Open Mouth Survey of Third Graders
Nebraska 2005

Nebraska Department of Health and Human Services
Regulation and Licensure

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Executive Summary

According to the Surgeon General's report on oral health, tooth decay is the single most common chronic disease of childhood. To establish a baseline for monitoring oral disease status and trends in Nebraska children, the Department of Health and Human Services, Regulation and Licensure partnered with a number of organizations to conduct Nebraska's first-ever, statewide assessment of oral health in third grade school children.

A total of 2,057 third-grade school children participated in the Open Mouth Survey. Fifty-five elementary schools, including both public and private schools, were involved. The Open Mouth Survey assessed caries experience, prevalence of untreated dental disease, and the utilization of protective sealants.

This statewide assessment will serve as a baseline for monitoring trends in children's oral health, but more importantly, help guide public health program design and policy development. This report is produced primarily for those who work to address the dental and public health of needs of children in Nebraska. This includes but is not limited to dental and public health professionals, policy makers, and child advocates.

Key Findings:

- Dental caries is a significant public health problem for Nebraska school children, with approximately 60% of children experiencing dental disease by the third grade and 17% having untreated dental decay or cavities.
- Children from lower-income schools tend to have poorer oral health; approximately 30% of children from low-income schools having untreated dental caries.
- Minority children experience poorer oral health, with approximately 28% of minority children having untreated dental decay and 20% having rampant caries.
- Although dental sealants are a proven method for preventing disease, only half of Nebraska's school children have received this preventive care.

Recommendations:

- Increase efforts to educate families about the importance of oral health as a part of total health, especially pregnant and new mothers.
- Continue to promote the efficacy of fluoridated water to Nebraska's communities.
- Increase efforts to educate both the public and healthcare professionals about the importance of fluoride applications and sealants.
- Target public health and dental disease prevention programs to reduce disparities.
- Increase access to preventive dental care through a dental home, especially for at-risk populations.
- Improve the Medicaid Dental Provider Network to increase the capacity to care. Expand Nebraska's Community Health Centers' and other community clinics' ability to provide dental care on a sliding scale.
- Continue and expand school based sealant programs such as Hope Medical's Sealing Smiles dental sealant program of Omaha Nebraska.
- Include additional age groups, especially very young children, in future oral health surveillance efforts.

Introduction

Dental caries (tooth decay) is one of the most common chronic diseases of childhood.[1] Despite improvements in oral health in the United States, by late adolescence approximately 80% of children have a history of caries.[1] Caries is an infectious disease that can be passed from mother to child and from generation to generation, shortly after a child's first teeth erupt.

Childhood caries can be prevented by:

- A balanced diet, including restricted consumption of beverages and food containing fermentable carbohydrates (e.g. juice, soft drinks, milk, and starches)
- Good dental hygiene for the entire family
- Regular dental visits
- The use of fluoride
- Dental sealant

The most effective prevention of caries on the smooth surfaces of teeth is fluoride. However, the chewing surfaces of molars are most vulnerable to cavities because they can be hard to clean, and difficult for fluoride to penetrate. Dental sealants are the most effective means of caries prevention on these surfaces.

Nationally, dental care is the most common unmet treatment need in children.[2] Although dental caries is largely preventable, it remains the most common chronic disease of children aged 5 to 17 years—5 times more common than asthma (59% versus 11%).[3] The oral health of children is a significant public health concern.[4] Untreated childhood caries can lead to delayed growth, impaired speech development and ultimately impact a child's ability to learn and thrive. Adverse dental experiences in childhood may lead to dental phobias impacting oral health and self-care as well as decreasing the frequency of dental visits as an adult.

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[1] U.S. Department of Health and Human Services. Oral health in America: report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, National Institute of Health, 2000.

[2] Department of Health and Human Services, Centers for Medicare and Medicaid Services. Guide to Children's Dental Care in Medicaid. October 2004.

[3] Department of Health and Human Services, Centers for Disease Control and Prevention. Preventing Chronic Diseases: Investing Wisely in Health. Preventing Dental Caries. August, 2005. http://www.cdc.gov/OralHealth/factsheets/dental_caries.htm

[4] World Health Organization. WHO Information Series on School Health, Document Eleven. World Health Organization 2003. Geneva, Switzerland.

For many years, Nebraska has relied on reports from health professionals in the field and Medicaid claims to estimate oral health needs of children in the state. In the spring of 2005, guided by a standardized epidemiological methodology, public health professionals and pediatric dentists conducted the first Open Mouth Survey of third grade students in Nebraska. This statewide assessment will serve as a baseline for monitoring trends in children's oral health in the State of Nebraska.

This report is produced primarily for those who work to address the dental and public health needs of children in Nebraska. This includes but is not limited to dental and public health professionals, policy makers, and child advocates.

Methods

The Open Mouth Survey was an assessment of the oral health of third graders in the State of Nebraska that occurred in the spring of the 2004-2005 school year. The survey methodology was adapted from the ***Basic Screening Survey Planning Guide***[5] produced by the Association of State and Territorial Dental Directors (ASTDD). A more detailed account of this survey's protocol can be found in Appendix A of this report.

The third grade was surveyed for two reasons: 1) generally by age seven children begin to shed their primary teeth and the permanent teeth erupt;[6] and 2) eight years of age and in the third grade is the standard utilized in epidemiological studies conducted by other states and the standard used by the federal government for surveillance.

Schools were randomly chosen from the pool of all schools in Nebraska with third grade children in the 2003-2004 school year. In that school year there were 847 schools (23,518 third graders). Of these schools, 673 were public (20,259 students) and 174 were private (3,259 students). All schools with at least five children in third grade were eligible for selection (676 schools and 23,136 students). A total of 61 schools representing 2,596 children were sampled. Dentists visited 55 schools across the state and peered into the mouths of 2,057 third grade children in (Table 1 response rates).

Table 1
Participation in the Nebraska Oral Health Survey

	Schools	Students Enrolled	Number Screened	Response Rate
Sample Schools	61	2,596	2,057	79%
Participating Schools	55	2,237	2,057	92%

All screeners attended training on the survey methods and protocol. The primary objective of the training was to achieve consistency between screeners. The dentists were taught to uniformly identify caries (visible decay), treated and untreated, as well as dental sealants on primary and permanent teeth with a mouth mirror and penlight.

