Assessing the Oral Health Needs of Children at the Harriet Lane Clinic in Baltimore, Maryland Using A Parental Survey: A Needs Assessment

MPH Capstone Project
Presented by:
Anjali Rajani DDS
May 5, 2005
Table of Contents

I. Executive Summary………………………………................pg 2
II. Introduction .............................................................pg 3-7
III. Project Description ...............................................pg 8-9
IV. Methodology .............................................................pg 9-14
V. Findings..........................................................pg 14-26
VI. Conclusions and Recommendations........................pg 26-30
VII. References................................................pg 31-34
VIII. Acknowledgments........................................pg 35
IX. Appendices
   A. Oral Health Survey........................................pg 36-42
   B. References from Oral Health Survey................pg 43
   C. Glossary.............................................................pg 44
Executive Summary

**Background.** The Harriet Lane Clinic is a pediatric primary care clinic at Johns Hopkins Hospital. Current records show that a majority of patients at the clinic do not have adequate dental care. The aim of this study was to perform an oral health needs assessment by developing and administering an oral health survey. Information from the survey will be used to determine whether or not dental services are warranted at the Harriet Lane Clinic.

**Methods.** An oral health survey was developed and administered to parents and caretakers of children ages 1-18, who were patients of the Harriet Lane Clinic. The study was conducted over a 3 week period in March 2005. The sampling method used was convenience sampling, and a sample size of two hundred was conducted.

**Results.** Eighty four percent of participants indicated that dental services would be accessed if located in the Harriet Lance Clinic. 21% of participants reported their child had dental caries. Subjects reported that 43.5% of doctors had discussed dental health. 11.9% of participants reported their child had dental sealants. 26.5% of children had never seen a dentist. 57% of children had seen the dentist in the past 1 year. 16% of children experienced a toothache more than once when biting or chewing in the past 6 months. 69.2% of parents helped children ages 6 or younger brush their teeth.

**Conclusion.** The need for dental services is high from parents at the Harriet Lane Clinic, and dental services are warranted. Data indicates that there is a need for minority and low-income populations to have access to routine dental treatment which includes restorative treatment, dental sealants and other preventive measures. Preventive oral hygiene education will need to be a large component in the dental site to help reduce dental disease in this population.
Introduction

Background

The United States has made tremendous strides in improving the dental health of many Americans. Fluoridation of community water systems has been one of the greatest public health achievements in the 20th Century. Other advancements in preventive treatments such as dental sealants, increased use of fluoridated toothpastes and rinses, and increased dental and nutritional promotion and awareness has resulted in better dental health and fewer dental caries for many Americans. Despite these advancements more than 50% of children experience tooth decay by the second grade, and by the time students finish high school, 80% have caries. Dental caries remains a significant problem in certain populations, especially certain racial and ethnic groups and poor children. National data indicate that 80% of dental caries in permanent teeth is found in 25% of the child and adolescent population (age 5-17), a greater proportion of whom are children from lower socioeconomic households. Significant dental health disparities exist, and certain populations, particularly minority and low-income populations, continue to suffer from poor dental health due to many barriers. These barriers include: cost, lack of fluoridated water, transportation, insurance, fear of dentists, and lack of providers from underserved and ethnic groups. The disparities in dental health that disproportionately affect low-income minority children were highlighted in the Surgeon General’s Report in 2000 which stated that dental caries, the “silent epidemic” is the single most common chronic diseases in children- five times more common than asthma.
The American Academy of Pediatric Dentistry, the American Academy of Pediatrics and the American Dental Association recommends that every child visit the dentist within 6 months of eruption of the first tooth or by the age of year 1. The reason for this age 1 policy is to establish a dental home and to provide preventive care for the child and parent. Furthermore, according to the American Academy of Pediatric Dentistry, a dental home provides a place for parents to seek information and oral health care if the “child sustains an injury or requires immediate attention.” Without an established dental home, parents often rely on emergency department facilities for care which can be costly and time consuming. Despite the American Dental Association and the American Academy of Pediatric Dentistry’s age 1 recommendations, 25% of poor children have never seen a dentist by kindergarten, and according to the Center for Disease Control, 40% of children experience dental decay by the time they reach kindergarten; in fact, dental decay has been found in children as young as 15 months. The American Dental Hygiene association recommends that children be monitored while tooth brushing until age 7 or 8 years of age.

