DENVER’S GREAT KIDS HEAD START:

“Healthy Teeth Give Children a Sparkling Smile”

by

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and

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Submitted to

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Introduction:

Denver’s Great Kids Head Start (DGKHS), one of three Denver-based Head Start programs, provides overall health education and services to low income three- to five- year olds and their families in the Denver Metropolitan area. DGKHS delivers services through five delegate agencies including Clayton, Catholic Charities (CC), Mile High Montessori (MHM), Denver Public Schools (DPS), and Volunteers of America (VoA). The Mayor’s Office for Education and Children (MOEC) (2008b) report “Summary of 2007 Comprehensive Community Assessment Findings” states family income is based on family size and must be at or below 130% of the federal poverty level (FPL) to qualify for DGKHS programs. The same report found that “approximately 57% of the children age 5 and under who live in poverty in Colorado reside in Denver County” (p. 1). As families qualify for Head Start programs financially, other demographic information is highlighted.

The MOEC (2008a) “DGKHS Program Information Report for 2007-2008 Program Year” states that of the 1,467 preschoolers serviced, 43.63% are three-year olds and 56.03% are four-year olds. In addition to 62.17% of students claiming Hispanic or Latino origin, the DGKHS population by race includes 40.49% White, 25.56% Black or African-American, and 0.06% Bi-Racial or Multi-Racial (Mayor’s Office for Education & Children [MOEC], 2008a). American Indian or Alaska Native, Asian, Native Hawaiian or other Pacific Islander, or “Other” racial groups comprise the remaining 33.89% of DGKHS serviced families (MOEC, 2008a). The majority of the DGKHS population speaks either English (53.17%) or Spanish (43.29%) as their primary language in the home (MOEC, 2008a). Other languages listed as primary in the home include Middle Eastern and South Asian, East Asian, Native North American or Alaska Native,
Pacific Island, African, and French. These percentages demonstrate the variety of racial, ethnic, and language backgrounds of the DGKHS program preschoolers.

The MOEC (2008b) assessed several community and family health indicators for DGKHS’s low income service population through its “Summary of 2007 Comprehensive Community Assessment Findings” report. Children from lower-income backgrounds have “lower rates of up-to-date immunizations and have obstacles accessing primary health care” (MOEC, 2008b, p.2). Children 1 to 14 years old of low income families are also 4.1% more likely to have someone smoking in their homes (MOEC, 2008b). Eighty percent of the parents in Head Start families have not yet attained a high school education (MOEC, 2008b). The Hispanic population in Colorado, which consists of 62.17% of the DGKHS population, has the “highest death rate from diabetes, over twice the rate of other groups” (MOEC, 2008b, p. 3). In relation to nutritional needs, 12% of all families in Denver County reported being “food insecure” and “40% of the Denver area Head Start income-eligible families expect to seek assistance from the Women, Infant, and Children (WIC) nutrition program” (MOEC, 2008b, p. 3). Despite reports of needing food assistance, 3.4% of Head Start children in 2007 were identified as overweight (MOEC, 2008b). In addition, the largest untreated health concern for the DGKHS population is dental caries, or cavities (Thornton-Kolbe & Good, 2008). There were no significant religious or occupational demographics for our service population. DGKHS program uses primary, secondary, and tertiary health care preventive measures to address the numerous health concerns facing its young service population.
Table 1: Key Enrollment Demographics for the DGKHS population (MOEC, 2008a)

<table>
<thead>
<tr>
<th>Agency:</th>
<th>Clayton</th>
<th>CC</th>
<th>MHM</th>
<th>DPS</th>
<th>VoA</th>
<th>DGKHS</th>
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<td>Enrollment by Age:</td>
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<tr>
<td>3-years old</td>
<td>139</td>
<td>199</td>
<td>230</td>
<td>19</td>
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<tr>
<td>4-years old</td>
<td>117</td>
<td>183</td>
<td>187</td>
<td>290</td>
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<td>Enrollment by Ethnicity:</td>
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<tr>
<td>Hispanic or Latino Origin:</td>
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<td>320</td>
<td>222</td>
<td>149</td>
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<td>Non-Hispanic/Non-Latino:</td>
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<td>Enrollment by Race:</td>
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<td>Asian:</td>
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<td>3</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>18</td>
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<tr>
<td>Black or African American:</td>
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<td>38</td>
<td>111</td>
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<td>White:</td>
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<td>321</td>
<td>255</td>
<td>12</td>
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<td>Primary Language of Family at Home:</td>
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<td>English:</td>
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<td>155</td>
<td>277</td>
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<td>Spanish:</td>
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<td>215</td>
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<td>103</td>
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<td>Medicaid/EPSDT:</td>
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<td>293</td>
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<td>Private health insurance:</td>
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<td>No health insurance:</td>
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<td>28</td>
<td>28</td>
<td>2</td>
<td>3</td>
<td>99</td>
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<td>Dental Services:</td>
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<td></td>
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<tr>
<td>Dental examination during the operating period or within the last 12 months:</td>
<td>148</td>
<td>291</td>
<td>356</td>
<td>288</td>
<td>73</td>
<td>1156</td>
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<tr>
<td>Of those examined, those who received preventive dental care:</td>
<td>142</td>
<td>291</td>
<td>324</td>
<td>288</td>
<td>71</td>
<td>1116</td>
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<tr>
<td>Of those examined, those who were diagnosed as needing dental treatment:</td>
<td>50</td>
<td>97</td>
<td>104</td>
<td>112</td>
<td>34</td>
<td>397</td>
</tr>
<tr>
<td>Of those diagnosed, those who have received or are receiving treatment:</td>
<td>50</td>
<td>63</td>
<td>73</td>
<td>101</td>
<td>31</td>
<td>318</td>
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<tr>
<td>Need/Received Average Rate:</td>
<td>100%</td>
<td>64.95%</td>
<td>70.19%</td>
<td>90.18%</td>
<td>91.18%</td>
<td>83.30%</td>
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</table>

