Structured career pathways in academic primary care

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Research in primary care has much to offer researchers and ultimately efforts to improve population health and health care. There is a need for capacity building and efforts to improve the science of research in this field. This article outlines a relatively structured career pathway for primary care researchers and offers advice on opportunities and commonly encountered pitfalls. It is largely based upon the authors’ experiences and personal reflections as medically trained researchers but many of the implications and lessons are relevant to other clinical and research disciplines.

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What kind of research does primary care need?

Anyone wishing to embark on a high-achieving and well-recognized research career could suggest more than one good reason to avoid becoming a primary care researcher. The family of applied health research to which it belongs is overshadowed by and hence relatively deprived of resources by the more prestigious basic biomedical sciences. In terms of research productivity, primary care also trails behind other clinical specialties and has even been dismissed as a ‘lost cause’. Furthermore, individuals considering embarking on a research career often discover that the pathways are ill-defined or absent.

This state of play is somewhat paradoxical given the contribution of primary care to population health, the impact of primary care research and the potential rewards to researchers. Many studies, including international comparisons, have demonstrated that the supply or receipt of primary care is associated with better population health, narrowing of disparities and reduced costs. The need for evidence-based policy is underlined by the prioritization of primary care by many governments as well as continuing debate elsewhere about its role (e.g. in the US).

Given the complex social milieu of the primary care setting, building the knowledge base requires boundary-spanning collaborations among many research disciplines, such as clinical science, epidemiology and the social sciences. Such interdisciplinary research has already enabled significant contributions to guide clinical practice, including the management of common acute and long-term conditions (e.g. upper respiratory tract infections, back pain, heart disease) and preventive care (e.g. smoking cessation). Getting this evidence into practice, and promoting effective and efficient health care, requires similar scales of collaboration. A career in primary care research therefore offers many opportunities and challenges towards making a genuine difference to population health and the patient experience.

What kind of researcher does primary care need?

Primary care researchers need to be equipped with, or at least appreciate, the broad repertoire of perspectives and skills needed to advance the cause and, critically, the science of their research field. Significant advances are more likely to be made through strategically driven partnerships and investment in infrastructure and the promotion of career pathways. This does not necessarily depreciate the contributions of visionary and dedicated ‘single-handed’ practitioner researchers who need to contend with limitations of time and infrastructure.

For primary health care professionals, relatively direct pathways to research careers do not need to start immediately after birth, graduation or completion of specialist training. Health care professionals (i.e. not...
only medical practitioners) can bring an appreciation of the realities of clinical practice and of doing research within their setting.\textsuperscript{12} The disadvantage of trying to accelerate from a standing start when older can be part compensated by the acquisition of professional and personal experience and skills. Non-clinical researchers (such as sociologists or health economists) face a different set of challenges, ranging from the relative poorer job security and rates of remuneration to coming to grips with the nuances of primary care and winning trust and acceptability from clinical partners.

Starting out

Some prospective researchers embark on a career trajectory with clear and focused goals, preferably initiated in training and junior researcher roles within the environment of a major programme and supportive institution. For others, particularly from clinical backgrounds, another approach is to start small and learn to think big. There are a number of ways to do this, which all involve building confidence as well as skills in a stepwise fashion. One is to gain experience in teaching, within one or both of undergraduate training and professional education. For example, many current researchers started out by learning to do and teach critical appraisal with various ‘evidence-based medicine’ workshops and programme. Being able to understand the methodology, merits and limitations of published research represent a good platform for thinking through possible research needs and methods. This can be a particularly fruitful approach if motivated by a desire to tackle a problem of personal interest and wider importance within the clinical setting. Another, which may follow directly, is to move on to a more formal education programme, such as a master’s level degree. Most of these, whether in subjects such as primary care or health services research, will expose participants to a wide range of disciplines and methods.

