



Connecticut Health
FOUNDATION

January 2015

In-Depth

Solutions for Integrated Care

IMPROVING CHILDREN'S ORAL HEALTH BY CROSSING THE MEDICAL-DENTAL DIVIDE

OVERVIEW

Young children in low-income families continue to suffer high rates of tooth decay — decay that can be prevented, slowed, or stopped by managing diet and using protective fluorides. Yet few Connecticut parents of such Medicaid-enrolled children under age three are counseled on prevention. Only 3 percent of children on Medicaid receive oral health services from their medical providers, despite having multiple well child visits. Only 1 percent of children on Medicaid under age one have a dental visit.

Chronic disease management (CDM) for early childhood caries (ECC) holds promise to curtail caries onset and progression. Collaboration by medical and dental providers is required for improved oral health in children, yet such collaboration is challenged by a medical-dental divide resulting from differences in medical and dental delivery systems, financing, and professional cultures.

This brief reports key findings of an analysis commissioned by the Connecticut Health Foundation to explore options for increasing dental care for young children, increasing involvement of medical primary care providers (PCPs), and securing the triple aim of improved patient outcomes at lower cost with improved population health.

Eight intervention options with incentive financing mechanisms and anticipated outcomes are presented. While some financial incentive options may increase use of traditional dental services or involvement of primary care providers in counseling, only a CDM approach that targets the highest risk children and uses a range of health care and social service professionals is anticipated to reduce both caries experience and cost of repair.

(continued on next page)

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APPLYING DISEASE MANAGEMENT APPROACHES TO ECC IN CONNECTICUT

Health care in the U.S. is undergoing significant delivery and financing redesign in its quest for better health outcomes at lower cost and improved population health. Conventional treatments are undergoing scrutiny by policymakers, payers, and patients as they are increasingly assessed for “value,” defined as improvements in health outcomes relative to costs of care.

Although the historical separation of dentistry from medicine has marginalized oral health in current reform efforts, medical and dental providers alike are increasingly challenged to demonstrate effectiveness and efficiency without sacrificing a positive patient experience. Even long-established treatment approaches and procedures are open to such reassessment. This scrutiny has led to increased attention to reducing risks, capitalizing on prevention, and — once disease is established — to chronic disease management (CDM) that is designed to reduce symptoms and progression.

The Institute of Medicine considers CDM to be a unique therapeutic intervention located between prevention and acute care! CDM has been defined as “a group of coherent interventions, designed to prevent or manage one or more chronic conditions using a community-wide, systematic and structured multidisciplinary approach potentially employing multiple treatment modalities.”²

The seven components of chronic disease management are:

1. **identifying** persons* with the disease from among a target population;
2. **engaging** affected persons to manage their own disease;
3. **tailoring** the intensity of interventions to individual disease risk and experience;
4. **using** best available biomedical evidence of effectiveness;
5. **maximizing** treatment settings and financing options;
6. **measuring** process and outcome variables; and
7. **using** those metrics to provide feedback to patients, clinicians, and others involved in care.

