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Oral Health Matters
The forgotten part of overall health

In 2000, the Surgeon General issued a report – *Oral Health in America*. In the Report, the Surgeon General focused on why oral health is important. "The mouth is the major portal of entry into the body… In the event that the integrity of oral tissues is compromised, the mouth can become a source of disease or pathological processes affecting other parts of the body."

According to the National Institutes of Health, "Oral health is an essential component of health throughout life. Poor oral health and untreated oral diseases can have a significant impact on the quality of life. They can affect the most basic human needs, including the ability to eat and drink, swallow, maintain proper nutrition, smile and communicate." Such diseases know as dental caries (cavities) and periodontal disease (gum disease) are caused by specific bacteria and are considered infectious bacterial diseases. These diseases can lead to tooth loss and have been linked to various other diseases of the body such as heart disease, cerebrovascular disease, diabetes, pre-term birth and recently pancreatic cancer.

Research found that few people make an automatic linkage between children's oral health and their overall health, nor to their achievement in school or their ability to thrive. Oral diseases are linked to unhealthy environments and behaviors such as widespread use of sugar, poor oral hygiene, lack of education and inadequate exposure to fluoridation. The Surgeon General reported that the number of Americans without dental insurance was more than 2.5 times the number who lack medical insurance. Approximately 140 million adults and children lack dental coverage. Uninsured children are 2.5 times less likely than insured children to receive dental care. For each child with medical insurance, there are at least 2.6 children without dental insurance. The National Institute of Dental & Craniofacial Research estimates that children will miss 52 million hours of school each year due to oral health problems and about 12.5 million days of restricted activity every year from dental symptoms. Because there is such a significant loss in their academic performance, the Surgeon General has made children's oral health a priority.

ORAL DISEASES

Dental Caries

The Center for Disease Control (CDC) states, “tooth decay affects children in the United States more than any other chronic infectious disease.” The statistics include: six percent of one year olds, twenty percent of two year olds, thirty-five percent of three years olds and forty-eight percent of four year olds. Palm Beach County is not immune to these statistics.

Baby teeth, typically the front ones, emerge before an infant's first birthday, and as soon as these teeth erupt, they are at risk of developing decay. In some cases, a child's risk of dental decay begins before birth. During the fourth month of pregnancy, an unborn baby's teeth begin to develop and harden. The mother’s intake of fluoridated water and a nutritious diet are very important at this time. If a mother receives poor nutrition during her pregnancy, many aspects of the child's growth and development, including proper tooth development, may be affected. Teeth that are not properly developed are more susceptible to tooth decay.

Specific bacteria that cause cavities begin forming in the mouth as early as 10 months of age. Infants and toddlers may be exposed to these bacteria from direct contact with care givers, as well as indirect exposure from shared contaminated foods and utensils. There are reports that mothers with untreated cavities can transmit the bacteria to their children.

Exposure to carbohydrates is a critical component of tooth decay risk. The specific acid producing bacteria that break down the tooth structure to form a cavity thrive on carbohydrates we eat. Of particular concern are babies who are given bottles at bed or other times to pacify them. These bottles usually contain substrates of milk, juice, or other sweetened beverages, all of which can play an integral part in "baby bottle decay."

Cavities are usually painless until they grow inside the internal structures of the tooth and can cause death of the nerve and blood vessels in the tooth, resulting in tooth abscess (see fig 1-5).

These infections that result from poor health and lack of proper and timely dental care can not only infect the tooth but also affect the jaw and throat. The bacteria that originated in the tooth can extent into the gums, the throat, or even into the jaw and facial bones. A dental abscess can become very painful. The infection can sometimes progress to the point where swelling threatens to block the airway causing difficulty breathing. Dental abscesses can also cause nausea, vomiting, fever, chills and sweats.

