



Dental Public Health Activities & Practices

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SECTION I: PRACTICE OVERVIEW

Name of the Practice:

Nevada Head Start Oral Health Screening Survey

Public Health Functions:

Assessment – Acquiring Data

Healthy People 2010 Objectives:

- 21-16 Increase the number of states with State-based surveillance system
- 21-1 Reduce dental caries experience in children
- 21-2 Reduce untreated dental decay in children and adults
- 21-10 Increase utilization of oral health system
- 21-12 Increase preventive dental services for low-income children and adolescents

State:

Nevada

Federal Region:

West
Region IX

Key Words for Searches:

Screening, survey, caries experience, untreated decay, dental sealants

Summary:

The Nevada Oral Health Program began a challenging endeavor to collect baseline data on oral health in the state, using indicators that were introduced by the Surgeon General's report and Healthy People 2010 oral health objectives for the nation. The Healthy Smile - Happy Child Survey (an oral health screening survey) was created and first conducted in 2003 to collect oral health data on third graders in Nevada. For 2004, the survey focused on children ages 3 to 5 who were enrolled in the Head Start Program. Survey findings indicated that there are large unmet oral health needs in the Head Start population. A report of the 2004 survey was disseminated to policymakers, funders, educators, and stakeholders throughout the state. Survey findings led to the Nevada Head Start Association and the Oral Health Program collaborating and convening three regional Head Start Oral Health Summits to establish goals and strategies to improve the oral health of Head Start children. Survey results will aid in the development of new programs and interventions to prevent oral disease so that growth, development, and overall quality of life in Nevada's children are not compromised. The Oral Health Program intends to repeat the survey of Head Start children every three years. This will allow for surveillance and trend analysis on the Head Start population. Following this plan, Nevada conducted the first survey of Head Start children in 2004 and completed the second survey in 2007.

Contact Persons for Inquiries:

Christine Wood, RDH, BS, Oral Health Program Manager, Nevada State Health Division, 3427 Goni Road, Suite 108, Carson City, NV 89706, Telephone: 775-684-5953, Fax: 775-684-4245, Email: pcwood@health.nv.gov

SECTION II: PRACTICE DESCRIPTION

History of the Practice:

In Nevada, an oral health assessment of youth, children in the first and sixth grades, was made in 1992 (A Youth Oral Health Needs Assessment completed by Cristman Associates). It showed that 67% of children had experienced decay in permanent or primary teeth. No other statewide oral health survey of children was conducted in Nevada for the next ten years. Then in 2003, the Oral Health Program at the Nevada State Health Division partnered with the Nevada Dental Association to conduct the first Healthy Smile – Happy Child Survey (an oral health screening survey) and collect baseline oral health data on third graders in Nevada. The subsequent year, 2004, the survey focused on Head Start children's oral health. The Healthy Smile – Happy Child Survey will be an ongoing effort to document the oral health of children in the state of Nevada.

Justification of the Practice:

Assessment data is important in that it estimates the extent of oral health needs in young low-income children. According to the Surgeon General's report, children from low-income families have more tooth decay, more extensive tooth decay, and suffer more pain than children from families with higher incomes. Survey results will aid in the development of new programs and interventions to prevent oral disease so that growth, development, and overall quality of life in Nevada's children will be improved.

Inputs, Activities, Outputs and Outcomes of the Practice:

Statewide Screening Survey

The Nevada statewide oral health screening survey, called "Healthy Smile - Happy Child Survey," was based on the methods outlined in the Association of State and Territorial Dental Directors (ASTDD) 1999 publication *Basic Screening Surveys: An Approach to Monitoring Community Oral Health*. The consent form used and parent questionnaire were taken directly from the publication, with minor formatting changes. The guidelines are the same as those followed in the 2003 statewide screening of third grade students. One licensed dental hygienist performed all of the screenings to maintain consistency in screening procedures and results.

The 2004 survey sampled children ages 3 to 5 who were enrolled in the Head Start program. The purpose of the survey was to establish baseline data, determine the oral health status and needs of children enrolled in Nevada Head Start, make program decisions that are data driven, and allow for meaningful program evaluation.

