Smiles for Life: Ensuring Oral Health Across the Lifespan

This Chapter Lecture Series is supported by a grant from the National Interprofessional Initiative on Oral Health
Program Objectives

At the conclusion of the program, participants will be able to:

1. Discuss the importance of oral health care as an integral component of PA practice.
2. Demonstrate knowledge of oral disease and prevention.
3. Discuss routine counseling for dental problems across the lifespan.
4. Discuss interventions that prevent and treat oral disease.
5. Describe reimbursement policies for oral health services.
6. Implement the Smiles for Life curriculum to improve oral health care for patients.
Faculty Disclosure Information

It is the policy of the American Academy of Physician Assistants to require the disclosure of the existence of any significant financial interest or any other relationship a faculty member has with the commercial interest of any commercial product discussed in an educational presentation. The participating faculty reported the following:

Mona Sedrak has no relationship with any commercial interests whose products or services may be mentioned during this presentation.

Off-Label Discussion: There are no references to unlabelled/unapproved uses of products in this program.

Disclaimer: The opinions and comments expressed by faculty and other experts, whose input is included in this program, are their own.
Why Now?

Institute of Medicine Reports 2011
Medical-Dental Collaboration

- Oral health training for medical providers will increase referral to dentists
- Expanded medical knowledge for dental providers will increase referral to medical providers
Misperceptions of the General Public

- “They’re just baby teeth”
- “Bring him in when he’s 4 years old and can sit still”
- “My 3-year old brushes his own teeth”
- “Fluoride is dangerous”
- “You lose a tooth for each pregnancy”
- “Dentures are just a part of getting old”
The Smiles For Life Curriculum

Course Quick Links

<table>
<thead>
<tr>
<th>Course 1: The Relationship of Oral to Systemic Health</th>
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<tbody>
<tr>
<td>Course 2: Child Oral Health</td>
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<tr>
<td>Course 3: Adult Oral Health</td>
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<td>Course 4: Acute Dental Problems</td>
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<td>Course 5: Oral Health &amp; the Pregnant Patient</td>
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<td>Course 6: Fluoride Varnish</td>
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<td>Course 7: The Oral Examination</td>
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<td>Course 8: Geriatric Oral Health</td>
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</tbody>
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Modules:

1. Oral-Systemic Connection
2. Child Oral Health
3. Adult Oral Health
4. Acute Dental Problems
5. Oral Health in Pregnancy
6. Fluoride Varnish
7. The Oral Examination
Caries Etiology Triad

Oral *bacteria* (*mutans strep*) break down dietary *sugars* into acids which break down the *tooth*.
Caries Transmission

- *S. mutans* is vertically transmitted from the primary caregiver, often the mother.
- Caregivers with high bacteria levels usually have:
  - A high frequency of sugar intake
  - Poor oral hygiene
  - High levels of decay
- Caregivers pass bacteria, dietary habits and oral care habits to the child.
Dietary Influences

- Oral bacteria ferment sugars, producing acids that persist for 20-40 minutes after sugar ingestion
- Oral acids demineralize tooth enamel
- Remineralization occurs when acid is buffered
- How often sugars are ingested is more important than how much sugar is ingested

Dietary Influences

<table>
<thead>
<tr>
<th>Time</th>
<th>Bottle</th>
<th>Breakfast</th>
<th>Snack</th>
<th>Sippy-cup</th>
<th>Snack</th>
<th>Lunch</th>
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<tbody>
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<td>pH</td>
<td>6</td>
<td>7</td>
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<td>9</td>
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<td>11</td>
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</tbody>
</table>

Safe zone

Danger zone

Smiles for Life
A national oral health curriculum

American Academy of Physician Assistants
Connecting PAs, Transforming Care
Cariogenicity of Foods

- Highly cariogenic:
  - Sweet sticky foods

- Less or minimally cariogenic:
  - Whole grain or non-carbohydrates (meat, nuts)
Oral-Systemic Connection

- Good evidence for oral/systemic link
  - Infective endocarditis (8% of cases)
  - Prosthetic device infection
  - Diabetes

- Emerging evidence for oral/systemic link
  - Obesity
  - Coronary artery disease
  - Lower respiratory disease
  - Adverse pregnancy outcome
    - Preterm birth and low birth weight
    - Preeclampsia
# Common Oral Diseases Across the Lifespan