One limitation of this survey is that radiographs (x-rays) were unavailable, likely resulting in an underestimate of the true prevalence of caries. Other limitations include: the point-in-time nature of this assessment; and the fact that other age groups such as kindergartners or preschoolers were not surveyed. The survey sample was designed to be inclusive of the rural/urban distribution of the state and all income levels; the sample was not designed to represent racial/ethnic groups and interpretation of results should take this into account. Finally, this study assessed risk at the population level rather than for individuals. In order to make an accurate diagnosis of risk and implement prevention strategies on an individual basis, a clinical assessment by a health care provider who can examine the patient and account for personal circumstances is necessary.

[5] Association of Territorial Dental Directors. Basic Screening Survey Planning Guide. December 2003. http://www.astdd.org/?template=publications.html

[6] American Dental Association. Tooth Eruption Charts. http://www.ada.org/public/topics/tooth_eruption.asp

Results

Demographics

Table 2 describes the demographics of the surveyed population. The child's age was self-reported at the time of the screening. The children screened ranged in age from eight to eleven years with the majority being either eight or nine years of age. About half of the children (51%) were male, 83% were Caucasian Non-Hispanic, six percent were African-American, and eight percent were Hispanic. All other racial/ethnic groups surveyed are shown in Table 2.

Table 2

Age, Gender, and Race/Ethnicity of Children Screened

Nebraska 2005

	Mean or Percent
Age	
Mean (Standard Deviation)	8.6 (0.5)
Range	8-11 years
Gender	
Male	50.5%
Female	49.4%
Unknown	0.1%
Race/Ethnicity	
Caucasian	82.7%
African American	6.0%
Hispanic	7.5%
Asian	0.9%
American Indian/Alaska Native	1.4%
Native Hawaiian or Pacific Islander	0.1%
Multiracial	0.7%
Unknown	0.6%

Overall Results

Table 3 reports the main findings of the survey. Nearly 60% of the children screened had experience with caries, either untreated or treated with fillings, in their primary and/or permanent teeth; 41% of the children had no evidence of caries. Table 3 shows that 45% of the children had a dental sealant on at least one permanent molar. Additionally, 17% of third graders in Nebraska had untreated decay at the time of the screening.[7] About 13% of the third grade children in Nebraska were found to have rampant caries.

Table 3
Oral Health Status of 3rd Grade Children
Nebraska 2005

	Percent*	95% CI**
Caries free	40.7	36.4 – 45.0
Caries experience	59.3	55.0 – 63.6
Dental sealants	45.3	41.3 – 49.2
Untreated decay	17	13.6 – 20.4
Rampant caries (7+ teeth with caries experience)	13.2	9.8 – 16.6
Needing treatment	17.3	13.1-21.5

*Data are weighted for non-participation and non-response

**The range of values in which the true population value will be found (95% probability)

The survey identified children who needed to see a dentist sooner than their "next" routine check-up. Table 4 illustrates that nearly 16% of third grade children surveyed were recommended to see a dentist within a few weeks of the screening, based on evidence of caries without symptoms. Nearly 2% were in need of urgent dental care within 24 hours of the screening because of pain or infection.

Table 4
Treatment Needs of 3rd Grade Children
Nebraska 2005

	Percent*	95% CI**
Treatment Need		
None	82.7	79.3 – 86.2
Early dental care	15.7	12.2 – 19.2
Urgent dental care	1.6	0.9 – 2.3

*Data are weighted for non-participation and non-response

**The range of values in which the true population value will be found (95% probability)

[7] The percent of children with untreated decay is assumed to be an under estimation because radiographs (x-rays) were not taken.

Third graders represent a cohort of children who are beginning to transition between primary and permanent teeth. Table 5 classifies the findings by primary and permanent teeth. In Nebraska's third grade children, caries is largely limited to the primary teeth. Forty-one percent of the children screened had no caries history, 39 percent had caries in their primary teeth only, while 20 percent had caries in their permanent teeth.

Table 5
Distribution of Caries Experience, Treated Decay, and Untreated Decay Among the Primary & Permanent Teeth of 3rd Grade Children
Nebraska 2005

	Percent of Children*
Caries Experience	59.3
Primary teeth only	39
Primary and permanent teeth	17.5
Permanent teeth only	2.8
Treated Decay	53
Primary teeth only	36.8
Primary and permanent teeth	13.9
Permanent teeth only	2.3
Untreated Decay	35.9
Primary teeth only	11.4
Primary and permanent teeth	3.5
Permanent teeth only	2.1

*Data are weighted for non-participation and non-response

Impact of Income and Race/Ethnicity

Eligibility for the free and/or reduced price lunch (FRL) program is often used as an indicator of overall socioeconomic status. Table 6 demonstrates that children at schools where 75% or more of the children receive FRL had a significantly higher prevalence of rampant caries and dental treatment needs as compared to children at higher-income schools (<25% FRL). Although, there is no statistical significance in caries experience between the groups there does appear to be a trend moving from a higher caries experience in the lowest income schools to the lower rates of caries experience in the higher income schools. Note that the confidence interval around the >75% (lowest income) category is very large. This finding is congruent with the literature, which consistently reveals that low-income children bear a disproportionate oral disease burden. However, this survey found that the prevalence of sealants did not differ based on the income status of the school.

