

# **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

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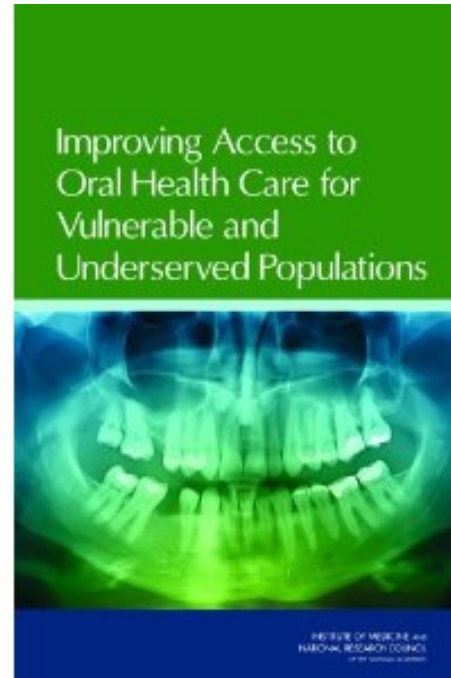
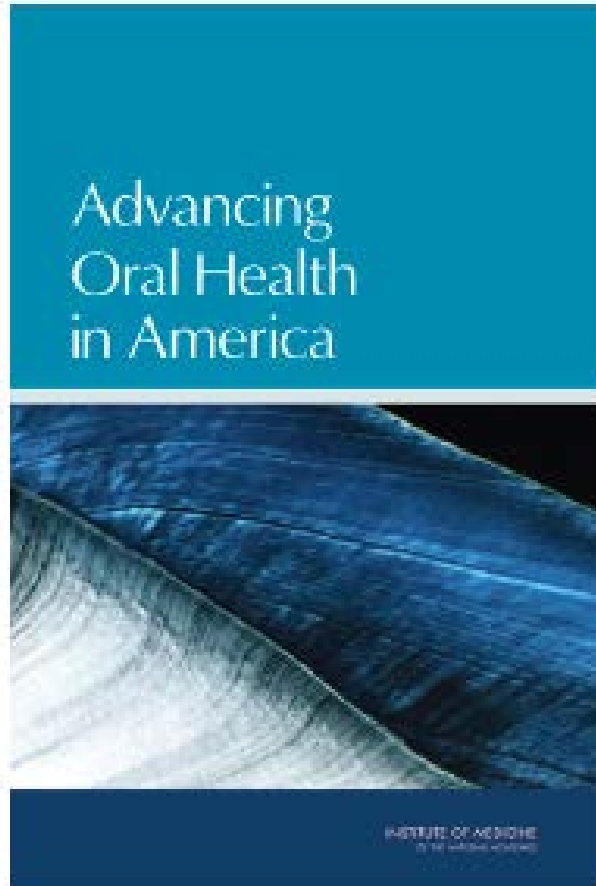
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# Why Now?



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

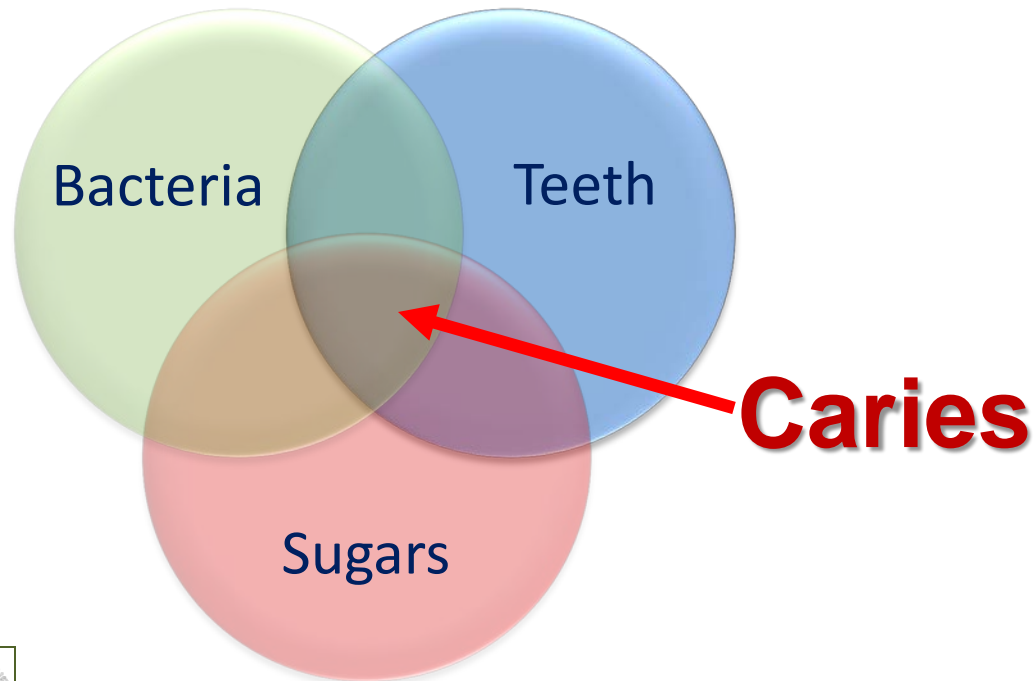
Course Quick Links	
 Oral Systemic	<b>Course 1:</b> The Relationship of Oral to Systemic Health
	<b>Course 2:</b> Child Oral Health
	<b>Course 3:</b> Adult Oral Health
	<b>Course 4:</b> Acute Dental Problems
	<b>Course 5:</b> Oral Health & the Pregnant Patient
	<b>Course 6:</b> Fluoride Varnish
	<b>Course 7:</b> The Oral Examination
	<b>Course 8:</b> Geriatric Oral Health

