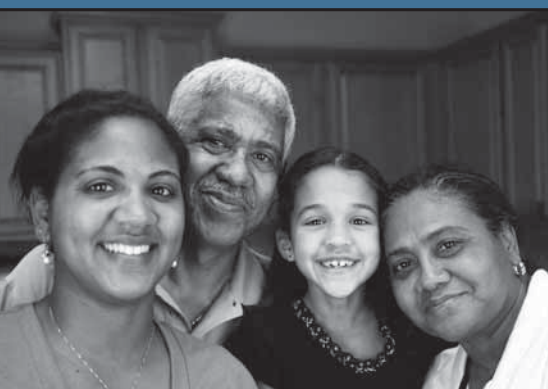


Alaska Oral Health Plan

2008–2012



State of Alaska
Department of Health and Social Services



Acknowledgements

Sarah Palin, Governor
State of Alaska

Karleen K. Jackson, PhD, Commissioner
Department of Health and Social Services

Jay C. Butler, MD
Chief Medical Officer

Beverly K. Wooley, Director
Division of Public Health

Stephanie Birch, RNC, MPH, MS, FNP, Chief
Section of Women's, Children's and Family Health

Oral Health Program
Brad Whistler, DMD, Dental Officer
Molly McGrath, CHES, Health Program Manager
Sharon Schlicht, RDH, MPH, Health Program Manager

Alaska Dental Action Coalition
Delisa Culpepper, Alaska Mental Health Trust Authority, Co-Chair
Joel Neimeyer, Rasmuson Foundation, Co-Chair

December 2007

Suggested Citation:

Whistler, BJ. Alaska Oral Health Plan: 2008-2012. Juneau, AK: Section of Women's, Children's and Family Health, Division of Public Health, Alaska Department of Health and Social Services, 2007.

Funding for the State Oral Health Plan was provided by the U.S. Centers for Disease Control and Prevention through the Chronic Disease Prevention and Health Promotion Programs Cooperative Agreement (U58/CCU022905). The contents of this plan are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

Contributors

The goals and recommendations of the Alaska Oral Health Plan are designed to improve the oral health status of Alaskans. The development of this plan would not have been possible without the involvement of the individuals and organizations participating in the Alaska Dental Action Coalition (ADAC).

ADAC Vision Statement:

Optimizing Oral Health for All Alaskans.

Value Statements:

1. Prevention and education are priorities in improving the oral health of Alaskans.
2. Oral health services should be available, accessible, timely, culturally competent and valued.
3. Oral health should be recognized as part of total health and well-being.
4. Responsibility for creating an environment to maximize oral health is shared by every Alaskan.
5. Every adult takes responsibility for their own oral health and each family takes responsibility for their dependents' oral health.

ADAC Membership:

- Alaska Department of Education and Early Development
 - State Head Start Collaboration Office
- Alaska Department of Environmental Conservation –
 - Division of Environmental Health
- Alaska Department of Health and Social Services
 - Division of Health Care Services
 - Division of Public Health
 - Section of Chronic Disease Prevention and Health Promotion
 - Section of Health Planning and Systems Development
 - Section of Public Health Nursing
 - Section of Women's, Children's and Family Health
 - Governor's Council on Disabilities and Special Education
 - Office of Children's Services
- Alaska State Dental Hygienists' Association
- Alaska Dental Society
- Alaska Health Education Consortium
- Alaska Mental Health Board
- Alaska Mental Health Trust Authority
- Alaska Native Health Board
- Alaska Native Tribal Health Consortium
 - Cancer Information Service
 - Dental Consultant
 - Division of Environmental Health and Engineering
- Alaska Primary Care Association
- Alaska Public Health Association
- Alaska Rural Water Association
- All Alaska Pediatric Partnership
- American Association of Retired Persons, Alaska Chapter
- Anchorage Neighborhood Health Center
- Denali Commission
- Head Start Grantees
- Interior Neighborhood Health Center
- Rural Alaska Community Action Program
- Rasmuson Foundation
- Region X and XI Head Start Training and Technical Assistance Office
- Southcentral Foundation Dental Clinic
- Stone Soup Group
- University of Alaska Anchorage
 - College of Health and Welfare
 - School of Allied Health - Dental Hygiene and Dental Assisting Programs

Table of Contents

Introduction	2
National and Alaska Health Objectives for the Year 2010	2
Child and Adolescent Oral Health	4
Dental Decay	4
Children with Special Health Care Needs	6
Dental Sealants	7
Orofacial Clefts	8
Oral Injuries	9
Children’s Access to Dental Care	10
Adult and Senior Oral Health	11
Dental Decay	11
Pregnant Women	12
Adult and Senior Dental Access	13
Periodontal Disease and Systemic Health	13
Oral Health and Other Systemic Connections	13
Tobacco Use	14
Oral and Pharyngeal (Oropharyngeal) Cancer	14
Oral Health Disparities	16
Alaska Natives – Dental Decay	17
Community Water Fluoridation and Fluorides	18
Community Water Fluoridation	18
Topical Fluoride and Fluoride Supplements	19
Dental Workforce	19
Infection Control in the Dental Office	21
Alaska Dental Action Coalition	21
Alaska Oral Health Program	22
Goals, Strategies and Recommendations	23
Action Plan	27
Appendix I – Sources for National and Alaska Health Objectives for the Year 2010	38
Appendix II – Summary of 2004 and 2005 Alaska Dental Assessments	40
References	44

Introduction

In the Surgeon General's report on "Oral Health in America" former Surgeon General David Satcher referred to a "silent epidemic" of oral disease restricting activities in school, work and home and often diminishing the quality of life. The report noted those who suffer the worst oral health are found among the poor of all ages, with poor children and poor older Americans particularly vulnerable. The report further detailed how oral health is promoted, how oral diseases and conditions are prevented and managed, and what needs and opportunities exist to enhance oral health. Water fluoridation and dental sealants were noted as two interventions that have reduced dental decay. The report noted the ongoing need to reduce oral health disparities.¹ In the United States, 25 percent of children and adolescents experience 80 percent of all dental decay occurring in permanent teeth.² Five to 10 percent of preschool-age children have early childhood caries – this rate is higher among families with low incomes and some racial/ethnic minorities.³



The mouth is vital to everyday life. It serves to nourish our bodies as we take in water and nutrients. It is how we communicate our thoughts, our mood and our dreams. Oral health is an essential and integral component of overall health throughout life. Oral health includes more than just healthy teeth – it includes the whole mouth, including the teeth, gums, hard and soft palate, lining of the mouth and throat, tongue, lips, salivary glands, chewing muscles, and upper and lower jaws. It also is more than being free of tooth decay and gum disease. Oral health is more than being free of tooth decay and gum disease – it also means being free of chronic oral pain conditions, oral cancer and other conditions

that affect the mouth and throat. Good oral health includes the surgical correction and treatment of birth defects such as cleft lip and palate. Oral health includes the ability to carry on the most basic human functions such as chewing, swallowing, speaking, smiling, kissing and singing.

Because the mouth is an integral part of the human anatomy, oral health is intimately related to the health of the rest of the body. For example, mounting evidence suggests infections in the mouth such as periodontal (gum) disease can increase the risk for heart disease, can put pregnant women at greater risk for premature delivery, and can complicate controlling blood sugar for people living with diabetes. Conversely, changes in the mouth are often the first signs of problems elsewhere in the body such as infectious diseases, immune disorders, nutritional deficiencies and cancer.

National and Alaska Health Objectives for the Year 2010

One component of the national plan for oral health is a set of measurable and achievable objectives on key indicators of oral disease burden, oral health promotion and oral disease prevention. In November 2000, a set of oral health indicators was developed for inclusion in the national health objectives for the year 2010 in the document entitled, *Healthy People 2010*. The Alaska Department of Health and Social Services developed a state companion plan that included oral health objectives in April 2002 - *Healthy Alaskans 2010: Targets and Strategies for Improved Health*. Both the national and state strategies are aimed at:

- Increasing the quality and years of healthy life; and
- Eliminating health disparities.

Included in *Healthy People 2010* are objectives for improving oral health (See Table 1). They represent the ideas and expertise of a diverse range of individuals and organizations concerned about the nation's health. Table 1 also reflects Alaska data, when available, for comparison with national baselines. Alaska indicators for caries experience, untreated caries and dental sealant utilization of Alaskan third-graders represent statewide data developed by the Oral Health Program's dental assessments – this data was not available at the time of publication of *Healthy Alaskans 2010*.

**Table 1. *Healthy People 2010* Oral Health Indicators,
Target Levels and Current Status in the United States and Alaska**

Healthy People 2010 Objective	Target	U.S. Status	Alaska Status
21-1: Dental caries experience			
Young children, ages 2-4	11%	18%	DNA
Children, ages 6-8	42%	52%	65%
Adolescents, age 15	51%	61%	DNA
21-2: Untreated caries			
Young children, ages 2-4	9%	16%	DNA
Children, ages 6-8	21%	29%	28%
Adolescents, age 15	15%	20%	DNA
Adults, age 35-44	15%	27%	DNA
21-3: Adults with no tooth loss, ages 35-44	42%	31%	67% (met target)
21-4: Edentulous (toothless) older adults, ages 65-74	20%	26%	23%
21-5: Periodontal diseases, adults ages 35-44			
Gingivitis	41%	48%	DNA
Destructive periodontal disease	14%	22%	DNA
3-6: Oral cancer mortality rates (per 100,000 persons)	2.7	3.0	3.7
21-6: Oral cancer detected at earliest stage	50%	35%	40%
21-7: Oral cancer exam in past 12 months, age 40+	20%	13%	DNA
21-8: Dental sealants			
Children, age 8 (1 st molars)	50%	23%	52% (met target)
Adolescents, age 15 (1 st and 2 nd molars)	50%	15%	DNA
21-9: Population served by fluoridated water systems	75%	62%	64%
21-10: Dental visit within past 12 months			
Children, age 2+	56%	44%	DNA
Adults, ages 18+	56%	44%	66% (met target)
21-11: Dental visit in the past 12 months			
Adults in long-term care	25%	19%	DNA
21-12: Preventive dental care in the past 12 months			
Low-income children and adolescents, age 0-18	57%	20%	32%
21-13: School-based health centers with oral health component, K-12	DNA	DNA	DNA
21-14: Community based health centers and local health departments with oral health component	75%	34%	DNA
21-15: States with system for recording and referring infants with cleft lip and palate	100%	23%	100% (met target)
21-16: States with an oral health surveillance system	100%	DNA	100% (met target)
21-17: State and local dental programs that serve 250,000 or more with a dental health program directed by a dental professional with public health training	100%	DNA	50%

Notes:

DNA – Data Not Available

(1) Data sources for national and state data for this table are provided in Appendix 1

(2) National data for NHANES is for 6-8 year old children; Alaska data is for third-grade children

(3) Objective 21-7: Baseline information will be obtained on this objective through an oral cancer exam question on the 2008 Alaska Behavioral Risk Factor Surveillance System (BRFSS)

(4) Objective 21-9: Percentages are the population with fluoridated community water systems of the population with access to community water systems (not percentage of total state/national population).

(5) National data for 21-12 (preventive dental care for low-income children and adolescents) is from the Medical Expenditure Panel Survey (MEPS); Alaska data is from Medicaid/SCHIP dental utilization reports (CMS416 report)

(6) Objective 21-13: Most village schools in Alaska have Tribal school-based or school-linked medical and dental programs – this infrastructure is somewhat different from school-based health centers discussed in Healthy People 2010.

(7) Objective 21-14: Municipality of Anchorage offers some support to the Anchorage Neighborhood Health Center which has a dental program and the North Slope Borough has dental services; and community health centers have included or expanded into dental services. The State Oral Health Program is working with the Alaska Primary Care Office to develop an Alaska baseline indicator, however it is not available at the time of publication of this plan.

(8) Objective 21-17: With the State Oral Health Program, the Municipality of Anchorage is the only other jurisdiction serving 250,000 or more in population that does not currently have an oral health program directed by a dental professional with public health training.

Child and Adolescent Oral Health

Dental Decay

Dental decay (caries) remains the most common chronic disease of childhood – five-times more common than asthma and seven-times more common than hay fever.¹ It is estimated 52 million school hours are missed annually by children with oral health problems.⁴ Other consequences of extensive tooth decay include pain, affects on learning and/or behavior management problems. Loss of teeth, especially front teeth, can affect speech development. Additionally, extensive decay results in expensive dental care – early childhood caries may require hospital-based dental care under general anesthesia. Children with decayed or missing teeth may also suffer embarrassment and problems with self-esteem.

Nationally over 50 percent of 5- to 9- year old children have at least one cavity or filling.⁵ Alaska’s caries experience rates (evidence of past or present dental decay) are higher than the national baseline of 52%, with 65 percent of Alaskan third-grade children with caries experience at the time of the

assessments. Higher dental decay rates were seen in third-graders from racial/ethnic minority groups. High dental decay rates in Alaska Native children have been noted in previous Indian Health Service dental assessments, however the 2004 third-grade dental assessments in Alaska found similar caries experience rates in third-grade Asian and Native Hawaiian/Pacific Islander racial/ethnic groups (See Figure 1).⁶ About the same percentage of Alaska third-graders had untreated decay at the time of the dental assessment, 28%, as the national baseline for 6-8 year olds (29%). Similar patterns were seen in terms of untreated dental decay in Alaskan third-graders with higher rates in third-graders from racial/ethnic minorities (See Figure 2).⁶ Untreated decay was found in 43.5% of Alaska Native children; rates were higher for Asian third-graders (49.5%) and Native Hawaiian/Pacific Islander third-graders (52.4%).

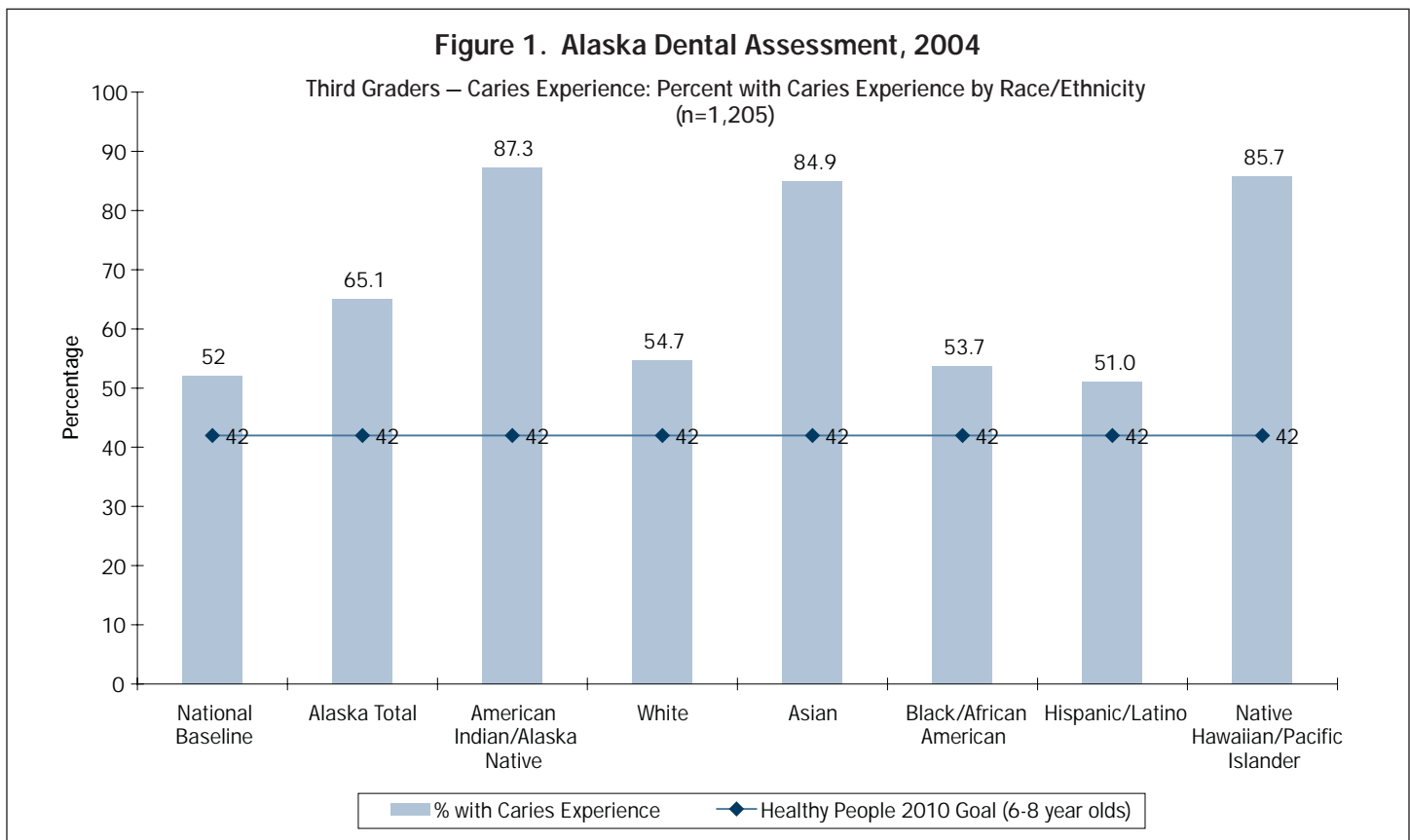
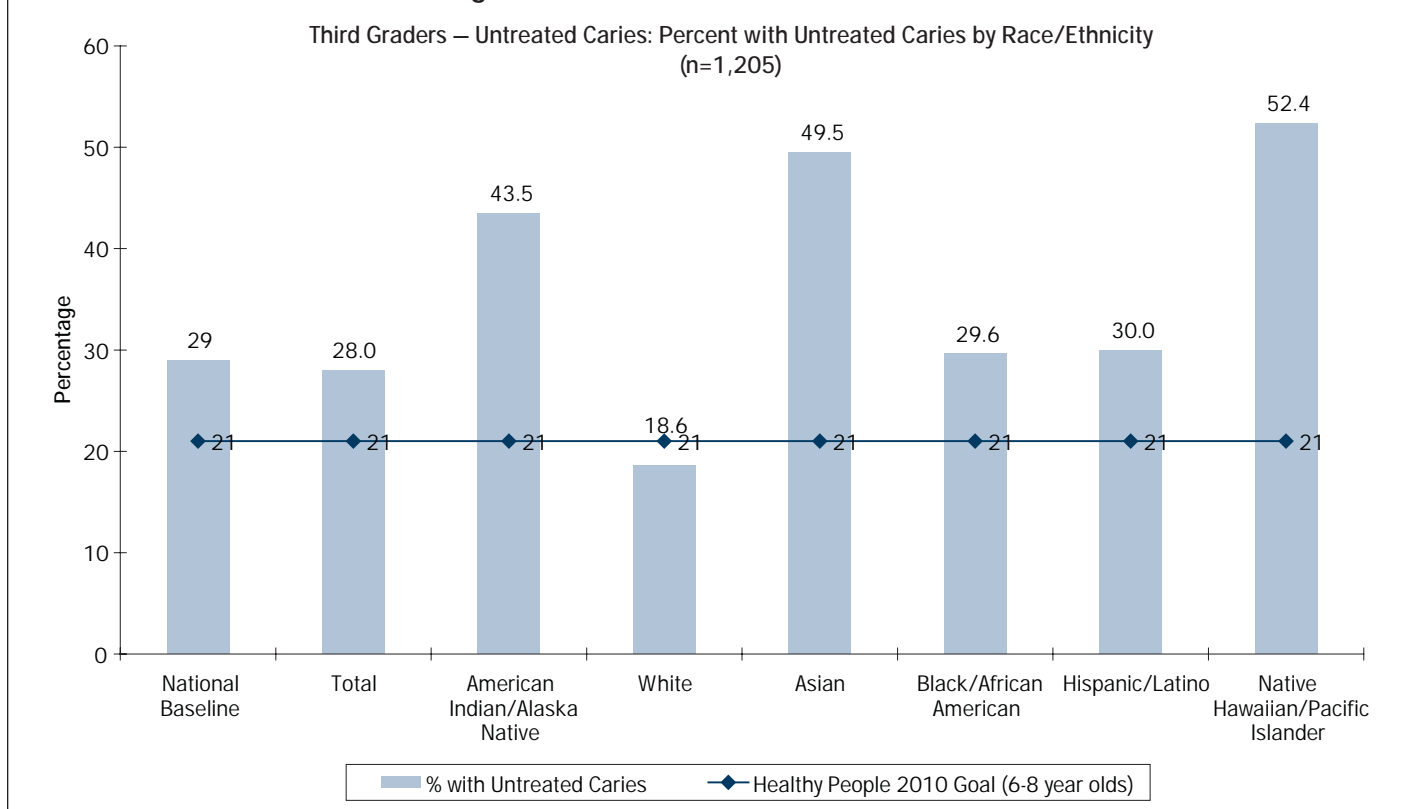


Figure 2. Alaska Dental Assessment, 2004



Dental decay rates in young Alaska children are also of concern – illustrated in Figure 3 is the caries experience in kindergarten children and in Figure 4 caries of upper front primary teeth (early childhood caries indicator) for children enrolled in Head Start.^{7,8} Advanced dental decay in young children often results in dental treatment in hospital settings so restorative dental and extractions can be accomplished in one visit with the least emotional trauma to the young child. In these cases, treatment involves not only the cost of the dental care provided but hospital and anesthesia fees.

