

Bright Smiles from Birth II

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None of the BSFB Advisory Committee members, faculty/presenters, content reviewers, CME application reviewers or anyone in control of the training content disclosed a relevant financial relationship with a commercial interest/ineligible company.

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Developed in Conjunction with:

Illinois Chapter of the American Academy of Pediatrics

Illinois Department of Public Health

Illinois Department of Healthcare & Family Services

Illinois Society of Pediatric Dentists

University of Illinois at Chicago Department of Pediatric Dentistry

Learning Objectives

Upon completion of this webinar, participants will be able to:

- Describe the pathogenesis of early childhood caries (ECC)
- ▶ Identify risk factors associated with ECC
- Implement oral health screening and application of fluoride varnish into practice
- Provide anticipatory guidance to families including parents
- Provide referral to Dental Home when appropriate
- State the importance of **primary care providers** that care for infants and young children role in oral health
- Serve as an important safety net provider of oral health information and prevention during public health emergencies

66

Oral health means much more than healthy teeth and is integral to the general health and well-being of all Americans. Oral health must be included in the provision of health care and design of community programs.

Prevalence of Caries

- Dental caries is the most common chronic disease of childhood from ages 6 to 19
 - 5 times more common than asthma
 - 7 times more common than allergic rhinitis
 - An estimated 51 million school hours per year are missed
- ~23% of children ≤5 years have had a cavity with an average of 4 teeth affected



Prevalence of Total and Untreated Dental Caries in Youth 2015–2016

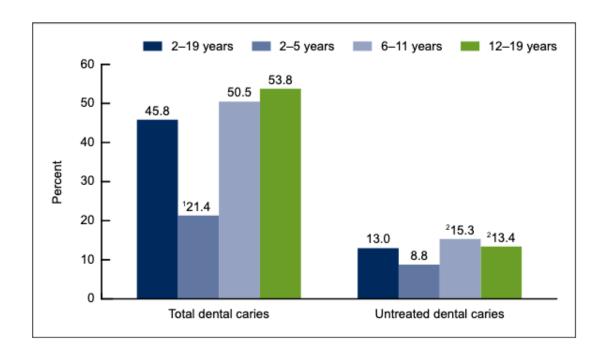
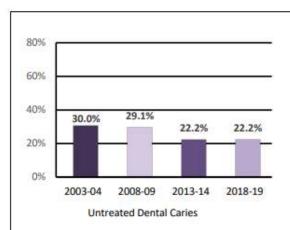
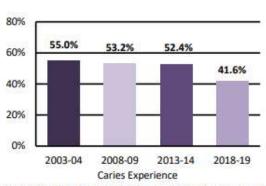




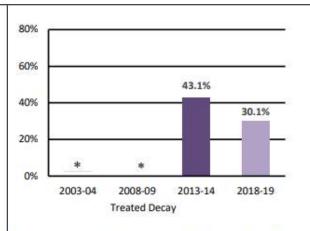
Figure 5. Trend Over Time in Percentage of Illinois' Third-grade Children with Dental Sealant, Treated Decay*, Untreated Decay, and Caries Experience



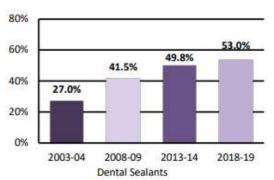
A. Untreated Dental Caries Affects One in Five Children Although there was no change in the percent of children with untreated dental decay from 2013-2014 to 2018-2019, untreated dental decay can cause pain, infection, and problems eating, speaking, and learning.



C. Caries Experience is Decreasing There was a 26% decrease in caries experience from 2013-14 to 2018-19.



B. Treated Decay Has Decreased Although children continue to suffer from untreated dental caries, treated decay decreased since 2013-14. *This indicator was not collected in 2003-04 and 2008-09 surveys.



D. Over Half of Children had Protective Sealants on Their Teeth in 2018-19 From 2003-04 to 2018-19 the number of children that had protective sealants on their teeth increased 96%.

