

Overview of Oral Health in South Dakota

This comprehensive oral health report summarizes the most current information available on the status of oral health in South Dakota (SD). This report is a joint effort between the South Dakota Oral Health Program, Delta Dental Plan of South Dakota, the South Dakota Dental Association, and Indian Health Services. The collection of data enhances the epidemiological capacity to monitor trends over time and document improvements in oral health among the residents of South Dakota. It is hoped that this information will help raise awareness of the need for monitoring the oral disease burden in South Dakota and guide efforts to prevent and treat oral diseases and enhance the quality of life of South Dakota's residents.

Children's Oral Health Highlights

A statewide oral health survey of South Dakota third grade students was conducted during the 2005/2006 school year. The survey demonstrated that a large number of South Dakota children suffer from this preventable disease.

- Sixty-six percent of third graders had cavities and/or fillings (decay experience) and 33% of the children had untreated dental decay (cavities). Dental decay is a significant public health problem for South Dakota's children (South Dakota Oral Health Survey, 2006).

- Thirty-nine percent of third graders did not have dental sealants. In 2006, 61% of the third grade children screened had dental sealants compared to 50% in 2003. Seventy percent of American Indian children had dental sealants in 2006. During the last three years, the prevalence of dental sealants has increased dramatically in South Dakota. While dental sealants are a proven method for preventing decay, many of South Dakota's children have not received this preventive service (SD Oral Health Survey, 2006).
- Thirty-three percent of third graders were in need of dental care including 6% that needed urgent dental care because of pain or infection. A large proportion of South Dakota's children are in need of dental care (SD Oral Health Survey, 2006).
- The 2006 South Dakota Oral Health Survey compared American Indians to white non-Hispanic children; a significantly higher proportion of third grade American Indian children have decay experience (62% vs. 84%) and untreated decay (28% vs. 51%).
- Forty-one percent of third graders that participate in the free/reduced price school lunch program had untreated decay compared to only 27 % of children not eligible for the program. Low income children have poorer oral health (SD Oral Health Survey, 2006).
- There were 1,153 Head Start children in need of dental care in 2008 (Head Start Annual Profile, 2008).

- Twenty percent of children ages 0-17 had not visited a dentist or dental clinic within the past year (South Dakota BRFSS, 2007).
- Sixty-two percent of children under age 5 had not visited a dentist (South Dakota BRFSS, 2007).

Adult Oral Health Highlights

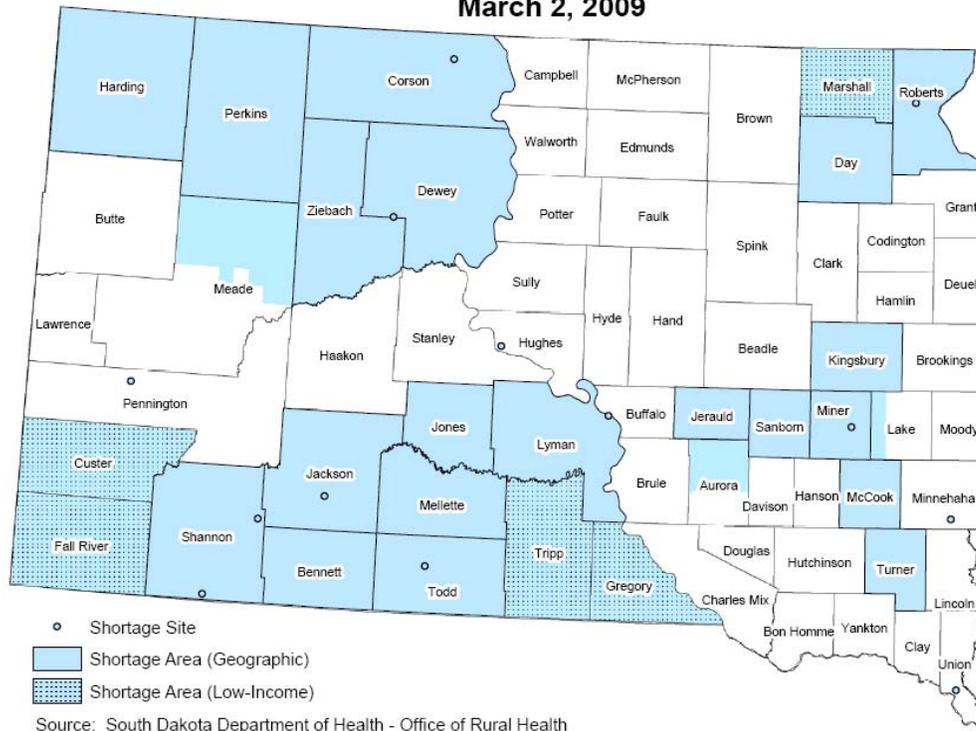
In 2007, the South Dakota Maternal and Child Health Program conducted a survey of new moms throughout the state. New mothers were asked questions about behaviors prior to conception such as tobacco and alcohol use and about health care and education received during pregnancy. Questions also were asked about behaviors after the baby was born such as infant health care, car seat use, sleep position, and mother's physical activity and nutrition.

