

Vermont Oral Health Plan

2014



HEALTHY
VERMONTERS
2020

 VERMONT
DEPARTMENT OF HEALTH

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Introduction to Vermont Oral Health Plan • 2014

Oral Health in America: A Report of the Surgeon General was released in 2000.¹ This served as a wake-up call to the nation by raising awareness about the prevalence of oral disease among Americans – as well as the racial, ethnic and socioeconomic disparities in oral health status. The report provided evidence-based data on oral health and oral diseases, the relationship

The Vermont Oral Health Coalition

Established in 2011, the Vermont Oral Health Coalition was formed to improve and advocate for the oral health of all Vermonters. Composed of 65 members who represent a variety of oral health stakeholders, including public and private organizations, professional associations and community organizations, the Coalition serves to influence oral health policy, practice, and programming.

Using start-up funding from the Vermont Department of Health, the Coalition has met regularly to define its scope of work. It is also the primary architect of the Vermont Oral Health Plan, and has identified five priority strategies to address in 2014:

- Focus educational efforts on the link between oral health and general health.
- Maximize the use of dental hygienists participating and providing services under public health supervision.
- Expand and enhance the Tooth Tutor Program.
- Promote adoption of community water fluoridation.
- Continue and expand the loan repayment program for dental professionals practicing in underserved areas.

These strategies and their action steps are highlighted throughout the Plan.

between oral health and general health, a review of the oral health system, access to oral health services, and the oral health workforce nationally. Based on the findings, the Surgeon General called for action to promote access to oral health care for all Americans, with an emphasis on those at greatest risk for severe medical complications due to lack of oral care.

The Surgeon General's Report clearly defined the need for a national oral health plan – and state-level oral health plans. In 2005, the Vermont Department of Health developed its first Oral Health Plan. In 2014, the plan was updated, using an evidence-based, consensus-driven process to address individual, community and state oral health needs. The Health Department collaborated with the Vermont Oral Health Coalition to provide leadership and to gather stakeholder input.

Methodology that informed the update to the plan included: 1) a comprehensive literature review to identify evidence, guidelines, best practices and other state models; 2) an assessment of national and state-level data; 3) interviews with oral health stakeholders in Vermont; 4) soliciting ideas and feedback from Coalition members; and 5) leading a strategic planning process with Coalition members related to implementing the plan.

¹ US Department of Health and Human Services, Public Health Service, Office of the Surgeon General. *Oral health in America: A report of the Surgeon General*. Rockville, MD: National Institutes of Health, National Institute of Dental and Craniofacial Research; 2000.

Organization of the Plan

The 2014 Vermont Oral Health Plan addresses six major oral health topics: 1) Literacy and Education; 2) Prevention Strategies; 3) Surveillance and Assessment; 4) Oral Health Infrastructure; 5) Financing and Delivery Systems; and 6) Workforce.

Goals directed at improving oral health in Vermont are identified for each topic, followed by a set of objectives and strategies to achieve each goal. These were developed to allow for flexibility in interpreting and feasibility in implementing goals. Listed below, the topics and goals provide stakeholders with guidance on improving oral health, reducing the burden of oral disease, and eliminating oral health disparities.

1) Literacy and Education

Goal: Increase oral health literacy, awareness, and knowledge of oral health and its link to overall health.

2) Prevention Strategies

Goal: Reduce the incidence of dental caries among Vermonters through the expansion of community water fluoridation and the use of topical fluoride.

Goal: Reduce the incidence of dental caries through appropriate use of dental sealants.

Goal: Ensure all Vermonters have access to a dental home.

Goal: Reduce the prevalence of oral cancer in Vermont.

3) Surveillance & Assessment

Goal: Ensure adequate and appropriate data are available to inform oral health related policies, programs and practice.

4) Oral Health Infrastructure

Goal: Ensure that public health infrastructure in Vermont works effectively to improve oral health and overall health of the population.

5) Financing & Delivery Systems

Goal: Ensure equitable access to oral health services through financing and delivery systems.

6) Workforce

Goal: Enhance the oral health workforce to meet the needs of all Vermonters.

State and national indicators of oral disease burden, prevention and health promotion are presented in Table 1 to compare oral health statuses of Vermont and the nation. It includes a selection of the *Healthy People 2020* national oral health indicators. When relevant, it also includes *Healthy Vermonters 2020* objectives.

Table 1. Healthy People 2020 Oral Health Indicators and Vermont Status

| Healthy People 2020 Objective | Target ¹ | National Status ¹ | Vermont Status ² | Healthy VT 2020 Target |
|--|---------------------|------------------------------|-------------------------------|---------------------------------|
| 1. Reduce the proportion of children ages 6 to 9 who have dental caries experience in their primary or permanent teeth | 49% | 54% | 34% | 30% |
| 2. Reduce the proportion of children ages 6 to 9 with untreated dental decay | 26% | 29% | 11% | -- |
| 3. Reduce the proportion of adults ages 45-64 who have ever had a permanent tooth extracted | 69% | 76% | 52% | 45% |
| 4. Increase the proportion of oral and pharyngeal cancers detected at the earliest stage | 36% | 33% | 38%* | -- |
| 5. Increase the proportion of children, adolescents, and adults who used the oral health care system in the past year | 49% | 45% | Age 6-9 = 95% Age 18+= 74% | Age 6-9 = 100% Age 18+ = 85% |
| 6. Increase the proportion of Federally Qualified Health Centers (FQHCs) that have an oral health care program | 83% | 75% | 88% | -- |
| 7. Increase the proportion of patients who receive oral health services at Federally Qualified Health Centers (FQHCs) each year | 33% | 18% | 19% | -- |
| 8. Increase the proportion of children ages 6 to 9 years who have received dental sealants on one or more of their permanent first molar teeth | 28% | 26% | 53% | -- |
| 9. Increase the proportion of the U. S. population served by community water systems with optimally fluoridated water | 80% | 72% | 57% | 65% |

¹ Data is from Healthy People 2020. Available at www.healthypeople2020.gov

² Data is from the Vermont Department of Health's 1) Burden of Oral Disease in Vermont report (data is from 2009-2011) and 2) Healthy Vermonters 2020 report.

* Data is from 2000-2009 combined.

The Burden of Oral Disease in Vermont

Oral health is an essential and integral component of overall health. Good oral health reflects freedom from tooth decay and gum disease, conditions associated with chronic oral pain, oral cancer and other conditions that affect the mouth and throat. Good oral health also includes the ability to carry on basic human functions such as chewing, swallowing and speaking. Oral health is related to the health of the rest of the body, and poor oral health can significantly diminish quality of life and overall health status. For example, evidence suggests that infections in the mouth may increase the risk of heart disease, increase the risk for premature labor, and complicate blood sugar control for people with diabetes.²

Over the past several decades, progress has been made in understanding the causes of oral disease and how to effectively prevent and treat it. This has resulted in significant improvements in the oral health of the nation and the state. While many Vermonters experience good oral health, oral diseases cause pain and disability for many children and adults. Furthermore, the burden of oral disease is unevenly distributed. Disparities in oral health status exist among specific subgroups, including people of low socioeconomic status and those who are uninsured or underinsured.

The report from the Vermont Department of Health's Office of Oral Health, *Burden of Oral Disease in Vermont 2013*, provides a comprehensive review of the oral health status of Vermonters. It summarizes key oral health status indicators and provides an overview of the burden of oral disease in Vermont across the lifespan (children, adults, older adults) and subgroups that experience disproportionate rates of oral disease.

Children

Tooth decay is the most common oral disease among children and the most common childhood chronic disease. The prevalence of decay in children is measured by assessing caries experience and untreated decay. Children in Vermont generally fare well with regard to oral health and tooth decay compared to children in other states. A survey from 2009-2010 indicates that 66 percent of children in first through third grade were caries-free, exceeding both the national rate of 46 percent and the 51 percent target rate set by *Healthy People 2020* (see Figure 1).³ This is also a 6 percent increase from the 2002-2003 survey that reported a caries-free rate of 60 percent among first through third grade children throughout Vermont.⁴

²Li X, Kolltveit KM, Tronstad L, Olsen I. *Systemic diseases caused by oral infection*. Clin Microbiol Rev. 2000 Oct;13(4):547-58.

³Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

⁴Vermont Department of Health. *Keep Smiling Vermont. Oral Health Survey 2002-2003*.

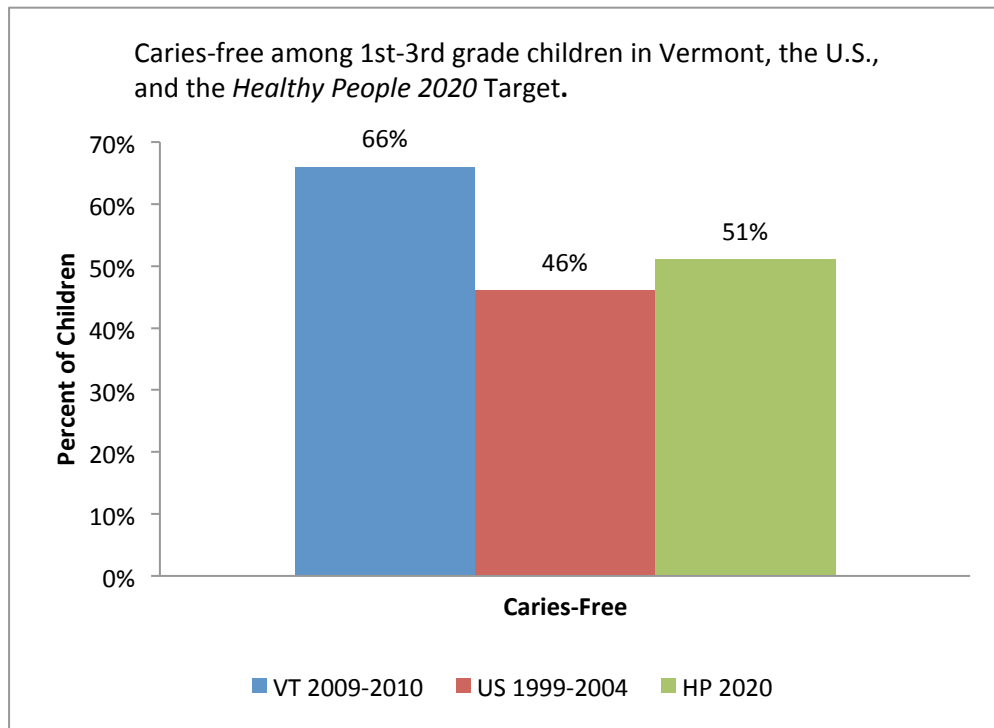


Figure 1. Percent of children free of dental caries.