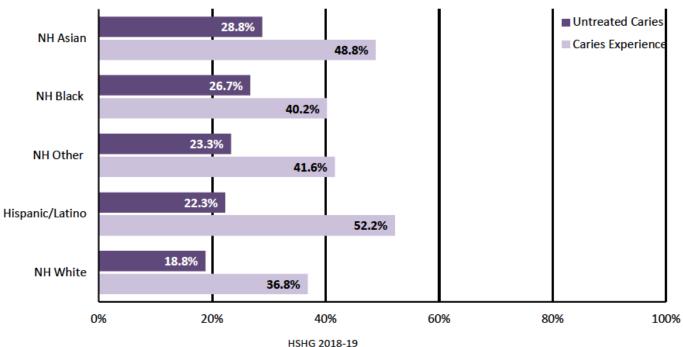
Prevalence of ECC in Illinois 3rd Grade Children

- The Illinois untreated decay rate is 22.2%
- Caries experience (treated decay and untreated dental caries) in Illinois children was measured at 41.6%
- 5.6% of 3rd grade children have an immediate care need due to the presence of an abscess of report of tooth pain

Healthy Smiles Healthy Growth 2018-19

Illinois Data

Race/Ethnicity



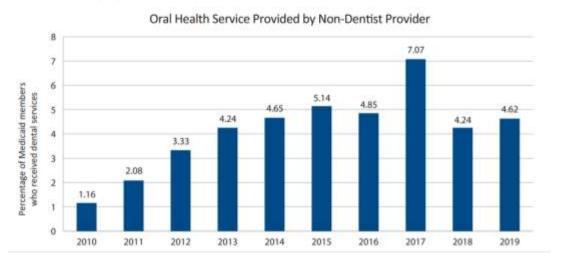


Illinois Data

- Estimated 34% of active dentists are Medicaid providers
- One dental clinic for every 8,400 children in IL
- Only two-thirds (66%) of children with private benefits, and 55% of children with Medicaid coverage, had a dental visit in the previous year (*2016 data)

Illinois Oral Health Plan IV: Eliminating Inequities in Oral Health (2021-2025)

Figure 10. Percentage of Medicaid members less than 6 years of age who received oral health services provided by a nondentist 2010-2019 (HFS).





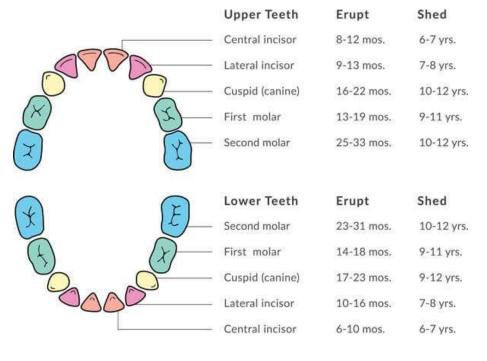
the American Academy of Pediatrics

Pathogenesis of Early Childhood Caries
Oral Health Screenings
Fluoride Varnish and SDF
Referrals to a Dental Home
Anticipatory Guidance

Pathogenesis of Early Childhood Caries

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Why are Baby Teeth Important?

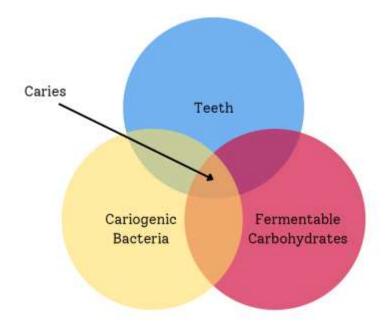


- ▶ Help children chew healthy foods
- Assist with speech development
- Maintain space for permanent teeth
- ▶ Help a child's social development
- A previous caries experience is the strongest indicator of future cavities
- Infections can spread easily to vital structures of the head and neck



What Causes Caries?

ECC is defined as the presence of one or more decayed (noncavitated or cavitated lesions), missing (due to caries), or filled tooth surfaces in any primary tooth in a child under the age of 6.





AAP News: Road map for oral health: AAP report outlines pediatricians' role in prevention

Outlining pediatricians' role in process and prevention of dental caries

Demineralization

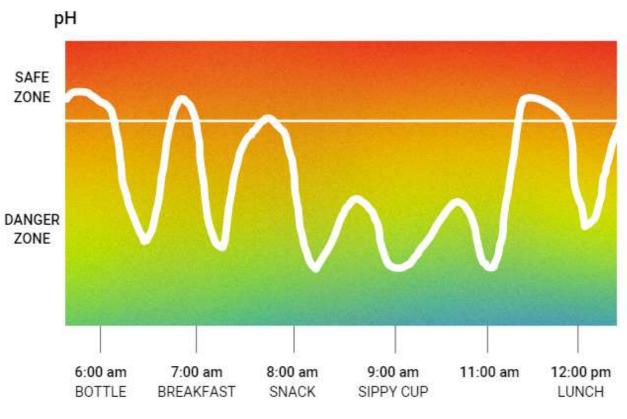
Presence of acids produced by bacteria and complex carbohydrates cause the tooth to demineralize creating white spot lesions