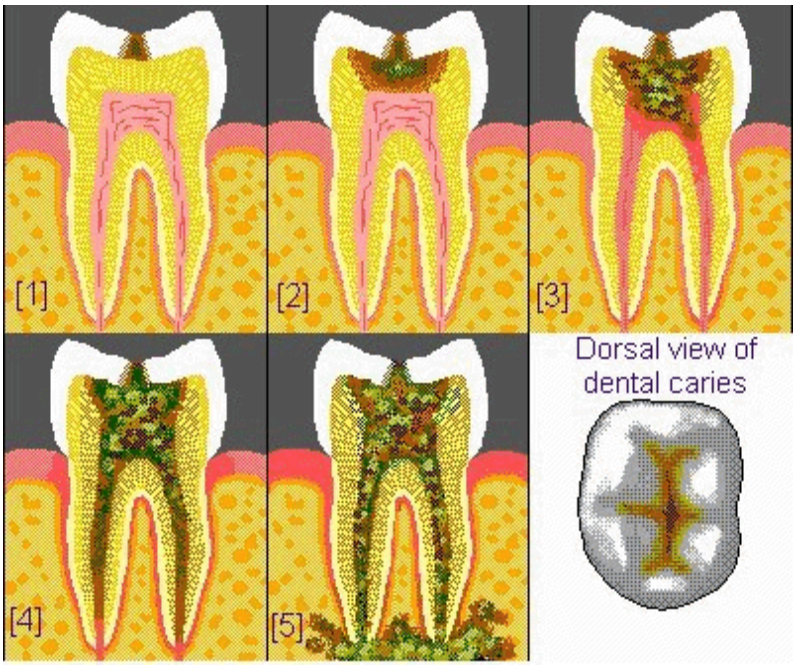


Fig 1-5

Prevention

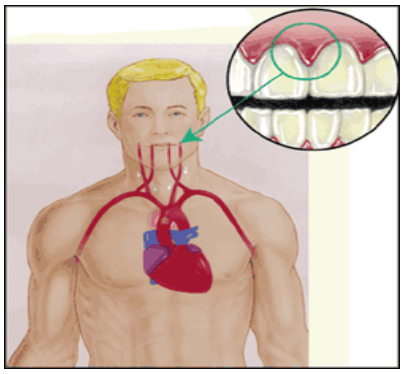
Good oral hygiene and proper nutrition are the primary prevention against dental caries. The good news is that tooth decay and other oral diseases that can affect children are preventable. The combination of dental sealants (a plastic material that covers the groves on top of the tooth surface) and fluoride have the potential to nearly eliminate tooth decay in school-age children.

Periodontal Disease

Gum disease is the most wide spread infection of mankind and many times manifests in early childhood. Epidemiological data indicates that gum disease in young children and adolescence are more prevalent than once believed. The bacteria causing these infections attack the gums and bone that surround and support the teeth. In its early stage, called gingivitis, the gums can become swollen and red, and they may bleed. In its more serious form, called periodontitis, the gums can pull away from the tooth, bone can be lost, and the teeth may loosen or even fall out. Chronic periodontitis is most prevalent in adults, but can occur in children and adolescents.

Gum disease is primarily caused by specific bacteria in the mouth that infect tissue surrounding the tooth, causing inflammation around the tooth leading to periodontal

disease. When bacteria stay on the teeth long enough, they form a film called plaque, which eventually hardens to tartar, also called calculus. Tartar build-up can spread below the gum line, which makes the teeth harder to clean.

