



Dental Public Health Activities & Practices

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SECTION I: PRACTICE OVERVIEW		
Name of the Practice:		
New Hampshire's Oral Health Surveillance System		
Public Health Functions:		
Assessment – Acquiring Data Assessment – Use of Data		
Healthy People 2010 Objectives:		
21-16 Increase the number of states with State-based surveillance system.		
State:	Federal Region:	Key Words for Searches:
New Hampshire	Northeast Region I	Oral health surveillance system, surveillance, assessment, oral health data
Summary:		
<p>New Hampshire developed a state surveillance system for oral health in 2000 based on the eight components of the National Oral Health Surveillance System (i.e., dental visits, teeth cleaning, complete tooth loss, oral cancer, fluoridation, history of decay, untreated decay, and sealants). The data required for surveillance were obtained from the Behavioral Risk Factor Surveillance System, Water Fluoridation Reporting System, state cancer registry, death certificates, and a statewide oral health survey of third grade students. The surveillance system has provided useful information at moderate cost on the oral health status of the state's population. New Hampshire's state and local stakeholders have used the surveillance data for developing the New Hampshire Oral Health Plan: A Framework for Action, for developing performance measures for organizations receiving oral health funding from the state, and for prioritizing oral health program activities.</p>		
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SECTION II: PRACTICE DESCRIPTION

History of the Practice:

New Hampshire developed its state-based oral health surveillance system beginning in 2000. New Hampshire's surveillance system was modeled on the National Oral Health Surveillance System (NOHSS) and comprised the same eight indicators in NOHSS (i.e., dental visits, teeth cleaning, edentulism, oral cancer, fluoridation, caries experience, untreated decay, and sealants). The National Oral Health Surveillance System was developed by the Centers for Disease Control and Prevention (CDC) and the Association of State and Territorial Dental Directors (ASTDD). It is designed to help public health programs monitor the burden of oral disease, use of the oral health care delivery system, and the status of community water fluoridation on a state and national level. The release of the National Oral Health Surveillance System, the Surgeon General's report on oral health supporting the need for surveillance, and the assignment of a CDC epidemiologist to New Hampshire was a key factor that initiated the New Hampshire's Oral Health Surveillance System.

New Hampshire Department of Health and Human Services, Oral Health Program started in 1997. At that time, the state program consisted of a single staff person, the program manager who is a dental hygienist. During 1997-2000, the state health department did not have a chronic disease epidemiologist and the collection of oral health data was limited. Then in 2000, a CDC epidemiologist was assigned to the New Hampshire Department of Health and Human Services. His expertise provided the opportunity to develop the state oral health surveillance system.

Justification of the Practice:

Healthy People 2010, the Surgeon General, and ASTDD/CDC have recommended developing a state-level surveillance system for oral health. Without a surveillance system, New Hampshire did not have a reliable source of information for assessing the oral health status of the state's population. Surveillance data is needed to prioritize needs, guide program planning, and develop policies.

Inputs, Activities, Outputs and Outcomes of the Practice:

For New Hampshire, since resources are limited and the CDC epidemiologist's assignment was only part time in oral health, the Oral Health Program decided to initially establish a state oral health surveillance system that is simple with a minimal set of data required. A benefit of this approach is that it will increase the sustainability of the surveillance system. With time, the system may be further developed incrementally and appropriate indicators may be added.

Modeling the National Oral Health Surveillance System and using the same eight oral health indicators was an efficient strategy to design the state's surveillance system. These indicators are:

1. Dental Visits. Routine dental visits aid in the prevention, early detection and treatment of tooth decay, oral soft tissue disease, and periodontal diseases.
2. Teeth Cleaning. Having one's teeth cleaned by a dentist or dental hygienist is indicative of preventive behavior.
3. Complete Tooth Loss. Loss of all natural permanent teeth (complete tooth loss) substantially reduces quality of life, self-image, and daily functioning.
4. Fluoridation Status. Water fluoridation has played an important role in reducing tooth decay and tooth loss.
5. Caries Experience. Dental caries is the single most common chronic disease of childhood, occurring five to eight times as frequently as asthma, the second most common chronic disease in children.
6. Untreated Caries. To avoid pain and discomfort, decayed teeth need to be restored. To keep as much of the natural tooth as possible, decayed teeth should be repaired promptly so that fillings may be kept small.

