Supporting research in primary care: are practice-based research networks the missing link?

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ABSTRACT

- Despite the size and importance of primary health care (including general practice) within the health system, traditional research output has been relatively low, both here and overseas.
- General-practice and primary-care research in Australia has been criticised for the preponderance of small-scale, descriptive and survey-based studies. If we are to conduct larger-scale clinical, epidemiological and health-services research, new structures and processes are needed.
- The research networks set up under the first phase of the Australian Government's Primary Health Care Research, Evaluation and Development (PHCRED) Strategy have tended to focus on up-skilling, research literacy and dissemination. This is important, but for general-practice research to evolve, a new type of practice-based research network is needed.
- These new practice-based networks require commitment and funding from policymakers, a base in academic departments, plus active involvement from Divisions of General Practice and the practitioners themselves.

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Despite the size and importance of general practice and primary health care in the health care system, the research output of these sectors has been low, both in Australia[1] and internationally.[2] A 2003 *Lancet* editorial was so bold as to ask "Is primary-care research a lost cause?".[3] Subsequently, Mant and colleagues vigorously argued the case for primary-care research, pointing out that research evidence is needed to inform clinical practice and to develop the evidence base of primary care.[4] Primary-care research seeks to answer questions of immediate relevance to the health of the community and has been described as "the missing link in the development of high-quality, evidence-based health care for populations".[5]

Worldwide policy responses to this concern have been wide ranging. Primary-care research capacity-building programs both in Australia and overseas (particularly in the United Kingdom, United States and the Netherlands) have sought to address the capacity issues, including research literacy, skills training, availability of academic support, workforce development and project funding. The Australian Government's Primary Health Care Research, Evaluation and Development (PHCRED) Strategy was an important step for primary-care research. The strategy was evaluated in 2005, 5 years after its inception,[6] and a further 4 years of funding was recently announced. In this second phase of PHCRED, the focus of the Research Capacity Building Initiative will be on expanding the existing primary health care research workforce, while improving the relevance and uptake of evidence into primary health care.[7]

What are the challenges in primary-care research?

Despite the impetus to primary-care research flowing from the PHCRED Strategy, it remains difficult in Australia to conduct larger scale clinical, epidemiological and health services research in primary care. The Editor of the *MJA* has stated that Australian general practice has "some catching up to do" in the area of research,[8] and, in a challenging speech to an Australian Association for Academic General Practice meeting, criticised general-practice research for the lack of intervention studies and the preponderance of small-scale, descriptive and survey-based studies with poor response rates. An all too common scenario for general-practice research is shown in Box 1.

Conducting larger-scale projects, such as clinical research studies, requires an organisational structure of interested practitioners who can provide the setting for reliable identification and recruitment of patients. A structure to support high-quality primary-care research needs to be set up precisely to satisfy this aim; it also needs to be sustainable over time and across topic areas. Practice-based research networks to support this type of research in Australian primary care have so far been temporary, such as the network of regional medical coordinators and research nurses developed for the second Australian National Blood Pressure Study.[9] In terms of epidemiological research, the Australian Sentinel Practice Research Network (ASPREN) of the Royal Australian College of General Practitioners has provided useful sentinel monitoring of respiratory infections in primary care, but is not currently structured or resourced for other purposes. While a range of research network structures have been established as part of the PHCRED Strategy under the Research Capacity Building Initiative, most are "bottom-up" in nature and focus on up-skilling and information dissemination.[10]

Are networks of research practices the missing link?

If we are to conduct the kind of research outlined above in Australian general practice and primary care, we need to build the necessary structures and processes. One such structure is practice-based research networks, which provide a setting and organisational structure to facilitate research in general practice, and to address questions relevant to general practitioners.[11] It is important to note that we do not contend that practice-based research networks are the answer to all the challenges facing primary-care research, but we believe they are particularly relevant to general-practice research.

In deciding if practice-based research networks are the way forward, it is useful to look at experiences with these networks elsewhere. In the UK, a number of models have been tried (Box 2). Indeed, the research network structures in England are currently being reinvigorated through the UK Clinical Research Network, which is setting up a national primary-care research network, as well as national research networks in specific clinical areas (eg, cancer, stroke and mental health).