Remineralization

Fluoride ions and saliva help repair the crystals and remineralize the tooth structure



Plaque Acid Levels





Additional Risk Factors:

- Poor oral hygiene
- Oral health of primary caregiver
- Family history of caries
- Cultural practices
- Low income
- Insurance status
- Rural areas



Additional Risk Factors: Children with Special Healthcare Needs

- > TWICE as likely to have unmet dental needs
- Developmental and cognitive limitations
- Poor motor skills limit selfcare
- Overwhelmed caregivers
- Medication interactions xerostomia (dry mouth)
- Special dietary regimes increase carbohydrate exposure



Pathogenesis of Early Childhood Caries

Oral Health Screenings

Fluoride Varnish and SDF Referrals to a Dental Home Anticipatory Guidance

Best Practices

- Oral Health was one of 3 'Pillars' for AAP's 2020 Vision
- Pediatricians should
 - 1. Screen/Assess Risks
 - 2. Examine
 - 3. Provide preventive care, including:
 - Anticipatory counseling
 - Fluoride application prn
 - Dental home referrals'

Statements:



the American Academy of Pediatrics

Oral Health Risk Assessment Timing and Establishment of the Dental Home (2003, ret 2015)

Preventive Oral Health Intervention for Pediatricians (2008)

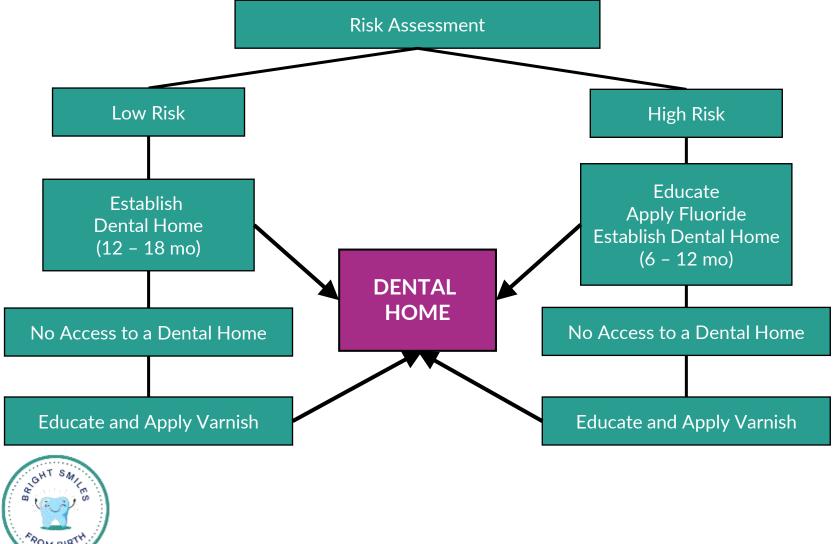
Early Childhood Caries in Indigenous Communities (2010/2021)

Oral Health Care for Children with Developmental Disabilities (2013/2018)

Maintaining and Improving the Oral Health of Young Children (2014/2019)

Fluoride Use in Caries Prevention in the Primary Care Setting (2014/2020)

Role of Primary Care Providers



A project of the Illinois Chapter of the American Academy of Pediatrics Academy of Pediatrics Updates Recommendations on Maintaining, Improving Children's Oral Health

Preventive Oral Health Interventions for Pediatricians – AAP

Oral Health Screening

- ▶ The visual identification of clinical caries, with a special focus on ECC in children 1 to 3 years old
- Bright Future and AAP Guidelines:
 - Begin at 6 months well child visit and continue until dental home is established



Bright Futures



A project of the Illinois Chapter of the American Academy of Pediatrics

Oral Health Risk Assessment Tool

The American Academy of Pediatrics (AAP) has developed this tool to aid in the implementation of oral health risk assessment during health supervision visits. This tool has been subsequently reviewed and endorsed by the National Interprofessional Initiative on Oral Health.

Instructions for Use

This tool is intended for documenting caries risk of the child, however, two risk factors are based on the mother or primary caregiver's oral health. All other factors and findings should be documented based on the child.