Vermont's children also rate well on untreated tooth decay, another primary indicator of the oral health status of children. About 11 percent of children in first through third grades had active untreated decay present in their mouths, which is lower than the national rate of 29 percent and the *Healthy People 2020* target rate of 26 percent.⁵ This rate decreased by 5 percentage points from the 2002-2003 rate of 16 percent, indicating improvement in the oral health of Vermont's children.⁶

Although the oral health of children in the state continues to improve, the experience of dental caries and untreated decay are unevenly distributed and concentrated among particular groups. For example, children in low income families are more likely to suffer from dental caries and are less likely to receive treatment. Children covered by Medicaid have a considerably higher rate of caries experience (44%) compared to children covered by private dental insurance or cash (27%). Despite available Medicaid benefits to treat tooth decay, Medicaid-eligible children are also more likely to have untreated decay (16%) compared to children with private dental insurance or who pay with cash (8%).⁷ In 2011, 56 percent of Medicaid-eligible children used dental services.⁸ Although the utilization rate of dental care among Medicaid-eligible children throughout Vermont has been rising slowly over time, there is still considerable room for improvement.

⁵ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

⁶ Vermont Department of Health. *Keep Smiling Vermont. Oral Health Survey 2002-2003*.

⁷ Vermont Department of Health. *Keep Smiling Vermont. Oral Health Survey 2009-2010*.

⁸ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

Fluoridation and dental sealants are effective interventions to help prevent tooth decay in children. Past and present efforts to reduce childhood caries in Vermont have included promoting community water fluoridation, school fluoride mouthrinse programs, helping children access dental homes, and adding an oral health component to WIC services. Many of the recommended strategies in this plan expand on these efforts to improve the oral health of Vermont's children.

Adults

Tooth loss is a main indicator of oral health status among adults. Tooth loss can affect the ability to chew and speak, as well as interfere with social functioning. Although trends show an overall reduction in tooth loss among adults in the U. S., the proportion of adults (18+) with at least one tooth extraction in Vermont has not changed significantly over the past decade and ranges between 44 and 46 percent.⁹

Vermonters typically experience less tooth loss when compared to other states and the nation. In 2010, 52 percent of Vermont adults 45-64 years of age reported having loss of one or more permanent teeth, which is less than the national average rate of 76 percent and the *Healthy People 2020* target of 69 percent (see Figure 3).¹⁰

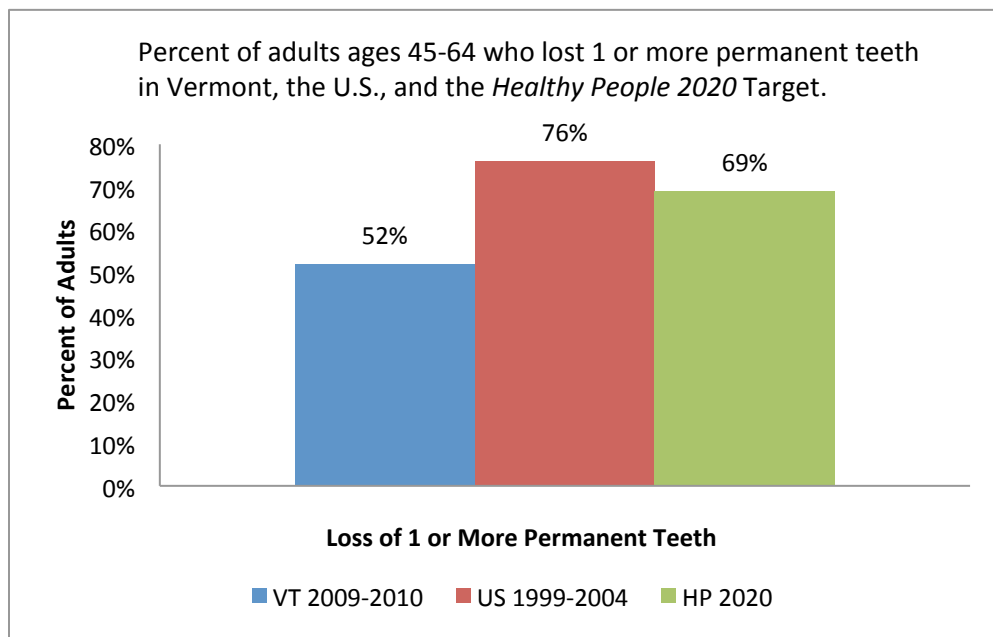


Figure 3. Percent of adults 45-64 years of age with tooth loss.

⁹ Vermont Department of Health. *Vermont Behavioral Risk Factor Surveillance System 2010 Data Summary*. May 2012.

¹⁰ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

Disparities in tooth loss among adults in Vermont are associated with several factors, including income and education. In 2010:

- 44 percent of adults (age 18+) reported having had at least one tooth extracted.
- 59 percent of adults with a high school education or less had at least one tooth extracted, compared to 31 percent of adults with at least a college education.¹¹
- 67 percent of adults with an annual household income of \$15,000 or less had at least one tooth extracted, while 34 percent of adults with an annual household income of \$50,000 or more had at least one tooth extracted.¹²

The most common reasons for tooth loss in adults are tooth decay and periodontal disease. Although data on the prevalence of gingival and periodontal disease in Vermont are not available, the number of emergency department visits for gingival and periodontal disease can serve as a marker. Between 2003 and 2009, Vermont residents made an average of 164 emergency visits to Vermont and New Hampshire hospitals each year. This constitutes about 3 percent of all emergency department visits. Emergency department visits for gingival and periodontal diseases are most prevalent in the 25 to 34 year old age group, representing 46 percent of all emergency department visits for oral health issues.

In most cases, tooth loss can be avoided by treating decay and periodontal disease. In 2010, 74 percent of adults age 18 and older reported visiting a dentist within the past year, compared to the national rate of 68 percent. When viewed by income and education, however, disparities emerge. Adults with higher levels of education and annual household incomes are more likely to routinely visit the dentist compared to those with lower levels of education and income:

- 63 percent of adults in Vermont with a high school education or less reported visiting a dentist in the past year, compared to 84 percent who had at least a college education.¹³
- 57 percent of adults in Vermont with an annual household income of less than \$25,000 reported visiting a dentist in the past year, compared to 90 percent with an annual household income of \$75,000 or more.¹⁴

Vermont has one of the highest rates in the nation of oral health care use and dentist participation in Medicaid. Despite this, not all Vermonters have access to dental care. Delays in treatment can cause pain, infection and complications for other health conditions.

Improving the overall health of Vermonters depends on making sure everyone has access to oral health care. Improvements can be made in the oral health system to ensure quality dental care is provided to low-income and Medicaid-eligible adults. Educational efforts can also help to increase knowledge of the importance of oral health and to improve oral health literacy.

¹¹ Vermont Department of Health. *Vermont Behavioral Risk Factor Surveillance System 2010 Data Summary*. May 2012.

¹² Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

¹³ Vermont Department of Health. *Vermont Behavioral Risk Factor Surveillance System 2010 Data Summary*. May 2012.

¹⁴ Vermont Department of Health. *Vermont Behavioral Risk Factor Surveillance System 2010 Data Summary*. May 2012.

Older Adults

Improvements in overall oral health status have occurred among older adults, increasing the number of people who keep their natural teeth throughout their lives. The percentage of adults in Vermont ages 65 to 74 who have lost all of their natural teeth has declined over the past decade, from 22 percent in 1999 to 15 percent in 2010. This is better than the national average of 24 percent and the *Healthy People 2020* target of 22 percent (see Figure 4).¹⁵

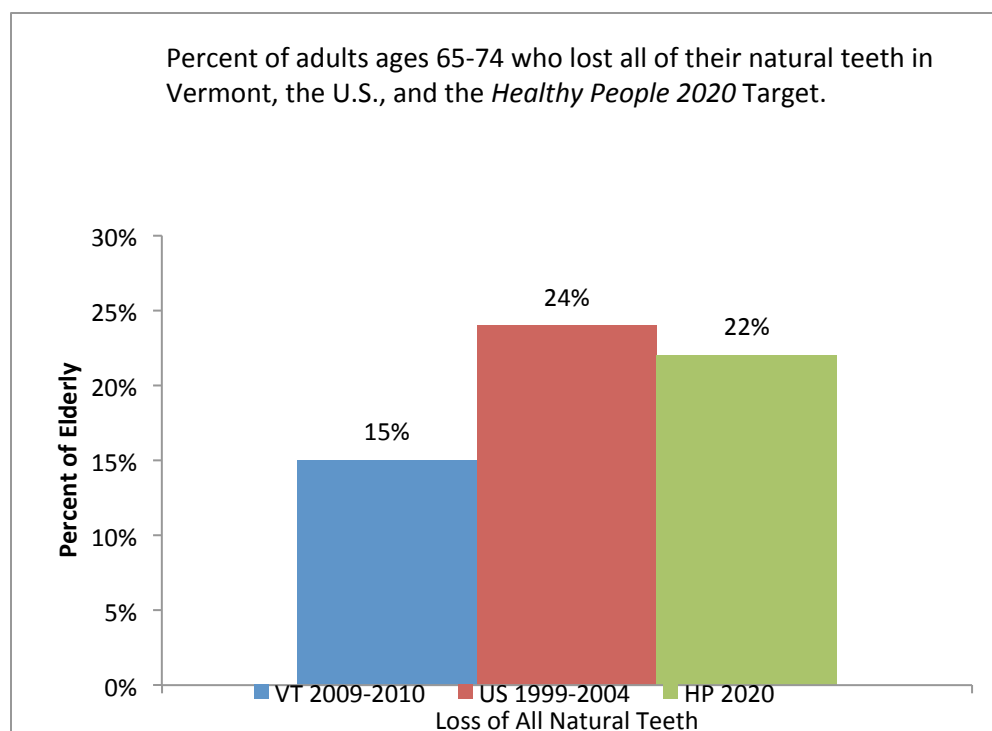


Figure 4. Percent of adults 65-74 years of age who have lost all of their natural teeth.