- At-least half of pregnant women did not receive information from their physician on the importance of care of their teeth and gums (South Dakota New Mom's Survey, 2007).
- Nineteen percent of pregnant women had problems with their teeth and gums during their pregnancy; however, 62% were able to see a dentist for treatment (South Dakota New Mom's Survey, 2007).
- South Dakota physicians that do in fact include information on oral health during the prenatal exams reported that they conduct an assessment to determine the oral health status of the woman (55%) (Status of Prenatal Care in South Dakota Report, 2005).

Access to Care Highlights

- From 2004 through 2008, the Ronald McDonald Care Mobile visited 49 South Dakota communities and served 7,600 children. The total value of the care received was over \$3 million dollars. It was the first dental visit for 25% of those seen during that timeframe (Delta Dental Plan of South Dakota, 2008).
- South Dakota hospital emergency rooms do not have policy in place to care for dental emergencies and lack specific dentists and/or oral surgeons to refer patients to (Emergency Room Dental Care Report, 2006).
- Since the late 1980's, the number of available dentists has decreased from 57/100,000 to 48/100,000. This trend is likely to continue since dental school enrollment remains steady; however, many current dentists are nearing retirement (Healthy People 2010, 2005).
- Sixteen of the 66 counties (24%) in South Dakota do not have a Medicaid enrolled dentist (South Dakota Department of Social Services, 2008).

**SOUTH DAKOTA HEALTH PROFESSIONAL SHORTAGE AREAS
DENTAL HEALTHCARE
March 2, 2009**



South Dakota Demographics

South Dakota is one of the least densely populated states in the nation with 754,844 people living within its 75,955 square miles – an average population density of 9.9 people per square mile (2000 Census). Over half (34) of the state's 66 counties are classified as frontier (population density of less than six persons per square mile) while 29 are considered rural (population density of six or more persons per square mile but no population centers of 50,000 or more). Three counties are classified as urban (have a population center of 50,000 or more). Of the state's total population, 88.7% are White (of which 99.3% are White alone, not Hispanic or Latino), 9.0% are Native American and the remaining 2.3% are classified as some other race.

According to the 2000 Census, 13.2% of South Dakotans live below 100% of the federal poverty level (FPL) compared to 12.4% for the nation. Over 33 % (33.1%) of South Dakotans live under 200% of the FPL

Percent of Population Under the Federal Poverty Level for Reservation Counties in South Dakota		
County (Reservation)	100% of FPL	200% of FPL
Dewey (Cheyenne River)	33.6%	66.0%
Ziebach (Cheyenne River)	49.9%	72.1%
Buffalo (Crow Creek)	56.9%	79.9%
Shannon (Pine Ridge)	52.3%	77.7%
Todd (Rosebud)	48.3%	73.4%

compared to 29.6% for the nation. When looking at poverty levels for counties on Indian reservations in the state, these numbers are significantly higher with the four largest reservations in the state representing the five poorest counties in South Dakota.