**Health Concern in Target Population:**

The health concern our group addressed for this project is oral health. The target population is low-income, ethnically diverse preschoolers between the ages of 3-5 years and their families that are enrolled in a Head Start program. We chose this health concern and target population for many reasons. First, “early childhood caries is a significant public health issue
among low socioeconomic infants and toddlers in the United States today. It is estimated that dental caries affects 1 to 12% of preschoolers in developed countries and up to 70% within disadvantaged populations in developed countries” (Bray, Branson, & Williams, 2003, p. 225). Secondly, “oral health status has continued to differ markedly between America’s poor and racial/ethnic minority populations and the majority population and the non-poor” (Powell, Hollis, de la Rosa, Helitzer, & Derksen, 2006, p. 96). Further evidence shows that “the US Surgeon General’s first-ever report on oral health found disproportionately poorer oral health among racial/ethnic minority groups than Whites” (Powell et al., 2006, p. 97). Therefore, it is clear from the evidence that the children and families involved in the Head Start program fall into the population groups that typically have poor oral health practices.

If the health concern of poor oral health is not addressed in this population, there could be many detrimental outcomes. Dental related negative outcomes consist of dental caries, tooth decay and loss, periodontal disease, halitosis, negative self image, and pain. Other negative outcomes surrounding periodontal disease is that there is a “growing body of evidence linking periodontal (gum) disease to diabetes mellitus, cardiovascular disease, pneumonia, and premature delivery of infants” (Powell et al., 2006, p. 96). Other studies also suggest that there are “associations between periodontal diseases and low birth weight and premature infants, as well as between periodontitis and heart disease and stroke” (Healthy People 2010, 2005, p. 5).

**Other Health Concerns in Target Population:**

After our literature review, it is clear that our target population has many health concerns. First, according to Health Resources and Services Administration (HRSA), “a much higher proportion of Black (33.6%) and Hispanic (28.9%) children under the age 18 were poor than were their non-Hispanic White counterparts (10.5%)” (Health Resources and Services
Administration [HRSA], 2006). In the city of Denver there were 12.6% of residents living below the poverty line in 2003, as compared to only 9.8% in the state of Colorado (Denver Healthy People 2010, 2005). Additionally, 73% of Denver residents speak English at home, while 21% are Spanish speaking, and 5% speak another language (Denver Healthy People 2010, 2005). Because so many families in the city of Denver, and especially those families involved in the Head Start program, are poor and their first language is not English, it raises many health concerns for this population.

The Centers for Disease Control and Prevention (2007) recognizes that, throughout the US, 83% of White people under the age of 65 had health insurance, while only 74% of Black/African Americans had insurance, and only 54% of Latino/Hispanic people had insurance (Centers for Disease Control & Prevention [CDC], 2007). Healthy People 2010 devised similar results in the city of Denver. Health care coverage for Whites was 85%, while Blacks/African Americans was 76.1% and 52% for Hispanic/Latino people (Denver Healthy People 2010, 2005). The lack of insurance in these populations contributes to a lack of overall health.

The leading causes of death for Denver residents in 2004 were cancer, cardiovascular disease, chronic lower respiratory disease, unintentional injuries, cerebrovascular disease, Alzheimer’s disease, atherosclerosis, influenza and pneumonia, diabetes mellitus, and suicide (Denver Healthy People 2010, 2005). The causes of death for Black/African Americans were significantly higher for heart disease, cancer, and diabetes than Whites, while the Hispanic/Latino population had significantly higher rates of colorectal cancer, diabetes, and unintentional injuries than the White population (Denver Healthy People 2010, 2005). These discrepancies stem from a lack of insurance and health education.
The lack of health education also contributes to problems with obesity and lack of physical activity in this population. According to the Child Trends Data Bank (2004), upon entry to kindergarten, 15.8% of Hispanic/Latino children were overweight, 11.5% of Black/African Americans were overweight, while only 10.1% of White children were overweight. This study also showed that 17.7% of children from non-English speaking homes were overweight compared to only 10.8% of children from English speaking homes (Child Trends Data Bank [CTDB], 2004). It also showed a correlation between being overweight and having lower socioeconomic status. Children from the lower socioeconomic groups were 14.2% overweight; while the highest socioeconomic groups were only 8.0% overweight (CTDB, 2004).