Conferences and workshops, often provided by research networks, are important in building capacity by providing opportunities to learn about research methodology, enabling networking and identify funding opportunities. It is useful at this horizon scanning stage for the beginner to sample relatively broadly before starting to focus on likely career goals. This is also a good time to contact and start talking to researchers whose work is of mutual interest. Many will be supportive if contacted for advice and may suggest potential opportunities within their groups and help identify structured pathways for further career development. Many researchers say that they have benefited from supportive relationships and role models,\textsuperscript{12} although it is generally advisable to steer clear of those who offer considered advice such as, ‘I told you so’. Mentoring relationships with supervisors and peers provide a basis for reflecting on goals, progress towards achieving them and problem solving.

Writing is an important skill to start developing even at this early stage. It provides a solid foundation required for developing and winning grants and publishing research, the key to a successful research career.\textsuperscript{13} This involves sitting down, grinding out and finishing a piece of work and seeking out and learning from the praise, criticisms and suggestions of others. This may be practiced within many contexts, such as for taught courses, clinical audit and journals. Taking opportunities to co-author with more experienced writers or those from different disciplines can be instructive, although there is always a chance of bringing on board the occasional backseat driver. It is also useful to seek out other means of presenting and getting feedback on work-in-progress or completed projects, through meetings and conferences held locally or farther afield.

Professionals who have been through structured ‘first step’ programmes—whereby resources are provided for learning and protected time—describe a range of outcomes. These outcomes represent legitimate ends in themselves, such as harnessing research knowledge and skills to improve practice or broadening the range of people worked with.\textsuperscript{4} However, those wishing to continue with research have found identifying follow-on opportunities difficult. Various ceilings are encountered throughout the different stages of a research career and, for many, this is the first to break through.

Planning and progressing

The ideal way to progress further is to win an award or fellowship which will provide an income, structured training, supervision by experienced mentors and protected time for research, writing and networking. Unlike project grants, these awards are mainly concerned with enhancing individual career progression. Training should include formal education, which sometimes starts with undertaking a master’s degree and usually progresses towards a doctorate. Another way of looking at structured training is that it can address ‘horizontal’ and ‘vertical’ training needs. Horizontal needs reflect the broader skills and experience required to become a research leader; vertical needs the specialist knowledge and skills required for a specific field of clinical, health services or methodological research. Box 1 lists some of the broader research skills.

Such awards can be competitive and opportunities limited. As much as persistence and sometimes luck can pay off, potential funders will look for a number of important criteria. These include the potential of the applicant, the strength of the proposed academic environment and the rigour, relevance, originality and
feasibility of the research plan. Box 2 provides an illustrative (and far from exhaustive) list of further sources of information about research career pathways and funding. However, we would strongly advise aspiring researchers to investigate opportunities with established academics who can offer context and country-specific advice.

The right sort of environment need not be an academic primary care unit: it is more important that it comprises the mix of disciplines necessary for high-quality work, such as from the social sciences, statistics and health economics. The research environment does not only need to ‘look right’ on paper; the quality of personal relationships with supervisors and other researchers and their commitment to supporting career development also count. Aspiring researchers searching for the right environment should take account of how well the potential hosts’ programmes and interests fit with their own. The fit need not—and probably should not—be precise if any boundaries are to be stretched. Remaining flexible and investing time in developing methodological skills (e.g. in systematic reviewing, interview studies or randomized trials) will pay off later, even if (say) the clinical focus does not match past experience or current interests. Finding the right environment and supervisor locally can sometimes be problematic and require relocation. Many fellowships are tied to proportions of 50% or greater research time and subsequent restrictions on clinical commitments which can make them impractical, or sometimes more attractive, to established clinicians. However, significant personal development and progress with research work demand a substantial time commitment.

