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Improving Pediatric Oral Health through the Primary Care Physician

Sarah King

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MILTON FAMILY PRACTICE

MENTORS: DR. TIM LISHNAK, HOLLY VAN WINKLE

Facts about Pediatric Dental Caries

- Good dentition is important for childhood development. Children with healthy mouths are able to chew more easily, learn to speak more quickly and clearly, have higher self-esteem, and have improved general health.
- Dental Caries is the most common chronic disease of childhood, more than four times as common as asthma and seven times as common as hay fever.
- Nationally, patients of low socioeconomic status, racial or ethnic minorities and patients with disabilities bear a much greater burden of pediatric dental caries.
- Many oral health problems originate in early childhood, and are preventable through regular dental care, fluoridated water or fluoride supplements, dental sealants, and education.
- The *Healthy People Goals 2020*, a national initiative to improve health of Americans, outlines pediatric oral health goals that include:
  - Reduction in the proportion of 3-5 year olds with dental caries from 33% to 30%
  - Reduction in the proportion of 6-9 year olds with dental caries from 54% to 49%
  - Reduction in the number of adolescents with caries in permanent teeth from 54% to 48%

Small Interventions Can Improve Pediatric Oral Health

A 2015 study showed that **early educational intervention** through reading materials and brief oral health instructions at well child visits within the first year of life **decreased odds of developing childhood caries by 80%.**

Pediatric Oral Health in Vermont

- The most recent Basic Screening Survey in 2009-2010 showed that 34% of Vermont school children in grades 1-3 had a history of dental caries, which is better than the *Healthy Peoples 2020* goal of 49%.
- Despite the lower percentage of pediatric dental caries, there are still particular groups in Vermont that have a disproportionately higher rate.
  - Compared to children with private insurance, Medicaid eligible children have a much higher percentage of caries (44% vs. 27%) and untreated decay (16% vs. 9%).
  - Rates of dental caries varied depending on the education level of mothers, with 51.9% of children with dental caries whose mothers have a high school education or less, and a rate of 28.0% of children to mothers with some college or more.
- Ninety-four percent of parents with children on Medicaid reported that their children visit a dentist annually, yet dental caries are 1.6 times more prevalent, and untreated decay is two times more likely.

Public Health Costs

- In 2010 in Vermont, expenditures for dental services were roughly 4.3% of the $4.93 billion spent on healthcare.
- A large proportion of dental costs are paid out-of-pocket, particularly in Vermont. In 2010 in Vermont, 60.1% of dental expenditures were paid out-of-pocket, with 28% from private insurance and 10% from Medicaid.
- There are many indirect costs of oral diseases.
  - In 1996, US school children missed more than 1.6 million days of school for acute dental conditions.
  - While research does not necessarily suggest causation, there is a correlation between gum disease (periodontitis) and heart disease, stroke, poor diabetes control and respiratory infections in susceptible patients.

Community Perspectives

- Dr. Kimberly Hageman, MD at Milton Family Practice
  - Dr. Hageman stated that pediatric oral health education is useful for all parents. She stated that a lot of her patients seemed to be familiar with *some* pediatric dental guidelines, but that there is still room for further education.
  - She said that while she knows where to send patients for dental emergencies, it is difficult to know where to send patients without dental insurance for routine dental cleanings, particularly pediatric patients.
- Name withheld, Dental Hygienist in Milton, VT
  - Stated that it was important for kids to start coming to the dentist's office early, but that they often do not do cleanings until 3 or 4 years old because often younger children do not tolerate cleanings.
  - Felt that parents understand the importance of fluoride toothpaste, but undervalue the importance of the mechanics of tooth brushing and flossing.
  - Agreed that oral health guidelines from primary care offices are important because parent education can occur from infancy.

Intervention and Methodology

- Goals of interventions:
  - Improving patient education about basic pediatric dental recommendations and prevention of childhood dental caries.
  - Improving patient knowledge of access to pediatric dental care in Vermont, particularly for low-income patients.
- Interventions:
  - Create an informational document about important points in pediatric dental care, located in the PRISM electronic medical record.
  - Create a succinct list of resources for finding a dental provider, with emphasis on local dental offices that frequently accept *new* patients without dental insurance or with Medicaid insurance as a resource for providers.

Results and Responses

- A number of providers commented that pediatric dental health instructions will be a useful addition to the well child visit.
  - The "Dental Guidelines for Your Child" information sheet is an available printout in the PRISM electronic health record.
- Due to time constraints of the project, patient reception of the dental hygiene information was not recorded.

Evaluation of Effectiveness and Limitations

- Given the time constraints of the project, efficacy of the interventions were not able to be measured.
- Future measure of effectiveness may include:
  - Survey of physician and parent perception of the handout and general knowledge of pediatric oral health recommendations.
  - Record how many MFP patients at pediatric well child visits with patients that regularly see a dentist.
  - Measure how many pediatric patients at MFP have dental caries.
- Limitations of the interventions
  - Handouts in PRISM requires user knowledge to add to the after visit summary.
  - The list of dental resources is not in electronic form, but rather placed in an area for providers to use. This means that it is inaccessible from every room in the office.

Future Directions

- Further investigation into the use and efficacy of the pediatric dental health handout is warranted.
- Further coordination with dental practices in the area will likely facilitate an easier referral and follow-up system for patients and providers.
- Likewise, coordination with local schools could improve outreach to children who may not present to well child visits at MFP.

References

- Vermont Department of Health Office of Oral Health. http://healthvermont.gov/family/dental/services.aspx Accessed 2/2016.
- *2014 Vermont Oral Health Plan*. Vermont Department of Health. http://healthvermont.gov/family/dental/documents/oral_health_plan.pdf.
- *Oral Health: Tips for Families*. National Maternal and Child Oral Health Resource Center. http://mchoralhealth.org/materials/dental-health-month.php Access 2/2016.
- American Academy of Pediatric Dentistry. 2015-16 Definitions, Oral Health Policies, and Clinical Practice Guidelines. http://www.aapd.org/policies/.
- American Academy of Pediatrics. Maintaining and Improving Oral Health of Young Children. *Pediatrics*. 2014; 134(6): 1224.
- Peres MA, Peres KG, de Barros AJD, Victora CG. The relation between family socioeconomic trajectories from childhood to adolescence and dental caries and associated oral behaviours. *Journal of Epidemiology and Community Health*. 2007;61(2):141-145.
- Nowak, Arthur; Warren, John. Preventative Dental Care and Counseling for Infants and Young Children. *UpToDate*. 2016. Retrieved from: http://www.uptodate.com/contents/preventive-dental-care-and-counseling-for-infants-and-young-children.
- Azevedo, Marina Sousa, Romano, Ana Regina, Correa, Marcos Britto, Santos, Iná da Silva dos, & Cenci, Maximiliano Sérgio. Evaluation of a feasible educational intervention in preventing early childhood caries. *Brazilian Oral Research*. 2015; 29(1): 1-8. Epub July 03, 2015.