Table 6
Oral Health Status of 3rd Grade Children by Free/Reduced Lunch Status
Nebraska, 2005

		Percent of Students Participating in FRL Program*			
		< 25.0%	25.0-49.9%	50.0-74.9%	>75%
Number of schools		21	14	14	6
Number of children screened		930	399	576	152
Caries free		47.8	35.2	33.8	30
	95% CI**	(40.7-55.0)	(30.2-40.2)	(27.5-40.2)	(12.4-47.7)
Caries experience		52.2	64.8	66.2	70
	95% C**I	(45.0-59.3)	(59.8-69.8)	(59.5-75.6)	(52.3-87.6)
Dental sealants		48	41.4	42.4	46.9
	95% CI**	(41.7-54.3)	(34.5-48.3)	(35.3-49.5)	(39.0-54.8)
Untreated decay		12.8	19	19.7	30
	95% CI**	(9.4-16.2)	(12.8-25.3)	(11.0-28.5)	(15.9-44.1)
Rampant caries		7.7	21.7	15.2	21.4
	95% CI**	(5.2-10.1)	(16.0-27.4)	(7.3-23.0)	(14.2-28.5)
Needing treatment		12.7	19.6	20.6	29.8
	95% CI**	(9.2-16.2)	(13.4-26.0)	(11.8-29.5)	(17.6-42.1)

*Data are weighted for non-participation and non-response
**The range of values in which the true population value will be found (95% probability)

Table 7 compares the oral health of Caucasian with African American and Hispanic children and then with racial/ethnic minority children overall.[8] Hispanic children have a significantly higher prevalence of caries experience, untreated decay, and rampant caries, as well as treatment needs when compared to Caucasian and African American children. This survey found that 75% or three fourths of Hispanic third graders has experience with caries and nearly 25% have rampant caries. Hispanic children also have a lower rate of dental sealants when compared to Caucasian children, however the difference is not statistically significant. While African-American children were significantly more likely than Caucasian children to have higher treatment needs; there was no difference in the prevalence of dental sealants. Finally, when compared to Caucasian children, racial/ethnic minority children as a whole have significantly higher rates of caries, untreated decay, rampant caries, and treatment needs. In fact minority children were found to have two times the untreated caries as Caucasian children.

Table 7
Oral Health Status of 3rd Grade Children by Race/Ethnicity
Nebraska, 2005

	Caucasian (n=1,701)		African American (n=124)		Hispanic (n=154)		Minority*** (n=343)	
	%*	95% CI**	%*	95% CI**	%*	95% CI**	%*	95% CI**
Caries free	42.9	(37.9-47.6)	33.8	(25.0-42.6)	24.6	(17.4-31.8)	29.8	(22.1-37.4)
Caries experience	57.2	(52.4-62.1)	66.2	(57.4-75.0)	75.4	(68.2-82.6)	70.2	(62.6-77.9)
Dental sealants	46.2	(41.7-50.7)	46.6	(38.4-54.8)	32.9	(25.5-42.4)	41	(34.4-47.7)
Untreated decay	14.9	(11.8-17.9)	27.1	(17.8-36.3)	29.8	(22.6-37.0)	28	(21.8-34.3)
Rampant caries	11.8	(8.5-15.1)	18.1	(11.6-24.6)	23.5	(16.2-30.9)	20.3	(14.7-26.0)
Needing treatment	14.9	(11.8-18.0)	28.3	(20.6-36.0)	30.9	(23.9-37.9)	29.2	(23.4-35.0)

*Data are weighted for non-participation and non-response

**The range of values in which the true population value will be found (95% probability)

***Excludes Caucasian children

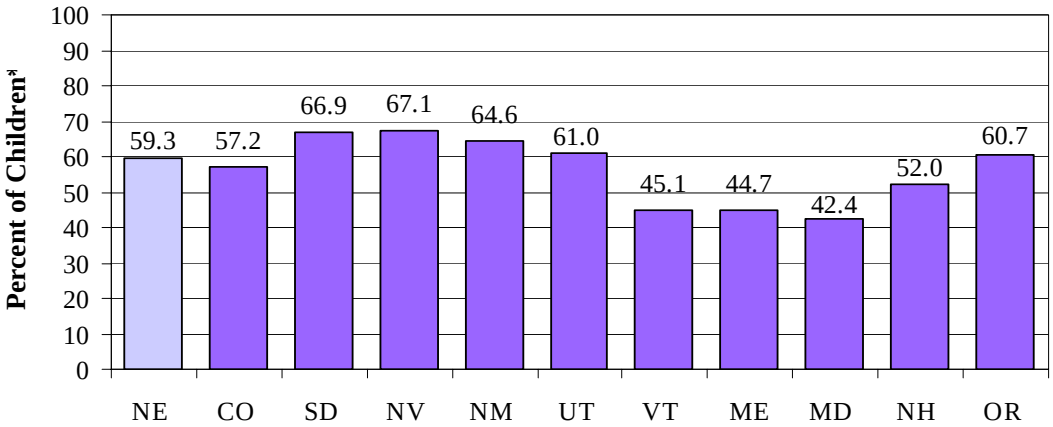
[8] Racial/ethnic minority includes African American, Hispanic, Asian, America Indian, Native Hawaiian/Pacific Islander and Multiracial children. The survey did not have enough children in some racial/ethnic populations to report valid estimates so populations were aggregated into one category (racial/ethnic minority).

Discussion

Comparison to Other States

Figure 1 compares Nebraska's rate of caries experience with other states that have conducted a survey using the same protocol. While Nebraska's rate of nearly 60 percent seems high, it is fairly compatible with findings from most states.

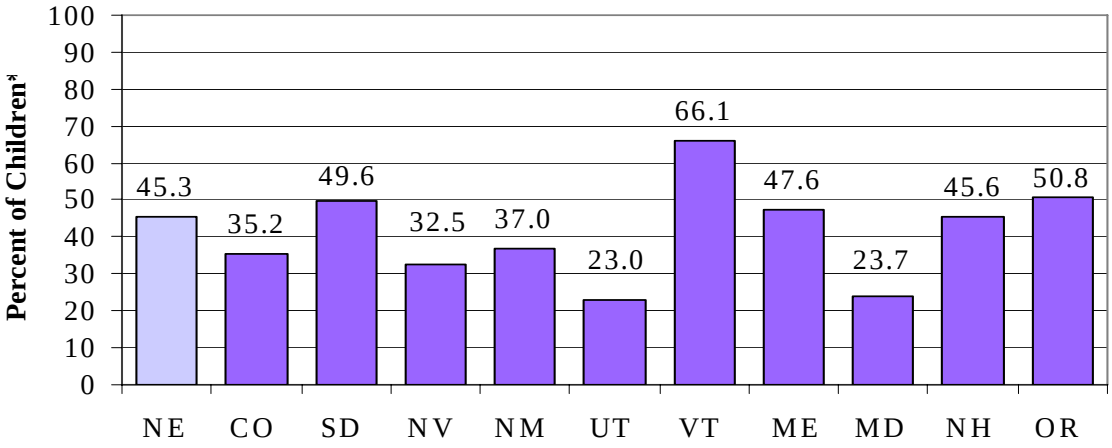
Figure 1
Caries Experience in Third Grade Children, by State
Nebraska, 2005



*Data is weighted for non-participation and non-response

Figure 2 compares the prevalence of dental sealants between Nebraska and other states. Utilization ranges from a low of 23 percent in Utah to a high of 66 percent in Vermont. At 45 percent, Nebraska falls in the mid-range of sealant use.

