



COLUMBIA UNIVERSITY

*College of Dental Medicine*

# Pediatric Oral Health Educator

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## Picking up on comments from yesterday

Panel 1 Question: Who is going upstream to deal with root causes?  
Who is dealing with socio-cultural health-behavioral oral health determinants?

### Reponses

1. Francisco Ramos Gomez: noted social, behavioral, familial, societal issues
2. Pat Blohut: Lakota Sioux health educator anecdote
3. Hazel Harper: need for community-wide public health effort
4. IreneHilton: Need disease management model

### Craig Amundson

- **‘Dental care is focused on the “salvage yard.”’**
- **‘Dental offices are poorly equipped to move people to lifestyle change.’**
- **‘Need “care model redesign”’**

# Charge

- Population covered:
  - Parents of young children
  - Children with ECC (28% of 2-5 year olds, 4.5 million US children)
- Model:
  - Disease management built on chronic disease medical model
  - POHE works with community sites and programs to reach at-risk families
  - POHE integrated with traditional (surgical) dental care systems through co-location or referrals
  - POHE may engage peer counselors/community health workers
- Evaluation: n/a
- Challenges going to scale
  - Developing the concept based on best biologic and behavioral science
  - Creating the training for educator and affiliated peer counselors
  - Creating the software support to maintain the science and manage the systems
  - Demonstrating and evaluating interventions for outcomes
  - Tailoring implementation in various sites

# Concept

Build on

## 1. Nature of the disease

- Focus on “behavioral determinants”
- Address ECC epidemiology
- Correct post “treatment” relapse

## 2. Lessons from Medicine

- Seek the medical side of dentistry
- Learn from the “chronic care model”

## 3. Bio-**behavioral** approaches

- Use behavioral and communications constructs
- Implement individualized disease management “care plans”

## 4. Wellness management

- Implement holistic care
- Deliver care by educators and peers
- Maximize the roles of informatics

# Nature of the disease: Cavities and their current treatment

“Cavities” in young children are

- Highly prevalent, disparately distributed, and consequential
- The result of caries - the underlying dynamic disease process
  - Chronic and progressive
  - Established early in life
  - Dependent upon diet content and eating pattern
  - Fluoride mediated
  - Bivalent (undergoes exacerbation and remission continuously)

Traditional dental treatment in young children is typically

- Surgical (often with general anesthesia)
- Instructional
- Costly (highest trained professionals in the most intense settings)
- Ineffective short term: high recurrence rates (40% within 2 years)
- Ineffective long term: ECC is best predictor of ongoing cavities

## Nature of the disease: Experience from the field

‘ECC is not a dental but a family problem. Dimensions include socio-behavioral and environmental factors. Care therefore needs to be multidimensional.’

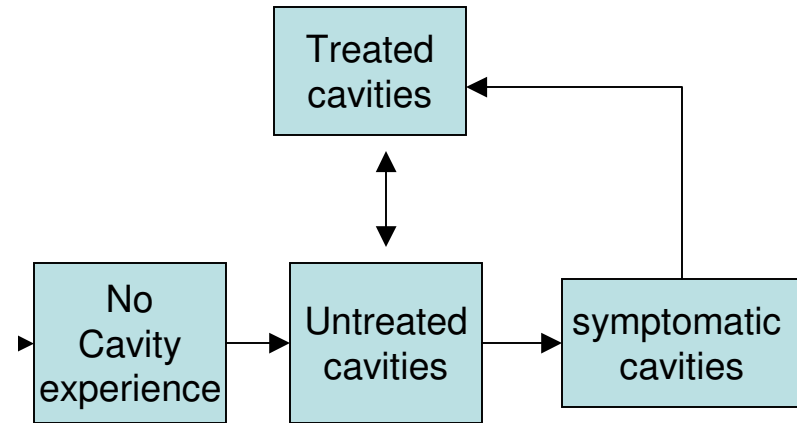
‘ECC is increasing because [current] solutions don’t address core causes. Rather behavioral change is needed, but that is easier said than done.’

‘Dentistry has relied on instruction rather than self directed goals to take action. Providers need to focus on changing what happens at home.’

‘Needed are long term, repeated, behavioral interventions. Short term is not sufficient. We need to start earlier if we are to effect prevention as well as suppression.’

Amid Ismail, Dean Kornberg School of Dentistry, Temple University  
reflecting on NIH-sponsored ECC interventions in Detroit

# Nature of the disease: Separating caries and cavities treatment



Medical Management  
Management

Pediatric Oral Health Educator

Surgical

Dentist

Learning from medicine: Cardiac surgery is to cardiology as dentistry is to \_\_\_\_\_?

Medical-surgical dichotomy

Medicine counterpart

Internal Medicine  
Pediatrics  
Urology  
Endocrinology  
Cardiology  
Neurology

Surgical counterpart

General Surgery  
Pediatric Surgery  
Urologic Surgery  
Endocrine Surgery  
Cardiac Surgery  
Neurosurgery