- Early childhood caries (ECC)
- Adult caries
- Gingivitis
- Periodontal disease
- Pregnancy complications
Prevalence of Early Childhood Caries (ECC)

- ECC is a public health crisis!
- Prevalence:
  - 5% of all U.S. children
  - 30-50% of low income children
- 80% of decay occurs in 20% of children
- Most common chronic disease in children
  - 5 times more common than asthma
Early Childhood Caries (ECC)

- Leads to tooth loss and/or infection
- Can be vertically transmitted
- Sequelae:
  - Pain: Impaired chewing and nutrition; school/work absences
  - Infection
  - Increased caries in permanent dentition
  - Extensive and expensive dental work

Is Preventable!
White Spots: The Early Stage of Caries

Photos: Joanna Douglass BDS DDS
White Spots, then Brown Cavitations

Photos: Joanna Douglass BDS DDS
Advanced Caries

Photos: Joanna Douglass BDS DDS
Brushing Techniques
(kids need help until age 6)

Lift the lip

Brush behind teeth

Photos: Joanna Douglass BDS DDS
Fluoride Mechanism of Action

- **Topical (greater effect)**
  - Inhibits demineralization
  - Promotes remineralization
  - Produces anti-bacterial activity
  - Also effective in older adults

- **Systemic (lesser effect)**
  - Reduces enamel solubility by incorporation into its structure
## Well-child Visit Frequency

<table>
<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
<th>1 month</th>
<th>2 months</th>
<th>4 months</th>
<th>6 months</th>
<th>12 months</th>
<th>15 months</th>
<th>18 months</th>
<th>19-23 months</th>
<th>2-3 years</th>
<th>4-6 years</th>
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</thead>
<tbody>
<tr>
<td>Hepatitis B</td>
<td>Birth</td>
<td>HepB</td>
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<td>Rotavirus</td>
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<tr>
<td>Diphtheria, Tetanus, Pertussis</td>
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<td>DTaP</td>
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<td>Haemophilus influenza type b</td>
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<td>Pneumococcal</td>
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<td>PCV</td>
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<td>PPSV</td>
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<td>Inactivated Poliovirus</td>
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<td>Influenza</td>
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<td></td>
<td></td>
<td></td>
<td>Influenza (Yearly)</td>
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<tr>
<td>Measles, Mumps, Rubella</td>
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<td>MMR</td>
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<tr>
<td>Varicella</td>
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<td>Varicella</td>
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<tr>
<td>Hepatitis A</td>
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<td>HepA (2 doses)</td>
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<td>Meningococcal</td>
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Oral Disease in Adults - Gingivitis

- Mildest form of gum disease
  - Mild gum swelling, tenderness, erythema
  - Gums bleed during brushing
  - Can occur acutely with foreign body
  - Reversible

- Etiologies
  - Plaque
  - Pregnancy
  - Disease
  - Trauma
Oral Disease in Adults - Periodontitis

- More severe than gingivitis
- Infection and inflammation induce loss of bone and tooth attachment
- Periodontal ligament is attacked
Periodontitis - continued

- Can start in teen years
- Present in 50% of adults
- Smoking is a major risk
- Prevention:
  - good oral hygiene
  - brushing and flossing
  - avoid tobacco
Oral Health in Pregnancy

- Gingivitis is common in pregnancy
- Periodontal disease is associated with adverse pregnancy outcomes
- Treatment during pregnancy is safe, but both medical and dental providers may be reluctant to treat
- The best way to improve infant oral health is to improve maternal oral health:
  - *S. mutans* vertically transmitted
  - Mother’s oral health practices and diet influence child practices
PAs Should Know…

- Many women neglect oral health during pregnancy
- Many patients take medications that may affect oral health
- Patients with ill fitting dentures and poor dental hygiene can suffer from a lack of food intake, poor nutrition, and weight loss
Geriatric Considerations

- The geriatric population is growing and has increasing oral health needs
- 70% of seniors lack dental insurance
- Dental health is often neglected
- Oral health behaviors are associated with longevity
- Mortality increases linearly with tooth loss
- Medications may have negative oral consequences which should be monitored and minimized whenever possible
- Quality of life and chronic disease management of elders are improved with attention to their oral health
Changes of Normal Aging