Earlier detection of caries in these children offers an opportunity for parent education, including improving the oral hygiene of the toddler, and preventative services (e.g., topical fluorides and education of parents on brushing to treat the dental “infection”). More frequent dental screening in affected children may be warranted so oral hygiene and the progression of the disease can be monitored. Risks for development of early childhood caries include active caries in the mother with transmission of the bacteria to the infant, lack of parent education about the oral health needs of the child, and inappropriate use of baby bottles and/or sippy cups. The bacteria that cause dental plaque and acid production,

resulting in tooth decay, are typically passed from mother/caregiver to child. Therefore, the caregiver’s oral health is an influencing factor on early childhood caries.⁹ Inappropriate feeding practices that increase risk of early childhood caries include bottle feeding with juice or soda, or providing a bottle for overnight use by the infant with any liquid other than water (including milk) – due to the risks with these feeding practices, forms of early childhood caries were formerly known as baby bottle tooth decay.

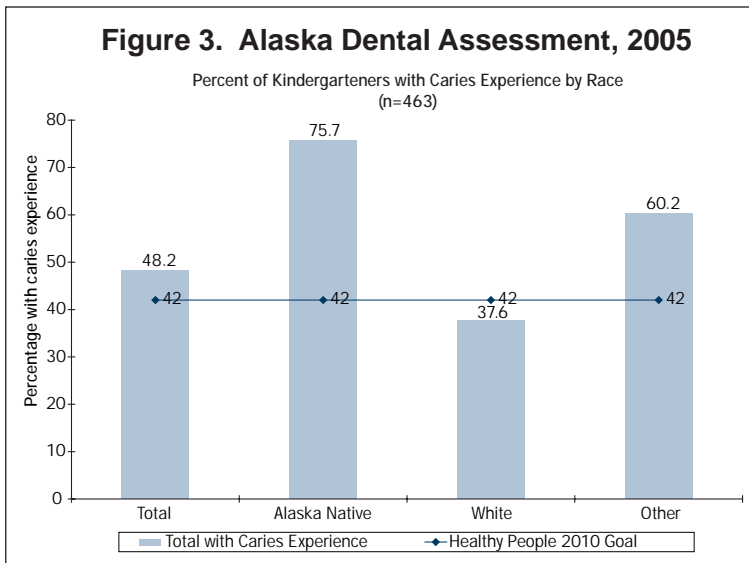
Recent national dental assessment information indicates dental decay in preschool age children is increasing. Data from the National Health and Nutrition Examination Survey (NHANES) indicates that caries in primary teeth is increasing in 2-5 year olds; from 24% in the 1988-1994 NHANES to 28% in 1999-2004 NHANES. Decayed and filled primary teeth (dft) also increased from 1.39 dft in the 1988-1994 assessments to 1.58 dft in 1999-2004. The rate of untreated decay remained stable at 23%.¹⁰

Factors reducing risk of dental decay include:

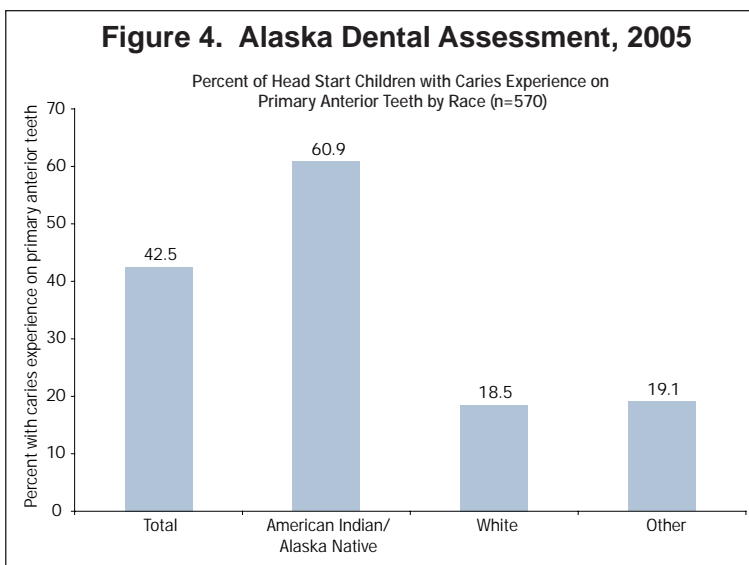
- Brushing with fluoridated toothpaste ideally at least after breakfast and before bedtime with parents assisting children age 8 and under;

- Nutrition and feeding practices that don't promote development of dental decay (e.g., limiting frequency of soda and sugared beverages);
- Access to fluoridated drinking water or use of fluoride supplements in areas without fluoridated water;
- Use of other topical fluorides in children at risk for development of dental decay (e.g., low-income children, racial/ethnic minorities and children with special health care needs);
- Use of dental sealants to seal the pits and fissures of teeth that may be susceptible to decay – especially on permanent first molars; and
- Saliva flow and buffering capacity of saliva (note: many medications reduce saliva flow).

Dental caries is cumulative, thus higher among adolescents in permanent teeth than in children. Effective personal measures – for example, tooth brushing with fluoride toothpastes – need to be applied throughout adolescence as the individual becomes more independent in their oral hygiene and dietary habits. Adolescents may over-consume sugar-laden beverages such as fruit juices, sodas and sport drinks, placing them at increased risk for new or recurrent dental decay. Regular dental visits provide an opportunity to assess oral hygiene and dietary practices and to place sealants on vulnerable permanent teeth that erupt during this life stage (including permanent second molars around age 12 years).⁵



Nationally, the prevalence of dental caries experience in permanent teeth of adolescents (persons aged 12-19) decreased from 68% in 1988-1994 to 59% in 1999-2004, however untreated dental decay remained about the same between these periods.¹⁰ Alaska data on dental decay in adolescents is not available at this time.



Children with Special Health Care Needs

Children with special health care needs (CSHCN) are an at-risk group for caries and often face barriers to routine access to dental care. The 1994-1995 National Health Interview Survey on access to care and services utilized by CSHCN indicated the most common unmet health need was dental care.¹¹ CSHCN are at increased risk for oral infections, delayed tooth eruption, periodontal disease, enamel irregularities, and moderate-to-severe malocclusion.¹² Exposure to medications that decrease saliva flow, cause gingival hypertrophy and/or have a high sugar content can exacerbate oral health problems in these children. Parent/caregiver and/or CSHCN difficulty in maintaining daily hygiene also increases risk of caries and periodontal disease.³ Further, children and adolescents with compromised immunity or certain cardiac conditions may face additional complications related to oral disease.

General dentists often lack the experience and/or training to feel comfortable providing treatment to CSHCN. Pediatric dentists are the usual referral source for dental care; however many states lack adequate numbers of pediatric dentists. As CSHCN age into adolescence and/or adulthood the pediatric dental offices face increased logistical difficulties in treatment within a pediatric setting. The pediatric practices may continue to treat these older individuals, despite the difficulties, when the practices are unable to find general practitioners where they can refer these individuals.

Alaska lacks data on the oral health needs of CSHCN in the state. In a “CSHCN Oral Health Forum” held in February 2007, parents reported dental access issues including:

- Finding private dentists accepting Medicaid;
- Long wait times for appointments and difficulties coordinating with children’s medical care;
- Not seeing the same dentist on subsequent appointments and having to spend the first appointment repeating the child’s medical history; and
- Limited general dentists treating children with special health care needs – reliance on pediatric dentists for dental services for adolescents and young adults.

Forum participants felt the need for improved parent information on the oral health of CSHCN and that activities to improve children’s Medicaid dental access would also benefit this population of at-risk children.



Dental Sealants

Dental sealants, a thin plastic coating applied to the pits and fissures of permanent teeth, along with community water fluoridation are the two most effective interventions to reduce dental decay in the population.

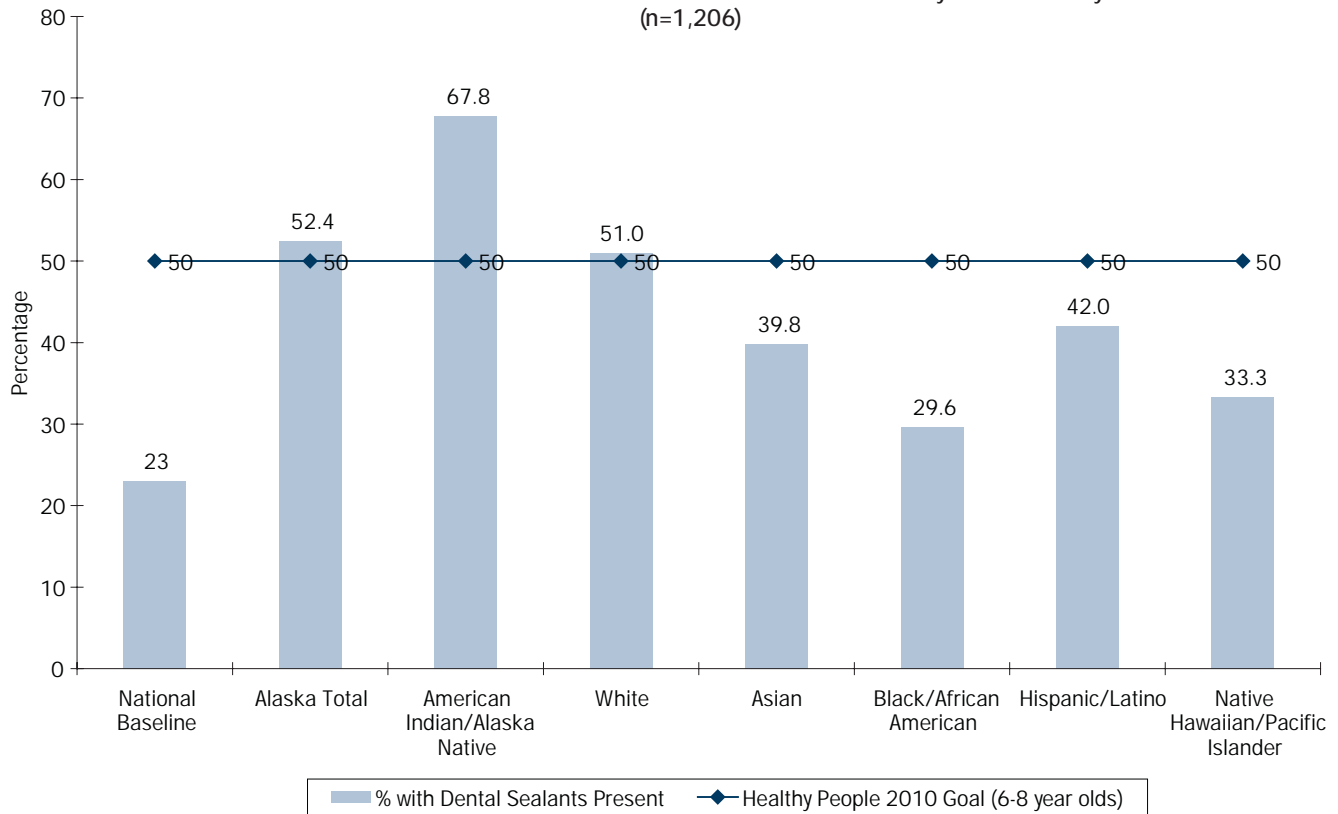
Alaska’s dental sealant rate of 52.4% for third-grade children exceeded the *Healthy People 2010* goal of 50%. Alaska Native third-graders had a sealant utilization rate of 67.8% - the highest of any racial/ethnic group in the state. However, as Figure 5 illustrates non-Native racial/ethnic minorities lack the same access to this preventive service as white or Alaska Native children. Sealant utilization was also below 50% for white children reported as enrolled in Medicaid/Denali KidCare.⁶ An inventory of schools with high percentages of children from low-income families conducted in 2005 found most village elementary schools have access to school-based or school-linked dental services including sealants through Tribal dental programs. Schools with high percentages of children from low-income households that lack dental sealant programs include:

- Schools in rural, regional hub communities (e.g., Nome); and
- Schools in urban areas of the state with 50+% of children eligible for the free and reduced school lunch program.

Dental sealants on permanent second molars are recommended as soon as these teeth erupt because they are susceptible to caries as the first permanent molars of younger children. Permanent second molars erupt in the mouth typically at 12-13 years.⁵ Nationally, the prevalence of dental sealants on permanent teeth among adolescents (aged 12-19 years) has increased from 18% in 1988-1994 to 38% in 1999-2004.¹⁰ Alaska data on sealant utilization on second molars for adolescents is not available.

Figure 5. Alaska Dental Assessment, 2004

Third Graders – Dental Sealants: Percent with Dental Sealants by Race/Ethnicity
(n=1,206)



Orofacial Clefts

Orofacial clefts, cleft lip and/or cleft palate, are common birth defects affecting approximately 6,800 infants in the United States annually.¹³ Cleft palate occurs when the roof of the mouth does not unite properly. Openings may involve either side of the palate and may extend into the nasal cavity. The cleft(s) may extend from the front of the mouth (hard palate) to the throat (soft palate), and they often include the lip. Cleft lip occurs when the two sides of the lip do not fuse completely. Cleft lip may vary greatly, from a mild notch in the lip to a severe opening up through the nose. A cleft may extend only partially from the lip towards the nose (incomplete) or go into the nasal cavity (complete). Lip clefts may occur on one side (unilateral) or both sides of the mouth (bilateral). Health problems associated with cleft palate include feeding difficulties; ear infections and hearing loss; speech and language delay; dental problems with alignment of teeth; and social effects. Orthodontics, oral surgery and prosthetic procedures are usually necessary with treatment of cleft palate.

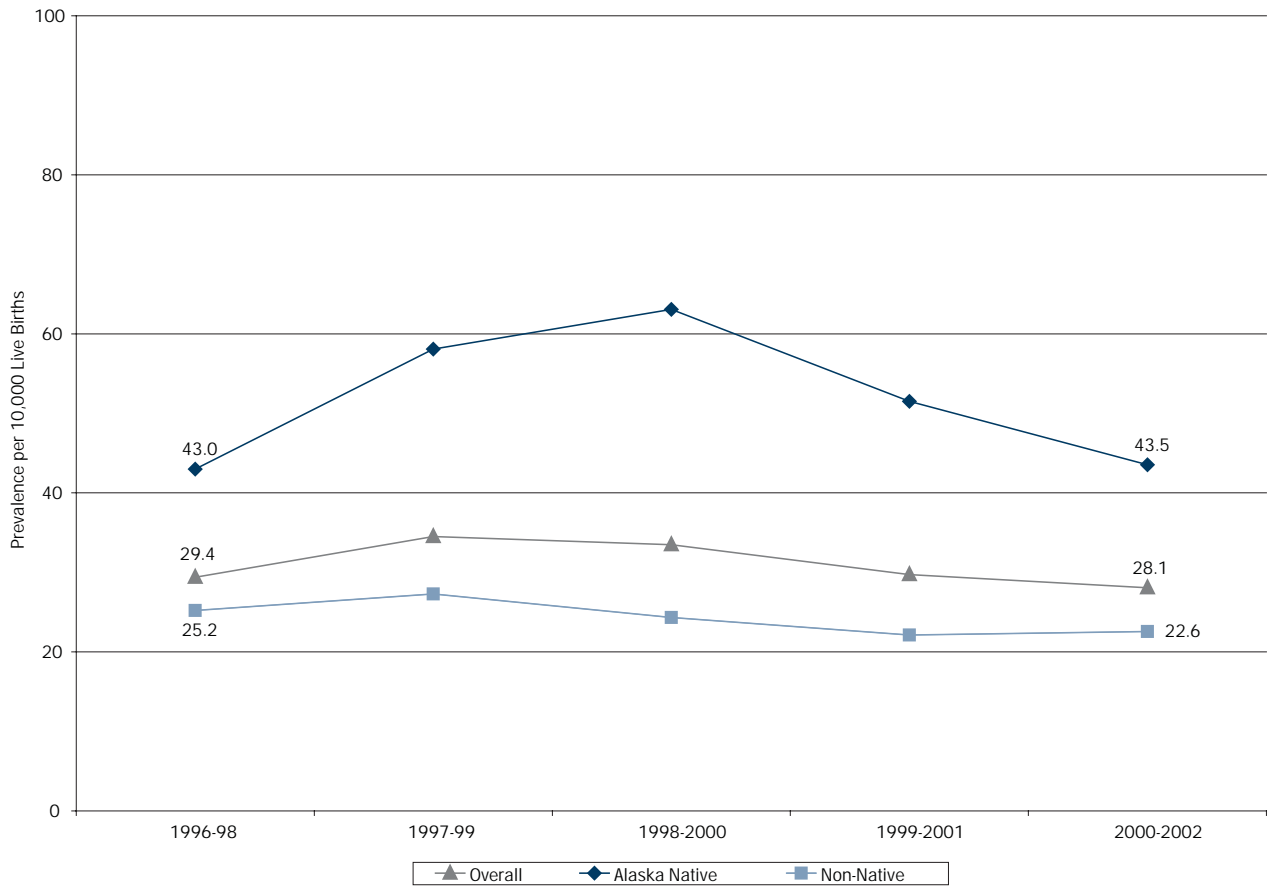
Alaska rates of orofacial clefts were 29 per 10,000 live births during 1996-2002 and are higher than national reported data. Alaska prevalence by gender was 25.3 per 10,000 live births for females and 32.7 per 10,000 live births for males. An average of twenty-nine Alaskan children were affected each

year for the 1996-2002 period. The orofacial cleft prevalence among Alaska Native children, at 47.1 per 10,000 live births, was higher than for non-Native children. Trends in prevalence of orofacial clefts during 1996-2002 are illustrated in Figure 6.¹⁴

The etiology of cleft lip and/or cleft palate is not well understood. The majority of isolated clefts, those not associated with another birth disorder or syndrome, appear to be due to a combination of genetic and environmental factors. Evidence supports the view that multiple genetic factors play a role in risk for oral clefts and environmental factors that have been documented to increase risk include heavy alcohol consumption, smoking and certain prescription drugs (e.g., Dilantin and other anti-seizure medications).^{15,16}

Use of folic acid and avoiding tobacco products may reduce the prevalence of oral clefts. Oral cleft prevalence in several populations, including Alaska, has been associated with maternal tobacco use. Retrospective studies have suggested use of folic acid supplements may have a protective effect against cleft lip with or without cleft palate.¹⁷ Abstaining from tobacco products, consuming a nutritious diet and adequate B vitamins, and taking folic acid supplements of 400 mcg daily are important for all women of childbearing age.