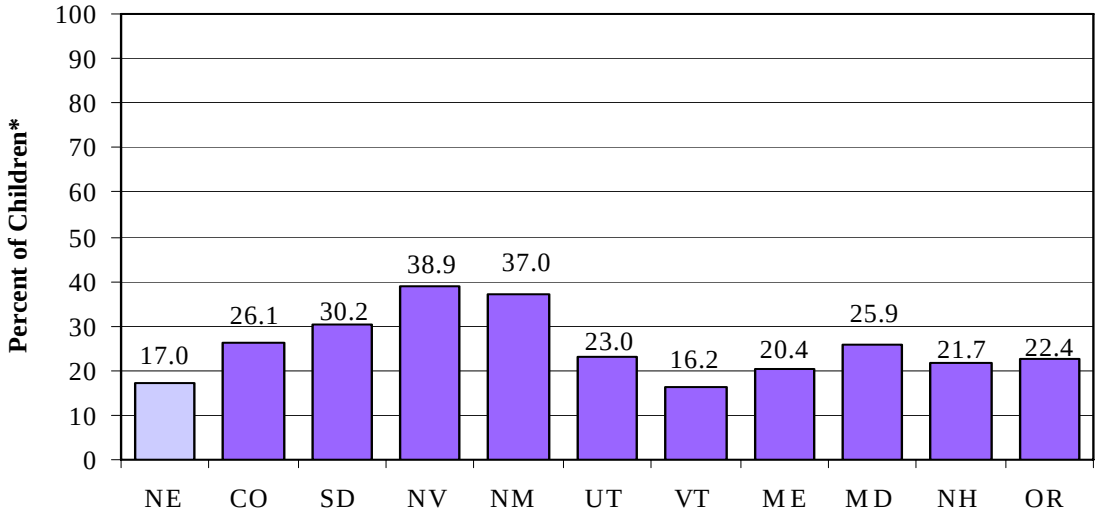
Figure 2
Dental Sealants in Third Grade Children, by State
Nebraska, 2005



*Data is weighted for non-participation and non-response

Figure 3 compares the prevalence of untreated decay in third graders between Nebraska and other states. While any untreated decay is not good and can be painful for the child, Figure 3 illustrates that Nebraska's rate (17%) is lower than all but one other state (Vermont 16.2%).

Figure 3
Untreated Decay in Third Grade Children, by State
Nebraska, 2005



*Data is weighted for non-participation and non-response

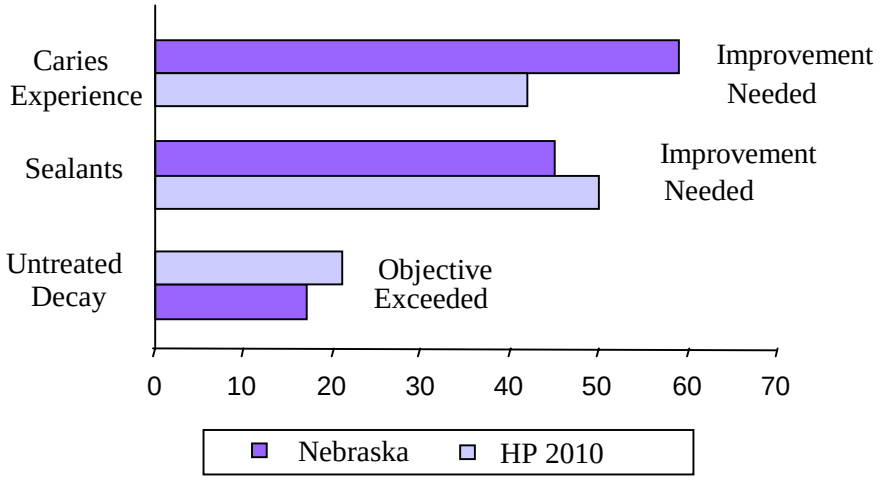
Comparison to Healthy People 2010

The National Healthy People 2010: Oral Health Objectives for Improving Health outline three primary objectives for six to eight-year-old children:[9]

- To decrease the proportion of children who have experienced dental caries in permanent or primary teeth to 42 percent (NE 2005 is 59.3%).
- To increase the proportion of six to eight year olds receiving dental sealants on the chewing surfaces of permanent molar teeth to 50 percent (NE 2005 is 45.3%).
- To decrease the proportion of children with untreated dental caries in permanent or primary teeth to 21 percent (NE 2005 is 17%).

[9] U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington, DC: U.S. Government Printing Office, November 2000.

Figure 4
Comparison of Nebraska's Findings with Healthy People 2010 Objectives
Nebraska, 2005



Fifty-nine percent of the third graders screened in Nebraska had experienced dental caries, substantially higher than the HP2010 objective of 42 percent. In Nebraska progress in prevention is needed.

For dental sealants the survey results are not strictly applicable to the designated HP2010 age group (six to eight year old children), as the majority of children screened were eight to nine years of age. Nonetheless Nebraska has not reached the goal. Only forty-five percent of Nebraska's third graders had dental sealants, lower than the HP2010 objective of 50 percent.

Seventeen percent of Nebraska's third graders had untreated caries, exceeding the HP2010 objective of 21 percent.

Prevention

The prevention of dental caries in Nebraska's children is a public health concern. Even though, dental caries is preventable, Nebraska's third grade children have significant dental caries experience, nearly 60 percent, compared to the benchmark HP2010 Objective of 42 percent.