Head Start Children

Head Start children are primarily from families with incomes at or below federal poverty guidelines. Less than 10 percent of Head Start children are from families with incomes that exceed the federal poverty guidelines. Consequently, Head Start children are not representative of all preschool children in the state.

Partnership to Conduct the Screening Survey

The Nevada State Health Division, Oral Health Program partnered with the Nevada Head Start State Collaboration to conduct the screening survey. With the cooperation of the Collaboration, children in 44 programs were screened.

The Nevada Head Start Collaboration Office assisted by encouraging grantees to participate in the screening survey and facilitating communication between the individual Head Start grantees and programs and the Oral Health Program.

Survey Method

A data file listing all Head Start and Early Head Start grantees in Nevada was obtained from the Head Start Collaboration Office. The file included the location, number of children enrolled, and the hours of operation of each program in the state. With the knowledge that less than 3,000 children were enrolled statewide, the Oral Health Program chose to schedule a screening at all 51 Head Start and Early Head Start sites. Contact was made with the directors of the programs. Each program delegated a person to be the contact for the Healthy Smile - Happy Child Survey (e.g., program directors, health services personnel, or program nurses).

Enrollment numbers were requested for each program in January 2004. All screenings were completed by the time the Head Start Programs concluded their year (late May to early June 2004). Scheduling of the screening sites was based on geographic location to minimize travel dollars spent. The first two programs to be screened were those closest to the office as a "trial run."

To determine the amount of time needed at each facility, three minutes were planned for each child enrolled at each site. Constant communication with the program contact was essential to keeping the schedule intact.

Enrollment numbers were used to project the amount of screening materials necessary for each site. Materials included gloves, masks, disposable mouth mirrors, cotton-tipped applicators, toothbrushes, stickers, treatment urgency forms and letters explaining that this was not a complete dental examination. Screening materials were transported to each site, with the exception of the Las Vegas area. By transporting the materials there was a substantial savings in shipping costs and no unused materials were left behind. In order to make transportation more efficient; toothbrushes, mouth mirrors, gloves, and masks were taken out of boxes and placed in large Ziploc bags. This allowed more items to be placed in a suitcase. For the Las Vegas area, arrangements were made to ship the materials to the University of Nevada, Las Vegas (UNLV) School of Dental Medicine and restocking of materials was made from that location.

Pre-printed parent letters and consent forms were sent electronically to the contact person who then made copies to be distributed to Head Start parents. The forms were provided in both English and Spanish. Only children with a signed, positive consent form received a screening.

Each site decided on the location to be used for screening and how the classes would be screened. In some sites, several children were sent to the screening area at a time and at other sites, the entire class came in together.

The survey team arrived at each location approximately twenty minutes prior to the scheduled screening time. This allowed them to collect and review the parental consent forms, and enter each child's name into the database. Only children who had signed parental consent forms with the appropriate box checked were screened.

Children with erupted permanent molars received a written note on their Treatment Urgency form to have an assessment for dental sealants.

Each program was given tooth brushing charts, a sheet explaining different types of fluoride and sealants, and several pages of songs relating to tooth brushing. The programs were asked to make copies to be sent home with the children as follow-up of the screening.

Survey Staff

One Nevada licensed dental hygienist performed all the screenings using a flashlight, gloves, disposable mirrors, and cotton tip applicators when necessary to remove debris. The Oral Health Program Biostatistician accompanied the dental hygienist to enter data directly at the time of screening. The dental hygienist would call out the findings to the biostatistician for untreated decay, previous caries experience, missing teeth, sealants and treatment urgency. This information was immediately entered into the survey database. Each child was given a sticker after being screened. Treatment urgency forms, letters to parents explaining that the screening was not a replacement for a routine dental examination, and toothbrushes were given to the teachers for the screened children to take home.

Volunteers helped with the children during the screenings, recorded the child's name on the take home sheets, gave the biostatistician the child's data tracking number, and handed the children their stickers. This was particularly helpful in the programs with larger enrollments.

Data Collection

The screening survey collected prevalence data on early childhood caries, caries experience, untreated decay, and the need for urgent dental treatment. In addition, the survey collected socio-economic data for each child screened (age, gender, race and ethnicity), dental insurance status and access to dental care in the past year. These questions were included in the consent form and information was provided by the parent/guardian.

