Preventive Oral Health Care for Infants & Pre-schoolers

Early Childhood Caries... (ECC)
A serious problem in Kentucky!

Early Childhood Caries (ECC)
- Early Childhood Caries: The presence of 1 or more decayed, missing or filled tooth surfaces in a child 71 months of age or younger
- Other names: baby bottle tooth decay, nursing caries

Trends in children’s oral health
- Low income and minority children experience the most tooth decay
- Tooth decay increased 15.2% in US children ages 2 to 5 between 1994 and 2002 (CDC/NHANES)
- 47% of Kentucky children start kindergarten with untreated tooth decay (Hardison, 2003)

How serious is it...?
- Dental caries is the most common chronic childhood disease- 5X asthma
- Dental caries is infectious
- Dental caries is established as an active disease process before age two
- Dental caries in primary teeth predict future decay in permanent teeth

Kentucky Uglies
Access to care may be difficult...

- Few general dentists train to treat young children
- Pediatric dentists in short supply
- ~18% of KY dentists participate in Medicaid
- ~50% of KY pediatric dentists participate in Medicaid (65 ped dent)

Prevention is the preferred and most immediate solution.

We need your help in reducing the prevalence of this disease!

Why?

- American Academy of Pediatrics: dental visit by age 1 year for high risk children
- American Academy of Pediatric Dentistry: dental visit by age 1 year or eruption of first tooth for all children
- Establishment of a dental home by age 1 allows the institution of appropriate caries preventive strategies including dietary recommendations and oral hygiene instructions as the primary teeth begin to erupt

Why primary teeth are important

- Nutrition
- Speech
- Facial development
- Maintaining space
- Overall good health
- A healthy smile

Oral health care ("dentistry")

Anticipatory guidance & prevention (DMD, MD, RN, BN)

Surgical treatment (DMD)

Procedure Components

- Oral screening & risk assessment (performed by physician, physician extender, or nurse with standing orders in public health settings)
- Oral and written oral health education for the parent or caregiver
- Fluoride varnish application
Kentucky Medicaid

- **CPT Code:** D1206
- **Description:** Topical Application of Fluoride $15
- **Age Group:** KyHealth Choices Member from birth to age 4 years
- **Provider Type:** Physician and Physician Groups

Kentucky Medicaid

- **Limitations of Coverage:** D1206 allowed once every 90 days up to a maximum of two visits per 12 months
- **Coding/Billing Guidelines:** D1206 must be billed in conjunction with an office visit exam code

Kentucky Medicaid

- **High risk child (medically necessary):** F varnish 3x/year
- **EPSDT**
- **Map 9:** requires pre-authorization

Screening

Oral screening is not a definitive diagnosis

- But, on the way to the tonsils look at the teeth and soft tissues
- Decide if the child should be referred to a dentist

Needed for the oral screening:

- 2 x 2 gauze sponges for drying the teeth
- Good source of directed light
- Disposable dental mirror
- Optional encounter form or Caries Risk Assessment Tool (CAT)
Optional encounter form

- Provides documentation for procedure
- Questions guide provider through caries risk assessment

Optional Encounter Form

When screening an infant or toddler:

- Use the knee-to-knee position with the child in the parent’s lap, facing them (great for babies/small children)
- Place the child on an exam table (better for larger, older children)
- In either position, screen and apply varnish looking over the top of the child’s head
When screening an infant or toddler look for:

- Inflammation, ulceration, lumps and bumps that shouldn’t be there
- Dental caries at any stage of progression
- Chipped or broken teeth that may be the result of trauma or advanced caries

**Risk Assessment**

Caries-risk Assessment Tool - CAT

- Developed by the AAPD for general health care providers
- Is not a diagnostic tool
- Based on a set of physical, environmental, and general health factors
- Assesses level of caries risk:
  - Low, moderate, or high

**High Risk Indicators**

- Low level family/caregiver socioeconomic status
- Active decay in mother
- Visible plaque on teeth
- White spot lesions
- Decay in past 12 months
- Children with special health care needs
- Reduced salivary flow (medications)
- Medications with sugar

