Early Childhood Caries Disease Management:

The MySmileBuddy Intervention

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ECC Disease Management Aims

To stop the progression of tooth decay in affected children, prevent tooth decay in those unaffected, and reduce risk of future decay for all
Current Approach to Combating ECC

Surgical treatment does *not* address the underlying disease process…

and results in a high failure rate
Understanding the ECC Disease Process

Step 1: Transmission and Primary Infection of Mutans Streptococci

Step 2: Proliferation and Accumulation of Mutans Streptococci

Step 3: Demineralization of the Tooth Structure

Poor Oral Self-Care and Diet-Related Behaviors

1Step 1 image obtained from MySmileBuddy risk assessment tool (Levine, Wolf, Chinn, & Edelstein, 2012)
2Step 3 image from Gussy (2006) (Gussy et al., 2006)
Effectively Combating ECC

Need to address the two key mediators:

**Diet- & Fluoride-related Behaviors**
Parents of cavity-prone children can stop new cavities from occurring by working closely with counselors to understand the disease process and take action to reduce risk through fluoride and healthy dietary behaviors.
Introduction to MySmileBuddy

The MySmileBuddy program is an iPad-based family-level intervention that seeks to eradicate ECC

- Delivered by lay health workers
- Targets the two key drivers of ECC: Diet and Oral Hygiene
About MySmileBuddy

MySmileBuddy supports engagement between lay health workers and families through:

1. Parent Engagement, Education, and Training
2. ECC risk assessment
3. Individualized risk score analysis
4. Family-specific goal setting
5. Family-designed action planning
6. Wrap-around support
Parent Engagement, Education, and Training

- Culturally appropriate videos and images
- Interactive assessment and educational modules

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Getting your Children to Eat a Balanced Diet

Why is This Important?

A balanced diet is important for overall health as well as oral health. Eating a balanced diet means eating foods from all food groups and eating everything in moderation.

- Dairy products provide calcium and vitamin D to help make teeth and bones stronger.
- Breads and cereals supply B vitamins for growth and iron for healthy blood which aids in healthy gums.
- Fruits and vegetables have Vitamin C (and other important vitamins) that help maintain healthy gums.
- Lean meat, poultry and beans provide iron and protein for overall health, and magnesium and zinc for teeth and bones.

Tips to Help Your Child Eat a Balanced Diet

Tip 1 - Set Times

Do not continually let your child snack throughout the day.

Children eat best with scheduled meals and snacks. Each time your child eats food that contains sugars or starches, their teeth are attacked by acids for 20 minutes or more.

Tip 2 - Offer Healthy Choices

Offer healthy snacks such as fruit, cheese and nuts.

The key to choosing foods wisely is to think before you eat. This means not just what your children eat but also how often and how long your children eat.
ECC Risk Assessment

• A series of targeted questions

• Highly developed “diet widget” to score dietary cariogenicity
Individualized risk score analysis

• Built-in modifiable science-based risk algorithm
Family-specific goal setting

- Pre-populated list of goals tailored to current risk-related behaviors
Family-designed action planning

- Open field space for parents, working with lay health workers, to develop individualized action plan by specifying who will do what, when, where, and how.
Wrap-around Support

- Health Worker Resources
- Family Resources
- Tracking and Follow-up

The parent may not think their child is at risk for tooth decay, and that the assessment is unnecessary. Explain that this is an educational tool to help keep children healthy. It is informative and easy to use at any point.

Serve non-cariogenic foods as snacks

What is your goal?  jelly fruit for morning snack

What are the steps it will take to make it happen:
1. Leave cut up fruit in the refrigerator
2. Let Ava pick which fruit she wants to eat

Who is responsible for this success:
Grandparent

When will this happen?
1-2 weeks

Goal Update

Limitations to meeting the Goal

Additional Comments

Continue to About You

New York State Dental Foundation Workshop
June 18, 2015
MySmileBuddy Development

A multidisciplinary team of Columbia-affiliated faculty

- Pediatric Dentistry
- Pediatric medicine
- Nursing
- Social Work
- Public Health
- Nutrition and Health Behavior
- Health Education
MySmileBuddy Projects

The Diet and Early Childhood Caries (DECC) Study

- Evaluated feasibility, acceptability and preliminary impact of MySmileBuddy and tested concurrent criterion validity of risk scores with physical indicators

ADA Foundation Harris Grant Program

- To develop and test a text-message supplement to the MySmileBuddy Program in a perinatal Head Start population

National Institute of Dental and Craniofacial Research (NIDCR) R34

- To rigorously test MySmileBuddy through a B-RCT throughout NYC

CMS Center for Medicare and Medicaid Innovation (CMMI)

- To demonstrate ECC disease suppression in 2000 already affected NYC children, < 6, using MySmileBuddy delivered by community health workers
Overview of CMMI Study Procedures

- Community Health Workers (CHWs), supported by MySmileBuddy, partner with families of affected children
  - Meet 6 to 9 times over 12 months
  - Additional telephone contacts in-between visits
- CHWs obtain consent from parents to participate in the program
- Children will have access to regular dental care
- Children’s teeth will be examined before and after the program year
- CHWs record all of their interactions with families
- Parents and CHWs are surveyed at the beginning and end of the study
Challenges

- Technology advances
  - Innovation in mobile technology moves fast!
- Medicaid claims data
  - Data for hospital-based dental care are often incomplete
- Hiring, managing and retaining CHWs
  - Community-based organizations are unique in management and structure
  - Turnover is fairly common
- Difficult-to-reach target population
- Misconceptions about oral health and ECC
  - Oral health vs. oral care
  - Sense of immediacy and concern is often lower
- Providers’ acceptance of disease management approaches
Successes

• Providers’ acceptance of disease management approaches (not a typo!)
• Families are interested and motivated!
  • High acceptance during clinic and Head Start projects
  • Focus group reactions, interest and engagement
• CHWs/CBOs are eager and ready for engagement!
  • Training was an eye opening experience
  • CHW feedback and input are invaluable!
  • Interest in scalability and ability to reach more families
• Project team collaboration, cooperation and communication
  • Effective problem solving
  • Creative solutions
Thank You!
Any Questions?

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https://vimeo.com/114512516
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