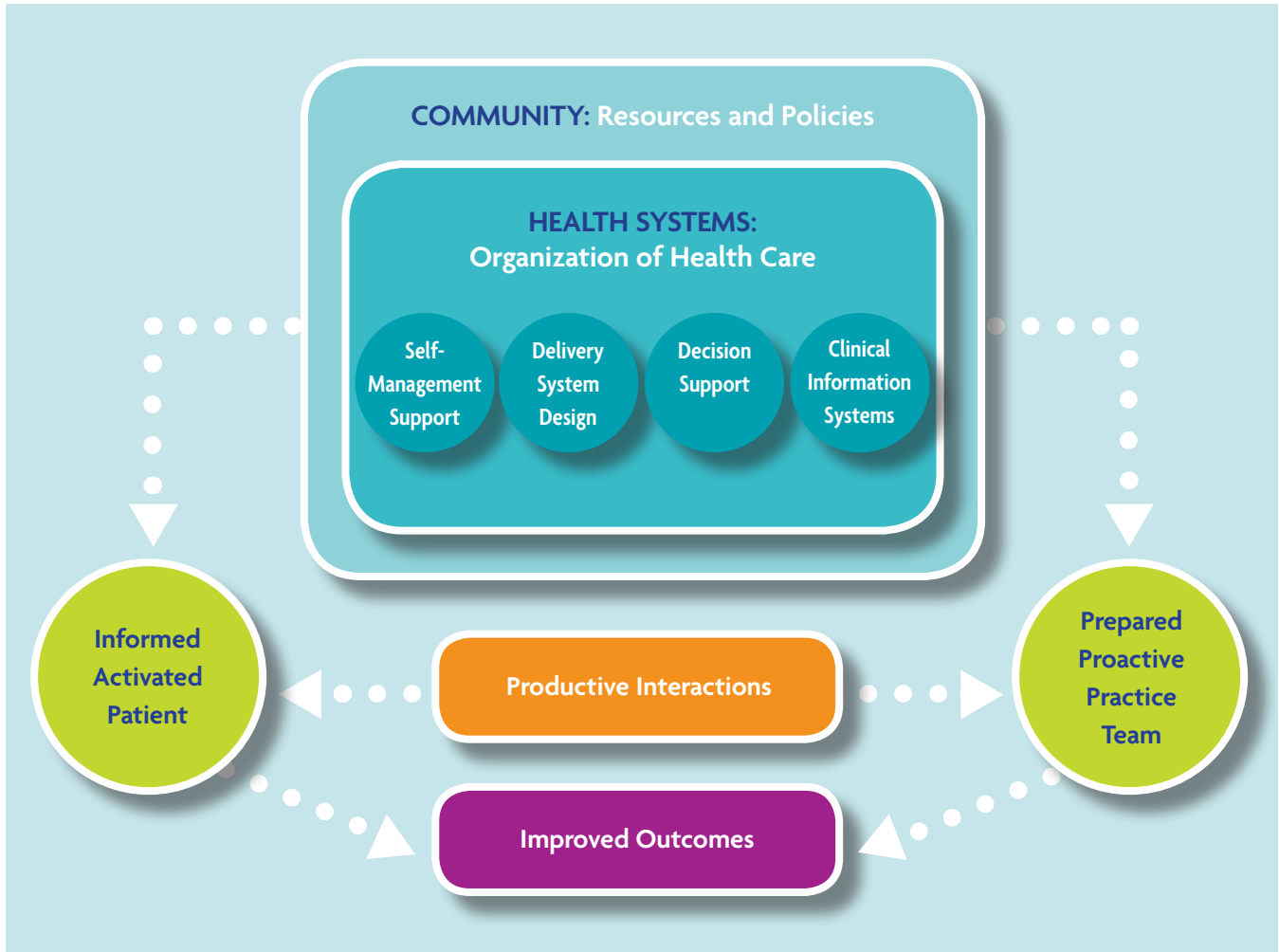
*Persons in this case go beyond affected children to include their parents or primary caregivers.



Early childhood caries (ECC) is one chronic oral disease that is particularly amenable to management across the medical-dental divide. Value-based purchasing (VBP) is a strategy that can help drive this change. VBP measures, reports, and rewards excellence in health care delivery. Characteristics of ECC that lend themselves well to VBP are:

- **Its extreme prevalence:** Because ECC affects nearly half of all U.S. children under six years, many multiples of per-child savings can be realized through low-cost disease management.
- **Its high rates of progression:** Because past caries experience is a strong predictor of future caries experience, suppressing ECC can limit ongoing disease incidence and associated costs.
- **Its high current treatment cost:** Because ECC is typically addressed through costly dental repair that often entails general anesthesia and operating room (OR) expenses, alternative lower-cost interventions may generate significant savings.
- **Evidence of current treatment ineffectiveness:** Because dental repair does not manage the underlying disease process, merely fixing cavities fails to arrest disease progression.
- **Availability of evidence-based treatment options:** Because science supports chronic disease management approaches to ECC suppression, major authorities — including the American Academy of Pediatric Dentistry, the American Academy of Pediatrics, and the Caries Management by Risk Assessment Coalition (CAMBRA) — have endorsed behavioral and pharmacologic management as adjuncts or alternatives to surgical management.

