

Early Childhood Caries (ECC) Collaborative Phase II Summary

ECC is a Collaborative with seven sites across the United States: St Joseph Health Services of Rhode Island (RI), Native American Health Center (CA), Nationwide Children’s Hospital (OH), NeighborCare Health (WA), University Pediatric Dentistry (NY), Holyoke Health Center (MA), Boston Children's Hospital (MA)

Problem

Nationwide, dental programs struggle with months-long backlogs of young children awaiting extensive dental repair in the operating room. Once definitive dental repair is provided under sedation or general anesthesia, many children experience unacceptably high rates of caries recurrence after 6-24 months. Caries recurrence is attributed to the failure of this traditional approach to mitigate the underlying caries process.

Introduction

The Early Childhood Caries (ECC) Collaborative is a Quality Improvement initiative of the DentaQuest Institute. The Collaborative focuses on the paradigm shift toward chronic disease management (DM) of dental caries. The aim of the Collaborative is to spread the practices and protocols of disease management of ECC, including, risk assessment, risk-based recall, fluoride use and self-management goal setting, in conjunction with restorative care. We have successfully tested the DM approach in diverse settings to demonstrate lower rates of new cavitated lesions, pain and referrals for restorative treatment in the operating room.

In 2008, Phase I of the ECC project began, with a goal to improve patient care and clinical outcomes. Boston Children’s Hospital and St. Joseph Health Services of Rhode Island successfully implemented a demonstration project funded by the Institute to test the feasibility and effectiveness of applying evidence-based approaches to addressing ECC in children younger than 60 months of age.

In 2011, Phase II of the ECC project began with the addition of (5) five more sites for a total of (7) seven in six (6) states. Through Phase II these sites successfully demonstrated that a disease management and prevention model in oral health care can improve outcomes, reduce disease, and control cost. The data and evidence collected will lead to expanded adoption among oral health providers. Evidence produced by the ECC collaborative has been cited in several national journals and publications, including the Journal for Healthcare for the Poor and Underserved, the Dental Clinics of North America, the Boston Globe and the New York Times.

Approach and Methodology

ECC uses an evidence-based disease management approach to manage and reduce caries progress in children younger than 60 months of age who present with early childhood caries.

In ECC Phase II teams used the Model for Improvement, developed by Associates in Process Improvement. This quality improvement methodology is a simple yet powerful tool for accelerating improvement. Its philosophy of small tests of change is integrated into the ECC collaborative and guided the teams in determining best practices at their sites.

Process Improvement Methods

1. Employ risk assessment practices and principles
2. Identify high-risk patients for DM approach
3. Engage families to improve caries risk (Self-management Goals)
4. Employ prevention focused practice using fluoride
5. Implement risk-based recall scheduling

Clinical Protocols

- Caries risk assessment (CRA) is performed at each visit.
- The caries process is explained to the caregivers (parents, family members) in lay language. Scripts are used.
- Clinical examination is performed, including to assess for caries status and change.
- Self-management goals are introduced to the parent/caregiver(s).
- Topical fluoride (1000 ppm fluoride toothpaste and/or 0.4% stannous fluoride) use is recommended in children younger than 5 years of age; Prevident 5000 in older children; Recommend waiting 30 minutes before eating, drinking or rinsing after; MI paste, xylitol can be recommended.
- Patients are recommended to return for DM visits based on the caries risk determined for their child, which is expected to change over time.
- Patients who are returning for restorative treatment will receive DM during the same visit (CRA, fluoride varnish, and self-management goals based on each child’s changing caries risk.)

Outcome Improvement Results

Outcome Measure	Baseline	Result Achieved	Percentage Improvement	Improvement Range
New Cavitation	46%	33%	▼ 28%	▲ 14% - ▼ 71%
Referral to the Operating Room	22%	14%	▼ 36%	0% - ▼ 81%
Pain	11%	8%	▼ 27%	▲ 80% - ▼ 100%

The table shows results for the (3) three ECC Phase II outcome measures. The measures include:

- Reduction of patients treatment in the Operating Room
- Reduction of new cavitation
- Reduction of percentage of patients complaining of pain

Results reflect random sample of 438 children/families drawn from a total ECC Collaborative population of 3,030.