As with children and adults, older adults experience oral health disparities and lower levels of income and educational attainment are predictors of tooth loss among the elderly. Among Vermonters 65 years of age and older without all of their natural teeth in 2010:

- 51 percent had less than a high school education, compared to 5 percent who had graduated from college.
- 46 percent had an annual household income of less than \$15,000, compared to three percent with an annual household income of \$50,000 or higher.¹⁶

¹⁵ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

¹⁶ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

Although the number of older adults continues to grow, both nationally and in Vermont, their oral health needs receive limited attention. Professional dental care remains a need throughout the lifespan, but financing this is difficult for many older adults. Dental insurance is typically acquired through a job and most people lose their dental insurance when they retire. In some states, Medicaid provides limited coverage for routine dental care for low income and disabled elderly adults. Medicare does not cover routine dental care for elderly adults, but provides several limited services if deemed medically necessary. Most older adults have no dental coverage at all, and must pay for dental services out of pocket. This can make it costly or even unaffordable. Consequently, many older adults living on fixed incomes are unable to afford dental care, which can lead to poor oral health and occasionally serious complications.

To better address the oral health of Vermont's older adults, financing and community-based strategies should address their needs. It is also essential to educate medical and social services providers about oral health needs of older adults.

Disparities

Although the oral health status of Vermonters has improved significantly over time and is generally good compared to other states, gains have been unevenly distributed. Disparities result from a number of factors, including socioeconomic status, vulnerable or special populations, and geography.

Socioeconomic Status

Income and educational attainment are the two most commonly used markers of socioeconomic status in the United States. Both are strongly correlated to measures of health and health-related behaviors. Income and education – along with other related characteristics such as accumulated wealth, occupation, and neighborhood socioeconomic conditions – can influence health. In the U. S. and Vermont, low-income families and those with less than a high school education often bear a disproportionate burden of oral disease. Despite the decrease in caries experience, children in families living below the poverty level have more caries than children who are from higher income homes. Poorer children's caries are also more likely to go untreated.

Dental insurance is a predictor of dental care utilization. In Vermont, people who are uninsured or underinsured are much less likely to use dental care than those who are insured. In 2009, 20 percent of uninsured children in Vermont did not receive needed dental care because they could not afford it, compared to 3 percent of children with insurance. Similarly, among adults ages 18 to 64, 35 percent of those without insurance did not receive needed dental care because they could not afford it, compared to 13 percent who were insured (see Figure 5).¹⁷

¹⁷ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

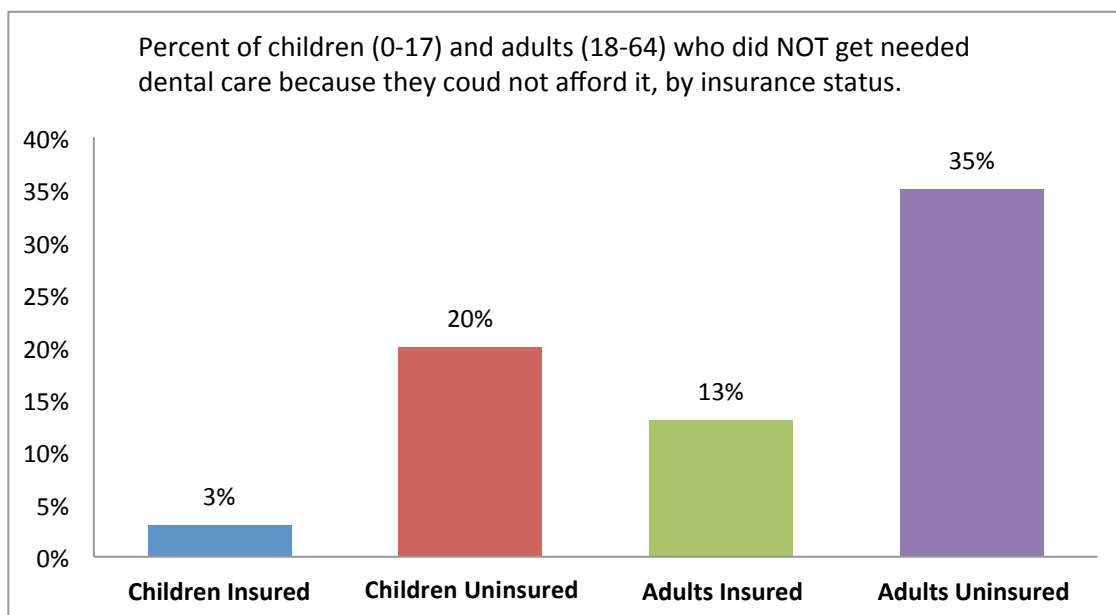


Figure 5. Percent of children and adults in Vermont who did not get needed dental care because they could not afford it.

Vulnerable Populations

Individuals with disabilities and minority populations (e. g., racial and ethnic minorities) experience poorer oral health than the overall population. The rate of caries is higher among people with disabilities compared to people without disabilities. Children with special health care needs also tend to have poorer oral health, more oral health problems and greater dental needs, yet receive less dental care compared to children without disabilities covered by Medicaid. Adults with disabilities are similarly less likely to visit a dentist than those without disabilities.¹⁸

Refugees and children in state custody also tend to have unique oral health needs. Many refugees arrive in Vermont from countries with few dental health services. They may need extensive treatment and education about preventive practices like brushing, flossing and nutrition. Foster children have often lived in situations with limited or intermittent access to health and dental care. Their entrance into state custody allows enrollment into the Medicaid insurance system as well as enabling regular access to clinical care. Another subpopulation, inmates in correctional facilities, numbers over 6,000 individuals per year. They also require oral health services, whether living in their community or in a prison.

¹⁸ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

Geographic Barriers

People living in rural areas have a higher burden of oral disease because of difficulties in accessing care. There are eight Federally Qualified Health Center (FQHC) organizations in Vermont that currently provide dental care and play an important role in increasing access to care in rural areas.

To continue to improve the oral health of Vermonters, strategies should address disparities and focus on the needs of high-risk populations. When possible, prevention strategies should be targeted to the groups with the highest need. Prevention strategies should also be aimed at special populations such as pregnant women, children in state custody, refugees, children with special health care needs and people with disabilities.

Literacy and Education

Oral health is integral to overall health and wellbeing, yet it is often under-valued and perceived as separate from health and health care. Many people do not understand oral health risk factors, the importance of prevention, or the relationship between oral health and overall health. Improving the oral health of Vermonters will depend on increasing knowledge and prioritization of good oral health. Individuals, healthcare providers, communities and policymakers who value and prioritize oral health will be aided in adopting and maintaining beneficial oral health practices, programs and policies.¹⁹

There is a need for people to understand the value of oral health as part of one's overall health.

--Vermont Oral Health Key Informant Stakeholder

Oral health literacy is low among many individuals, providers and communities. Recommendations from the Institute of Medicine's 2011 report, *Advancing Oral Health in America*, include the need to improve oral health literacy and cultural competency. Oral health literacy refers to the degree to which people obtain, process and understand basic health information and services to make appropriate oral health decisions. It goes beyond the ability to read and write effectively. Good oral health literacy is important because it can affect use of oral health services, patient outcomes and overall health care costs.²⁰

A phone survey conducted in 2004 by the Vermont Department of Health demonstrates gaps in the oral health literacy of Vermont parents. The survey was conducted to determine the knowledge, attitudes, beliefs and behaviors of parents and guardians of children currently, previously, or potentially eligible for Dr. Dynasaur, the state's public insurance plan for children. Findings indicated a significant number of caregivers had limited awareness, understanding, and knowledge of good oral health practices for their children. Parents make decisions and take actions that influence not only their own oral health, but also that of their children. It is important for caregivers to instill good oral health habits in their children at a young age. To do so they first need to equip themselves with accurate information about oral health and preventing oral disease.

Increasing oral health literacy is also about changing norms so that oral health and dental care are viewed as important and integral to overall health. Public education to increase knowledge and understanding of the link between oral health and general health is a good starting point. Access to evidence-based oral health information will enable individuals to make informed decisions and to interact more effectively with the oral health system in Vermont.

¹⁹ IOM (Institute of Medicine). 2011. *Advancing Oral Health in America*. Washington, DC: The National Academies Press. <http://www.iom.edu/Reports/2011/Advancing-Oral-Health-in-America.aspx>

²⁰ IOM (Institute of Medicine). 2011. *Advancing Oral Health in America*. Washington, DC: The National Academies Press. <http://www.iom.edu/Reports/2011/Advancing-Oral-Health-in-America.aspx>

Educating and training health care and other service providers (including educators and nursing home staff) increases their understanding of oral health and referrals to appropriate providers in the oral health system. Communication and advocacy efforts to increase policymakers' awareness and understanding of the link between oral health and general health, as well as the burden of oral disease, oral health access issues, and gaps in Vermont's oral health system, are essential to getting these issues added to the agenda. Well-informed policymakers who understand the importance of oral health as part of overall health are more equipped to promote change in oral health policy, programs and resource allocation.

