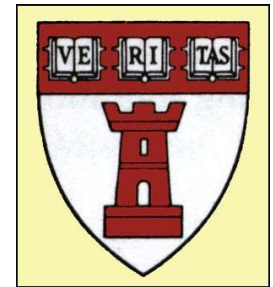




Risk-based Disease Management of ECC



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**Developing a Vision for
Oral Health Quality Improvement
In an Era of Accountability**

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Unpublished data is the property of the DentaQuest Institute and Children's Hospital Boston. Unpublished data should not be referenced without the permission of the DentaQuest Institute.

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Problem Statement

- Hospital-based dental clinics care for a disproportionate number of children with ECC
- Many of these children are treated surgically
- Months-long backlogs for operating room care
- High rate of recurrent decay after treatment
- High cost of operating room treatment
- **Yet, caries is a highly preventable disease**

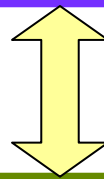


Opportunities for Improvement

What we know →

- Change biochemistry
- Assess and manage risk
- Repair defects
- Support behavior change
- Focused prevention

The Gap

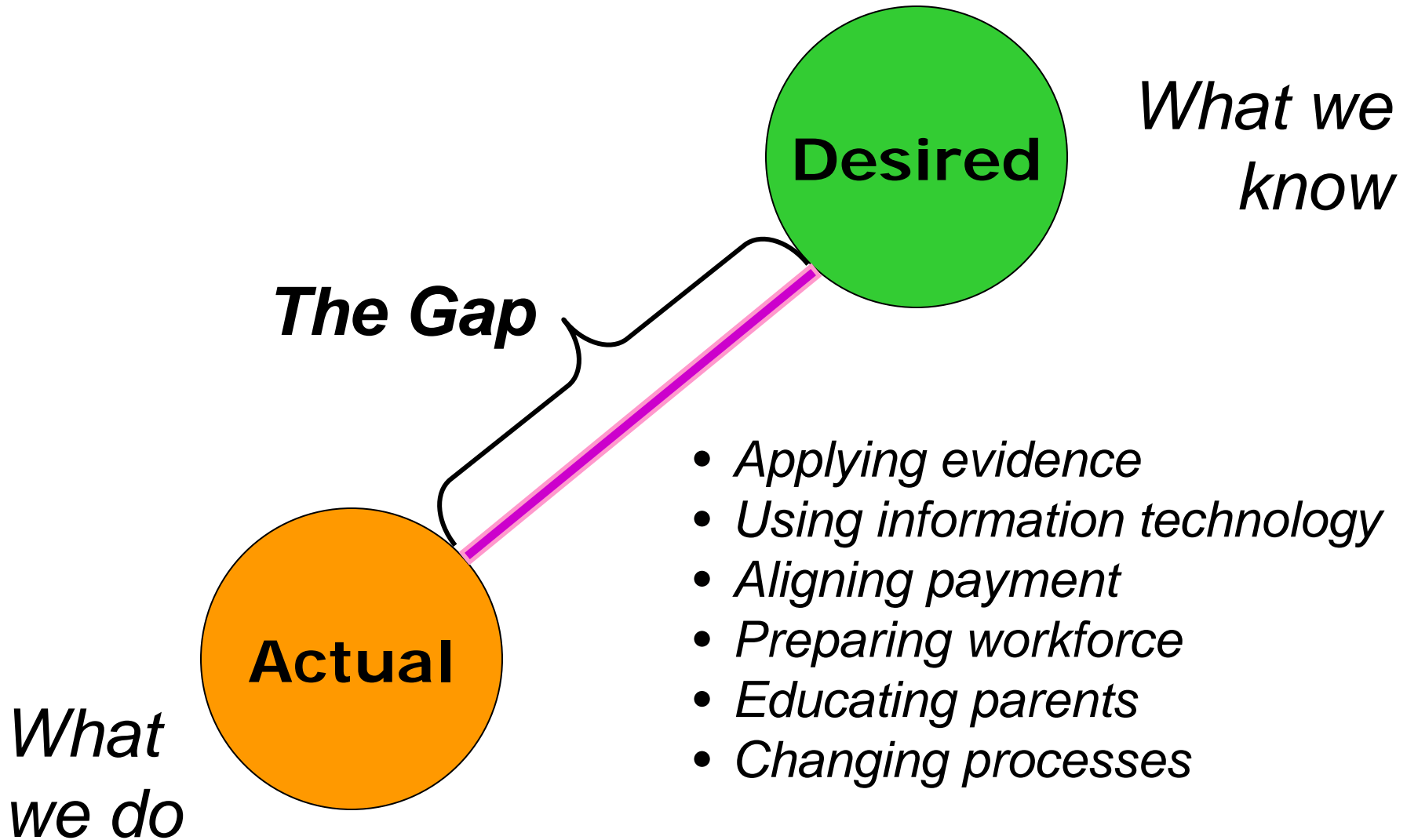


- 6-month recall visits
- Restore teeth
- Prevention essentially the same for everyone
- Little focus on self management



What we do

Opportunity for Improvement



ECC Management Project

- In two hospital settings* that care for overwhelming numbers of high caries-risk and underserved children:
 - Improve quality of care
 - Improve clinical outcomes
- Methodology
 - Implement an evidence-based chronic disease management approach to manage and prevent ECC in our target populations

*Children's Hospital Boston and Saint Joseph Hospital, RI

ECC Phase I Aim Statement

Over an 18 month period, caries will be managed and caries progression will be reduced in all children under 60 months of age who present with high risk for ECC.