FIGURE: MODEL OF CHRONIC CARE



The widely accepted Wagner model of chronic care³ illustrates the essential components of this approach, which can be applied to ECC (figure above). Improved outcomes result when a “prepared, proactive practice team” engages “productively” with an “informed, activated, patient” in an environment that provides “self-management support.” In the case of ECC, an effective practice team would include medical and dental professionals as well as other professionals such as dietitians, behavioral nutritionists, health educators, social workers, and occupational therapists (a cluster often called “helping professionals”). The team would also include lay health workers who can capitalize on peer relationships with parents and caregivers to encourage positive oral health behaviors, such as food selections, feeding and eating practices, and use of fluoridated products including over-the-counter and prescription toothpastes.

Early evidence suggests substantial disease reductions and cost savings through ECC treatment that capitalize on CDM principles:

- The DentaQuest ECC Collaborative reports 27 percent reduction in pain experience, 36 percent reduction in operating room utilization, and 28 percent reduction in caries progression.⁴
- California Medicaid projects a 36 percent to 43 percent reduction in reparative costs if ECC disease management reduces repair by 50 percent at \$400/family and \$200/family cost respectively and an 18 percent to 22 percent reduction if management reduces repair by 25 percent.⁵
- System dynamics modeling in New York State Medicaid projects savings for a variety of interventions that target high-risk children, start early, and involve nontraditional providers.⁶
- ECC interventions in settings as varied as WIC, a Medicaid managed care plan, a birth-to-three program, and a physician-delivered oral health program report returns on investment from break-even to 54 percent.⁷

OPTIONS FOR IMPLEMENTING ECC CHRONIC DISEASE MANAGEMENT IN CONNECTICUT MEDICAID

Eight options for improving young children's oral health in Connecticut Medicaid are summarized in the figure below and more fully presented on page 6. As shown in the summary table, the first five aim to incentivize an increased volume of early dental visits — each involving a different agent or “actor.” Direct incentivizing can be done with parents, primary care providers, and/or dentists. These groups can also be indirectly incentivized through the state's medical or dental ASO vendors.

Because there is little substantiation that generic early preventive dental care in and of itself produces improved oral health, these options are anticipated to produce only modest reductions in ECC prevalence and incidence. Their dependence on high-cost providers suggests that they will cost more in delivery than they save in disease occurrence.

In option 6, the PCP goes beyond referral, providing more extensive oral health guidance that emulates the kinds of guidance that PCPs generally provide in structured well-child visits. This more tailored approach may yield somewhat greater disease reductions but, again, is expected to be costly because it involves highly compensated providers.

Options 7 and 8 focus on bona fide disease management approaches. Both recognize that such intensive disease

management requires both the deeper oral health knowledge of dental professionals, and the focus made possible because dental professionals are not attending to other health concerns.

Option 7 looks directly to the dentist — adequately trained in principles and procedures of chronic disease management — to assess risk, individualize nonsurgical treatment, engage and motivate families in self-care plans, monitor adoption and fidelity to those plans, and assess process and outcome metrics. This comprehensive CDM approach can be anticipated to yield significant reductions in ECC occurrence, but also anticipates high cost due to reliance on dental professionals.

Option 8 provides the same intensive chronic disease management strategy but looks to the dental ASOs to coordinate risk assessment and associated intervention in collaboration with its professional network. Under this option, the dental ASO directly engages helping professionals in working directly with at-risk families, along with lay health workers such as peer counselors, community health workers, community dental health coordinators, and *promotores* in the Hispanic community. Dental ASOs may use mobile health information technologies designed by dental authorities to ensure fidelity to caries science.