## 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
8. Geriatric Oral Health (2011)

# Caries Etiology Triad- How decay occurs

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



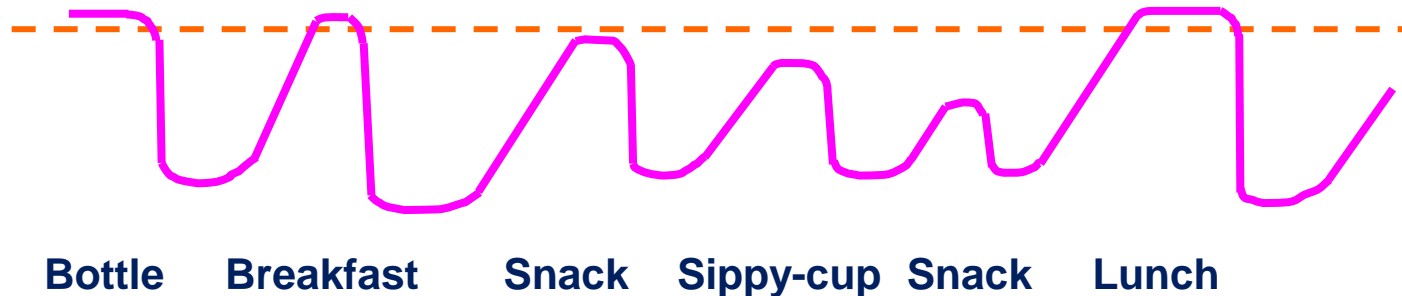


# Dietary Influences

- 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

Safe zone

Danger zone



# Cariogenicity of Foods

## ☐ Highly cariogenic:

- Sweet sticky foods



## ☐ Less or minimally cariogenic:

- Whole grain or non-carbohydrates (meat, nuts)



# Can Caries be Transmitted?

- ❑ *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



# Is there an 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



# A Review Common Oral Diseases Across the Lifespan

- Early childhood caries (ECC)
- Adult caries
- Gingivitis
- Periodontal disease
- Pregnancy complications
- Geriatrics