**Referral**

<table>
<thead>
<tr>
<th>KY Clinic Pediatric Dentistry Criteria</th>
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<tbody>
<tr>
<td>Age 0-4 years</td>
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<tr>
<td>ASA I, II, III</td>
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<tr>
<td>Frankl 1, 2, 3, 4</td>
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<tr>
<td>CSHCN</td>
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<td>Emergency (trauma, pain, infection)</td>
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<tr>
<th>UK College of Dentistry Student Dentist Clinic Criteria</th>
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<tbody>
<tr>
<td>Age 4-10 years</td>
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<tr>
<td>ASA I, II</td>
</tr>
<tr>
<td>Frankl 3, 4</td>
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</tbody>
</table>
Healthy Primary Dentition

White Spot Lesions

White Spot Lesions

White spot lesions progress to cavitated lesions

Advanced ECC

Oral Health Education

Educate parents about good oral health habits for their children
**Points to cover with parents**

- Explain why primary teeth are important
- Brush the teeth regularly with a smear of fluoridated toothpaste
- Start regular dental visits early
- Encourage proper dietary habits

**Why fluoridated toothpaste?**

- All Medicaid-covered children are at high risk for caries
- A smear of fluoridated toothpaste daily will complement the benefits of varnish
- Toothpaste is a topical form of fluoride and does not substitute for systemic forms (fluoridated water, supplements)
- Toothpaste is not intended for swallowing - parents need to dispense and monitor its use

**Too much toothpaste!**

**This is more like it...**

**Diet**

- Sugar (in any form) is the main problem
- Frequency of exposures is the most critical factor
- Do not put the child to bed with a bottle or sippy cup (unless it has water in it)
- Wean the child to a cup by the age of 1 (ADA recommendation)

**Duraphat Fluoride Varnish**

**What is it?**
**Fluoride Varnish**
The first topical fluoride treatment used safely and effectively for infants and toddlers.

- Small amount used
- Adheres to teeth until brushed off
- Negligible amount swallowed

**Historical perspective**

- Duraphat has been used in Europe and Scandinavia since the 1960’s
- FDA approved for use in the US in 1995
- Only varnish product with published clinical trials showing effectiveness

**Duraphat Ingredients**

- Sodium Fluoride....... Active ingredient
- Colophonium........... Adhesive
- Ethyl Alcohol.......... Vehicle
- Shellac.................. Permeable hard surface
- Mastic.................... Permeable hard surface
- Saccharin............... Sweetener
- Raspberry............... Flavor
- White Beeswax......... Gives body/substance

**How much research has been done on Duraphat?**

- A 2005 Medline search shows almost 200 publications since 1966
- Over 45 of these are clinical trials

**Why Duraphat?**

- Duraphat fluoride varnish is recommended because of the extensive research, particularly clinical trials, conducted on this product.
- There are at least 10 other fluoride varnishes on the market at this time. None have published clinical trials showing effectiveness.
How effective is Duraphat in preventing dental caries?

DMFS increments

2 Year dmfs Increments

Percent Caries Reduction

Effect of a fluoride varnish (Duraphat®) in preschool children

Preventive Measures


Abstract - The long-term effect of anticariogenic application of a fluoride varnish (Duraphat)® was studied after 2 years in 250 preschool children. 91 children served as a control group and 106 children served as a treatment group. The test group experienced 75% of the children in the treatment group and 25% in the control group when caries lesions were observed. The results after 2 years showed an average caries reduction of 2.5 in the treatment group and 4.5 in the control group. The difference was statistically significant. Thirty-eight percent of the children in the treatment group and 70% in the control group were caries-free. The caries reduction in this group was 49%.

Key words: Dental caries, prevention, fluoride varnish.

Anna-Karin Holm, Department of Pedodontics, University of Umeå, Umeå, Sweden.

Accepted for publication 20 June 1979.
Physicians’ Role

- Do physicians increase access to oral preventive services?
- Does this medical office model of prevention reduce early childhood caries?