Goal: Increase literacy, awareness, understanding and knowledge of oral health and its link to overall health.

Objective 1.1: Educate the public, health professionals and policymakers about the relationship between oral health and general health, with an emphasis on prenatal oral health care, prevention of early childhood caries (Baby Bottle Tooth Decay), health-promoting behaviors (e.g., daily oral hygiene, routine dental exams, tobacco-free lifestyles), the link between oral health and chronic conditions, the importance of prevention and dental care across the lifespan, and early detection and prevention of oral cancer.

Specific Strategies:

- A. Deploy a statewide media campaign with messages about the value and importance of oral health and the impact of poor oral health on general health. Create specific messages with cues to action for different target groups.
- B. Provide education to pregnant women about the relationship between maternal oral health and infant oral health, maternal oral health and possible adverse birth outcomes, and the benefits of establishing healthy oral health behaviors in infancy and early childhood.
- C. Develop messages and provide education for community organizations serving children (e.g., day care centers, WIC, Department of Children and Families, parent-child centers, visiting nurses, maternal and child health coalitions, Head Start/Early Head Start) on oral health, oral health preventive measures and early childhood caries.
- D. Support incorporating oral health as a component of comprehensive school health programs by integrating messages about oral health throughout the K-12 school environment (e.g., school-based educational programs that emphasize nutrition, promoting healthy food choices in vending machines).
- E. Expand the reach of current oral health education activities by engaging new stakeholders and partners and creating a multi-sectorial approach to oral health messaging efforts.

- F. Promote the use of mouth guards for students participating in physical activities.
- G. Educate health care providers, especially primary care providers, on the relationship between oral health and overall health, including the possibility of adverse outcomes during pregnancy and the transmission of cariogenic bacteria from mother to infant.
- H. Provide health care providers with information on oral disease prevention (including oral health risk assessment, fluoride varnish, and early childhood caries), existing oral health services in their communities, and where to refer patients for oral health treatment.
- I. Include oral disease prevention across the lifespan as a component of overall health promotion in the curricula and training experiences of all schools of medicine and allied health professions.
- J. Build and strengthen partnerships between dental and medical providers.
- K. Develop and disseminate educational messages about oral hygiene, periodontal disease and effects on chronic conditions for use by health professionals and organizations serving elderly populations (e.g., social centers, assisted living facilities).
- L. Educate medical professionals on the effects of medications on oral health, such as bisphosphonates and medications that cause dry mouth.
- M. Educate health providers on prevention, screening, detection, and risk behaviors related to oral cancer.
- N. Educate health providers on communication techniques effective in promoting behavior change.

The Vermont Oral Health Coalition's **Education Committee** has been developed to address strategy 1.2A—*Focus educational efforts on the link between oral health and general health.*

Activities of the Education Committee include:

- Coordinating Grand Rounds and other presentations for health care providers, school nurses, and Blueprint Community Health Teams to promote the importance of oral health in overall health.
- Promoting the use of oral health risk assessments and fluoride varnish applications in primary care practices.
- Promoting the use of public health dental hygienists as an oral health resource for communities and health providers.

Objective 1.2: Educate the public, health care providers and policymakers about oral health problems and build support for policies and resources to overcome them.

Specific Strategies:

- A. Focus educational efforts on the link between oral health and general health.
- B. Promote educational efforts on the link between oral health and chronic conditions.
- C. Develop and promote oral health policy proposals based on priority needs identified through assessments and best practices.
- D. Participate actively in planning and policy development for future state initiatives in health systems development, service delivery and financing.
- E. Publish newsletters, press releases, annual reports and other documents on oral health issues.
- F. Disseminate nationally published literature so that both dental and medical providers have access to the same information when treating patients with chronic conditions.
- G. Use oral health data to build support for program planning.

Objective 1.3: Educate policy makers on oral health delivery systems and financing.

Specific Strategies:

- A. Establish regular communications about oral health systems issues with policy makers (e.g., elected officials, government policymakers).
- B. Invite policymakers to be active participants in the Vermont Oral Health Coalition.

Prevention Strategies

Most oral diseases and conditions are preventable. In fact, the significant improvement in the oral health of Americans over the past 50 years is largely a result of effective prevention and treatment efforts.²¹

Primary prevention includes interventions designed to prevent oral disease from first occurring. Community water fluoridation, use of dental sealants, good dietary practices and proper self-care such as tooth brushing and flossing are examples of primary prevention.

Secondary prevention approaches are those that eliminate the need for extensive dental care, such as early diagnosis and treatment of oral disease, through periodic examinations and screening for oral cancer.

Tertiary prevention are those measures that prevent disability from oral diseases in intermediate and late stages, and includes restorative care ranging from crowns to implants.

Primary prevention strategies are the most cost-effective for improving oral health status. Community water fluoridation and the use of dental sealants are evidence-based primary prevention interventions that have contributed to the improvements in the oral health of Americans. Linking individuals to a dental home, and promoting awareness of preventing and screening for oral cancer, are also important oral health prevention strategies. The majority of recommendations made in this plan relate to primary prevention.

Fluoride

Community water fluoridation has been identified as one of the 10 great public health achievements of the 20th century, due to its preventive impact on the prevalence and severity of dental caries. Residents of communities with fluoridated water have 18 to 40 percent less dental disease than those living in non- fluoridated communities.

Community water fluoridation is cost-effective and benefits all residents served by public water systems, regardless of socioeconomic status. In communities with more than 20,000 residents, every \$1 invested in community water fluoridation yields about \$38 in savings annually from fewer cavities treated.²²

From a public health perspective, water fluoridation is huge because it does not rely on behavior change.

--Vermont Oral Health Key Informant Stakeholder

²¹ U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. *Healthy People 2020*. Washington, DC.

²² Griffin SO, Jones K, Tomar SL. *An economic evaluation of community water fluoridation*. J Public Health Dent. 2001 Spring; 61(2):78-86.

Community water fluoridation now benefits about seven out of 10 Americans (74%) who get water through public water systems.²³ To continue gains in improving the oral health of Americans, *Healthy People 2020* has set an objective to increase the percentage of the population served by community water systems with optimally fluoridated water to 79.6 percent.²⁴ In Vermont, only about six of every 10 residents (57%) served by municipal water systems receive optimally fluoridated water.²⁵ Although many public water systems throughout Vermont have optimally fluoridated water, Vermont is well below the *Healthy People 2020* target.

Efforts must be directed to support fluoridation in communities without it, and to sustain those that are already fluoridated. Residents living in areas with fluoridated water should understand the benefits of drinking fluoridated water. Of the 458 community water systems in Vermont, 68 systems, serving approximately 252,700 Vermonters, currently fluoridate their drinking water. While Vermont is above average in many categories of oral health, it ranks 39th among all states for the percentage of the population served by community water fluoridation.²⁶

The use of fluoridated products is another way to receive optimal exposure to fluoride. These include using fluoridated toothpaste, mouth rinses and dietary supplements, as well as professionally applied varnishes and gels.

Goal: Reduce the incidence of dental caries among Vermonters through expanding community water fluoridation and the use of fluoride.

Objective 2.1: Increase the percentage of Vermont residents served by public water systems with optimally fluoridated water.

Specific Strategies:

- A. Promote adoption of community water fluoridation.
- B. Maintain a multidisciplinary statewide fluoridation subcommittee as part of the Vermont Oral Health Coalition to provide a forum for stakeholders to communicate, plan and pool resources to promote and sustain water fluoridation.

The Vermont Oral Health Coalition's **Fluoride Committee** is addressing strategy 2.1A— *Promote community adoption of community water fluoridation*. Activities include:

- Collaborating with locally based oral health coalitions on the development of a social marketing and community mobilization campaign to promote community water fluoridation.

²³ Centers for Disease Control and Prevention. *2010 Water Fluoridation Statistics*.

²⁴ U.S. Department of Health and Human Services. Office of Disease Prevention and Health Promotion. *Healthy People 2020*. Washington, DC.

²⁶ Centers for Disease Control and Prevention. *2010 Water Fluoridation Statistics*.

- C. Ensure adequate infrastructure within the Vermont Department of Health to support fluoridation and its expansion to new communities. Identify key personnel and resources that will be actively engaged in the fluoridation program, including the Office of Oral Health, Laboratory, and Information Technology.
- D. Continue collaboration between the Vermont Department of Health and Department of Environmental Conservation.
- E. Continue statewide fluoride monitoring and surveillance to track fluoride concentration in each of the fluoridated public water systems and support the Centers for Disease Control and Prevention's national fluoridation database.
- F. Continue to provide incentives to support community water fluoridation. For new systems, the Health Department provides technical services, operator training and funding for fluoridation equipment for free. For existing systems, the Health Department provides ongoing support, including technical assistance and funding for equipment.
- G. Promote awareness of the benefits of community water fluoridation.
- H. Promote public awareness of the availability and benefits of bottled water with optimal levels of fluoride.

Objective 2.2: Increase the percentage of Vermont residents receiving the benefits of optimal fluoridation.

Specific Strategies:

- A. Encourage appropriate prescription of systemic and topical fluoride by dentists and primary care providers.
- B. Increase awareness of free well water testing available through the Health Department Laboratory for families with children under the age of 4.
- C. Explore opportunities for the application of topical fluoride by non-dental professionals.

Dental Sealants

The use of dental sealants is another proven prevention strategy that reduces tooth decay and promotes good health. Dental sealants reduce decay by more than 70 percent.²⁷ One of the best ways to provide dental sealants for children at risk of decay is through school-based and school-linked dental sealant programs. These programs focus on sealing permanent molar teeth and usually target schools that serve children from low-income families.

