

Practice-based research networks

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This article is the fourth in a series on general practice research in Australia. The series explores strategies to strengthen general practice research and further develop the evidence base for primary care.

Background

Practice-based research networks (PBRNs) are collaborations between clinical practitioners and academics. PBRNs aim to foster research in general practice through opportunities to learn more about how to undertake and participate in research, and assist in translating new knowledge into practice. Critically, PBRNs also offer clinicians the chance to contribute to research by posing questions of importance to quality clinical care.

Objectives

The objectives of this article are to describe why PBRNs are needed, the current situation regarding PBRNs in Australia, and why Australian general practice and patient outcomes could benefit from further investment in PBRNs.

Discussion

PBRNs may assist by engaging more general practitioners (GPs) in the research process, thereby increasing the relevance of the research questions posed to the outcomes of the population GPs work within. Unlike similar countries (eg UK and The Netherlands), Australia no longer has any funding to support the activities of primary-care based PBRNs.

Professor Chris van Weel describes the event that led to the formation of possibly the world's first practice-based research network (PBRN) in The Netherlands. In the 1960s, a professor of paediatrics complained that general practitioners (GPs) should not intrude into the management of measles, which he considered was the domain of paediatricians. Dutch GPs at the time knew that they managed the majority of measles cases, but there was no evidence to support this observation.¹

You are perhaps a curious GP who has thought of learning more about, or even getting involved in, research. Many GPs have been inspired by stories, such as that of Dr William Pickles who traced an outbreak of viral hepatitis through systematic observations in his patients in a rural UK practice.²

Currently, The Royal Australian College of General Practitioners' (RACGP's) curriculum includes GP 'research to improve quality care' as a core skill (CS16 Core Skills unit); however, earlier generations of GPs in training had few opportunities to learn such skills.

One way in which GPs can be involved in research is through local PBRNs. Primary care PBRNs have been described in various ways, but overall, these are 'sustained collaborations between practitioners and academicians dedicated to developing relevant research questions, working together on study design and conduct, and translating new knowledge into practice'.³

Why are PBRNs necessary?

While most healthcare takes place in the community setting,⁴ most research is conducted in tertiary or specialist settings. There are many reasons for this mismatch:

- Research in an Australian community setting is difficult as most practices are small private businesses where practice staff are not paid to undertake research.
- Most diseases seen in general practice have relatively low prevalence, compared with those seen in specialist outpatient clinics, which makes recruitment for research slower and thus more costly.
- Until recently, most GPs and staff were not trained in research methods. This has not been the case for many specialties where trainees are often expected to do some research training and projects as part of their fellowships.

Why is it important that there is a mismatch between where care is delivered and where research is conducted?

First, the populations seen in tertiary practice tend to differ from those in primary care. Patients in primary care tend to be at the less severe end of a disease spectrum, may present differently, and often have multiple comorbidities. In general, there is a preference to recruit people into trials who have no complicating comorbidities. Therefore, results from trials in hospitals might not be directly applicable to patients in general practice.

Another problem with the mismatch is that some medical conditions are mainly or only managed in primary care (eg acute bronchitis, vaginal candidiasis). Such topics tend to be underresearched, leading to a relative lack of evidence on which to base care. This situation is not only an issue for our patients, but also for GPs' job satisfaction, the profession's esteem more broadly, and possibly for new medical graduates who are considering where they wish to practise medicine.

Finally, important research questions about how primary care services are organised to deliver the best and most cost-effective care can only be undertaken within the primary care setting.

Clinical care in general practice will be more relevant and more strongly evidence-based by engaging more GPs in developing research questions and applying the findings to their own patients.

How can PBRNs address these problems?

PBRNs can be envisaged as the primary care version of a research laboratory that provides infrastructure to foster research. PBRNs link and support interested GPs, practice nurses and other community-based health practitioners with primary care academics who have skills in research methods, statistics, health economics, data management and general practice.

All the strengths of the diverse general practice environment can be harnessed within PBRNs to undertake rigorous research, which will be fully relevant to patients, GPs and health policymakers. Importantly, this approach will foster research questions that arise from general practice. As Professor van Weel wrote, 'A strong grassroots general practice link is vital to generate research questions to improve patient care. However, a connection to the overall organisation of biomedical research is essential to ensure scientific rigour'.¹

PBRNs can operate in a 'top-down' or 'bottom-up' approach, or a mixture

of both. Ideally, networks and their members benefit mutually from their association. Benefits might include:

- learning more about research
- generating ideas for research from GPs' clinical work
- working together to use members' own clinical data to answer questions or other research involvement (eg commenting on or contributing to PBRN projects and publications arising from projects)
- hosting medical students who are undertaking research projects
- being pilot practices to help test study protocols and materials or recruit patients in their practices.

PBRNs can work with members to disseminate research findings that, given members' input into formulating the research question and methods to answer it, should be highly relevant to their practices.