According to the 2000 Census, 26.8% of the state's population are children (under the age of 18) while 6.8% is age four or younger. Over 41% (41.5%) of the state's female population is considered to be of childbearing age (aged 15 through 44). South Dakota resident pregnancies totaled 11,846 in 2004 (21 of those were to women not in the 15-44 year age range). Pregnancies were estimated by totaling resident births (pregnancies producing at least one live birth), fetal deaths and abortions.

Children's Oral Health: Third Grade Screening Results

During the 2005-2006 school year, the South Dakota Department of Health conducted a statewide oral health survey of third grade children in public, private and Bureau of Indian Affairs (BIA) elementary schools. Thirty-three elementary schools were randomly selected and 32 agreed to take part in the survey. Volunteer dentists and hygienists screened those children who returned a positive consent form. A total of 656

children returned the questionnaire/consent form and 643 were screened (66% of all third grade children enrolled in the 32 participating schools).

Sixty-six percent of the children had cavities and/or fillings (decay experience) and 33% of the children had untreated dental decay (cavities). Dental decay is a significant public health problem for South Dakota's children (Table 1). Thirty-nine percent of the children did not have dental sealants.

In 2006, 61% of the third grade children screened had dental sealants compared to 50% in 2003. Seventy percent of American Indian children had dental sealants in 2006. During the last three years, the prevalence of dental sealants has increased dramatically in South Dakota. While dental sealants are a proven method for preventing decay, many of South Dakota's children have not received this preventive service (Table 2).

Thirty-three percent of the children were in need of dental care including 6% that needed urgent dental care because of pain or infection. A large proportion of South Dakota's children are in need of dental care (Table 1). Compared to white non-Hispanic children, a significantly higher proportion of American Indian children have decay experience (62% vs. 84%) and untreated decay (28% vs. 51%).

Forty-one percent of children that participate in the free/reduced price school lunch program had untreated decay compared to only 27% of children not eligible for the program. Low income children have poorer oral health (Table 3).

Table 1- Oral Health of South Dakota Third Graders by Race and Ethnicity

Variable	Percent of Children (95% Confidence Interval)		
	White Non-Hispanic (n=501)	American Indian (n=56)	Other Minority Children (n=33)
With Private Insurance	58.3 (54.6-62.0)	20.7 (12.3-32.4)	37.9 (20.7 – 57.7)
Eligible for FRL	20.5 (17.6-23.6)	67.9 (55.5-78.3)	54.5 (36.4 – 71.9)
With Dental Visit in Last Year	83.3 (80.4-86.0)	66.9 (55.1-78.0)	60.6 (42.1 – 77.1)
Caries History	61.9 (58.2-65.5)	84.3 (77.0-90.5)	57.6 (39.2 – 74.5)
Untreated Decay	28.2 (24.9-31.6)	50.5 (41.5-59.7)	39.4 (22.9 – 57.9)
Dental Sealants	63.0 (59.4-66.5)	70.0 (61.2-78.0)	48.5 (30.8 – 66.5)
Treatment Urgency			
None	70.6 (67.1-73.8)	52.0 (43.0-61.2)	60.6 (42.1-77.1)
Early	26.2 (23.1-29.6)	31.9 (24.1-41.2)	36.4 (20.4-54.9)
Urgent	3.2 (2.1-4.9)	16.1 (10.2-23.8)	3.0(0.1-15.8)

Table 2- Comparison of Oral Health Status Indicators to Healthy People 2010 Objectives, 2003 & 2006