²⁷ U.S. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General*. Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health, National Institute of Dental and Craniofacial Research, 2000.

Vermont's school-linked dental program, the Tooth Tutor Program, began in 1997 and about one-third of all public elementary schools participate. The dental hygienists who serve as Tooth Tutors work with children and families to connect them to a local dental home where they can receive comprehensive dental care, including sealants. The program has been very successful, largely due to its focus on care coordination, which is the primary function of Tooth Tutors.

As of 2010, 53 percent of Vermont children in first through third grade had dental sealants. This rate exceeds both the U.S. rate of 26 percent and the *Healthy People 2020* target of 28 percent. Students in schools participating in the Tooth Tutor Program had sealant rates for children in first through third grade than children in schools not participating in the program – 57 percent compared to 50 percent, respectively.²⁸

Goal: Reduce the incidence of dental caries through appropriate use of dental sealants.

Objective 2.3: Increase the percentage of Vermont children who receive dental sealants as appropriate for their age and risk for dental caries.

Specific Strategies:

- A. Increase public awareness of the effectiveness and availability of sealants to prevent dental caries.
- B. Analyze the current delivery system of sealants, identifying what currently works well (e.g., linking children with a dental home, application of sealants in dental offices) and where gaps exist.

Dental Home

Despite established and effective oral health programs both nationally and in Vermont, not everyone has access to preventive programs and services. People with the least access to preventive services and dental treatment experience greater rates of oral disease.²⁹

Based on the medical home model, it is widely recognized that oral health care is best delivered in a dental home. This involves an established partnership between a dentist and a patient to promote good oral health. A dental home is defined as a primary dental care provider who is accessible and who provides continuous, comprehensive, coordinated, compassionate and culturally effective care. Establishment of a dental home should begin by age 1. The dental home is expected to provide:

- An accurate risk assessment for dental diseases and conditions.
- An individualized preventive dental health program based on the risk assessment.

²⁸ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

²⁹ US Department of Health and Human Services, Public Health Service, Office of the Surgeon General. *Oral health in America: A report of the Surgeon General*. Rockville, MD: National Institutes of Health, National Institute of Dental and Craniofacial Research; 2000.

- Anticipatory guidance about growth and developmental issues (i.e. teething, digit or pacifier habits and feeding practices).
- Access for emergency dental trauma.
- Information about proper care of teeth and gingival tissues.
- Information about nutrition and dietary practices.
- Comprehensive dental care in accordance with accepted guidelines.
- Referrals to dental specialists when care cannot be provided directly within the dental home.

The Vermont Oral Health Coalition's **Workforce Committee** is addressing strategy 2.4B— *Expand and enhance the Tooth Tutor Program*. Activities include:

- Pursue grant funding to expand the program in additional schools, as well as in middle and high schools.

Promoting the dental home model and linking people, especially members of vulnerable populations, to a dental home will ensure more Vermonters receive comprehensive and coordinated oral health care. Dental hygienists serving as Tooth Tutors identify children without a dental home and work to connect them to one. To further facilitate the linkage between individuals in need with a local dental home, the Health Department's Office of Oral Health is working with the Office of Local Health to place a public health dental hygienist in Women, Infant, and Child (WIC) clinics in each of its district offices. Currently, three of the 12 district offices have a public health dental hygienist to provide WIC participants with oral health education, oral health risk assessments, fluoride varnish and referrals for treatment. The public health dental hygienists also provide outreach to communities and dental offices.

Goal: Ensure all Vermonters have access to a dental home.

Objective 2.4: Increase the percentage of Vermont residents with an established dental home.

Specific Strategies:

- Expand the use of public health dental hygienists to link children birth to age 5 with a dental home.
- Expand and enhance the Tooth Tutor Program.
- Explore the creation of programs to link adults and the elderly with a dental home, including an analysis of limitations such as reimbursement.
- Assess opportunities for increased collaboration between community dental practices and clinics and dental services provided with correctional facilities. The purpose of this is to foster continuity of care during the times when individuals are transferred between prison and home community providers.

Oral Cancer

In 2012, over 40,000 Americans were diagnosed with cancer that affects the mouth and/or part of the throat.³⁰ These cancers are largely preventable and most are related to tobacco use, alcohol use, or a combination of the two. Because oral cancer can spread quickly, screening and early detection are important. An oral cancer exam can identify early signs of the disease, which can increase survival rates. Recognizing the need for dental and medical providers to examine adults for oral and pharyngeal cancer, *Healthy People 2020* has an objective to increase in the proportion of adults who received an oral and pharyngeal cancer screening from a dentist or dental hygienist in the past year.

Goal: Reduce the prevalence of oral cancer in Vermont.

Objective 2.5: Increase early detection and promote prevention of oral cancer in Vermont.

Specific Strategies:

- A. Ensure that tobacco control, alcohol abuse, comprehensive cancer and reproductive health programs address oral cancer and efficiently work with oral health and primary care providers to integrate programs for the identification and prevention of this disease.
- B. Ensure that tobacco control, alcohol abuse, comprehensive cancer, and reproductive health programs and the oral health program use a collaborative approach to health promotion and disease prevention.
- C. Promote routine screening for oral cancer by oral health and primary care providers.
- D. Promote tobacco prevention and education programs with an emphasis on spit tobacco.
- E. Maintain continuing education on tobacco prevention for oral health and primary care providers so that they can adequately provide patients with the necessary information to help break their tobacco addiction.

³⁰ American Cancer Society. Cancer Facts & Figures 2012. Atlanta: American Cancer Society; 2012

Surveillance & Assessment

Routine surveillance and assessment activities need to be in place to provide data on: 1) the oral health status of Vermonters, including special populations; 2) access to oral health care; 3) prevention strategies, such as community water fluoridation; 4) the dental workforce; and 5) the use of dental services and associated costs.

Monitoring the oral health status of Vermonters is essential to understanding the oral health needs of the population. It helps identify priorities, set goals and inform planning, implementation and evaluation for oral health programs. Reliable data are also needed to make well informed and evidence-based decisions related to oral health policy, practice, programming and resource allocation.

The key is to leverage what we have to its full capacity and to do this we need to understand what we have and what we don't have.

--Vermont Oral Health Key Informant Stakeholder

The Vermont Department of Health conducts data collection, analysis and reporting activities to provide a profile of the oral health status of Vermonters, and the oral health infrastructure and workforce. Data sources and surveys include:

- Behavioral Risk Factor Surveillance System (BRFSS)
- Pregnancy Risk Assessment Monitoring System (PRAMS)
- Vermont Dentist Survey
- Vermont Oral Health Survey (BSS)
- Water Fluoridation Reporting System (WFRS)

In 2012, the Health Department's Office of Oral Health began to develop an oral health surveillance system for the State with support from the Vermont Oral Health Coalition. A surveillance system routinely collects data on health outcomes, risk factors and intervention strategies for the whole population or representative samples of the population.³¹ Vermont's oral health surveillance system is intended to:

- Measure the burden of oral disease and monitor trends
- Guide the planning, implementation, and evaluation of oral health programs
- Develop and evaluate oral health related public policy
- Detect changes in health practices and evaluate the effects of these changes
- Prioritize the allocation of health resources

The Vermont Oral Health Surveillance System is based on the National Oral Health Surveillance System (NOHSS), which is designed to help public health programs monitor the burden of oral disease, the use of the oral health care delivery system, and the status of community water fluoridation on a state and national level. NOHSS includes nine basic oral health surveillance

³¹ Association of State and Territorial Dental Directors. *Best Practice Approach State-based Oral Health Surveillance System. Best Practice Approaches for State and Community Oral Health Programs*. Updated May 17, 2011.

indicators reported at the state level: dental visits, teeth cleaning, complete tooth loss, loss of six or more teeth, fluoridation status, caries experience, untreated caries, dental sealants and oral/pharyngeal cancer. Additional indicators were included in Vermont's surveillance system to comprehensively monitor the oral health status of Vermonters and the oral health system. A complete list of the Vermont oral health surveillance indicators can be found in Appendix I.

Goal: Ensure adequate and appropriate data are available to inform oral health related policies, programs and practice.

Objective 3.1: Establish and maintain an oral health surveillance system for ongoing monitoring, evaluation of interventions and timely communication of findings.

Specific Strategies:

- A. Develop and maintain a comprehensive epidemiological surveillance system.
- B. Identify critical data elements and standards needed for effective planning and program development. Specifically, better oral health data is needed to describe the oral health needs of adults and special populations (e.g., older adults, special needs, resettled refugees).
- C. Secure funding to maintain a comprehensive oral health surveillance system.
- D. Continue school-based oral health surveys routinely to assess trends in the oral health status of school-aged children.
- E. Implement oral health surveys and needs assessments for specific demographics, such as adults and special populations.
- F. Implement surveillance activities focusing on access issues. Data collected can highlight outcomes and missed opportunities.
- G. Develop regular (annual/semi-annual) reports on fluoridation status and oral health status for specific audiences.
- H. Continue the biannual dentist workforce survey.

Objective 3.2: Evaluate the effectiveness, accessibility and quality of both population-based and individual oral health services.

Specific Strategies:

- A. Incorporate evaluation into any oral health surveillance system that is developed.
- B. Secure funding to accomplish evaluation activities.

Objective 3.3: Continue the systematic collection of dental workforce data in Vermont and expand it to include detailed information on all dental professionals (to include dental hygienists and dental assistants).

Specific Strategies:

- A. Monitor supply and demand for dental professionals in order to predict existing and future workforce shortfalls or surplus.
- B. Assess the geographic distribution of dental specialists, including pediatric dentists, oral surgeons and others.

