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Improving Oral Health and Access to Dental Care for Children

"You're not healthy without good oral health." FORMER SURGEON GENERAL C. EVERETT KOOP

The Surgeon General's Report on Oral Health refers to oral diseases as a "silent epidemic."[1] Advances in preventive care and treatment have led to improvement in oral health status, but not all Americans have benefitted from these achievements. While most Americans enjoy good oral health, a larger burden of oral disease falls on vulnerable populations. In Ohio, oral health care is a top unmet need, with four million Ohioans without dental insurance.[2]

Oral health encompasses more than healthy teeth and has implications for overall health and well-being. Many oral diseases and associated health problems are preventable and treatable, suggesting the crucial need for accessible dental services for all people, especially children. When not addressed, oral health problems can become serious and have lasting effects. For example, oral disease has been associated with health problems such as ear and throat infections, heart disease, stroke, lung disease, diabetes, low birth weight and premature births.[1] Oral health problems also affect aspects of child development, including speech, growth and function, nutrition, school performance, and social development.

ORAL HEALTH DISPARITIES IN CHILDREN

Tooth decay is the most common chronic disease among children.[3] Untreated dental caries, a transmissible disease in which dental plaque bacteria produce acids that break down tooth structure, can lead to pain, infection and other health problems.[4] While improvements have been made in other age groups, the rate of tooth decay in young children is increasing, especially among preschool-aged children.

Some children are at higher risk of oral health problems and are less likely to have access to dental care. Poverty is the greatest indicator of oral health disparities followed by ethnic, racial and geographic indicators.[6] In a 2008 analysis of data from the National Survey of Children's Health, researchers identified racial and ethnic disparities in oral health status and access to care.[7] In relation to access to dental care, non-white children had more unmet dental care needs and were less likely to have had a preventive dentist visit in the past year. Some racial and ethnic disparities in oral health can be explained by socio-economic status, but not all. Geographic location is another indicator of oral health disparities, with higher rates of oral disease in rural populations.[2]

Oral health is one of the key indicators of the Healthy People 2010 initiative but many of the targets for children's oral health have not been met. For example, the target for tooth decay for children ages 2-5 was 11% but at a review of the initiative in 2005, dental caries in that age group had significantly increased from 18% in 1988-1994 to 24% in 1999-2004.[3] This increase may be a result of changes in diet and is especially concerning because tooth decay in primary teeth is predictive of tooth decay in secondary teeth later in life.[5]

Many oral health disparities can be attributed to lack of access to preventive care or treatment. Nearly three times as many children lack dental insurance coverage than lack medical coverage[3] and for many families, dental care may be unaffordable.[8] For Ohio's children, dental care is an unmet health care need, with children from low-socioeconomic status, racial and ethnic minorities or those without private insurance less likely to have access to care.[2]

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Improving Oral Health and Access to Dental Care for Children

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Dr. Lalumandier's interests lie at the intersection of dental research, practice and education. His research interests focus primarily on the preventive aspects of dentistry, including fluoridation, fluorides and sealants. He is the founder of the Healthy Smiles Sealant Program, an innovative clinical outreach program that seeks to prevent dental disease in children, while educating dental students about the importance of community service. The Healthy Smiles Sealant Program is a public-private partnership funded primarily by the Saint Luke's Foundation. It is also made possible by donations from Case Western Reserve University and the efforts of dental students, hygiene students and volunteer dentists.

PREVENTIVE APPROACHES TO IMPROVING CHILDREN'S ORAL HEALTH

There is a range of approaches available to prevent oral disease in children, including health education, topical fluorides, community water fluoridation, dental sealants, dietary interventions and antibacterial rinses.[4] Of these, community water fluoridation, fluoride varnishes, and dental sealants are the most supported community-based interventions. Fluoride varnishes involve a much higher concentration of fluoride than in community water fluoridation, which is then directly applied to the teeth. A dental sealant is a plastic-like coating which is affixed to the chewing surface of the tooth to create a barrier where the tooth is most vulnerable to decay. Sealants have been shown to reduce tooth decay by 70%.[1]

In the last ten years, there have been gains in preventive oral health care for children, but considerable work remains. For example, only 31% of low-income children received any preventive care in the past year, less than half of the target of 66%.[4] Dental sealant use increased nationally for children 8 or 14 years old, but remained below the 50% target and was significantly lower among minority and low-income children.[4] In Cuyahoga County, there are some encouraging signs that may serve as building blocks for stronger prevention efforts. For instance, the latest Oral Health Survey reports that 49.2% of all 3rd graders had one or more sealants.[9]

In the Cleveland Metropolitan School District, an estimated 80% of all third graders have one or more sealants while 65% have all four first molars sealed. This far surpasses the Healthy People 2010 goal of 50% of children having at least one sealant and represents a significant achievement for a largely low-income, urban school environment. This success is largely due to the efforts of the Healthy Smiles Sealant Program. Such prevention efforts, if made available to all children, have the potential to decrease the incidence of oral disease and associated harms to children's health and quality of life.

THE HEALTHY SMILES SEALANT PROGRAM: Celebrating Ten Years of Community-Based Clinical Outreach in Cleveland Schools

Founded in 1999 as a joint initiative of the Saint Luke's Foundation, the CWRU School of Dental Medicine and the Cleveland Metropolitan School District, the Healthy Smiles Sealant Program seeks to reduce disparities in oral health care for children in the Cleveland Metropolitan School District. The program has grown from an initial pilot phase of just six schools[6] to serving all Cleveland public kindergarten through eighth grade schools.