Analysis of the 1999 National Health and Nutrition Examination Survey determined that the rate of dental caries significantly increased in all groups of 2-4 year old children, with the largest increase in minority children. Tooth decay affects nearly 20% of children 2-4 years old, more than 50% of eight year olds, and more than 75% of 17 year olds. Analysis of the 1999 National Survey of America’s Families found that nearly one in ten low-income children had an unmet need for dental care; furthermore, 30% of low-income children had not been to the dentist in the last year and almost 60% had not received the two dental examinations in the last year as recommended by the
Thus, as explained best by Edelstein, “children from low-income families experience the greatest amount of oral disease, the most extensive disease, and the most frequent use of dental services for pain relief.”

Healthy people 2010 oral health objectives include increasing the proportion of 8 and 15 year olds with dental sealants to 50%. National trends indicate that the percentage of school-aged children with dental sealants has increased due to increased use of the procedure, re-imbursement from dental insurance, and increased request from parents for dental sealants. However, the percentage of children with dental sealants in low-income populations has not increased, and as few as 3% of poor children have dental sealants compared to the national average which was 23%. Applying sealants to the pits and fissures on the occlusal surfaces of posterior teeth is effective in primary prevention of dental caries and much more cost effective than a restoration.

Maryland’s Oral Health Status

Findings from the Oral Health Survey of Maryland School children 2000-2001 indicated that 70.2% of school children in Maryland had a dental visit in the last year, and 6.6% of Maryland school children had never seen a dentist. The survey results indicated that more than 2 in 10 Maryland school children had a history of dental caries, and approximately 50% of the caries experience was due to untreated decay. According to Macek and researchers, the significance of the findings indicated that the success in “meeting the dental caries treatment needs in children will require attention to multiple family-level, community level, and system level barriers, especially among low
socioeconomic status populations….unless barriers are overcome, dental disparities will continue in Maryland.”¹³ Data from the Survey of Oral Health Status of Maryland School Children 2000-2001, was used to determine the lifetime prevalence of dental pain among schoolchildren. History of dental pain was reported by an adult respondent and was examined for 2411 kindergarten and third grade students. The findings indicated that 11.8% of Maryland school age children in kindergarten and third grade experienced some dental pain. Children who had dental caries had a parental report of 28.2% experiencing dental pain. Vargas and researchers concluded that almost a “third of Maryland kindergartners and third graders who have caries experienced dental pain.”¹⁴

A study by Vargas and colleagues was performed to determine the oral health status of preschool children attending Head Start Centers in Maryland.¹⁵ Clinical caries were examined on 482 children ages 3-5 from 37 Maryland Head Start centers in 2000. In addition, 560 questionnaires were completed by caretakers regarding access to care, caries risk factors and history of dental pain. Results from the study found that the overall prevalence of untreated decay was 52%. In children with dental caries, 17% had complained of a toothache. The significance of the study were the findings that “caries is highly prevalent in this underserved preschool population; pain to dental caries is not uncommon, and there is little utilization of dental care despite federally mandated Head Start and Medicaid Requirements.”¹⁵ Numerous studies have clearly demonstrated that a vast number of Maryland school children experience untreated dental decay and dental pain.
Importance of Oral Health

The effects of poor dental health can be dramatic and can affect a child’s nutritional intake, physical growth and development, eruption of the permanent teeth, speech and language development and self-esteem. Dental pain can result in a limitation of nutritional intake, thus affecting a child’s proper growth and development. The ability to chew and swallow foods is compromised when a child experiences premature tooth loss or dental pain/disease. In addition, premature loss of primary teeth can affect a child’s speech, and affects the proper eruption and alignment of the permanent teeth. Poor oral health and dental pain can affect school attendance and educational learning; in fact, “more than 51 million school hours are lost each year to dental related illness. Poor children suffer nearly 12 times more restricted activity days than children from higher-income families.” Thus, oral health is important in the growth and development (physical and mental) of a child, and can have a significant impact on a child’s quality of life. “For those most affected, dental disease is consequential for their growth, function, behavior and comfort.” Furthermore, if the caries rate in children continues to increase, there will be serious financial implications and an increased stress on publicly financed dental care.
Project Description

Disparities in dental health and barriers to dental care affect children throughout the United States. Statistics from children at the Harriet Lane Clinic indicate that while most (90%) of children seen at the Harriet Lane Clinic have medical insurance (Priority Partners) that includes dental coverage, a majority of them do not have adequate dental care. Data collected from Priority Partners demonstrates that among 4200 school aged Priority Partner recipients who received medical care in 2000, 48% had not seen a dentist in the past year.