Oral Health Infrastructure

Public health infrastructure consists of systems, people, relationships and resources that facilitate and support the provision of public health services, including oral health services. It includes governmental and non-governmental entities that address the three core public health functions: 1) *assessment*, 2) *policy development*, and 3) *assurance*. Assessment efforts evaluate and monitor the oral health status and needs of communities and populations. Policy development provides an environment to promote better oral health. Assurance activities improve the access and availability of quality oral health care, including prevention services.

With the Vermont Oral Health Coalition, the Vermont State Dental Society, and other membership groups, we have a good infrastructure to work within to make things happen on a statewide level.

--Vermont Oral Health Key Informant Stakeholder

The core public health functions are addressed by the Centers for Disease Control and Prevention's (CDC) 10 Essential Public Health Services, which provide a framework for many national, state and local public health systems, programs and guidelines, including the Association of State and Territorial Dental Directors' (ASTDD) Guidelines for State and Territorial Oral Health Programs. Table 1 provides an overview of the framework and how it can be used to promote oral health.³²

Table 1. CDC Essential Public Health Services and ASTDD Guidelines for promoting oral health.

| 10 Essential Public Health Services | 10 Essential Public Health Services to Promote Oral Health |
|--|--|
| Assessment | |
| 1. Monitor health status to identify community health problems. | 1. Assess oral health status and implement an oral health surveillance system. |
| 2. Diagnose and investigate health problems and health hazards in the community. | 2. Analyze determinants of oral health and respond to health hazards in the community. |
| 3. Inform, educate, and empower people about health issues. | 3. Assess public perceptions about oral health issues; educate and empower people to achieve and maintain optimal oral health. |
| Policy Development | |
| 4. Mobilize community partnerships to identify and solve health problems. | 4. Mobilize community partners to leverage resources; advocate for and act on oral health issues. |
| 5. Develop policies and plans that support individual and community health efforts. | 5. Develop and implement policies and systematic plans that support state and community oral health efforts. |

³² Association of State and Territorial Dental Directors. *State Oral Health Infrastructure and Capacity: Reflecting on Progress and Charting the Future*. 2012.

| Assurance | |
|---|--|
| 6. Enforce laws and regulations that protect health and ensure safety. | 6. Review, educate about and enforce laws and regulations that promote oral health and ensure safe oral health practices. |
| 7. Build linkages by linking people to needed personal health services and assure the provision of health care when otherwise unavailable. | 7. Reduce barriers to care and assure use of personal and population-based oral health services. |
| 8. Assure a competent public and personal health care workforce . | 8. Assure an adequate and competent public and private oral health workforce. |
| 9. Evaluate effectiveness, accessibility , and quality of personal and population-based health services. | 9. Evaluate effectiveness, accessibility and quality of personal and population-based oral health promotion activities and oral health services. |
| 10. Research for new insights and innovative solutions to health problems. | 10. Conduct and review research for new insights and innovative solutions to oral health problems. |

A strong oral health infrastructure is necessary at the national, state and community levels to ensure the oral health of Vermonters. A strong state oral health program is a crucial component of the oral health and public health infrastructure. The Health Department's Office of Oral Health administers the state's oral health programs that provide significant infrastructure and capacity to the state's oral health system, including leadership, surveillance activities to monitor the status of oral disease among Vermonters, development and updating of the state oral health plan, building partnerships and supporting the Vermont Oral Health Coalition, administering school-based programs such as the Tooth Tutor Program, and providing leadership and oversight for community water fluoridation programs.

Other important elements of the oral health infrastructure are the coalitions that work together to promote the oral health of Vermonters. These include the Vermont Oral Health Coalition, the Vermont Oral Health Care for All Coalition and the Upper Valley Oral Health Coalition. These statewide and local coalitions play a key role in mobilizing communities and stakeholders throughout Vermont to communicate, collaborate, influence policy and leverage resources to promote oral health.

The objectives and strategies defined in this section of the plan are intended to enhance and sustain the oral health infrastructure and capacity in Vermont.

Goal: Assure a public health infrastructure in Vermont that works effectively to improve the oral health and overall health of the population.

Objective 4.1: Maintain an adequately staffed oral health program within state government that is skilled in public health functions.

Specific Strategies:

- A. Designate the Health Department's Office of Oral Health as the focal point to advise, monitor and evaluate services provided in all oral health preventive programs in state government. At a minimum, the Office of Oral Health should advise oral health programs in other departments and agencies to insure program efficiency and to avoid duplication of services.
- B. Maintain the technical expertise of a fluoridation specialist within the Office of Oral Health.
- C. Recruit and maintain a licensed dental professional with public health training as the state Dental Director with a position in the organizational structure of the Health Department that provides overall agency coordination and leadership, develops and carries out specific program initiatives, and represents the agency to outside organizations.

Objective 4.2: Build linkages with partners interested in reducing the burden of oral disease by maintaining a statewide oral health coalition and encouraging the development of local community oral health coalitions.

Specific Strategies:

- A. Continue the work of the Vermont Oral Health Coalition as a collaborative partnership to provide guidance and recommend direction for the state Office of Oral Health.
- B. Promote and disseminate best practices for service delivery.
- C. Promote regional and community-based collaborative efforts among agencies, organizations and individuals to address oral health needs.
- D. Provide leadership, expertise, technical assistance and resources to address oral health problems through collaboration and integration.

Objective 4.3: Maintain and enhance the Vermont Oral Health Plan through a collaborative process.

Specific Strategies:

- A. Integrate the Vermont Oral Health Plan into all health planning efforts by state agencies, including the State Health Improvement Plan and Health Resource Allocation Plan.
- B. Monitor the implementation of the Vermont Oral Health Plan. Review and revise as necessary.
- C. Disseminate the Vermont Oral Health Plan and engage stakeholders throughout the state and facilitate further discussion of recommended strategies. Encourage stakeholders to identify specific areas for action and to use the Vermont Oral Health Plan in their work.
- D. Incorporate recommended strategies identified in the Vermont Oral Health Plan into funding plans.

Objective 4.4: Build community capacity to implement community-level interventions.

Objective 4.5: Evaluate the effectiveness, accessibility and quality of both population-based and individual oral health services.

Specific Strategies:

- A. Incorporate evaluation into programs and oral health surveillance systems.
- B. Secure funding to assure evaluation activities are accomplished.

Financing & Delivery Systems

A high quality oral health system includes access to adequate, affordable and appropriate oral health services for all. In Vermont, comprehensive oral health care is primarily delivered by private dental practices. Services are also provided by Federally Qualified Health Centers (FQHCs), Rural Health Centers (RHCs), hospital emergency departments, the dental hygiene program at Vermont Technical College and the dental residency program through the University of Vermont at Fletcher Allen Health Care.

There is a lot of unmet need, especially among the Medicaid population. Dr. Dynasaur does a great job, but not all practices take Medicaid or they are full.

--Vermont Oral Health Key Informant Stakeholder

Vermont has eight FQHC organizations that provide primary and preventive health care to people living in rural and urban medically underserved communities. The FQHC organizations will operate over 50 primary medical and dental care sites throughout the state by December 2014, serving an expected 160,000 Vermonters. Seven FQHC organizations include dental centers to provide oral health services and the remaining FQHC uses contracted dental services. In 2012, 20 percent of the FQHC patients served received oral health services. The total number of FQHC patients in Vermont receiving dental care has increased in recent years from 15,581 in 2007 to 25,727 in 2012,³³ with the oral exams and preventive care the most common dental services provided.³⁴ There are also 15 RHCs throughout the state in areas that were previously considered Dental Professional Shortage Areas. In 2014, designated FQHCs and RHCs will provide oral health services to patients in 13 of Vermont's 14 counties, creating a statewide safety net and critical access point for Medicaid, uninsured and underinsured Vermonters.

The Tooth Tutor Program, administered by the Health Department, plays an important role in coordinating access to oral health services for school children by linking them to a dental home. The Tooth Tutor Program provides a system to identify school children who have not accessed dental care in the last year and helps families access care in the community. The Tooth Tutor Program also uses a dental education curriculum for classroom-based oral health education. Currently, about one-third of all elementary schools and all Head Start programs in Vermont participate in the Tooth Tutor Program.

The financial cost associated with dental care is a major barrier in service utilization. The likelihood of accessing dental care is largely dependent on dental insurance and the quality of the insurance plan. In 2012 in Vermont, 88 percent of individuals with private dental insurance reported seeing a dentist in the past year, compared to 56 percent of those without any dental

³³ U.S. Department of Health and Human Services, Health Resources and Services Administration. *2012 Health Center Data: Vermont Program Grantee Data*. Available at: <http://bphc.hrsa.gov/uds/datacenter.aspx?year=2012&state=VT> Accessed December 12, 2013.

³⁴ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

insurance, a statistically significant difference.³⁵ Dental care is primarily financed by three mechanisms: private insurance, public insurance (e.g., Medicaid), or out-of-pocket payments. In 2009, 63 percent of Vermonters paid for dental care out-of-pocket, 17 percent held private insurance, 10 percent were self-insured, and 10 percent used Medicaid.³⁶

Most older adults have limited or no dental insurance coverage. Medicare typically only covers dental care in limited medically necessary circumstances, and most employer-provided dental insurance ceases upon retirement. As a result, the cost of dental care is a significant barrier to many older adults who will incur out-of-pocket expenses.

Twenty-four percent of all Vermonters are covered by Medicaid.³⁷ In 2011, about 56 percent of Medicaid-eligible children and 29 percent of Medicaid-eligible adults used dental services.³⁸ These rates indicate a need to increase knowledge of covered dental services and how Medicaid-eligible Vermonters can access them.

Medicaid dental benefits for adults are limited to maximum of \$495 per calendar year. As of October 1, 2012, however, pregnant and postpartum women are eligible for Dr. Dynasaur/Medicaid and exempt from the annual dental cap. During this time they can receive the same dental benefits that are available to eligible children. Children with Medicaid dental benefits do not have a maximum limit for expenditures.