Outcomes and Effectiveness

- 2006: Analysis by UNC School of Public Health of Into the Mouths of Babes (IMB) physician preventive program (screening, RA, education, F varnish)

- IMB children had fewer caries-related treatments in dental offices than other Medicaid-enrolled children not receiving the procedure

- Children with 4, 5, or 6 visits had the most benefit (dose-related response using regression analysis)

- Children with fewer than 4 visits had some benefit

Efficacy of Fluoride Varnish

- Randomized clinical trial of low income children younger than age 3 (Weintraub et al, 2006)

- All parents received counseling on oral health

- Control group: placebo varnish; Intervention group: Duraphat

- Strong dose-response effect to varnish

- No adverse safety or health events reported

Fluoride Varnish Application

Fluoride Varnish

- Periodic professional fluoride varnish applications should begin once the first tooth erupts
Application

- Use gloves
- Put a drop of varnish on your off-hand glove
- Dry the teeth in sections with a 2x2 gauze
- Apply a thin coat to all tooth surfaces
- Paint a ‘house’, not a ‘picture’

Fluoride Varnish

Clinical appearance of demineralization/remineralization

Demineralized Enamel

Remineralized Enamel

Post-application instructions

- Wait until the next day to brush the varnish off the teeth
- Eat a soft diet the rest of the day

Of most importance, Duraphat eliminates the risks of toxicity

WHY?

Seppa and Hanhijarvi

(3 Studies)

Salivary F- Concentrations in ppm

Ekstrand et al.

Plasma F- (M)

- 0.6 mg Tab
- 0.6 mg toothpaste
- APF gel 36 mg. (Ingested)
- Duraphat (3.5 mg. Ingested)
Duraphat

- 1995: FDA approved Duraphat as a desensitizing agent, not caries preventive agent
- Clinical trials completed in Europe and Scandinavia
- Use is considered ‘off label’ as are most pediatric prescriptions

AAP Committee on Drugs

- “Off label” drug use
- The word ‘unapproved’ is used to indicate lack of approval, not to imply disapproval or contraindication based on evidence of lack of safety or efficacy

Please remember...

- Early childhood caries is a serious problem
- It is preventable
- You, as primary care medical providers, have access to these high-risk children

Please...

Make oral screening, parent education, and fluoride varnish an integral part of your practice

In your office...

Unapproved Uses of Approved Drugs: The Physician, the Package Insert, and the Food and Drug Administration: Subject Review

Abstract. Physicians who prescribe a new drug that has not been approved for a specific indication or a specific age group frequently find themselves in a quandary. Physicians who prescribe such “off label” non-licensed drugs usually do not consult the package insert or search for US Food and Drug Administration (FDA) approval. This statement was written to clarify the legal and institutional status of the package insert and the role of the FDA in approving or not approving drugs for specific indications or specific age groups. The unapproved use of approved drugs, or so-called “off-label” use, is extremely prevalent among physicians who care for children. It is important that such use of compounds be brought up to date with current FDA policies and to emphasize the responsibility of the prescribing physician in the use of these compounds.
Helpful hints from providers:

- Getting started
  - Train everyone in your practice
  - Identify children to receive the procedure
  - Choose a coordinator
  - Have supplies handy in a central location

Identifying patients

- Flag chart
- Daily schedule
- Medicaid status and birthday

Supplies

- Central location
- Accessible to exam rooms

Fluoride Varnish Kit

- Gloves
- Mouth mirror
- Benda brush
- Gauze
- Varnish
- Finger splint

Helpful hints

- Procedure prep
- Position looking over the top of the head
- Parent provides restraint

More tips on application:

- Easy to learn – parent acceptance is excellent
- Start with patients with only anterior teeth
- Use a plastic finger splint under your glove to protect the finger and ease apprehension
More tips:

- **Parent education**
  - Use age-specific handouts as a guide for yourself and to give to the parent
  - Use the questions on the optional encounter form to assess habits and determine what information the parent needs
  - Consider using a toothbrush to demonstrate brushing technique to the parent and then give it to them to take home

Thank-you for your attention!

Questions?