The Harriet Lane Clinic at Johns Hopkins Hospital is a primary care clinic for children and adolescents and has been serving the East Baltimore community since 1912. The clinic is a resident training clinic which currently serves over 10,000 children and adolescents with over 25,000 annual visits. The main features of the program are providing general pediatric care, adolescent health services, and comprehensive HIV care. By the beginning of May 2005, the Harriet Lane Clinic hopes to implement dental services, thus integrating a “dental home” with a “medical home” that is accessible and accommodating for patients. Establishing dental services within the Harriet Lane Clinic will hopefully result in improved access to dental care and will improve the dental health of children in East Baltimore.

The objectives of this capstone project are to develop and administer an oral health survey to parents/caretakers of children at the Harriet Lane clinic to assess the oral health needs of children at the clinic. The purpose of the survey is to generate baseline information of the: 1) proportion of parents who report their child has not seen a dentist
in the past 1 year, 2) proportion of parents who report would take their child to the dentist if services were provided at HLC, and 3) proportion of parents who report their regular doctor has referred them to a dentist. In addition the survey is being implemented to collect information regarding dental problems, carriers of medical and dental insurance, and perceived barriers to care. The survey data will be used to determine whether provision of dental services is warranted. The research paper will discuss the study design, data collection procedures, data analysis, and interpretation of the findings.

**Methodology**

**Conceptual framework**

A conceptual framework is a useful tool for understanding the different variables that result in dental disease. The framework used to guide the process of planning interventions and understanding the different factors affecting oral health is an adaptation of the precede-proceed framework. The precede-proceed model includes predisposing, reinforcing, and enabling factors for behavior change. Below is the framework that was used, which was adapted from the researchers of the YBM study at Johns Hopkins University. This particular project focuses on predisposing and enabling factors.
The framework above highlights the different variables leading to the American Dental Hygiene Association’s recommendation of routine dental visits, proper oral hygiene practices such as brushing twice a day, flossing once a day, and parental monitoring with tooth brushing. The predisposing factors are knowledge and beliefs about dental care and oral hygiene practices. Enabling factors are environmental factors that assist or prevent an individual’s behavior. Such factors include the presence of dental facilities and pediatric dentists as well as the ability to pay for services and to have transportation to dental facilities. The final outcome in the framework is the reduction of dental disease. The objective of having routine care and good oral hygiene practice is
ultimately a decrease in dental disease, and an increase in preventive practices such as cleanings and sealants.

**Survey Design**

The survey was designed using predominantly validated questions (some modified) from National Health Interview Surveys 1986, 1989, 1994, 1997 and from recommended questions from the Basic Screening Surveys. The survey consisted of 30 questions: 24 closed ended multiple choice categorical questions, 4 close ended dichotomous questions and 2 open ended numeric questions. The survey included several domains such as barriers to care, demographics, insurance status, routine care, risks leading to dental caries and dental problems. (Please see appendix A for entire survey). The questions asked relied on self report, hypothetical questions and sensitive questions. Sensitive questions such as race, gender, and level of education were located near the end of the survey, following the recommendations of Galloway who states that “respondents may refuse to co-operate if your survey begins with awkward or embarrassing questions and that people are more likely to give honest replies to personal questions if some rapport has been developed with the interviewer.”

**Survey Procedure**

The survey was conducted by face to face interviewing, with one surveyor (AR) conducting all surveys. The surveyor read (and explained further if necessary) each survey question to the participant and recorded the participant’s answer. The surveyor prompted the participant by reading out loud the multiple choice answers. Surveys were
administered over a three week period, and each survey took approximately ten minutes to complete. A verbal consent script was read to the participant and consent was obtained from the parent/caretaker prior to administering the survey. In addition, the parent/caretaker was asked not to participate if he/she had previously answered the survey questions. The participant was also told that no identifiable information (such as name and birth date) regarding themselves or their child would be attached to the survey. The child of the participant was given a dental sticker as an incentive for the parent to participate. The research study and survey received IRB approval.

**Sampling and Study Subjects**

The survey was conducted only to parents and caretakers of children ages one to eighteen, who were patients of the Harriet Lane Clinic. This age group was selected due the American Academy of Pediatric Dentistry’s recommendations of every child visiting the dentist by age 1. The sampling method used was convenience sampling, and a sample size of two hundred was conducted due to limitations in time and resources. Two hundred participants was the selected sample size after accounting for the number of days available to conduct the survey. Participants were selected based on the researcher approaching them and subsequently their willingness to participate. After the adult was approached they were then asked if they were the parent/caretaker of the child, and if their child was between ages one to eighteen. It was confirmed that the child was a patient of the Harriet Lane Clinic prior to administering the survey. The majority agreed
to participate, with a refusal rate of 7/207 or 3.4%. A majority agreed to answer all 30 survey questions (198/200 or 99%).