While Medicaid offers a safety net for some vulnerable populations, it does not entirely close the gap of unmet need. Some vulnerable adults do not meet Medicaid eligibility requirements and there are limitations on the type and amount of dental services covered for those who are eligible.

In addition, some Medicaid enrollees experience difficulty finding a dentist who accepts their insurance. Although most (84%) of dentists participate in the state Medicaid program at some level, many place limits on the number of Medicaid-eligible patients they will treat because of low reimbursement rates, burdensome administrative requirements and other factors.³⁹

Enhancements and reforms to the state's oral health financing and delivery system are needed to ensure the oral health of all Vermonters. The strategies in this section of the Vermont Oral Health Plan are intended to promote equitable and affordable access to oral health services for all.

³⁵ 2012 Vermont Behavioral Risk Factor Surveillance System Data.

³⁶ Vermont Department of Health. *Healthy Vermonters 2020*. December 2012.

³⁷ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

³⁸ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

³⁹ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

Goal: Ensure equitable access to oral health services through Vermont's financing and delivery systems.

Objective 5.1: Explore opportunities for collaboration between Federally Qualified Health Centers/Rural Health Centers and private dentists.

Specific Strategies:

- A. Examine systems that allow contractual arrangements between private providers and clinics to combine providers' clinical services and the clinics' social support services and enhanced reimbursement rates.
- B. Explore opportunities to match community support services and dental practices to increase patient access.

Objective 5.2: Develop an economic model to understand the impact of reimbursement on provider practices and overall access to care.

The goal of the Vermont Oral Health Coalition's **Medicaid Committee** is to:

- Analyze adult Medicaid utilization to identify ways to increase participation in Medicaid.

Specific Strategies:

- A. Establish an advisory committee to work with the Health Department to develop a dental economic model for Vermont that will lead to a common understanding of cost calculations and practice capacity.
- B. Evaluate other states that pay a market reimbursement rate and the effect this has had on increasing access to care.

Objective 5.3: Create a community-based coordinated social support system for both patients and providers to increase access.

Specific Strategies:

- A. Examine lessons learned from successful state and national programs (such as the Tooth Tutor Program and community health centers) and suggest strategies to organizations serving vulnerable populations.

Objective 5.4: Enhance access to dental services.

Specific Strategies:

- A. Increase funding to expand the number of schools participating in the Tooth Tutor Program.
- B. Expand the number of WIC programs that incorporate public health dental hygienists.
- C. Explore ways to enhance public health dental hygiene and Tooth Tutor programs and the services they provide.
- D. Explore the potential for other professionals to participate in the Tooth Tutor Program in roles designed to provide case management, transportation assistance or coordination of establishing a dental home.
- E. Consider the development of a Tooth Tutor-like program designed to link older adults with a dental home. Develop specific strategies for older adults living in their own homes and for those living in group home facilities.
- F. Explore opportunities and models to provide Vermonters with universal oral health coverage.

Workforce

An important part of access to quality oral health services is the capacity of the oral health workforce. Dentists, dental hygienists, dental assistants and other dental professionals deliver dental care to prevent and treat oral disease and promote behaviors for optimal oral health. A robust, qualified and diverse dental workforce is essential to ensuring access to high-quality oral health services and addressing oral health needs.

The national and state oral health workforce is limited in its capacity to adequately meet the oral health needs of all populations. The dental workforce, specifically dentists, is in decline while Americans' oral health needs are growing. One in seven Americans lives in an area with a shortage of dentists.⁴⁰ Vermont is experiencing a similar trend, with several factors contributing: 1) the dentist workforce is aging and there are not enough younger dentists to make up for the dentists who retire, 2) there is no dental school in Vermont, and 3) while well-regarded, the general dentistry residency program in Vermont is small.

According to the 2011 Vermont Dentist Survey conducted bi-annually by the Health Department, there were 368 dentists providing patient care in Vermont, or about 37 dentists per 100,000 Vermont residents. Vermont's dentist-to-population ratio is less than the national average of 47 per 100,000 people. Of the 368 dentists practicing in Vermont, 81 percent practice primary care dentistry, and these dentists are unevenly distributed across the state. For example, in Grand Isle County, one dentist serves a population of 6,983. In Chittenden County (population 158,504), there is one dentist per 1,717 residents. In 2011, 34 percent of primary care dentists were 60 years of age or older and 63 percent were 50 years of age or older.⁴¹ Vermont anticipates a shortage of dentists in the next decade as older dentists retire.

Vermont is limited in its ability to "grow its own" dentists, further contributing to the anticipated shortage of dentists. Vermont does not have a dental school and sends fewer residents to dental school compared to the overall U.S. population. This makes the state highly dependent on its ability to compete nationally to recruit dentists from other states. There is one highly respected general dental residency program in Vermont and it helps to bring dentists into the state. The program currently has capacity for four residents with plans to

Workforce is an issue.
If we get more people in the
system, is the workforce
there to support it?

I believe there is more
capacity within the
workforce, but we need
to find where it is
and leverage it.

-- Vermont Oral Health Key
Informant Stakeholder

⁴⁰ The PEW Charitable Trusts. *Expanding the Dental Workforce*. Infographic. January 16, 2012.

Available at: <http://www.pewstates.org/research/data-visualizations/expanding-the-dental-workforce-85899377082>
Accessed March 22, 2013.

⁴¹ Vermont Department of Health. *2011 Dentist Survey*.

expand. It is one of the best recruiting mechanisms for increasing the influx of dentists, with over half electing to practice in Vermont after completing their residency program.⁴²

The development of Vermont Technical College's Program in Dental Hygiene underscores the impact of the presence of a school on the workforce. Each year approximately 20 students graduate with an Associate or Bachelor of Science in Dental Hygiene⁴³ and the supply of hygienists is improving.

As the population in Vermont continues to both grow and age, health care practice and education must evolve to meet those needs. In order to address the declining dental workforce capacity, it is essential to develop strategies to recruit and "grow" more dentists in Vermont. Additional areas to consider include developing strategies to: 1) accommodate new dentists who are interested in larger group practices, 2) expand Medicaid reimbursement for providers of dental services, and 3) implement new types of oral health providers and expand the roles for dental hygienists and dental assistants to increase access to dental services in a cost-efficient manner, especially in rural communities.

Goal: Enhance the oral health workforce in Vermont to meet the needs of all Vermonters.

Objective 6.1: Increase the representation of Vermonters, including those from diverse backgrounds, in professional dental training programs.

Specific Strategies:

- A. Work with Area Health Education Centers to encourage Vermont students to consider careers in dental fields. Use targeted outreach to diverse populations (including culturally, linguistically, economically and geographically diverse populations) to develop a more diverse workforce.
- B. Explore a dental education scholarship program that provides full tuition grants and monthly living stipends to Vermonters who attend dental professions schools and return to practice in the state.
- C. Encourage oral health-related community service and/or mentoring of youth from underrepresented populations.
- D. Maintain and expand the loan repayment program for dental professionals practicing in underserved areas.
- E. Explore a reciprocity program whereby Vermont students can qualify for in-state tuition at dental schools in other states.

⁴² Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

⁴³ Vermont Department of Health. *Burden of Oral Disease in Vermont 2012*.

- F. Explore relationships with nearby dental schools in other states to enroll Vermonters each year.
- G. Work with the University of New England to place dental students in externships throughout Vermont, particularly in rural areas.

Objective 6.2: Provide additional support and continue existing efforts to recruit dentists into the state.

The Vermont Oral Health Coalition's **Workforce Committee** is addressing strategy 6.1D — *Continue and expand the loan repayment program for dental professionals practicing in underserved areas*. Activities include:

- Working with the Vermont Department of Health and the Vermont Area for Health Education Center to evaluate the state's existing loan repayment program and review other states' programs.

Specific Strategies:

- A. Expand existing tools to inform and encourage dentists to practice in Vermont (e.g., Vermont State Dental Society efforts in dental schools in the region to market the state).
- B. Maintain or increase the number of available training slots for general practice residents.
- C. Analyze the current environment for dentists to practice in the state and identify factors that may influence the decision to relocate to Vermont (e.g., adequate reimbursement rates, availability of auxiliary personnel, number of specialists for referral, demand for dental services, health care reform).
- D. Explore strategies to address the need for clinic facilities. Explore models, options, and financing strategies to build clinic facilities or other resources to encourage dentists to come to Vermont.
- E. Use data to explore processes and systems for ongoing workforce planning and strategizing.

Objective 6. 3: Explore the use of dental and health care providers with appropriate education, training and licensure to enhance the oral health workforce and promote access.

Specific Strategies:

- A. Maximize the use of dental hygienists participating and actively providing services under public health supervision.
- B. Increase the number and maximize the use of Expanded Function Dental Assistants (EFDAs) in dental practices to improve productivity.

- C. Examine programs in other states that expand the productivity of dental hygienists and consider adopting them.
- D. Expand and promote oral health risk assessments and especially target subpopulations such as children ages 0-3, older adults and those seeking medical management for chronic diseases.
- E. Promote the use of care coordinators or patient navigators to facilitate increased rates of dental access.
- F. Expand the scope of practice for dental hygienists.
- G. Support the development of a Licensed Dental Practitioner (LDP) position, also known as a mid-level provider position, to improve workforce capacity and access to oral health services.

Objective 6. 4: Ensure a well-trained dental and medical provider workforce by providing qualified oral health continuing education opportunities.

Specific Strategies:

- A. Continue to provide dental continuing education through professional associations.
- B. Through a partnership with professional societies and the Health Department's Office of Oral Health, recommend and develop qualified continuing education opportunities for dental and medical providers in the areas of prevention, health promotion, working with special populations and other priority areas.

