Two is Too Late

New York Times - March 6, 2012

"Preschoolers in Surgery for a Mouthful of Cavities"

THE PROBLEM

In the photo above, a 2 1/2 year old is going under general anesthesia for treatment of dental decay. **2 1/2 years old!** Although the scene above took place in Seattle, the exact same thing happens every Wednesday morning at Fletcher Allen hospital in Burlington (actually about 7 days per month … 4 patients per day), as well as in other hospitals around Vermont each year.

In FY 2009, **421 Vermont children** ages 0-5, were hospitalized to treat Early Childhood Cavities (ECC) - Average cost **$6,500 for total cost of $2.7 million. 351 (82%) of the 421 were Medicaid, costing $2.2 million.** In the same year, an additional nearly $1.0 million of Medicaid expenditures were for children ages 0-5 for routine restorative care in dental offices - fillings, stainless steel crowns and extractions. **Total cost - approximately $3 million to treat dental decay for children in Vermont UNDER 5 years of age**.

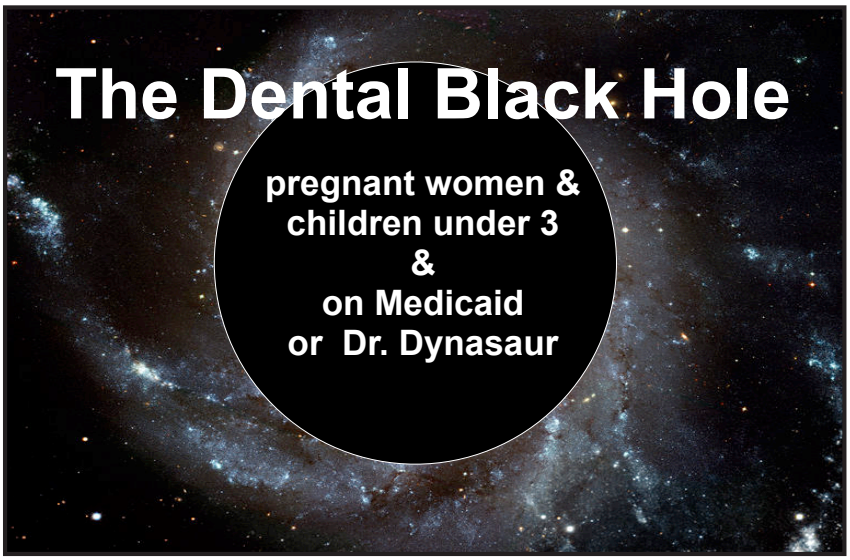
ONE INNOVATIVE SOLUTION

The Office of Oral Health, Vermont Department of Health, is proposing placing dental hygienists in each of the 12 district health offices in Vermont – half-time positions – with the goal of more appropriately addressing local oral health care needs (***specific focus on pregnant mothers and children from 0-5 years old - the WIC program)*** and coordinating local programs, such as the Tooth Tutors in elementary schools and Head Start.

These Public Health Dental Hygienists (PHDH) would work towards establishing close communication, at the local level, with pediatricians, obstetrics/gynecologists and family physicians, as well as dentists, dental hygienists and tooth tutors. Additionally, the public health dental hygienist in the district offices would connect, and work with, child care facilities, Head Start and other entities, such as Federally Qualified Health Centers. Prevention works.

Early Prevention is the key - Two is Too Late!

J. Steve Arthur, Dir. Office of Oral Health, VT Dept. of Health - February 2014



THE CURRENT SITUATION IN VERMONT & NATIONALLY

- Obgyns **do not** routinely counsel pregnant women concerning the importance of oral health for the pregnant woman OR the implications for the oral health of the new baby.
- Primary care physicians (pediatricians and family physicians) **do not** routinely incorporate oral health risk assessment and counseling in well baby visits.
- Dentists **do not** routinely accept children under age 3.
- WIC programs in district health offices do not routinely counsel pregnant women and mothers/caregivers of children under age 5 about the importance of oral health.

A Public Health Dental Hygienist in WIC can:

- Educate all District Health office staff in oral health
- Participate in WIC – pregnant mothers and children 0-5.
- Provide Oral Health Risk Assessments for children 0-5
- Provide oral health education and counseling
- Assist families in locating a dental home
- Therapeutic intervention (fluoride varnish)
- Support of all Tooth Tutors in the district
- Communicate with local dentists, other hygienists, pediatricians & family physicians
- Establish working relationships with Head Start, childcare facilities and schools
- Communicate with other dental providers (FQHCs, school based clinics, etc.)
- Collect data and participate in oral health surveys to determine oral health status of children, adolescents, adults and seniors
- Assist community water fluoridation efforts
- Participate as member of the Community Health Team

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Public Health Dental Hygienist in WIC clinic
Burlington District Health Office

WIC is the right place for early prevention!

