Enhancing Your Patients Health: Providing Oral Health Care

From the First Tooth: A four-state initiative involving CT, MA, ME and RI, funded by Dentaquest and the Sadie and Harry Davis Foundation
Disclosure Statement

This program is supported by a grant from DentaQuest Foundation and all presenters are paid by the grant.

The developers and presenters of this presentation do not have any other financial interest/arrangement with any organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation.
Promoting Oral Health in Your Practice

- **Patient Benefits:**
  - Medical clinicians are crucial in getting children into dental homes
  - Fluoride varnish use reduces caries by 38%
  - Children in practices using fluoride varnish are more likely to establish dental homes

- **Office Benefits:**
  - Adopting current best practices (42 states)
  - Medicaid billable service, increased office revenue

- **Assistance:**
  - “From the First Tooth”
Module 6: Fluoride Varnish
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Funded By

National Interprofessional Initiative on Oral Health
Educational Objectives

• Discuss the etiology of early childhood caries (ECC)
• Assess a child’s risk of developing ECC
• Perform an appropriate oral examination on small children
• Recognize the various stages of ECC
• Discuss the effects, sources, benefits and safe use of fluoride
• Describe the benefits and indications for fluoride varnish
• Demonstrate the application of fluoride varnish
• Describe strategies for a successful office-based fluoride varnish program
• Advise parents on caries prevention and describe when to arrange dental referral
Early Childhood Caries: A Brief Review

Chapter Objective
• Discuss the etiology of early childhood caries (ECC)
What is Early Childhood Caries (ECC)?

**Etiology**
- Infectious, chronic disease that destroys tooth structure leading to loss of chewing function, pain, and infection
- A variety of feeding habits beyond just nursing or bottle use are implicated
- Affects 35% of 3-year-olds from low income families

**Progression**
- Upper front teeth that are least protected by saliva are affected first
- Disease moves posteriorly as teeth erupt.

Photos: Joanna Douglass, BDS, DDS
What causes dental caries?

- Oral bacteria (mutans streptococci) metabolize the sugars from dietary carbohydrates into acid
- The acid demineralizes the tooth enamel
- If the cycle of acid production and demineralization continues, the enamel will become weakened and break down into a cavity
Etiology: Bacteria

Etiology

• Mutans streptococci is vertically transmitted from the primary caregiver, typically the mother
• Transfer is thought to occur via saliva contact
• The higher the bacteria level in the caregiver’s mouth, the more likely the child will become colonized

Caregivers can decrease the risk of passing bacteria to children by

• Receiving regular comprehensive dental care
• Limiting the frequency of sugar in the diet
• Maintaining excellent oral hygiene and using a fluoride containing toothpaste
• Using preventive agents such as topical fluorides, antibacterial mouth rinses, and xylitol containing gums
It’s not just WHAT, but HOW children eat

- Oral bacteria produce acids that persist for 20–40 minutes after sugar ingestion
- Oral acids lead to enamel demineralization
- Remineralization occurs when acid is buffered by saliva
- If sugars are consumed frequently, there is insufficient time for remineralization to occur
Etiology: Teeth

Nature of Enamel Defects

• 20 to 40% of children have enamel defects
• Defects may appear as changes in translucency, color, or texture
• May be difficult to distinguish enamel defects from early clinical signs of caries (lower photo)
• Diagnosis is immaterial as it does not affect management
• Enamel defects are associated with substantially increased risk of ECC
ECC: Risk Assessment

Chapter Objective

• Assess a child’s risk of developing ECC
Why Is ItImportant?

80% of ECC occurs in 20% of children. Oral health risk assessment should begin around 4 to 6 months, just before the first tooth erupts.

A child’s risk status determines:

- Age of first dental visit
- Use of fluoride
- Depth of nutritional and hygiene counseling provided
Assessing Caries Risk

Moderate
One of the following risk factors:
• Lower SES
• Poor access to health care
• Family members have cavities – particularly mother
• Diet – drinks or eats sugar containing foods two or more times between meals
• Diet – sleeping with bottle or at breast
• Special health care needs
• Developmental enamel defects

High
Multiple moderate risk factors and one of the following:
• Plaque on teeth
• Presence of white spots or cavities
• No systemic fluoride exposure
Oral Health Risk Assessment tools should document the following components:

- Age of first dental visit
- Use of fluoride
- Depth of nutritional and hygiene counseling

The AAP and NIIOH have collaborated to create a formal Oral Health Risk Assessment Tool piloted through the QuINN:

- Over 80% of practices found the tool easy to implement
- Clinicians did not need to significantly alter current practice to incorporate risk assessment
- Bright Futures’ oral health recommendations can be implemented in just 2 minutes during the well child visit
- Identification of high-risk patients for oral health referral increased from 11% to over 87% with use of the tool

