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Increasing the impact of health services research on service improvement; the researcher-in-residence model

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Background

Proponents of Evidence Based Medicine often quote the 17 year lag between the publication of clinical research and its impact on the behaviour of front line staff [1]. Less attention has been shown to the lag in Health Services Research (HSR) impacting on decisions made by managers or clinicians about the organisation and delivery of health services.

For several reasons it is likely that the HSR 'know-do gap' may be an even greater problem. Decisions about optimal delivery and health service improvements are likely to be influenced by factors such as pragmatism, politics, ideology and personal experience. In addition, the social sciences underpinning HSR often produce less certain results and the tradition of science influencing practice is less embedded in the management world than the clinical one. As a consequence there are many service changes being implemented, unguided by research evidence, that have gone badly awry; walk-in centres, integrated care programmes and Independent Sector Treatment Centres being just three examples within the British NHS.

Yet HSR has greater potential to positively influence service delivery than is generally realised and as health systems around the world struggle to improve quality whilst controlling costs they are becoming more interested in organisational research evidence. In this paper we describe a new approach to increasing the impact of research, the Researcher-in-Residence model, which is being developed in a number of UK locations. We explore the model's background and origins, present examples of its use in a London academic health science network, highlight learning from this early work and consider the next steps in its development.

Mobilising knowledge

The challenge of getting research into practice has spawned a new academic field of study in recent years, commonly termed 'Knowledge Mobilisation'. Broadly, two different approaches are described.

The first frames the 'know-do' gap as a relatively straightforward challenge of transferring academic knowledge from researchers to practitioners [2]. Researchers are seen as having expert knowledge and the task is to convey that knowledge to health service decision makers in an accessible and timely fashion. Knowledge is seen as a product and the decision-making process as time-limited, linear and rational. Scientific research evidence, perceived as the most rigorous form of knowledge, is 'pushed' from the research community, using guidelines or evidence summaries, or 'pulled' by practitioners who are well-informed about the research process.

The second approach describes a more fundamental challenge relating to the nature of knowledge and how it is produced [2-5]. Here, for research to have impact, both knowledge producers and users need to be involved in its creation and its application. A strong emphasis is placed on co-production, the development of positive relationships, effective systems and a conducive organisational context [6]. Knowledge is understood to be something that is socially constructed and emergent, and its incorporation into practice is regarded as a complex, iterative and dynamic social process [7].

From theory to practice; participatory research

There are examples of the transfer model working well for evidence that is relatively unambiguous and uncontested, such as that derived from clinical trials. There is however, growing consensus that co-production is a more appropriate model for evidence relating to the organisation, delivery and improvement of health services [6]. But therein lies a problem. The transfer model is readily

operationalised using practical tools such as guidelines and a range of performance management techniques. In contrast, advocates of co-production have enthusiastically developed theories and frameworks but have been less successful to date in developing workable models which can be used by practitioners [4].

Underlying this problem is the deeply embedded distinction between the academic and practitioner communities. For this reason, a possible solution lies in the application of a research paradigm which brings the two communities together. Participatory research [8] is characterised by an over-riding desire to solve practical problems and a commitment on the part of researchers to substantive and sustained collaboration with relevant stakeholders. It focuses on initiating change through reflection, the promotion of greater understanding and shared learning. Most fundamentally, there is a commitment to finding common ground through negotiation, by promoting agency and, where necessary, reaching a compromise with those who might benefit from the research. Participatory research, with its basis in the epistemologies of interpretivism and pragmatism rather than positivism, therefore has quite different characteristics from the detached, rational approach to scientific inquiry more familiar to those (particularly clinicians) working in health services (Box 1).

<<Insert Box 1 about here>>

Participatory approaches have a strong historical pedigree. Advocates such as Kurt Lewin ('No research without action, no action without research') and Larry Green ('Evidence based practice needs practice based evidence') have promoted the use of participatory research over many decades in the fields of education, community development and business. There are, however, few examples of its use in health systems and even fewer in the mainstream HSR journals [9]. The Researcher-in-Residence model attempts to address this deficit.

A new model of participatory research; the researcher-in-residence

The 'in-residence' concept has achieved a popular appeal in a range of different sectors and settings, including Barnsley Football Club's poet in residence and the All England Tennis Club's artist in residence. It aims to make what are often rarefied areas of expertise more accessible to the general population. Essentially it is used to democratise elite or niche knowledge and skills.

The first researcher in residence model of which we are aware was developed by the UK Department for Education in the early 1990s. The scheme placed university academics into secondary schools with the aim of inspiring school children to choose a career in science. An early example from the health sector took place at University College Hospital London more than a decade ago, where an anthropologist joined the senior management team to help them engage their clinical staff more effectively in shaping the organisation's priorities, and to develop a new model of clinical leadership [10].

In recent years the model has been developed further within UCLPartners, a London-based Academic Health Sciences Partnership, and the North Thames Collaboration for Leadership in Applied Health Research and Care (CLAHRC). Recent or currently active examples of the model being used in North Central and East London are described in Box 2.

<<Insert Box 2 about here>>

The examples share three characteristics which define the model as an exemplar of co-production knowledge mobilisation principles [11]. First, the researcher(s) involved spend most of their time embedded in an operational team, rather than in an academic institution. As core members of the team, they share responsibility for delivering the team's objectives, working alongside managers, clinicians and service users. Second, the researcher(s) explicitly bring new skills and expertise to the team – an understanding of the empirical evidence relevant to the tasks in which they are involved, an ability to use theory to guide change, and the skills to evaluate interventions using a range of data

sources and types of data. The role therefore involves both mobilising established knowledge and creating new evidence for local use and for wider dissemination. The balance between these two functions may vary by project and may alter as the project progresses. Third, and most importantly, the researcher(s) is both willing and able to negotiate their expertise, integrate it with the expertise of their colleagues and, where necessary, compromise on shared understanding and solutions.

