Carolina Dental Home: Linking Medical and Dental Practices

Larry P. Myers DDS,MPH, R. Gary Rozier, DDS, MPH, Rebecca S. King, DDS, MPH, Kelly Close, RDH, MHA

North Carolina Department of Health and Human Services - Division of Public Health - Oral Health Section and School of Public Health, University of North Carolina at Chapel Hill

Abstract

Background: Early childhood caries (ECC) is increasing in low-income North Carolina children, contributing to poor dental care access. Workforce shortages and other characteristics of the supply of dental professionals such as their inability or unwillingness to see young patients, contribute to much of this disease going untreated.

Project Objectives: 1) Enhance the ability of medical providers to provide risk-based dental referrals. 2) Improve the availability and adequacy of the dental workforce to meet the dental needs of preschool-aged children enrolled in Medicaid. 3) Increase the value that parents of Medicaid children place on early and regular dental visits.

Target population: The project includes 5 primary care medical practice, 10 general dental practices, 1 pediatric dentist and the local health department in three contiguous counties (Craven, Jones and Pamlico) in eastern North Carolina. It is deigned to meet the oral health needs of ~4,000 Medicaid, preschool-aged children.

Project Description: The overall goal of the project is to develop and pilot test a collaborative, coordinated and comprehensive community-based system that provides access to dental homes for targeted children. To "link" medical and dental practices, the project is developing an instrument known as the Priority Oral Risk Assessment and Referral Tool (PORRT) to guide physicians' dental referrals. Lower-risk children remain with the physician until 3 years of age. Moderate-risk children who get non-cavitated lesions are referred to trained general dentists, while those with cavitated lesions are referred to the pediatric dentist.

Methods / Strategies: Evidence-based risk assessment guidelines for physicians have been developed to identify children who are at elevated risk for ECC. To increase the capacity of the dental workforce, general dentists have been trained in the management of dental disease in young children. Nurse case managers, who are part of the Community Care of North Carolina (CCNC), a Medicaid funded initiative help ensure effective referrals through support of families and acting as a point of contact for medical and dental offices.

Results / Impact: Carolina Dental Home has resulted in the successful collaboration of key partners in medicine, dentistry and public health. Preliminary data suggest that such a collaboration can help ensure that young children have access to appropriate and timely oral health services provided in an efficient, coordinated delivery system. We hope to demonstrate that access to these services is effective in reducing the need for caries-related treatment services.

Conclusions / Key Lessons: A key component of this project is the support and enthusiasm of the pediatric dentist in the project area. General dentists would be less likely to participate without the knowledge that a specialist is available to answer their questions and accept patients that they are not comfortable treating. Another important ingredient is the collaboration with faculty at the UNC-CH School of Dentistry who provide training in infant oral care for general dentists and their staff. The nurse case manager is an invaluable resource to aid in the referral process. We anticipate that the final PORRT guidelines will help physicians feel more comfortable in making the decisions about which children need to be referred and increase referral rates.

Background

- **The prevalence of early childhood caries (ECC) is increasing in low-income children in North Carolina (NC), exacerbating an already unacceptable low level of access to dental care and widening the disparities gap among socioeconomic groups.**
  - 40,000 children begin kindergarten having experienced ECC
  - Most tooth decay occurs in low income and minority children
  - 33% of low-income children have untreated decay
- **Workforce shortages and other characteristics of the supply of dental professionals make access to care difficult in NC**
  - 47th in the number of dentists per population
  - Pediatric dentists are in short supply
  - 25% of dentists participate in Medicaid
  - 31% of Medicaid recipients <21 yrs visited a dentist in 2004; <20% of those <6 yrs of age

Introduction

- **"Into the Mouth of Babes" (IMB), a Medicaid program in which primary care medical professionals provide oral preventive care was developed to meet the needs of young children**
  - Oral evaluation
  - Fluoride varnish application
  - Parent counseling
- **These services are provided to Medicaid covered children from tooth eruption to age 3½ years with a maximum of 6 procedures**

IMB has been very successful:

- 425 participating practices
- Increased access by 30-fold
- More than 100,000 visits per year
- Reduction in caries-related treatment needs

However:

- Physicians have difficulty referring because of work force shortages and lack of confidence in oral health assessment results.
- General dentists lack knowledge and skills for infant and early childhood oral health care.

