Oral Health in Pediatric, Young Adult, and Foster Care Patients: A Pediatrician's Perspective

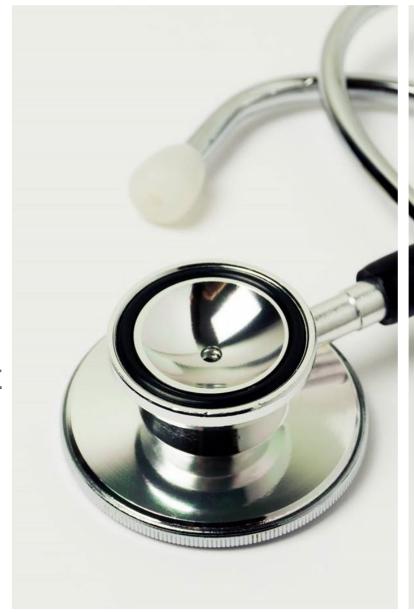
Mikki Bouquet, MD

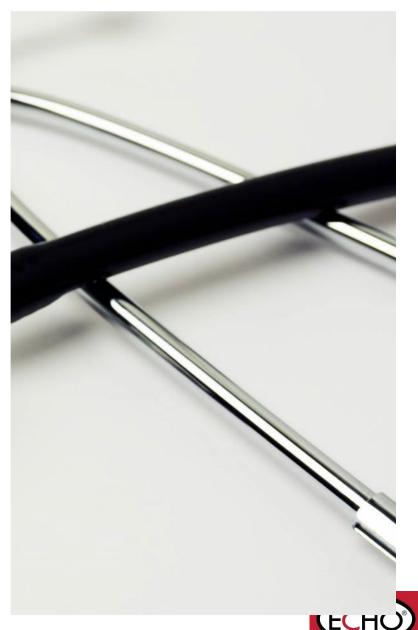




Agenda

- About Me
- Physicians Dental Health Knowledge
- General Pediatric Patient
- Young Adult Patient
- Foster Care & Immigrant Patients







About Me:

- From Baton Rouge
- Graduated LSU Shreveport
- Residency at OLOL
- Work with the pediatric residents at the Pediatric Academic Clinic
- Serve the underserved
- Fluoride varnish project
- 100 Million Mouths Campaign through CIPCOH & Harvard





RESOURCES

• 100 Million Mouths
Campaign

Apply to be a Champion

Current Oral Health
Champions

Oral Health Fillings, Bits and
Bites

• Community of Practice

Newsletters

Posters, Presentations, and

Podcasts

Publications

HOME / RESOURCES /

100 Million Mouths Campaign

News & Events

The 100 Million Mouths Campaign (100MMC) is an initiative, which will create fifty oral health education champions over the next decade, one in each state, to work with health profession schools and programs to integrate oral health into their curricula to bridge gaps in oral health access.

The goal of the 100MMC is to recruit and train health professionals in each state to engage with primary care training sites to develop oral health curricula that will be sustainable and has a health equity component. Champions are taught to reach out to medical and osteopathic schools, physician assistant, nurse practitioner, and midwifery schools, as well as pediatrics, med-peds, internal medicine, obstetrics and gynecology, and family medicine residencies. They are taught to use existing national and state resources, and to partner with local and state experts such as the state dental director, department of public health, and local academic and community-based dentists and dental hygienists. Our champions train faculty in the health schools to carry on the oral health curricula thereby creating a system that will generate future PCPs that can engage their patients and improve the oral health of at least 100 million mouths over the next decade.