7. Dental Sealants. Plastic coatings applied to decay-susceptible tooth surfaces (the pits and fissures) have been approved for use for many years and are recommended by professional health associations and public health agencies.
8. Cancer of the Oral Cavity and Pharynx. Oral and pharyngeal cancer comprises a diversity of malignant tumors that affect the oral cavity and pharynx. Each year, some 30,000 new cases of oral and pharyngeal cancer are diagnosed and 8,000 people die from the disease.

This minimal set of indicators can be expanded in the future when data sources and surveillance capacity increases for the state. Information for the oral health indicators was obtained from:

1. Behavioral Risk Factor Surveillance System (BRFSS)
For the indicators: dental visits, teeth cleaning and complete tooth loss
2. Water Fluoridation Reporting System (WFRS)
For the indicator: fluoridation status
3. State cancer registry and death certificates
For the indicator: oral cancer
4. New Hampshire Third Grade Oral Health Survey (2001 and 2004)
For the indicators: caries experience, untreated caries and dental sealants

The Behavioral Risk Factor Surveillance System is a state-based, ongoing data collection program designed to measure behavioral risk factors in the adult, non-institutionalized population 18 years of age or older through telephone interviews of a random sample of adults. The CDC's Water Fluoridation Reporting System provided New Hampshire with a convenient way to update its numbers on fluoridation. WFRS allows a state to go on-line to update basic information including populations served, fluoridation status, and contact information. The Cancer Registry and death certificates provide information on the number of cases and deaths due to oral and pharyngeal cancer in the state. The administrators of the BRFSS and cancer registry are part of the same organizational unit as the Oral Health Program (the Division of Public Health Services). As a result, the Oral Health Program only needs to make a simple data request to receive the data for the oral health surveillance system. The Oral Health Program updates the WFRS and conducts the oral health survey of third grade students.

The New Hampshire Third Grade Oral Health Survey was first conducted in 2001 and repeated in 2004. The plan is to repeat the Third Grade Oral Health Survey in 2009. The state's chronic disease epidemiologist used ASTDD's *Basic Screening Surveys* protocol, CDC's *PCSample* software, and advice from an ASTDD consultant to design the survey. The school-based screening survey provides information on the oral health status of children. The 2001 statewide survey of third grade students was conducted from February through April. Twenty-six schools participated in the survey and 410 students were screened. In 2004 the survey was conducted from September 2003 to April 2004. Forty-two schools participated in the survey and 597 students were screened.

The surveillance system was initially established and run by the CDC epidemiologist who spent 22% of his time in the oral health program. It took approximately 12-18 months to obtain the data for all 8 indicators mainly because of the need to conduct the third grade oral health survey. Most of the other data were pre-existing. In 2007 the Chronic Disease Epidemiologist spends 20.0% of her time in the Oral Health Program

Initial New Hampshire oral health surveillance data was available online in a printed format (<http://www.dhhs.state.nh.us/DHHS/RHPC/LIBRARY/Data-Statistical+Report/oral-health.htm>). More recent surveillance data is reported in several documents: (1) New Hampshire Oral Health Data Reports for 2001, 2002 and 2003. We are awaiting publication of New Hampshire Oral Health Data, 2006 containing data for several years; (2) Oral Health in New Hampshire, Issue Brief June 2004 and New Hampshire Oral Health Issue Brief-January 2007

The first set and more recent set of surveillance data for New Hampshire have been compared to national data and objectives showing the following:

Oral Health Indicators	New Hampshire	United States	Healthy People 2010
Annual dental visit in persons >18 years	76% (2001) 77% (2004)	68% (1999) 69% (2004)	---
Annual teeth cleaning in persons ≥18 years	78% (2001) 78% (2004)	69% (1999) 69% (2004)	---
Complete tooth loss in persons >65 years	23% (2001) 21% (2004)	24% (1999) 21% (2004)	20% among 65-74 year olds
Oral cancer deaths per 100,000 persons	3.7 (1995-99) 3.3 (1996-00)	2.8 (1999)	2.7
Untreated caries in 3 rd grade children	22% (2001) 24% (2004)	---	21% in 6-8 year olds
History of decay in 3 rd grade children	52% (2001) 51 % (2004)	---	42% in 6-8 year olds
Sealants in 3 rd grade children	46% (2001) 43% (2004)	---	50% in 8 year olds
Fluoridation of public water supplies	43% (2001) 43% (2005)	66% (2000)	75%

For the eight indicators in the National Oral Health Surveillance System, New Hampshire is doing reasonably well for five measures: annual dental visits among adults, annual teeth cleaning among adults, complete tooth loss among the elderly, untreated decay among children 6-8 years of age, and sealants in children 8 years of age. Additional progress is needed to reach *Healthy People 2010* objectives for oral cancer deaths, history of decay, and fluoridation of public water supplies.