# 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



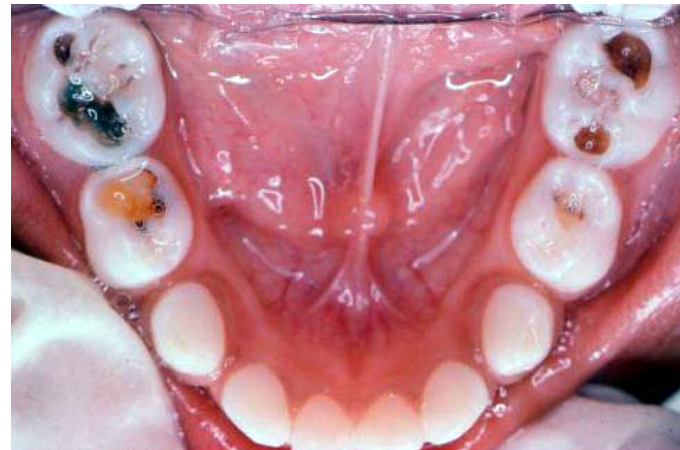


# White Spots, then Brown Cavitations



Photos: Joanna Douglass BDS DDS

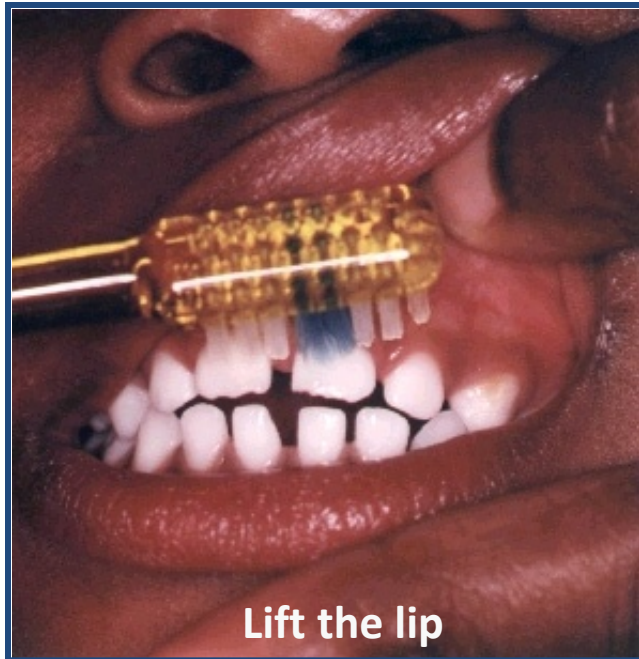
# Advanced Caries



Photos: Joanna Douglass BDS DDS



# Brushing Techniques (kids need help until age 6)



Photos: Joanna Douglass BDS DDS

# Don't Forget About Fluoride!

- ❑ 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-Opportunity to Talk About Oral Health

Vaccine ▼	Age ►	Birth	1 month	2 months	4 months	6 months	12 months	15 months	18 months	19-23 months	2-3 years	4-6 years
Hepatitis B <sup>1</sup>	HepB		HepB			HepB						
Rotavirus <sup>2</sup>				RV	RV	RV <sup>2</sup>						
Diphtheria, Tetanus, Pertussis <sup>3</sup>				DTaP	DTaP	DTaP	see footnote <sup>3</sup>	DTaP				DTaP
<i>Haemophilus influenzae</i> type b <sup>4</sup>				Hib	Hib	Hib <sup>4</sup>		Hib				
Pneumococcal <sup>5</sup>				PCV	PCV	PCV		PCV				PPSV
Inactivated Poliovirus <sup>6</sup>				IPV	IPV			IPV				IPV
Influenza <sup>7</sup>								Influenza (Yearly)				
Measles, Mumps, Rubella <sup>8</sup>								MMR		see footnote <sup>8</sup>		MMR
Varicella <sup>9</sup>								Varicella		see footnote <sup>9</sup>		Varicella
Hepatitis A <sup>10</sup>								HepA (2 doses)				HepA Series
Meningococcal <sup>11</sup>												MCV

# Oral health-Adults

# 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

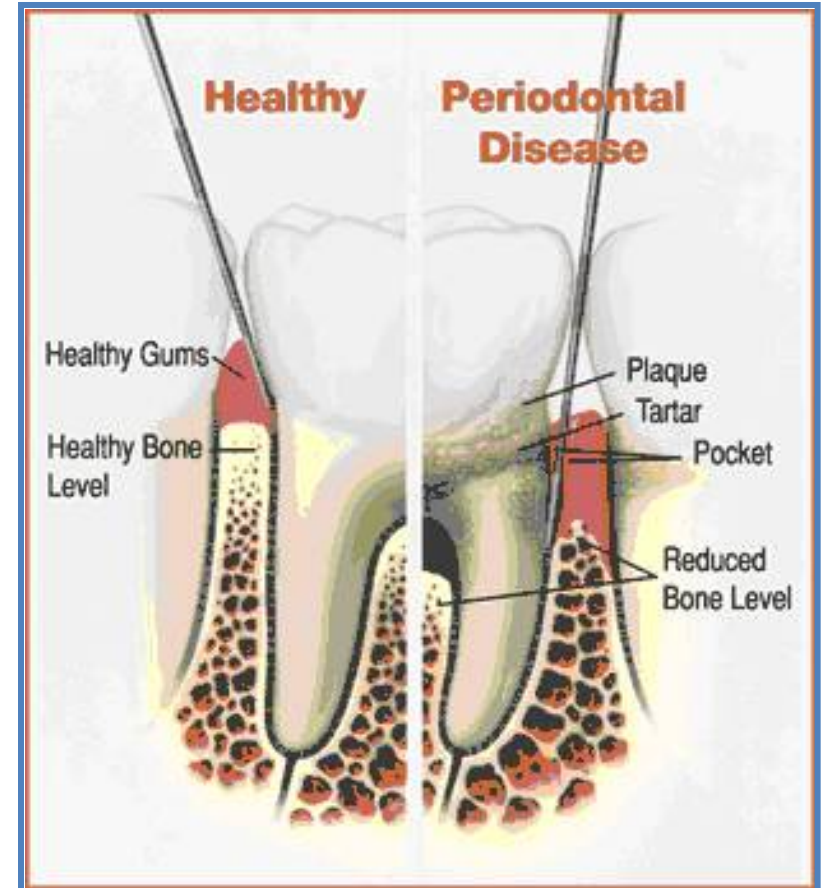
- ❑ More severe than gingivitis
- ❑ Infection and inflammation induce loss of bone and tooth attachment
- ❑ Periodontal ligament is attacked