The condition of each primary tooth was recorded. Permanent teeth were recorded if there were visible decay on the tooth. Each tooth was recorded as one of the following:

- 1) Sound
- 2) Decayed (visible untreated decay as described in the ASTDD guidelines)
- 3) Filled (amalgam/composite fillings, stainless steel and porcelain crowns, and bridges)
- 4) Decayed and Filled (both an existing restoration and visible recurrent decay)
- 5) Missing due to caries
- 6) Missing due to injury
- 7) Missing due to exfoliation
- 8) Sealant present
- 9) Not recordable

A Treatment Urgency rating was also assigned to each child using the criteria below:

- 1) Urgent Care – signs or symptoms that include pain, infection, swelling, or soft tissue ulceration of more than 2 weeks duration (determined by questioning)
- 2) Need Restorative Care – visible caries without accompanying signs or symptoms, individuals with spontaneous bleeding of the gums, or suspicious white or red soft tissue areas
- 3) No Obvious Problem/Needs Routine Preventive Care – any child without the above problems

Data collection was performed onsite with the use of a laptop computer. The data were collected in real-time and stored in an MS Access database. The data file was imported to SPSS (Statistical Package for the Social Sciences) for editing and analysis. The data were weighted for non-response. Complete lists of the Head Start programs and their participation rates can be found in the appendix. The Oral Health Program Biostatistician analyzed the survey data. The data was analyzed to report for the state and geographic regions of the state, as well as by race/ethnicity and age.

Statewide Survey Results

The screening took approximately three months to complete. A total of 1,677 children were screened (63% response rate). The survey results separated the Head Start children from Early Head Start children screenings for analysis. There were very few Early Head Start children surveyed (74) and most of these children did not yet have their primary teeth. Therefore, of the original 51 programs, data from 44 programs are cited in the final data.

Key Findings

- ⇒ Dental decay is a significant public health problem for Nevada's Head Start children.
 - 54.0 percent of Head Start children had cavities and/or fillings (caries experience).
 - 37.5 percent of Head Start children had untreated dental decay (cavities).
 - 25.3 percent of Head Start children had Early Childhood Caries (ECC is the presence of 1 or more decayed, missing due to caries, or filled tooth surfaces in any primary tooth in a child 71 months of age or younger, also known as baby bottle tooth decay.)
 - 37.4 percent of Head Start children were in need of either restorative or urgent dental care.
- ⇒ A large percentage of Nevada's Head Start children have limited access to regular dental care.
 - 22.0 percent of parents reported that they had trouble accessing dental care during the last year. The primary reasons were "could not afford it" and "no insurance."
- ⇒ The majority of Nevada's Head Start children have some type of dental and medical coverage.

- 64.7 percent of the parents reported that they had some type of *dental* insurance coverage for their child.
 - 68.9 percent of the parents reported that they had some type of *medical* insurance coverage for their child.
- ⇒ Children with no dental insurance have poorer oral health.
- Compared to children with dental insurance, a significantly higher proportion of children without dental insurance had untreated decay (35.2% vs. 41.4%) and ECC (22.3% vs. 29.0%), while a significantly lower proportion had no obvious dental problems (64.9% vs. 58.4%).
- ⇒ There are regional differences in the oral health of Head Start children.
- A higher proportion of children in Washoe County had caries experience (64.9%) than Clark County (50.3%) and rural areas (53.7%).
 - A higher proportion of children in Washoe County had ECC (28.9%) than Clark County (25.2%) and rural areas (21.2%).
- ⇒ Minority children have poorer oral health.
- 44.4% of White Non-Hispanic children had caries experience, a significantly lower proportion than that of Hispanic children (56.8%) and Non-Hispanic Minority children (54.0%).
 - 30.2% of White Non-Hispanic children had untreated decay, a significantly lower proportion than that of Hispanic children (38.9%) and Non-Hispanic Minority children (38.7%).
 - 16.3% of White Non-Hispanic children had ECC, a significantly lower proportion than that of minority children. The proportion of Hispanic children (28.6%) with ECC was significantly higher than that of Non-Hispanic Minority children (24.0%).