Figure 6. Prevalence of Oral Clefts in Alaska



Source: Alaska Birth Defects Registry, 2002

Oral Injuries

Oral injuries including fractures, loss of teeth and lacerations are another concern for children. Interventions that reduce the frequency of these injuries include use of safety restraints and/or car seats to reduce injuries in motor vehicle crashes. Additionally, children should be encouraged to use mouth-guards when participating in contact sports.

Falls are a major cause of trauma to teeth, primarily to incisors (front teeth). Unlike bone fractures, fractures of crowns of the teeth do not heal or repair, and affected teeth often have an uncertain prognosis. Problems may later develop due to damage of the tooth pulp. Family violence is another source of oral injuries - dental professionals are in a good position to detect and report abuse.¹



Rates of oral injuries in Alaska are not known. Treatment of an oral injury typically occurs in dental offices or hospital emergency rooms and there is not a data collection system to collect this type of information at this time.

Mouth-guard use in school sports is dictated by policy at the school district level. Sports organizations and local recreational programs may also play a role in sports activities and safety requirements. Parents and coaches typically recognize the need for mouth-guards in sports like football and hockey. However, other contact sports like soccer and basketball can result in oral injury as feet and/or elbows may be in close proximity to an opponent’s mouth during the course of a game.

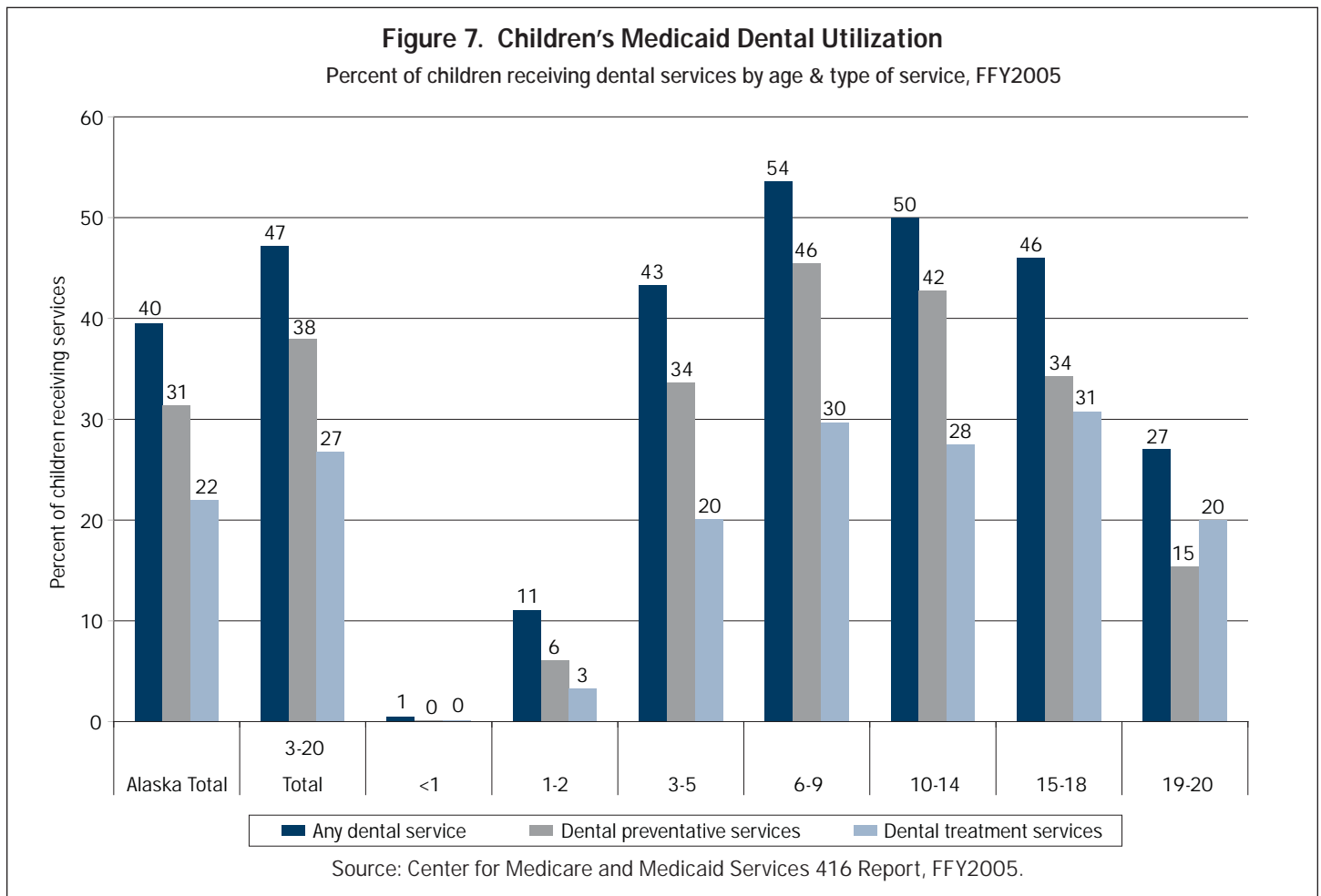
Children’s Access to Dental Care

Access to dental care offers additional avenues for education and preventive approaches, including placement of dental sealants and application of topical fluorides. Access to dental care also offers an early intervention approach to remove decay and place restorations before the pulp of the tooth is involved with the decay process. Without routine access children can be faced with more extensive and expensive restorative dental care. The Alaska Medicaid program offers dental coverage for enrolled children; however, dentist participation in the program is limited due to lower reimbursement rates, concerns with non-kept appointments and other factors.

Currently, in the Medicaid program about 1 in 3 children receive any dental service during a given year - only 1 in 5 children receive a dental treatment service. Figure 7 illustrates the dental utilization for children enrolled in Medicaid by age group (Source CMS 416 EPSDT utilization reports). Alaska’s Early & Periodic Screening, Diagnosis and Treatment (EPSDT) program guidance for children enrolled in Medicaid is to refer children for a dental exam at age 3, or earlier if a problem is detected during screenings. Guidance from the American

Academy of Pediatrics and American Academy of Pediatric Dentistry are for a dental referral with the eruption of the first tooth and no later than age 1. This earlier dental referral would be recommended for Alaska, especially given the extent of dental decay in young children. However, the groundwork needs to be laid for increased dental participation in Medicaid and accepting younger children for dental appointments. Other states have encouraged participation of physicians and nurses in enhanced screening and triage for dental needs as well as application of topical fluoride varnish to address the dental access issue for young children.

Dental access for adolescents is important to assess oral hygiene and dietary habits as well as provide dental treatment services. Medicaid dental utilization peaks at about 54% for children aged 6-9 years and then utilization begins to fall off for subsequent age groups – with dental access down to 27% for individuals aged 19-20 years. Data on dental access for Alaskan junior high and high school aged children is not available - the Youth Risk Behavior Survey may be utilized in the future to establish baseline data for adolescent dental access in Alaska.



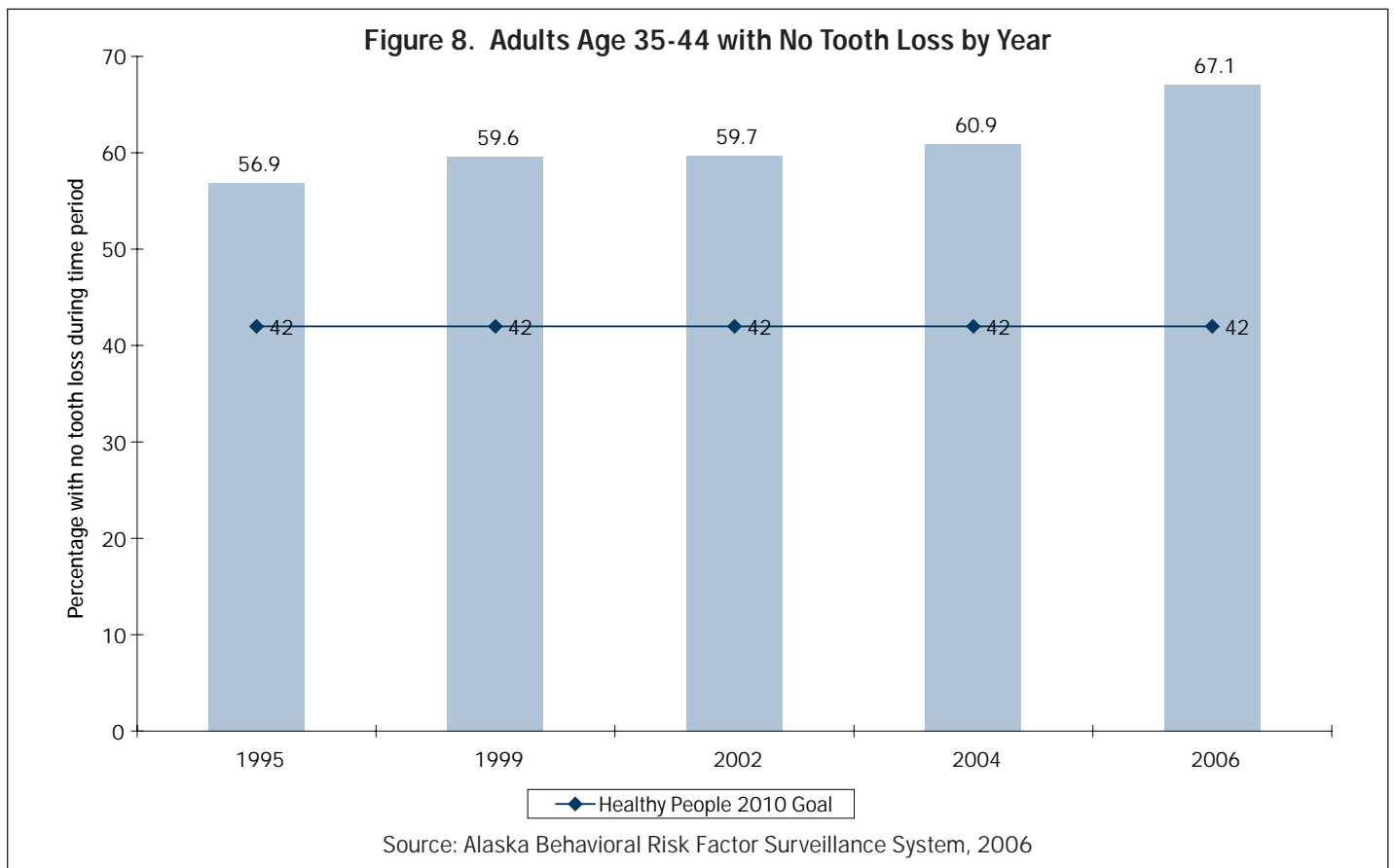
Adult and Senior Oral Health

Dental Decay

Adults, including seniors, also experience dental decay. In adults, like children and adolescents, dental decay can develop on the crown of the tooth (enamel covered portion of the tooth). Adults also may develop dental decay on the root surfaces of the tooth with exposure of the roots through gum recession. Nationally, the prevalence of coronal dental decay declined from 30% in 1988-1994 to 26% in 1999-2004 in adults aged 20-64 years but remained unchanged in seniors (aged 65 years and older). Root caries for adults aged 20-64 years also declined from 19% in 1988-1994 to 14% in 1999-2004. Root caries for dentate seniors decreased from 46% to 36% for the same respective periods.¹⁰ Dental decay and untreated decay rates for Alaskan adults and seniors are not available.

Severe and/or recurrent dental decay can result in tooth loss. Further, development of periodontal disease increased with age and can also result in tooth loss. *Healthy People 2010* objectives related to tooth loss include adults aged

35-44 years with no loss of permanent teeth due to caries or periodontal disease, and edentulous seniors (adults aged 65 years and older that have lost all of their permanent teeth). Figure 8 illustrates trends in Alaska for adults aged 35-44 years with no tooth loss due to caries or periodontal disease. This indicator excludes loss of third-molars (wisdom teeth), teeth extracted for orthodontic treatment or as a result of trauma.¹⁸ Tooth loss due to caries and periodontal disease typically is a more severe outcome than dental decay experience or untreated dental decay; however, at this time Alaska must rely on self-reported tooth loss in the Behavioral Risk Factor Surveillance System (BRFSS) for assessment of adult and senior dental health. Medications and cancer treatments can also increase risk for development of dental decay as these can result in decreased saliva flow – this can affect adults and seniors that had not previously been at risk for development of dental decay.



Risk of tooth loss increases with age. Twenty-four percent of Alaskan seniors are edentulous - see Figure 9.¹⁸ The loss of all teeth at an advanced age can make it difficult to adapt to dentures and can contribute to poor nutrition.

With improved prevention, primarily use of fluorides, and routine dental access most seniors have all or most of their natural dentition. Nationally, the percentage of edentulous seniors has been decreasing – 34% in the 1988-1994 National Health and Nutrition Examination Survey (NHANES) to 27% in the 1999-2004 NHANES survey.¹⁰

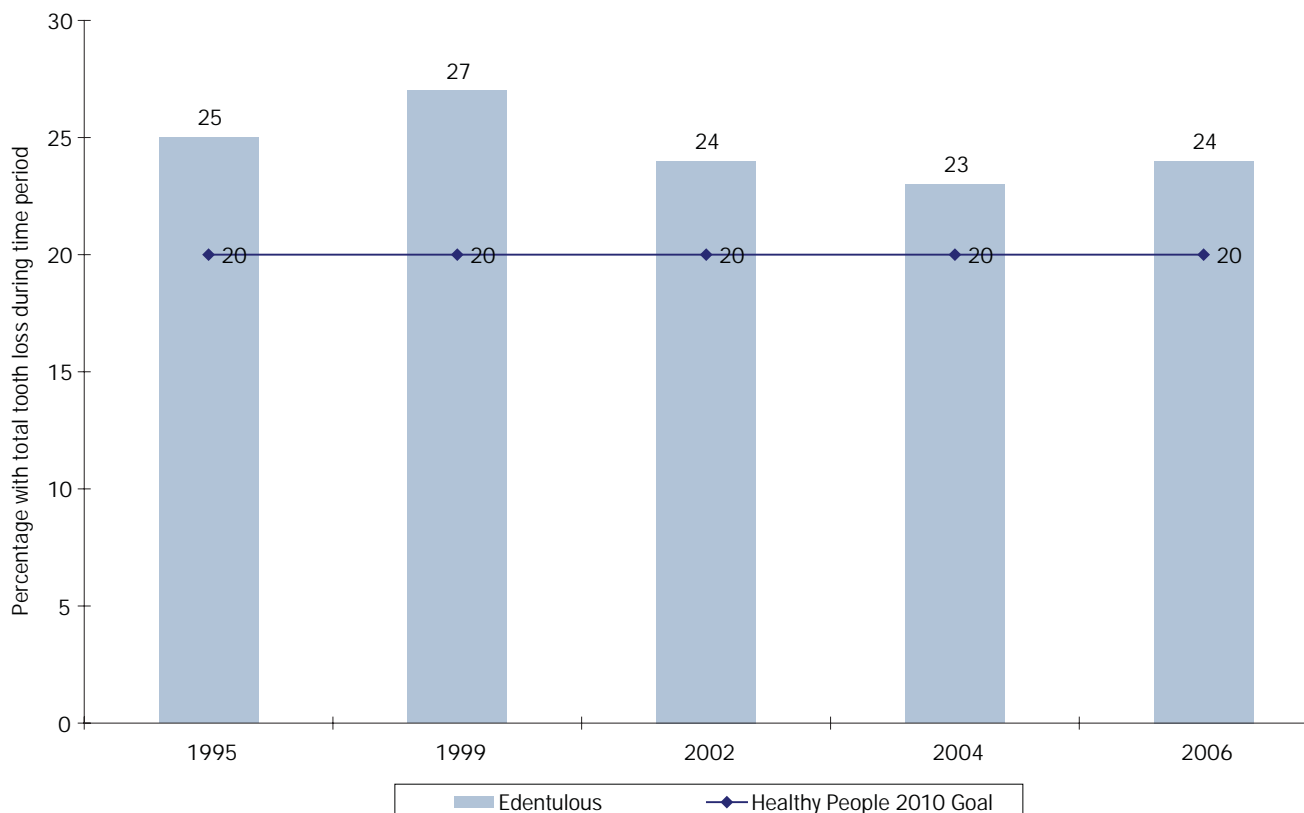
The opposite view of tooth loss in Alaskan seniors is that most seniors have all or most of their permanent teeth. Nineteen percent of Alaska seniors have all of their teeth and twenty-nine percent have lost 1-5 of their natural teeth.¹⁸ While more seniors are retaining more of their permanent teeth, Medicare (which provides health coverage for most seniors) does not include coverage for routine dental care.

Pregnant Women

The bacteria associated with tooth decay are typically passed from mother to child.^{19,20} Children of mothers with high caries rates are at higher risk of tooth decay, including development of early childhood caries.²¹ Additionally, studies have found associations between periodontal disease and adverse birth outcomes. While these issues speak to ensuring dental access for pregnant women, their access may be affected by lack of dental coverage and dental provider participation in the Medicaid program. Additionally, dentists may be reluctant to provide elective dental treatment during the pregnancy. Antimicrobials (e.g., chlorohexidine rinse) and xylitol gum have been used by some programs providing services to pregnant women as a means to reduce dental decay activity and/or delay transmission of the bacteria causing tooth decay to the infant.

In Alaska, the Pregnancy Risk Assessment Monitoring System (PRAMS) reported for 2005 that 26% of women reported a need to see a dentist during their pregnancy (dental treatment need); 37% reported going to a dentist during the pregnancy (any dental visit); and 28% reported a dental visit that included having their teeth cleaned during the pregnancy.²²

Figure 9. Alaskan Edentulous Adults Age 65+ by Year



Source: Alaska Behavioral Risk Factor Surveillance System, 2006

Adult and Senior Dental Access

The 2006 BRFS survey responses indicate 66% of Alaska adults and 57% of Alaskan seniors had seen a dentist within the last year.¹⁸ These rates, which indicate about 34% of adults lack routine access to dental care, have been relatively stable since these questions were first asked in BRFS in 1995. Adults and seniors still experience dental decay, and changes in medications or diet can result in increased caries activity. Routine exams offer the opportunity to detect gingivitis and early periodontal disease which can be arrested with proper oral hygiene and scaling and root planing at dental visits to remove calculus from tooth root surfaces. Adults with dentures may not realize routine dental care is still important. Dental care is still needed to ensure proper fit of the dentures, which reduces loss of alveolar bone (the bone ridge of the jaws which supports the dentures). Further, these dental exams can detect and provide treatment for other diseases of the hard and soft tissues (e.g., candidiasis) and should include examination for oropharyngeal cancer.

In April 2007 an expansion of dental preventive and restorative services for adults enrolled in Medicaid was implemented. These services, which sunset in June 2009 without legislative reauthorization, offer the opportunity to increase preventive services and early intervention to reduce extraction of permanent teeth for adult Medicaid recipients and/or provide restorative care and denture services to adults needing those services. With provision of services to adult Medicaid recipients, pregnant women enrolled in Medicaid also receive the benefits of preventive dental care and maintenance of periodontal disease.