Another study cited a discrepancy in leisure time physical activity between races and socioeconomic class. In 2004, 42.5% of the Hispanic/Latino population did not engage in leisure time physical activity, 23.3% of the Black/African American population, and 14.6% of the White population (Denver Healthy People 2010, 2005). Thirty-four percent of the lower socioeconomic group engaged in no leisure time activity, while only 11.5% of the higher socioeconomic group had no leisure time activity (Denver Healthy People 2010, 2005). These statistics indicate that ethnically diverse, socio-economically challenged, non-English speakers, like our target population, have health risks related to obesity. It is clear that our target population suffers from these risks by their increased rates of death in heart disease, cancer, and diabetes.

And lastly, a health risk that is directly related to our project is the lack of dental care. The National Survey of Children’s Health (2003) indicated that the percent of children ages 0 to 17 years with both preventative medical care and preventative dental care within the last year to be 58.8% for the US and 57.7% for Colorado (National Survey of Children’s Health [NSCH],
2003). However, annual dental visits for the Hispanic/Latino population in 2007 were only 65%, 77% for the Black/African American population, and 78% for the White population in Denver (Denver Healthy People 2010, 2005). Our target population is particularly vulnerable to a lack of dental care.

**Interviews:**

The first interview conducted was with Dr. C.F., a DGKHS dentist that performs oral health screenings and cleanings in the classroom setting. Dr. C.F. indicated that there were many children seen in the classroom that have dental caries. She also expressed frustration in the fact that the follow-up care clinics had long waits for children to be seen to get treatment for the caries. Another barrier to these children receiving care stems from the parents’ inability to get care for their children after receiving the initial diagnosis of a dental cavity or other problem. Details of DGKHS oral screening, cleaning, and follow up care program were obtained through a personal communication with Dr. C.F. on November 14, 2008.

Dr. C.F.’s experience with DGKHS families has heightened her awareness to being culturally sensitive to these families as well. She relayed a story about a Middle Eastern girl and her father that illustrated the differences in viewpoints and the diverse priorities between cultures. The father insisted that the young girl had a toothache, yet when asked, the young girl insisted that she did not. The father was also adamant that the tooth be extracted due to the pain it was causing the girl. Dr. C.F. examined the tooth and found that the tooth was loose, but there were no signs of cavities or problems with the tooth. Dr. C.F. tried to educate the father and tell him that the tooth would fall out naturally. The father continued to argue and insisted that the tooth be extracted. Dr. C.F. finally agreed to extract the tooth. However, she noted that the amount of time spent in discussion with the father and the amount of money for the extraction
were excessive. The details of this case were discussed after a dental screening with Dr. C.F. on November 14, 2008, to illustrate the numerous cultural practices encountered with DGKHS’s service population.

A second interview was conducted with a DGKHS Nurse who assists with dental screenings in the classroom setting as well. T.N. revealed that dental screenings are only performed once per year in each classroom due to the Head Start schedule (T.N., personal communication, November 14, 2008). There are many other programs and activities that are integrated into the classroom. Therefore, the program only has time for one dental screening per year. Due to the infrequency of the classroom visits, it is imperative that students are present on the day of the screening or they may go an entire year without a screening. T.N. noted that four students were absent on the day of the screening. Arrangements were made to reschedule the students the following week. However, if they had been absent at the second screening, they would have had to wait a year for the screening (T.N., personal communication, November 14, 2008).

L.G., another DGKHS Nurse involved in the dental screenings, indicated that it can be difficult to get some of the children to cooperate with the dentist and actually have the screening performed. Their age is a factor in their lack of cooperation, but also many children have already had extensive dental work performed, creating an environment of fear for dental procedures. Because some children have had all of their teeth capped or crowned already, L.G. stated most have an intense fear of the dentist. Other children also have behavior issues that prevent them from cooperating with the dentist in order for the screening to be performed. DGKHS student fear of dental procedures and the dentist were discussed with L.G. during a personal communication on December 3, 2008.
The mother of a DGKHS student acknowledged the importance of dental care after receiving education from the DGKHS staff. However, oral health had not been a high priority for her until she enrolled her children in the program. She also expressed frustration at the high cost of dental care and stated that she, “simply could not afford to take [her] child to the dentist.” It was clear from her statements that other priorities were important such as; food, shelter, and doctor’s visits. Details of this perception of the important of oral hygiene and health were gathered during a personal communication with L.G. on December 3, 2008.