_Piloting the Survey_

According to Galloway, the survey should be piloted to a group similar to the one that will participate in the survey, and to approximately 5-10% of the final sample number.\textsuperscript{16} Therefore, 5% of the final sample number (200), ten participants, were included in the pilot survey. During the piloting, length of time to complete the survey was computed, which was ten minutes. In addition, participants were asked about the clarity of the questions, and were asked whether or not they objected to any questions. The surveyor also asked whether or not the survey was straightforward and if there were any other comments. McNamara recommends that the survey be piloted to fellow staff.\textsuperscript{17} Therefore, the survey was given to one of the front registration desk attendants for feedback. Suggestions from the front desk attendant included providing more choices (types of insurance) for the question that asked “If your child has medical insurance what type is it?” Other types of insurance (REM, FED, Blue Cross/Blue Shield) were added to the choices for that particular question. (Previously the answer choices included Priority Partners and Other). Another question asked “What are the main reasons your child has not visited the dentist in over 12 months/never gone to the dentist?” Many respondents had a similar answer which was “my child is too young.” This answer was added to the choices for that particular question. The necessary revisions were made to the survey based on feedback and comments from the pilot test. In general, comments from the
participants in the pilot test were positive and enthusiastic. One parent commented “Having dental services here would make a lot of sense.” Another parent commented “it would be easier to bring them (her children) all to the same place….it would be like hitting two birds with one stone.” Another parent commented “I called twenty to thirty dentists before I could find one that accepted Priority Partners.” There seemed to be an overall consensus from parental comments that dental services would be used and were needed in the Baltimore area.

**Findings**

*Demographics of the participants:*

Of the subjects that participated in the survey 88.5% identified themselves as Black/ African American. 9% of the participants were male, and 91% were female. 51.8% reported high school or GED equivalent as the highest level of education completed. 23.4% of participants reported the highest level of education completed as less than high school. The average age of the participant was 35.7 years with a range from age 18 to 74. A majority (87.5%) of the participants surveyed identified themselves as the parent of the child; 6% identified themselves as the grandparent. 54% of the children were male. 89.5% of children were identified by the parent as Black/African American. 99% of parents reported that they had insurance that paid for some or all of their child’s medical care. 76.5% of parents reported having Priority Partners insurance. 97.4 % of participants with Priority Partners insurance were aware that they had dental benefits. 96.5% of parents reported that they had insurance that paid for some or all of their child’s dental care.
Figure 1a demonstrates the number of children ages 1-18 who had a regular dental visit (57%) (been to the dentist in the past 1 year). 60.0% of children ages 2 to 17 had a regular dental visit in the past 1 year. Figure 1a also demonstrates the significant number (26.5%) of children who had never seen a dentist. Figure 1b shows frequency of dental
visits by age groups. It can be seen that the lowest age group (age 1-3 year olds) had the highest percentage of children who had never visited the dentist. The oldest age group (12-18 yrs old) had the highest percentage of children visiting the dentist in 6 months or less.

**Figure 2a**

![Percentage of Children with Dental Sealants](image)

Figure 2a demonstrates the percentage of children with dental sealants. 85.6% of children 6 or older did not have dental sealants. The survey showed that 80.0% of children 6 years and older who had a regular dental visit (dental visit in the past 1 year) did not have dental sealants. Only 16.5% of children were reported as having dental sealants although they had a regular dental visit. Figure 2b demonstrates that as children got older the placement of sealants did not increase. In this survey, children ages 8-10 years old had the highest frequency of dental sealants (17.6%).
**Figure 2b**

**Percentage of Children with Dental Sealants by Age Group**

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>6-7 years</td>
<td>8.00%</td>
</tr>
<tr>
<td>8-10 years</td>
<td>17.60%</td>
</tr>
<tr>
<td>11-14 years</td>
<td>13.80%</td>
</tr>
<tr>
<td>15-18 years</td>
<td>5.60%</td>
</tr>
</tbody>
</table>

**Oral Hygiene Practices**

**Figure 3a**

**Number of Times Children Brush Their Teeth**

<table>
<thead>
<tr>
<th>Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1x a day</td>
<td>69.50%</td>
</tr>
<tr>
<td>More than 1x a day</td>
<td>28.50%</td>
</tr>
<tr>
<td>Never</td>
<td>1.50%</td>
</tr>
<tr>
<td>Don’t know/ Don’t remember</td>
<td>0.50%</td>
</tr>
</tbody>
</table>
Figure 3a demonstrates the percentage of children brushing their teeth more than once a day (69.5 %), those brushing once a day, and those brushing never. Figure 3b displays the frequency of tooth brushing by age. The group with the highest frequency of brushing (77.2%) was the children ages 4-7 years old. All age groups were more likely to brush more than once a day instead of once a day.