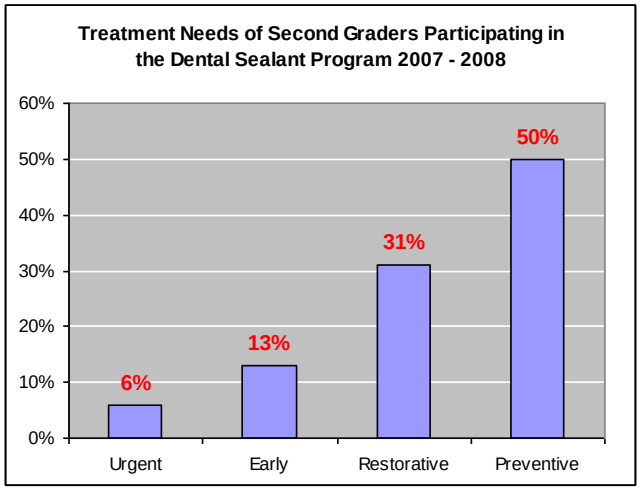


Inflammation caused from periodontal disease has been linked in studies to numerous diseases, including diabetes, and heart disease, respiratory disease, pancreatic cancer. Periodontal disease can put a pregnant mother at an eight times higher risk for pre-term birth.

Palm Beach County Data Collection

Data collected from the Palm Beach County Health Department (PBCHD) Dental Sealant program, Comprehensive Services program and the School District-operated Head Start site in Delray Beach was collected by screening 2800+ children. The screening revealed 40% needed oral health services.

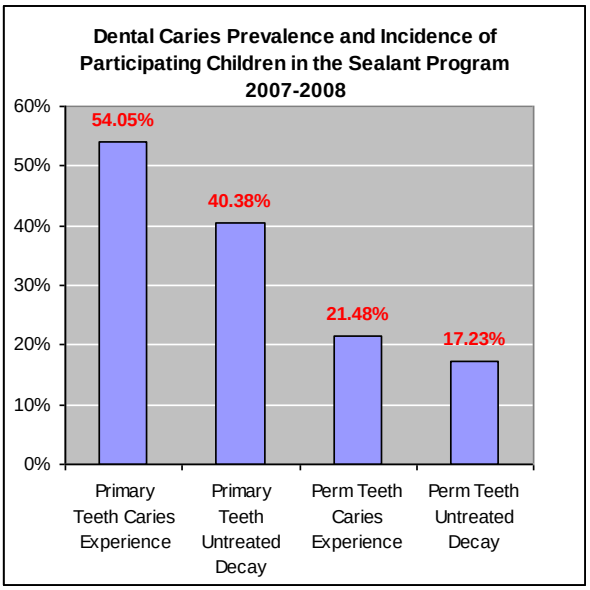
Additionally, the Dental Sealant Program Data Findings highlights in this report the findings of the Basic Oral Health Screening Survey (BOHSS) model developed by the Association of State and Territorial Dental Director (ASTDD). This survey model is considered a best practice and national standard for the collection of community level oral health status and dental care access data. The information gathered is at a level consistent with monitoring the national health objectives found in the Healthy People 2010. The BOHSS uses three separate survey instruments for three age brackets; preschool children, schoolchildren, and adults. For our purposes, the schoolchildren survey instrument was used.



Data-Treatment Needs

In this study a four point scale was used to separate those that required care immediately (Urgent), and those that have significant disease, but no symptoms (Early). The last two groups divide students into those needing restorative dental care (Restorative) or students having no visible dental problems (Preventive) radiographs were not used during these exams. Graph #2 shows the results on participating students in school year 2007-2008. Fifty percent of children had no visual treatment needs at the time of evaluation, while the other 50% had some evidence of dental disease that needed care. Further review shows that 31% had non-immediate

restorative needs, while 19% (6% plus 13%) had more emergent need for care. Six percent of children required dental care as soon as possible. 54% of children had already experienced decay on their baby teeth and 40% had untreated dental decay. For permanent teeth, 21% of children already experienced decay and 17% had decay that was untreated. The data demonstrates that there is not only a high rate of dental decay, but most of the decay is untreated.