Variable	Percent of Children (95% Confidence Interval)		
	South Dakota 3 rd Grade 2003	South Dakota 3 rd Grade 2006	HP 2010 Objective 6-8 year old children
Caries History	66.9 (60.8 – 73.0)	65.6 (62.5 – 68.6)	42
Untreated Decay	30.2 (22.8 – 37.5)	32.9 (29.9 – 35.9)	21
Dental Sealants	49.6 (44.2 – 55.0)	61.1 (57.2 – 64.8)	50
8 Year Olds Only			
Dental Sealants	52.7 (43.8- 61.7)	57.6 (50.1 – 64.8)	50

Table 3- South Dakota Third Graders Eligible for Free and/or Reduced Price Meal Program

Variable	Percent of Children (95% Confidence Interval)		
	< 20% of Students Eligible for FRL (n=333)	20-49% of Students Eligible for FRL (n=195)	≥ 50% of Students Eligible for FRL (n=115)
White Non-Hispanic	89.4 (86.2-92.0)	82.7 (77.6-86.9)	33.0 (27.1-39.4)
With Private Insurance	63.3 (58.6-67.7)	46.4 (40.2-52.5)	32.2 (23.2-42.0)
With Dental Visit in Last Year	85.7 (81.4-89.3)	74.0 (67.1-80.0)	71.4 (57.8-82.7)
Eligible for FRL	16.7 (13.4-20.5)	33.2 (27.6-39.1)	59.9 (50.5-68.5)
Caries History	57.8 (53.2-62.3)	66.4 (60.6-72.2)	80.0 (74.3-84.9)
Untreated Decay	27.4 (23.4-31.7)	39.1 (33.4-45.3)	36.5 (30.3-43.0)
Dental Sealants	63.9 (59.3-68.2)	56.5 (50.4-62.5)	67.8 (61.4-73.7)
Treatment Urgency			
None	73.7 (69.4-77.6)	56.7 (50.5-62.5)	64.4 (57.9-70.5)
Early	21.0 (17.5-25.1)	41.1 (35.2-47.1)	25.6 (20.0-31.5)
Urgent	5.3 (3.5-7.8)	2.2 (0.8-4.7)	10.0 (6.6-14.7)

The state of South Dakota has exceeded the Healthy People 2010 objective for dental sealants. Unfortunately, significant progress must still be made in terms of caries history and untreated decay if South Dakota is to meet the other two objectives. About 66% of third grade children screened in South Dakota had experienced dental caries, much higher than the HP2010 objective of 42%. Almost 33% of the South Dakota children had untreated caries compared to the HP2010 objective of 21%. More than 61% of the third grade students screened had dental sealants compared to the HP2010 objective of 50%. Figures 1-3 compare the oral health of South Dakota's third grade children

with the oral health of third grade children from several other states. Each of the states on the graphs collected data in a manner similar to South Dakota.

Figure 1
Prevalence of untreated decay in third grade children stratified by state