Physician Knowledge on Oral Health







Oral Health Knowledge Gaps

- I. Baghdadi et al. 2021
 - Recruitment of >300 pediatricians from 3 countries (US, Saudi Arabia, Greece)
 - b. Self administered questionnaire
 - c. 53% reported they had adequate knowledge to make recommendations about oral health for their patients
 - d. Knowledge gaps were more of an issue with pediatricians who had less work experience
- 2. Focus on knowledge gaps during med school and residency
- Pediatricians with more knowledge are more likely to refer their patients to dentists

Other studies:

- 39% knew the transmissibility of dental caries
- 37% understood that dental sealants are not usually applied to primary teeth
- 60% knew the correct dose of fluoride for infants
- 22% were aware of fluoride varnish
- Study out of India showed only 32% of pediatricians acknowledged that cariogenicity of medicated syrups
- May be portrayed as "less importance" and "over confidence" regarding oral health
- Additionally dental care between dentists and pediatricians is not well coordinated





DEVELOPING AN ORAL HEALTH CURRICULUM FOR PEDIATRIC RESIDENTS TO INCREASE DENTAL DISEASE PREVENTION FOR THE PEDIATRIC POPULATION

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Our Lady of the Lake Children's Hospital Pediatric Residency Program¹

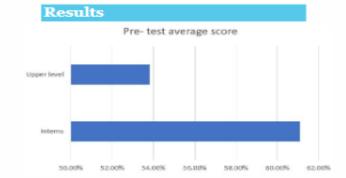


- In the U.S., dental caries are the most prevalent chronic disease in childhood (1).
 - Disparities in caries continue to persist for some race & ethnic groups (1).
 - Children suffer from dental caries at a rate 5 times greater than asthma (2).
- Although researchers have acknowledged the various links between oral health and overall systemic health, oral health care is not usually a component of pediatric primary health care (3).
- In addition, pediatric residency training often lacks an oral health curriculum.



Methods

- Anonymous surveys were completed by our 35 residents before implementing our oral health curriculum
 - The oral health curriculum was tailored to concentrate on knowledge deficits based on the pre-test results
- Surveys will be taken at the end of the academic year to determine effectiveness and adjust.
- Curriculum will include:
 - Smiles for Life fluoride varnish module implemented during intern orientation
 - Hands on training in clinic on fluoride varnish application
 - Jeopardy style morning report on general dental health
 - Lecture on fluoride supplementation
 - Lecture given by a local pediatric dentist
- Secondary outcomes:
 - Increase dental disease prevention through fluoride varnish & fluoride supplementation
 - Provide quality anticipatory guidance for parents and promote the establishment of a dental home through dental referrals
 - Reduce caries disparities among our vulnerable population.



Discussion

- Our residency currently has no formal oral health curriculum established.
- Most residents agreed that dental health knowledge is important and should be part of their pediatric training.
- Most residents stated their current knowledge base was inadequate.
- Through the implementation of our new oral health curriculum, we hope to train our pediatric residents to comfortably provide preventative dental care.



Conclusion

- Our goal is to introduce an oral health curriculum to build pediatric residents' foundational knowledge, confidence, and awareness of optimal oral health within the pediatric population
- It is our responsibility to reduce oral health disparities and address this public health crisis.

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- US Department of Health and Human Services. Oral Health in America: Report of the US Surgeon General (Executive Summary, Part Three). National Institute of Dental and Craniofacial Research, US Public Health Service (2000). Available from:

https://www.nidcr.nih.gov/datastatistics/surgeongeneral /report/executivesummary.htm-execSumm

 Cooper D, Kim J, Duderstadt K, Stewart R, Lin B, Alkon A. Interprofessional Oral Health Education Improves Knowledge, Confidence, and Practice for Pediatric Healthcare Providers. Front Public Health. 2017 Aug 14;5:209. doi: 10.3389/fpubh.2017.00209. PMID: 28856134; PMCID: PMC5557781.