The Oral Health Program provided funding for the oral health questions in the BRFSS, the summer intern that set up the WFRS system and the Third Grade Oral Health Survey 2001. Funding for the 2004 Third Grade Oral Health Survey was provided by the Endowment for Health. The Chronic Disease Epidemiologist maintains the WFRS database for 10 community water systems. She receives funding support from the University of New Hampshire and several programs within the Division of Public Health Services as well as the Oral Health Program.

The Oral Health Program will track five indicators (dental visits, teeth cleaning, complete tooth loss, fluoridation status and oral cancer) on **an annual/biennial basis** as data sources are available. Three indicators relating to the children's oral health status (caries experience, untreated caries and dental sealants) will be tracked **every three to five years** since the third grade oral health survey

will be repeated at least once every five years. The 2004 New Hampshire Oral Health Survey of Third Grade Students provides a statewide benchmark to measure programmatic performance improvement. The next third grade oral health survey will be undertaken in 2009.

Information from the New Hampshire's Oral Health Surveillance System has been disseminated and shared at the national, state and local levels. New Hampshire has contributed the oral health surveillance data to both NOHSS and the State Synopsis of State and Territorial Oral Health Programs. In addition, a MMWR article has been published on the results of the third grade survey. A databook on oral health is printed and posted on the web. Summary articles have been included in the state Epidemiology newsletter and in the newsletter of the dental hygiene association. Furthermore, information from the state surveillance system has been presented at three national meetings (Epidemic Intelligence Service, Chronic Diseases and Oral Health).

The surveillance data are used extensively. Program performance measures developed from surveillance data are now used to manage the performance of programs receiving oral health funding from the state. Surveillance data is also used for prioritizing oral health program activities. New Hampshire's state and local stakeholders have used the surveillance data for developing the state oral health action plan. The Coalition for New Hampshire Oral Health Action, broadly representative of the individuals and entities concerned with oral health, that developed the state action plan wanted information that only the surveillance system could provide. Without measures of the oral health status of the population, the discussion would have focused mainly on access to care issues. Having population based data from the oral health surveillance system made the coalition look at issues more from a public health perspective.

Budget Estimates and Formulas of the Practice:

At the state level, much of the infrastructure was already in place and was handled by the oral health program manager and the Behavioral Risk Factor Surveillance System coordinator. In addition, there was \$31,000 contributed to the salary of an epidemiologist. There was the summer intern who set up the Water Fluoridation Reporting System; he earned approximately \$3,500. The contract for the dental hygienist that conducted the third grade survey in 2001 was \$5,000 and \$7,225 in 2004. The cost of adding three oral health questions to the Behavioral Risk Factor Surveillance System was \$3,000 per year. In 2008 the oral health program will contribute to a child focused set of questions for the Behavioral Risk Factor Surveillance System at an anticipated cost of \$6,500.

Lessons Learned and/or Plans for Improvement:

Developing the oral health surveillance system was made easier by the infrastructure for surveillance that has been developed by ASTDD and CDC. The existence of the National Oral Health Surveillance System, Behavioral Risk Factor Surveillance System, Basic Screening Surveys, and Water Fluoridation Reporting System made the work much easier. Leadership within the health department has supported oral health surveillance efforts, and assists with securing the needed resources.

The presence of a CDC epidemiologist provided the technical assistance that was needed to develop the surveillance system. Although the CDC epidemiologist has been re-assigned, a new chronic disease epidemiologist was hired by the New Hampshire Department of Health and Human Services with 20% of her time dedicated to oral health.