**Comparing Concerns between Target Population and Literature:**

A recent study by Bray, Branson, and Williams (2003) indicates “the percent of caries-free children aged two to four in ethnic groups to be 87% for non-Hispanic whites, 78% for non-Hispanic blacks, and 68% for Mexican Americans” (Bray et al., 2003, p. 226). This survey was conducted using children enrolled in Head Start programs. Dr. C.F. highlighted this point by her comment that, “the ethnic diversity in the Head Start programs contributes greatly to the importance of delivering culturally competent care and education to the Head Start families” (personal communication, November 14, 2008). Because the target population we are working with has so ethnically diverse, it is clear that the education we are providing must be culturally competent. Otherwise, we risk that the disparities between ethnic groups will remain stagnant or potentially get worse.

T.N.’s statement that, “it is imperative to get kids in for this dental screening because otherwise they won’t see a dentist for an entire year,” (personal communication, November 14, 2008) highlights the importance for kids in this population to have at least one exposure to fluoride per year. One study conducted among disadvantaged African Americans (2008) revealed that, “efforts should be aimed directly at reducing caries risk among children by
increasing fluoride exposure among children and improving access to preventative dental care” (Reisine, Tellez, Willem, Sohn, & Ismail, 2008, p.191). In many cases, the DGKHS dental screening is also the children’s only access to preventative dental care. The fluoride exposure and preventative care that the Head Start dental screenings encourage DGKHS families to practice appropriate oral hygiene.

Due to the lack of health insurance in this population, as referenced earlier in this paper, parents have a harder time getting medical care. Some studies, as noted in the Agency for Healthcare Research and Quality (2007), linked the likelihood of visiting a dentist on whether or not the family had health insurance. The rates of dental visits were significantly higher at 45.9% for those families who had medical insurance, than for the families that had no coverage at only 26.9% (Manski & Cooper, 2007). This point was further illustrated when Dr. C.F. stated that, “parents have a difficult time getting their children in for follow-up care” (personal communication, November 14, 2008). The lack of health and dental insurance in this population directly influences when and if their children will ever get the follow-up care they need.

**Program Plan:**

According to the report “America’s Children: Key National Indicators of Well Being 2007”, only 69% of children ages 2 to 17 years from families with incomes between 100-199% of poverty had a dental visit in the last year. (Federal Interagency Forum on Child and Family Statistics [FIFCFS], 2007) The U.S. Department of Health and Human Services (DHHS) (2004) echoes this finding in “Dental Caries in U.S. Children” by stating, “Preschoolers in households with incomes less than 100% of the…[FPL] are three to five times more likely to have cavities than children from families with incomes equal to or above 300 percent of the FPL” (p. 1). Furthermore, in 2005, children two to four years old were 36% less likely to have a dental visit in
the last year than children 5 to 11 years old (FIFCFS, 2007). Due to the lack of preventative dental screenings, the DHHS (2004) states, “Overall, national epidemiological surveys show that nearly one-in-five (18.7%) U.S. children two to four years of age have visually evident tooth decay” (p. 1). This percentage of children was calculated without the aid of dental x-rays that are typically used during dental examinations to assess decay in hard to visualize areas (DHHS, 2004). If dental x-rays were used during dental examinations, the percentage of dental decay would drastically increase. Without proper assessment and treatment, undiagnosed dental disease can lead to poor oral health, pain, infection, destruction of teeth and surrounding tissue, delayed overall development and difficulties with school attendance and performance (DHHS, 2004). To emphasize the importance of early dental care, DHHS (2004) states, “Potential consequences to the health system as a result of poor dental health care would include: frequent visits to emergency departments (often without definitive resolution of the presenting problem); hospital admissions; and treatment provided in operating rooms for conditions that are either largely preventable or amenable to less costly care had they been treated earlier” (p. 2). Barriers of low income and age prevent young children of the DGKHS service population from receiving adequate dental care, which could result in lifelong consequences.

To address documented dental health disparities in its service population, DGKHS follows the Office of Head Start (OHS) (2006) “Program Performance Standards for the Operation of Head Start Programs by Grantee and Delegate Agencies.” For secondary prevention measures, DGKHS assesses each child within 90 days of enrollment for accessibility to continuous, ongoing dental care and for being up-to-date on preventative and primary dental care. The program fills provider and care needs through dental screenings in the classrooms and coordinates follow-up care at the Eastside Clinic or Denver Health for tertiary prevention
depending on dental needs. DGKHS dental care initiatives have resulted in a 26.86% increase between the number of children at enrollment and the number of children at the end of the enrollment year with an ongoing, continuous source of accessible dental care (MOEC, 2008a). Table 1 highlights the numbers and percentages of DGKHS preschoolers in the 2007-2008 program year who were examined during a dental screening, received preventive dental care, diagnosed as needing dental treatment, and received or are receiving treatment. Overall, 83.30% of DGKHS enrollees who were diagnosed as needing dental treatment received the recommended treatment (MOEC, 2008a).