Appendix I: Vermont Oral Health Surveillance System 2012

| Oral Health Indicators | Complete Description | Vermont Data Source |
|--|---|----------------------------------|
| Adult Indicators | | |
| 1. Use of Oral Health Care System – Adults 18+ | Adults aged 18+ who have visited a dentist or dental clinic in the past year. | BRFSS, Biennial (even years) |
| 2. Complete Tooth Loss – Older Adults 65+ | Adults aged 65+ who have lost all their natural teeth due to tooth decay or gum disease. | BRFSS, Biennial (even years) |
| 3. Loss of 6 or More Teeth – Older Adults 65+ | Adults aged 65+ who have lost six or more teeth due to tooth decay or gum disease. | BRFSS, Biennial (even years) |
| 4. Use of Oral Health Care System – Adults 18+ with Diabetes | Adults aged 18+ with diabetes who visited a dentist or dental clinic in the past year. | BRFSS, Biennial (even years) |
| 5. Any Dental Visit in the 12 Months Before Pregnancy | Mothers who had their teeth cleaned in the 12 months before pregnancy. | PRAMS, Annual |
| 6. Medicaid Dental Utilization Adults 19+, Preventive | Percentage of adults 19+ with preventive claims. | Medicaid Claims Data, Annual |
| 7. Medicaid Dental Utilization Adults 19+, Restorative | Percentage of adults 19+ with restorative claims. | Medicaid Claims Data, Annual |
| Child Indicators | | |
| 8. Caries Experience – Children 3rd Grade | Percentage of 3 rd grade students with caries experience, including treated and untreated tooth decay. | BSS, Approximately every 5 years |
| 9. Untreated Caries – Children 3rd Grade | Percentage of 3 rd grade students with untreated tooth decay. | BSS, Approximately every 5 years |
| 10. Dental Sealants – Children 3rd grade | Percentage of 3 rd grade students with dental sealants on at least one permanent molar tooth. | BSS, Approximately every 5 years |
| 11. Urgent Treatment Needs – Children 3rd grade | Percentage of 3 rd grade students who need urgent dental care. | BSS, Approximately every 5 years |
| 12. Medicaid Dental Utilization Children Under 2 Years Preventive | Number and percent of children under 2 years with preventive dental claims. | Medicaid Claims Data, Annual |

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| 13. Medicaid Dental Utilization Children & Adolescents 2-18 Preventive | Percentage of children & adolescents aged 2-18 with preventive claims. | Medicaid Claims Data, Annual |
| 14. Medicaid Dental Utilization Children & Adolescents 2-18, Restorative | Percentage of children & adolescents aged 2-18 with restorative claims. | Medicaid Claims Data, Annual |
| 15. Medicaid Dental Utilization Children age 6-9 Dental Sealants | Percentage of children aged 6-9 with dental sealants on at least one permanent molar tooth. | Medicaid Claims Data, Annual |
| 16. Medicaid Dental Utilization Children age 10-14 Dental Sealants | Percentage of children aged 10-14 with dental sealants on at least one permanent molar tooth. | Medicaid Claims Data, Annual |
| 17. Children in Outpatient Hospital for Dental Caries | Rate per 1000 children aged 0-5 with procedure codes for removal and restoration of teeth due to dental caries. | VT Uniform Hospital Discharge Data Set, Annual |
| 18. SCHIP Dental Utilization Eligible Children & Adolescents 2-18, Preventive | Percentage of children & adolescents age 2-18 with preventive dental claims. | Medicaid Claims Data, Annual |
| 19. SCHIP Dental Utilization Eligible Children & Adolescents 2-18, Restorative | Percentage of children & adolescents age 2-18 with restorative dental claims. | Medicaid Claims Data, Annual |
| 20. Dental Visits for Children 0-17 | Percentage of children age 0-17 who visited a dentist. | NSCH, every 4 years |
| 21. Use of Tobacco Products, Children Grades 9-12 | Percentage of children in grades 9-12 who used chewing tobacco, snuff or dip in past 30 days. | YRBS, every 2 years |
| 22. Soda Consumption, Children Grades 9-12 | Percentage of children in grades 9-12 who consumed at least one soda in past week. | YRBS, every 2 years |
| All | | |
| 23. Dental Visits for FQHC Patients | Percentage of patients who had dental visits at FQHCs. | HRSA, Annual |
| 24. Emergency Department Visits for Non-traumatic Dental Complaints | Number of visits and rate per 100,000 populations for ICD-9 520-526 Disorders of Teeth and Jaw. | VT Uniform Hospital Discharge Data Set, Annual |
| Fluoridation Status | | |
| 25. Water Fluoridation | Percentage of people served by public water | WFRS, Annual |

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| | systems who receive fluoridated water. | |
| Cancer | | |
| 26. Cancer of the Oral Cavity and Pharynx Incidence | Cancer all ages. | VT Cancer Registry Data, Annual |
| 27. Cancer of the Oral Cavity and Pharynx Mortality | Cancer deaths all ages. | VT Cancer Registry Data, Annual |
| 28. Cancer of the Oral Cavity and Pharynx Percentage in Localized Stage at Diagnosis | Cancer at state of diagnosis. | VT Cancer Registry Data, Annual |
| Workforce | | |
| 29. Total Number of Active Dentists in Vermont | Number of dentists providing patient care in Vermont. | Dentist Biennial Survey (odd years) |
| 30. Total FTE in Vermont | Number of full-time equivalents for dentists providing patient care in Vermont. | Dentist Biennial Survey (odd years) |
| 31. Primary Care Dentists FTE | Number of full-time equivalents for primary care dentists. | Dentist Biennial Survey (odd years) |
| 32. Primary Care Dentists FTE per 100,000 Populations | Age categories: <60, and ≥60. | Dentist Biennial Survey (odd years) |
| 33. Dentists Accepting New Medicaid and Non-Medicaid Patients, Primary Care Dentists and Orthodontists | Percentage of primary care dentists and orthodontists accepting new Medicaid patients. Percentage accepting new non-Medicaid patients. | Dentist Biennial Survey (odd years) |
| 34. All dentists, 60+ years | Percentage of dentists age 60 years and older. | Dentist Biennial Survey (odd years) |
| 35. Primary Care Dentists, 60+ years | Percentage of primary care dentists age 60 years and older. | Dentist Biennial Survey (odd years) |
| 36. All Dentists FTE, 60+ years | Percentage of all FTE dentists age 60 years and older. | Dentist Biennial Survey (odd years) |
| 37. Primary Care Dentist FTEs, 60+ years | Percentage of FTE primary care dentists age 60 years and older. | Dentist Biennial Survey (odd years) |

Appendix II: S. M. A. R. T. ⁴⁴ Objectives for Priority Areas

Prevention

Maintain the percentage of third graders in Vermont who receive sealants as appropriate for their age and dental caries risk above the *Healthy People 2020* goal through 2018.

Justification

- Findings from the 2009-2010 School Oral Health Brief Screening Survey showed sealant levels above the *Healthy People 2020* target.
- With the expansion of the Tooth Tutor Program to emphasize sealant placement, data suggests that Vermont will continue to experience high levels of sealant placement.

Increase the percentage of Vermont residents served by public water systems that have optimally fluoridated water from 56 percent to 62 percent by 2018.

Justification

- The percentage of Vermont's population served by fluoridated community water systems falls below the national average and the *Healthy People 2020* target.
- As a rural state, many water systems are too small to be fluoridated; however, 22 additional water systems are eligible for fluoridation.
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Surveillance and Assessment

Update the oral health surveillance system annually using the Vermont Indicators.

Justification

- The Vermont Department of Health developed an oral health surveillance system in 2010-2012 through support from CDC and the Vermont Oral Health Coalition.
- Maintenance of the surveillance system provides data on oral health issues and disparities, supports program monitoring and improvement, and supports developing new initiatives to target unmet need that the surveillance system has identified.

Complete a BSS on older adults, Head Start students, kindergarten, and third grade students by 2016.

Justification

- Data has not been previously collected on older adults, Head Start students, or kindergarteners. The burden of oral disease among these populations is unknown for Vermont.
- ASTDD recommends collecting BSS data on elementary school children every five years. It was last collected in Vermont in 2009-2010.

⁴⁴ S.M.A.R.T. objectives are goals that are specific, measurable, attainable, realistic and timely.

Infrastructure

By 2018, incorporate oral health representatives into 50 percent of the community health teams in Vermont.

Justification

- Community health teams promote care coordination for high-risk patients and stress the importance of patient-centered care and medical and dental homes.
- Community health teams bring together health professionals from different fields to support access to care and understanding of available community support systems.

By 2018, increase the number of community oral health coalitions from two to five.

Justification

- Community oral health coalitions promote oral health issues that matter to them on a local level. Community groups and coalitions have been integral during community debates affecting oral health issues such as community water fluoridation.
- Members of community oral health coalitions are credible voices within their communities and can educate and advocate for oral health issues.

Financing and Delivery

By 2018, expand the public health dental hygienist program to nine of Vermont's 12 district offices.

Justification

- A disproportionate number of children who visit hospital emergency rooms and who undergo dental procedures requiring anesthesia are from families who receive services through district offices.
- Dental hygienists working in district offices provide oral health risk assessments, education, and care coordination to help pregnant women and young children access dental care and dental homes.
- Dental hygienists working within district offices are uniquely situated to work closely with local medical and dental communities to provide education on the importance of oral health and the linkages between oral health and overall health.

Workforce

Increase dentist recruitment by 10 percent annually above the current average of 12 new dentists coming to Vermont each year.

Justification

- The dental workforce in Vermont is aging and Vermont expects a shortage of dentists in the state as “baby-boomer” dentists retire and leave the workforce.
- Dental recruitment outside the state is necessary, as Vermont does not have a dental school in which to “grow its own”.