Available Resources - Models, Tools and Guidelines Relevant to the Practice:

- [NH Oral Health Data 2003](http://www.dhhs.state.nh.us/DHHS/RHPC/LIBRARY/Data-Statistical+Report/oral-health.htm) (47 pages) is an annual report prepared by DHHS. The report contains information on fluoridation, sealants, insurance coverage, hospital-, community-, and school-based dental programs, oral cancer, tooth loss, access to care and more. Available at <http://www.dhhs.state.nh.us/DHHS/RHPC/LIBRARY/Data-Statistical+Report/oral-health.htm>
- [Issue Brief-Oral Health Data 2003](http://www.dhhs.state.nh.us/DHHS/RHPC/LIBRARY/Data-Statistical+Report/oral-health.htm) (2 pages) is a summary of the annual report and contains facts and figures about the oral health of children and adults in New Hampshire, risk factors and access to care. Available at <http://www.dhhs.state.nh.us/DHHS/RHPC/LIBRARY/Data-Statistical+Report/oral-health.htm>

- Association of State and Territorial Dental Directors. Basic screening survey: an approach to monitoring community oral health. Columbus, Ohio: Association of State and Territorial Dental Directors, 1999. Available at <http://www.astdd.org>
- CDC, Association of State and Territorial Dental Directors. National oral health surveillance system. Available at <http://www.cdc.gov/nohss>. Accessed March 2003.
- CDC. Oral health survey of third grade students – New Hampshire, 2001. MMWR. 2002; 51: 259-260.
- Oral Health in New Hampshire: Issue Brief-January 2003
- Oral Health in New Hampshire: Issue Brief-June 2004
- Third Grade Oral Health Survey – New Hampshire, 2004

SECTION III: PRACTICE EVALUATION INFORMATION

Impact/Effectiveness

Does the practice demonstrate impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence and outcomes of the practice)?

The data from the surveillance system were reported in an annual report (New Hampshire Oral Health Data) in 2001, 2002 and 2003 and a summary was published in the state epidemiology newsletter and the newsletter of the state dental hygiene association. The results of the third grade survey were reported in the MMWR and were presented at two national meetings (the 51st Annual Epidemic Intelligence Service (EIS) Conference and the 16th National Conference on Chronic Disease Prevention and Control). Furthermore, New Hampshire has used the surveillance data for developing the state oral health action plan, for developing performance measures that are performance management tools for organizations receiving oral health funding from the state and for prioritizing oral health program activities. As the system is still new, it is too early to demonstrate its full impact.

Efficiency

Does the practice demonstrate cost and resource efficiency where expenses are appropriate to benefits? Are staffing and time requirements realistic and reasonable?

The surveillance system was developed with a modest amount of money and using 0.22 FTE for the CDC assigned epidemiologist. Annual costs have been \$31,000 for the epidemiologist and \$3,000 for the BRFSS questions on oral health. Additional costs have been \$3,500 to set up WRFS; \$5,000 to conduct the oral health survey of third grade students in 2001; and \$7,225 to conduct the second third grade oral health survey in 2004.

Demonstrated Sustainability

Does the practice show sustainable benefits and/or is the practice sustainable within populations/communities and between states/territories?

The surveillance system is kept as simple as possible to improve its sustainability. As the system is relatively new, it is too soon to say whether or not the system will continue over time. The key factor is the availability of epidemiologic support to maintain the system and to conduct the third grade survey at periodic intervals.

Collaboration/Integration

Does the practice build effective partnerships/coalitions among various organizations and integrate oral health with other health projects and issues?

The Department of Environmental Services (DES) is responsible for public water systems in the state. The Oral Health Program has collaborated with DES to conduct periodic trainings for water system operators from ten fluoridated communities and to improve data collection for the Water Fluoridation Reporting System.

The Oral Health Program has also collaborated with the New Hampshire Department of Education on the third grade oral health surveys in 2001 and 2004 conducted to obtain the three indicators for children.

Within the health department, the Oral Health Program has collaborated with the Behavioral Risk Factor Surveillance System, vital records, and the state cancer registry to obtain the required data.

Objectives/Rationale

Does the practice address HP 2010 objectives, the Surgeon General's Report on Oral Health, and/or build basic infrastructure and capacity for state/territorial oral health programs?

HP 2010 Objective #21-16 is to increase the number of states with state-based surveillance systems.

In the Surgeon General's report on oral health, the call to action states: "...epidemiologic and surveillance databases for oral health and disease...are limited or lacking at the national, state, and local levels. Such data are essential ..."

Extent of Use Among States

Is the practice or aspects of the practice used in other states?

A 1999 ASTDD survey found that only approximately eight (19%) of 43 responding states self-reported having "a state-based oral health surveillance system," none of which were comprehensive. That number may be lower had the survey further defined the required attributes of a comprehensive surveillance system.

Synopses of State and Territorial Dental Public Health Programs showed that 29 states reported having an oral health surveillance system in FY 2004-2005.