Our group will present the existing PowerPoint presentation “Healthy Teeth Give Children a Sparkling Smile” to DGKHS administrators and staff along with newly constructed supplemental speaking points (See Appendix A) to incorporate primary prevention measures for oral health. We conducted key informant interviews and facilitated open discussion with each audience after the presentation to gather recommendations for improving presentation material. We constructed a written test to be given prior to and after each presentation as a pre and post-test to evaluate knowledge gained through the presentation and supplemental talking points. Recommendations gathered from the interviews, discussions, and tests were used to revise the presentation and supplemental talking points. The revised presentation and talking points were briefed and given to Gloria Richardson, the Health Coordinator for the DGKHS program, for future staff and parent teaching. Our objectives included: 1) finalizing an English version of “Healthy Teeth Give Children a Sparkling Smile”; 2) constructing and finalizing supplemental talking points to be used in conjunction with the presentation; 3) constructing and using a pre and post-test to evaluate increases in administrator and staff knowledge regarding the need for healthy mouths through an updated version of the “Healthy Teeth Give Children a Sparkling
Smile” presentation and talking points; 4) recommending to Ms. Richardson that the oral health presentation, talking points, and pre/post-test be translated into Spanish and both presentations be rapidly disseminated to educate more of DGKHS’s population. Our goal is to build upon prior students’ work to improve oral hygiene and decrease dental disease in current and future DGKHS preschoolers.

By addressing small oral hygiene measures in the updated presentation and new supplemental talking points for presenters, our group pairs a behavior change theory and a behavior change model to improve overall oral hygiene in the DGKHS service population. The social cognitive learning theory “proposes that behavior change is affected by environmental influences, personal factors, and attributes of the behavior itself” (Grizzell, 2007, p. 2). DGKHS, accounting for community needs, will use clear instructions of proper oral hygiene and health measures in the presentation and supplemental talking points to promote self-efficacy, highlighting each person’s ability to improve the oral hygiene of DGKHS preschoolers.

Incentives for following these measures, also included in the presentation, will emphasize the short- and long-term benefits of proper oral hygiene.

Specific to personal factors, the behavior change transtheoretical model states that “behavior change has been conceptualized as a five-stage process or continuum related to a person's readiness to change: precontemplation, contemplation, preparation, action, and maintenance” (Grizzell, 2007, p. 2). Correcting information gaps concerning proper oral hygiene will encourage precontemplation audience members, those who do not know proper oral hygiene measures, to transition to the contemplation phase, where the importance of individual proper oral hygiene measures and overall oral hygiene care are acknowledged. As DGKHS supports preschoolers and their families with education materials, dental supplies, and dental services, the
goal is to encourage individuals to move from the preparation phase, making plans to improve oral hygiene practices, to the action phase, implementing some of the oral hygiene measures. Finally, continued DGKHS support and education will lead to maintenance, when proper oral hygiene measures are performed consistently into the future, on the individual level. DGKHS recognizes that oral health and hygiene is an individual commitment but believes that staff and parent trust, admiration, and respect for the program will translate into improvements in the service population’s dental health. “Healthy Teeth Give Children a Sparkling Smile”, one of many tools used by DGKHS to improve oral hygiene, a small behavior, through education improve oral health, achieving an overall complex behavior in the service population.

Our group completed all aspects of our project by the final due date of December 8, 2008. Interviews with key informants were completed from November 14, 2008 to December 3, 2008. Presentation of the oral health module and talking points were on November 24, 2008 and December 4, 2008. Pre and post-testing of audience members and open discussions of the module material were completed on those same dates. Final editing of the “Healthy Teeth Give Children a Sparkling Smile” was performed on December 5, 2008. Recommendations from key informant interviews, open discussion, and pre- and post-test results were incorporated into this report. All project activities and goals were completed by December 8, 2008.

**Outcome Evaluation:**

We developed a standard test for participants involved to take pre-presentation and post-presentation. Our goal was to determine what the attitudes and knowledge was surrounding oral health, both before the power point presentation and after the presentation. Our aim with the power point presentation and the supplemental talking points was to enhance knowledge and
change attitudes towards oral health practices and beliefs from the skills and education the participants gained from the presentation.

The pre-test (See Appendix B), given to a group of administrators and staff at the DGKHS office, revealed that 50% of the participants answered 7 of the 10 questions correctly as common knowledge, while 50% answered the same questions incorrectly. After the presentation, an identical post-test revealed only 5% of questions were answered incorrectly (See Appendix C). These results indicated that the presentation had a positive influence on the participants’ attitudes and beliefs surrounding oral health exhibited through increased knowledge on the post-test. Furthermore, due to language barriers, lack of education, and other obstacles our target population may have less existing knowledge surrounding oral health. We believe our presentation will significantly benefit our target population and their families by increasing oral hygiene knowledge and improving oral health attitude.

