Health services research: building capacity to meet the needs of the health care system

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Abstract

Health services researchers have an important role to play in helping health care systems around the world provide high quality, affordable services. However, gaps between the best evidence and current practice suggest that researchers need to work in new ways. The production of research that meets the needs and priorities of the health system requires researchers to work in partnership with decision-makers to conduct research and then mobilize the findings. To do this effectively, researchers require a new set of skills that are not conventionally taught as part of doctoral research programmes. In addition to wider contextual changes, researchers need to understand better the needs of decision-makers, for example through short placements in health system decision-making settings. Second, researchers need to learn to accommodate those needs throughout the research process, including identifying research needs; conducting research collaboratively with decision-makers and producing effective research products.

Keywords

capacity building, health services research, training

Introduction

The relationship between health services research (HSR), health care providers and policy-makers is changing but not quickly enough. The provision of high quality, affordable, health care is a growing challenge across the world. Researchers have an important role to play in informing decision-making, for example by examining health care outcomes, costs and processes,[1] and leveraging potential new opportunities such as 'big data' to address health care challenges.[2] There is also growing recognition amongst policy-makers about the need for evaluative research to clarify the mechanisms underlying change, as well as the accommodating contexts.[3] However, unexplained variations in care quality and gaps between the best evidence and current practice persist, despite decades of research into evidence-based medicine and quality improvement. This suggests that researchers need to work in new ways if this important body of knowledge is to inform change.

There has been longstanding concern that research counts for little unless its findings are shared, understood and used.[4] Traditionally, efforts to close the research–practice gap have viewed researchers as producers of knowledge, which then needs to be transferred to and consumed by practitioners.[5] However, this linear, rational view has been increasingly challenged by a growing body of evidence that research use is a social and relational process.[4] Knowledge alone is not enough to change practice. Instead, personal contact and interaction are required to move evidence into practice.[5] The importance of social factors is encapsulated within the concept of 'knowledge mobilization'. It encompasses the co-production and channelling of knowledge to enable researchers to gain

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purchase in the decision-making process.[6] However, if this depends on social processes,[5] researchers need to work in a different way to the traditional model of research production and dissemination. It has been argued that the knowledge mobilization literature draws on a wide range of disciplines in a 'chaotic fashion'.[4] Nevertheless, there are some areas of agreement, including the need for stronger partnerships between researchers and decision-makers to strengthen the relationship between research, policy and practice.[6]

Increasing partnership working in HSR

Greater partnership working requires a move away from a supply-driven culture of research.[7] 'Engaged scholarship'[8] is a more demand-driven approach that seeks partnership with knowledge users by focusing specifically on their needs. It emphasizes an iterative cycle from problem identification, through to sharing and shaping the findings with the intended audience.[8] It also includes the co-production of knowledge in the context of application, by interdisciplinary teams of researchers and decision-makers.[7,9] The growth of non-traditional research funding models represents another driver for partnership working. For example, contracts with decision-makers such as healthcare providers, rather than with research funding bodies. We use the term 'decision-makers' to encompass all those making choices at both the policy level and on the frontline of healthcare.

A number of strategies have been developed to help promote this more demand driven way of working. These include the expansion of 'push' activities undertaken by researchers to package and disseminate research evidence.[10] (There are also approaches to address the problem from the 'pull' side – i.e. efforts by knowledge users to access research evidence[10] – but these are beyond our scope here.) However, capacity and capability development in HSR has yet to fully embrace the skills that researchers require to work within this framework. Doctoral training programmes, for example, typically focus on skills required to produce new knowledge in the university context, within established disciplinary boundaries. This is partly because the world of research is still dominated by academic incentives. However, the increasing focus placed on impact by research funders and universities means that there are opportunities to be grasped.