FIGURE: SUMMARY OF INTERVENTION OPTIONS (see more detailed table on page 6)

■ Recommended Option

INCENTIVIZED ACTION	ACTOR	ANTICIPATED OUTCOMES
Increase early dental visits (Options 1-5)	Parent PCPs Dentist Dental ASO* Medical ASO	Modest ECC reductions: Net \$ ↑
Provide oral health guidance (Option 6)	PCP	Moderate ECC reductions: Net \$ ↗
Implement caries prevention and management (Options 7 and 8)	Dentist	Significant ECC reductions: Net \$ ↑
	Dental ASO	Significant ECC reduction: Net \$ ↓

* ASO: administrative services organization — an organization that manages a benefits program for a payer such as Medicaid.

FINANCING CDM IN MEDICAID

Medicaid options that may be used to fund CDM include longstanding Medicaid managed care contracting flexibilities and primary care case management fees, as well as new options created by the Affordable Care Act: the Medicaid Health Home Initiative, and the new Preventive Services Rule that promotes delegation to nontraditional providers.⁸

To initiate incentive programs, a state Medicaid program (or its third-party contractor) may engage in one of the following approaches: fund incentive payments on either projected or realized savings from reduced volumes of costly dental repair in the OR; institute a hold-back on regular provider payments to later reward providers who generate savings from reduced OR usage; or avoidable OR usage by eliminating or reducing payments. Optional determinations of incentive payments to providers may include: equal distribution across all providers who elect to participate in the incentive program; prorated distribution according to differential volumes of care provided; or prorated distribution according to a point system allocated to specific desirable behaviors (as Connecticut Medicaid did successfully in encouraging strategies that reduced avoidable cesarean sections).

Key strategies to realize savings at the family level are (1) care coordination, including triage to identify high-risk families, followed by culturally and linguistically appropriate facilitation of logistics; and (2) disease management, including motivational interviewing, tailored uses of fluorides, and dietary risk reduction delivered through home visits, and supplemented with text or phone support and/or monetary and social behavioral incentives.

NEXT STEPS

While this brief substantiates the benefits to children, families, and Medicaid programs of implementing a chronic disease management approach in Medicaid to early childhood caries, the findings could also be applied to accountable care organizations (ACOs) that incorporate dental and medical coverage.

Of the identified options, only option 8 is likely to achieve both disease reductions and cost savings. This option incentivizes the state's dental ASO vendor to develop and deliver targeted home and/or community-based ECC disease management services by professionals and lay health workers to families of high-risk children. This approach will complement traditional dental services while assisting families in eliminating or controlling their children's risk for tooth decay. Further, it can help improve patient outcomes and population health while lowering costs.

The Connecticut Department of Social Services can adopt ECC disease management in various ways: through its Medicaid contracting with ASOs; through its federal SIM (State Innovation Model) activities; or through demonstration support by foundation grants, Center for Medicare and Medicaid Innovation's Health Care Innovation Awards, or the Patient Centered Outcomes Research Institute's (PCORI's) funding opportunities.