The child is at an absolute high risk for caries if any risk factors or clinical findings, marked with a sign, are documented yes. In the absence of risk factors or clinical findings, the clinician may determine the child is at high risk of caries based on one or more positive responses to other risk factors or clinical findings. Answering yes to protective factors should be taken into account with risk factors/clinical findings in determining low versus high risk.

	Date of Birth:nonth ☐ 15 month ☐ 18 month ☐ 24 month ☐ 25 month ☐ 26 m	Date: onth		
□4 year □5 year □6 year □0th RISK FACTORS	PROTECTIVE FACTORS	CLINICAL FINDINGS		
Mother or primary caregiver had active decay in the past 12 months ☐ Yes ☐ No	Existing dental home Yes No Drinks fluoridated water or takes fluoride supplements Yes No	White spots or visible decalcifications in the past 12 months ☐ Yes ☐ No ⚠ Obvious decay		
Mother or primary caregiver does not have a dentist Yes No	6 months ☐ Yes ☐ No • Has teeth brushed twice daily	☐ Yes ☐ No Restorations (fillings) present ☐ Yes ☐ No		
Continual bottle/sippy cup use with fluid other than water Yes No Frequent snacking Yes No Special health care needs Yes No Medicaid eligible Yes No	□Yes □No	Visible plaque accumulation		
ASSESSMENT/PLAN				
□ Low □ High □ Regul Completed: □ Denta □ Anticipatory Guidance □ Brush	nagement Goals: lar dental visits	☐ Healthy snacks ☐ Less/No junk food or candy ppy cup ☐ No soda ☐ Xylitol		

Oral Health Screening

Perform one!

Tell the caregiver what you are doing:

- Lift lips
- ▶ Inspect all tooth surfaces
- Look from behind

Consider:

- Lighting
- Supplies
- Positioning

Look for:

- Presence of plaque
- Presence of white spots or dental decay
- Presence of tooth defects (enamel)



Normal Teeth



Late Decay



Early Decay



Severe Decay



Pathogenesis of Early Childhood Caries Oral Health Screenings

Fluoride Varnish and SDF

Referrals to a Dental Home Anticipatory Guidance

Fluoride Varnish

- The US Preventive Services Task Force published a recommendation that primary care clinicians apply fluoride varnish to the primary teeth of all infants and children starting at the age of primary tooth eruption
- > 5% NaF or 2.26% fluoride
- Viscous resinous base in an alcoholic suspension with flavoring agent

Types of Fluoride Varnish

- Over a dozen different brands
- Comes in yellow, white or tooth colored and multiple different flavors

"All in one" with brush attached or brush separate from unit dose



When to Apply

- ▶ Every 3-6 months at tooth emergence
 - In conjunction with oral health screenings and well child visits until dental home established
 - AAP recommends 2-4 times a year to be most effective



Proper Application

- Use gloves
- Mix varnish
- Dry the teeth
- Apply a thin coat over all surfaces





Post-Application Instructions

- Child can drink or eat soft foods right away
- No hard food (such as chips) or hot food/drinks for four hours
- Child should not brush or floss teeth until the next day



Varnish Economic Data

Provider Perspective:

Cost: ~Less than \$2.00 for varnish

Payer Perspective:

- CDC-conducted cost comparison study comparing varnish application to restorative care costs
 - 10-year cost savings: \$65 million



Sources: Hirsch et al. Prev Chronic Dis 2012; 9: 110219. Stearns et al. Arch Pediatr Adolesc Med. 2012; 166(10);945-951

Frese et al. 2011

Fluoride Varnish Reimbursement

- All Medicaid patients are considered high-risk for ECC
- Children ages 0 36 months
 - Use D1206 for traditional Medicaid and select Medicaid MCOs
 - Reimbursement \$26/application
 - Use 99188 for commercial insurance and select Medicaid MCOs
 - Refer to your individual plan's contract / provider agreement for information about reimbursement

- It is suggested to append a Z modifier for preventive services (e.g. Prophylatic fluoride administration Z41.8)
- Bureau of Comprehensive Health Services: 1-877-782-5565
- **BCBS** Preventative Services information
- AAP resource on payment for oral health services
- HFS provider notices



Illinois Population on Fluoride

- Community water fluoridation
- Recs: 0.7ppm "optimally fluoridated"