# 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 Cancer

- ❑ Two precursors
  - Erythroplakia
  - Leukoplakia
- ❑ Risk Factors
  - ETOH
  - Tobacco
- ❑ Most Common Location
  - Lateral Aspect of the Tongue

# Precursors

## Erythroplakia



## Leukoplakia



# Oral Exam

- ❑ Examine the anterior surfaces of the teeth for discoloration, caries, trauma, and heavy plaque.
- ❑ Inspect the teeth with mouth closed and open noting occlusion, missing, damaged, or decayed teeth.

Smiles for Life  
*A national oral health curriculum*



# Oral Exam

- Instruct patients to open their mouths wide to inspect the inner (lingual) aspect of the upper (maxillary) teeth and the molars.
- Use a mouth mirror to help view the inner (lingual) aspect of the teeth and a retractor to help view the molars.
- If you do not have a mirror, you must either advise patients to tilt their heads back or lower your head to see properly.
- Repeat the procedure to examine lingual aspects of the lower teeth and molars.

A mirror helps to view lingual surface

Lingual upper teeth



Lingual lower teeth



Mark Deutchman, MD

# Oral Health -Pregnancy





# Oral Health in Pregnancy

- ❑ Gingivitis is common in pregnancy
  - ❑ Postulated caused by increase in hormones
  - ❑ Usually resolves after birth
  - ❑ Pyogenic granulomas common
- ❑ Periodontal disease is associated with adverse pregnancy outcomes
  - ❑ Inflammatory response may cause the following:
    - ❑ Pre term birth
    - ❑ Low birth weight





# Oral Health in Pregnancy

- ❑ Treatment during pregnancy is safe, but both medical and dental providers may be reluctant to treat
  - ❑ Avoid 1<sup>st</sup> and 3<sup>rd</sup> trimester
  - ❑ Xrays safe-But double shield
  - ❑ Urgent care can be done at anytime
- ❑ 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



# Oral Health - Geriatrics



# 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
- ❑ Osteonecrosis of the Jaws



# 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

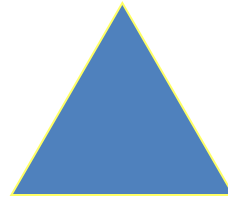
# Oral Health Balance

## Protective Factors

Diet  
Brushing/flossing  
Salivary flow  
Fluoride



No caries  
Healthy gums  
Cancer-free



## Pathologic Factors

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



Caries  
Periodontal disease  
Oral cancer



# The Opportunity

- ❑ 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-can discuss oral health during these exams
- ❑ Principles of risk assessment, screening and behavior change counseling are fundamental to primary care clinicians



# Medical Setting Opportunities

	Infants & Children	Pregnancy	Adults
Risk assessment	Diet Oral hygiene Family oral health	Diet Oral hygiene	Diet Oral hygiene Tobacco EtOH / Drugs
Screening and counseling	Caries Parental care	Periodontal Dz Self-care	Periodontal Dz Oral cancer Medications Self-care
Treatment and referral	Fluoride Dental visit	Rinses Xylitol Dental visit	Rinses Xylitol Biopsy Dental visit

# 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



# Education - continued

## □ Identification of:

- periodontal disease and referral
- oral cancers including sites often neglected by medical providers
- acute problem/trauma
- need for referral