Periodontal Disease and Systemic Health

Periodontal disease, like dental decay, is an infection caused by bacteria in dental plaque. The basic division in periodontal diseases is between gingivitis (which affects the gums) and periodontitis (which may involve all of the soft tissue and bone supporting the teeth). Gingivitis and mild periodontitis is common in all adults. The percentage of adults with moderate to severe periodontitis, in which destruction of supporting tissue can cause the tooth to loosen and fall out, increases with age.¹ Periodontal disease has been linked with general health including relationships with diabetes, cardiovascular disease and birth outcomes.

Periodontal disease has a two-way relationship with diabetes. Studies have shown that individuals with diabetes are more susceptible to periodontal disease and this risk is independent of whether it is Type I or Type II diabetes.¹ The likelihood of periodontal disease increases when diabetes is poorly controlled. Severe periodontal disease

can increase blood sugar and increase risk of diabetes related complications. Periodontal diseases respond well to therapy when managed in individuals with well-controlled diabetes. The *Healthy People 2010* objectives recognize this relationship between diabetes and oral health, and recommend an increase to 75% the proportion of persons age two and older with diabetes that have at least an annual dental exam.

A consensus conference of oral health experts, sponsored by the U.S. Health Resources and Services Administration in 2006, found evidence of the association of maternal periodontal disease with increased risk of preterm birth and low birth-weight, especially in economically disadvantaged populations.²³ Additional research is being done to more fully explore the relationships of periodontal disease with birth outcomes.

Studies examining the relationship between dental infections and the risk for cardiovascular disease suggest the potential for oral microorganisms, such as those found with periodontitis, to be linked with heart disease.²⁴ One theory for this relationship is that bacteria enter the blood stream and attach to fatty plaques in the coronary arteries, contributing to clot formation. Another theory is that inflammation caused by periodontal disease increases plaque build-up in vessel walls. At this time there is not evidence to support periodontal disease as an independent risk for heart disease and stroke, though there are consistent findings showing an association. The relationship of periodontitis and cardiovascular disease continues to be investigated.

Oral Health and Other Systemic Connections

The mouth may also serve as an early indication for signs of osteoporosis (a degenerative disease associated with loss of bone mineral). Detection of oral bone loss through routine oral exams and magnetic resonance imaging may be diagnostic of early osteoporotic changes in skeletal bone.¹

The link among poor nutrition with obesity, and compromised oral health offers areas for collaboration between programs addressing these issues. The focus on decreasing consumption of soda as it relates to risk of dental decay and child obesity has been undertaken at the Alaska Native Medical Center in the "Stop the Pop" campaign. Some school districts have taken action to reduce the availability of soda in schools during school hours. Heavy soda consumption can lead to dental decay and tooth erosion. Many sodas not only contain sugar but are acidic – which promotes demineralization of teeth.

Tobacco Use

Use of tobacco has a devastating impact on the health and well-being of the public, including tobacco's affect on oral health. Use of tobacco is a significant risk factor for development of periodontal disease and oral and pharyngeal cancer. The use of any form of tobacco – including cigarettes, cigars, pipes and smokeless tobacco – has been established as a cause of oral cancer and pharyngeal cancer.²⁵ Alcohol use can potentiate risk of oral cancer in individuals using tobacco - tobacco use with alcohol accounts for 75-90% of all oral and pharyngeal cancers in the United States.²⁶ One-half of the cases of periodontal disease can be attributed to cigarette use.²⁷ Maternal tobacco use during pregnancy may increase the risk of orofacial clefts. Additionally, chewing tobacco with the sugar content increases risk for development of root caries in older adults.

The goal of comprehensive tobacco control programs is to reduce disease, disability and death related to tobacco by:

- Preventing initiation of tobacco use among young people;
- Promoting quitting among young people and adults;
- Eliminating nonsmokers' exposure to secondhand tobacco smoke; and
- Identifying and eliminating disparities related to tobacco use and its effects among different population groups.

Tobacco control programs which prevent or reduce tobacco use, impact oral health along with other tobacco-related health issues.

Dental appointments can assist with tobacco intervention services. Dental patients are receptive to health messages for oral health at periodic visits and tobacco use may provide visible evidence of effects in the mouth – which can be a strong motivation for tobacco users to quit. Additionally, dental providers can assist in provision of information on tobacco quit lines in the state.

Tobacco use in Alaska has been decreasing overall. Evidence of decreased tobacco use in Alaska includes:

- Overall cigarette consumption in Alaska has been reduced by more than one-third from 1996 to 2006²⁸
- Reported smoking among Alaska high school students is down from 37% in 1995 to 18% in 2007.²⁹
- Reported use of smokeless tobacco (or "chew") is down from 16% of all high school students and 24% of high school males in 1995 to 10% of all high school students and 14% of high school males in 2007.²⁹

Reported adult use of cigarettes and smokeless tobacco has remained stable the past decade. Adults using cigarettes declined slightly from 25.1% in 1995 to 24.3% in 2004³⁰; however as noted above, total cigarette consumption has declined significantly. Smokeless tobacco use by Alaska Natives was reported at 11.5% and by non-Natives at 4.7% for 1995/1997 - reported rates in 2002/2004 were 11.0% for Alaska Natives and 4.7% for non-Natives.



Nationally sales of loose leaf, plug/twist and dry snuff forms of smokeless tobacco have been decreasing the past two decades; however, moist snuff (finely cut or long cut tobacco) sales increased from 36.1 million pounds in 1986 to 75.7 million pounds in 2005. Sales volume of smokeless tobacco, including moist snuff, are not reported in the Alaska tobacco excise tax program; however, a joint project of the Oral Health Program, Tobacco Control Program and Department of Revenue manually reviewed tobacco invoices submitted for the Tobacco Excise Tax Program from January 2000 to June 2002. For the period from state fiscal year (SFY) 2001 to SFY 2002 the review determined moist tobacco sales increased by 1.09% by volume and 6.23% by dollar value. Other forms of smokeless tobacco listed on the invoices increased by volume and dollar value during that period.

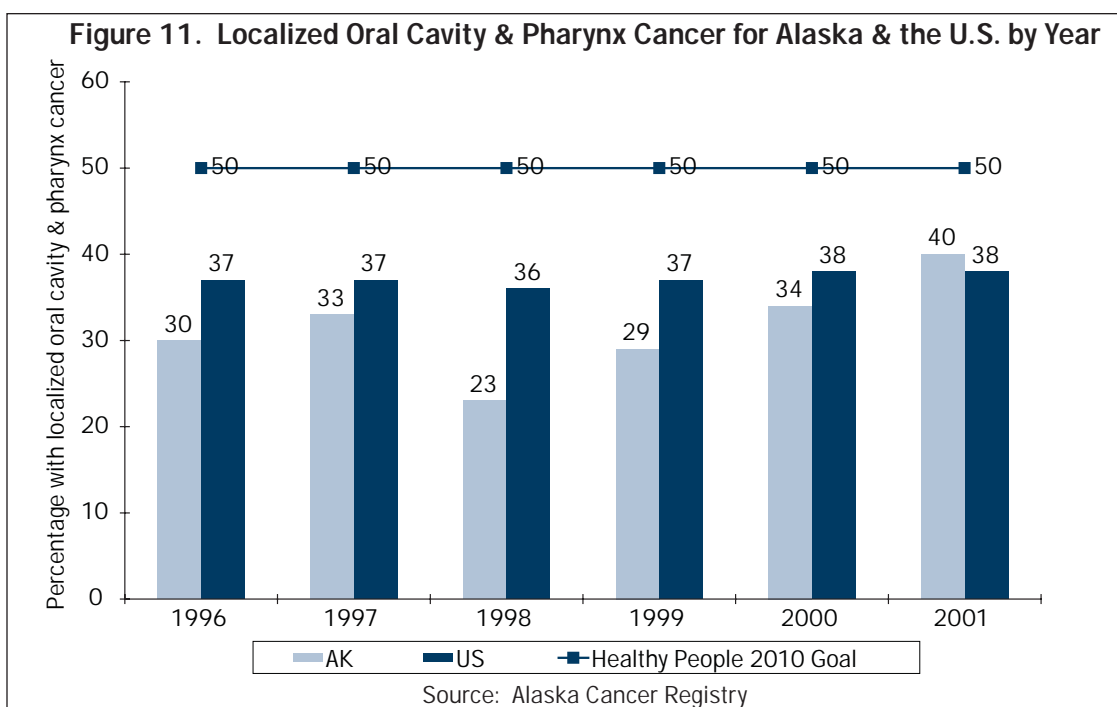
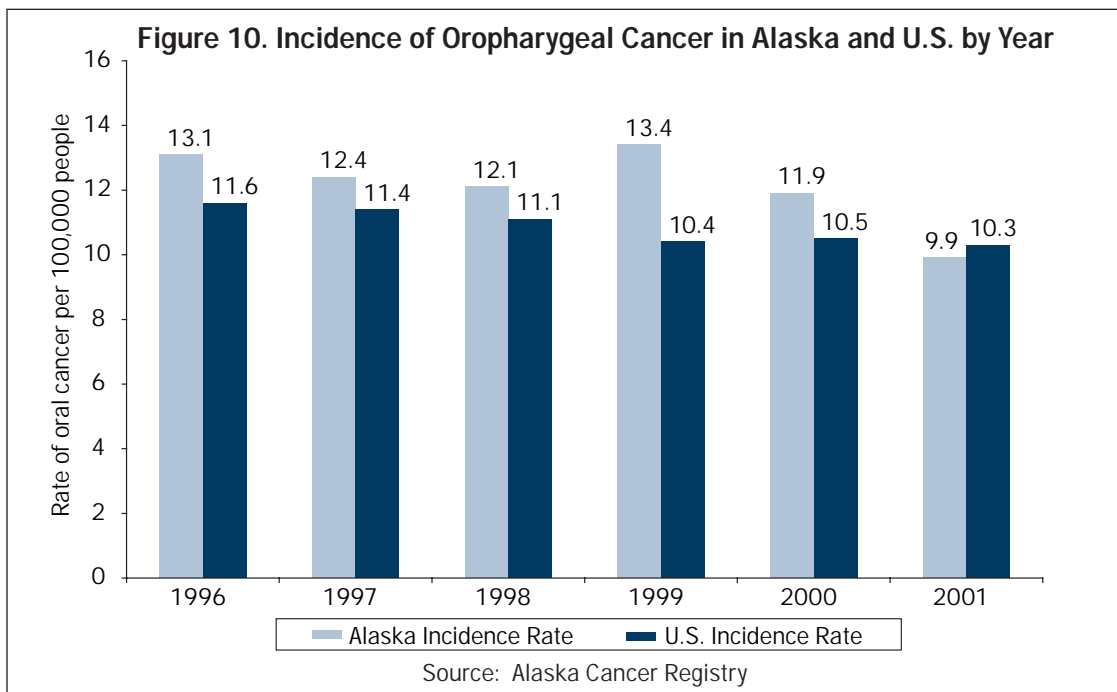
Oral and Pharyngeal (Oropharyngeal) Cancer

Oropharyngeal cancer is the 6th most common cancer in U.S. males and 4th most common among African American men. About 32,000 new cases of oral cancer are diagnosed each year and it accounts for about 7,200 annual deaths.³¹ Survival rates for oral and pharyngeal cancer vary by site and by stage of diagnosis. Figure 10 illustrates the incidence of oral cancer in Alaska as compared with U.S. incidence. The incidence rate for oral cancer in Alaska was 11.5 per 100,000 (SEER, 1996-2003) – this is slightly higher than the U.S. rate for oral cancer of 10.7 per 100,000 (SEER, 1996-2003). The highest incidence rate occurred in Alaska Natives who had a rate of 17.7 per 100,000 – significantly higher than the next highest rate in whites of 10.6 per 100,000 (SEER, 1996-2003). The

death rate from oral cancer for Alaskans is 3.7 per 100,000 which is higher than the U.S. death rate from oral cancer at 2.8 per 100,000 (SEER, 1996-2003).³²

As noted above tobacco use increases risk for development of oral and pharyngeal cancer. Alcohol is an independent risk factor and when combined with tobacco use accounts for most cases of oral cancer in the United States. Viruses and impairments in the immune system have also been implicated in development of oral cancer.¹ Exposure to sunlight without protection (use of lip sunscreen and hats recommended) increases risk of solar related cancer (e.g., cancer of the lip).

Nationally, a focus area with oral and pharyngeal cancer is to increase detection at early, localized stages of the cancers with screening typically beginning on all adults aged 40 years and over. These efforts include training of dental and medical providers (as many at-risk adults lack routine dental care). Oral cancer detection is accomplished by a thorough examination of the head and neck and examination of the tongue and entire oral and pharyngeal mucosal tissues, lips, and palpation of the lymph nodes. Figure 11 illustrates the percent of oral and pharyngeal cancer detected at the earliest stage for Alaska and the United States, 1996-2001. The smaller number of Alaska cases creates more year-to-year variability in the data; however, the general trend has been improving.



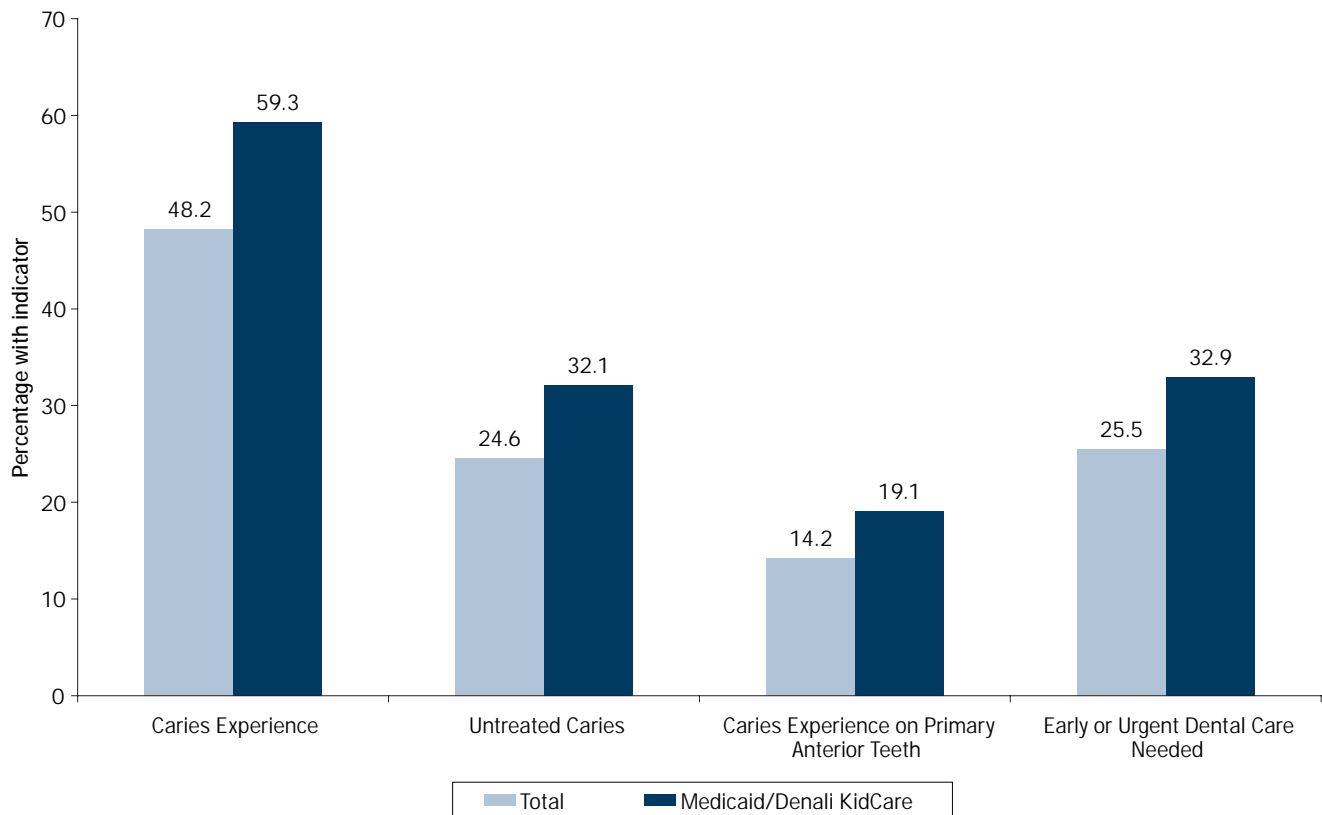
Oral Health Disparities

Although there have been gains in oral health in the United States there remain striking disparities among lower-income groups, racial/ethnic minorities and individuals with disabilities. The situation in Alaska is similar with increased rates of dental decay in racial/ethnic minorities and all children enrolled in the Medicaid/Denali KidCare program. Figure 12 illustrates the higher dental decay rates for kindergartners reported as enrolled in Medicaid/Denali KidCare.

Higher rates of tooth loss reported in the Behavioral Risk Factor Surveillance System are associated with lower education level and lower socioeconomic status. Oral clefts are more prevalent in the Alaska Native population. The

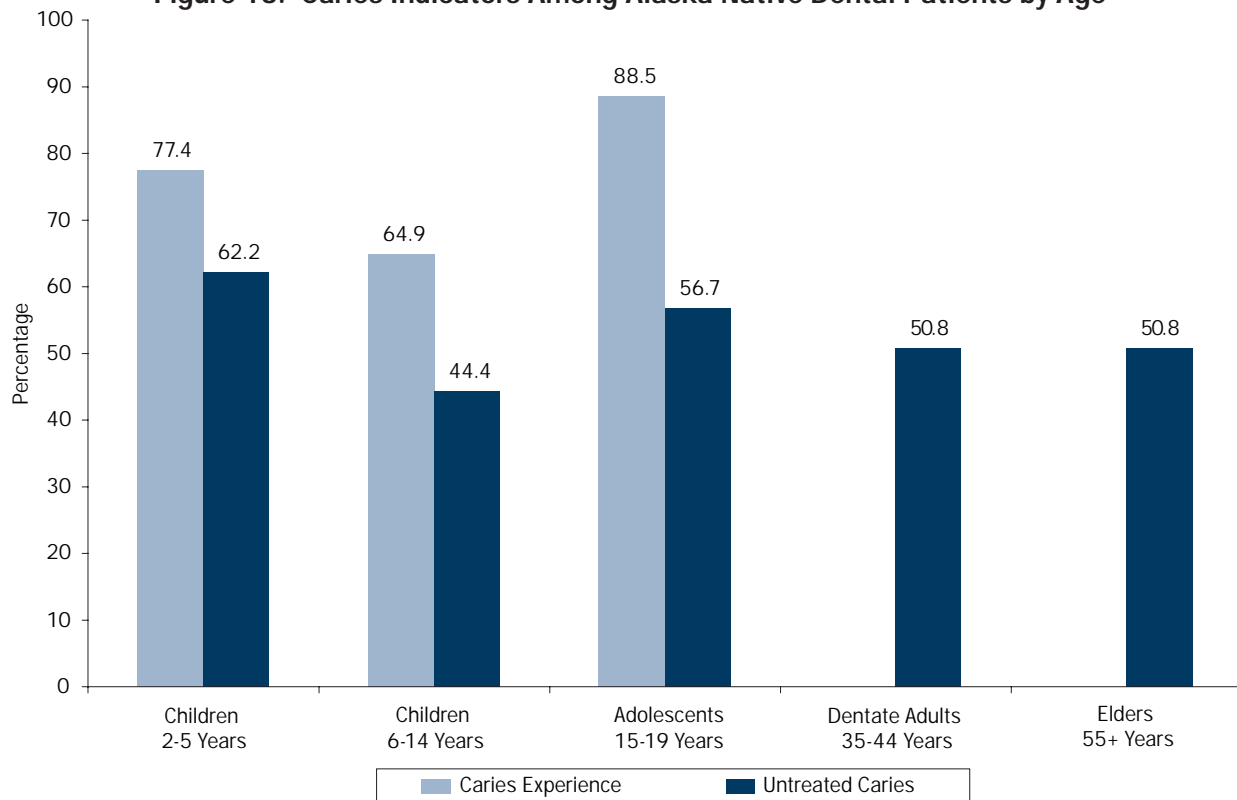
prevalence of smoking is twice as high among Alaska Native adults as non-Native Alaskans and Alaska Natives are three times more likely to use smokeless tobacco.³³ Tobacco use is a risk for development of oral cancer and periodontal disease. Alaska Natives have a higher incidence of oral cancer than other racial/ethnic groups in Alaska. Dental assessments of Alaska Native dental clinic users in 1999 found 37% of Native adults aged 35-44 years had destructive periodontal disease (as indicated by one or more sites with 5 mm or more in loss of tooth attachment). Destructive periodontal disease in Native adults increased with age with 69% of Native adult clinic users aged 55 years and older having destructive periodontal disease.³⁴

Figure 12. Dental Indicators for Alaska Kindergartners: Total and Medicaid/Denali KidCare



Source: Alaska Basic Screening Survey, 2005

Figure 13. Caries Indicators Among Alaska Native Dental Patients by Age



Source: 1999 Indian Health Service Dental Assessment of Alaska Native Dental Clinic Users

Alaska Natives - Dental Decay

Historically a number of studies documented the low dental decay rates in the Alaska Native population in the first half of the 20th century. The traditional diet of Alaska Natives was rich in proteins and fats and very low in sugars and fermentable carbohydrates. Studies conducted in the 1920's documented the relationship between tooth decay and increased ingestion of refined sugar and carbohydrates in the Native population.³⁵ These changes in diet and lack of access to fluoridated public water in most villages, combined with limited access to dental providers in rural Alaska, are factors influencing the high rates of dental decay. The higher rates of dental decay in Native children have been discussed previously; however, the 1999 dental assessment of adult Native clinic users found high rates of dental decay and/or untreated dental decay across all Native age groups (See Figure 13).