Common Water Sources and their Fluoridation Levels

Source	Fluoridation level	
Commercially bottles waters	No or suboptimal levels (<0.3ppm)	
Packed sterile & distilled water	No or suboptimal levels (<0.3ppm)	
"Nursery" water or others marked as fluorinated	Supplemented at 0.7ppm	
Activated Charcoal & cellulose filters (Brita (R), Pure (R))	Insignificant effect to fluoride content	
Reverse osmosis & distillation	Remove fluoride ions	



A New Tool: Silver Diamine Fluoride

- Effective and economical at arresting caries
- Requires minimal equipment and training to apply

<u>Downside:</u> Causes staining tooth discoloration





Before After

Pathogenesis of Early Childhood Caries
Oral Health Screenings
Fluoride Varnish and SDF

Referral to a Dental Home

Anticipatory Guidance

Referral to a Dental Home

- Establishment of "dental home"
 - O 6 months after 1st tooth, or 1 year of age
- Care should be:
 - O Accessible, continuous, comprehensive, family centered, coordinated, compassionate, and culturally effective
 - O Should meet child's unique needs

If a patient cannot find a dental home:

- O Perform oral health assessment
- O Counsel on diet and nutrition
- O Apply fluoride varnish
 - Continue until dental home can be established

Dental Home/Referrals

- DentaQuest is Medicaid Administrator of the Dental Program
 - O Have Parent/Guardian <u>call</u> DentaQuest at 888-286-2447 for dentists accepting patients
 - O If need additional assistance, parent/guardian can request a "placement specialist"
- Contact dentists in your area to create a referral list for your office
 - O Lists of dentists available at <u>AAPD</u> or <u>Illinois State Dentist</u> <u>Society (ISDS)</u>
 - O List of dentists that treat children with special healthcare needs can be found on the HFS website
 - http://www.insurekidsnow.com.gov/ also has a "search for dentist" feature

Pathogenesis of Early Childhood Caries
Oral Health Screenings
Application of Fluoride Varnish
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Anticipatory Guidance

Prevention Strategies

Parent/Caregiver Oral Health

- Be compassionate and speak in simple terms
- Explain bacteria transmission
- Teach to model positive oral hygiene behaviors brush 2x per day
- Avoid sharing utensils or cleaning pacifiers with mouth

Improve Dietary Habits

- Reduce dietary sugars and frequency of snacks
- Delay introduction of fruit juices
- No soda
- Water in bottles at night and naptime
 - Wean from bottles at age 1: training cups should only be used transitionally

Prevention Strategies

Tooth Brushing with Fluoride Toothpaste

0 - 1 year	Clean teeth with soft cloth or toothbrush after each feeding
1-3 Years	Parent performs brushing, Grain of rice-sized of fluoride toothpaste; 2x/day
3-6 years	Parent performs brushing, pea-sized amount of fluoride toothpaste, 2x/day for 2 minutes
6 years	Brush with a strip of fluoride toothpaste, 2x/day for 2 minutes







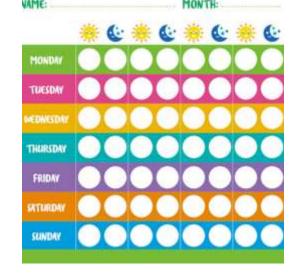
Tools for Families:

- Timers (via dental supply vendors for nominal costs)
- Brush Charts (online for free)

Other Tooth-brushing Materials













A project of the Illinois Chapter of the American Academy of Pediatrics

How to Brush a Child's Teeth

- 1. Place correct amount (based on age) fluoride toothpaste onto a soft children's toothbrush
- 2. Sit the child in your lap, facing away from you, or stand behind taller children. Tilt the child's head back against your body so you can see all the surfaces of the teeth
- 3. Angle, at 45 degrees, the bristles of the toothbrush towards the gum. Move the brush in gentle circles to clean the outer sides of the teeth and gums
- 4. Brush in gentle circles on the inside of the teeth and gums
- 5. Brush back and forward on the chewing surface of the teeth
- After brushing all the surfaces, encourage the child to spit out the toothpaste



Fluoride

- Fluoride test kits from IDPH (217-785-4899) or email at DPH.OralHealth@illinois.gov
- Urge use of tap water for drinking
- Formula should be made with fluoridated water

Fluoride Supplementation Dosage Schedule									
Age	Fluoride Ion Level in Drinking Water ^a								
	< 0.3 ppm	0.3 - 0.6 ppm	> 0.6 ppm						
Birth to 6 mo.	None	None	None						
6 mo - 3 yrs	0.25 mg/day⁵	None	None						
3-6 yrs	.50 mg/day	0.25 mg/day	None						
6 - 16 yrs	1.0 mg/day	0.50 mg/day	None						

a1.0 ppm = 1 mg/L.

b2.2 mg of sodium fluoride contains 1 mg of fluoride ion.