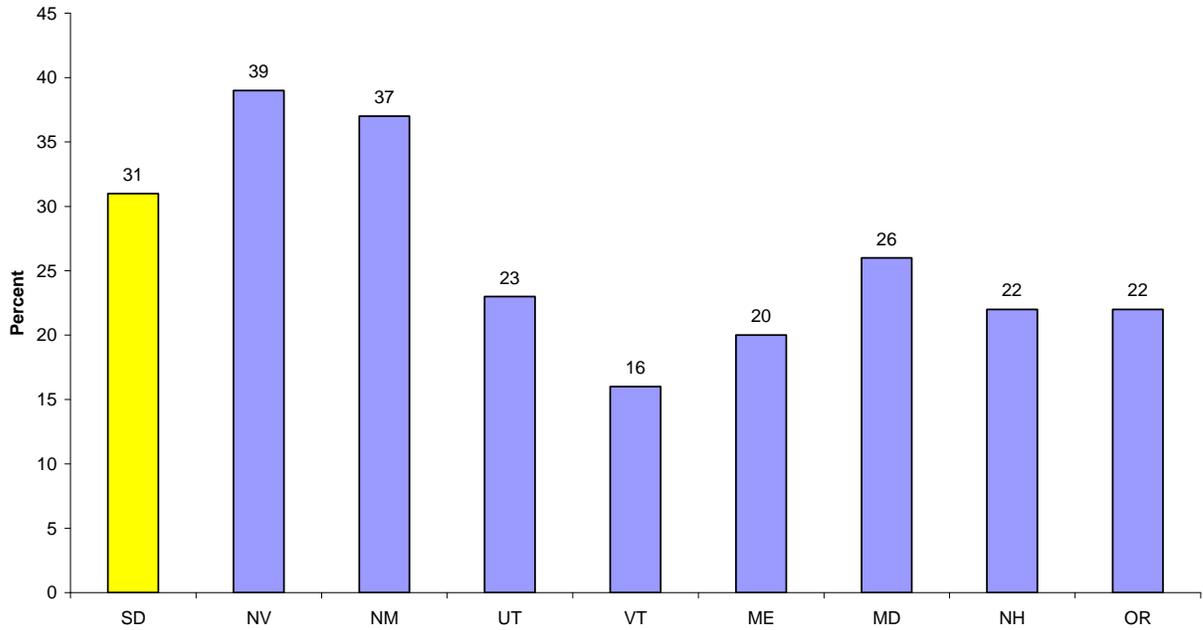


Figure 2
Prevalence of caries experience in 3rd grade children stratified by state

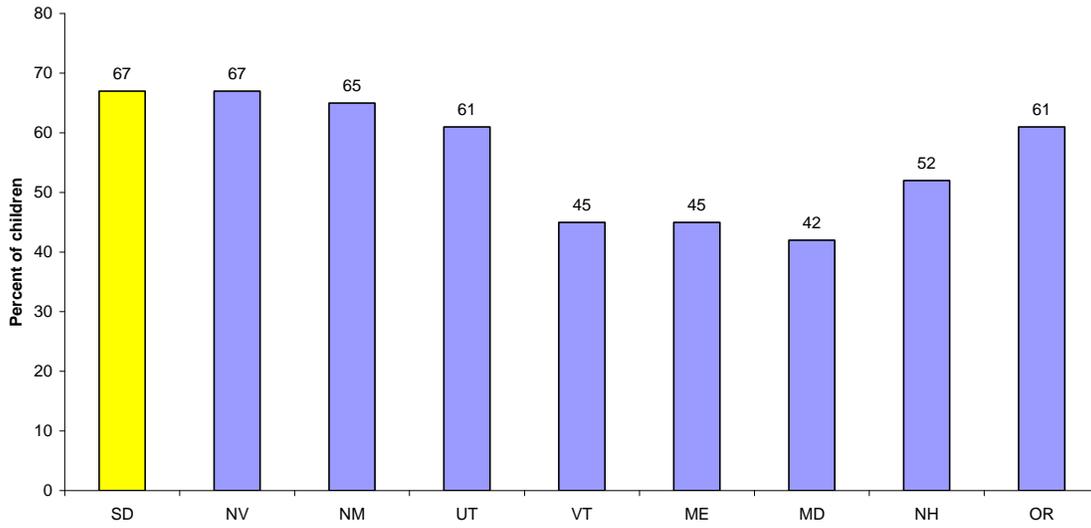
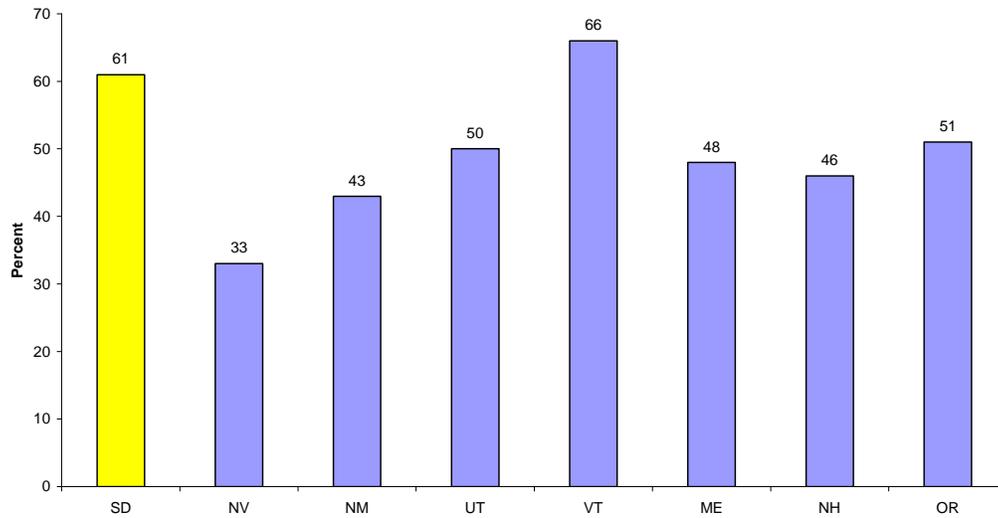