Frequent ingestion of soda has been identified by Tribal health programs as a factor contributing to increased dental decay in Alaska Natives. Frequent ingestion of soda contributes to dental decay through two mechanisms:

- Non-diet sodas are a major source of sugar; and
- Most sodas, like citrus drinks, have a relatively low pH (they are acidic)

These factors result in increased acid production by the bacteria causing dental decay as well as demineralization of teeth due to the low pH of these drinks.



The high dental decay rates have persisted over several generations which can create a social environment where dental visits are expected to be painful, teeth are expected to be lost and a lower value is placed on taking care of teeth (brushing and flossing). Changes in dental decay prevalence in the Alaska Native population cannot solely be accomplished by increasing capacity for dental treatment. Changes need to occur in the frequency of ingestion of food and beverages that promote tooth decay. Along with changes in diet, accessing dental services without waiting for emergent problems and proper home care foster increased retention of permanent teeth. The Tribal health program approaches to increase prevention of dental decay, education on oral hygiene, and treatment capacity, offer hope of improvement in the oral health status of Alaska Natives.

Community Water Fluoridation and Fluorides

Community Water Fluoridation

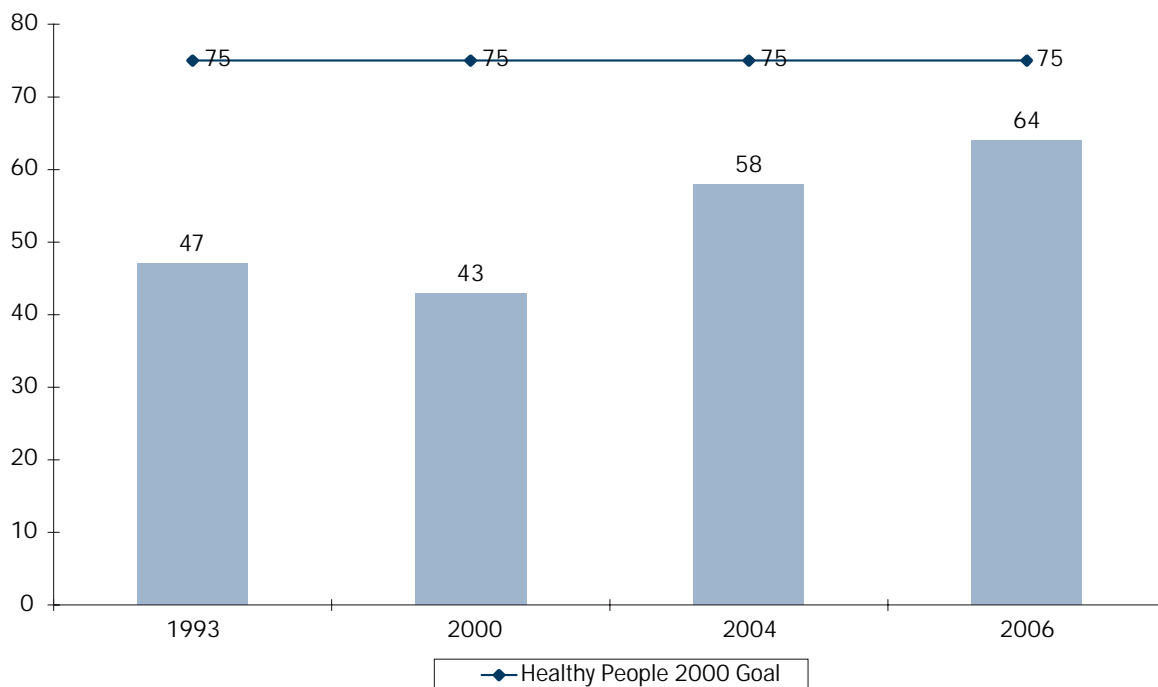
Community water fluoridation is recognized as one of the 10 greatest public health achievements of the 20th century in the United States for its role in reducing dental decay.³⁶ Community water fluoridation is the process of adjusting natural fluoride in a community's water supply to a level that reduces dental decay in the population served by the public water system. Fluoride in drinking water provides frequent exposure to small amounts of fluoride that decrease demineralization and promote re-mineralization of tooth enamel during exposure to acid production from oral bacteria with ingestion of food and/or beverages or other products with sugars (e.g., medications). Water fluoridation is most effective at preventing decay on the smooth surfaces of the teeth – with dental sealants being effective at reducing decay of the pits and fissures of permanent molars.

Water fluoridation reduces disparities in the population by preventing dental decay in individuals from different socioeconomic, racial and ethnic groups. It helps reduce the cost of dental care and dental insurance premiums; it also assists in retaining teeth throughout life.¹

Recognizing the importance of community water fluoridation, *Healthy People 2010* objectives aim to increase the proportion of U.S. population served by community water systems with optimally fluoridated water to 75%. In the United States during 2002, approximately 162 million people (67% of the population served by public water systems) received optimally fluoridated water.³⁷ In Alaska in 2006, 64% of the population served by public water systems received optimally fluoridated water (See Figure 14).

The Alaska population with public water systems with fluoridated water declined in the 1990's as rural water systems that lacked appropriately certified water operators or adequate infrastructure were taken off-line for fluoridation. The increased population growth in urban areas of Alaska – most of which are fluoridated (e.g., Anchorage and Fairbanks), has been the primary reason for the increased population served by fluoridated public water supplies from 2000 to 2006. Meeting appropriate certification levels and water operator turnover are the main issues restricting water fluoridation in village public water systems, although other

Figure 14. Proportion of Alaskans Served by Community Water Systems with Optimally Fluoridated Water



infrastructure barriers exist (e.g., some villages still lack piped water systems). The Oral Health Program, Alaska Native Tribal Health Consortium, Alaska Dental Action Coalition and Alaska Rural Water Association offer information and training to support optimal water fluoridation in communities currently fluoridating public water supplies and communities interested in implementing water fluoridation.



Topical Fluoride and Fluoride Supplements

Since frequent exposure to small amounts of fluoride each day best reduces the risk for dental decay in all age groups, all people should drink water with optimal fluoride and brush their teeth at least twice daily with fluoride toothpaste.³⁸ For communities that do not receive fluoridated water and persons at high risk for dental decay additional fluoride measures may be warranted. Community measures include fluoride mouth rinse programs, typically conducted in schools. Individual measures include prescriptions for fluoride supplements and topically applied fluoride gels or varnishes.

Dental Workforce

In 2001, about 25% of Alaska dentists were aged 55 and above – this pattern was evident in Anchorage as well as the rest of the state (See Figure 15). Since that time, Professional Licensing no longer reports dentist demographics by age, however still reports information on the date of first dental license in Alaska. The pattern seen in Figure 16 on the distribution by years in practice in Alaska shows a similar pattern as seen in 2001, with 25% of Alaska dentists being practice in the state for more than 25 years. Nationally, about 35% of dentists are age 55 and above. While individual circumstances may vary, some dentists may retire in their mid- to late-50's – many of the dentists in practice for longer than 25 years will retire in the next decade. This demographic trend in Alaska and nationally indicate that over the next decade the number of dentists retiring will be greater than the number of dental graduates to replace them, thus further restricting dental access. The workforce implications are especially significant for rural areas, for Medicaid recipients and the elderly.

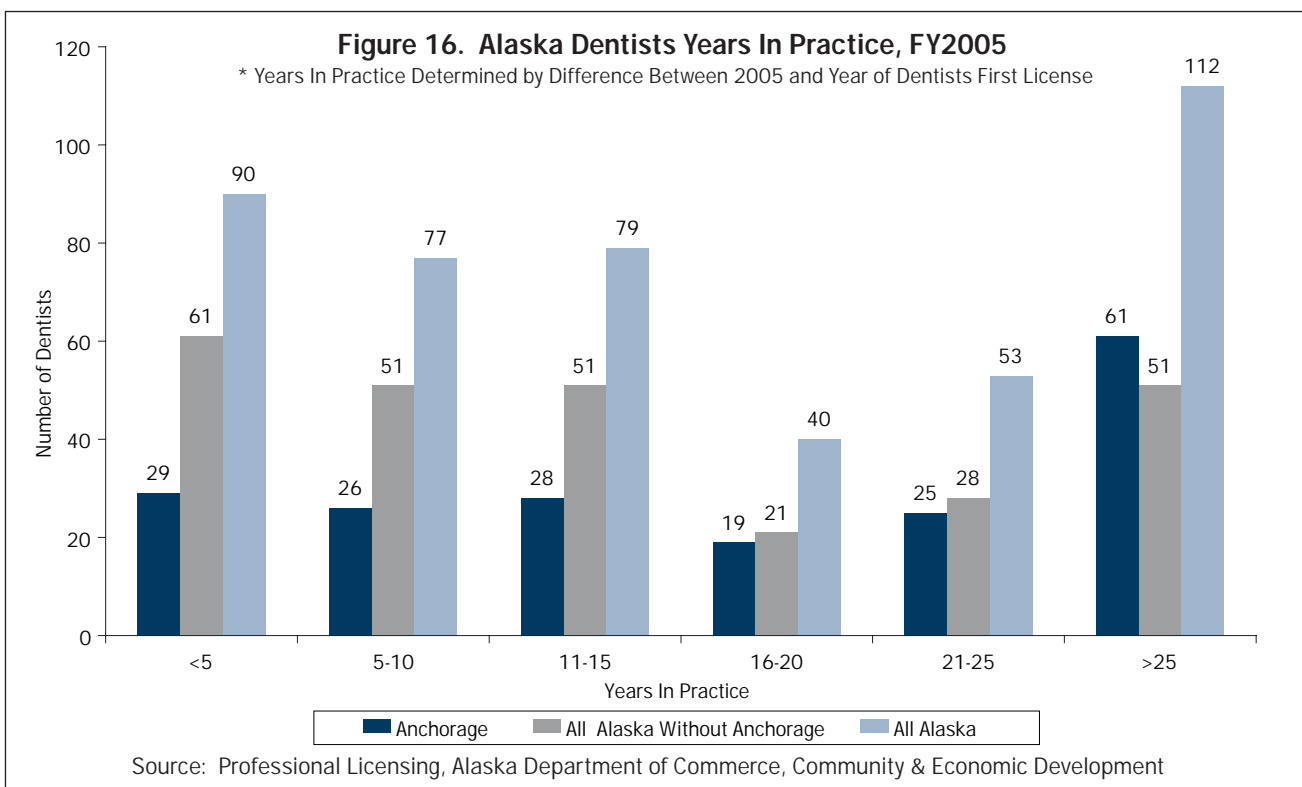
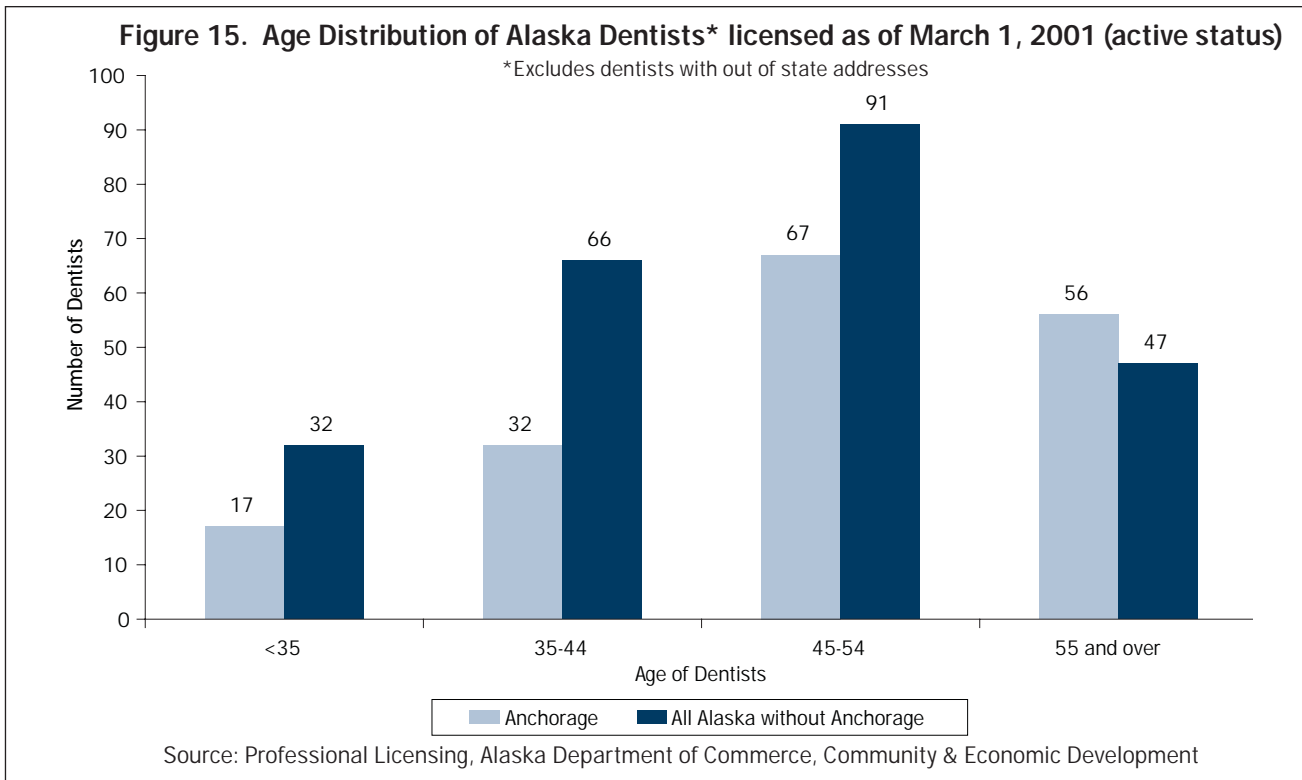
In 2005, Professional Licensing reported 457 Alaska dentists, or 1 dentist for every 1,451 residents using Department of Labor population estimates for that year. That ratio is higher than national averages for the dentist to population ratio for that year at 1:1,878. Alaska also experienced the greatest increase in dentist to population ratios of any state from 1993-2000.³⁹ While these statistics look favorable for Alaska, there is a problem of distribution with most dentists practicing in urban areas of the state. Much of rural and remote Alaska has received designation for dental-health professional shortage areas. The U.S. Health Resources and Services Administration estimates it would take about 20 additional dentists to provide dental services for residents living in these under-served areas of the state.⁴⁰

From the Medicaid perspective, most Alaska dentists are enrolled in the Medicaid program (422 enrolled dentists with an in-state address in state fiscal year 2005). However, only 316 dentists were active in the program that state fiscal year (dentists having at least one paid Medicaid claim during FY2005). Looking at dental providers with \$10,000 or more in paid Medicaid claims, an amount typically less than 3% of gross receipts for a private practice, the number of dental providers with an in-state address at that level or reimbursement fell to 227 dentists. Many of the dentists with \$10,000 or more in paid Medicaid claims work with the Tribal dental programs, community health center dental programs and/or are pediatric dentists. Most private dental practices in Alaska nominally participate in the Medicaid program. Issues raised by private dentists include Medicaid reimbursement, which for most dental procedures has been frozen at 1997 Medicaid payment levels, non-kept appointments by Medicaid recipients, perceived excess paperwork, and/or liability provisions in the Medicaid provider agreement. While expansion of community health centers has increased some local access for Medicaid recipients and low-income populations, the dental components of these clinics have faced difficulties with recruitment and retention of dental staff.

Tribal programs in Alaska, faced with high rates of dental decay in their beneficiaries and dental vacancies, have developed the Dental Health Aide Program to increase education and preventive services – along with some of the restorative treatment needs of the population. Other states faced with similar issues have utilized increased roles for dental hygienists under general supervision, enhanced screening and topical fluoride application by medical providers, and/or use of foreign trained dentists in under-

served settings. Tribal and private dental programs in Alaska are looking at utilization of expanded-duty dental assistants (e.g., to place dental restorations) as a means to increase dentist efficiency. The Alaska State Dental Hygienists' Association has proposed to increase dental hygiene services under general supervision in underserved settings (e.g., schools and nursing homes) along with the ability to place restorations if they have completed the appropriate training.

The American Dental Hygienists' Association and American Dental Association are both proposing new models of practitioners to address increased access to preventive dental services, earlier intervention and/or improved dental practice efficiencies to address dental access issues.



Infection Control in the Dental Office

Dental health-care personnel (DHCP) and dental patients can be exposed to pathogenic microorganisms in dental settings through:

- Direct contact with blood, oral fluids, or other patient materials;
- Indirect contact with contaminated objects;
- Contact of the conjunctiva, nasal, or oral mucosa with droplets containing microorganisms from an infected person and propelled a short distance (e.g., by coughing, sneezing, or talking); and
- Inhalation of airborne microorganisms that can remain suspended in the air for long periods.

DHCP includes the dentist, dental hygienist, and dental assistant; and dental laboratory technicians (in-office and in commercial dental labs), administrative/clerical staff and others not directly involved in patient care but potentially exposed to infectious agents (e.g., housekeeping and maintenance workers).

The U.S. Centers for Disease Control and Prevention has published infection control guidelines for dental health-care settings to address these issues.⁴¹ The University of Alaska Anchorage, Dental Assisting and Dental Hygiene Programs and the Alaska State Dental Hygienist Association use the CDC infection control guidelines in training of dental personnel in Alaska.

Alaska Dental Action Coalition

The Alaska Dental Action Coalition (ADAC) is a voluntary interagency partnership that formed under the cooperative agreement with Alaska from the U.S. Centers for Disease Control and Prevention, Division of Oral Health. ADAC merged with other oral health stakeholders following successful efforts to educate policymakers on the need for improvements in dental benefits for adults enrolled in the state Medicaid

program. ADAC has four established committees that meet at least quarterly (Prevention & Education, Provider Training & Education, Dental Access and Fluorides) and a leadership committee to discuss oral health policy development. The strategies and recommendations identified in this plan reflect the input from ADAC members.

