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Recommended Citation

Heiser, Alyssa, "Integrating Oral Health in Primary Care to Reduce Early Childhood Caries (ECC): Evidence-Based Guidelines and Recommendations" (2020). *Family Medicine Clerkship Student Projects*. 569. <https://scholarworks.uvm.edu/fmclerk/569>

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Integrating Oral Health in Primary Care to Reduce Early Childhood Caries (ECC)

Evidence-Based Guidelines and Recommendations

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UVMHC Hinesburg Family Practice, July - August 2020

Mentors: Michelle Cangiano, MD; Elizabeth Cote, AHEC Program Director

Background

- Dental caries is the most common chronic disease affecting children, despite being almost 100% preventable
- Early childhood caries (ECC) can lead to school absences, poor school performance, difficulty sleeping, attention problems, slower social development, and poor overall health
- Primary care providers can play a major role in preventing childhood dental caries by initiating early fluoride screening and treatment at well-child visits
- American Academy of Pediatrics (AAP) recommends fluoride varnish in the primary care setting every 3-6 months starting at tooth emergence
- Beginning at the 6-month well-child visit, *The Building Bright Futures Periodicity* schedule states, “Assess if the child has a dental home. If no dental home is identified, perform a risk assessment” using the Oral Health Risk Assessment Tool (OHRA)
- The US Preventive Services Task Force (USPSTF) recommends that primary care clinicians prescribe oral fluoride supplementation to children starting at 6 months of age whose primary water source is deficient in fluoride

Problem Identification

Medicaid-Enrolled and Eligible Children

Children in VT who are insured by Medicaid are less likely to access dental care than those who are commercially insured (56.27% vs. 73.67%, respectively)

- In 2015, 51% of VT children (75,350) were enrolled in Medicaid; however, only 59% of those children visited a dentist that year
 - 26% of children ages 1-2 years received preventative dental care
 - 61% of children ages 3-5 years received preventative dental care
- Over 30,000 eligible Medicaid-covered children in VT did not see a dentist in 2015, with parents citing the following barriers:
 - Cost/Dentist did not accept Medicaid
 - Did not have a dentist/difficulty in getting appointment
 - Did not believe they had a reason to go
- Access to Care: Dental Services Among Medicaid-Enrolled Children by their 2nd Birthday in 2015
 - 47% received any dental services (30% by a dental provider, 10% by a medical provider)
 - 30% received an Oral Evaluation and Counseling (17% by a dental provider, 10% by a medical provider)
 - 27% received a fluoride application (16% by a dental provider, 8% by a medical provider)

Problem Identification, cont.

Community Water Fluoridation

- The Water Fluoridation Reporting System (WFRS) is an online tool developed by the CDC in partnership with the Association of State and Territorial Dental Directors (ASTDD) that describes the % of the U.S. population on community water systems who receive 0.70 ppm optimally fluoridated drinking water
- Vermont Towns: Fluoridation Status as of 2016 (CDC Statistics)
 - Persons receiving fluoridated water: 249,073
 - Persons served by community water systems (CWSs): 443,316
 - % Population served by CWSs receiving fluoridated water: 56.2%
 - Rank in U.S. by fluoridation percentage: 41
- 56.2% of VT's population served by community public water systems have optimally fluoridated water, which is lower than the U.S. (75%), the Healthy Vermonters 2020 goal (65%), and the Healthy People 2020 goal (80%)

Public Health Cost

- Annual spending on dental care in the U.S. is well over \$100 billion, representing nearly 20% of children's overall health coverage
- About 1/3 of VT's children have experienced tooth decay in the past 5 years
 - 26% of VT's kindergarten children
 - 37% of VT's third grade children
- Each year, approximately 400 Vermont Medicaid-eligible children under the age of 6 years old are treated in the hospital for preventable dental problems including, but not limited to:
 - Maxillary incisor caries
 - Dental abscesses & draining fistulae
 - Carious lesions and demineralized areas
 - Brown cavitations exposing underlying dentin
- In 2017, 14,85 (8%) Medicaid-enrolled children aged 1-5 years were treated for extractions, endodontics or restorations
 - Of those children, 26% were treated in a hospital setting
- The average amount paid per child treated in a hospital setting in 2015 was \$4,829

Community Perspective

Name Withheld, RHD

Public Health Dental Hygienist and Fluoridation Coordinator
VT Department of Health, Office of Oral Health

- Older generation of dentists are not comfortable performing dental cleanings in children under the age of 3 years old, though this is changing with the newer generation of dentists
- Busy schedules, not having a designated person to order, and not knowing where to order from are the biggest barriers to instituting fluoride varnish application in primary care offices

Name Withheld

AHEC Program Director
University of Vermont Office of Primary Care

- Figuring out the patient encounter “process” has been the biggest barrier to the fluoride varnish (FV) in primary care effort
- Fluoride varnish doesn’t take long, doesn’t cost the practice, and it improves patient outcomes – especially for the highest risk (dental) children
- There remains much to do for oral health risk assessment and FV to become a consistent norm in primary care medicine