Figure 3b

[Graph showing the number of times children brush their teeth by age groups.]

Figure 4a

[Graph showing the percent of children receiving help with tooth brushing.]
Figure 4a shows the percentage of children 6 or younger who received help with tooth brushing by a parent or another adult. Data from figure 4b shows an inverse relationship between age and parental help with tooth brushing. As the child increased in age, help with tooth brushing decreased. 84.4% of children age 1 or 2 had help with tooth brushing compared to 58.6% of children age 5 or 6.

Very few parents gave their child a bottle to bed; of parents and caretakers who had a child 1 to 3 years of age, only 3.5% (7/41) gave their child a bottle to bed.
Dental Problems

Figure 5a

Parental Report of Children with Dental Caries

Score
1. Yes- has dental caries
2. No- dental caries
3. Don’t know/Don’t remember

Figure 5b

Parental Report of Children with Dental Caries by Age Groups

Age Group
1. Age 1-3 years
2. Age 4-7 years
3. Age 8-11 years
4. Age 12-18 years
Figure 5a shows parental report of children that currently have dental caries. Figure 5b stratifies the parental report of children with dental caries by age. As children grow older, the frequency of dental caries increases. The oldest group of children (12-18 years old) had the highest percent of dental caries (29.2%). The youngest group of children (1-3 years old) had the lowest percent of dental caries (4.9%).

A $\chi^2$ analysis was performed to compare the proportion of children with dental caries to the proportion of children who had visited the dentist in the past 1 year. 42.2% of children were reported by the parent as not having dental caries and not having a regular dental visit. 57.8% of parents reported that their child had dental caries and had a regular dental visit. Findings were not statistically significant ($p>.05$) and demonstrated that in this cohort, visiting the dentist in the past 1 year was not associated with dental caries (parental report of caries).

Figure 6a

<table>
<thead>
<tr>
<th>Score</th>
<th>Percent of Children who experienced a toothache more than once in the past 6 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes- child had a toothache more than 1X</td>
</tr>
<tr>
<td>2</td>
<td>No toothache</td>
</tr>
<tr>
<td>3</td>
<td>Don’t know/ don’t remember</td>
</tr>
</tbody>
</table>

Percent

Score

1. Yes- child had a toothache more than 1X
2. No toothache
3. Don’t know/ don’t remember
Figure 6b indicates the percentage of children who experienced a toothache more than once when biting or chewing in the past 6 months. 4.5% of parents reported that their child had missed at least one day of school due to a toothache. Figure 6b demonstrates that children who were in the oldest age group (age 12-18 years old) had the greatest frequency of toothache in the past 6 months.

Parental/caretaker report of having a bad dental experience (29.5%) was higher than parental report of their child having a bad dental experience (10.0%).

Unmet Dental Needs

Data collected from the survey indicates that 26.5% of children ages 1-18 years old never had a dental visit. 43% of children had not had a regular dental visit (a visit in the past 1 year). The most common response (19.2%) for children not having a regular dental visit was because the child was “too young to see the dentist.”
demonstrated that children in the youngest age group (1-3 yrs) were less likely to have a regular dental visit and more likely to have never seen the dentist compared to all other age groups (Figure 1b). Only 15.2% of parents/caretakers said that there was a time when their child needed dental care in the past 1 year and couldn’t get it. Only 22.4% of parents who said they needed dental care and were unable to receive care had never taken their child to the dentist. Thus 77.5% of parents who had not taken their child to the dentist said that there was never a time when their child needed dental care (in the past 12 months) and was unable to receive it.