Dental caries is an infectious disease often transmitted from mother to child and from generation to generation.[10] Because the transmission of caries bacteria is usually occurs

[10] American Academy of Pediatrics. Oral Health Risk Assessment Timing and Establishment of the Dental Home. Pediatrics. 2003;111:1113-1116.

shortly after the child's first teeth erupt, primary prevention needs to begin in the first year of life. In fact because high caries rates are passed from generation to generation, more attention is being focused on the oral health of expectant mothers.[11] Effective prevention can be achieved through a comprehensive dental program, which consists of appropriate dietary practices, including the restriction of fermentable carbohydrates (juice, soft drinks, milk, and starches), and good oral hygiene for the entire family, including the use of fluoride, regular dental cleaning and dental sealants.

Frequent exposure to small amounts of fluoride each day best reduces the risk of dental caries in all age groups. For that reason it is recommended that all persons drink fluoridated water and brush their teeth daily with fluoride toothpaste.[12]

Fluoridated water is not available in all communities in Nebraska. In this study, 25.6 percent of the children lived in one of the 20 communities that do not have access to fluoridated water. The Task Force on Community Prevention Services recommends the use of fluoride mouth rinse, fluoride supplements, and professional applications of fluoride products to persons of high risk, including those who have low concentrations of fluoride in their drinking water. Others who are considered by this study to be high risk are children from schools with more than 75% of families supported by Free or Reduced Price Lunch program and racial/ethnic minority children, particularly Hispanic and African American children.

As much as 90% of all dental caries in school children occurs in the pits and fissures of the molar teeth.[13] Dental sealants were developed to prevent caries on the chewing surfaces of molars, which are most vulnerable to caries. While over half (54.7 %) of Nebraska's third grade children do not have dental sealants, Nebraska is close to meeting the benchmark HP2010 Objective of 50 percent on at least one permanent molar. However, this study identified Hispanic children as having significantly higher rates of caries and rampant caries and lower utilization of dental sealants. Sealants are nearly 100% effective in preventing tooth decay and are recommended by the Task Force on Community Preventive Services as a part of a comprehensive population-based strategy to prevent and control dental caries. [14, 15]

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[11] U.S. Department of Health and Human Services. Guide to Children's Dental Care in Medicaid. U.S. Department of Health and Human Services, Center's for Medicare and Medicaid Services. October 2004.

[12] Centers for Disease Control and Prevention. Recommendations for using fluoride to prevent and control caries in the United States. MMWR 2001; 50 (No. RR-14)

[13] American Academy of Pediatric Dentistry. Policy on Third-party Reimbursement of Fees Related to Dental Sealants. Revised 2002.

[14] U.S. Department of Health and Human Services. Oral health in America: report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, National Institute of Health, 2000.

[15] Guide to Preventative Community Services. School-Based or School-Linked Pit and Fissure Sealant Delivery Programs are Effective in Reducing Tooth Decay in Children and Adolescents. December 2002. http://www.thecommunityguide.org/oral/oral-int-seal.pdf

Treatment

Once disease is established it requires treatment. A cavity only grows larger and more expensive to repair the longer it remains untreated.[16] Nebraska's third graders had low rates of untreated decay (17%,) as compared to the benchmark HP2010 Objective of 21 percent. Yet, 13% of third graders were found to have rampant caries, an indication that for those children the disease is established. Further dampening the overall positive finding is the disparity that exists for African American, Hispanic and children from low-income schools, all of whom had significantly higher treatment needs (including rampant caries) than the state overall, and the benchmark HP2010 objective of 21%.

Dental care is the most common unmet treatment need in children and a small percentage of the population has the greatest needs. Documented reasons for disparities include 1) high caries rates run in families and are passed from generation to generation; and 2) access to care occurs on an episodic or urgent care basis, typically only when pain or swelling are present.[17] Because of these issues the American Academy of Pediatric Dentistry, the American Dental Association, the American Academy of Pediatrics, and the Bright Futures Consortium have issued and endorsed policy statements on the establishment of a dental home, especially for high risk children, by age one.

The concept of a dental home states that pediatric dentistry is best delivered where comprehensive, continuously accessible, family-centered, coordinated, compassionate, and culturally effective care is available and delivered or supervised by qualified dental specialists.[18] The dental home environment promotes a more cost effective and higher quality alternative to emergency/urgent care scenarios.[19]

Most children establish a dental home through private dental practice, although this is often not accessible to low-income families without insurance or Medicaid-eligible families unable to find a participating dentist. Other options in Nebraska for children and families to access care are through the network of public health clinics and Community Health Clinics' (Appendix B) although nearly all are located in urban centers.

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[16] Department of Health and Human Services, Centers for Disease Control and Prevention. Preventing Chronic Diseases: Investing Wisely in Health. Preventing Dental Caries. August, 2005. http://www.cdc.gov/OralHealth/factsheets/dental_caries.htm

[17] Department of Health and Human Services, CMS. Guide to Children's Dental Care in Medicaid. October 2004.

[18] American Academy of Pediatrics. The medical home. Pediatrics. 2002;110:184-186.

[19] American Academy of Pediatric Dentistry. Policy on Dental Home. Revised 2004.

Recommendations

Acknowledging that it is difficult to make recommendations in a time of economic uncertainty it seems reasonable and prudent to support current activities, expanding them when possible, as well as promoting recommendations made by the national pediatric and dental leadership. The recommendations provided touch on education and increased access. Therefore, based on the findings of the Open Mouth Survey of Third Graders, Nebraska 2005 the following recommendations are made:

- Increase efforts to educate families about the importance of oral health as a part of total health, especially pregnant and new mothers.
- Continue to promote the efficacy of fluoridated water to Nebraska's communities.
- Increase efforts to educate both the public and healthcare professionals about the importance of fluoride applications and sealants.
- Target public health and dental disease prevention programs to reduce disparities.
- Increase access to preventive dental care through a dental home, especially for at-risk populations.
- Improve the Medicaid Dental Provider Network to increase the capacity to care.
- Expand Nebraska's Community Health Centers' and other community clinics' ability to provide dental care on a sliding scale.
- Continue and expand school based sealant programs such as Hope Medical's Sealing Smiles dental sealant program of Omaha ,Nebraska.
- Include additional age groups, especially very young children, in future oral health surveillance efforts.

Appendix A

Sampling

The survey sample of elementary schools with third graders was drawn from an electronic data file containing all elementary schools in Nebraska obtained from the Nebraska Department of Education. The data file for the 2003-2004 school year contained the following information for each school: district, county, total enrollment, third grade enrollment, number of children participating in the free or reduced price lunch program, school address, and class of school.