In the United States, a number of successful practice-based research networks exist, including that operated by the American

1 Research in general practice: a current scenario

Dr A is a general practitioner who works in a busy outer metropolitan group practice. Dr A is interested in research and would like the practice to be involved, but is inundated by paper. When requests arrive in the mail from academic institutions, she usually puts them aside, but most eventually end up in the recycling bin.

Dr A receives a request from a teaching hospital to recruit patients for a study comparing the accuracy of a diagnostic algorithm for influenza with laboratory testing. Given the implications of an avian influenza pandemic, she decides to take part. It does not go well. The protocol requires patients to be informed about the study in the waiting room. The receptionists find this difficult, and eligible patients are missed. By the time these issues are sorted out, a month of the influenza season has passed.

The algorithm has 15 questions, which take 5 minutes to administer. A throat swab is also required, taking more time. The extra consultation length cannot be billed to Medicare, and the academic institution has no budget for payment to the GP. In the end, Dr A manages to recruit only five patients. Dr A does not know how this compares to other sites. She receives a thank you letter for her involvement, but no further communication from the researchers about the outcomes of the study. ◆

Academy of Family Physicians.[16] Similarly, there are a number of provincial practice-based research networks in Canada, such as the North Toronto Primary Care Research and Development Network,[17] and efforts are currently being made to develop a national network.

These overseas practice-based research networks differ from most of the primary-care research networks developed in Australia during the first phase of PHCRED. The *Bird's eye view* report from the Primary Health Care Research and Information Service found that, in 2003, 22 networks existed with a combined membership of 1377 individuals.[10] To date, these networks have focused largely on fostering interest and literacy in research, providing basic training in research skills, and assisting individuals to develop research projects.

In 2002, Jane Gunn (of the Department of General Practice, University of Melbourne) stated that "during the next three years, we could develop networks of research practices with practitioners skilled in research methods, who, in time, would link up to form a National Research Network to undertake large-scale studies".[18] This vision has not yet been achieved.

To facilitate high-quality studies, a new type of network is needed with different aims, structures and processes from the "bottom-up" capacity-building networks. This matches the experience in the UK, which has resulted in disinvestment in "bottom-up" capacity-building networks, first in Scotland and more recently in England, because of the difficulties in attributing real gains in research expertise among primary-care practitioners or primary-care research networks.

However, it is vital not to "throw the baby out with the bath water". If structures are to be developed to enable trials and other high-quality studies, then the practitioners who are to host the studies will need training. These practitioners will also need to feel (and to be) valued if they are to be retained in academically initiated research. Continued investment in skills development is therefore essential, including better integration of research training with general-practice vocational training.

What would the missing link look like?

The experience of practice-based research networks in other countries, such as the UK, cannot simply be replicated in the Australian context, not least because of the differences in general practice and primary care between the countries. These differences include smaller practices in Australia, with the GPs doing more work themselves and delegating less often, fewer practice nurses (who form the linchpin of networks such as the UK Medical Research Council General Practice Research Framework), and largely separate structures for community and allied health services in both the public and private spheres.

A range of possible models exist for developing network structures that could support larger-scale research projects, but their essential elements are:

- Processes to link primary-care practitioners with researchers, including opportunities to have input into the development of research projects and to be involved in piloting projects;
- A system for selecting the studies to be undertaken, so that the network is not stretched beyond capacity in any one topic or regional area;
- Systems for timely and relevant feedback on project involvement, such as progress on recruitment;
- Systems for feedback and discussion of research findings in ways that are relevant and timely to general practitioners and practice staff;
- Access to training in research skills for practice staff, including training on how to make best use of practice data systems;
- Information technology capacity and improved data collection in practices;
- A system for remunerating practices and practitioners for their involvement; and
- High-quality, research-trained coordination staff to provide the outreach and crucial face-to-face contact with practitioners.

What is needed to take this forward?