Figure 3
Prevalence of dental sealants in 3rd grade children stratified by state



Access to Dental Care

From 2004 through 2008, the Ronald McDonald Care Mobile visited 49 South Dakota communities and served 7,600 children. The total value of the care received was over \$3 million dollars. It was the first dental visit for 25% of those seen during that timeframe (Delta Dental Plan of South Dakota, 2008).

South Dakota hospital emergency rooms do not have policies in place to care for dental emergencies and lack specific dentists and/or oral surgeons to refer patients to (Emergency Room Dental Care Report, 2006). Sixteen of the 66 counties (24%) in South Dakota do not have a Medicaid enrolled dentist (South Dakota Department of Social Services, 2008).

Children eligible for Medicaid have difficulty accessing oral health care. In 2008, 68% of Medicaid children received any dental services. The focus of oral health efforts, to date, has been around children. The American Academy of Pediatric Dentistry recommends that a child's first visit occur by the age of one year; however, many parents, caregivers, and health professionals are not aware of the screening guidelines. In 2008, the Centers for Disease Control and Prevention (CDC) found that 25% of children entering kindergarten had tooth decay prior to entry.

Pregnancy and Oral Health

Emerging research highlights the infectious and contagious nature of oral bacteria. There may be a relationship between the poor oral health of expectant mothers and pre-term low birth weight babies (Jeffcoat et al., 2001). Nineteen percent of pregnant

women had problems with their teeth and gums during their pregnancy; however, only 62% were able to see a dentist for treatment (South Dakota New Mom's Survey, 2007).

After birth, mothers may transmit the bacteria responsible for tooth decay to their infants and toddlers through the sharing of saliva. South Dakota physicians that do in fact include information on oral health during the prenatal exams report that they conduct an assessment to determine the oral health status of the woman (55%) (Status of Prenatal Care in South Dakota Report, 2005).