During the 2003-2004 school year, there were 847 schools in Nebraska with third grade (23,518 students). Of these schools, 673 were public (20,259 students) and 174 were private (3,259 students). All schools with at least five children in third grade were included in the sampling frame (676 schools and 23,136 students).

Table
Enrollment and Free/Reduced Price Lunch Program
Nebraska 2005

	3rd Grade Enrollment	Percent on FRL
Nebraska Schools with 3rd Grade (n=847)	23,518	33.50%
Sample Schools (n=61)	2,596	32.10%
Participating Schools (n=55)	2,237	33.60%

Source: Nebraska Department of Education, 2003-2004 School Year

To be eligible for the FRL program during the 2004-2005 school year, annual family income for a family of four could not exceed $34,873.[20] While information on eligibility for the FRL program was not available at the student level, it was available at the school level. The schools taking part in the oral health survey were categorized into four income levels based on the percentage of children eligible for the FRL program:

- High income: Less than 25% of students eligible.
- Moderate income: 25% - 49.9% of students eligible.
- Middle-low income: 50% - 74.9% of the students eligible.
- Low income: 75% or more of the students eligible.

Implicit stratification, a systematic sampling from an ordered list, was used to select a probability sample. The sampling frame was sorted by the class of school district (Class I, II, III, IV, V, and non-public) and then by percent of students eligible for the free/reduced price lunch (FRL) program. Selecting a sample using implicit stratification assured that the sample was representative of the state's schools in terms of both class of school district (based on population density) and free/reduced lunch participation (based on income).

Once the list of schools was obtained and sorted, a random number between 1 and 11 was chosen (n=7); the 7th school was selected with every 11th school thereafter. This produced a sample of 61 schools with a total of 2,596 third graders. If a school declined to participate, a

[20] U.S. Department of Agriculture, Child Nutrition Programs, School Lunch Program, Income Eligibility Guidelines SY 2004-2005, http://www.fns.usda.gov/cnd/governance/notices/iegs/IEGs04-05.pdf.

replacement school within the same sampling strata was selected. If a replacement school declined to participate they were not replaced and data were not collected. Of the 61 sampled schools, 55 schools and 2,237 third graders participated.

Preparation of Screeners

Each dental screener attended calibration training conducted on October 11, 2004. The training was designed to inform the screeners of the survey methodology and ensure that the screenings were conducted consistently. The diagnostic criteria outlined in ***Basic Screening Surveys: An Approach to Monitoring Community Oral Health***[21] was utilized. The training was a two part process: 1) A didactic training covered informed consent, how to record demographic and screening data, the difference between screening and diagnosis, operational definitions of variables, instrumentation, and how to complete a referral letter followed by a hands-on calibration session. 2) Dentists screened a group of students in an after school program (using mask/gloves, penlights, and disposable mouth mirrors). This calibrated the observations with consistent screening techniques.

Individual Participation

School principles were contacted by letter. Once a school agreed to participate, an informed consent letter (IRB approved) was sent to parents/guardians of third graders. If the parent/guardian did not want their child screened they were given the opportunity to opt-out (passive consent). For their participation children received a toothbrush and the parent/guardian received a letter describing the findings of the assessment. All materials were professionally translated and distributed in the following languages requested by the schools: Arabic, Bosnian, Farsi, Korean, Kurdish, Nuer, Portuguese, Spanish, and Vietnamese.

Data Management and Analysis

Data entry and analysis was completed using Epi Info, Version 3.2.2 a public access software program developed and supported by the Centers for Disease Control and Prevention. The data were adjusted (weighted) for schools who declined participation and the students who did not participate within each school. The non-participation sampling weight was calculated by taking the number of children enrolled in the non-participating school divided by two and added to the enrollment figures of the schools in the sampling strata immediately before and after the missing strata. For the non-response sampling weight, the number of children screened was divided by the number of children enrolled in each school.

[21] Association of Territorial Dental Directors. Basic Screening Survey Planning Guide. December 2003. http://www.astdd.org/?template=publications.html

Appendix B

CHILDREN ONLY:

Clinic Name	Services Available	Eligibility	Payment	Hours	Appointment Waiting Time (Maximum)
UNMC Pediatric Dentistry 985460 NE Medical Center Omaha, NE 68198-5460 (402) 559-6100 option 1	All dental services and limited orthodontics except dentures, oral and gum surgery	Open only to children – new patients 8 years old and under – Children with special needs until 19 years old	Cash, Checks, Insurance and Medicaid	Mon – Fri 8 am – 11:30am 1pm – 4:30pm	1st Appointment: 5-6 weeks

CHILDREN/ADULTS:

Clinic Name	Services Available	Eligibility	Payment	Hours	Appointment Waiting Time (Maximum)
Central Community College Dental Hygiene Clinic Hastings PO Box 1024 East Highway 6 Hastings, NE 68901 (402) 461-2468 (800) 742-7872 ext. 2468	All preventive services – no restoration services available	Accepts both children and adults	Cash, Checks, Credit Cards, Kid's Connection and Medicaid	\variable times and \variable days	1st Appointment: 1 week 2nd Appointment: As needed Emergency: None
Charles Drew Health Center 2915 Grant Street Omaha, NE 68111 (402) 453-1433	All basic dental services except orthodontics	Accepts both children and adults	Sliding Fee Scale, Cash, Insurance and Medicaid	Mon – Fri 8am – 5pm One day a week open late	1st appointment: 1 – 2 weeks Emergency: As needed
Creighton University Medical Center School of Dentistry 2802 Webster Street Omaha, NE 68178 (402) 280-2865	All dental services	Accepts both children and adults	Cash, Checks, Credit Cards, Insurance and Medicaid	Mon & Tues 8 am – 5pm Wed & Fri 1pm – 5pm Thurs 8am – 12pm	1st Appointment: 1 month 2nd Appointment: As needed Emergency: As needed
Douglas County Health Department Dental Clinic 4102 Woolworth Avenue 2nd Floor Omaha, NE 68105 (402) 444-7348	All basic dental services for children except orthodontics -screenings for emergency treatment - adult services for referred Primary Health Care patients	Children birth to 18 years of age must be a Douglas County resident and must meet income guidelines or have Kid's Connection – Adults must be a Douglas County Health Center resident – Approved Primary Health Care patient with referral	Income guidelines, Kid's Connection and Medicaid	Mon – Fri 8am – 4:30pm	1st Appointment: 1 – 2 weeks
Good Neighbor Community Health Center 2282 East 32nd Street Columbus, NE 68601 (402) 562-7500 (877) 563-2400	All basic dental services – no orthodontics, complex restoratives or dentures	Accepts both children and adults	Sliding Fee Scale, Cash, Checks, Insurance, Medicaid and Medicare	Mon – Fri 8am – 5pm	1st Appointment: 2 weeks