The average number of decayed, missing (due to caries), and filled teeth (dmft) per child was 2.44. The number of teeth with active decay in one child ranged from 0 to 13; the range for filled teeth was 0 to 15. The number of missing teeth ranged from 0-16.

Use of the Survey Data & Survey Outcomes

The 2004 Healthy Smiles - Happy Child Head Start Oral Health Survey report was disseminated to policymakers, funders, educators, and stakeholders throughout the state (<http://health2k.state.nv.us/oral/report.pdf>).

The data indicated that there are large unmet oral health needs in the Head Start population. This resulted in the Nevada Head Start Association and the Oral Health Program collaborating to convene three regional Head Start Oral Health Summits. One was held in Reno (northern Nevada), one in Las Vegas (southern Nevada), and one in Elko (northeastern Nevada) Each meeting resulted in development of a Regional Action Plan to improve oral health of Head Start children.

The three Regional Action Plans addressed seven goals:

Goal Statement #1: To ensure all children enrolled in Head Start/Early Head Start are receiving appropriate pre-eruptive fluoride.

Goal Statement #2: All children enrolled in Head Start/Early Head Start will receive post-eruptive fluoride treatments as indicated by a risk assessment performed by a medical or dental professional.

Goal Statement #3: All children enrolled in Head Start/Early Head Start will show evidence of appropriate oral hygiene and consume a diet that promotes oral health.

Goal Statement #4: All children enrolled in Head Start/Early Head Start will have a dental examination by a licensed dentist within 90 days of enrollment (HS) or by age one or within 6 months of the eruption of the first tooth (EHS).

Goal Statement #5: All children enrolled in Head Start/Early Head Start needing emergency treatment due to the presence of pain or swelling are treated to relieve the pain or swelling within 24 hours of staff becoming aware of the problem.

Goal Statement #6: All children enrolled in Head Start/Early Head Start will have all of their routine dental treatment needs met within 90 days of the end of the program year.

Goal Statement #7: All children enrolled in Head Start/Early Head Start who need hospital or surgery-center based dental treatment will be treated within 90 days of the end of the program year.

Specific strategies to achieve each goal were identified. Each strategy included a timeline and an identified individual or organization to implement the strategy. The draft Action Plans were approved by the individual grantees and the stakeholders who collaborated in their development. At that point, each of the grantees started working with the oral health coalition in their community to implement the Action Plans.

To date, separate PowerPoint presentations on fluoride and on basic oral health information have been developed to educate Head Start Policy Council members, Health Advisory Committee members, Head Start staff and families of children enrolled in Head Start. A Caries Risk Assessment Tool has been developed to identify children at high risk so that targeted education and support can be provided to their families. Memorandums of agreement to provide services to children enrolled in Head Start have been developed with the dental school (University of Nevada, Las Vegas School of Dental Medicine), dental hygiene programs, and safety net providers. In addition, grantees are working collaboratively to apply for grants to assist with costs associated with the delivery of oral health education and preventive and restorative oral health services for children enrolled in Head Start

An intermediate outcome is that data is being used to secure additional funding for programs that provide both preventive and restorative care and to support policy changes to improve access to care. The long term outcome from the data collection will be the ability to compare year to year data to assist in evaluation of prevention efforts such as school-based dental sealant programs and community water fluoridation. Such regular and periodic data provided by the survey will sustain and maintain the state oral health surveillance system.

Frequency of Data Collection for Surveillance

The Oral Health Program at the Nevada State Health Division intends to repeat the survey of Head Start children every three years. In interim years, using the same Basic Screening Survey (BSS) protocol, the Oral Health Program will survey children enrolled in third grade and seniors residing in Assisted Living Facilities. This will allow for surveillance and trend analysis on the three distinct populations. Following this plan, Nevada conducted the survey of third graders in 2003, the survey of Head Start children in 2004, and the survey of seniors in 2005.