Use of Dental Services if located at the HLC

**Figure 7a**

![Percent of Parents who Reported that they would use HLC Dental Services](image)

<table>
<thead>
<tr>
<th>Score</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Yes- they would use services</td>
<td>84.00%</td>
</tr>
<tr>
<td>2. No- they would not use services</td>
<td>6.00%</td>
</tr>
<tr>
<td>3. Don’t know/ Don’t remember</td>
<td>10.00%</td>
</tr>
</tbody>
</table>
The reason given by most participants who reported that they would not use the services or that they didn’t know if they would use the services was because their child already had a dentist. Parents with children in the youngest age category (ages 1-3) were most likely to use the HLC dental services (96.0%). Parents with older children (ages 12-18) were still likely to use HLC dental services (86.4%) but frequency was lower than those parents with younger children.
**Doctors discussing dental care with parents**

**Figure 8a**

![Bar chart showing the percentage of doctors who discussed dental care with parent/caretaker.]

**Score**

1. Yes- doctor discussed dental care.
2. No- doctor didn’t discuss dental care.
3. Don't Know/ Don’t remember

**Age Group**

1. Age 1-3 years
2. Age 4-7 years
3. Age 8-11 years
4. Age 12-18 years

Figure 8a indicates the parental report of the percentage of doctors who discussed dental care with the parent/caretaker. A $\chi^2$ analysis was performed to compare the
proportion of children that had never been to the dentist between those that had a doctor recommending dental care to the parent or caretaker to those that didn’t. Findings were not statistically significant (p > .05) and demonstrated that in this cohort, doctor recommendation for dental care was not associated with making a dental visit.

Figure 8b demonstrates that physicians were more likely to discuss dental care with parents/caretakers who had a younger child rather than an older child. Dental care was discussed with 50.9% of parents/caretakers who had children ages 1-3 compared to 39.6% of parents/caretakers with children ages 12-18.

**Conclusion and Recommendations**

Dental services are warranted at the Harriet Lane Clinic for several reasons. There is a need for services and a large percentage of parents and caretakers (84.0%) demonstrated that they would use the services if implemented. Parents/Caretakers with younger children were more likely to use the services than parents/caretakers with older children. The most common response for not using dental services was because the child already had a dentist.

The percentage of HLC children who had seen a dentist in the past one year (51%) is currently well below the National Center for Health Statistics (NCHS). In 2002 according to the NCHS, 74.3% of children ages 2-17 years of age had seen a dentist in the past year. Furthermore, 80.6% of children ages 2-17 years of age living in the Northeast had seen a dentist in the past 1 year.\(^18\) Parents reported several different reasons for children not having a regular dental visit (dental visit in the past 1 year). The
most common response (19.1%) was because the child was “too young to see the dentist.” This response could have two interpretations: 1) the parent thought the child was too young to see the dentist; 2) the dentist would not take the child because he/she was too young. If the first interpretation is correct, then this information is helpful because it allows us to know that parental education about appropriate age of first dental visit must be reiterated. The issue of whether this is due to lack of parental knowledge of age of first dental visit or provider acceptance warrants further investigation.

There is a large need for preventive services, especially the placement of dental sealants, and oral hygiene instruction. The findings indicate that the number of children 6 years of age or older with dental sealants in this population is substantially below the national average for sealants of 23%. This demonstrates that sealants are not being placed on this population. Further investigation is needed to understand why preventive treatments, such as sealants, are not being enforced in this particular population, especially those with regular dental visits.

In addition, parents and children should be re-educated regarding oral hygiene practice. The American Dental Hygiene Association’s recommends that parents help their child brush until the age of 7 or 8. Children should be supervised with tooth brushing until 7 or 8 to avoid fluorosis, and to ensure effective brushing. Data from the survey indicated that 30.9% of children 6 or younger were not being supervised while brushing. As children approached age 6, parental supervision with tooth brushing decreased. It appears that parents are helping very young children with tooth brushing but are unaware that as children get older they still need supervision. This is important because it
suggests that oral hygiene instruction and the need for monitoring tooth brushing should be discussed with parents at dental visits.

A significant percentage of children demonstrated the need for restorative treatment, which would be provided to them if dental services were established. Data from the survey showed that 21% of children were reported to have dental caries. These findings are significant because the percentage of dental caries is likely to be underestimated. A research study conducted by Goodman and colleagues found that “clinically assessed un-restored dental caries (21%) was found to be 2 times the level of self-reported awareness of dental caries (11%). The researchers found that an incorrect perceived oral health need is high in poorer populations.”

It is more than likely, the percentage of dental caries is higher than 21% in this population. Data from the survey indicated that younger children had a lower frequency of dental caries compared to older children.