After the presentation and the post-test we invited an open forum for questions and suggestions to improve further upon the existing presentation. We received some feedback that when the presentation is presented at the parent-level, that it be broken up into two presentations to allow more time for comprehension. Because of some parents’ inability to attend multiple meetings, sections of the presentation may be missed. Therefore, parents would have only some of the information available to help keep their child’s teeth healthy. However, the total presentation is approximately 20 minutes in length and splitting it after Slide 10 would provide two short sessions to be used during parent teaching.

Another suggestion was to list types of toothbrushes for children to use and a list of pediatric dentists. Oftentimes children find toothbrushes with a theme or novelty more enticing and user-friendly. DGKHS provides age appropriate toothbrushes in classrooms. The
presentation was modified to include age appropriate toothbrush selection for the home. Also, many children’s dental experiences are spoiled by a negative experience. Therefore, a friendly, pediatric environment would help children to have a positive view of the dentist. DKGHS administrators are planning to update their provider list to only include child-friendly providers and environments.

Next, we were reminded to remain culturally competent through a suggestion that the Latino/Hispanic culture commonly uses bottles to get children to sleep. It was brought to our attention that we could not simply state that putting a child to bed with a bottle was a bad practice without offering alternatives. The presentation was modified to include other soothing methods such as pacifier use, quiet activity before bedtime, and consistent bedtime routine to modify behavior.

Subsequently, this led the conversation to the benefit of having the presentation translated into Spanish. Much of DGKHS program service population is made up of Spanish speaking individuals and their families. Often, Spanish is the primary language at home and translation would increase the distribution of education for these participants. All suggestions and data will help the Head Start staff educate the families on the importance of oral health and increase oral hygiene practices. Families involved in the Head Start program currently and future generations will benefit from these education and community support measures to improve oral health specifically, which will improve overall population health.
References


Appendix A
Talking Points for Oral Health Presentation
Presentation and (supplemental talking points)

Slide 1: Healthy Teeth Give Children a Sparkling Smile
Denver’s Great Kids Head Start

Slide 2: Why are baby teeth important? (Sometimes people wonder why baby teeth are important if they’re just going to fall out anyway.)
- Baby teeth help children…
  - Chew food
  - Save space for permanent teeth
  - Help in jaw development
  - Talk clearly
  - Promote self-esteem and a positive self-image
  (And if permanent (adult) teeth develop in a mouth that is unhealthy, the adult teeth are more like to decay and have cavities too.)
- Oral health is important for overall health. (Poor oral health can negatively affect your heart, your pregnancy and birth, and can make diabetes harder to control. That’s why oral health is so important for overall health.)

Slide 3: Why is oral health important? (Why are we talking about oral health today?)
- Of Colorado Head Start children
  - 42% have had a cavity or filling
  - 32% have untreated tooth decay (cavities)
  - 17% did not receive the follow-up care they needed in 2007.
- Oral disease (e.g. cavities) is THE most common childhood illness
  - 5 times more common than asthma.
  (As you can see from this chart, almost 20% of 5-year olds in the program have cavities, about 18% of 4-year olds and about 16% of 3-year olds. It is slightly less for 1-and 2-year olds, but we can see that oral care is still important because cavities are still occurring in those age groups.)

Slide 4: Progression of tooth decay
(These slides show the potential progression of tooth decay if a child is put to bed with a bottle or sippy cup of milk, formula, or juice. It can also happen by giving a child these liquids too often throughout the day and not brushing or wiping the gums clean with a soft cloth, which we will talk about later. The top left hand picture shows mild tooth decay. The top right hand picture shows moderate tooth decay. The bottom picture shows severe decay.)

Slide 5: Did you know cavities are contagious?
- Germs that cause cavities can be passed to children by…
  - Sharing utensils (i.e. spoons)
  - Cleaning off a pacifier or bottle nipple with your mouth
  - Sharing cups
  (Germs are in the mouth from food and drinks and must be brushed away so they don’t pass to children.)
Slide 6: Effects of unhealthy teeth in children (Poor oral health that leads to tooth decay and cavities has many negative effects on children like...)

- Distraction from play and learning
- Problems with speech
- Inability to eat or chew well

Slide 7: We’ve got some good news and some bad news

The Bad News...(more negative effects)

- Effects of unhealthy teeth in children (include)
  - Persistent pain
  - Embarrassment and low self-esteem (from)
    - Discolored, damaged, or missing teeth
  - Untreated dental problems can lead to infection and even death (The bacteria in your mouth can lead to an infection in the gums, which can lead to an infection in your blood, which could cause death.)