Essential to the development of practice-based research networks in Australia is commitment and funding from the Department of Health and Ageing. A national research network was mentioned in the evaluation of the first phase of the PHCRED Strategy,[6] but without a clear rationale for what such a network would do. As stated above, we believe practice-based research networks are vital to the capacity to conduct larger-scale clinical, epidemiological and health-services research to answer questions of relevance to the health of the Australian community. Given the focus of the Research Capacity Building Initiative on building a sustainable workforce, and the focus of the Australian Primary Health Care Research Institute (APHCRI) on policy-relevant health-services research, we believe that clinical research needs greater support; practice-based research networks are an important facilitating structure. While the hub-and-spoke model of APHCRI-funded projects is bringing together researchers into streams of work, it does not support practitioners at the coalface to participate in research. We believe the issue of enabling and supporting practitioners to take part needs to be addressed for the future of high-quality research in general practice.

Australia needs a model for practice-based research networks that suits our circumstances. A scenario of general-practice research under such a model is shown in Box 3. The model we propose has the following features:

2 Examples of practice-based research networks in the United Kingdom

Medical Research Council General Practice Research Framework

This is a long-established national network of practices with trained research nurses. Examples of recent studies conducted through the framework include: WISDOM (Women's International Study of long Duration Oestrogen after Menopause), a multicentre (UK, Australia and New Zealand) randomised controlled trial exploring the long-term balance between the benefits and hazards of hormone replacement therapy in postmenopausal women aged 50–69 years treated for 10 years;[12] and BLP, a multicentre randomised controlled trial of a primary-care based cognitive behavioural program for low back pain.[13]

Scottish Practices and Professionals Involved in Research

This network (SPPIRe) is a model of a national network coordinated by the Scottish School of Primary Care. The SPPIRe group maintains a database of primary-care professionals and practices who are interested in research. Researchers who wish to conduct a project in primary care approach SPPIRe which, if it is agreed that the project is of high quality and relevance to primary care, engages practitioners and practices though a local coordinator in one of four regional nodes. An example of a project being done through SPPIRe is a four-group randomised trial comparing corticosteroids, antivirals, combined treatment, and placebo for treatment of Bell's palsy.[14]

Midlands Research Practices Consortium

This consortium (MidReC) is linked with a Research Support Facility to form a Primary Care Clinical Research and Trials Unit. This network is involved in a series of studies that focus on cardiovascular disease. MidReC has also become involved in the UK Biobank project,[15] which aims to recruit 500 000 UK adults aged 45–69 years and follow them up to investigate genetic influences on common chronic diseases. A feature of this network is the use of secure electronic linkage of research practices to a central server. This can be used for communication about eligibility, recruitment and randomisation of patients, as well as a portal for offering training and support to practices in the network. ◆

3 Research in general practice: a future scenario

Two years on, Dr A continues to work in a busy suburban general practice, but the practice is now part of a network of research practices linked to a university. The network covers several Divisions of General Practice, which are supportive and involved in the process of selecting projects to be conducted through the network. The funding available to support the network has enabled training for practice administrative and nursing staff in understanding the basics of research. Dr A's involvement in projects can earn income equivalent to taking students in the practice through the Practice Incentives Program.

The network has decided to focus on respiratory disease, as this is of interest to members. The university wants to develop a project on improved diagnosis of chronic obstructive pulmonary disease. The project is discussed at a network meeting, and the members are able to discuss the clinical issues. After some developmental work, the project is funded.