The number of children with dental caries was very similar regardless of whether or not the child has seen the dentist in the past one year. This could be due to several reasons 1) parent was not aware that his/her child had dental caries since the child did not have a regular dental visit; 2) children that did have regular dental visits were able to have caries detected by the dentist. Furthermore, the survey question regarding dental caries relied on self report and was not verified by a dental exam. Further investigation is needed to determine the reason why only 57% of children had regular visits when a large percentage of parents had dental insurance (96.5%) for their child.

Findings from the survey indicated that doctors were more likely to discuss dental care with parents/caretakers of younger children rather than older children. As children
grew older, doctors were less likely to discuss dental care with parents/caretakers. Physicians discussed dental care with 43.5% of parents/caretakers. The data indicated that doctor recommendation for dental care was not associated with making a dental visit. Further investigation is needed to examine this finding.

The administration of oral health surveys to parents/caretakers had several limitations. One question asked the participant if their child “currently has cavities or teeth that are black or rotten.” Another question explained dental sealants and asked the participant if their child ever had dental sealants. These questions would be more appropriately answered, and would be more valid, if a basic oral exam had been conducted by a dental professional. Furthermore, since parents were asked questions in the context of 6 months to 1 year time frames, data is susceptible to recall bias. In addition, the survey was not randomized, and was a non-experimental study. No conclusions or analysis could be conducted on the difference between those parents who were willing to participate, and those who were not, although as discussed previously, the refusal rate was very low. In addition, this data may not be generalizable to the rest of the population for several reasons: 1) the demographics of this population are different from the demographics of certain other populations and 2) it is highly possible that the parents and caretakers may be more motivated than the average parent since they are seeking health care. Finally, the sample size was small (n=200) and more statistically significant associations may have been found with a larger sample size.

Despite these limitations, children at the Harriet Lane Clinic may benefit significantly if dental services were provided. A dental home is needed to provide routine dental care for children of the HLC, and to provide preventive care such as dental
sealants and oral hygiene instruction. It is my hope that the disparities in dental health between this population and the general population of children will decrease, and the children at the Harriet Lane Clinic will have the opportunity to receive and benefit from an on-site dental facility.
References


Acknowledgments

Dr. George Siberry
Dr. Bernard Guyer
Dr. John Taylor
Dr. Mark Macek
Dr. Elizabeth Elliott
Ilise Marrazzo
Appendix A: Oral Health Survey

Date: __________

Identification #____

Instructions: This survey is regarding the child you brought here today. If you have participated in this survey before for this child, do not complete this survey. You are eligible to complete the survey again if it is regarding a different child that you have brought from last time. I will be reading the questions to you. Please answer the question to the best of your ability.

1. About how long has it been since your child last visited a dentist? Include all types of dentists, such as, orthodontists, oral surgeons, and all other dental specialists, as well as dental hygienists. (if answer is #1 or #2 skip next question)

   1. 6 months or less
   2. More than 6 months, but not more than 1 year ago
   3. More than 1 year ago, but not more than 3 years ago
   4. More than 3 years ago
   5. Never have been
   6. Don’t know/don’t remember

2. What are the reasons your child has not visited the dentist in over 12 months/ never gone to the dentist? (circle all that apply)

   1. Afraid
   2. Nervous
   3. Too young to see the dentist
   4. Needles
   5. Cost
   6. Don’t know of a dentist
   7. Dentist is too far
   8. Can’t get there
   9. My child doesn’t have dental problems
   10. My child doesn’t have many teeth
   11. Not important
   12. Didn’t think of it
   13. Other ___
   14. Don’t know
3. What was the main reason that your child last visited a dentist? (Please circle one)

1. Went in for check-up, examination or cleaning.
2. Something was wrong, bothering or hurting.
3. Had to go in for something (filling, crown, deep cleaning, tooth pulling) that the dentist found at earlier check-up or examination.
4. Never have been to dentist.
5. My child’s doctor said I should take my child to the dentist.
6. Don’t know/don’t remember
7. Other _____________

4. During the past 6 months, other than teething pain, did your child have a toothache more than once, when biting or chewing?