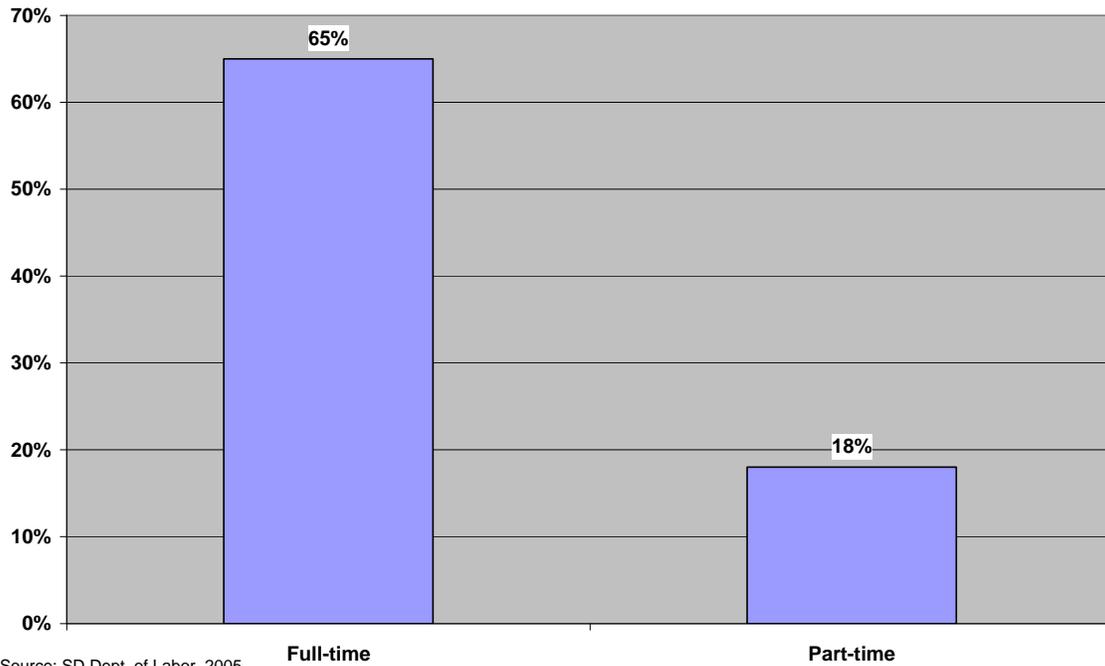
Chronic Disease and Oral Health

Other adults, in addition to pregnant women, also are in need of dental care. Survey data for South Dakota adults show that oral health issues among adults are significant, and dental disease is exacerbated by various chronic diseases (SD BRFSS 2003, 2005, and 2007). In 2006, 39% of adults with diabetes had been to the dentist in the past year (SD BRFSS, 2006). Among all adults in South Dakota, only 31% had visited the dentist or dental clinic within the past year for any reason (SD BRFSS, 2006).

According to the United States Surgeon General's Oral Health Report (2000), "you cannot be healthy without oral health. Oral health and general health should not be interpreted as separate entities. Oral health is a critical component of health and must be included in the provision of health care and the design of community programs".

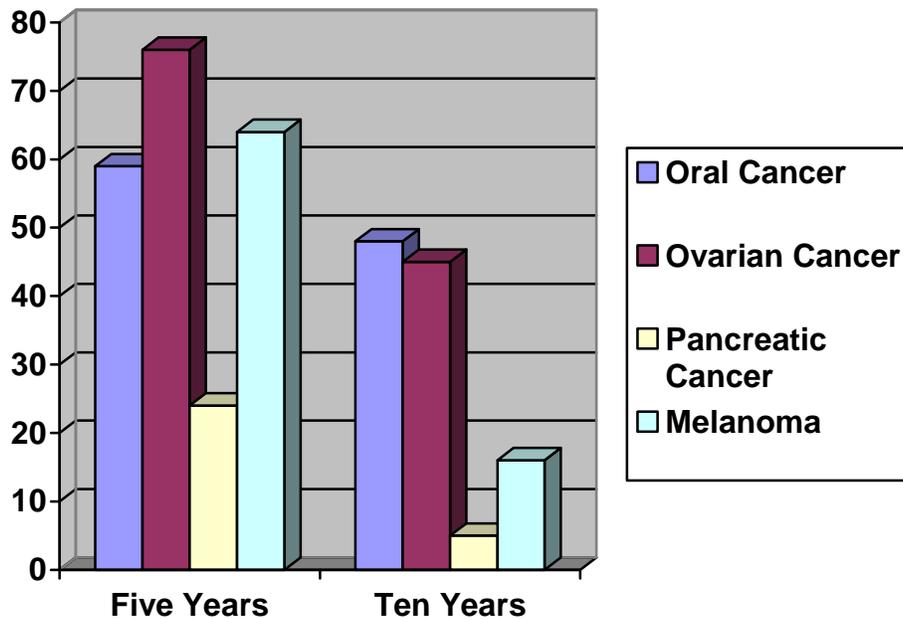
Those with dental insurance are almost one and a half times more likely to visit the dentist than those without dental insurance. In South Dakota, 65% of full-time employees are offered dental insurance; while only 18% of part-time workers are offered dental insurance.

