

What's in a dental practice-based research network?

Characteristics of Northwest PRECEDENT dentists, their patients and office visits

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Recent emphasis at the National Institutes of Health (NIH), Bethesda, Md., on translation of research into practice identified research networks as a major tool in NIH's "roadmap" for re-engineering the clinical research enterprise.¹ This prompted the National Institute of Dental and Craniofacial Research (NIDCR), Bethesda, to fund three general dental practice-based research networks (PBRNs).²⁻⁴ If we apply the Agency for Healthcare Research and Quality's definition of primary care PBRNs⁵ to the dental field, a general dental PBRN can be defined as a group of general dental practices devoted principally to the primary dental care of patients and affiliated in their mission to investigate questions related to dental practice and to improve the quality of primary dental care. In the PBRNs, practicing dentists work collaboratively with academic investigators to develop research questions and research protocols, conduct studies and translate new knowledge into practice. Academic investigators provide the research methodology and the network's organizational

ABSTRACT

Objectives. The authors conducted a study to describe the general dentists, practices, patients and patient care patterns of the dental practice-based research network (PBRN) Northwest Practice-based REsearch Collaborative in Evidence-based DENTistry (PRECEDENT).

Methods. Northwest PRECEDENT is a dental PBRN of general and pediatric dentists and orthodontists from five U.S. states in the Northwest: Idaho, Montana, Oregon, Utah and Washington. The authors collected data from general dentists in Northwest PRECEDENT (n = 101) regarding the diagnosis and treatment of oral diseases in a survey with a systematic random sample of patients (N = 1,943) visiting their practices. They also obtained demographic data from the general dentists and their patients.

Results. The authors found that 50 percent of the general dentists were 51 to 60 years of age, 14 percent were female and 76 percent were non-Hispanic white. More than one-half (55 percent) of the dentists had practiced dentistry for more than 20 years, 83 percent had private solo practices and 32 percent practiced in rural community settings. The majority (71 percent) of patients visiting the dental practices was in the age range of 18 to 64 years, 55 percent were female and 84 percent were non-Hispanic white. In terms of reasons for seeking dental care, 52 percent of patients overall visited the dentist for oral examinations, checkups, prophylaxis or caries-preventive treatment. In the preceding year, 85 percent of the patients had received prophylaxis, 49 percent restorative treatments, 34 percent caries-preventive treatments and 10 percent endodontic treatments.

Conclusions. Northwest PRECEDENT general dentists are dispersed geographically and are racially and ethnically diverse, owing in part to efforts by network administrators and coordinators to enroll minority dentists and those who practice in rural areas. Estimates of characteristics of dentists and patients in Northwest PRECEDENT will be valuable in planning future studies of oral diseases and treatments.

Key Words. Dental private practice; dentists; office visits; research. *JADA 2010;141(7):889-899.*

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structure for the development and conduct of the studies. The objectives of the network are to create the structure and process needed for studying the effectiveness of the routine care in general dental practice settings; to provide investigative experience for dental practitioners as they contribute to the evidence base for dental practice; and to disseminate study results and help accelerate the translation of research into practice.

The Northwest Practice-based REsearch Collaborative in Evidence-based DENTistry (PRECEDENT) is one of the three general dental PBRNs funded by NIDCR in 2005. It includes general dentists, pediatric dentists and orthodontists from five U.S. states in the Northwest: Idaho, Montana, Oregon, Utah and Washington. The schools of dentistry at the University of Washington (UW), Seattle, and the Oregon Health & Science University (OHSU), Portland, organize and administer the network activities. As new PBRNs develop, they seek opportunities to create a sense of identity and to engage the network members in the research activities.

For a network's first study, it is important that investigators take the following steps to ensure the success of the project and to maintain a balance between methodological rigor and ease of conduct:

- identify a practical and relevant study topic;
- develop a simple protocol for conduct of the study;
- involve network members in the initial phases of the study development.

A first study designed to gather information regarding network dental practices, their dentists, their patients and patient visits can meet these criteria and provide valuable information for future research projects and for comparisons with other populations. Although the Centers for Disease Control and Prevention⁶ (CDC), Atlanta, in its National Health and Nutrition Examination Surveys, has reported about the prevalence of oral diseases in the general population, little is known about the prevalence of oral diseases among patients in the United States who visit their dentists. Our aim in this study was to describe the dentists, practices, patients and patient care patterns of Northwest PRECEDENT. We obtained our data from PRECEDENT Study 001, a study that all general dentist members were required to complete on joining the network and that consisted of an evaluation of the oral health conditions of a random sample of 20 patients in each network practice. Although Northwest PRECEDENT now also includes pediatric dentists

and a network of orthodontists, our study was limited to general dentists and their practices.

METHODS

Study design and selection of practices and patients. Study design and settings. We conducted a cross-sectional study of the oral health conditions of the patients and the treatments performed by general dentists in their dental practices from September 2006 through July 2009 in Northwest PRECEDENT, a dental PBRN. When we terminated the study, 93 dentists had enrolled 20 patients, two had enrolled 19 patients and six had enrolled from five to 12 patients during an average of 2.5 months (standard deviation = 2.9) per practice, for a total of 1,943 participants from 101 practices. One dentist quit the network before completing the study. We enrolled dentists in the study in a sequential manner, so the last seven had not reached their goal of 20 patients when enrollment ended.

Practice recruitment. Northwest PRECEDENT chair investigators invited dentists to join the network by means of oral presentations they gave at national and regional conferences and study club meetings. Press releases and articles about Northwest PRECEDENT were published in academic, professional and news journals, and network chair staff members sent letters of invitation to licensed dentists in Idaho, Montana, Oregon, Utah and Washington. Interested dentists filled out an online registration at the Northwest PRECEDENT Web site ("www.nwprecedent.net").

Practice selection. To be eligible to participate in the studies of Northwest PRECEDENT, general dentists were required to take part in a five-hour continuing dental education course regarding the principles of good clinical research⁷ and instruction in responsible conduct of research in humans and regarding relevant Health Insurance Portability and Accountability Act (HIPAA) regulations for research. Regional coordinators invited practicing general dentists who completed

ABBREVIATION KEY. CDC: Centers for Disease Control and Prevention. HIPAA: Health Insurance Portability and Accountability Act. IRB: Institutional review board. NIDCR: National Institute of Dental and Craniofacial Research. NIH: National Institutes of Health. OHSU: Oregon Health & Science University. PBRN: Practice-based research network. PRECEDENT: Practice-based REsearch Collaborative in Evidence-based DENTistry. UW: University of Washington.

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