American Academy of Pediatrics (AAP) Recommendations



- Pediatricians can improve oral health by focusing on reducing or eliminating key risk factors for dental caries like high sugar diet, frequent snacking, lack of a dental home and tooth decay in the caregivers/siblings
- We acknowledge dental health disparities due to poverty, insurance and language barriers that prevent accessing proper care at the dentist's office
- Instill early habits like never putting child to bed w/ a bottle, avoid sugary drinks and have parents serve as role models by brushing/flossing regularly
- Drink only water with meals, preferably fluorinated tap water and avoid/limit juice
- Fluoride toothpaste and rinses are helpful, but pediatricians or dentists should also apply fluoride 2 to 4 times per year to reduce risk of caries
 - "Fluoride use in caries prevention in the Primary Care Setting" published in 2020
- Dental home by age one





Oral Risk Assessment

To be done at well visits





American Academy of Pediatrics Oral Health Risk Assessment Tool

The American Academy of Pediatrics (AAP) developed this tool to aid in the implementation of oral health risk assessment during health supervision visits. Since a validated caries risk assessment tool does not currently exist, this tool includes factors known to be related to childhood caries. The form provides a framework to assist the pediatric clinician to identify risk as undifiable behaviors to optimize patient oral health.

Instructions for Use

Use this form in conjunction with the **AAP Oral Health Intake Form**, to collect information from parents/caregivers on home care and habits that contribute to both protective and risk factors. That information will help inform the **Action Plan** and the family's **Self-Management Goals**.

The child is at high risk for caries if any of the risk factors below are reported or found in the physical exam. In the presence of multiple risk factors or severe clinical findings, the clinician may determine the child should be seen by a dentist as soon as possible.

Patient Name:	Date of Birth: _	Da	te:				
Visit: 6 month 9 month 12 month 15 month 18 m	nonth 24 month 30	month 3 year 4 year	5 year 🔲 6 year	Other			
RISK FACTORS							
ther or primary caregiver had active decay in the past 12 months Yes No			e				
Does not have an established dental home ☐ Yes ☐ No	Has not received fluoride varnish in the last 6 months Special health care needs Yes No Yes No						
Continual bottle/sippy cup use with beverage other than water Yes No	Does not have teeth brushed twice daily ☐ Yes ☐ No						
Does not drink fluoridated water or take fluoride supplements Yes No	Does not use fluoride toothpaste ☐ Yes ☐ No						
PH'	YSICAL FINDINGS						
bvious decay White spots or decalcifications Visible plaque] Yes \ No \ Yes \ No							
Restorations present (Fillings or Silver Diamine Fluoride Present) Swollen or bleeding gums (gingivitis) Yes No							
Oral Health Risk Determination: If YES to any of the above, this patient is considered HIGH risk for dental disease. Determine HIGH / LOW risk; follow Action Plan below.							
IOIIOW ACTION Plan Delow.							
	ACTION PLAN						
	isk	agement goals with caregiver	High Risk	Low Risk Yes			
High Risk Low R Apply fluoride varnish	isk		-				
High Risk Low R Apply fluoride varnish Every 3 months Every 6 t Refer to a dental home Yes	isk		Yes				
Apply fluoride varnish	isk	COMPLETE Oral health risk assessment Visual exam of the mouth Fluoride varnish application Anticipatory guidance Referral to a dentist	D ACTIONS Yes	Yes			











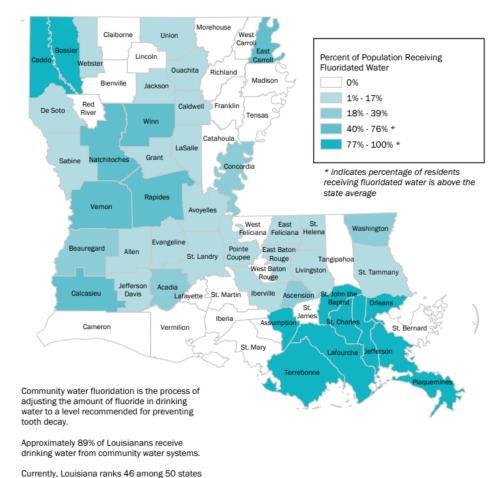
and the District of Columbia, with only 39% of the residents receiving fluoridated water.