In 2007, the second survey collecting oral health data on children enrolled in Head Start programs in Nevada was completed. With the cooperation of the Nevada Head Start State Collaboration Office, the Nevada Head Start Association, and the individual Head Start grantees, children at all 44 Head Start sites were screened. The comparison of the 2004 and 2007 survey screening results of children in Nevada's Head Start programs indicated that oral health status has stayed the same or slightly improved for selected measures. The overall caries experience is the same in both years at 54 percent. Untreated decay shows a slight improvement of six percentage points which is a very positive sign (38 percent in 2004 and 32 percent in 2007). However, this is still far from the Healthy People 2010 goal of nine percent. Early childhood caries has not changed much between the two screenings (25 percent in 2004 and 24 percent in 2007). Treatment urgency also shows a positive improvement of six percentage points (37 percent in 2004 compared to 31 percent in 2007). These data are important in that they estimate the extent of oral health needs in young low-income children. Screening results will aid in the development of new programs and interventions to prevent oral disease so that growth, development, and overall quality of life in Nevada's children are enhanced. The 2007 Healthy Smile - Happy Smile Head Start Survey Report is available online at <http://health.nv.gov/docs/BSSheadstart2007final73007.pdf>.

Budget Estimates and Formulas of the Practice:

For the 2004 survey, the total cost for materials and hard costs such as per diem, airfare, rental cars, motor pool, overtime, and added employee time was around \$13,800. Some of the materials used were in inventory from the screening project the previous year. Cost was between \$8.00 and

\$9.00 per child screened. When budgeting for future screenings it is suggested that the figure of \$10.00 per child be used to give leeway for unexpected expenses (e.g., cancelled trips due to weather conditions). Funding for the supplies, printing, postage and Oral Health Program staff time was provided by the Centers for Disease Control and Prevention through the Chronic Disease Prevention and Health Promotion Programs Component 4: State-Based Oral Disease Prevention Program (U58/CCU922830-01-2).

2004 Healthy Smile - Happy Child Head Start Screenings – Supply List & Cost Breakdown			
Item	Description	Number Ordered	Cost
Flashlights	2 flashlights, batteries included.	On hand from previous screening project	N/A
Batteries	Size D	5 packages (8batteries/pkg.)	\$57.35
Stickers	Roll of Plak Smacker stickers		Free
Mouth Mirrors	Plastic disposable	1008 mirrors (72 mirrors/box); some on hand from previous screening project	\$200.25 (including shipping)
Toothbrushes	Plak Smacker child size	14 gross	\$362.88 (.18 ea) (1,677 x .18 = \$301.86)
Cotton Tipped Applicators		On hand from previous screening project	N/A (Used very few of these)
Facemasks	Ear loops	On hand from previous screening project	Approx. .61ea. (110 x .61 =67.10)
Anti-bacterial hand cleanser		Used 2 from previous screening project	N/A
Trash Bags	Draw-tie (13 Gal.)	4 boxes (100/box)	\$50.88
Ziploc bags	1 Gal.	Donated	N/A
Vinyl Powder Free gloves	Medium	30 boxes (100 gloves/box); some on hand from previous screening project	\$201.00
Shipping costs	Materials sent to & returned from Las Vegas		Approx. \$150.00
Printing			
Post Screening Letter	English/Spanish (1/2 sheet); two sided	900 sheets; some on hand from previous screening	\$42.00
Treatment Urgency Form	English (1/2 sheet), 50 per pad	1,500 sheets; some on hand from previous screening	\$44.25
Treatment Urgency Form	Spanish (1/2 sheet), 50 per pad	1,000 sheets; some on hand from previous screening	\$30.75
		Total	\$1,145.44

Lessons Learned and/or Plans for Improvement:

Recommendations to improve the screening program include:

1. Revise and shorten the Treatment Urgency form and the letter explaining that this is not a complete dental exam to one page, with English on one side and Spanish on the other. This would reduce the amount of paper being transported and handled. Include a place at the top of the page for the child's name.
2. The screening team had to travel for several weeks at a time. It was difficult to prepare all the paperwork for each trip, restock materials, and complete reimbursements for travel cost, while spending extended hours away from home and office. In the future, adequate office time should be scheduled between trips.

3. In future Head Start screenings, the Early Head Start programs would be eliminated due to the small sample size and lack of fully erupted teeth.
4. It would be helpful to have access to a bi-lingual volunteer at many of the sites. It was difficult to determine if some of the children had pain or how teeth had been lost due to language barriers.

Available Information Resources:

The 2004 Healthy Smile - Happy Child Head Start Oral Health Survey Report, describing the statewide oral health screening survey of Nevada Head Start children, is available online at <http://health2k.state.nv.us/oral/report.pdf> (the Nevada State Health Division Web site).

