Creating a Research Network of General Dental Practitioners: Lessons Learned from a Pilot Project

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Given the demand for evidence-based practice (EBP) in health care and, more recently, in research fields, for applied research and for translation of generated knowledge into practice, finding a means to link research with practice is now essential. One approach is to create networks of health care providers who are prepared to be involved in research, particularly by providing information about their patients and the treatments they receive. A number of such networks of physicians and dental practitioners already exist in the United States and Europe.1-5

Such initiatives can be particularly useful in dentistry, where practice is seldom supported by systematic collection of process or outcomes data from the setting where the vast majority of dental care occurs, i.e., private dental offices. This is not surprising given that most dental practitioners in industrialized nations work in independent private businesses. However, if we can create and maintain collaborative networks involving researchers and dental practitioners, we would have a functional foundation for EBP, knowledge translation and organized dentistry.

What would it take to establish such a network? Is it feasible? Will it work? We attempt to answer these questions based on findings from a pilot research network project that was conducted in Montreal, Canada, and evaluated using one-on-one interviews with selected participants.

Methods

An online network was established by researchers at McGill University’s faculty of dentistry to test the feasibility of creating and maintaining a network of general dental practitioners (GDPs) for 1 year. The principal investigators (CB, PA) randomly recruited 11 Montreal GDPs. The sample size was restricted by budget and logistic concerns. Participating GDPs were provided with free computers and the necessary software. They collected and transmitted data to the researchers via the study’s website on a weekly basis.

Over the period of 1 year, 16 research topics covering descriptive epidemiology, treatment evaluation and dental office management were addressed. GDPs or others in their offices collected data on paper sheets, then entered the summary data on the study website by the end of each week. At the completion of each research topic, data from all GDP offices were collated and analyzed by the researchers, on both an individual GDP office and group basis. The resulting reports were returned to the GDPs regularly along with a commentary by the researchers.

All 11 GDPs remained in the project for its duration. They were able to collect and transmit data for all the studies in the specified time, producing a response rate of 96.7%.

The principal investigators wanted to obtain more in-depth feedback from project participants about their experience, how they benefited from the research outcomes and how they would like to use the network in the future. Thus, qualitative one-on-one interviews were conducted with selected participants (4 researchers and 4 GDPs).

Overall Assessment

Overall, the pilot project was rated satisfactory by the participants, and the establishment of a research network for GDPs was shown to be feasible, although there were several shortcomings, mainly due to the small sample size and small budget.

Analysis of the qualitative data collected during the interviews yielded interesting findings that highlighted differences between the researchers and the GDPs and showed that, although creating a network is feasible, several issues must be carefully addressed to meet the goals of such an initiative.

Participating researchers and GDPs had different motives for joining the network. The GDPs viewed the network mainly as a means to reduce professional isolation—to connect with other professionals and academia. The researchers saw the network mainly as a tool to generate more research (i.e., a source of data from an important but largely untapped group) and to promote EBP.
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Evaluating the Research Element

During the interviews, discussions about the research element of the pilot network revealed crucial differences. The researchers believed that the studies were interesting and useful to dental practice, whereas the GDPs found the topics less "exciting" and not very useful. The formulation of research questions had been carried out mainly by the researchers; although the GDPs were encouraged to provide feedback and were sent outlines of the studies well in advance, they remained passive and carried on with data collection. This indicates that the success of the mechanical aspects of the pilot network, i.e., data collection, data processing and distribution of results, does not necessarily lead to practical application and uptake of new information.

In addition to the small sample size and lack of generalizability of findings, other factors may have contributed to the unmet expectations. A review of the project documents revealed that the GDPs and researchers had met only twice: once at the beginning of the project and once at the end. During the rest of the time, they communicated mainly through the project coordinator. This lack of interaction may have prevented potential improvements over the course of the project.

The Potential of Research Networks

Collaborative networks bring together people from different backgrounds, with different attitudes and expectations. In its Network Notes, the Canadian Health Service Research Foundation highlights the importance of regular communication and interaction among network members to find common grounds and establish common goals: "In order to encourage an effective knowledge network, it is important to foster opportunities, such as face-to-face exchanges, that allow for the development of a shared vocabulary and a common understanding of often disparate objectives, practices and experiences."6

From a knowledge transfer perspective, 2 important elements are necessary to ensure application of new knowledge: integration and simplification.7 Integration can be accomplished by involving the research users in the formulation and conduct of research, and simplification means presenting the information in a form that is easily understood by the user. In the case of the pilot network, those 2 elements were not fully addressed. In addition, some form of research education could have been used to prepare the GDPs for their new role. For example, the Practitioners Engaged in Applied Research and Learning network,5 a dental research network launched in the United States in 2004, requires its participating clinicians to complete a research training course before becoming active members of the network.

The attitudes of the GDPs and researchers in our study regarding the potential for large-scale electronic collaboration were unanimously positive and, indeed, it is only a matter of time before the integration of information technologies into organized dentistry becomes indispensable. However, we believe it is important, when planning a large-scale network, to consider the needs and readiness of prospective participants for such an initiative to determine the framework and scope of the network.

Recommendations

Based on the outcomes of our study, in forming a large-scale research network, we recommend:

- involving a team of researchers from academic institutes and working in conjunction with dental organizations
- providing research education to participating dentists and involving them in the process of research synthesis
- frequently evaluating the impact of the research outcomes on the members of the dental community: dentists, researchers and policymakers.

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