Dyad Specialties

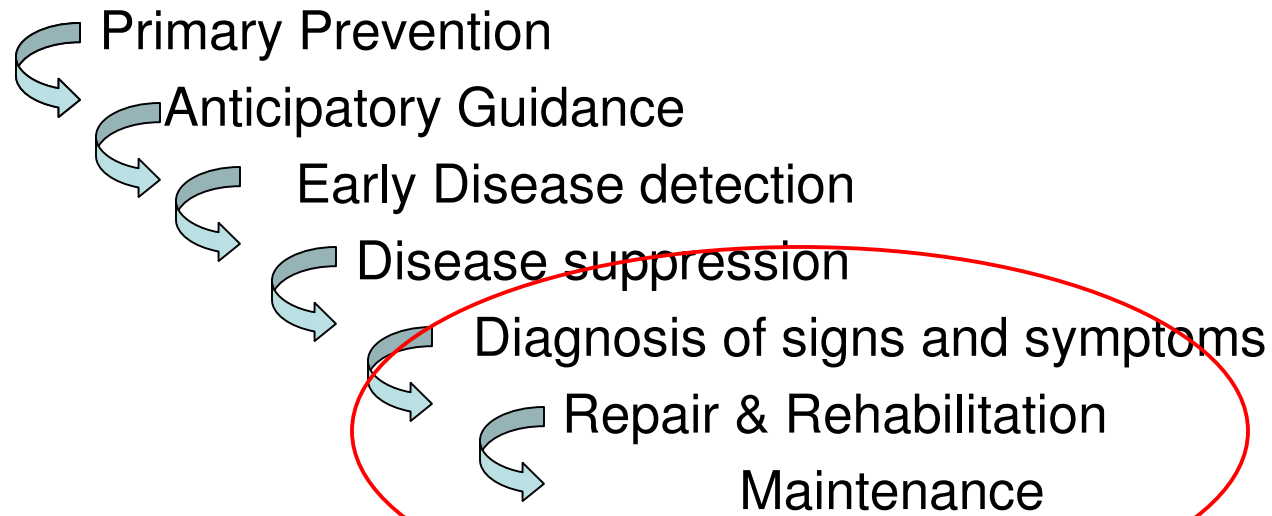
OB-GYN  
Dermatology  
Ophthalmology

\_\_\_\_\_

Dentistry

# Learning from medicine: leads from pediatrics

## Treatment hierarchy



# Learning from medicine: Leads from diabetes management

## Certified Diabetes Educator

Who? May be nurse, health educator, social worker, dietitian, nutritionist, physician, PA, psychologist or other professional

What? Receives advanced training and certification in disease management

How? Works directly with patients and families to individualize diabetes control

## Pediatric Oral Health Educator

Who? May be **hygienist**, nurse, health educator, social worker, dietitian, nutritionist, physician, PA, psychologist, dentist or other professional

What? Receives advanced training and certification in disease management

How? Works directly with patients and families to individualize caries control

# Lessons from medicine: Chronic care model

As with chronic care management for heart failure, we envision

“State-of-the-art patient-focused programs providing comprehensive education and counseling on symptom management and treatment adherence and intervening with patients and providers to ensure optimal regimens”

Sochalski et al, Health Affairs 2009

Currently building the model with “Clinical and Translational Service Award (CTSA)” support at Columbia University:

“Improving children’s oral health: Developing an informatics-assisted pharmaco-behavioral therapeutic approach to managing early childhood caries through family-centered peer-counseling.”

## Building on bio-behavioral approaches: “bio”

Biological approaches are in practice and development for

Diagnostics: microbiological, salivary, dental assessments

Chemotherapeutics: Fluorides (including varnish), Xylitol and other non-nutritive sweeteners, Iodine, Chlorhexidine, various other antimicrobials

Status:

No ‘silver bullet’ (including immunization) has evolved

Existing diagnostics and chemotherapeutics are underutilized

No pharmacological approach can overwhelm harmful behavioral determinants

Biological approaches may have greater public health than individualized care utility

# Building on bio-behavioral approaches: “behavioral”

## Informing disciplines on our Team

### Behaviorists representing:

Health Education & Communication

Behavioral Psychology

Behavioral Nutrition

Social Work

Peer Counseling

### Clinicians representing:

Community pediatrics (asthma specialist)

Nursing (diabetes educator)

Pediatric Dentistry (ECC)

### Supporting fields:

Bioinformatics

Epidemiology

Public Health Dentistry

# Building on bio-behavioral approaches: Building on past work

## ECC Management trials:

1. NIH Disparity Centers
2. Catalyst Institute QI demonstration
3. HRSA-Oral Health Disparities Collaborative
4. MAYA project in San Diego
5. Personal clinical experience with caries management

Clinical asthma and diabetes interventions

Community Health Worker experiences

Health behavior literature and expertise

# Wellness management: Building on other approaches

Caries disease management builds on  
bio-behavioral concepts

- Social determinants of health
- Social Pediatrics
- Holistic care
- Wellness promotion through patient engagement and self-regulation
- Common determinants of health
- Lifecourse approach

current professional policies on

- early dental care, age one dental visit
- dental home
- anticipatory guidance
- risk assessment

# Wellness management: Envisioned Disease Manager

The POHE will

- counsel families referred by medical and dental primary care providers or identified by community-based resources (e.g. Head Start, WIC)
- employ theory-based education and communication approaches
- engage peer counselors as needed
- develop and implement individualized care plans
- seek to control caries activity evidenced as remineralization and arrest
- return the patient to the dentist for definitive repair



Photo courtesy of AAPD

# Wellness management: Utilizing informatics

## Anticipated roles for informatics

- risk assessment
  - input with parent using touch-screen technology
  - algorithm-driven risk categorization
  - self-informing knowledge base
- family capacity assessment
  - input on health knowledge, belief, attitudes, locus of control, self efficacy
  - input on logistics
- tailored intervention care plan
- compliance encouragement and monitoring
- case management and tracking

# Outcome goals

1. Improve children's oral health, short term and long
2. Stop caries progression and cavity recurrence
3. Reduce need for treatment under general anesthesia
4. Reduce cost of care while obtaining better health outcomes
5. Continue moving the profession toward treating disease and away from treating symptoms
6. Improve the public's knowledge and action promoting children's oral health.
7. End the epidemic of ECC



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