Intervention & Methodology

- Designed a SmartPhrase titled, “WCCDENTAL,” in EPIC and shared with providers at UVMMC Hinesburg
- SmartPhrase can be inserted into the “Patient Instructions” section under “Communication” and serves as an after-visit information sheet to provide parents/caregivers at routine well-child visits for information about dental hygiene
- Explains resources, national guidelines, and recommendations for proper pediatric oral health and preventative measures against ECC and how to get water tested for fluoride
- Objectives of information sheet:
 - Targets well-child visits beginning at the time of first tooth eruption
 - Pediatric oral health education for parents/caregivers
 - Information about early childhood caries (ECC)
 - Provides resources about fluoridated water and how to get water tested
 - Oral health care coordination – linking children with local dental homes

Response

- After-visit summary sheet provides accessible and easy to understand information on proper and preventative pediatric oral health care and hygiene
- Provides the most recent and up-to-date guidelines and recommendations on seeking oral health care for children beginning at the time of the first tooth eruption
- Provides information on importance of fluoride and fluoridated water sources in the community
- Provides resources and links to finding dentists in the area who see Medicaid-eligible patients
- A more formal evaluation of the effectiveness of this information would involve administering a pre- vs. post-questionnaire to parents/caregivers to assess understanding about the importance of pediatric oral health care
- Following up on the accessibility to a dental home at the next well-child visit would also ensure proper continuity of care and screening for any identified barriers

Effectiveness & Limitations

Effectiveness

- To measure effectiveness of the information sheet:
 - Create a short pre- and post-questionnaire that parents/caregivers fill out before and after reading the information sheet to assess knowledge about pediatric oral health care
 - Questionnaire would involve assess parent/caregiver understanding of the importance of pediatric oral health, fluoridation of community water sources, and accessibility to a dental home for their children

Limitations

- Limitations of the current information sheet:
 - Written in English, so non-English speaking parents/caregivers would not understand the information unless it is translated to their native language
 - Information only reaches those parents/caregivers who bring their children into the office for well-child visits
 - Information is not yet able to be sent to parents/caregivers through MyChart in EPIC

Future Interventions & Projects

1. Modify the Well-Child Care Smartset in EPIC to include questions about how parents brush their child's teeth and whether they use fluoride toothpaste, allowing for conversation and counseling on proper oral hygiene during these visits
2. Survey pediatricians and pediatric dentists in Chittenden County to assess current practices used in screening children for oral health and thoughts about incorporating fluoride varnish in the primary care setting
3. Implement a Plan-Do-Study-Act (PDSA) Cycle in the primary care setting to integrate fluoride varnish application at well-child visits, working with the entire care team (physicians, nursing staff, front desk management, etc.)
4. Once a PDSA cycle is established, build a Health Maintenance Notification in EPIC that pops up in the patient's chart that alerts providers to screen for dental caries and prompts them to order fluoride varnish for that visit if necessitated
5. Obtain toothbrushes and fluoride toothpaste for providers to give to patients at well-child visits

References

- Clark MB, Douglass AB, Maier R, Deutchman M, Gonsalves W, Silk H, Wrightson AS, Quinonez R, Dolce M, Dalal M, Rizzolo D, Sievers K. Smiles for Life: A National Oral Health Curriculum. 3rd Edition. Society of Teachers of Family Medicine. 2010 www.smilesforlifeoralhealth.com.
- “Oral Health in Vermont and Vermont’s Offices of Local Health: Preventive and Access to Care, Risk Factors, and Outcomes.” *Vermont Department of Health*, 2019, www.healthvermont.gov/sites/default/files/documents/pdf/HS-Stats-Oral-Health-Data-Vermont-20190723.pdf.
- Miller, Robin. “Oral Health: An Essential Component to Overall Health.” *Vermont Department of Health*, 2019, www.med.uvm.edu/docs/nsnt_oral_health_for_school_nurses_2019/ahec-documents/nsnt_oral_health_for_school_nurses_2019.pdf?sfvrsn=3d1908c5_2.
- “Bright Futures Medical Screening Reference Table.” *American Academy of Pediatrics*, 2018, brightfutures.aap.org/Bright%20Futures%20Documents/MSRTable_InfancyVisits_BF4.pdf.
- “2016 Water Fluoridation Statistics.” *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, 23 Jan. 2020, www.cdc.gov/fluoridation/statistics/2016stats.htm.
- “Keep Smiling Vermont: The Oral Health of Vermont’s Children 2016–2017.” *Healthvermont.gov*, 2017, www.healthvermont.gov/sites/default/files/documents/pdf/oral_health_survey_1617.pdf.
- Griffin, SO, Barker LK, Wei L, et al. Use of Dental Care and Effective Preventive Services in Preventing Tooth Decay Among U.S. Children and Adolescents — Medical Expenditure Panel Survey, United States, 2003–2009 and National Health and Nutrition Examination Survey, United States, 2005–2010. *MMWR Surveill Summ* 2014;63 Suppl 2:54-60.