As well as personal interest and the expertise and track records of potential supervisors, there are other issues to consider in focusing on likely issues for research. These include their fit with known research priorities and policy developments, likely sustainability and possibilities for follow-on work, and originality. As well as recent literature, it is worth becoming familiar with recent health policy statements and priorities set out by research funding agencies, usually available via websites. Reflecting on clinical experiences or discussions with others involved in health care (including patients and managers) also help generate research questions as well foster possible partnerships between researchers, health services and communities.

Awards may also exist that support ‘mid-career’ development and provide platforms for researchers to continue building academic portfolios and start thinking about long-term goals. These may also provide funding for visits and placements abroad, and thereby opportunities to build future international collaborations. Travelling fellowships provide an ideal way to gain experiences and insights into different health care systems and academic environments. This sort of cross-pollination is also critical to the evolution of research goals and methodologies.

Career awards represent one recognizably orthodox way of developing as a researcher—although they are still relatively scarce. Other opportunities and pathways exist, such as academic posts—often tied to an existing programme of research—or project grants which remunerate dedicated research time.
Developing research programmes

Moving on from a number of related projects towards taking the lead for or establishing a programme of research requires some bigger thinking. This involves mapping available or potentially available resources and collaborators, as well as horizon scanning to see how the content and direction of a programme are likely to fit with national research priorities. The search for more senior academic posts or advanced career fellowships usually provides a springboard for this strategic development.

To illustrate what a programme of research might look like, we provide an example from implementation research which is based upon a framework for the development and evaluation of complex interventions. Uneven uptake of clinical research findings—and thus inappropriate care—occurs across different countries, settings and specialties and may not be attributable to either patient or resource factors. Implementation research is the scientific study of methods to promote the systematic uptake of research findings and other evidence-based practices into routine practice, and, hence, to improve the quality and effectiveness of health services and care. Upper respiratory tract infections represent a common problem in primary care. Cochrane reviews of the effectiveness of antibiotics suggest no or only marginal benefit for a range of respiratory tract infections. Although antibiotic prescribing in the UK has declined, substantial variations in practice remain. Tackling any given implementation problem usually starts with questions about why inappropriate variations in practice exist and what factors that influence practice are most important and amenable to change. This may involve a combination of reviewing relevant literature, qualitative studies to identify the most salient factors (e.g. general practitioners’ beliefs and attitudes towards prescribing antibiotics) and survey work to quantify these and examine the relationships between hypothesized factors and practice.

The next phase may incorporate pilot or experimental work to help identify what sorts of behaviour change methods could offer the most promising basis for a definitive intervention before moving on to a definitive evaluation (such as a randomized trial) to measure the effectiveness and costs of an implementation strategy. This could involve evaluating whether GPs’ motivation to prescribe antibiotics is changed by persuasive communications (a technique often used in the advertising industry) challenging their beliefs about the consequences of prescribing. The explicit use of theoretical models of behaviour change within such a programme offers a generalizable framework within which to represent the dimensions that implementation studies address, a process by which to inform the development and delivery of interventions, a guide when evaluating and a way to allow for an exploration of potential causal mechanisms. Such work prepares the ground for a definitive randomized controlled trial to evaluate the cost-effectiveness of fully worked up interventions on clinical practice (in this case, antibiotic prescribing). Such a programme of work presents a range of methodological challenges which require close collaboration with clinical partners and research disciplines from behavioural science, statistics and economics.

Influencing and leading

Primary care research needs committed leadership to promote the uptake of research findings, advance its cause and build capacity. Influencing policy involves more than publishing papers that provide evidence and exhortations for change. The most frequently identified factors that support the uptake of research evidence in decision making include personal contact between researchers and decision makers, the timeliness and relevance of research and the dissemination of clear and concise messages.

Conclusion

The road to a research career is not trouble and detour free. There are competing demands, from clinical, teaching and personal commitments. There are rejections, failures and other frustrations to face and learn from. Yet, beyond the general limitations of research infrastructure, there are many challenging aspects of the primary care research agenda and major opportunities for growth. The potential rewards, in terms of benefits to population health and health care experience, are substantial.

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