Alaska Oral Health Program

The Alaska Oral Health Program was established under a cooperative agreement with the U.S. Centers for Disease Control and Prevention (CDC), Division of Oral Health in July 2002. Current funding from the CDC supports 2.5 full-time equivalent (FTE) positions in the Division of Public Health, Section of Women's, Children's and Family Health for a Dental Officer; Health Program Manager for management activities on community water fluoridation, oral health education and Coalition support; and a part-time Health Program Manager for development and/or evaluation of dental sealant programs, professional service contract management and assistance with management of federal grants.

The Oral Health Program has developed an oral health surveillance system to assess oral health needs in Alaska, identify disparities and monitor trends in oral disease over time. The information in this plan reflects the information collected through the surveillance system. Summary data from the 2004 dental assessment of Alaska third-grade children and the 2005 dental assessment of Alaska kindergarten children and children enrolled in Head Start are provided in Appendix II. Major gaps in assessing oral health in Alaska currently include:

- Ongoing funding to conduct child dental assessments to monitor trends in dental decay and dental sealant utilization;
- Dental decay and sealant utilization in children with special health care needs and adolescents;
- Dental decay and periodontal disease in adults and seniors (including adults/seniors with disabilities);
- Oral cancer screening by dental and medical providers; and
- Oral injuries.

The Oral Health Program is utilizing dental assessment information to inform policymakers and the public about oral disease in Alaska, to identify oral health disparities and monitor disease trends. Assessment information will be utilized to implement appropriate interventions to reduce oral disease and injuries.

Goals, Strategies & Recommendations:

Priority Recommendations

1. The Department of Health and Social Services and Alaska Dental Action Coalition will educate legislators on the continued need for preventative and enhanced restorative dental benefits for adults enrolled in Medicaid in the 2009 legislative session so that the enhanced dental services are reauthorized (current dental services for adults enrolled in Medicaid sunset on June 30, 2009).

Justification:

The enhanced dental services for adults enrolled in Medicaid offers opportunities to:

- Reduce emergent dental treatment needs through earlier prevention and intervention;
- Decrease Medicaid costs associated with emergent procedures;
- Increase beneficiary employability or employment advancement with treatment of decayed or missing teeth;
- Provide denture services to low-income adults and seniors that have lost most or all of their natural teeth; and
- Improve overall health (e.g., relationship of oral disease with other chronic diseases and adverse birth outcomes).

2. By April 2008, the Alaska Legislature will pass legislation, as currently reflected in HB136 for the 2008 legislative session, to:

- allow dental hygienists with an endorsement to place restorations under the direct supervision of a dentist;
- to provide local anesthetic agents under direct, indirect or general supervision; and
- allow experienced dental hygienists to practice under a collaborative agreement with a dentist that would allow services to be provided without the dentist present and in settings outside the dental office.

Justification:

- Use of appropriately trained dental hygienists to place restorations offers increased efficiency in the delivery of dental care which can constrain dental costs and increase access to dental services; and
- Dental hygienists working under collaborative agreements could expand access to dental preventive services in schools, assisted living settings, nursing homes and other settings with underserved populations.

3. By FY2010, the Department of Health and Social Services should increase dental Medicaid reimbursement.

Justification:

- Dental provider participation, especially by private dentists, is limited or absent in a number of communities across the state;
- Only about 1 in 3 children enrolled in Medicaid receive a dental visit during a given year and about 1 in 5 receive a dental treatment service;
- Dental reimbursement for preventive and restorative dental procedures has not been increased since FY1999 based on 1997 Medicaid claims profiles; and
- Low reimbursement is a significant factor for dental providers to discontinue participation in the Medicaid/ Denali KidCare Program – continuing reimbursement at existing levels will lead to even more significant dental access problems in the future.

4. By 2010, the Department of Health and Social Services, Division of Health Care Services will implement a method to track Medicaid non-kept appointments in the Medicaid Management Information System.

Justification:

- Non-kept dental appointments is another common reason that dentists indicate they don't participate or limit participation in Medicaid;
- Dental appointments are built on a surgical model of care - typically 45 minutes to one hour blocked out for each appointment; and
- Tracking non-kept appointments would assist in identification of the extent of the problem and offer the potential for development of case management to address Medicaid recipients that repeatedly miss dental appointments.

5. By 2010, the Department of Health and Social Services, Division of Health Care Services will implement reimbursement for non-dental providers (e.g., physicians and nurses) for fluoride varnish application on young children.

Justification:

- Children enrolled in Medicaid are an at-risk group for development of early childhood caries;
- Caries in primary teeth can rapidly progress through tooth enamel and result in treatment of the pulp (if affected), placement of stainless steel or resin crowns and/or extractions;
- Fluoride varnish applications have been shown to be effective at reducing dental decay (including early childhood caries);
- Typically children under the age of three are not seen by dentists but are seen by medical providers for well-child exams;
- Application and reimbursement for fluoride varnish application could prevent dental decay and/or arrest early decay in tooth enamel caries for young children enrolled in Medicaid.

6. By 2010, the State of Alaska will implement loan forgiveness and other methods that assist both recruitment and retention of dentists and dental hygienists practicing in dental health professional shortage areas.

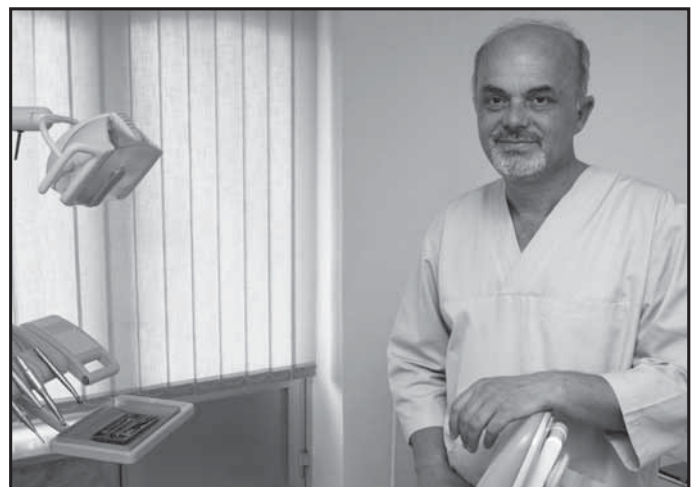
Justification:

- In the past decade Alaska has seen an increase in Community Health Center dental programs, however most programs face difficulty recruiting and retaining dental providers;
- Tribal health programs face ongoing difficulties with recruitment and retention of dental providers providing services in rural/remote areas of the state – these programs have access to Indian Health Service loan forgiveness programs but the program is limited in effects on retention as many dentists leave once they have completed the three-year commitment in this program;
- Rising dental education costs result in increased debt for dental graduates which can limit decisions to practice in rural areas and in programs treating underserved populations; and
- Private dental practices are concentrated in urban areas of the state – dentist retirements over the next decade could result in dental access issues in rural areas of the state.

7. By 2011, the Department of Health and Social Services, Division of Health Care Services and Division of Public Health should develop a training program or integrate existing training programs (e.g., American Academy of Pediatric training materials) for enhanced dental screenings by non-dental providers and provide for Medicaid reimbursement for these services.

Justification:

- Children under the age of three typically lack routine dental access (or a “dental home”), however most children this age see medical providers for immunizations and/or well child exams;
- Children enrolled in Medicaid/Denali KidCare are an at-risk group for development of dental decay (including early childhood caries);
- There currently is a lack of sufficient dental capacity in the state to meet dental referrals for every young child enrolled in Medicaid/Denali KidCare;
- Non-dental providers, if trained to recognize early dental decay and urgent treatment needs, can utilize fluoride varnish application and conduct triage for referral of children with more urgent needs for dental services;
- Private dental providers are more likely to work with health providers in accepting children referred for urgent treatment needs than an approach of referring every child screened by the medical providers for a dental exam and/or treatment; and
- Medical providers are more likely to do the dental screening and triage if they are adequately trained and reimbursed for the screening services.



8. In efforts to support optimal fluoridation of public water systems, the Alaska Native Tribal Health Consortium and/or the Alaska Rural Water Association will offer fluoridation training for water operators at least once per year in 2008 and annually thereafter; the Oral Health Program will maintain collection of fluoridation test results and entry into the Centers for Disease Control and Preventions "Water Fluoridation Reporting System (WFRS); and the Alaska Dental Action Coalition, Fluoride Committee will continue to recognize water operators and water systems for annual optimal water fluoridation.

Justification:

- Adjustment of fluoride to optimal levels in public water systems has been shown as an effective population-based approach to reduce dental decay;
- Water operators are key stakeholders in successful implementation of community water fluoridation;
- Water operator training on fluoridation and recognition of water operators and water systems that achieve optimal fluoridation reinforced on an annual basis encourage maintenance of fluoride at optimal levels in fluoridating water systems.



9. By 2010, the Alaska Dental Action Coalition and Oral Health Program, in conjunction with Community Health Center dental programs, will pilot a dental sealant program in an urban elementary school with fifty percent or more children eligible for the free or reduced school lunch programs. The pilot would be to identify and resolve critical factors with implementation of school-based or school-linked dental sealant programs in the state so the pilot can be replicated in other schools with significant percentages of children from low-income families.

Justification:

National estimates indicate as much as ninety percent of all dental decay in permanent teeth occur on tooth surfaces with pits and fissures^{1,2};

- The teeth at highest risk for pit and fissure decay are the permanent first molars (which erupt at about age 6) and permanent second molars (which erupt at about age 12)¹;
- Dental sealants applied to the pits and fissures on the chewing surfaces of molars provide a physical barrier to bacterial plaque and food;
- When sealants are placed soon after molars erupt, they are almost 100% effective at reducing this type of dental decay so long as they are properly placed and the sealants are retained¹; and
- School-based and school-linked dental sealant programs target schools with high percentages of low-income children that typically lack access to private dental care. (Note: The Children's Health Act encourages development of sealant programs in rural schools with a household median income of 235% of federal poverty level or less and urban schools with fifty percent or more of students eligible for the free or reduced-cost lunch programs.)

10. Continue to support and expand preventative efforts to improve the oral health of all Alaskans through:

- Education of parents, caregivers and individuals on the personal role of preventing dental disease through proper feeding practices of infants, diet and oral hygiene (e.g., brushing with fluoridated toothpaste and flossing);
- Encouraging schools to adopt policies to restrict soda and sugared beverages and/or promote use of low-fat milk and water as healthier drink choices;
- Preventing and/or decreasing the use of tobacco products;
- Promoting use of car seats and/or safety restraints in automobiles and mouth-guard use when participating in contact sports to reduce oral injuries; and
- Awareness of the role of oral health as it relates to general health (e.g., cardiovascular disease and diabetes).

Justification:

- Most oral disease is highly preventable with proper diet, oral hygiene, access to fluoride and dental sealants and avoiding tobacco products;
- Education efforts seek to inform individuals, increase public awareness and ultimately change behavior to improve and/or maintain oral health.



11. Continue development and maintenance of Alaska's oral health surveillance system through:

- Developing resources and/or strategies for sustainability for dental assessments for information on dental decay and sealant utilization every five years (to include adolescents in future dental assessments);
- Develop strategies to collect information on dental decay in adults and seniors, including adults and seniors in long-term care settings, beyond self-reported data on missing teeth;
- Collect information on treatment of early childhood caries in hospital and ambulatory surgical settings;
- Collect information on hospital emergency room use for dental related health issues;
- Develop strategies to collect information on dental decay and/or periodontal disease in children with special health care needs and adults with disabilities;
- Develop strategies to collect information on periodontal disease in adults and seniors;
- Collaborate with the Section of Chronic Disease Prevention and Health Promotion in coordination of Behavioral Risk Factor Surveillance System (BRFSS) questions and analysis of BRFSS data for baseline and trends on dental visits by Alaskan adults with diabetes and/or heart disease, and with inclusion of a question on oral cancer exams in BRFSS every two years to establish a baseline and monitor trends in adults reporting tobacco use and/or regular alcohol use and all adults aged 40 years and older.

Justification:

- Individuals have difficulty reporting specific information on dental decay and sealant utilization;
- The 2004 and 2005 dental assessments used in this plan were funded by federal grants – there is not a sustainable funding plan for these dental assessments beyond the dental assessment project ending in December of 2007;
- Data is limited to reporting missing teeth due to caries or periodontal disease for adults and seniors – this information is not adequate to evaluate implementation of interventions with these population groups;
- Children with special health care needs and adults with disabilities are at-risk groups for dental disease;
- Individuals with diabetes are at-risk for development of periodontal disease and untreated periodontal disease can interfere with management of diabetes; and
- Information on oral cancer examination can be utilized to raise public and provider awareness on risks for oral cancer and increase involvement of dental offices in counseling on alcohol and tobacco; and
- Increased oral cancer exams on adults and seniors should increase the percentage of oropharyngeal cancer detected at the early, localized stage of cancer.

Oral Health Action Plan:

Acronyms:

AAP – American Academy of Pediatrics
 ADA – American Dental Association
 ADAC – Alaska Dental Action Coalition
 ADHA – American Dental Hygienists' Association
 ADS – Alaska Dental Society
 AMHTA – Alaska Mental Health Trust Authority
 ANMC – Alaska Native Medical Center
 ANTHC – Alaska Native Tribal Health Consortium
 APCA – Alaska Primary Care Association
 APCO – Alaska Primary Care Office
 ARWA – Alaska Rural Water Association
 ASDHA – Alaska State Dental Hygienists' Association
 ATCA – Alaska Tobacco Control Alliance
 BRFS – Behavioral Risk Factor Surveillance System
 BSS – Basic Screening Survey (visual dental assessments)
 BVS – Bureau of Vital Statistics
 CDC – U.S. Centers for Disease Control and Prevention
 CDPHP – Section of Chronic Disease Prevention and Health Promotion
 CHC – Community Health Center dental programs
 DEED – Department of Education and Early Development
 DEED – Department of Education and Early Development
 DHCS – Division of Health Care Services (Medicaid Program)
 DHSS – Department of Health and Social Services
 DPH – Division of Public Health
 ECCS – Early Childhood Comprehensive Systems
 EPSDT – Early & Periodic Screening, Diagnosis and Treatment
 MCH – Section of Women's, Children's and Family Health
 OHP – Oral Health Program
 PCC – Primary Care Council
 PHN – State Public Health Nursing
 PRAMS – Pregnancy Risk Assessment Monitoring System
 SCF – Southcentral Foundation
 UAA – University of Alaska Anchorage, Dental Hygiene Program
 WIC – Women, Infant and Children Program (Nutrition Services)
 WFRS – Water Fluoridation Reporting System
 YRBS – Youth Risk Behavior Survey

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/Evaluation	Completion Date/Frequency
<p>Goal 1: Support educational activities to increase awareness on oral health and implications for general health including information on preventing oral disease and injuries, early intervention to reduce the health consequences of disease and maintaining oral health across the lifespan.</p>	<p>Assist other health programs with oral health education efforts including information on:</p> <ul style="list-style-type: none"> Importance of maternal oral health and pregnancy and/or early childhood caries Other early childhood caries preventions (nutrition, feeding practices and fluorides) Community water fluoridation and fluorides Oral hygiene (brushing with fluoridated toothpaste and flossing) Nutrition – foods and beverages promoting dental decay Early and periodic dental visits Dental sealants Injury Prevention: Seat belt, car seat and mouth-guard use 	ADAC & OHP	Program materials/Changes in knowledge and awareness – assess use of program and DHSS surveys for evaluation.	Ongoing

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 1 (continued):	<p>Tobacco avoidance</p> <ul style="list-style-type: none"> Importance of oral health with general health (links with chronic disease) Oral cancer exams <p>Encourage incorporation of oral health information with school health curriculums and health education.</p> <p>Develop or identify education materials for parental/caregiver recognition of early enamel caries, "white spot lesions", in relation to early childhood caries and prevention efforts.</p> <p>Develop or identify education materials for parental/caregiver use of topical fluoride varnish for early childhood caries prevention and/or use with children with special health care needs and adults with disabilities.</p> <p>Develop an oral health section for Parent Navigation Manual for parents/caregivers of children with special health care needs.</p> <p>Collaborate with Maternal Child Health programs and Chronic Disease Prevention & Health Promotion Programs to increase awareness of risks and/or complications between oral disease and adverse birth outcomes, cardiovascular disease and diabetes.</p>	<p>DEED, school districts, CDPHP & OHP</p> <p>ADAC</p> <p>ADAC</p> <p>OHP & Stone Soup Group</p> <p>MCH, CDPHP & OHP</p>	<p>School district health curriculum/Track changes.</p> <p>Training program and/or educational materials/Change in knowledge and awareness.</p> <p>Training program and/or educational materials/Change in knowledge and awareness.</p> <p>Project completed/Key informant interviews with parents on usefulness, additions and/or clarifications – changes in knowledge and awareness.</p> <p>Integration of educational messages for routine dental care and/or management of periodontal disease in MCH & CDPHP program materials and plans; and/or joint public information campaigns. Document changes in public/target population awareness and/or access to dental care (BRFSS).</p>	<p>As developed</p> <p>As developed</p> <p>As developed</p> <p>2008</p> <p>Ongoing</p> <p>2009/2010</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 1 (continued):	<p>Explore bringing Smithsonian oral health exhibit to Alaska museums as an educational activity for Children's Dental Health month (February).</p> <p>Also see Goal 7 - Partnerships</p>	ADAC, ADS, ASDHA & OHP	Project completed, participating site(s) and/or schools.	2009/2010
Goal 2: Expand and/or improve programs and interventions in schools and communities to reduce the oral disease burden in Alaska.	<p>Support community water fluoridation with optimal levels of fluoride by:</p> <p>Providing training to water operators;</p> <p>Recognition of water operators and water systems with annual optimal fluoridation;</p> <p>Providing information and support to water operators and/or communities requesting support with implementation or maintenance of community water fluoridation programs.</p> <p>Report fluoridation status of community water systems to health providers – allow for providers to determine appropriateness of use of fluoride supplements to children.</p> <p>Support development of school-based and/or school-linked dental sealant programs.</p> <p>Support development of school-based fluoride rinse or fluoride varnish programs in communities without community water fluoridation.</p>	<p>ANTHC & ARWA</p> <p>ADAC & ADS</p> <p>ANTHC, ARWA, ADAC and OHP</p> <p>OHP</p> <p>ANTHC, ADAC and OHP</p> <p>ANTHC & OHP</p>	<p>Training programs provided/ Training assessment results</p> <p>ADAC Awards/Track optimal fluoridating systems annually</p> <p>ADAC Fluoride Committee reports/Changes in fluoridating community water systems and optimal fluoridation.</p> <p>WFRS Reports/Internal controls with review and entry of water operator report data.</p> <p>Inventory of Tribal Dental Programs with sealant activities – sealant program pilot in an urban school developed/Changes in sealant utilization in populations at-risk for dental decay.</p> <p>Information requests from schools and communities/Programs following suggested protocols.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing</p> <p>Ongoing – pilot development assessment in 2010</p> <p>As developed</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 2 continued:	Explore development of use of chlorhexidine rinse and/or xylitol gum use in pregnant women with active dental decay and limited access to dental care.	ANTHC, ADAC & MCH	Interventions utilized in Tribal/CHC programs.	As developed
Goal 3: Develop and maintain a statewide oral health surveillance system to assess needs, identify disparities and monitor trends in the oral health of Alaskans.	Proportion of children and adolescents with dental decay in primary and/or permanent teeth.	OHP	BSS./Participation rate and screener calibration	2007, 2010 & every 5 years
	Proportion of children and adolescents with untreated dental decay in primary and/or permanent teeth.	OHP	BSS./Participation rate and screener calibration	2007, 2010 & every 5 years
	Proportion of adults who have never had a permanent tooth extracted because of dental decay or periodontal disease.	BRFSS Coordinator & OHP	BRFSS/Response rate	Even numbered years
	Proportion of older adults (age 65 years and above) who have had all of their natural teeth extracted.	BRFSS Coordinator & OHP	BRFSS/Response rate	Even numbered years
	Investigate options to measure the prevalence of periodontal disease in adults.	OHP	Possible use of self-reported information in BRFSS with questions being examined by a CDC work group.	As conducted
	Oropharyngeal cancer death rate	BVS & CDPHP	Vital Statistics/Internal quality controls	Annual
	Proportion of oropharyngeal cancer detected at the earliest stage.	CDPHP	Cancer Registry/Internal quality controls	Annual
	Proportion of adults, age 40 years and older, with an oral cancer exam in the past 12 months.	BRFSS Coordinator, CDPHP & OHP	BRFSS./Response rate	2008 and every 2 years thereafter
	Proportion of children and adolescents who have received dental sealants on permanent molar teeth.	OHP	BSS./Participation rate and screener calibration	2007, 2010 & every 5 years