# Reimbursement

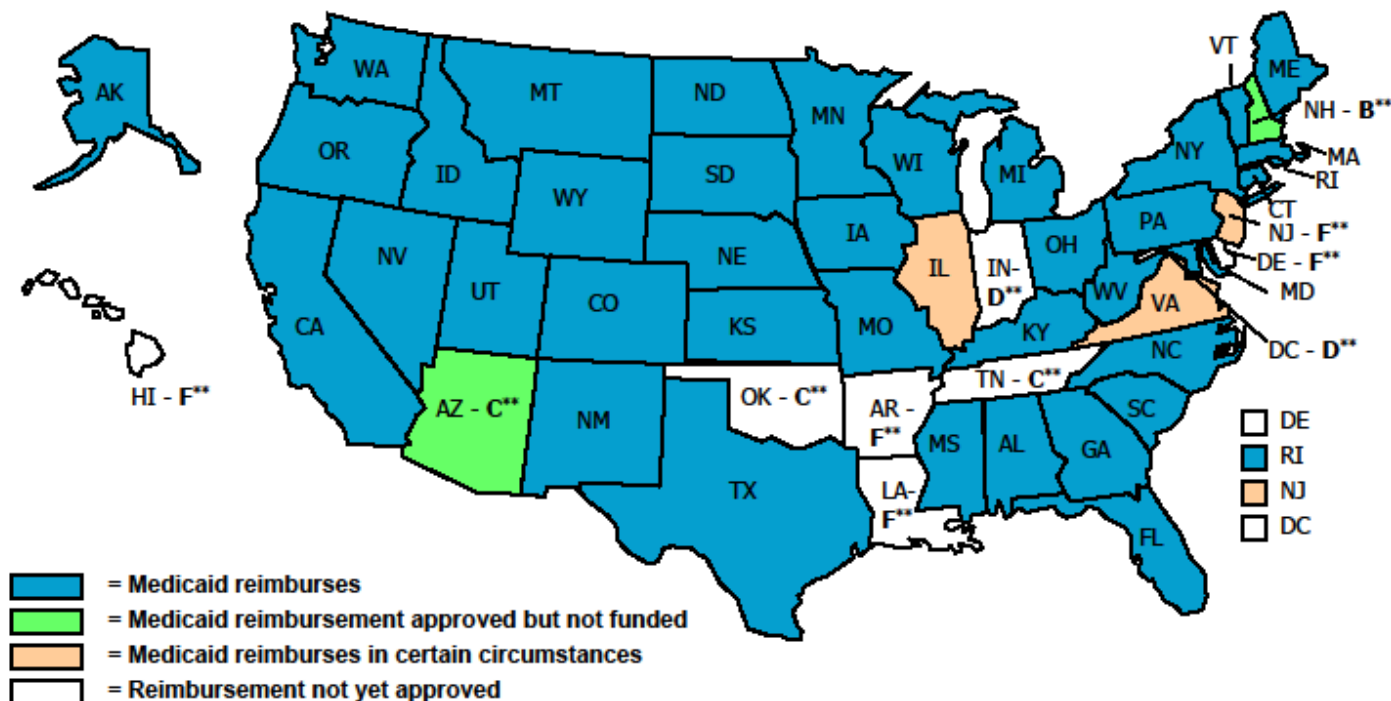
- ❑ Medicaid in most states now pays medical providers for child oral health services
  - Exam, risk assessment and guidance
  - Fluoride varnish application
  - Must be combined with well-child exam in CO
- ❑ Next steps:
  - Adult oral health benefits for Medicaid?
  - Affordable dental insurance



# Reimbursement by State

Revised: 10/10

## States With and Without MEDICAID Reimbursement for Primary Care Medical Providers to Perform Caries Prevention Services



\*\* Indicates state grade from *The Cost of Delay: State Dental Policies Fail One in Five Children*, Pew Children's Dental Campaign

<http://www.aap.org/oralhealth/pdf/Caries-Prevention-Map.pdf>





## Smiles for Life: A National Oral Health Curriculum

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.

### Course Quick Links

	<b>Course 1:</b> The Relationship of Oral to Systemic Health
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**AAFP** American Academy of Family Physicians

**AAPA** American Academy of Physician Assistants

**PAEA** Physician Assistant Education Association

**AFNP** Association of Faculties of Pediatric Nurse Practitioners

**NAPNAP** National Association of Pediatric Nurse Practitioners

**NIIOH** National Interprofessional Initiative on Oral Health

**AAP** American Academy of Pediatrics

**STFM** Society of Teachers of Family Medicine





# [www.Smilesforlifeoralhealth.org](http://www.Smilesforlifeoralhealth.org)

## 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.



National *Interprofessional Initiative*  
on Oral Health



Initiative activities are made possible as a result of funding from the DentaQuest Foundation, the Washington Dental Service Foundation, and the Connecticut Health Foundation.

**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