CHILDREN/ADULTS: continued

Clinic Name	Services Available	Eligibility	Payment	Hours	Appointment Waiting Time (Maximum)
Lincoln-Lancaster County Health Department 3140 N Street Lincoln, NE 68502 (402) 441-8015	All basic dental services	Must be a Lancaster County resident – Children 2-18 years old are given priority – Adults without children are seen for emergencies and limited treatment services	Sliding Fee Scale, Cash, Checks and Medicaid	Mon – Fri 8 am – 4:30pm	1st Appointment: 2 weeks 2nd Appointment: As needed
One World Community Health Center 5155 S. 36th Street Omaha, NE 68107 (402) 932-7204	All basic dental services – no orthodontics, crown and bridge work or dentures at this time Languages spoken: English/Spanish/ Sudanese	Accepts both children and adults of all incomes	Sliding Fee Scale, Cash, Checks, Insurance and Medicaid	Mon 12pm– 6pm Tues & Wed 9am – 6pm Thurs 8am– 6pm Fri 8am – 3pm Sat (two times a month) 8am – 12pm	1st Appointment: 2 – 3 weeks Emergency: 1 – 2 days
Panhandle Community Services Dental Clinic 3350 10th Street Gering, NE 69341 (308) 632-2540	All basic dental services except orthodontics	Comprehensive care for children – emergency care for adults – also accepts migrant seasonal farm workers	Sliding Fee Scale, Cash, Checks and Medicaid	Mon – Fri 7:30am – 5pm	1st Appointment: 3 months 2nd Appointment: 8 weeks Emergency:Tues 8 –12, Thurs 1– 5
Peoples' Health Center 1021 N. 27th Street Lincoln, NE 68503 (402) 476-1455	All basic dental services	Accepts both children and adults	Sliding Fee Scale, Cash, Checks, Credit Cards and Medicaid	Mon, Tues, Wed and Fri 8am – 5pm Thurs 10am – 7pm	1st Appointment: 4 weeks Emergency: As needed
UNMC Adult Dentistry 989375 Nebraska Medical Center Omaha, NE 98198-9375 (402) 559-6100 option 3	All dental services	Children accepted if permanent teeth are present, if not they are referred to UNMC Pediatric Dentistry	Cash, Checks, Credit Cards and Medicaid	Mon – Fri 8am – 5pm	1st Appointment: 1 month 2nd Appointment: 3 weeks Emergency: 2 days
UNMC College of Dentistry Student Clinic 40th and Holdrege Lincoln, NE 68583-0740 Adults: (402) 472-1301 Children: (402) 472-1305	All dental services	Accepts both children and adults	Cash, Checks, Credit Cards and Medicaid	Mon – Fri 8am – 5pm	1st Appointment: 2 weeks 2nd Appointment: 1 week Emergency: As needed

NATIVE AMERICANS:

Clinic Name	Services Available	Eligibility	Payment	Hours	Appointment Waiting Time (Maximum)
Carl T. Curtis Health Education Center PO Box 250 Macy, NE 68039 (402) 837-5381 ext. 138	All basic dental services except molar endodontics and implants	Open to tribally enrolled Native Americans only	Tribally Funded Medicaid and Insurance	Mon – Thurs 8am – 4:30pm	1st Appointment: 2 weeks Emergency: Mon– Thurs 8am – 8:30am
Fred LeRoy Health and Wellness Dental Clinic 2602 J. Street Omaha, NE 68107 (402) 733-1325	All basic dental services	Open to tribally enrolled Native Americans only	Tribally Funded Medicaid and Insurance	Mon – Fri 7am – 4:30pm	1st Appointment: 1 month 2nd Appointment: 4 weeks Emergency: Daily
Santee Dental Clinic PO Box 163 Niobrara, NE 68760 (402) 878-2465	All basic dental services except orthodontics	Open to tribally enrolled Native Americans only	Tribally Funded Medicaid, Cash, Checks and Insurance	Mon – Fri 8am – 4:30pm	1st Appointment: 1 month 2nd Appointment: 2 weeks Emergency: Daily
Winnebago Dental Clinic 77/75 Highway PO Box 706 Winnebago, NE 68701 (402) 878-2465	All basic dental services except gum surgery and orthodontics	Open to tribally enrolled Native Americans from a Federally recognized tribe only	Tribally Funded Medicaid	Mon – Fri 8am – 4:30pm	1st Appointment: 1 month 2nd Appointment: 4 weeks Emergency: Daily

VETERANS:

Clinic Name	Services Available	Eligibility	Payment	Hours	Appointment Waiting Time (Maximum)
Veterans Administration Grand Island 2201 N. Broadwell Avenue Grand Island, NE 68801 (308) 382-3660 ext. 2255 (800) 452-7897 ext. 2255	All basic dental services except orthodontics and implants – limited oral surgery and periodontics	Open to eligible veterans only (no family)	Veteran Benefit	Mon – Fri 8am – 4:30pm	1st Appointment: 3 months 2nd Appointment: As needed Emergency: Daily
Veterans Administration Lincoln 600 South 70th Street Lincoln, NE 68510 (402) 486-7841	All dental services except pediatric dentistry and orthodontics	Open to veterans who meet existing eligibility requirements (no family)	Veteran Benefit	Mon – Fri 7:30am – 4pm	1st Appointment: 1-2 weeks 2nd Appointment: As needed Emergency: Daily
Veterans Administration Omaha 4101 Woolworth Avenue Omaha, NE 68105 (402) 346-8800 ext. 3306	All dental services except pediatric dentistry and orthodontics	Open to eligible veterans only (no family)	Veteran Benefit	Mon – Fri 7am – 4pm	1st Appointment: 3 weeks 2nd Appointment: As needed