Objectives

- **Establish a collaboration among physicians, dentists and other community child care providers**
  - Develop definitive guidelines for IMB medical providers to promote risk-based dental referrals.
  - Increase availability of the dental workforce by providing continuing education for general dentists in infant and early child oral health care.
  - Provide education to parents about the importance of early dental care.
- **Expand access to dental services for children 0-5 years of age enrolled in Medicaid so they begin school without any untreated disease**

Strategies

- **Development and organization of collaboration**
  - Presented objectives of Carolina Dental Home to "Power Brokers":
    - President of the local dental society
    - Director of the county health department
    - Local pediatric dentist
    - Several local pediatricians and dentists
  - In-office meetings with local IMB pediatricians to present project
  - Met with general dentists in the office of the pediatric dentist to present project
  - Presented an overview of the project at joint CE meeting of medical and dental office staff and invited them to participate
  - Invitation letter mailed to all general dentists located in the pilot site area asking them to participate in the project
  - Worked closely with Medicaid to have dentists reimbursed at the same rate for follow-up preventive visits that are paid to physicians
- **Selection of pilot site**
  - Active IMB medical providers
  - Dentist-to-population ratio similar to the state average
  - Pediatric dentist
  - Safety-net dental clinic
  - Manageable Medicaid population younger than 6 yrs of age
  - Early Head Start program

- **Description and development of PORRT**

  Priority Oral Risk Assessment and Referral Tool (PORRT)
  - Reviewed available risk assessment and referral guidelines (n=12) and existing systematic review of caries risk.
  - Initial PORRT
    - 6 questions for the parent: oral hygiene, fluoride exposure toothpaste and drinking water), diet (bottle use, snacks and beverages), history of family dental problems
    - 4 clinical indicators from the oral evaluation: non-cavitated lesions, cavitated lesions, enamel hypoplasia, visible plaque
    - Weighted scoring system to derive an overall score for the 10 items
    - Priority of referral to a general dentist, pediatric dentist, or remain in the medical office for preventive care based on the overall score
  - Pilot tested acceptability in a large IMB pediatric practice
  - Modified the tool based on feedback
  - Introduced revised tool into all medical practices in the pilot area

Although the age 1 dental visit is an ideal goal, it is not possible to provide a publicly-insured child with a dental home by that age.

- **The aim of the PORRT is to coordinate the care of young children between the physician and the dental provider to guide their dental referrals.**

Children with obvious disease before 3 years of age

⬇

Pediatric Dentist

Non-cavitated lesions or high risk without disease

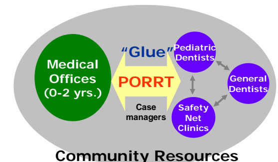
⬇

General Dentist

Low risk remain under the care of physicians and referred to a general dentist at 3 yrs

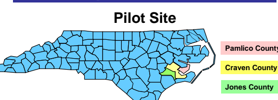
- **Continuing education for medical offices**
  - In-office training:
    - Review of IMB oral preventive procedures
    - Introduction and discussion of a pilot risk assessment tool
    - Review of possible clinical findings: normal mouth, plaque, decalcification cavitated lesions, and enamel defects
  - Chair of the UNC-CH Department of Pediatric Dentistry provided CE on infant oral health for all staff of IMB pediatric and family medicine offices and dentists at meeting of local dental society
- **Continuing education for dental offices**
  - Presentation of the risk assessment and referral tool and feedback on its potential effectiveness during first education session.
  - Discussion of methods to track pediatricians' referrals and letting the physician know the patient was seen or did not keep an appointment, i.e., ways to close the "feedback loop"
  - Dentists and their staff received "hands on" training by a faculty member from the UNC-CH School of Dentistry and the local pediatric dentist on the care of young patients, including instruction on child management and preventive counseling. This training took place in the pediatric dentist's office.
- **Case Managers**
  - 3 nurse case managers link medical and dental offices.
  - They are part of Community Care of North Carolina (CCNC), a Medicaid funded project to assist in the management of patient care.
  - If the child needs to be referred to a dental provider, the case manager contacts the dental office, assists in finding transportation if needed, and reminds the caregiver of their appointment.
  - The case manager determines if the appointment was kept if the medical office does not hear from the dentist.