The Healthy Smiles Sealant Program has five main objectives:

1 To treat all second, third, and sixth grade students in the Cleveland Metropolitan School District.

2 To perform on-site dental examinations on these students and place sealants on all permanent molars at risk of decay.

3 To provide classroom oral health education to all children from pre-kindergarten-third grade, sixth grade and their teachers, nurses and principals.

4 To expose dental students to the needs of underserved children and communities and encourage them to develop a desire to care for the underserved.

5 To refer all participating children for dental care, as needed.

The Healthy Smiles Sealant Program is an integrated component of the CWRU School of Dental Medicine first year curriculum, providing students with the opportunity to practice clinical skills while serving the community. During the first semester of their first year, dental students take a class entitled "Outreach Preventive Dentistry" in which they learn about sealants through a combination of lectures, labs and clinic experiences. By the end of that semester, the students begin participation in the school-based sealant program, and their involvement continues throughout the first three years of their dental school education. While the Program has now grown to a staff of 13, many dentists volunteer their time to provide care to underserved children in their schools.

The school-based Healthy Smiles Sealant Program is comprised of both clinical and educational components. Elementary and middle-school age students receive classroom education on oral health prior to the visit by the Program's dentists and student dentists. The student dentists, under the supervision of volunteer dentists, then visit the schools and conduct on-site dental examinations and apply sealants to adult molars. In addition to the sealant treatment these routine dental evaluations allow early diagnosis and may identify unique dental problems associated with inherited disorders or underlying medical or developmental conditions. Children who require more intensive dental care are referred to a network of community dentists who volunteer their services to treat the children.

EXPANDING THE SCOPE AND IMPACT OF THE HEALTHY SMILES SEALANT PROGRAM

In its first year of operation, the Healthy Smiles Program provided services to children in six elementary schools. Since its inception the Program has grown significantly, touching the lives of every elementary student in the city of Cleveland. In the 2009-2010 school year, the Program visited all 85 K-8 schools to provide clinical and educational care to children, free of charge. Over the course of one school year, more than 6,000 students were examined and treated and over 3,000 were referred for more extensive care. The dental students placed nearly 17,000 sealants. In addition, the health education component reached nearly 8,000 pre-kindergarten, kindergarten and first grade students and more than 11,000 second, third and sixth graders in the same 85 schools.

Prior to the implementation of the Healthy Smiles Sealant Program, young students had to travel to Case Western Reserve University to benefit from the Dental School's sealant program. This proved inefficient, with fewer children served due to transportation issues, a common barrier to accessing dental services. The Healthy Smiles Sealant Program travels to the schools to provide care to children in their own communities, and specifically targets second, third and sixth grade students who are at the stage of tooth development where they can most benefit from the program. In addition to improvements in care, the community-based program provides CWRU dental students with the hands-on opportunity to experience the need for preventive services in low-income communities. After the experience, students report a greater understanding of the health needs of low-income children and express a desire to assist such children through their practice.[10] Given that one of the major challenges to good dental care for children is a lack of dedicated pediatric dental professionals, this educational impact on dental students has significant implications for improved access and quality of care in the future.

IMPLICATIONS FOR POLICY AND PRACTICE

Preventive dental care for children makes sense not only because, as Dr. Lalumandier says, "it's the right thing to do" but also because it is cost-effective. Children who receive early preventive care have average dental care costs of 40% less than children who do not receive preventive care.[11] Preventive programs can be relatively inexpensive, especially when compared to the future health care costs of preventable and treatable oral diseases.[6,11]

Addressing oral health disparities in children is a key policy challenge. Approximately one quarter of all children and half of low-income children receive health coverage through public programs, specifically Medicaid and CHIP.[11] All states are required to provide Medicaid-eligible children with comprehensive dental care under Medicaid's Early and Periodic Screening, Diagnosis and Treatment (EPSDT) benefit. In 2009, the Children's Health Insurance Program Reauthorization Act (CHIPRA) created new provisions to strengthen CHIP's oral health benefits, making it mandatory for states to provide dental benefits to CHIP-eligible children.[12] Previously, dental benefits were optional for states with separate CHIP programs. However, children who are eligible for Medicaid or CHIP may not be enrolled in either program for a host of reasons and, despite having better access than uninsured children, children with public insurance still face barriers to accessing dental care.[6]

Primary barriers to dental care for children include an insufficient dental care infrastructure, a shortage of dentists and pediatric dentists, and a lack of dentists willing to treat publicly insured patients.[11] Dentists sometimes refuse or limit the numbers of Medicaid patients who they will treat and cite low payments as the reason for these limits.[11] Ohio has 56 federally designated dental health professional shortage areas (HPSAs) and this is primarily attributed to a shortage of dentists who treat low-income patients.[2] In 2008, only 27% of Ohio's dentists submitted at least one claim for a Medicaid patient.[2]

A multi-faceted approach is needed for policymakers and practitioners committed to improving child oral health. Legislative initiatives at the federal and state levels have sought to increase prevention efforts, expand coverage and treatment in underserved areas, provide incentives for dentists to focus on pediatric dentistry, track oral health indicators and improve dentist payment mechanisms.[11] State-level programs that streamline the billing process or incentivize providers to treat Medicaid patients can increase access to care for publicly-insured children.[11] Local community wide prevention efforts and efforts to increase oral health literacy are also necessary. Models like the Healthy Smiles Sealant Program demonstrate how community-based programs can address multiple aspects of this complicated problem. By educating dental students and children, particularly those most at-risk, while providing services and referrals, the Healthy Smiles Sealant Program provides preventive services and treatment while addressing some of the causes of dental health disparities in our community.

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