A PDF of the Risk Assessment Tool is available for download at smilesforlifeoralhealth.org
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### Section A: Oral Health Risk Assessment Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Option</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Does the child have teeth?</td>
<td>NO</td>
<td>STOP</td>
</tr>
<tr>
<td></td>
<td>YES</td>
<td>Reassess at next well child visit</td>
</tr>
<tr>
<td>Q2. Has the child seen a dentist in the past year?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Q3. Does the child have his/her teeth brushed daily with toothpaste?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Q4. Has the child ever had cavities or fillings?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Q5. Has the mother/primary caregiver had active/untreated cavities in the past year?</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

### Section B: Oral Evaluation and Plan

<table>
<thead>
<tr>
<th>Question</th>
<th>Option</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q6. Is there visible plaque on the teeth?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Q7. Are there signs of visible decay or white spot lesions on the teeth?</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>Q8. Does the child have other oral conditions of concern (abscess, broken tooth, pain, etc.)?</td>
<td>YES</td>
<td>NO</td>
</tr>
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### ORAL EVALUATION

Must Be Performed by Primary Care Provider

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<td>YES</td>
<td>NO</td>
</tr>
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</table>

### ORAL HEALTH PLAN

Must Be Performed or Delegated by Primary Care Provider

*Consider fluoride varnish for one or more Risk Factors from Sections A and/or B

<table>
<thead>
<tr>
<th>Caries Risk Assessment</th>
<th>Low (No Risk Factors)</th>
<th>Moderate/High (1+ Risk Factors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>For all children:</td>
<td>Prescribed Fluoride Supplement (circled dose) 0.25mg 0.5mg 1.0mg</td>
<td>Fluoride Supplements not indicated</td>
</tr>
<tr>
<td>Provided Oral Health Anticipatory Guidance</td>
<td>Completed Caries Risk Assessment w/Oral Evaluation</td>
<td>Other:</td>
</tr>
<tr>
<td>For children who have not seen a dentist in last year (Q2):</td>
<td>Completed Caries Risk Assessment w/Oral Evaluation</td>
<td>Applied Fluoride Varnish if moderate/high risk (D1206) Patient/Family declined Fluoride Varnish</td>
</tr>
</tbody>
</table>
ECC Recognition

Chapter Objectives

• Perform an appropriate oral examination on small children
• Recognize the various stages of ECC

Photo: Joanna Douglass, BDS, DDS
1. Child is held facing the caregiver in a straddle position

2. Child leans back onto examiner while caregiver holds child’s hands

3. Provider performs exam while caregiver holds child’s hands and legs

Photos: Mark Deutchman, MD

Look at all the teeth – front, back, sides
Note plaque, white spots, cavities, abscesses
Palpate for submucosal clefts
Healthy Teeth

Nature of Healthy Teeth

• Creamy white with no signs of deviation in color, roughness, or other irregularities

• If the clinician cannot determine whether an abnormality in the tooth surface is a defect versus an early cavity, it does not matter

• Any child with enamel abnormalities is at high risk for caries and should be referred to a dentist for further evaluation

Photos: Joanna Douglass, BDS, DDS
White Spots

Appearance & Symptoms
• White spots and lines are the first clinical signs of demineralized enamel
• Typically begins at the gingival margin
• If the disease process is not managed, lesions will progress to cavities that are initially yellow

Treatment
• Immediate dental referral
• Dietary and oral hygiene counseling
• Topical fluoride to reverse or arrest lesions

Photos: Joanna Douglass, BDS, DDS
Brown Cavitations

Appearance & Symptoms

- Brown cavitations represent areas where loss of enamel has exposed underlying dentin
- Lesions darken as they become stained with pigments from food

Treatment

- Immediate dental referral
- Lesions are small enough that simplified restorative techniques that do not use high speed drills and local anesthesia can be used
- Dietary and oral hygiene counseling
- Topical fluoride to arrest lesions not requiring restorations

Photos: Joanna Douglass, BDS, DDS
Early Aggressive ECC

Appearance & Symptoms
- Abscesses and fistulae may be present
- Patient may experience pain, but children may be too young to accurately verbalize it

Treatment
- Urgent dental referral for comprehensive treatment including extractions and/or silver crowns
- Dietary and oral hygiene counseling
- Topical fluoride to prevent development of new lesions

Photos: Joanna Douglass, BDS, DDS
Advanced ECC

Appearance & Symptoms

• Multiple dark cavities appear in anterior and posterior teeth
• Possible for abscesses and draining fistulae to be present
• Patients may experience pain

Treatment

• Urgent dental referral for comprehensive treatment including extractions and/or silver crowns
• Dietary and oral hygiene counseling
• Use of fluoride to prevent development of new lesions

Photos: Joanna Douglass, BDS, DDS
Preventing or reversing the caries process is possible by enhancing protective factors and reducing pathologic factors.
Fluoride

