Pediatric Residents' Knowledge and Comfort With Oral Health Bright Futures Concepts: A CORNET Study

Rani S. Gereige, MD, MPH, FAAP; Niramol Dhepyasuwan, MEd; Karla L. Garcia, MD; Rukmani Vasan, MD, MPH, MSEd; Janet R. Serwint, MD; Henry H. Bernstein, DO

From the University of South Florida, Department of Pediatrics, Tampa, Fla (Dr Gereige); CORNET, Academic Pediatric Association, McLean, Va (Ms Dhepyasuwan); T. C. Thompson's Children's Hospital, Chattanooga, Tenn (Dr Garcia); University of Southern California, LAC+USC Medical Center, Los Angeles, Calif (Dr Vasan); Department of Pediatrics, Johns Hopkins University School of Medicine, Baltimore, Md (Dr Serwint); and Cohen Children's Medical Center of New York, New Hyde Park, NY (Dr Bernstein)
The authors declare that they have no conflict of interest.
Address correspondence to Rani S. Gereige, MD, MPH, FAAP, Medical Education and DIO, Nicklaus Children's Hospital, 3100 SW 62nd Ave, Miami, FL 33155 (e-mail: Rani.Gereige@mch.com).
Received for publication October 23, 2014; accepted April 19, 2015.

ABSTRACT

OBJECTIVE: Training residents in oral health helps eliminate disparities and improves access. The American Academy of Pediatrics Bright Futures Guidelines curriculum is used as a training guide. We assessed knowledge, confidence, and perceived barriers to incorporating Bright Futures oral health concepts into well-child care for children below 3 years in a national sample of pediatric residents.

METHODS: A sample of postgraduate year 1 and 2 residents from CORNET sites completed demographic, Bright Futures oral health concepts confidence and knowledge cross-sectional surveys before any intervention. Measures were tested for reliability using Cronbach's alpha coefficient.

RESULTS: One hundred sixty-three residents from 28 CORNET sites completed the surveys. One third reported no prior training in oral health. Time (42%) and knowledge (33%) led the perceived barriers to addressing these concepts in well visits. Although 63% rated their confidence as excellent in identifying tooth decay risk factors, a significant percentage rated their oral health risk assessment skills as poor or neutral (64%) and identifying caries at examination (53%). Only 49% conveyed oral health messages during encounters and 80% correctly scored 75% or higher on knowledge questions.

CONCLUSIONS: This cross-sectional study shows that residents from a wide geographic range have high self-reported oral health knowledge but low perceived skills and competency in clinical implementation. Lack of time and knowledge in identifying caries led the perceived barriers. Barriers are addressed by implementing oral health curricula that promote competence and skill-development. This study helps programs effectively implement Bright Futures concepts to train graduates to incorporate oral health in well visits.

KEYWORDS: Bright Futures; CORNET; knowledge; medical education; oral health; resident education

ACADEMIC PEDIATRICS 2015;15:551–556

WHAT'S NEW

This cross-sectional assessment of a geographically diverse multi-institutional sample of residents adds a more detailed look at barriers to applying Bright Futures oral health concepts in continuity clinic. This helps educators design implementation strategies to supplement knowledge and confidence acquisition.

THE 2000 SURGEON General's report on oral health in America highlighted the disparities in oral health and access to care for vulnerable populations, especially poor and underserved children, and called for action.[1] The American Academy of Pediatrics (AAP), the American Academy of Family Physicians, and the Society of Teachers of Family Medicine have responded to this call by supporting training programs designed to increase physicians' engagement in oral health, particularly for high-risk and vulnerable children.[2] The 2003 AAP policy statement "Oral Health Risk Assessment, Timing, and Establishment of the Dental Home" recommended the incorporation of oral health risk assessment, anticipatory guidance, and education into the well-child visit by 6 months of age. The pediatrician's role in oral health was further formalized in 2008 through the publication of the AAP policy statement, "Preventive Oral Health Interventions for Pediatricians."[3]

Despite progress in addressing oral health issues, disparities remain. Dental caries are the most common chronic

disease of childhood, affecting 5 to 8 times as many children as asthma, including more than 50% of children by midchildhood and about 80% by late adolescence.[4]

Oral health disparities are multifactorial and are related to access to care as well as financial, cultural, and public health causes. In addition, failure to integrate oral health into pediatric training can lead directly to poorer health outcomes.[4] A 2008 AAP periodic survey of fellows[3] found that only 36% of respondents reported any previous training in oral health, with 13% receiving at least some training in medical school, 16% in residency, and 22% after residency. Those pediatricians without any formal training cited this as a barrier to providing oral health care to their patients younger than 3 years old. Many practicing pediatricians lack the scientific knowledge about transmissibility of caries, sealants, or fluoride varnishes.[4]

The AAP Bright Futures guidelines[5] incorporated oral heath risk assessment, referral, and anticipatory guidance into its oral health curriculum. One pediatric-focused Bright Futures oral health curriculum has been documented to have a positive impact on resident knowledge and confidence.[6] What this study adds to the previously published study is a more detailed assessment of the perceived barriers to the clinical application of oral health knowledge. Although a majority of pediatric training programs in the United States use the Bright Futures guidelines concepts as a guide for residents' ambulatory and continuity clinic experiences, pediatric residents' perceptions, knowledge, and barriers to implementation of its oral health elements are not known. Understanding these concepts is valuable to training programs and continuity clinic directors to design and implement strategies in the clinical setting to supplement learners' knowledge and confidence acquisition.

The main objective of this study is to assess the knowledge, confidence, and perceived barriers to incorporating Bright Futures oral health concepts and promotion into routine well-child care for children younger than 3 years in a national sample of pediatric residents.

PATIENTS AND METHODS

STUDY POPULATION

Sample.—Pediatric categorical residents were eligible if their continuity practice was enrolled in the Continuity Research Network (CORNET) and had agreed to participate in the study. CORNET is a national primary care practice-based research network of pediatric continuity clinics endorsed as a core function of the Academic Pediatric Association. CORNET research goals include the study of health care issues of minority and low-income children, health disparities, and resident education. When study enrollment began in 2007, all 77 CORNET site champions enrolled at that time were sent an invitation to participate. Although 31 programs indicated initial interest, 26 programs completed the study. Figure 1 shows the geographic distribution of the participating sites compared to all CORNET sites.

Enrollment.—Eligibility criteria included residents at postgraduate year 1 or 2 levels of training in order to assure study completion before their general pediatric training was finished. Recruitment of only a subset of all possible residents from each continuity practice was decided to minimize the local research burden; site champions self-determined the number of residents who would participate. Individual resident recruitment was at the discretion of site investigators. Recruitment methods were random and varied from residents' voluntary self-selection, to including those residents in the study faculty's continuity group for ease of implementation of the Bright Futures oral health curriculum. A range of 4 to 12 residents were recruited per site. The completion of the preintervention Web-based surveys, sent directly to participants as a link, took place from November 2007 to December 2009 and reflected the time frame before exposure to an oral health curriculum.

STUDY IMPLEMENTATION

The administration of the preintervention surveys was the first phase of a larger cluster randomized controlled trial to

Figure 1. *Map shows the location of the participating sites. Drop points indicate Bright Future Oral Health Project participating sites; drop points and dots, all CORNET sites.*