Innovations in Family Medicine Education

Joshua Freeman, MD, Feature Editor
Alison Dobbie, MD, Feature Editor

Editor’s Note: Send submissions to jfreeman3@kumc.edu. Articles should be between 500–1,000 words and clearly and concisely present the goal of the program, the design of the intervention and evaluation plan, the description of the program as implemented, results of evaluation, and conclusion. Each submission should be accompanied by a 100-word abstract. Please limit tables or figures to one each. You can also contact me at Department of Family Medicine, KUMC, Room 1130A Delp, Mail Code 4010, 3901 Rainbow Boulevard, Kansas City, KS 66160. 913-588-1944. Fax: 913-588-2496.

Incorporating Caries Prevention Into the Well-child Visit in a Family Medicine Residency

Marie N. Wawrzyniak, MS, RN; Suzanne Boulter, MD; Christos Giotopoulos, DDS; Janice Zivitksi, RDH

From the Capital Region Family Health Center, Concord, NH (Ms Wawrzyniak, Dr Giotopoulos, and Ms Zivitksi); and Department of Pediatrics, New Hampshire-Dartmouth Family Practice Residency Program, Concord, NH (Dr Boulter).

Background: The Centers for Disease Control and Prevention reports that topical fluoride application may prevent early childhood caries in high-risk populations. Yet, there are few published descriptions of caries prevention curricula for primary care residents. Methods: In 2003, the New Hampshire-Dartmouth Family Practice Residency hired a dentist and a hygienist to develop and implement a didactic and practical oral health curriculum. Results: Over 2 years, faculty and residents competent with oral health screening and fluoride varnish application rose from 0% to 69% to 100%. In the same period, the percentage of well-child visits (ages 6 months to 3 years) with documented oral health screening and fluoride varnish application rose from 0% to 80% to 91%. Conclusions: Our successful model of teaching early childhood caries prevention services within the well-child visit could be replicated by other residency programs. Programs may need start-up funding for initial training by dental professionals.

(Fam Med 2006;38(2):90-2.)

The medical community increasingly is recognizing caries as an infectious disease, and researchers have urged primary care providers to integrate caries prevention (including fluoride varnish) into well-child health visits. The Centers for Disease Control and Prevention (CDC) reports that topical fluoride application may prevent early childhood caries in high-risk populations (quality of evidence Grade 1, strength of recommendation A). High-risk populations for dental caries include children with low socioeconomic status, parents with low education levels, and lack of dental insurance and/or access to dental services.

Despite the quality of evidence supporting caries prevention, a 2005 PubMed literature search revealed only one article describing a caries prevention curricula for primary care residents. In 2003, faculty at the New Hampshire-Dartmouth Family Practice Residency added a caries prevention component to our existing well-child curriculum. The new curriculum contained both didactic and clinical instruction in early childhood caries prevention. The curriculum’s goals were to (1) demonstrate that our providers could become competent in early childhood caries prevention and (2) routinely deliver oral health screening and apply fluoride varnish dur-
ing well-child visits for children up to age 3 years. Our outcome measures were (1) percentage of providers certified as competent in caries prevention after direct observation by a dentist and (2) percentage of well-child encounters documented as incorporating caries prevention in our electronic health record.

Methods

Setting and Subjects
The Capital Region Family Health Center, a department of Concord Hospital, is the clinical training site for the New Hampshire-Dartmouth Family Practice Residency Program. This community-based, university-affiliated residency program has eight residents per year.

Needs Assessment
Most children served by our Health Center are of low socioeconomic status. While many have Medicaid, most lack access to a dental care home. As part of our ongoing community health assessment, we routinely review examination results from the children’s dental clinics. Examination of DMFTS data (decayed-missing-filled-teeth-sealants) on the clinics’ low-income children revealed an established pattern of decay by the time these children accessed routine preventive dental care. The mean DMFTS for 380 children served in the year 2000 was three decayed teeth, two filled teeth, and three sealants per child. Since physicians from the New Hampshire-Dartmouth Family Practice Residency provide primary care for this population, we addressed this need by designing and implementing an early childhood caries prevention curriculum for family medicine residents.

The New Hampshire-Dartmouth-Concord Caries Prevention Curriculum
Our curriculum was funded by a 3-year award from the Endowment for Health, Concord, NH. We hired a dentist at 8 hours per week for 3 years and a registered dental hygienist at 30 hours per week for 2 years. The dentist and a faculty pediatrician designed a didactic and clinical oral health curriculum for children up to 3 years of age. Two 1-hour didactic sessions covered the caries disease process and caries prevention, oral health assessment and promotion, and the evidence for and use of topical fluoride. The dental hygienist, under the dentist’s supervision, then conducted individual clinical training with faculty and residents during well-child visits. During this one-on-one training, the hygienist demonstrated parent education, oral health screening, and fluoride varnish application. Over 2 years, the percentage of faculty and third-year residents documented as competent with oral health screening and fluoride varnish application rose from 0% to 69% (22 physicians) to 100% (32 physicians).

Service Delivery
Over the 2-year intervention period, the percentage of well-child visits (ages 6 months to 3 years) documented oral health screening and fluoride varnish application rose from 0% to 91% (198 children) to 91% (198 children).

Evaluation—Goal 1: Demonstrating Competency in Caries Prevention
After the didactics and clinical training, the dentist directly observed every resident and faculty member and assessed their competence in three skills—patient education, oral health screening, and fluoride varnish application. Generally only one direct observation was required to demonstrate competency.

Curriculum Evaluation—Goal 2: Documenting Service Delivery
To document service delivery, we measured the percent of well-child visits (ages 6 months to 3 years) during which residents and faculty documented oral health screening and fluoride varnish.

Results

Competency in Caries Prevention
Over 2 years, the percentage of faculty and third-year residents documented oral health screening and fluoride varnish application rose from 0% to 91% (22 children) to 91% (198 children).

Conclusions
Our model of teaching family medicine residents and faculty to provide early childhood caries prevention services within the context of the well-child visit was successful and could be replicated at other residency programs. Programs may require start-up grant funding for initial “train the trainers” faculty development. After being trained, our faculty changed their practice to integrate caries prevention strat-
egies into their routine well-child care. Faculty now model caries prevention and provide the one-on-one resident training previously provided by dental professionals. We do not yet know if graduating residents incorporate caries prevention into well-child care in their practices.

Acknowledgments: This project was funded by a grant from the Endowment for Health, Concord, NH.

Corresponding Author: Address correspondence to Ms Wawrzyniak, Capital Region Family Health Center, 250 Pleasant Street, Concord, NH 03301, 603-227-7000, ext 4711. Fax: 603-228-7307. mwawrzyn@crhc.org.

REFERENCES