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 3 continued:	<p>Proportion of population on community water systems with optimally fluoridated water.</p> <p>Proportion of population with a dental visit in the past 12 months</p> <p>Children (2 years and older)</p> <p>Pregnant Women</p> <p>All adults (18 years and older)</p> <p>Adults with diabetes</p> <p>Adults in long-term care</p> <p>Proportion of children and adolescents from low-income families with a preventive dental visit in the past 12 months.</p> <p>Community based health centers and local health departments with an oral health component.</p> <p>Prevalence of oral clefts.</p> <p>Explore strategies to measure the proportion of adults and seniors with untreated dental decay.</p> <p>Explore strategies to measure the annual number of children's dental cases done in hospital and ambulatory surgery settings for treatment of early childhood caries.</p> <p>Explore strategies to measure hospital emergency room use for dental related health issues.</p>	<p>OHP & ANTHC</p> <p>DHCS, MCH & OHP</p> <p>MCH</p> <p>BRFSS Coordinator & OHP</p> <p>BRFSS Coordinator, CDPHP & OHP</p> <p>DPH & OHP</p> <p>DHCS & OHP</p> <p>SPCO, APCA & OHP</p> <p>MCH & OHP</p> <p>OHP</p> <p>PCC, APCO, DHCS & OHP</p> <p>PCC, APCO & OHP</p>	<p>WFRS/Internal monitoring & fluoride testing</p> <p>Medicaid is the only source at this time</p> <p>PRAMS/ Response rate</p> <p>BRFSS/ Response rate</p> <p>Explore use of BRFSS</p> <p>Explore use of Medicaid certification process</p> <p>Medicaid data/Internal controls on claims processing</p> <p>Funded CHC with an oral health component</p> <p>Birth Defects Registry/Internal controls</p> <p>Explore screening alternatives</p> <p>Explore use of a hospital survey and/or Medicaid claims</p> <p>Explore use of a hospital survey</p>	<p>Annual</p> <p>Annual</p> <p>Annual</p> <p>Even numbered years As conducted</p> <p>As conducted</p> <p>Annual</p> <p>Annual</p> <p>Annual</p> <p>As conducted</p> <p>As conducted</p> <p>As conducted</p> <p>As conducted</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 3 continued:	Explore strategies to measure dental decay, untreated dental decay and/or periodontal disease for children with special health care needs and adults with disabilities.	OHP	Explore screening alternatives	As conducted
Goal 4: Increase the sustainability of the statewide oral health surveillance system.	Develop resources and/or collaboration with other DHSS programs for periodic dental screenings (2010 and every five years thereafter). Explore use of telemedicine equipment for collection of dental indicator data in rural and remote areas of the state. Explore use of dental hygienists, PHN's and/or use of Head Start performance data to reduce costs of dental assessments.	DHSS, MCH, CDPHP & OHP ANTHC & OHP	Explore funding alternatives and/or integration with MCH Block Grant needs assessment and/or Obesity Prevention activities. Pilot test use of images from use of intra-oral cameras for use with dental assessments.	Ongoing Ongoing
Goal 5: Provide information to policymakers, elected officials and the public to increase awareness and knowledge on oral disease and injury in Alaska, stimulate policy development and implement interventions to reduce oral disease and injuries – and reduce disparities.	Explore use of Head Start performance data to reduce costs of dental assessments. Distribute the state oral health plan to key stakeholders. Develop a short version of the plan and/or fact sheet(s) with major issues and recommendations. Include oral health status information in other DHSS plans, legislative briefings and budget documents. Distribute data from Alaska oral disease burden document. Consider an oral health summit meeting to highlight oral health issues and discuss policies which could improve the oral health of Alaskans.	UAA, PHN, Head Start & OHP DHSS, ADAC & OHP DHSS, ADAC & OHP DHSS, CDPHP, MCH and OHP OHP ADAC	Explore use of other screeners besides dentists for dental assessments. Track distribution and requests for the plan. Utilize DHSS communication staff to develop plan summary and/or fact sheets. Track use of oral health status information in reports and briefings. Burden document completed/Key informant interviews for knowledge and awareness of information. Explore feasibility of a meeting to involve key stakeholder groups and policymakers to discuss oral health issues and policy development to address these issues.	As developed 2008 2008 Ongoing 2008 and annually As developed

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 5 continued:	Support inclusion of dental coverage within expansions to child health coverage. Maintain core oral health infrastructure in DHSS.	ADAC, DHSS & OHP DHSS	Monitor federal and state legislation/Benefit plans Explore funding for sustainability of the OHP.	As developed Ongoing
Goal 6: Increase access to dental care services – priority focus on populations at-risk for oral disease or complications of oral disease.	Continue enhanced dental services for adults enrolled in Medicaid (June 30, 2009 sunset) Address major issues with private dental participation in Medicaid by addressing: Medicaid reimbursement Non-kept appointments Liability issues in the Medicaid agreement Develop capacity to change EPSDT guidance to dental referral by age one. Support legislation to provide for dental hygiene practice under general supervision in underserved settings through collaboration agreements with dentists. Support development of CHC programs in underserved areas of Alaska. Support development of preventive dental services in schools with significant numbers of children from low-income families.	DHSS & ADAC ADS, DHSS, DHCS & OHP DHCS & OHP ASDHA & ADAC APCA, SPCO, PCC and local organizations ADAC, APCA, CHC, PCC and OHP	Services reauthorized by the legislature/ADAC review of education strategies. Medicaid policy changes/Increased dental participation in Medicaid. Providers seeing Medicaid children <2 years/Medicaid dental utilization reports. Changes in the dental practice statutes and regulations/Number of dental hygienists utilizing collaborative agreements to increase access to preventive services. CHC funding with dental components/CHC financial reports and changes in Medicaid dental access. Inventory schools with dental sealant programs/Assess sealant rates in at-risk populations.	2008-2009 2009 & annually thereafter 2008 & annually thereafter 2008 – annual assessments thereafter Ongoing Ongoing

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 6 continued:	<p>Encourage dental hygiene student exposure to treatment of children with special health care needs and adults with disabilities.</p> <p>Explore use of case management fees in health coverage plans to augment dental reimbursement for the additional time involved in providing dental treatment to children with special health care needs (CSHCN) in the dental office setting.</p> <p>Assess dental access to seniors living in assisted-living and long-term care settings.</p>	<p>ANTHC, SCF & UAA</p> <p>ADAC, MCH, DHCS and OHP</p> <p>DPH & OHP</p>	<p>Dental hygiene student participation in SCF clinics/Changes in knowledge and awareness of students.</p> <p>Case management fees allowed in health coverage programs/Changes in access for CSHCN.</p> <p>Report on dental access in assisted-living and long-term care settings.</p>	<p>Ongoing</p> <p>2010 – annual assessments thereafter</p> <p>2010</p>
Goal 7: Increase partnerships with other health programs to encourage integration of oral health and collaboration on strategies to improve overall health.	<p>Assist programs serving pregnant women and children with oral health education efforts – nutrition, oral hygiene, fluorides and/or importance of mother's oral health related to pregnancy and risks of early childhood caries.</p> <p>Support efforts to reduce soda and sugared beverage consumption by children and adolescents.</p> <p>Assist with provision of training on "Cavity Free Kids" curriculum to Head Start and/or preschool programs.</p> <p>Explore education and/or training activities to increase standardization of Head Start "Program Information Report (PIR)" dental information and feasibility for integration into the oral health surveillance system.</p>	<p>MCH, ECCS, WIC, Head Start, PHIN, ADAC & OHP</p> <p>ANMC, ANTHC, ADAC, WIC, CDPHP, school districts & OHP</p> <p>Head Start & OHP</p> <p>Head Start & OHP</p>	<p>Program materials/Changes in knowledge and awareness – explore use of program/DHSS surveys.</p> <p>Program materials and initiatives/Changes in school district policies.</p> <p>Trainings/Implementation and/or maintenance of curriculum use in Head Start Programs.</p> <p>Head Start PIR data/Changes in knowledge regarding standards for data entry.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>Annually</p> <p>2009</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
<p>Goal 7 continued:</p>	<p>Integrate information on the importance of oral health in plans, publications and educational materials from Cardiovascular, Diabetes, Obesity and other Chronic Disease Programs.</p> <p>Leverage resources by sharing capacity for surveillance, data analysis and evaluation program capacity.</p> <p>Collaborate with the Cancer Control & Prevention Program to: Support addition of a question to BRFSS on oral cancer exams; and</p> <p>Increase adult oral cancer exams (physicians and/or dentists)</p> <p>Support and participate in tobacco control and cessation activities by:</p> <p>Supporting tax increases on tobacco products;</p> <p>Integrating oral health issues with other health issues on reasons to avoid tobacco products;</p> <p>Implement reporting requirements on smokeless tobacco in the Tobacco Excise Tax Program.</p> <p>Support efforts to increase referrals for tobacco cessation as a result of dentists and/or dental hygienists discussing tobacco use with patients.</p>	<p>DPH, CDPHP & OHP</p> <p>CDPHP, MCH & OHP</p> <p>BRFSS Coordinator, CDPHP & OHP</p> <p>CDPHP & OHP</p> <p>ATCA, DHSS, CDPHP & OHP</p> <p>ATCA, CDPHP & OHP</p> <p>Dept. of Revenue</p> <p>ATCA, CDPHP, ADS & OHP</p>	<p>Program plans and educational materials/Changes in knowledge and awareness and/or access to dental care – explore use of program/DHSS surveys.</p> <p>Shared staffing and/or agreements /Increased program capacity.</p> <p>BRFSS/Response rates</p> <p>Inventory trainings/Changes in knowledge and competencies.</p> <p>Legislation/Decreased consumption of tobacco products</p> <p>Program plans and educational materials/Changes in knowledge and awareness.</p> <p>Reporting implemented/Monitor trends in consumption.</p> <p>Program materials/Changes in tobacco cessation referrals – track source that initiated the referral.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>2008</p> <p>2010</p> <p>As developed</p> <p>As developed</p> <p>2009</p> <p>2009 – and annually thereafter</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 7 continued:	<p>Encourage and support efforts to increase collaboration between dental and medical providers in treatment of children with special health care needs and adults with disabilities.</p> <p>Increase knowledge and awareness on the importance of oral health with general health in the primary care community.</p>	<p>MCH, AMHTA, ADAC and OHP</p> <p>DHSS, MCH, SPCO, APCA, PCC, CHC & OHP</p>	<p>Presentations and training programs/Changes in knowledge, awareness and medical/dental practice.</p> <p>Presentations, trainings and program materials/Changes in knowledge, awareness and skills/competencies.</p>	<p>As developed</p> <p>As developed</p>
Goal 8: Develop recruitment and retention programs for dental professionals to practice in dental health professional shortage areas of Alaska.	<p>Develop state-supported recruitment funding and/or loan repayment for dental professionals to accept practice opportunities in dental health professional shortage areas.</p> <p>Continue to support University of Alaska Dental Hygiene programs – supporting Alaskan student education as a means to develop oral health workforce and workforce recruitment/retention.</p>	<p>APCA, ANTHC, PCC, SPCO & OHP</p> <p>UAA, ADAC, APCA, APCO and OHP</p>	<p>Programs implemented/Document changes in recruitment and retention of dental professionals.</p> <p>Document graduate practice location(s).</p>	<p>2008 and ongoing</p> <p>Ongoing</p>
Goal 9: Support initiatives to expand the dental workforce to address dental access of at-risk populations.	<p>Support efforts to increase the number of pediatric dentists in Alaska - ANMC/SCF Pediatric Residency Program</p> <p>Support development of general practice residencies which offer additional training on dental treatment of children with special health care needs and adults with disabilities.</p> <p>Provide Medicaid reimbursement for topical fluoride varnish procedures by physicians, physician assistants, nurses and other providers doing EPSDT well child exams.</p> <p>Develop training and/or encourage use of training programs (e.g., AAP) on dental screening/triage by medical providers.</p>	<p>ANTHC & OHP</p> <p>ANTHC & ADAC</p> <p>DHCS & OHP</p> <p>AAP, DHCS & OHP</p>	<p>Pediatric dentists with current, active Alaska licenses/increased dental access for young children in Alaska.</p> <p>General practice residency opportunities available in Alaska.</p> <p>Reimbursement implemented/ Increase in topical fluoride utilization in Medicaid (EPSDT).</p> <p>Training developed/Changes in knowledge, skills and awareness.</p>	<p>Ongoing</p> <p>Ongoing</p> <p>2010 and ongoing</p> <p>2011 and ongoing</p>

Goal	Strategy	Responsible Organization(s)	Monitoring Mechanism/ Evaluation	Completion Date/Frequency
Goal 9 continued:	Support new provider models, with appropriate quality assurance, that expand access to educations, preventive services and/or dental treatment services. (e.g., Tribal Dental Health Aide/Therapist Program and review of proposed models for Community Oral Health Practitioners and Dental Hygienist Practitioners).	ADA, ADHA, ANTHC & ADAC	Programs implemented/Document changes in access to preventive and/or restorative dental services, client acceptance/satisfaction, decreased untreated decay (intermediate outcome), reduce dental decay (long-term outcome).	Ongoing
<u>Goal 10</u> : Support dental provider training to address oral health issues.	Support training on recognition of abuse and neglect and reporting requirements – Prevent Abuse & Neglect through Dental Awareness (PANDA) training. Support training opportunities for conducting oral cancer exams with dental and medical health care providers.	UAA, ADS & ADAC ADAC, ADS, ASDHA, APCA, APCO, PCC & OHP	Document training/changes in knowledge and awareness of participants; monitor changes in dental reporting of abuse & neglect. Document training/changes in knowledge and skills of participants; monitor changes in adults reporting oral cancer exams (BRFSS); monitor changes in early detection of oropharyngeal cancer.	Ongoing 2009 and ongoing
<u>Goal 11</u> : Assure implementation and use of the state oral health plan – Evaluation of the planning process and plan implementation.	Support training opportunities for general dentists in provision of care in the dental office for exams and treatment for young children (<age 3 years), children with special health care needs and/or adults with disabilities. Evaluate planning process for development of the state oral health plan. Evaluate implementation of the plan, including use by stakeholders in other organization plans.	UAA, SCF, ADAC, ADS, ASDHA, MCH, AMHTA & OHP ADAC & Stakeholders ADAC, Stakeholders and OHP	Document training/changes in knowledge and/or skills of participants; monitor changes in dental access for the population groups. Key informant interviews of ADAC members and stakeholders. Annual review of plan and implementation progress: ADAC survey and key informant interviews.	2009 and ongoing 2008 Annually
<u>Goal 12</u> : Encourage use of CDC infection control guidelines in training programs on infection control in Alaska.	Assess use of CDC infection control guidelines in training programs on infection control in Alaska.	UAA, ANTHC, ASDHA & OHP	CDC infection control guidelines utilized in training/Training program documentation of knowledge and awareness of infection control issues in those taking training.	Ongoing

Appendix I – References for Table 1:

Table 1, *Healthy People 2010* Oral Health Indicators, United States and Alaska

Healthy People 2010 Objective	U.S. Source for Data	Alaska Source for Data
21-1: Dental caries experience Young children, ages 2-4 Children, ages 6-8 Adolescents, age 15	1988/1994 NHANES " " " " " "	DNA 2004 BSS DNA
21-2: Untreated caries Young children, ages 2-4 Children, ages 6-8 Adolescents, age 15 Adults, age 35-44	1988/1994 NHANES " " " " " " " " "	DNA 2004 BSS DNA DNA
21-3: Adults with no tooth loss, ages 35-44	1988/1994 NHANES	BRFSS (2006)
21-4: Edentulous (toothless) older adults, ages 65-74	NHIS (1997)	BRFSS (2006)
21-5: Periodontal diseases, adults ages 35-44 Gingivitis Destructive periodontal disease	1988/1994 NHANES " " " " " "	DNA DNA
3-6: Oropharyngeal cancer mortality rates (per 100,000 persons)	National Vital Statistics System (1998 age adjusted to 2000 standard population)	Alaska Bureau of Vital Statistics – 2001
21-6: Oropharyngeal cancer detected at the earliest stage	SEER	Alaska Cancer Registry, 2001
21-7: Oral cancer exam in the past 12 months, age 40+	20%	DNA
21-8: Dental sealants Children, age 8 (1st molars) Adolescents, age 15 (1st and 2nd molars)	1988/1994 NHANES " " " " " "	2004 BSS DNA
21-9: Proportion of population with optimally fluoridated water of population served by community water systems	CDC Fluoridation Census	WFRS (2006)
21-10: Dental visit within past 12 months Children, age 2+ Adults, ages 18+	MEPS (1996) " "	DNA BRFSS (2006)
5-15: Annual dental exam for persons with diabetes, aged 2 and older	NHIS (1996)	DNA
21-11: Dental visit in the past 12 months Adults in long-term care	National Nursing Home Survey (1997)	DNA
21-12: Preventive dental care in the past 12 months Low-income children and adolescents, age 0-18	MEPS (1996)	Medicaid/SCHIP CMS 416 Report (FFY2005)
21-13: School-based health centers with oral health component, K-12	DNA	DNA
21-14: Community based health centers and local health departments with oral health component	HRSA BPHC (1997)	DNA
21-15: States with system for recording and referring infants with cleft lip and palate	ASTDD State Oral Health Program Synopsis Survey (1997)	Alaska Birth Defects Registry (2000-2002)
21-16: States with an oral health surveillance system	DNA	Alaska Oral Health Program (FY2006)
21-17: State and local dental programs that serve 250,000 or more with a dental health program directed by a dental professional with public health training	DNA	Alaska Oral Health Program (FY2006)

References and Notes for Appendix I

BRFSS – Behavioral Risk Factor Surveillance System
BSS – Basic Screening Survey dental assessments conducted by the Alaska Oral Health Program in 2004 and 2005
CMS – U.S. Department of Health and Human Services, Center for Medicare and Medicaid Services (federal Medicaid agency)
DNA – Data Not Available
HRSA BPHC – U.S. Health Resources and Services Administration, Bureau of Primary Health Care
MEPS – Medical Expenditure Panel Survey
NHANES – National Health and Nutrition Examination Survey
NHIS – National Health Interview Survey
SEER – Surveillance, Epidemiology, and End Results; National Institutes of Health, National Cancer Institute
WFRS – Water Fluoridation Reporting System – Alaska data is entered by the Alaska Oral Health Program to the CDC maintained system.