1. Yes
2. No
3. Don’t know/don’t remember

5. During the past 1 year, has your child missed any days of school because he/she had a toothache?

1. Yes
2. No
3. Don’t know/Don’t remember
4. My child is too young to be in preschool or school

6. During the past 12 months was there a time when your child needed dental care but could not get it at that time? (If no skip next question)

1. Yes
2. No
3. Don’t know/don’t remember
7. The last time your child could not get the dental care he/she needed, what was the main reason he/she couldn’t get care? (Please circle all that apply)

1. Don’t like/trust/believe in dentists
2. Couldn’t find a dentist
3. No way to get to the dental office
4. No dental insurance
5. I work the hours the dentist is open
6. Speak a different language
7. Didn’t see a need.
8. Don’t know/don’t remember
9. Could not afford it
10. Other

8. How old is your child?

_______ years old

9. How many times a day do your child's teeth get brushed? (Skip next question if child is older than 6 or answer is Never)

1. 1 time a day
2. More than 1 time a day
3. Never
4. Don’t know/ don’t remember

10. If your child is 6 or younger, do you or another adult help him/her with tooth brushing?

1. Yes
2. No

11. If your child is between 1 to 3 years of age, does he/she usually take a bottle to bed while sleeping?

1. Yes
2. No
12. If yes, what do you usually put in the bottle?

1. Milk
2. Juice
3. Soda
4. Water
5. Formula
6. Other _________________

13. (For children 6 or older) Dental SEALANTS are special plastic coatings that are painted on the tops of the back teeth to prevent tooth decay. They are DIFFERENT from fillings, caps, crowns and fluoride treatments. Has your child EVER had dental SEALANTS painted on his/her teeth?

1. Yes
2. No
3. Don’t know/Don’t remember

14. Does your child currently have any cavities or teeth that are “black,” or “rotten”?

1. Yes
2. No
3. Don’t know/Don’t remember

15. Has your child ever had a bad dental experience which caused him/her to not want to go to the dentist again?

1. Yes
2. No
3. Don’t know/Don’t remember

16. Have YOU ever had a bad dental experience which caused YOU to not want to go to the dentist again?

1. Yes
2. No
3. Don’t know/ Don’t remember
17. In the next 3 months, the Harriet Lane Clinic may provide dental services. If you needed to take your child to the dentist would you use these services?

1. Yes
2. No
3. I don’t know

18. Would your child be comfortable seeing other children being treated in the dental clinic at the same time he/she is being worked on?

1. Yes
2. No.
3. I don’t know.

19. In the past 12 months has your child’s regular doctor ever talked to you about his/her teeth?

1. Yes
2. No
3. Don’t Know/ Don’t Remember
4. Child doesn’t have a regular doctor

20. Does your child have any kind of insurance that pays for some or all of your child’s MEDICAL CARE?

1. Yes
2. No
3. Don’t know/ don’t remember

21. If your child does have medical insurance, what type is it? (circle all that apply) (skip next question if patient does not have 1 -6)

(que: if answer is Medical assistance, ask: “Is it Priority Partners, or another type of insurance?”)

1. Priority Partners
2. Medical Assistance
3. FED
4. REM
5. Employee Health Plan
6. Blue Cross/ Blue Shield
7. Applied/Pending
8. None
9. Other ____________________
22. Does that insurance provide Dental Benefits?

1. Yes
2. No
3. Don’t know/Don’t remember

23. Do you have any kind of insurance that pays for some or all of your child’s DENTAL CARE?

1. Yes
2. No
3. Don’t know/don’t remember

24. What gender is your child?

1. Male
2. Female

25. Please tell me which of the following describe your child (you can select ALL that apply):

1. White
2. Black/African American
3. Hispanic/Latino
4. Asian
5. American Indian/Alaska Native
6. Native Hawaiian/ Pacific Islander

26. Please tell me which of the following describe YOU (you can select ALL that apply):

1. White
2. Black/African American
3. Hispanic/Latino
4. Asian
5. American Indian/Alaska Native
6. Native Hawaiian/ Pacific Islander

27. How old are you?

__________ years old
28. Gender of person being surveyed:
   1. Male
   2. Female

29. What is the highest level of education you have completed?
   1. Less than High School
   2. High School or GED equivalent
   3. 2 year College or Associates Degree
   4. 4 yr College or more
   5. Never went to school

30. What is your relationship to the child you brought here today?
   1. Parent
   2. Grandparent
   3. Neighbor
   4. Legal guardian
   5. Relative
   6. Foster Parent
   7. Other
Sources for Questions from Oral Health Survey


Appendix B: Glossary

**Dental Caries/Tooth Decay:** a cavitated lesion. An infectious transmissible disease caused by streptococcus mutans.

**Dental Sealants:** Dental sealants are protective coatings that are placed on the chewing surfaces of posterior teeth to help prevent tooth decay.

**Primary teeth:** Baby teeth

**Positive caries experience:** any tooth that is decayed, missing or filled for permanent teeth. Any tooth that is decayed or filled for primary teeth.