TABLE: INTERVENTION OPTIONS, INCENTIVE MECHANISMS, ANTICIPATED OUTCOMES

Recommended Option

OPTION	INCENTIVE	ANTICIPATED OUTCOMES
1 Incentivize all parents to seek early dental visits	Gift card, voucher for completed initial dental visit in specified time frame	Action • Parents will seek more early visits ECC • Modest reduction Net cost • Increase
2 Incentivize PCPs to increase dental referrals for all young children	Monetary performance incentives to PCPs for documented dental visits resulting from referral	Action • PCPs will address oral health with parents and will increase collaboration with dentists ECC • Modest reduction Net cost • Increase
3 Incentivize dentists to see more young children	Monetary performance incentives to dentists for documented increased dental visits by children under age 3 compared to baseline	Action • Dentists will recruit young children through community organizations and PCPs and will actively promote age-one visits ECC • Modest reduction Net cost • Increase
4 Incentivize dental ASO to increase early dental visits	Monetary performance incentive to the dental ASO for documented increased dental visits by children under age 3 compared to baseline	Action • Dental ASO will educate dentists on early visit; benchmark performance provide feedback; provide case management ECC • Modest reduction Net cost • Increase
5 Incentivize medical ASO to increase early dental visits	Monetary performance incentive to the medical ASO for documented increased dental visits by children under age 3 compared to baseline	Action • Medical ASO will educate PCPs on early visits; benchmark performance and provide feedback; implement case management; liaison with dental ASO to identify providers ECC • Modest reduction Net cost • Increase
6 Incentivize PCPs to provide oral health guidance to high-risk children	Monetary performance incentive based on points earned for specified actions (e.g., triage/risk assessment, counseling, fluoride varnish application, diet counseling, completed referrals)	Action • PCPs will adopt professional association ECC management protocols and guidelines. ECC • Moderate reduction Net cost • Neutral to increase
7 Incentivize dentists to adopt CDM protocols for high-risk children	Monetary performance incentive or withhold based on points earned or lost for specified actions/inactions	Action • Dentists will institute disease management and stabilization protocols; engage families with helping professionals; monitor disease trajectories; tailor care to risk ECC • Significant reduction Net cost • Decrease
8 Incentivize ASOs to directly deliver ECC CDM for high-risk children	Monetary performance incentive or withhold based on points earned or lost for specified actions/inactions	Action • ASOs will institute CDM by engaging families with helping professionals; monitoring disease trajectories; tailoring care to risk. ECC • Significant reduction Net cost • Greatest reduction

NOTES:

- 1 <http://www.iom.edu/-/media/Files/Activity%20Files/Quality/IntegrativeMed/Integrative%20Medicine%20and%20Patient%20Centered%20Care.pdf>
- 2 Peytremann-Bridevaux I, Burnand B. "Disease management: a proposal for a new definition." *Int J Ineg care* 2009;9:e16.
- 3 The model is presented at <http://www.improvingchroniccare.org/index.php?p=Chronic+Care+Model&s=124>
- 4 Early Childhood Caries Collaborative. DentaQuest Institute. Available at

- 5 Ramos-Gomez FJ, Shepard DS. "Cost-effectiveness Model for Prevention of Early Childhood Caries." *J Calif Dent Association*. 1999;27:539-44.
- 6 Edelstein BL, Hirsch GB, Frosh M, Kumar, J. "Reducing early childhood caries in a Medicaid population: a systems model analysis." Submitted for publication to Medicare and Medicaid Research and Review, January 2014.

- 7 Jared Fine, dental health administrator, Alameda County Public Health Department (communication 11/27/12); DentaQuest Institute ECC Initiative at <http://www.dentaquestinstitute.org/improvement-initiatives/early-childhood-carries-initiative>; Francisco Ramos-Gomez, UCLA (communication 11/27/12); Michael Shirtcliff, CEO of Advantage Dental in Oregon (communication 11/30/12).
- 8 <http://medicaid.gov/Federal-Policy-Guidance/Downloads/CIB-11-27-2013-Prevention.pdf>

CONTRIBUTORS:

- Burton L. Edelstein, DDS, MPH** (author), is professor of dental medicine and health policy & management at Columbia University Medical Center, and a senior fellow in public policy at the Children's Dental Health Project.
- Marcie S. Rubin, DrPH MPH MPA** (author), is assistant professor of dental medicine at Columbia University Medical Center.
- Joanna M. Douglass BDS, DDS** (subject matter editor), is associate professor of pediatric dentistry at University of Connecticut School of Dental Medicine.
- Elizabeth Krause**, editor-in-chief
Rhea Hirshman, editor