The project budget includes a payment to practices to compensate for administrative time spent on the project. The protocol is explained to practice staff, and roles and responsibilities are agreed. Recruitment occurs over a short period, and regular updates on progress are provided. The results of the research are fed back to all involved — patients, practice staff and GPs, as well as being presented at a network meeting and at relevant conferences. The participation of network practices is acknowledged in the publications arising from the project. ◆

Academic linking: Networks are to be funded through, and led by, academic departments, as the expertise to conduct high-quality research in primary care resides predominantly in university departments of general practice and rural health, which already have a strong role in capacity building. There are issues for newer universities that have not yet developed their own capability in research, and we believe these institutions should form partnerships with established universities. While practice-based research networks need local connections and relevance, we believe it would not be productive to have a large number of small, disconnected practice-based research networks, as this would duplicate administrative structures and make it unlikely that the networks would be able to conduct larger studies. These are especially needed for investigating low-prevalence conditions. The experience of Scottish Practices and Professionals Involved in Research (SPPIRe) has been that a network of 1000 GPs (25% of all Scottish GPs) was needed to investigate the very low-prevalence condition, Bell's palsy. Studies on common chronic illnesses would require much smaller numbers.

In the Australian context — where university departments have existing linkages and a research focus — a practical way forward is to form topic-specific groups to develop research proposals, and to set up the regional networks in such a way that researchers can access practices with an interest in the particular topic in any regional network. Although the topic taken on by a network should be broad, to cater for the diversity of research interests of its members, networks could also focus on methods that match the strengths of the particular academic department. For example, one or more academic departments and networks might focus on clinical trials, while others could focus on health-services research.

Linking to Divisions of General Practice: The model recognises the pivotal role to be played by Divisions of General Practice. Given their importance as the key local organisational structures for general practice and their increasing responsibility for population health, it is vital that they are linked to practice-based research networks. Divisions in a regional area should form partnerships with universities. This process could be facilitated by the state-based organisations and the Australian Divisions of General Practice, which link Divisions at the state and federal levels. The Divisions should have input into the governance of practice-based networks. This would include helping select projects to be conducted through the network and providing input into development of project ideas. The involvement of Divisions in practice-based research networks would help them become active partners in academic research projects from their inception, and ensure that research projects are relevant to the needs of Divisions and their members. Consumers could have input into research questions and project selection through the same mechanism.

"Bottom-up" capacity building: The model will facilitate continued support for "bottom-up" capacity building. We believe it is essential to continue investing in activities that develop research literacy and skills, including existing networks of practitioners interested in research. The need to identify and develop a sustainable primary-care research workforce has been identified as a major aim of the second phase of the PHCRED Strategy. There is also a need to provide research training to medical, nursing and allied health practitioners who wish to participate in practice-based research networks. However, we believe that, although "bottom-up" capacity building is vital, practice-based networks for

undertaking research require new structures or a major new role for existing networks.

Funding base: The model will have an ongoing and significant funding base. In England, eight regional networks are being proposed with links to universities and an annual budget of about £250 000 each. Adequate funding for practice-based networks is essential. In our view, this needs to be additional to the current PHCRED Strategy, at least in the medium term, until general-practice research can be competitive for existing National Health and Medical Research Council (NHMRC) programs, such as Centres for Clinical Research Excellence. This process is analogous to the General Practice Evaluation Program, which provided funding for general-practice and primary-care research project grants until the capacity, expertise and track record had developed sufficiently for this type of research to compete in the NHMRC grant process. A start-up model in Australia would be to fund a program to establish and evaluate a number of regional networks across the country for a period long enough (say, 4–5 years) for them to be able to demonstrate their worth. This funding could be competitive and administered through the NHMRC.

Adequate remuneration: The model will adequately remunerate primary-care practitioners for their participation in research. For GPs, this could be through the Practice Incentives Program, as currently provided for teaching. The level of remuneration is not high, but would help make it possible for GPs to participate if the project is perceived to be of interest and value. There will continue to be a need for granting bodies to accept the inclusion of a budget item in grant applications to adequately compensate practices for the other costs of participation in a project (such as the time of non-GPs, including practice nurses, practice managers and receptionists).

Conclusion

Practice-based research networks are not the only missing link for primary-care research in Australia. However, we believe that, for general-practice research in particular, they are an important link if we are to improve and sustain our capacity to conduct high-quality and relevant research with significant transfer potential for practice and policy. In seeking to establish these networks, it is important not to go down an evolutionary "blind alley" and face extinction, but rather to create structures that will allow primary-care research to rapidly evolve and thrive in a competitive environment.

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Competing interests

None identified.

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