- Plaque and gingivitis develop more rapidly in older adults than younger cohorts
- Common medical conditions may interfere with ability to cleanse teeth and oral cavity
  - Dementia
  - Osteoarthritis
  - Visual impairment
  - Stroke
- Tendency to xerostomia even without medications
Iatrogenic Xerostomia

- Decreased saliva promotes periodontal disease
- Many medications reduce salivary flow:
  - steroids
  - antihistamines
  - diuretics
  - antihypertensives
  - anticholinergics
  - antidepressants
Dentures

- Good fit essential but may be difficult to achieve and maintain
- Monitor for damage to plates and rough areas
- Should be removed for oral cavity exam at least 1/yr or when dental problems suspected
- Must be removed, brushed with denture cleanser (not toothpaste) and placed in water overnight
Oral Health Balance

Protective Factors
- Diet
- Brushing/flossing
- Salivary flow
- Fluoride

Pathologic Factors
- *mutans strep*
- Carbohydrates
- Reduced salivary flow
- Plaque
- Meds: xerostomia
- Tobacco

No caries
- Healthy gums
- Cancer-free

Caries
- Periodontal disease
- Oral cancer
Most children have access to primary care
  - 89% of poor children have a usual source of medical care
  - Primary care providers have regular, consistent contact with children for checkups and immunizations

Adults with many chronic diseases see medical providers frequently

Principles of risk assessment, screening and behavior change counseling are fundamental to primary care clinicians
<table>
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<tr>
<th>Medical Setting Opportunities</th>
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<tr>
<td>Infants &amp; Children</td>
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<tr>
<td>Risk assessment</td>
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<tr>
<td>Oral hygiene</td>
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<tr>
<td>Family oral health</td>
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<td>Screening and counseling</td>
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<tr>
<td>Parental care</td>
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<td>Treatment and referral</td>
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<td>Dental visit</td>
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Oral Health Provider Education

- Awareness of the oral-systemic connection
- Importance of anticipatory guidance re: diet and oral hygiene
- Risk assessment
  - Diet
  - Oral hygiene
  - Oral cancer
  - *S. mutans*
  - Xerostomia
Identification of:

- periodontal disease and referral
- oral cancers including sites often neglected by medical providers
- acute problem/trauma
- need for referral
Medicaid in most states now pays medical providers for child oral health services
- Exam, risk assessment and guidance
- Fluoride varnish application
- Must be combined with well-child exam in CO

Next steps:
- Oral health benefits for private medical insurance?
- Medical benefits for private dental insurance?
- Adult oral health benefits for Medicaid?
States with Medicaid Funding for PA Oral Health Screening and Fluoride Varnish

- Medicaid Coverage
- No reimbursement

Smiles for Life is the nation’s only comprehensive oral health curriculum. Developed by the Society of Teachers of Family Medicine Group on Oral Health and now in its third edition, this curriculum is designed to enhance the role of primary care clinicians in the promotion of oral health for all age groups through the development and dissemination of high-quality educational resources.

For Individual Clinicians

We’ve made it easy for individual physicians, physician assistants, nurse practitioners, students, and other clinicians to access the curriculum and learn on their own time and at their own pace. Each of the courses is available online. Free CME credit is available.

For Educators

The curriculum is available in a presentation format easily implemented in an academic setting. Included is a comprehensive set of educational objectives based on the Accreditation Council for Graduate Medical Education (ACGME) competencies, test questions, resources for further learning, oral health web links, an implementation guide, and detailed outlines of the modules.
Modules

- Each designed to take about 45 minutes
- Can be completed online and followed by a test
- Certificate of completion issued
- Free CME
- Can also be downloaded
- Speaker notes

Other Resources

- Videos
  - Knee-to-knee exam
  - Fluoride varnish
  - Brushing a child’s teeth
- Posters
- Pocket cards
- Learning objectives
- Curriculum implementation guide
- Test questions
Take Home Points

- Early childhood caries is an infectious, vertically-transmitted, preventable disease.
- Oral health and systemic health are related across the lifespan.
- Primary care providers are well-positioned to help patients improve their oral health through guidance, screening and referral.
- The Smiles for Life National Oral Health Curriculum can improve knowledge and skills in oral health.
Mission

Engage primary care clinicians to be:

Alert to their patient’s oral health needs

Ready and willing to deliver oral health preventive services

Effective at partnering with dental specialists and other primary care providers to promote oral health through patient-centered collaborative care