Chapter Objective

• Discuss the effects, sources, benefits, and safe use of fluoride
Effects and Sources of Fluoride

Topical Mechanisms (main effect)
- Inhibiting tooth demineralization
- Enhancing remineralization
- Inhibiting bacterial metabolism

Systemic Mechanisms
- Reducing enamel solubility through incorporation into its structure during tooth development

Fluoride Sources
- Topical: Fluoride toothpastes
  Gels, foams, mouthwashes
  Fluoride varnish
- Dietary: Water fluoridation
  Dietary fluoride supplements

Photos: Joanna Douglass, BDS, DDS
Fluoride Use Recommendations

All Children should have BOTH systemic AND topical fluoride needs assessed.

<table>
<thead>
<tr>
<th>Systemic Fluoride: Need for dietary supplementation</th>
<th>Low Risk</th>
<th>Mod Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimally Fluoridated Water*</td>
<td>YES</td>
<td>No Action Needed</td>
<td>Yes</td>
</tr>
<tr>
<td>NO</td>
<td>No</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Topical Fluoride: Need for toothpaste AND varnish; BOTH should be used if recommended</th>
<th>Low Risk</th>
<th>Mod Risk</th>
<th>High Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluoridated Toothpaste</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Fluoridated Varnish</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

* 0.7-2.0 ppm Fluoride
Fluorosis

Appearance and Significance
• White mottling of teeth due to chronic excessive exposure to fluoride during tooth development
• Cosmetic issue that does not affect systemic health

Risk Reduction
• Determine fluoride content of drinking water before prescribing current dosage schedules
• Avoid duplicating fluoride prescriptions
• Use only a smear (< 2 yrs) or pea-sized dab (>2 yrs) of toothpaste
• Fluoride varnish is not a risk factor for fluorosis
Fluoride Varnish

Chapter Objective

• Describe the benefits and indications for fluoride varnish
Fluoride Varnish Benefits

- Safe and effective
- Inexpensive
- Quickly and easily applied
- Children can eat and drink immediately after application
- Strengthens enamel and prevents initiation of disease
- Studies demonstrate 38% reduction in caries with use
- Can reverse early decay (white spots) and slows enamel destruction in active ECC
- Medicaid reimburses application by nondental clinicians in majority of states
Indications and Frequency of Use

Current Standard of Care

• Moderate risk children should receive a professional fluoride treatment at least every 6 months
• Higher risk children should receive fluoride treatment every 3 to 6 months
• Ideally, occurs as part of comprehensive care in a dental home
• If a dental home cannot be established, periodic applications of fluoride varnish by trained medical clinicians may be effective in reducing the incidence of early childhood caries
• Fluoride varnish used for the prevention of dental caries is an FDA “off-label” use. However, currently its used almost exclusively as a preventive agent.
Varnish Selection

Guidelines

• Unidose preparation recommended for safety
• Preschool children: 0.25 ml 5% Na F (2.26% F)
• Contains 5.6 mg fluoride
• Cost: $1.00–$2.50 per unidose

Examples of Various Varnish Products
Applying Fluoride Varnish

Chapter Objectives

- Demonstrate the application of fluoride varnish
- Describe strategies for a successful office-based fluoride varnish program
Steps

1. Assemble varnish, gauze and a good light source
2. Place child in knee-to-knee position
3. Check child’s mouth for
   - Developmental defects
   - White spots or cavities
   - Oral hygiene status
   - Soft tissue pathology and submucosal cleft palate
4. Child may cry during examination
5. If child does not open mouth, slide finger in buccal sulcus and apply gentle opening pressure
6. Record findings
Steps

1. Use gauze to dry the teeth as much as possible. Varnish will not adhere if teeth are wet
2. Apply varnish to dried teeth, starting in posterior
3. Apply varnish to anterior teeth last
4. Saliva contamination after application is fine as varnish sets in contact with saliva
Tell the caregiver
• The child's teeth will be discolored for 24–48 hours
• Do not brush the child's teeth for 24 hours
• Avoid sticky or hard foods

Provide preventive advice
• Emphasize the importance of regular tooth brushing
• Offer dietary counseling regarding amount and frequency of refined carbohydrate intake
• Provide systemic fluoride prescription if appropriate
• Arrange referral to dental home
Other Prevention Strategies

Chapter Objective

• Advise parents on caries prevention and describe when to arrange dental referral
Hygiene: Toothbrushing

Guidelines

- Brush twice daily beginning as soon as teeth erupt
  - Bedtime is most critical due to decreased salivary flow at night

- Caregiver should brush child's teeth until age 6
  - Young children have difficulty brushing all areas
  - Intermittently supervise by parents should continue

- Caregiver should stand or sit behind child

- Lift lip and brush join between gum and teeth

- Child should spit out, not rinse, after brushing to increase topical fluoride exposure