Notes:

- (1) National data for NHANES is for 6-8 year old children; Alaska data is for third-grade children
- (2) Objective 21-7: Baseline information will be obtained on this objective through an oral cancer exam question on the 2008 Alaska Behavioral Risk Factor Surveillance System (BRFSS)
- (3) National data for 21-12 (preventive dental care for low-income children and adolescents) is from the Medical Expenditure Panel Survey (MEPS); Alaska data is from Medicaid/SCHIP dental utilization reports (CMS416 report)
- (4) Objective 21-13: Most village schools in Alaska have Tribal school-based or school-linked medical and dental programs – this infrastructure is somewhat different from school-based health centers discussed in Healthy People 2010. The ASTDD State Oral Health Program Synopsis Survey is being utilized to collect national baseline data and trends.
- (5) Objective 21-14: The ASTDD State Oral Health Program Synopsis Survey is being utilized to collect national baseline data and trends. Municipality of Anchorage offers some support to the Anchorage Neighborhood Health Center which has a dental program and the North Slope Borough has dental services; and community health centers have included or expanded into dental services. The State Oral Health Program is working with the Alaska Primary Care Office to develop an Alaska baseline indicator, however it is not available at the time of publication of this plan.
- (6) Objective 21-17: The ASTDD State Oral Health Program Synopsis Survey is being utilized to collect national baseline data and trends. With establishment of the State Oral Health Program and Dental Officer position, the Municipality of Anchorage is the only other jurisdiction serving 250,000 or more in population that does not currently have an oral health program directed by a dental professional with public health training.

Appendix II

Alaska Dental Assessments – Basic Screening Survey

The Alaska Oral Health Program, through a professional services contract, conducted dental assessments on Alaskan children in 2004 and 2005 utilizing the Basic Screening Survey (BSS) protocol developed by the Association of State and Territorial Dental Directors (ASTDD) and U.S. Centers for Disease Control and Prevention (CDC). The BSS utilizes a visual assessment of children's teeth without the use of films or a dental explorer (dental pick). The BSS assesses caries experience (treated or untreated tooth decay); untreated caries (untreated tooth decay); and dental sealant utilization (at least one dental sealant on at least one permanent first molar) for third-grade children. The BSS assessment includes caries experience, untreated caries and caries of primary front teeth (an indicator of early childhood caries).

The Alaska third-grade dental assessment data was collected in 50 elementary schools and 1,206 third-grade children across the state to provide statewide and regional baselines. The regions used in the assessments were the five regions used with the Behavioral Risk Factor Surveillance System (Anchorage & Vicinity; Gulf Coast; Southeast; Rural Alaska; and Fairbanks & Vicinity). Assessments were performed September – December 2004.

Kindergarten dental assessments were conducted in 14 schools with on 463 kindergarten children in the fall/winter of 2005. The sample was only to collect a statewide baseline data. The sample framework used did not provide regional baseline data.

Additionally, in the fall/winter of 2005 dental assessments were conducted on 571 children enrolled in Head Start. The age range of children in the sample was 35-71 months. Children enrolled in Head Start are at higher risk for development of dental decay than the general population of children in this age range. The higher risk for children enrolled in Head Start is primarily to being from lower socioeconomic status. Utilization of Head Start Programs for the dental assessments is a convenience sample due to the logistics that would be involved in trying obtain a sample representing the general population in this age range. For this reason the Head Start dental assessment results are not compared with national Healthy People 2010 objectives for 2-4 year olds.

For detailed information on the sample design of the dental assessments please contact the Alaska Oral Health Program.

Summaries of the dental assessment results are provided on the next three pages.

ALASKA – Dental Assessment, 2004 (3rd grade children)

Survey results listing the mean, confidence intervals and number of children in each category from the project for state totals, racial/ethnic groups and Medicaid enrolled children were as follows (2004/2005 school year – 3rd grade children):

Caries Experience:

Total (n=1,206)	65.1% (62.3, 67.8)	National (NHANES 1988-94) 52%
American Indian/Alaska Native (n=283)	87.3% (82.8, 90.9)	90% (1999 – IHS)
White (n=580)	54.7% (50.5, 58.7)	51%
Asian (n=93)	84.9% (76.0, 91.5)	
Black/African American (n=54)	53.7% (39.6, 67.4)	50%
Hispanic/Latino (n=51)	51.0% (36.6, 65.2)	
Native Hawaiian/Pacific Islander (n=21)	85.7% (63.7, 97.0)	79% (1999 – Hawaii)
Medicaid/Denali KidCare (n=336)	76.2% (71.3, 80.6)	
American Indian/Alaska Native (n=128)	91.4% (85.1, 95.6)	
White (n=99)	63.6% (53.4, 73.1)	

Untreated Caries:

Total (n=1,205)	28.0% (25.3, 30.7)	National (NHANES 1988-94) 29%
American Indian/Alaska Native (n=283)	43.5% (37.6, 49.5)	69% (1999 – IHS)
White (n=580)	18.6% (15.6, 22.1)	26%
Asian (n=93)	49.5% (38.9, 60.0)	
Black/African American (n=54)	29.6% (18.0, 43.6)	36%
Hispanic/Latino (n=50)	30.0% (17.9, 44.6)	
Native Hawaiian/Pacific Islander (n=21)	52.4% (29.8, 74.3)	39% (1999 – Hawaii)
Medicaid/Denali KidCare (n=336)	34.2% (29.2, 39.6)	
American Indian/Alaska Native (n=128)	50.8% (41.8, 59.7)	
White (n=99)	15.2% (8.7, 23.8)	

Dental Sealants Present:

Total (n=1,206)	52.4% (49.5, 55.3)	National (NHANES 1988-94) 23%
American Indian/Alaska Native (n=283)	67.8% (62.1, 73.3)	55% (1999 – IHS)
White (n=580)	51.0% (46.9, 55.2)	26%
Asian (n=93)	39.8% (29.8, 50.5)	
Black/African American (n=54)	29.6% (18.0, 43.6)	11%
Hispanic/Latino (n=50)	42.0% (28.2, 56.8)	
Native Hawaiian/Pacific Islander (n=21)	33.3% (14.6, 57.0)	20% (1999-Hawaii)
Medicaid/Denali KidCare (n=336)	57.4% (52.0, 62.8)	
American Indian/Alaska Native (n=128)	66.4% (57.5, 74.5)	
White (n=99)	44.4% (45.2, 65.5)	

Treatment Urgency – Early or Urgent Dental Care Needed:

Total (n=1,206)	33.8 (31.2, 36.6)
American Indian/Alaska Native (n=283)	48.4 (42.5, 54.4)
White (n=580)	26.4 (22.9, 30.2)
Asian (n=93)	50.5 (40.0, 61.1)
Black/African American (n=54)	31.5 (19.5, 45.6)
Hispanic/Latino (n=50)	35.3 (22.4, 49.9)
Native Hawaiian/Pacific Islander (n=21)	57.1 (34.0, 78.2)
Medicaid/Denali KidCare (n=336)	41.7 (36.4, 47.2)
American Indian/Alaska Native (n = 128)	56.3 (47.2, 65.0)
White (n=99)	30.3 (21.5, 40.4)

ALASKA – Dental Assessment, 2005 (Kindergarten children)

Survey results listing the mean, confidence intervals and number of children in each category from the project for state totals, racial/ethnic groups and Medicaid enrolled children were as follows (2004/2005 school year – kindergarten):

Caries Experience:

Total (n=463)	48.2% (43.5, 52.8)
American Indian/Alaska Native (n=70)	75.7% (64.0, 85.2)
White (n=295)	37.6% (32.1, 43.4)
Other (n=98)	60.2% (49.8, 70.0)
Medicaid/Denali KidCare (n=140)	59.3% (50.7, 67.5)

Healthy People 2010 Goal

42%

Untreated Caries:

Total (n=463)	24.6% (20.8, 28.9)
American Indian/Alaska Native (n=70)	37.1% (25.9, 49.5)
White (n=295)	20.0% (15.6, 25.0)
Other (n=98)	29.6% (20.8, 39.7)
Medicaid/Denali KidCare (n=140)	32.1% (24.5, 40.6)

Healthy People 2010 Goal

21%

Caries Experience on Primary Anterior Teeth:

Total (n=457)	14.2% (11.2, 17.8)
American Indian/Alaska Native (n=64)	28.1% (17.6, 40.8)
White (n=295)	10.2% (7.0, 14.2)
Other (n=98)	17.3% (10.4, 26.3)
Medicaid/Denali KidCare (n=136)	19.1 (12.9, 26.7)

Treatment Urgency – Early or Urgent Dental Care Needed:

Total (n=463)	25.5%
American Indian/Alaska Native (n=64)	41.4%
White (n=295)	20.0%
Other (n=98)	30.6%
Medicaid/Denali KidCare (n=140)	32.9% (25.2, 41.3)

ALASKA – Dental Assessment, 2005 (Children Enrolled in Head Start)

Survey results listing the mean, confidence intervals and number of children in each category from the project for state totals, racial/ethnic groups and Medicaid enrolled children were as follows (2005 Head Start):

Caries Experience:

Total (n=571)	68.8%	(63.9, 73.2)*	NHANES (1988-94)*** 18%
American Indian/Alaska Native (n=423)	84.2%	(80.2, 87.4)**	76% (IHS 1999)
White (n=54)	48.1%	(34.3, 62.2)**	15%
Other (n=94)	45.7%	(35.4, 56.3)**	
Medicaid/Denali KidCare (n=351)	73.4%	(67.2, 78.9)*	

Untreated Caries:

Total (n=571)	40.5%	(35.7, 45.5)*	NHANES (1988-94)*** 16%
American Indian/Alaska Native (n=423)	50.8%	(46.0, 55.7)**	67% (IHS 1999)
White (n= 54)	24.1%	(13.5, 37.6)**	11%
Other (n= 94)	27.7%	(18.9, 37.8)**	
Medicaid/Denali KidCare (n=351)	42.5%	(36.0, 49.0)*	

Caries Experience on Primary Anterior Teeth:

Total (n=570)	42.5%	(37.6, 47.7)*
American Indian/Alaska Native (n=422)	60.9%	(56.0, 65.6)**
White (n=54)	18.5%	(9.3, 31.4)**
Other (n=94)	19.1%	(11.8, 28.6)**
Medicaid/Denali KidCare (n=351)	49.8%	(43.2, 56.3)**

Treatment Urgency – Early or Urgent Dental Care Needed:

Total (n=571)	41.2%	(36.3, 46.2)*
American Indian/Alaska Native (n=423)	52.0%	(47.1, 56.8)**
White (n=54)	24.1%	(13.5, 37.6)**
Other (n=94)	27.7%	(18.9, 37.8)**
Medicaid/Denali KidCare (n=351)	43.6%	(37.2, 50.2)*

* weighted data

** unweighted data

*** NHANES data is aged 2-4 years so not identical to this age group 3-5 years

References

- ¹ U.S. Department of Health and Human Services (USDHHS), *Oral Health in America: A Report of the Surgeon General*, USDHHS National Institute of Dental and Craniofacial Research, National Institutes of Medicine, 2000.
- ² Kaste, LM, Selwitz, RH, Oldakowski, RJ, Brunelle JA, Winn DM, Brown, LJ, "Coronal caries in the primary and permanent dentition of children and adolescents 1-17 years of age, 1988-1991", *Journal of Dental Research*, 75(Special Issue):631-641, 1996.
- ³ Casamassimo P, *Bright Futures in Practice: Oral Health*, National Center for Education in Maternal and Child Health, Arlington, Virginia, 1996.
- ⁴ Gift, HC, Relsine ST, Larach DC, "The social impact of dental problems and visits", *American Journal of Public Health*, 82(12):1663-1668, 1992.
- ⁵ U.S. Department of Health and Human Services (USDHHS), *Healthy People 2010*, 2nd edition, 2 volumes, Washington DC: U.S. Government Printing Office, November 2000.
- ⁶ Hardison, J.D., *Results of the 2004 Oral Health Survey of Alaskan Third Graders: Alaska Oral Health Basic Screening Survey*, contractor's report to the Oral Health Program, Alaska Department of Health and Social Services, 2005.
- ⁷ Hardison, J.D., *Results of the 2004 Oral Health Survey of Alaskan Kindergarteners: Alaska Oral Health Basic Screening Survey*, contractor's report to the Oral Health Program, Alaska Department of Health and Social Services, 2006.
- ⁸ Hardison, J.D., *Results of the 2004 Oral Health Survey of Alaskan Head Start Children: Alaska Oral Health Basic Screening Survey*, contractor's report to the Oral Health Program, Alaska Department of Health and Social Services, 2006.
- ⁹ Berkowitz, RJ, "Causes, treatment and prevention of early childhood caries: a microbiologic perspective", *Journal of the Canadian Dental Association*, 69(5):304-307b, 2003.
- ¹⁰ Dye BA, Tan S, Smith V, Lewis BG, Barker LK, Thornton-Evans, G., et al., "Trends in oral health status: United States, 1988-1994 and 1999-2004", *National Center for Health Statistics*, 11(248), 2007.
- ¹¹ Newacheck PW, McManus M, Fox HB, Hung YY, Halfon N, "Access to health care for children with special health care needs", *Pediatrics*, 102 (4 Part I):760-766, 2000.
- ¹² Isman R, Isman B, "Access to oral health services in the U.S. 1997 and beyond", Chicago: Oral Health America, 1997.
- ¹³ U.S. Department of Health and Human Services, "Improved national prevalence estimates for 18 selected major birth defects – United States, 1999-2001", *MMWR*, Centers for Disease Control and Prevention, 54(51&52):1301-1305, January 6, 2006.
- ¹⁴ Birth Defects Registry - - cite would be: Schoellhorn, J, unpublished memorandum on Alaska oral clefts for 1996-2002, Alaska Department of Health and Social Services, Division of Public Health, Section of Women's, Children's and Family Health, MCH Epidemiology Unit, 2006.
- ¹⁵ Cleft Palate Foundation, "The genetics of cleft lip and palate: information for families, 2000 edition.
- ¹⁶ Columbia University, "Cleft lip and cleft palate", Department of Otolaryngology, from <http://www.entcolumbia.org/cleft.html>
- ¹⁷ Wilcox, J. et al., "Folic acid supplements and risk of facial clefts: national population based case-control study", *BMJ*, 224(7591):464, March 3, 2007.
- ¹⁸ Alaska Behavioral Risk Factor Surveillance System (BRFSS), unpublished data, CY2006 survey, Alaska Department of Health and Social Services, Division of Public Health, Section of Chronic Disease Prevention and Health Promotion, 2007.
- ¹⁹ Davey AL, Rogers AH, "Multiple types of bacterium *Streptococcus mutans* in the human mouth and their intra-family transmission", *Arch Oral Bio*;29:453-460, 1984.
- ²⁰ Berkowitz RJ, Jones P, "Mouth-to-mouth transmission of the bacterium *Streptococcus mutans* by infants from their mothers", *Arch Oral Biol*, 30:377-379, 1985.
- ²¹ Berkowitz RJ, "Causes, treatment and prevention of early childhood caries: a microbiologic perspective", *Journal of the Canadian Dental Association*, 69(5):304-307b, May 2003.
- ²² Hester, K, internal memorandum on results of 2005 PRAMS questions on dental access, Alaska Department of Health and Social Services, Division of Public Health, Section of Women's, Children's and Family Health, November 6, 2007.

²³ Brown A, Zimmerman B, *Research to Policy and Practice Forum: Periodontal Health and Birth Outcomes – Summary of a Meeting of Maternal, Child, and Oral Health Experts*, Washington, DC: National Maternal and Child Oral Health Resource Center, 2007.

²⁴ Association of State and Territorial Health Officials (ASTHO), "The oral health and chronic disease connection", available at: http://www.astho.org/templates/display_pub.php?pub_id=327, May 2002

²⁵ U.S. Department of Health and Human Services (USDHHS), "The health consequences of smoking: a report of the Surgeon General", Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 2004. Available at: http://www.cdc.gov/tobacco/sgr/sgr_2004/index.htm.

²⁶ Blot WJ, McLaughlin JK, Winn DM, Austin DF, Greenberg RS, Preston-Martin S, Bernstein L, Shoenbert JB, Stemhagen A, Fraumeni JF Jr., "Smoking and drinking in relation to oral and pharyngeal cancer", *Cancer Research*, 48:3282-3287, 1988.

²⁷ Tomar SL, Asma S., "Smoking attributable periodontitis in the United States: findings from NHANES III", *J Periodontol*, 71:743-51, 2000.

²⁸ Alaska Department of Revenue, unpublished data from the Tobacco Excise Tax Program, Tax Division, 2007.

²⁹ Alaska Youth Risk Behavior Surveillance System (YRBS), Alaska Youth Risk Behavior Survey 2007, Alaska Department of Health and Social Services, Division of Public Health, Section of Epidemiology.

³⁰ Alaska Behavioral Risk Factor Surveillance System (BRFSS), unpublished data, CY2004 survey, Alaska Department of Health and Social Services, Division of Public Health, Section of Chronic Disease Prevention and Health Promotion, 2005.

³¹ Greenlee RT, Murray T, Bolden S, Wingo PA, "Cancer statistics", *CA Cancer J Clin*, 50:7-33, 2000.

³² Alaska Department of Health and Social Services (DHSS), *Alaska Comprehensive Cancer Control Plan: 2005-2010*, Division of Public Health, Chronic Disease Prevention and Health Promotion, Comprehensive Cancer Control Program, November 2006.

³³ Alaska Department of Health and Social Services (DHSS), *Tobacco in the Great Land: A Portrait of Alaska's Leading Cause of Death*, Division of Public Health, Section of Epidemiology, February 2004.

³⁴ Indian Health Service (IHS), *An Oral Health Survey of American Indian and Alaska Native Dental Patients: Findings, Regional Differences and National Comparisons*, U.S. Department of Health and Human Services, 1999 survey.

³⁵ Alaska Department of Health and Social Services (DHSS), *Healthy Alaskans 2010: Targets and Strategies for Improved Health*, Division of Public Health, Data and Evaluation Unit, April 2002.

³⁶ U.S. Centers for Disease Control and Prevention (CDC), "Achievements in public health, 1900-1999: fluoridation of drinking water to prevent dental caries", *MMWR*, 48(41):933-940, 1999.

³⁷ U.S. Centers for Disease Control and Prevention (CDC), Statistical reports for the National Oral Health Surveillance System – unpublished, found at http://www.cdc.gov/fluoridation/statistics/states_stats2020.htm, updated 2004.

³⁸ U.S. Centers for Disease Control and Prevention (CDC), "Recommendations for using fluoride to prevent and control dental caries in the United States", *MMWR Recomm Rep*, 50(RR-14):1-42, 2001.

³⁹ Brown, LJ, *Adequacy of Current and Future Dental Workforce*, American Dental Association, Health Policy Resources Center, 2005.

⁴⁰ U.S. Health Resources and Services Administration (HRSA), *Financing Dental Education: Public Policy Interests, Issues and Strategic Considerations*, Department of Health and Human Services, 2005.

⁴¹ U.S. Centers for Disease Control and Prevention (CDC), "Guidelines for infection control in dental health-care settings – 2003", *MMWR*, 52(RR-17), December 2003.

Funding for the State Oral Health Plan was provided by the U.S. Centers for Disease Control and Prevention through the Chronic Disease Prevention and Health Promotion Programs Cooperative Agreement (U58/CCU022905). The contents of this plan are solely the responsibility of the authors and do not necessarily represent the official views of the CDC.

This publication was produced by the Alaska Department of Health and Social Services.
It was printed at a cost of \$TBD per copy in Anchorage, Alaska.
This cost block is required by AS 44.99.210.



State of Alaska
Department of Health and Social Services
Division of Public Health

Sarah Palin, Governor
Karleen K. Jackson, Commissioner

<http://www.hss.state.ak.us/dph/wcfh/Oralhealth>

December, 2007