So what are the knowledge, skills and behaviours that researchers require, if they are to work more effectively at the interface of academia, healthcare and policy? And in what ways might relevant training be acquired? First, researchers need to understand the context in which decision-makers work, including their priorities and the role research knowledge plays in informing their work. In addition, researchers need skills to package and effectively communicate their work, as well as an understanding of the practicalities of undertaking research in health care settings, such as hospital wards. These could be acquired by spending time in a decision-making organization on secondment. Second, researchers need to learn to work in substantively different ways throughout the research process to accommodate the needs of decision-makers. The skills and behaviours required during three phases of the process in which partnership working is particularly relevant are: identifying research needs; conducting research and producing effective research products. Although researchers do not form a homogeneous group, these skills and behaviours are crucial, regardless of an individual's career stage or background. We draw on examples from the UK, the United States and Canada. Differences in the three health care systems and policy settings mean that the dynamics of research may play out differently. However, decision-makers increasingly face similar challenges in improving the quality and cost of health care, which have implications for HSR, and there also are opportunities for mutual learning.

Calls for stronger partnerships between researchers and decision-makers are not new. As well as increasing attention to these issues in the literature, there has been increased investment in infrastructure and activity.[4] For example, the 'linkage and exchange' model proposed by Lomas[11] focuses on the development of positive relationships between researchers and decision-makers. This is based on the understanding that involving decision-makers in the research process is the best predictor for seeing it used. However, the lessons from research in this area, as well as the persistence of the gap between research and practice, demonstrate that learning has not always been applied.[4]

Understanding decision-makers

In order to work effectively with decision-makers, researchers need first to understand the requirements, expectations and culture of policy-making and care delivery.[12] Only by acknowledging the demands placed on decision-makers will researchers be able to conduct research and mobilize its findings in ways that are imminently useful. Although many health services researchers have experience of service delivery and policy-making, researchers and decision-makers inhabit very different professional worlds. Specifically, researchers need to appreciate that research evidence is just one factor in the decision-making process.

Understanding culture includes different ideas about what knowledge counts in decision-making in different settings. Scientific knowledge is only one part of what Davies et al.[4] refer to as 'an ecology of knowledge,'

where it sits alongside and competes with other forms of knowledge (e.g. professional knowledge and judgement). For example, consensus-based guidelines may be valued more than research-based guidelines, despite having a weaker scientific base.[4] Equally important is an appreciation of how knowledge fits into the priorities of governments and healthcare organizations, which may change substantially over time. Turnover in personnel, as well as changes in the structure and function of organizations may have an impact on efforts to build effective partnerships. Early career researchers are often employed in a series of fixed term posts, which provide an opportunity to work in different contexts but restrict opportunities for long-term relationships.

As well as understanding the environment in which decision-making takes place, researchers also need to understand the practicalities of conducting research in healthcare settings. Important within this is designing research in a way that fits within existing care delivery; does not place undue burden on patients; and is sensitive to the time constraints and competing priorities faced by clinicians.

A good way to acquire the relevant knowledge and skills is for researchers to spend time in a decision-making environment. A number of novel schemes have been established to facilitate this type of learning. For example, in the US, AcademyHealth manages three fellowship programmes providing researchers with experience of decision-making settings, including national government agencies and private sector delivery systems.[13] The Canadian Institutes of Health Research Science Policy Fellowship programme offers researchers an opportunity to spend a period of time in a policy-making setting.

Accommodating the needs of decision-makers

As well as understanding the environment inhabited by decision-makers, engaged scholarship also requires researchers to work in substantively different ways to accommodate their needs. This requires a further set of skills and behaviours. These are particularly relevant to three aspects of the research process: the development phase, when research needs are identified; when the research is being conducted and, finally, the dissemination phase.