Photos: Joanna Douglass, BDS, DDS
Prevention: Diet Counseling

**Infants**
- Strongly promote breastfeeding
- Infants should be held when feeding
- Avoid propping the bottle in crib or car seat, etc
- Fill bottle with only breast milk or formula

**Older Children**
- Establish regular meal times for breakfast, lunch, and dinner
- Limit snacks to once in the morning and once in the afternoon
- Only give milk or water between meals
- Restrict fruit juice to 4 ounces per day at regular meal times
- Don't provide snacks that contain added sugar
- Prepare healthy snacks such as cheese, fresh fruit, crackers, and vegetables
Fluoride Supplementation

Guidelines

- Prescribe dietary fluoride supplements to children with high caries risk who lack access to optimally fluoridated water
- Determine your patient's source of water and its fluoride content before administering fluoride supplements
- Test well water before prescribing systemic fluoride

<table>
<thead>
<tr>
<th>Child’s Age</th>
<th>Water Fluoride Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&lt; 0.3 ppm</td>
</tr>
<tr>
<td>6 mos – 3 yrs</td>
<td>0.25 mg</td>
</tr>
<tr>
<td>3 yrs – 6 yrs</td>
<td>0.50 mg</td>
</tr>
<tr>
<td>&gt; 6 years</td>
<td>1.00 mg</td>
</tr>
</tbody>
</table>

Dosages are in milligrams F/day
Establish a Dental Home

The American Academy of Pediatric Dentistry and the American Academy of Pediatrics both recommend establishment of a dental home by the first birthday.

Dentist will provide

- Enhanced preventative services
- Comprehensive evaluation and diagnosis of oral disease
- Evaluation of growth and development
- Counseling on oral habits and interceptive orthodontic treatment as needed
- Fluoride varnish and cleanings
- Dental x-rays when indicated
- Sealants to permanent molars as child grows
- Dental trauma management
Implementation

Tips

• Educate all staff, including front desk personnel, on:
  • Caries risk assessment
  • Preventive messages
  • Establishment of a dental home
  • Value of fluoride varnish

• Train all clinicians on application procedures

• Identify a varnish champion who can answer questions, understand billing issues, assign tasks, order varnish, and maintain supplies

• Store supplies in exam rooms or a portable kit

• Use a one-page/screen documentation form with check boxes for risk history, consent, varnish documentation, advice, and referral

• Update billing forms with varnish code(s)

• Stock educational handouts for parents
• Assistance in getting your office ready to implement
• Instructions on proper billing specific for your state
• CME for all clinical providers
• CT, RI, MA
  • Gretchen – hygienist trainer
  • Jan – recruiter, systems assistance, follow-up
• ME
  • CME
  • Susan, Carol and Wendie – hygienist trainers
  • Karen – quality improvement specialist
• Resources to find dentists accepting Medicaid
• Newsletters
MASSACHUSETTS: Connect the Dots

- **What?** An initiative to promote age 1 dental care for all children as the standard of care in MA.

- **Who?** MCAAP, MAAPD, MDS, and MA Head Start Association

- **Why?** AAP, AAPD, and ADA all recommend children have their 1st dental exam no later than 12 months of age to
  - Provide anticipatory guidance
  - Complete caries risk assessment
  - Prevent unnecessary decay – caries are preventable!
  - Comply with MA EPSDT requirement
What does this mean for me?

- Review what to look for on the Caries Risk Assessment
- Develop partnerships with local dentists who will see age 1 patients if I make a referral; we will connect you after we talk with you about the age 1 visit.
MAINE:
Dining with the Dentists: Building Bridges in the Medical Neighborhood

- From the First Tooth partnered with Quality Counts for Kids
  - Pilot program to bring medical and dental professionals together within a community
  - Informal setting – breakfast, lunch or dinner

- Aims:
  - Build awareness of providers’ practice scope and patient population
  - Create relationships to facilitate communication and referral
  - Improve coordination of oral and physical health of young children (6 mos – 4 yrs)
Contact Information

- From the First Tooth:
  - Maine:
    - 207.662.6309
    - COTES4@mainehealth.org
    - http://www.fromthefirsttooth.org
  - Connecticut, Massachusetts, Rhode Island
    - 860-525-9738
    - oralhealth.ctaap@gmail.com
    - http://ct-aap.org/oral-health

- Connecticut the Dots
  - ageone@massdental.org, or
  - Michelle Dalal, MCAAP Oral Health Chapter Advocate
    - mdalal@mcaap.org
Take Home Messages

• ECC is a significant health problem for children
• As a medical clinician, you can play a key role in preventing ECC
• Fluoride varnish is one part of a comprehensive approach to a child's oral health
• Fluoride varnish is safe and effective
• You can apply fluoride varnish to a child's teeth as a part of a routine visit