Nebraska Department of Health and Human Services
Division of Dental Health
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Lincoln, Nebraska 68509-5007

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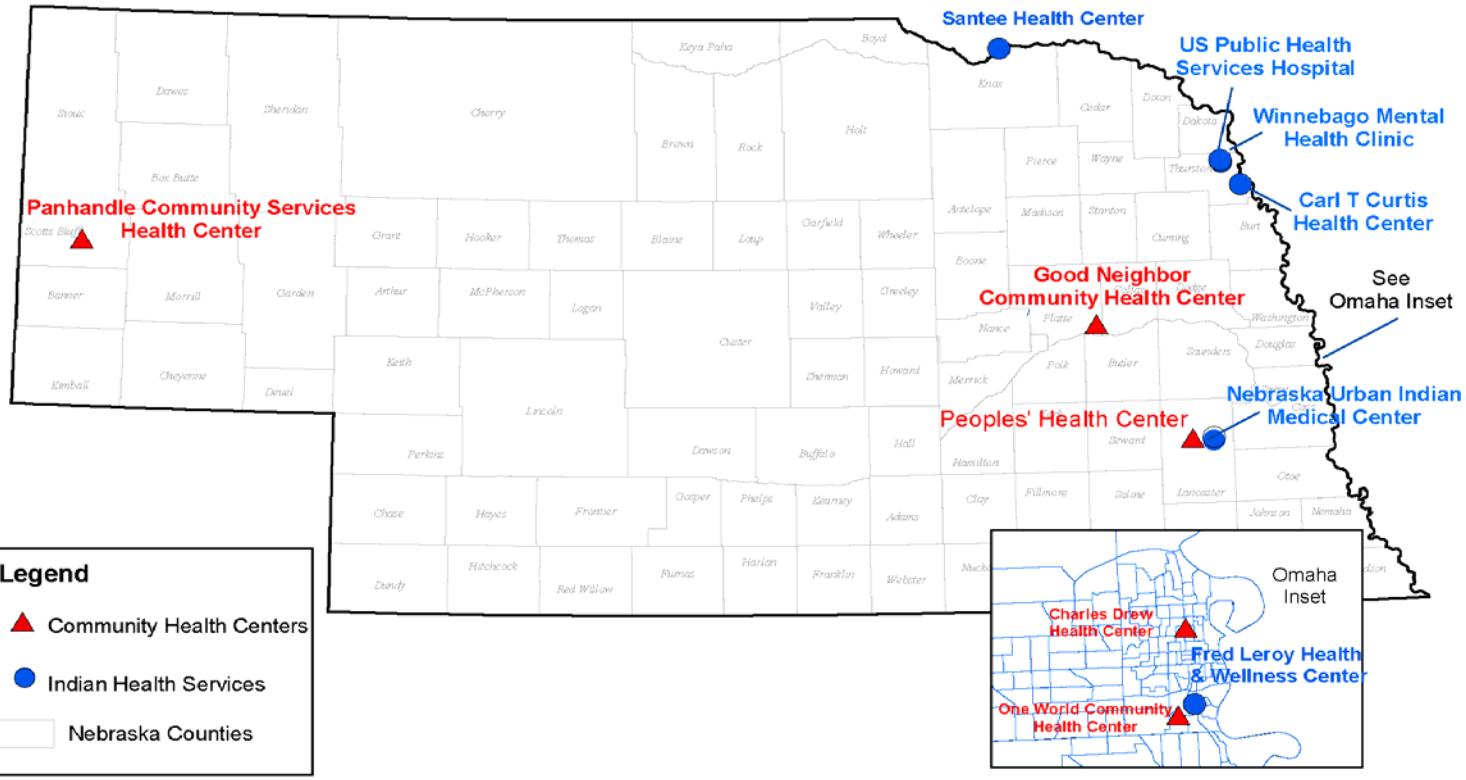
Nebraska Health and Human Services System

Nebraska Community Health Centers and Indian Health Services Facilities

August 2005



Source:
Nebraska Health and Human Services System, Office of Rural Health & Primary Care
Data current January 31, 2005.

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Cartography:
Tom Rauner, PCO Director
HHSS - Office of Rural Health

Glossary of Terms

Dental Caries: the common term for tooth decay, the destruction of the outer surface of a tooth by the bacteria that live in plaque. Plaque bacteria sticking to tooth enamel uses sugar and starch from food particles in the mouth to produce acid and that eventually decays an area.

Dental Sealants: act as a barrier protecting against bacteria. Sealants are made of a resin that covers the "pits and fissures" on the top of the teeth and were developed as an effective way to prevent caries on molars.

Fluoride: a naturally occurring compound that can help prevent dental caries. Fluoride is effective both systemically (ingested in water and food) and topically (toothpaste, rinse, foams, and gels).

Molar: are the teeth farthest back in the mouth that are used exclusively for crushing and grinding. Molars have a series of elevations, or cusps, that are used for breaking up particles of food.

Primary or Deciduous Teeth: sometimes-called "baby teeth" are as important as the permanent adult teeth. Primary teeth typically begin to appear when a baby is between age six months and one year. Primary teeth help children chew and speak. They also hold space in the jaws for permanent teeth that are developing under the gums.

Permanent Teeth: begin to erupt about age 5 or 6 and are finished by age 13. The primary teeth are shed when their roots are reabsorbed as the permanent teeth push toward the mouth cavity in the course of their growth.

Plaque: a sticky, whitish film of bacteria that cover the teeth.

Rampant Caries: a history of dental caries on seven or more teeth and occurs when there is prolonged demineralization of the teeth and may result from an increase of carbohydrate consumption and/or from decreased use of fluoride at home.[22]

[22] Colgate Oral Care and Adelaide University. Caries Challenges of Rampant Caries. Practitioner Information Summary No. 6. Colgate Caries Control Program. http://www.adelaide.edu.au/spdent/dperu/caries/

NEBRASKA HEALTH AND HUMAN SERVICES SYSTEM

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