While the amount and quality of general practice research in Australia has been increasing over time,⁵ there is still a relative lack of large-scale clinical trials based in general practice. A prerequisite for successful trials is a stable, funded research infrastructure linking general practice to provide a reliable place to recruit participants and obtain data.⁶ An Australian example of how a PBRN can raise and then answer a clinical question of importance to its members is Dr Clare Heal's group at James Cook University. Their research findings have changed wound management practice among GPs through the discovery that uncovering wounds within 12 hours and exposing them to moisture did not lead to an increase in infection rates.⁷

Members and staff at another PBRN generated a number of research questions they were interested in and chose to explore how practices manage same-day appointments using a qualitative method. Members were involved in formulating the interview questions, analysing and interpreting the responses, and contributed to the final manuscript reporting the findings.⁸

What is the current situation with PBRNs?

Professor van Weel's anecdote quoted in this paper's introduction led to a project at the Nijmegen Department of General Practice to systematically collect morbidity data from a network of GPs. This unique database, rigorously maintained by one of many PBRNs now in The Netherlands, continues to be a major influence on GP research and teaching in that country.

In the US in 1970s, PBRNs began with volunteers and philanthropic support. However, in 1999, the US Congress designated the Agency for Health Care Research and Quality to fund primary care research (and PBRNs). As of 2015, the US has 174 PBRNs across nearly 30,000 practices, where 153,736 clinicians serve more than 86 million patients.⁹

The UK and Canada also have well-functioning PBRNs. Since 1998, the UK's National Health Service (NHS) has made funding available for PBRNs, which has led to a rapid growth in networks. The National Institute of Health Research (NIHR) Clinical Research Network is the clinical research arm of the NIHR, whose national coordinating centre and 15 local branches now manage research across England, with a focus on recruitment to large-scale clinical trials.¹⁰ An example of a PBRN in Canada is the Canadian Primary Care Sentinel Surveillance Network, which links 11 PBRNs across Canada to, among other goals,¹¹ collect and maintain national epidemiological surveillance data using electronic medical records to improve outcomes in primary healthcare and promote knowledge exchange.¹²

In Australia, various projects have linked GPs for research purposes, but often for a specific project, without a model to sustain the network over time for further research. The first of these was probably the late Professor Charles Bridges-Webb's network of 85 GP volunteers who surveyed morbidity and mortality in general practice.¹³ The ability to develop sustainable networks arrived when the Australian Government's Primary Health Care Research, Evaluation

and Development (PHCRED) Strategy was funded in 2000. Its aim was to improve Australia's capacity to produce high-quality primary healthcare research, to increase the number of primary care researchers, and improve the quality of research and the uptake of evidence into policy and practice. By 2003, the PHCRED funding supported 22 research networks, with a combined membership of 1377 individuals within 13 university departments of general practice. Unfortunately, some of these networks were compromised when the PHCRED funding was redirected to other research initiatives.

In 2013, the Australian Association for Academic Primary Care (AAAPC) was modestly funded by the Australian Primary Health Care Research Institute (APHCRI), whose own funding ended in 2015, to establish a national support service for Australia's PBRNs. The AAAPC established the Australian Primary Care Research Network (APCReN) secretariat to link the 23 existing PBRNs. While only funded for 12 months, APCReN managed to gather information on all PBRNs, establish a website for communication and a repository for resources, develop new resources, act as a central point for interacting with other research institutions, and develop links with PBRNs in other disciplines.

What needs to happen next?

APCReN surveyed its PBRN members about their views on what was needed to enable PBRNs to conduct quality research to underpin evidence-based practice in Australia. Most organisations responded that they required funding to employ dedicated staff to enable continuity and build research momentum. In addition, they needed to engage with local GPs and Primary Health Networks, locate funding opportunities, and write grant applications to ensure sustainability of PBRNs and their work.¹⁴ Zwar et al, writing about the future of Australian PBRNs in 2006, advocated for several elements that remain relevant today.⁶

- linkages to academic departments of general practice to enable rigorous methods (they suggest that PBRNs might focus on specific topics of interest to its members or on specific methods according to the local expertise [eg health services research, clinical trials])
- linkages to the then Divisions of General Practice
- sustained and sufficient funding for infrastructure including, staff
- working closely with practice staff to develop research literacy and encourage what Charles Bridges Webb termed 'organised curiosity' about their clinical work
- adequate remuneration for GPs and practice staff for time taken in research pursuits.

There is still no direct funding for PBRNs in Australia and, in the current research funding environment, it is likely that innovative methods to fund this valuable research infrastructure need to be sought.

How can GPs and practices get involved?

GPs interested in exploring PBRNs can find much information on the APCReN website (www.apcren.org.au). This repository contains links to all Australian PBRNs and other resources from PHRCIS and international PBRNs. All PBRNs welcome new members.

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Competing interests: Both authors are involved in the University of Melbourne's PBRN and APCReN.

Provenance and peer review: Commissioned, externally and internally peer reviewed.

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