Percent of Louisiana Population Receiving Fluoridated Water from Community Water Systems by Parish, 2018

TABLE 1

Summary of Fluoride Modalities for Low- and High-Risk Patients

Fluoride Modality	Low Caries Risk	High Caries Risk
Toothpaste	Starting at tooth emergence (smear of paste until age 3, then pea-sized)	Starting at tooth emergence (smear of paste until age 3, then pea-sized)
Fluoride varnish	Every 3–6 mo starting at tooth emergence	Every 3 mo starting at tooth emergence
Mouth rinse OTC	Do not use	Starting at age 6 y if the child can reliably swish and spit
Community water fluoridation	Yes	Yes
Dietary fluoride supplements	Yes, if drinking water supply is not fluoridated	Yes, if drinking water supply is not fluoridated







Source: Water Fluoridation Reporting System 2018 Fluoridation Status Report

Improving Dental Health and Awareness with Fluoride Varnish

Whitney Allen, MD1, Emily Picciola-Millet, MD1, and Mikki Bouquet, MD1

Our Lady of the Lake Pediatric Academic Clinic1



INTRODUCTION

Early Childhood Caries (ECC) is a chronic disease that destroys tooth structure leading to pain, infection and loss of chewing function in children. 23% of children are affected between 2 to 5 years of age. Fluoride varnish helps reduce the risk of ECC by inhibiting tooth demineralization, enhancing remineralization, and inhibiting bacterial metabolism. There is a huge need for fluoride supplementation in our community due the lack of water fluoridation in Louisiana.



OBJECTIVES

- Implementing fluoride varnish application as a part of primary medical care for our pediatric patients, ages 6 months or at tooth emergence to 2 years old and up to 5 years old not in the care of a dentist at the Our Lady of the Lake Children's Pediatric Academic Clinic (PAC).
- We are aiming to increase the percentage of patients who establish care with a dentist by 50% and decrease patients on a cariogenic diet by 25% by 2023.

MATERIALS & METHODS

To achieve the project aim, we plan to utilize the Plan-Do-Study-Act (PDSA) quality improvement method. We obtained baseline data by conducting a retrospective chart review in Epic from August-October 2021 of all PAC patients between the ages of 6 months to 5 years of age who were seen for a well child visit and have a documented oral health risk assessment. Our first intervention included fluoride varnish application and providing dental office resources that began February 2022 to present.



PROJECT MEASURES

Process Measures

- Number of patients who receives fluoride varnish application/resources
- Number of patients/parents who receives education

Outcome Measures

 The percentage of patients who establish care with a dentist by January 2023

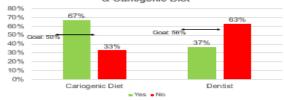
Balancing Measures

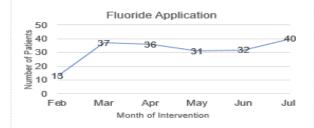
- Number of patients who do not receive fluoride varnish application even though they met criteria
- Number of patients whose parents refuse fluoride varnish application

RESULTS

Baseline data showed that 37% of children had a dentist prior to initiating fluoride application. 67% of patients had a cariogenic diet and risk for dental caries. As of July 2022, we have completed fluoride varnish application on 189 children at well child visits which will potentially impact dental health in our patient population.

Percentage of Patients in PAC with a Dentist & Cariogenic Diet





DISCUSSION

Patients ages 6 months to 5 years see their pediatrician more than the dentist, so preventative interventions will potentially have a greater impact on dental health in the primary medical care setting. Since starting fluoride at Our Lady of the Lake Children's PAC, parents are asking more questions about the dentist and at home dental care. Overall, the prevention of dental caries and other issues due to tooth decay will help with better health outcomes in children.

FUTURE GOALS

- Our second intervention will be a patient/parent educational session on the importance of oral health and dental visits.
- We will obtain data on dental care establishment at least 1 year post collection of baseline data and compare to determine the impact of the project on dental health.
- We will apply for grant money to continue to apply fluoride varnish and cover the cost of the application.
- We will add <u>age appropriate</u> books to our collection in the PAC from "Reach Out and Read" about dental health to be distributed in the clinic as an educational resource.