Identifying research needs

The traditional supply-driven model of research can be disconnected from the real world concerns of policy-makers. It is also often at odds with the reality of the environment in which research is used, as a research topic typically takes years to work through the system from identification to dissemination. An alternative strategy is to put the identification and prioritization of research topics into the hands of research users, encouraging them to work collaboratively with researchers. This approach has been adopted by the National Institute for Health Research Collaborations for Leadership in Applied Health Research and Care (NIHR CLAHRCs) in England[14] and the Patient-Centered Outcomes Research Institute in the United States.[15] It is also being attempted via initiatives linked to the Canadian Institute for Health Research's Strategy for Patient Oriented Research.[16] There are a wide variety of ways in which such collaborations can approach the production and implementation of research, just as there will be a wide variety of organizational structures in which decision-makers engage in their daily work.[17] Nevertheless, settings such as this offer an opportunity for researchers to gain many of the skills they require for partnership working. Even where researchers identify potential research topics themselves, for example via gaps in the scientific literature, partnering with decision-makers is crucial to refining the question and methodological approach, and maximizing the utility of the findings.

However, researchers have traditionally worked and trained in disciplinary silos, acquiring in depth expertise in a particular research technique. In contrast, research priorities identified by decision-makers often require a range of methods. Researchers therefore also require a broad enough knowledge of different research methods that might be appropriately employed to address a range of possible research questions. For example, quantitative approaches are helpful to measure the effectiveness of interventions but are not alone sufficient to address the 'how' and 'why' questions about the effectiveness of complex interventions in typical settings. Qualitative approaches can help to highlight the contextual factors[18] and mechanisms of action, including reasons for results varying across different settings.[19,20] Mixed-methods approaches are therefore increasingly required to capture the complexity and the heterogeneity of the mechanisms, processes and outcomes of major system change,[19] and alongside randomized controlled trials of complex interventions.[21] This has implications particularly for doctoral programmes, where relevant training might be acquired by exposing students to a range of different approaches and methods, under the supervision of a multidisciplinary team.

Conducting research

Researchers seeking to work with decision-makers also require a different set of skills and behaviours when carrying out research. Even where priorities are

identified collaboratively, research timelines are typically far longer than health care planning cycles and the contextual realities of delivery systems. This clearly limits the utility of longitudinal evaluation findings, for example, which may become available too late to inform decisions about whether to continue, extend or cease a new programme.[21]

Prolonged research timelines are partly due to structural barriers, such as lengthy ethics and regulatory review processes, which may be disproportionate for this type of research. Inevitably, though, there is often a tension between rigour and research that produces immediate answers.[22] Volume and quality of traditional written outputs, as well as their academic and scientific standing, remain an important measure of research productivity.[23] However, service requirements sometimes need to trump methodological concerns. For example, decision-makers may require a swift answer which may be challenging to deliver using rigorous methods. Consequently, researchers may have to use methods that would provide the best possible answer in the time available.[21] As well as considering what would constitute 'good enough' research, researchers may also use formative methods of feedback to improve the implementation of interventions in real time. Dialogue between researchers and decision-makers can help elucidate how the level of evidence needed varies by the type of decision that the evidence will be used to inform.[24]

Partnership working also requires different rules of engagement with decision-makers, challenging traditional assumptions about objectivity.[21] For example, difficulties may arise because decision-makers are often keen to pilot a new intervention in favourable circumstances. Equally, there may be an unwillingness to evaluate at all, in case the programme is not shown to be effective. Early discussions are therefore required to clarify what is to be achieved through evaluation and ensure that all parties understand the methods to be used.[25]

Additionally, discussions about the required standards of evidence would also be useful at the design stage. For example, when evaluating a pilot of a new intervention, what level of evidence of efficacy would be required for the intervention to be rolled out more widely? Others argue that such coproduction of research with decision-makers results in a loss of researcher independence. However, there are innovative examples of attempts to bridge this gap, such as the NIHR CLAHRCs in England.[14]

Producing effective research products

Involving decision-makers in the conduct of research is an important predictor of whether or not those findings will later be used.[26] Other features that appear to contribute include involving potential users in formulating proposals.[27] Indeed, both need-led and collaborative research programmes have been found to be associated with higher rates of impact.[28] This emphasizes again the importance of partnership working. However, in order to maximize the impact of their findings, researchers also need to understand how and why research does or does not change practice, for example using theories of knowledge mobilization.