Conclusions

- By second grade, there is already a high decay experience (17%) on the occlusal surface (biting surface) of the first molars, and most were untreated. Nationally, tooth decay on the occulsal surfaces of 1st permanent molars represents close to 90% of permanent tooth decay in childhood.
- The findings also reveal 19% of second graders had dental disease that was either urgent or needed care soon. The trend further points to the high dental neglect and poor access to care existing in underserved populations. Only 50% of the student population had no overt need for dental care.
- The prevalence of decay in primary teeth (54%) is much higher than the 28% seen in the 1999-2004 National and Nutrition Examination Survey. The incidence of untreated decay (40%) is also very high. Normally, one of the best predictors of future permanent tooth decay is a history of decay on primary teeth decay. This appears to be true in our population. The use of community oral health interventions and increased dental access can help defray this trend.

Remembering that most dental disease has no symptoms the following data from the Palm Beach County School Health Program (PBC Health Care District) is alarming. In the school year 2007-2008 there were 9,738 dental related visits to the school nurse. For many of these students the school nurse is the only health care provider they see each year.

Solutions

Providing community prevention interventions like water fluoridation and school based sealant programs are scientifically proven means to help reduce dental disease amongst the young as recommended by the CDC's Task Force of Community Preventive Services published in 2001.

Healthy People 2010 urges the promotion of oral health and the prevention of oral diseases and lays out many oral health objectives. The Palm Beach County Oral Health Coalition (PBCOHC) has picked five objectives as a starting point.

Objectives/Next Step

The PBCOHC has adopted five objectives for this year and is working closely with community partners to achieve the following objectives.

1. Objective: Decrease dental caries experience through education and prevention in school based programs.

   Response:
   - Increase prevention with oral health curriculum through school based programs.
   - Educate and deliver preventive care to the county's most at-risk populations (e.g., maternal child system of providers, early learning or child care system, schools, out-of-school programs, and pediatrician's offices).

   Gap:
   - Estimates report we are reaching 3% and 97% are yet to be reached.

2. Objective: Improve access to oral health care for the dentally underserved in Palm Beach county.

   Response:
   - Department of Health School Nurse Referral Program
   - Dental Resource guide that will expand a broader base of dental providers through community efforts.

   Gap:
   - Of the 102,249 children eligible for dental care through Medicaid, 21 % access dental care.
   - Florida is one of the lowest in United States for Medicaid reimbursement.
   - Out of the 960 active dentists in Florida only 7% actively accept Medicaid.
   - Increased need for oral health assessment of children

3. Objective: Expand the Department of Health Dental Sealant Program.

   Response:
   - The development or expansion of school-based dental sealant programs to prevent decay in low income children populations.
   - The health department has received a 5 year commitment to expand the sealant program to at least 30 schools and develop other early intervention and treatment projects using a mobile dental program model.

Gap:

- Over 170 public schools in Palm Beach County.
- Large percentages of children have existing decay not allowing them to have a preventive dental sealant.
- Limited workforce creating long waits and ultimately the providers sees the child after they have a problem.

4. Provide dental services for low-income children.

   Response:

   - Engaging partnerships with the Department of Health, Nova Southeastern University dental students and residency intern programs.

   Gap:

   - Only19 % of Medicaid eligible children saw a dentist last year. Leaving over 80% untreated.
   - Low-income children are 5 times less likely to receive dental treatment than their wealthier counterparts.

5. Objective: Initiate a community based water fluoridation project for Riviera Beach, Jupiter and Seacoast Utility.

   Response

   - The introduction of community water fluoridation helps prevent tooth decay for persons of all ages.

   Gap:

   - Only 62% of the County's population has access to optimally fluoridated water compared to the states 80% goal.

CONCLUSION

Poor oral health is one of the largest unmet health needs in Palm Beach County especially in low income families. Of the approximately 1.3 million residents residing in PBC 26% live below 200% of the poverty level and 10% live below 100% of the poverty level.

The Florida Public Health Institute (FPHI) currently facilitates the PBCOHC and our mission is to improve the oral health of all residents in Palm Beach County. The PBCOHC recognizes oral health disparities exist in all age groups. With this in mind the PBCOHC has developed an Oral Health Promotion plan starting with the underserved and uninsured children in Palm Beach County that will eventually expand to all age groups.