Slide 8: The Good News…

Early childhood cavities can be prevented by following some simple steps. (And, if the problems are caught early, they can be treated.)

Slide 9: Good Oral Health Begins at Pregnancy

- Gum disease while pregnant may cause preterm and low birth-weight babies (So healthy teeth and gums during pregnancy, not only helps you, but your baby too!)
- While pregnant, make sure to have a dental check-up
- Eat a healthy diet (keeping teeth and gums healthy too)
- Keep your gums and teeth clean by brushing and flossing regularly

Slide 10: Caring for Infant’s Teeth

- From birth, wipe baby’s gums with a clean soft cloth and water after each feeding (This will help remove any bacteria that could cause cavities in the baby’s mouth and it will get your baby used to oral care.)
- Infants should go to the dentist when their first tooth comes in (This is to see how the teeth are coming in and how healthy they look. It also creates the habit of seeing a dentist and making it less scary for the dentist to look in the child’s mouth.)
  - Normally between 6-12 months, then every 6 months (It is easier and costs less to see the dentist every six months because it keeps your child’s teeth healthy. When a problem first starts, seeing the dentist will keep the problem from getting worse, making it less painful and easier to fix the problem.)
- As the baby’s teeth come in, continue to wipe gums and teeth with a soft damp cloth (to remove the bacteria)

Slide 11: Caring for Children’s Teeth

- Don’t use toothpaste with fluoride until the child is 2 to 3 years old (Fluoride can be poisonous if the child swallows too much of it. It can also cause white spots on the teeth. Until
your child is old enough to spit out the toothpaste, use a pea-sized amount when brushing. When your child is old enough to spit it out, you can switch over to fluoride toothpaste.)

- Supervise and help the child during brushing
  - Children shouldn’t brush alone until they are 6 to 7 years old (They need help reaching all the surfaces of the teeth.)
- Visit the dentist every 6 months (to get the teeth cleaned and find any problems early.)
- Flossing is important too (Just like with brushing, help your child floss until they are 6 to 7 years old. If your child’s teeth are close together, you can use a floss pick to get between the teeth. Flossing between close teeth can prevent some decay.)

Slide 12: Brushing Teeth...The Right Way
(First, just like with your child's clothes and shoes, you need to have the right size toothbrush. Most toothbrushes have an age printed on the packaging to tell you how old a child should be to use that toothbrush.)

1. Wet the toothbrush.
2. Apply a pea sized amount of toothpaste. (The Centers for Disease Control and Prevention (CDC), 2008, [http://www.cdc.gov/oralhealth/topics/child.htm](http://www.cdc.gov/oralhealth/topics/child.htm) recommends this that even if you are using fluoride free toothpaste with a young child, using a small amount creates a habit that will be important with fluoride toothpaste when the child is older.)
3. Brush teeth in small circles. (This is the best way to remove food buildup.)
4. Be sure to brush all surfaces of the teeth.
5. Don’t forget to brush the top of the tongue. (Even though you may brush the child’s teeth, bacteria can travel from the tongue to the teeth if it is not brushed also.)
6. Don’t stop brushing until two minutes are up! (This increases the chance of brushing more surfaces of the teeth. To get in the full two minutes, you can sing a song while you brush your child’s teeth, listen to a song on the radio, or use a timer that is set to two minutes.)
7. Repeat these steps twice a day for a healthy smile! –Once in the morning and one before bed. (This prevents the buildup of food and bacteria.)

Slide 13: Nutrition
- Provide snacks at regular times- 2-3 times a day.
  --Continuous eating can increase the risk of cavities. (Most tooth decay comes from the sugar we eat. When we eat meals or snacks, we make more spit and this washes the sugar and bacteria from our teeth. Continuous eating doesn’t allow the washing away of sugar, letting bacteria feed on the sugar and increases tooth decay.)
- Give healthy snacks – low sugar foods.
  --Dairy foods like milk, cheese, yogurt and cottage cheese
  --Fruits or vegetables (usually brightly colored and look good to children)
  --Protein like meat and peanut butter
  --Whole grains (Whole grains are found in whole-wheat bread, brown or wild rice, whole-wheat pasta, whole wheat or oat flour used for making pancakes and other flour-based recipes. Look on the food label for “whole” oats, wheat, grain, corn or oatmeal. [U.S. Department of Agriculture, 2008, http://www.mypyramid.gov/pyramid/grains_tips_print.html])
Slide 14: A Few Do’s and Don’ts for Healthy Teeth

Slide 15: Do’s
• Starting at birth, clean your child’s teeth and gums every day, twice a day! (preventing the buildup of food and bacteria that causes tooth decay.)
• First dental visit by the first birthday. (and every 6 months after that)
• Help children brush their teeth (This also shows them that you think keeping their teeth healthy is important.)
• Get a new toothbrush every 3 months. (As you brush your child’s teeth, the bristles bend and don’t work as well. The toothbrush also collects bacteria and can’t be easily cleaned.)