At the same time, researchers require a diverse knowledge of modes of dissemination to policymakers, practitioners, patients and the public. They must draw on their understanding of the requirements, expectations and cultures of decision-makers[29] and make use of their interactions to disseminate findings.[18] To communicate effectively, researchers first need to have the capability to describe findings in the context of immediate key challenges faced by knowledge users. The findings and implications of research are also likely to be more important than the intricacies of the methods.[30] They then need to understand the ways in which different decision-makers like to receive information. If the primary aim of a research programme is implementation or impact, a different set of research products is likely to be needed, alongside traditional outputs such as journal and conference papers. For example, some audiences prefer infographic summaries of research to traditional formats.

One way in which researchers might learn such skills is in roles focused on knowledge mobilization, such as knowledge brokers.[31] Positioned at the interface between the worlds of researchers and decision-makers, these individuals are seen as the human force behind knowledge mobilization: finding, assessing and interpreting evidence, then facilitating its implementation.[5] Schemes to develop a new generation of knowledge mobilizers are on the rise. In the UK, these include NIHR Knowledge Mobilisation Research Fellowships.[32] In Canada, especially, there has been an explosion in the number and scope of specialist knowledge mobilization positions.[33] However, knowledge brokering is not without its specific challenges, including the diverse range of skills that successful brokering requires.[5]

'Embedding' researchers in decision-making organizations

Another emerging approach that facilitates partnership working right across the research process is to embed researchers in organizations outside of academia for an extended period of time. Regular personal interaction has been shown to promote a better understanding of decision-making by researchers and – equally – the

Table 1. Knowledge, skills and behaviours required for effective partnership working.

Knowledge, skills and behaviours required	Potential routes to learning
Understanding decision-makers	
Understand the requirements, expectations and cultures of decision-makers	Short placements in decision-making settings
Understand what knowledge 'counts' in decision-making in different settings	
Understanding the practicalities of conducting research in frontline health settings	
Accommodating the needs of decision-makers	
Identify and prioritize research topics collaboratively with research users	Experience in collaborative structures such as the NIHR CLAHRCs in England
Broad knowledge of different research methods	Exposure to different methods and disciplines during doctoral training
Use methods that would provide the best possible answer in the time available	Dialogue with decision-makers about the level of evidence required
Understand how and why research does or doesn't change practice	Theories of knowledge mobilization
Diverse knowledge of modes of dissemination to end users, including patients and the public	Knowledge broker roles, embedded researcher roles

research process by decision-makers.[34] Settings for embedded researchers might include, for example, payers or health care delivery systems. With a dual affiliation to both a healthcare and academic institution, embedded researchers can learn to understand and navigate the different worlds of research, policy and practice. Through this, they can learn to position their research better, in ways that can help to solve pressing challenges in the system.[35]

This has advantages over shorter secondments because the literature on knowledge mobilization emphasizes the importance of ongoing relationships, trust and credibility with decision-makers.[4] However, whilst short secondments offer an opportunity to learn how to engage, if they are to be successful, embedded researchers need to have many of the skills and behaviours we have described before they take on such a role.

Conclusion

We have described a range of ways in which health services researchers need to be better equipped to work in partnership with decision-makers (Table 1). This approach offers the researcher the reward of undertaking work that directly addresses the challenges facing healthcare systems and contributes to improving services for patients and the public. Nevertheless, it is not without risk: structural barriers remain to research of this kind. For example, promotion frameworks for researchers often remain focused on traditional outputs such as high impact papers. As well as individuals needing to work in new ways, change is therefore also

required by academic institutions and funders to facilitate and incentivize greater partnership working, for example via new funding streams and novel institutional structures, such as the CLAHRCs in England. However, a growing emphasis is already being placed on research impact in many countries, as well as a need to demonstrate that research funds have been used to improve care for patients and the public. It is therefore vital that we equip the next generation of researchers to operate in a more engaged way.

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