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Improving Dental Health and Awareness with Fluoride Varnish

Emily Piccola, MD1, Whitney Allen, MD1, Bhakti Samant, MD1, and Victoria Oh, MD1, Mikki Bouquet, MD1

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Early Childhood Caries (ECC) is a chronic disease that destroys tooth structure leading to pain, infection and loss of chewing function in children. 23% of children are affected between 2 to 5 years of age. Fluoride varnish helps reduce the risk of ECC by inhibiting tooth demineralization, enhancing remineralization, and inhibiting bacterial metabolism. There is a huge need for fluoride supplementation in our community due the lack of water fluoridation in Louisiana.



Objectives

- Implementing fluoride varnish application as a part of primary medical care for our pediatric patients, ages 6 months or at tooth emergence to 2 years old and up to 5 years old not in the care of a dentist at the Our Lady of the Lake Children's Pediatric Academic Clinic (PAC).
- We are aiming to increase the percentage of patients who establish care with a dentist by 50% and decrease patients on a cariogenic diet by 50% by 2023.

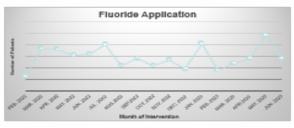
Material & Methods

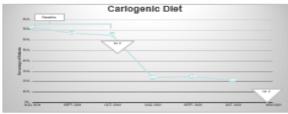
- To achieve the project aim, we utilized the Plan-Do-Study-Act (PDSA) quality improvement method.
- We obtained baseline data by conducting a retrospective chart review in Epic from August-October 2021 of all PAC patients between the ages of 6 months to 5 years of age who was seen for a well child visit and have a documented oral health risk assessment.
- Our first intervention included fluoride varnish application and providing dental office resources that began February 2022 to present.
- Our second intervention, we provided educational handouts on oral health.
- We obtained data from 1 year post collection of our baseline data to compare if our patients have established a dental home and reduced their cariogenic diet.

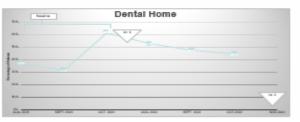


Results

- Baseline data showed that 37% of children had a dentist prior to initiating fluoride application. 64% of patients had a cariogenic diet and risk for dental caries.
 After one PDSA cycle, we have completed fluoride varnish application on 307 children at well child visits which will impact dental health in our patient population.
- 1 year post collection data showed that 48% of our children have a dental home. 23% of patients had a cariogenic diet.









Discussion

Patients ages 6 months to 5 years see their pediatrician more than the dentist so preventative interventions will potentially have a greater impact on dental health in the primary medical care setting. Since starting fluoride at Our Lady of the Lake Children's PAC, parents are asking more questions about the dentist and at home dental care. Overall, the prevention of dental caries and other issues due to tooth decay will help with better health outcomes in children.

Future Goals

- Our third intervention will be initiating fluoride supplementation prescriptions to patients from 6 months to 16 years of age in East Baton Rouge Parish.
- We will apply for grant money funding for dental supplies like toothbrushes and toothpaste to further educate our families.
- We will continue to provide educational handouts on oral health

References

American Academy of Pediatrics. Dental Health & Hygiene for Young Children. HealthyChildren.org. (2015, October 14). Retrieved Jan 28, 2022, from https://www.healthychildren.org/English/healthyliving/oral-health/Pages/Teething-and-Dental-Hygiene.aspx

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"Smiles for Life" Fluoride Course. (2005), https://www.smilesforlifeoralhealth.org





TABLE 2

Fluoride Supplementation Schedule for Children

Age	Fluoride Ion Level in Drinking Water, ppm ^a			
	<0.3	0.3-0.6	>0.6	
Birth to 6 mo	None	None	None	
6 mo to 3 y	0.25 mg/d <u>b</u>	None	None	
3-6 y	0.50 mg/d	0.25 mg/d	None	
6–16 y	1.0 mg/d	0.50 mg/d	None	

Source: Centers for Disease Control and Prevention. 21

- a 1.0 ppm = 1 mg/L.
- b $\,\,$ 2.2 mg of sodium fluoride contains 1 mg of fluoride ion.