In under-resourced communities: community water fluoridation may have been the only dental service many individuals received during the pandemic!

Fluorosis

Excess Fluoride at <8 yrs can lead to fluorosis (i.e. "Snowcapping") of Permanent Dentition

Very Mild-Mild:

- Less Resistant to Caries
- Cosmetic concern only
- Most common, yet still relatively rare (15% US population)

Moderate-Severe:

- Weaken Tooth Structure
- Tooth Mottling
- Not observed in US



There is no research-proven link to bone cancers, etc. at optimal fluoride doses

Prevention Strategies: Flossing

- When more than 2 teeth touch
- With assistance from caregiver until the age of 8



Children with Special Healthcare Needs

- Be aware of oral health complications associated with medical conditions
- Monitor impact of oral medications and other therapies
- Choose non-sugar containing medications
- Emphasize preventive measures
- Find a dental home as soon as possible

Emergency Preparedness

Impact of COVID-19 on dental care:

- Dental clinics & school-based dental programs closed
- Many children could not access dental care or were slow to return to routine dental care

Target Indicator		licator	Indicator Definition	Data Source (Reporting Date Range)	2018	2019	2020	2021
Medicaid/ Children's Health Insurance Program (CHIP)*	Dental visit	Non-dentist provider	Proportion of Medicaid-enrolled children under 6 years of age who received oral health services provided by a non-dentist.	Medicare and Medicaid Services (CMS 16) (Annual)	4.2%	4.6%	2.3%	2.3%
		Dental provider	Proportion of Medicaid enrolled children under 6 years of age who received any dental services.	HFS CMS 416 (2018; 2019; 2020)	29.5%	28.8%	20.7%	24.4%
	Dental visit (1-20 years of age)		Proportion of Medicaid enrolled children 1-20 years of age who saw a dentist or other oral health care provider for any kind of dental or oral health care during the past 12 months.	HFS CMS 416 (Annual)	47.1%	45.5%	36.6%	35.6%
	Preventive dental visit (1-20 years of age)		Proportion of Medicaid enrolled children 1-20 years of age who received at least one prevention or periodontal service.	HFS CMS 416 (Annual)	44.0%	42.6%	33.4%	32.9%



Emergency Preparedness

- Relationship building with dentists in your community
 - Collaborate for preparedness response in the event of a public health crisis
 - Help establish dental homes and prepare for future emergencies
- Resources to prepare for future emergencies:
 - Register for <u>State of Illinois Rapid Electronic Notification</u> <u>System (SIREN)</u>
 - Consider joining the medical reserve corp



Practice Implementation Tips

- Add/embed fluoride varnish notification to all well-child visits
- Include in order sets (fluoride varnish code, diagnosis, and billing chart)
- Find an internal champion for the program
- Add oral health screening questions to intake forms
- Document any oral health findings in patient's chart
- Work with front desk staff to flag charts of eligible children and to check eligibility at every encounter
- Keep a few fluoride varnish packets in each exam room, and ensure they are accessible and replenish as needed (choose a coordinator to monitor supplies)
- Encourage to do fluoride at the time of oral mouth examination, so not needing to have toddler/child cooperate with opening mouth twice



You Can Make a Difference!

Key Takeaways

- Oral health is an integral part of general health
- Primary care providers can do oral health assessment and fluoride varnish starting at first tooth eruption
- Applying fluoride varnish is cost-effective
- Fluoride varnish should be applied every 3-6 months until 5 years of age
- Patient should establish with a dentist within 6 months of tooth eruption or by 1 year of age



Additional Resources & More Information

Illinois Chapter, American Academy of Pediatrics www.illinoisaap.org

Illinois Department of Public Health 217/782-4977

Illinois Department of Health and Family Services
www.hfs.illinois.gov/medical
217/524-7478

American Academy of Pediatric Dentistry
www.aapd.org

Bright Futures Oral Health

Pocket Guide