South Dakota Employees Offered Dental Insurance



Oral Cancer

Six percent of South Dakotans reported that they use chewing tobacco or snuff every day or some days (South Dakota BRFSS, 2007). Of the deaths due to lip, oral cavity, and pharynx cancer, tobacco use was a contributing factor in 63% of them (South Dakota Vital Statistics Report, 2007). In 2007, there were 16 deaths due to lip, oral cavity, and pharynx cancer. Ten of the 16 total deaths were directly due to tobacco use. Oral cancer has an 84% survival rate at one year post diagnosis; however, only 59 % of oral cancer patients survive for five years, which is lower than the percentage of patients surviving ovarian cancer and melanoma. Dentists and primary care physicians can identify leukoplakia, which in the early stages can increase survival. Early detection, as with all cancers, is key to survival.

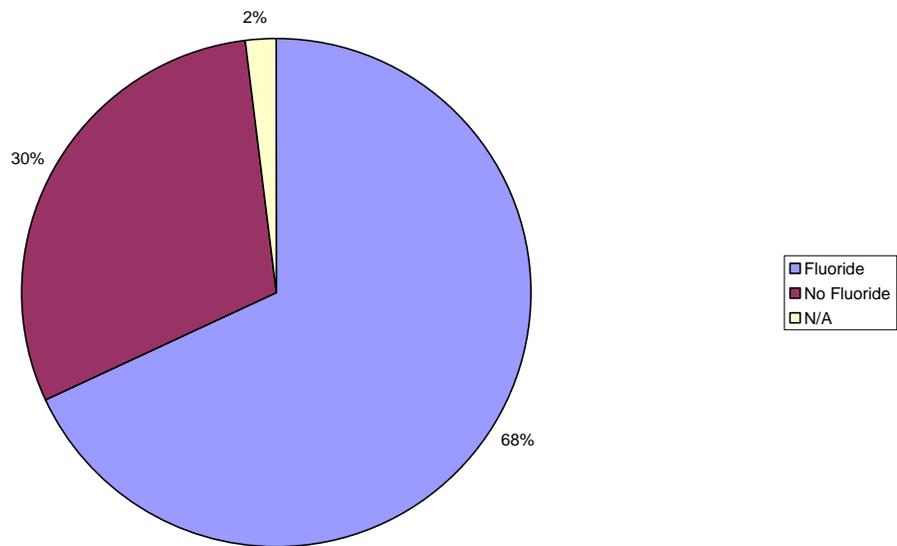


Community Water Fluoridation

Approximately 78% of South Dakota’s population lives in communities that fluoridate their drinking water. Municipalities that serve over 500 residents are federally mandated to fluoridate the drinking water in accordance with EPA guidelines. South Dakota communities began fluoridating their drinking water supplies in the early 1980’s. Fluoridation, recognized as one of the ten greatest public health achievements of the 20th century, is a safe and cost-effective means of preventing tooth decay. Today, over 78% of South Dakota residents served by public water systems have optimal levels of fluoride (on average, one part per million).

In 2002 the Aberdeen Area Indian Health Service, which serves South Dakota, North Dakota, Iowa, and Nebraska, began a water fluoridation initiative. The number of tribally owned and operated public water systems has grown to 72 (63 community water systems, and 9 non-community water systems). The service population for the Aberdeen Area is about 120,000 and 70,000 of those are served by a public water system. The other 50,000 get water from private wells, which may provide water with a low fluoride content. The good news is that as rural water systems expand their distribution lines, more people get fluoridated water and the need for private wells diminishes. Specific to South Dakota, 68% of the American Indian reservations have fluoridated water.

Tribal Water Systems in South Dakota



Source: Aberdeen Area Indian Health Service, 2006

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