Slide 16: Do’s
• Give only breast milk, formula, or water in a bottle. (When children drink out of a bottle, more of the drink sits on their teeth. These drinks are low in sugar, leaving less sugar in the mouth that bacteria can feed on.)
• Begin teaching your child to drink from a cup at 6 months. (There are two reasons for using a cup. First, a bottle pushes against the child’s teeth and can cause them to be out of line. Second, using a cup keeps the drink from sitting in the child’s mouth.)
• Trade the bottle for a cup by the first birthday.

Slide 17: Do’s
• Drink tap water over bottled water.
  – It contains fluoride to keep teeth healthy. (Because tap water is meant for anyone to drink, there are more rules on what can be in it. Bottled water, unless you buy the kind with fluoride, doesn’t have fluoride. Kidshealth.org (2008, http://kidshealth.org/parent/general/teeth/fluoride.html) states that fluoride helps protect the teeth by making them stronger from the inside out when you drink it as part of water and from the outside in when it is put on the teeth with brushing. It keeps the bacteria from breaking down the protective tooth coating, enamel, and prevents tooth decay.)
• Provide only 2-3 healthy snacks a day.
• Limit juice to once a day with food. (Juices have a lot of sugar and drinking them once a day with food keeps the sugar from sitting on the teeth.)

Slide 18: Don’ts
• Don’t forget to clean the child’s teeth twice a day. (Cleaning keeps sugar and bacteria from building up.)
• Don’t put off going to the dentist. (It makes things easier in the long run.)
• Don’t use bottles or Sippy cups with sugary drinks.
  – Avoid juice, soda or Kool-Aid, Gatorade, or flavored water. (More sugar means more decay.)

Slide 19: More Don’ts
• Don’t allow a child to use a bottle after 1 year.
• Never let a baby sleep with a bottle or breast in their mouth. *(How many of you would wake a sleeping baby to brush his/her teeth? If your child uses a pacifier, you can use it to soothe your little one to sleep instead of a bottle or breast. To help your child get ready for sleep, you could have 30 minutes of quiet activity before bed time and try to set a consistent bedtime routine.)*

• Never dip a pacifier in something sweet like a sugar or honey. *(Honey should not be given to children less than 1-year old because it can give them botulism, a disease caused by bacteria that releases toxins. In addition to avoiding straight honey, also avoid foods that contain honey, like Honey Graham Crackers, Honey Nut Cheerios, Honey Wheat Bread, etc.)*

Slide 20: Sparkling Smiles

• Good overall health depends on healthy teeth. *(The CDC says that having healthy teeth is part of having a healthy mouth. We use our mouths to eat, drink, talk to others, and show how we feel through smiling or frowning. Having healthy teeth means not having tooth decay and the pain that can come with it. “Good oral health also includes the ability to carry on the most basic human functions such as chewing, swallowing, speaking, smiling, kissing, and singing” (CDC, 2007, [http://www.cdc.gov/oralhealth/publications/library/burdenbook/chapter1.htm](http://www.cdc.gov/oralhealth/publications/library/burdenbook/chapter1.htm)). Problems in the mouth and with the teeth are usually signs of problems somewhere else in the body.)*

• Give children the healthy smile they deserve…start now. *(What we do now affects how we are in the future. Starting your children’s lives with healthy teeth means fewer problems in the future.)*

**References**


Appendix B
Pre and Post-Test for Oral Health Presentation
(Correct answers capitalized)

1. What is the most common childhood illness?
   a. asthma                          C. cavities
   b. Strep throat                    d. influenza

2. What percentage of Head Start children need dental treatment?
   a. 10-30%                          c. 50-70%
   B. 30-50%                          d. 70-90%

3. It is not important to keep baby teeth healthy because they just fall out anyway.
   a. True                            B. False

4. Poor oral health can lead to other health problems.
   A. True                            b. False

5. How often are dentist visits recommended?
   a. Every 3 months                  c. Once a year
   B. Every 6 months                  d. Only if there is a problem

6. How long should you brush your child’s teeth?
   a. For 30 seconds                  C. For 2 minutes
   b. For 1 minute                    d. Until my child tells me to stop

7. Please list two healthy snacks
   - milk, cheese, yogurt, cottage cheese, fruits, vegetables, meat, peanut butter, whole grains-
   low sugar foods

8. It is okay to use a bottle when your child is over a year old.
   a. True                            B. False

9. What causes tooth decay and cavities?
   a. Sugar                          C. Both
   b. Bacteria                       d. None of the above

10. How often should you clean your child’s teeth?
    a. Once a day, at bedtime
    b. Twice a day, once in the morning and once before bedtime (correct answer)
    c. After every time he/she eats or drinks something
    d. Only when he/she has something stuck in them
## Appendix C
### Results of Pre and Post-Testing

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