ECC Phase I Goals

Reduce the percent of patients with new cavitation by 33%

Reduce the percent of patients who are referred to the OR and/or for sedation by 20%

Reduce the percent of patients complaining of pain by 50%

Participation Criteria

- Inclusion criteria
 - Children less than 60 months of age
 - At least 1 carious tooth (inclusive of white spots) or prior tooth extraction due to caries
- Written informed consent.

Evidence-Based Clinical Protocol

- **In-Clinic Care**

- Risk assessment

- Modified AAPD Caries Risk Assessment Tool
- Strep Mutans testing
- Treatment plan based on risk status*
- Fluoride varnish application

- Restorative care[±]

- Patient education

- Scripts

- **At-Home Self Management**

- Gelkam (0.4% stannous fluoride) application
- Diet modification
- Oral hygiene

- **Self-management Goals**

*Including. periodicity of return preventive visits

± Including conventional restorative tx, OR, sedation, nitrous oxide, ITR, sealants

Disease Management (DM) Visits

- High caries risk
 - Schedule in 1 month
 - Medium risk
 - Schedule in 3 months
 - Low risk
 - Schedule in 6 months
- Caries risk assessment
 - Clinical/radiographic exam and charting
 - Restorative care as needed
 - Redefine or re-emphasize self-management goals
 - Behavior assessment

Results After 30 Months*

	CHB		SJH	
Outcomes	ECC (N=403)	Historical Control (N=129)	ECC (N=234)	Historical Control (N=80)
New cavitation	26.%	75%	41%	71%
Pain	13%	22%	7.%	31%
Referral to OR	11%	21%	15%	25%

‡Not referred at 1st visit

*Patients with at least 2 visits included

Interviews with CHB ECC Project Parents

- Qualitative study of parents' perceptions and expectations
- Key emerging themes were identified
 - Parents have limited knowledge and perceptions of oral health but want to know more
 - Parents have guilt about ECC
 - Family and social influences
 - Parent/provider interactions

Visit Type and Treatment Costs

- Disease Management (DM) patients had more visits, more preventive visits, and fewer restorative and OR visits than historical control patients.
- The median adjusted dental charge per visit for the DM group was 24% (\$57) less than for the control group.
- The mean cumulative dental charge per DM patient was 19% (\$871) less than for the control patient.
- We estimate a savings of \$825,384 on medical charges for the DM group as a result of fewer patients in the DM group receiving dental treatment in the OR.

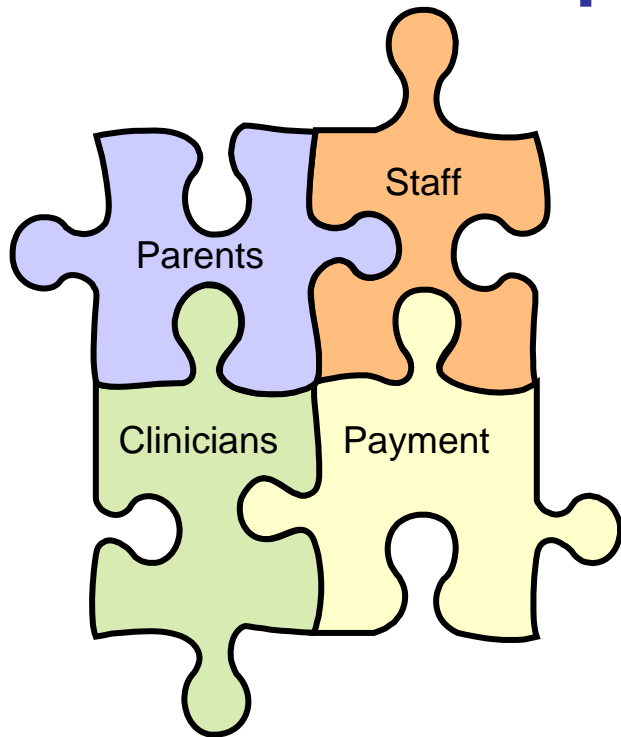
Conclusions

- Risk-based disease prevention and management of ECC can be implemented into practice.
 - Has a promising potential to *deliver better oral health care, improve outcomes and reduce cost of treatment*, but needs testing in other clinical settings where children receive care.
 - ECC Phase II Collaborative involving 7 sites
- Clinicians require support with tools and incentives to align their care delivery systems/practices toward oral health maintenance.
 - Reimbursements are needed for caries risk assessments, diagnosis, non-surgical management of caries, fluoride varnish applications, and more frequent risk-based recall visits for some appropriate patients.

Conclusions

- To support risk-based disease management approaches:
 - Reliable measurements of outcomes are needed
 - Diagnostic codes and new systems of documenting disease activity are needed to support risk-based disease management of caries approaches.
 - The public and providers will need to be educated toward a frame shift to maintaining oral health.
- Patients and families may be willing and receptive to adopt approaches that conceptually make sense and through which they may engage in collaborative family centered care.

Thank you!



Making the Pieces Fit

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