Pediatric Population

- Morning appointments are best
 - Young children will be the most alert and fresh
- Prepare your child by giving them general expectations of what to expect in the office
- Ask the parent if they have any concerns. Often parents have dental anxieties that the children can pick up on
- The parent needs to be calm in the room

- Ask the parent if the child has a tendency toward being stubborn, defiant, anxious or fearful in new situations
 - 10 months 24 month: normal to be fearful of examiner and prefer to be examined while being held by the parent
 - 2 3 yo: may do okay with a brief separation from parents, will often say "no" in response to a question or command, not purposely being defiant
 - 3 yo : consider having parent present for procedures like fillings, most are not socially mature enough to be separated from the parent
 - 4 5 yo : most should be able to sit in another from the parent for exam/treatments





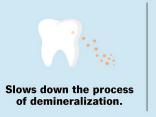
Pediatric Population

Fluoride strengthens teeth and reduces your risk of cavities. Specifically, fluoride:



Fluoride

Cleveland Clinic



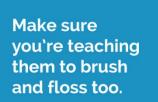
Remineralizes your

tooth enamel.











- Dental visits every 6 months
- Discuss baby teeth, adult teeth, risks of tooth decay and need for xrays
- Anticipate common questions
- Higher rate of no shows

- Educating the parents...
 - Help your child brush his or her teeth until age 7 or 8 as they may miss spots
 - Educate on the importance of fluoride products and discredit falsities around fluoride
 - Older children are more open to dental education and taking ownership of their oral health
 - Encourage your pregnant mothers to talk care of their health as it can directly affect their unborn babies health





Young Adult Population

- One of the most unmet health care need of adolescents
- Lifelong caries management
 - Higher caries rates paired with poor oral hygiene
- Increased risk of periodontal disease (crowding, eruption)
 - Sex hormones play a role
- Focus on sports injury prevention
 - Mouth guards, faceguards
- Work to motivate them about oral health
 - Teeth autonomy

- Risks:
- Oral piercings (ie infection risk)
- Increased sugar intake (soda, energy drinks, coffee, junk food)
- Nicotine initiation
- -Alcohol use and other recreational drugs
- Orthodontic considerations (esthetic desire/awareness)
- -Sexually transmitted infections (ie. HPV)
- -discuss condoms, dental dams
- -Eating disorders
- Opportunities for Prevention:
- Sealants
- -Fluoride varnish
- · -Emphasize personal hygiene







Young Adult Population



- Parent/family may be unaware of certain conditions affecting the adolescent
- Dental provider should instill trust and confidentially in certain situations
- -Consider gender dysphoria and modify forms/records to include preferred name, pronouns, etc.
- These youth are also at risk for eating disorder, substance abuse
- Referral to non dental specialist (counselor, PCP) may be necessary
- -Educate the patient on value of transitioning to a dentist who is knowledgeable in adult oral health care.





Foster Care Population

- Dental and oral health care remains the most difficult health services to access for children and teens in foster care
 - Common dental problems include bottle tooth decay in very young children to multiple dental cavities in older children
 - Malocclusion is another common dental problem
 - 35% of children and teens enter foster care with a significant dental and oral health problem
 - Foster care children often have fragmentary and sporadic dental and oral health
 - They have a higher prevalence of undiagnosed and under treated acute and chronic dental or oral health problems
 - Every child and teen entering foster care should have a dental evaluation within 30 days of placement!

- Be mindful of the impact of childhood trauma on health and development
- Advocate for stability even in dental health







Thank you!

 What do you wish pediatricians would discuss or do regarding oral health?







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QUESTIONS