A study was conducted by the Health Surveillance Division of VDH. In that study, **2,201** Medicaid eligible Vermont children aged 0-5 years, with a diagnosis of dental caries or unspecified disorder of the teeth, received dental restoration, endodontic or extraction procedures in 2009, accounting for 3,205 visits. Of these 3,205 visits, **421 (13%) took place in a hospital** outpatient setting. **Total costs to Medicaid: $2,210,131!**

These Medicaid data were matched or linked to birth data and WIC data with the following results:

- **81% of the mothers of the children requiring hospitalization** had been enrolled in WIC either pre- or post-partum.

- **76% of the mothers of the children requiring routine restorative care** (fillings, extractions, etc.) had been enrolled in WIC either pre- or post-partum.

Conclusion: For early oral health prevention and intervention, WIC is the place to be. Whether the mother is enrolled in WIC for pre-natal or post-partum counseling and nutrition, this is a unique opportunity for early oral health prevention, therapeutic intervention and care coordination to establish meaningful dental homes.

Additionally, the Public Health Dental Hygienist in WIC is in the perfect place, at the local community level, to "connect" with all other health care providers who can impact oral health outcomes for pregnant women and children ages 0-5.

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Early Prevention Works!

- Low-income children who have their first preventive dental visit by age one are not only less likely to have subsequent restorative or emergency room visits, but **their average dentally related costs are almost 40% lower ($263 compared to $447)** over a five year period than children who receive their first preventive visit after age one.

Savage Matthew, Lee Jessica, Kotch Jonathan, and Vann Jr. William. "Early Preventive Dental Visits: Effects on Subsequent Utilization and Costs". Pediatrics 2004; 114 pp.418-423

- In addition, cost-estimation modeling of preventive interventions predict **cost savings of $66-$73 per tooth surface** prevented from needing repair among young Medicaid-enrolled children.

Ramos-Gomez FJ, Shepard DS. "Cost-effectiveness Model for Prevention of Early Childhood Caries". J Calif Dent Association. 1999 Volume 27, pp. 539-44

- Another study estimates a **savings of 7.3 percent from regular screening and early intervention.**

Zavras AI, Edelstein BL, Vamvakidis A. "Health Care Savings from Microbiological Caries Risk Screening of Toddlers: a Cost Estimation Model". Journal of Public Health Dentistry. Summer 2000. 60(3) pp. 182-8

- An oral health promotion program based on repeated rounds of anticipatory guidance **initiated during the mother's pregnancy** was successful in reducing the incidence of early childhood tooth decay in these very young children.

Plutzer K, Spencer AJ., "Efficacy of an oral health promotion intervention in the prevention of early childhood caries." Community Dent Oral Epidemiol. 2008 Aug;36(4):335-46.

- Most recent 2012 research:

  Interventions targeting the youngest children (0-3) exerted the greatest benefit in reducing early childhood tooth decay.

  Interventions targeting the highest-risk children provide the greatest return on investment.

  All interventions produced substantial reductions in subsequent dental repair cost.

Gary B. Hirsch, SM; Burton L. Edelstein, DDS, MPH; Marcy Frosh, JD; Theresa Anselmo, MPH, BSDH, RDH, "A Simulation Model for Designing Effective Interventions in Early Childhood Caries". Prev Chronic Dis. 2012;9:E66. Epub 2012 Mar 1.

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Early Prevention Saves Money!

FY2009 – 421 children 0-5 were hospitalized to treat serious early childhood dental decay.

- Of the 421 children, 351 (82%) were paid for by Medicaid at a cost of approximately $6,500 per surgery for a total of $2.2 million.
- In addition to that $2.2 million, routine fillings and extractions for kids ages 0-5, on Medicaid, cost an approx. $1.0 million
- Bottom line: Approximately $3.0 million spent for kids age 0-5.

Hygienist costs:

- One 0.5 FTE hygienist cost approximately $30,000 (including benefit package)
- 12 0.5 FTE hygienists would cost approximately $360-400K

Prevention savings: **by investing $360-400K, we only have to save 16% of the $3.0 million to recoup those dollars.** In other words, by preventing only 55 children (of the 351) from hospitalization, we pay for all 12 dental hygienists in the district offices. This is feasible and achievable. Not only does this make good business sense, we would be saving many young children countless hours of pain and suffering.

How We Will Measure Success

Select a District Health Office with public health dental hygienist. The Division of Health Surveillance can merge databases from WIC, Medicaid claims, birth registry and residence location to arrive at the following measurments. For the data not available through Medicaid claims, data will be collected by the PHDH and/or CHW *(for instance, % of pregnant women referred to a dentist for oral health care)*.

- Select a calendar year PRIOR to employment of PHDH for baseline data and then measure the same indicators each year for 5 years :

    - % of children, ages 0-5, who had oral health risk assessments
    - % of children, ages 0-5, identified as “high” risk
    - % of children, ages 0-5, who had at least one FL varnish procedure
    - % of children, ages 0-5, hospitalized for dental decay
    - % of children, ages 0-5, treated in dental offices for dental decay
    - % of pregnant women receiving oral health consultation in WIC
    - % of pregnant women referred to a dentist for oral health care
    - % of pregnant women receiving restorative dental care during pregnancy or within 60 days postpartum

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