Carolina Dental Home Model



Implementation

Pilot Site



Providers Enrolled in Project

- Five primary care IMB medical practices
- Ten general dentists
- One pediatric dentist
- Safety Net Clinic—Craven County Health Department

Results

Frequencies of Risk Factors using PORRT

[Practice Name]

Caries Risk Assessment Screening N=1,285

A. Questions for the Parent / Guardian

Please check the following questions with a YES or NO response:	Yes	No	Missing N	Missing %
1. Do you brush your child's teeth or clean their gums at bedtime?	[illegible]	[illegible]	[illegible]	[illegible]
2. If you brush your child's teeth, do you use toothpaste with fluoride?	[illegible]	[illegible]	[illegible]	[illegible]
3. Does your child drink tap water most of the time?	[illegible]	[illegible]	[illegible]	[illegible]
4. Does your child drink juice or sweetened drinks between meals?	[illegible]	32.1	17	[illegible]
5. Have you or anyone in your immediate family had dental problems?	[illegible]	[illegible]	[illegible]	[illegible]
6. Does your child sleep with a bottle filled with drinks other than water?	[illegible]	[illegible]	[illegible]	[illegible]

B. Questions for the Provider

Please check the following questions with a YES or NO response:	Yes	No	Missing N	Missing %
7. Does the child have cavities? (cavitated lesions)	[illegible]	[illegible]	[illegible]	[illegible]
8. Does the child have white spot lesions? (non-cavitated lesions)	[illegible]	[illegible]	[illegible]	[illegible]
9. Does the child have enamel defects?	[illegible]	[illegible]	[illegible]	[illegible]
10. Does the child have visible plaque on the teeth?	[illegible]	[illegible]	[illegible]	[illegible]
11. Does the child have any other oral conditions?	[illegible]	[illegible]	[illegible]	[illegible]

12. Does this child have special health care needs? ☐ Yes ☐ No

If yes, please describe: 5.2% [illegible]

[illegible]

On a scale of 1 to 10, what is this child's caries risk?

Please circle the number that indicates the level of risk.

0 1 2 3 4 5 6 7 8 9 10

Extremely Low Risk — Extremely High Risk

13. Does this child need to be evaluated by a dentist **as a result of this assessment**?

☐ Yes ☐ No ☐ Don't know

[illegible]

a. If yes, how urgent is it for this child to be evaluated by a dentist?

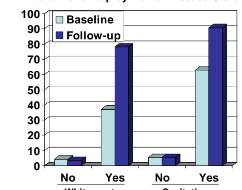
__ 1 Not urgent at all

__ 2 Urgent

__ 3 Very Urgent

__ 4 Don't know

Percent of Patients Referred at Baseline and Follow-up by Dental Disease Status



Baseline n=903, Follow-up n=433

- Collaboration between medicine, dentistry, and public health established
- Preliminary evidence that risk-based referrals are occurring:
  - Increase in the referral rate for children with white spot and cavitated lesions
- Policy changes in Medicaid to provide the same reimbursement for both dentists and physicians for preventive visits

Planned Activities

- Complete a formal systematic review of the literature on ECC risk factors
- Revise PORRT and referral guidelines based on experience with its use in practice
- Complete evaluation of Carolina Dental Home effectiveness
- Complete policy change process to increase the frequency interval for preventive visits for high risk children to every four months, or a maximum of eight visits before the age of three

Conclusions/Key Lessons

- Participation by a pediatric dentist is necessary to provide a needed referral source for general dentists who do not want to provide restorative care.
- Collaboration with a school of dentistry is important to provide training in infant oral care for general dentists and their staff.
- A case manager is a valuable resource to aid in the referral process.
- Referral guidelines help physicians who lack confidence in their ability to evaluate the oral health needs of children to feel more comfortable in making the decision about which children need to be referred and to which type of dental provider.

Acknowledgements

- Funded by a grant from the Department of Health and Human Services, Health Resources and Services Administration entitled: Grants to States to Support Oral Health Workforce Activities. Grant No. T12HP07711
- North Carolina Division of Medical Assistance
- Community Care of North Carolina
- Jim Congelton, DDS, MS
- Leslie Zeldin, UNC School of Dentistry
- Bill Vann, UNC School of Dentistry