Laboratories of primary care

Practice-based research networks in Canada

Craig Jones, PHD

Practice-based research networks (PBRNs) are groups of practices networked together to serve ambulatory patients, usually affiliated with professional organizations or university schools of medicine, with the objective of asking and answering questions that arise from daily practice. They are, therefore, of central concern to clinicians and patients.

Family practice is complex, dealing, as it must, with the interaction between disease and patients' families and socioeconomic circumstances, the meaning of sickness, and the setting of the doctor-patient encounter. Practice-based research networks serve as instruments for building the evidence base at the point of primary care delivery. Since their emergence in the late 1960s—initially as sentinel networks to track morbidity, mortality, seasonality, and prevalence of disease—PBRNs have proliferated across Europe, the United Kingdom, Australia, and the United States.[1] Their value is only beginning to be appreciated in Canada, as indicated by the development of the Thames Valley Family Practice Research Unit, the North Toronto Primary Care Research and Development Network (Nortren), Queen's University's Network for Studies in Primary Care, and The Alberta Recording and ReseArch NeTwork (Tarrant).

Practice-based research networks are the laboratories of primary care. Dispersed across a region and networked through shared research protocols and regular communication with the coordinating centre, this kind of organization constitutes what Dr Larry Green calls a "reusable space shuttle"—the permanent platform upon which new research ideas can be tested and new patient care lessons can be learned.[2] Ideas for network projects can be—indeed ought to be—solicited from participating primary care providers who then become the sources of raw data from which outcomes are derived and results published and translated into practice. For participating family practitioners, these networks constitute a virtuous circle of practising, learning, and reflecting, which is turned back into practice to improve patient care and physician satisfaction.

Solid evidence now confirms primary care is central to the success of a health care system where success is measured in terms of improved outcomes for morbidity and mortality, universal accessibility, coordination and integration of care, provision of care at the most appropriate level, a narrowing disparity in health between various populations, accountability, and cost containment.[3] Starfield's comprehensive analysis of the relative benefits of primary care to the well-being of a population argues in favour of front-line, first-point-of-contact care as being the component of a health care system that distinguishes the best performance. Put simply, Starfield argues that the more highly developed the primary care sector is, the better patient outcomes are across the board.[4]

In recognition of this, other modern health systems have moved to redress the imbalance in the flow of biomedical resources to research activities. There are currently 42 different PBRNs operating across England, Scotland, and Wales as a consequence of an infusion of resources from the National Health Service. By one estimate, 1 in 10 family physicians in the United States is participating in a PBRN. The United States Agency for Healthcare Research and Quality had awarded planning grants to 19 networks across the United States as of September 2000. As expressed in the autumn 2004 issue of the *Annals of Family Medicine,* the consensus on PBRNs is that this type of organization constitutes a "potent vehicle for direct and rapid dissemination of research findings that can improve the outcomes of care."[3] A PBRN is acknowledged as "the essential laboratory for the generation of new knowledge that is relevant to the types of problems and patients seen in primary care practice."[5]

Canada is the laggard among modern health care systems when it comes to PBRNs. There is not, despite vigorous lobbying, even an establishment within the Canadian Institutes of Health Research devoted to this crucial component of our health care service and delivery system.

The primary need is for infrastructure funding to accomplish the following.

- Build capacity among community-based primary care physicians enabling more of them to become principal investigators, thereby adding to the primary care evidence base.
- Underwrite the time of primary care researchers to mentor, encourage, and support community physicians who want to enhance their practices with research.
- Enable networks' support and research staff to work closely with and to assist physicians' office staff in tasks related to primary care research.
- Ensure that office space and equipment—computers, personal digital assistants, photocopiers, fax machines, and computer software—are available and able to be deployed for various research projects.

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- Enable talented and capable primary care physicians and principal investigators to design and conduct cutting-edge primary care research projects that arise directly from their experience as front-line care providers.
- Compensate office staff and patients for their participation in primary care research projects.

Additional money is needed for secretarial support, library collections, literature reviews, telephones, information technology and support, research assistants, and methodologic assistance in the design of research projects.

Enabling more primary care physicians to become principal investigators would also have the salutary effect of making family practice more appealing to medical students who currently believe, wrongly, that they have to relinquish research aspirations if they choose a career in family medicine. Nothing could be further from the truth, as Dr Larry Green told the Annual Research Conference of the Network for Studies in Primary Care in 2004.[2] Canadians need high-quality research conducted at the primary care level for 4 reasons.

- Clinical and preventive care must be underpinned by evidence.
- The bulk of such care is delivered in primary care.
- The evidence to underpin this care cannot be informed by laboratory- or hospital-based research alone.
- Practice-based research benefits both patients and practitioners—research is incorporated directly into practice guidelines, increasing practitioners' ability to reflect upon and improve their practices, hence improving patients' direct care.

Practice-based research networks have proven their value in Europe, the United Kingdom, Australia, and the United States where they have "shifted the focus of research from technology in the hospital to patients and their diseases in the community."[6] We now need to turn our efforts to nurturing these laboratories, to cultivating community-based principal investigators, and to aggressively building the evidence base to enhance primary care across Canada.

Dr Jones *was Coordinator of the Network for Studies in Primary Care at the Centre for Studies in Primary Care at Queen's University in Kingston, Ont, at the time of writing.*

Correspondence to: **Dr Craig Jones,** *c/o* **Dr Richard V. Birtwhistle,** *Director, Centre for Studies in Primary Care, PO Bag 8888, 220 Bagot St, Kingston, ON K7L 5E9; telephone 613 544-3400, fax 613 544-3245; e-mail* **jonesc2@hdh.kari.net**

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