The 2007 Health Smile - Happy Child Head Start Oral Health Survey Report available online at <http://health.nv.gov/docs/BSSheadstart2007final73007.pdf>.

SECTION III: PRACTICE EVALUATION INFORMATION

Impact/Effectiveness

How has the practice demonstrated impact, applicability, and benefits to the oral health care and well-being of certain populations or communities (i.e., reference scientific evidence, outcomes of the practice and/or evaluation results)?

The survey data is being used to secure additional funding for programs that provide both preventive and restorative care and to support policy changes to improve access to care. The capacity of the Oral Health Program to repeat the survey of Head Start children every three years will provide the ability to observe trends and evaluate prevention efforts. The survey data will be used to support the National Oral Health Surveillance System and contribute to building Nevada's oral health surveillance system.

Survey findings have led to increased efforts to educate Head Start Policy Council members, Health Advisory Committee members, Head Start staff and families of children enrolled in Head Start (including the development of educational PowerPoint presentations on fluoride and basic oral health information). A Caries Risk Assessment Tool has also been developed to identify children at high risk so that targeted education and support can be provided to their families. Memorandums of agreement to provide services to children enrolled in Head Start have been developed with the dental school (University of Nevada, Las Vegas School of Dental Medicine), dental hygiene programs, and safety net providers. In addition, grantees are working collaboratively to apply for grants to assist with costs associated with the delivery of oral health education and preventive and restorative oral health services for children enrolled in Head Start

Efficiency

How has the practice demonstrated cost and resource efficiency where expenses are appropriate to benefits? How has the practice demonstrated realistic and reasonable staffing and time requirements? Provide unit cost analysis or cost-benefit analysis if appropriate.

The survey leveraged resources to collect and analyze data. The Nevada State Health Division Oral Health Program provided survey staff (the screener and biostatistician). Funding for the supplies, printing, postage and Oral Health Program staff time was provided through a Cooperative Agreement with the Centers for Disease Control and Prevention, Division of Oral Health.

Demonstrated Sustainability

How has the practice showed sustainable benefits and/or how has the practice been sustainable within populations/communities and between states/territories? What mechanisms have been built into the practice to assure sustainability?

The Nevada State Health Division, Oral Health Program will repeat the survey of Head Start children every three years. With the experience of conducting the survey in 2003 on third graders, the state was able to expand its survey efforts with a survey of Head Start children in 2004 and initiating a survey of seniors in 2005. It is planned that each year, a Basic Screening Survey will be conducted rotating from third graders to Head Start children to seniors. The second Head Start survey was completed in 2007.

Collaboration/Integration

How has the practice built effective partnerships/collaborations among various organizations and integrated oral health with other health projects and issues? What are the traditional, non-traditional, public and private partnerships/collaborations established by the practice for integration, effectiveness, efficiency and sustainability?

The Nevada State Health Division, Oral Health Program partnered with the Nevada Head Start State Collaboration to conduct the screening survey of Head Start children. With the cooperation of the Collaboration, children in 44 Head Start programs were screened statewide.

The survey also resulted in increased collaboration between Head Start grantees and the oral health coalition members in their communities to improve the oral health of Head Start children.

Objectives/Rationale

How has the practice addressed HP 2010 objectives, met the call to action by the Surgeon General's Report on Oral Health, and/or built basic infrastructure and capacity for state/territorial oral health programs?

The Nevada oral health survey primarily addresses the Healthy People 2010 Objective 21-16 (increase the number of states with State-based surveillance systems). In addition, the survey data will support efforts for other HP 2010 objectives including reduce caries experience in children, reduce untreated caries in children, increase sealants, increase utilization of the oral health system and increase preventive dental services for low-income children and adolescents.

Extent of Use Among States

Describe the extent of the practice or aspects of the practice used in other states?

ASTDD Synopses of State and Territorial Programs showed that during 2004-2005, 31 states and 1 territory reported having implemented an oral health survey (open mouth screenings may not be for Head Start children). States that have conducted recent Head Start oral health screening surveys include Alaska, Ohio, Hawaii, Massachusetts, Colorado, and Washington.