Within these defining characteristics, the model has great flexibility in terms of the researcher's academic discipline and the sector and type of service being investigated (Box 2). In addition, different approaches are emerging to the seniority of researchers and their position within the organisational hierarchy, and to the development of an in-residence team rather than single researchers. Finally, there are differences in the nature of the projects, their duration, embedded researchers' time commitment, and the source of funding for the work.

Emerging learning about the model

As the 'in residence' model is at an early stage of development, the emphasis is on exploring the flexible characteristics described above [12]. The lessons from these examples [11,13] are being used to further develop the model in preparation for a comprehensive evaluation. Early learning suggests that the model is adding value to current approaches to both research and knowledge mobilisation, but is also highlighting some real challenges.

The model appears to have strong face validity for managers and clinicians working in the health service. In particular, they can see how skilled health service-oriented researchers can bring new expertise to their teams and they appear willing to invest in the model, even when budgets are constrained. There is enough interest from the academic community to have a reasonable field of applicants when in-residence posts are advertised. Early career researchers who want to make a difference to patients seem to be particularly interested. However, some established academics

express concerns for themselves and their junior staff. These centre on intellectual isolation resulting from being detached from their academic colleagues, reduced objectivity as a consequence of being socialised within operational teams, and the extent to which embedded research clashes with the established norms and incentives of the academic health services community. It is possible that such clashes may stimulate academic institutions to align their methods more closely to the needs of the real world.

It is becoming increasingly clear that embedded roles do not suit all HSR academics. In addition to expertise on methodologies, they need self-awareness, an ability to understand and empathise with others, and the skills to encourage new ways of thinking and working amongst different groups of people. Embedded researchers need to be flexible enough to meet the needs of their service colleagues, but sufficiently focused to manage multiple demands and to achieve agreed goals. In addition, effective researchers-in-residence have to cope with ambiguity and conflict, conceptual and relational, and have the patience and resilience to invest time and effort into a slow and sometimes frustrating process of enabling change. In the quality improvement literature these skills parallel those described as the 'habits of improvers' [14] whilst in the psychological and management literatures they are aligned to those described for influencers and negotiators [15-17].

The personal and professional challenges facing in-residence researchers in enacting this wide-ranging skill-set are becoming clear, and it appears that embedded researchers may need a higher level of supervision and support than conventional researchers. UCLP in-residence researchers are fulfilling this in several ways, including frequent supervisory meetings, the establishment of a peer support group and the use of reflective research diaries.

Next steps

The in-residence model is approaching a stage of maturity that invites formal evaluation. In addition to being a way of generating new knowledge, the model may be regarded as an improvement intervention in its own right, likely to demonstrate benefits, carry risks and incur both real and opportunity costs. A strong case therefore exists to better understand its characteristics, mechanisms of action, impact and costs. In addition, it would be helpful to explore the contextual factors more or less conducive to its operation.

A rigorous evaluation is currently being designed by researchers, practitioners and people who use health services in the UK. The plan is to outline the model's broad principles, comparing and contrasting it with other models of knowledge mobilisation which have a similar participatory intent, including Diffusion Fellows [18], Knowledge Brokers [2], National Institute for Health Research Knowledge Mobilisation Research Fellows [19], Health Foundation Improvement Science Fellows [20] and Service Organisation and Delivery Management Fellows [7]. The scoping phase will also incorporate the lessons from academic disciplines that have a longer tradition of working in partnership with their 'customers', such as engineering, architecture and design. In-depth multi-method case studies will be conducted of a purposeful sample of knowledge co-production models with contrasting characteristics. Specific features of the model, such as the process of becoming embedded and the challenges of negotiating different ways of knowing will be explored in detail, as will approaches to evaluating cost-effectiveness.

Conclusion

Most academics would like to have more impact on practice and most practitioners aspire to better decision-making by using scientific evidence more effectively. It is therefore frustrating for both parties that the prevailing cultures and incentives in the university and health service sectors are not

more aligned. The absence of practical models to close the gap between researchers and practitioners has been a major impediment to change. The researcher-in-residence model draws on long established theories and practices to offer a potential solution to these deeply embedded challenges.

Box 1: Comparing participatory and conventional research (adapted from Cornwall and Jewkes, 1995)

| | Conventional research | Participatory research |
|---------------------------------------|--|--------------------------------------|
| <i>Aims</i> | To seek objectivity and truth | Empowerment and mutual learning |
| <i>Primary purpose</i> | Enlightenment | Action |
| <i>Target audience</i> | Institutions and professionals | Local people |
| <i>Scope of influence of results</i> | Wide | Local |
| <i>Who influences choice of topic</i> | Funders, institutions or professionals | Local people |
| <i>Emphasis</i> | Outcomes | Processes |
| <i>Role of participants</i> | Constrained to specific phases of research | Embedded throughout research process |

Box 2: Examples of researchers in residence within UCLPartners

| | Academic discipline | Project and aim | Setting | Seniority of researcher | Workforce model | Position within organisation | Source of funding |
|---|--|--|---|--------------------------------------|-------------------------|---|---|
| 1 | Social scientist/ linguist | Realising the aims of a large scale integrated care programme | Multiple providers and commissioners in East London | Junior post-doctoral researcher | Full time for 36 months | From front line to senior executives | Multiple Clinical Commissioning Groups |
| 2 | Health Service Researcher/ epidemiologist | Helping to engage providers in quality improvement collaboratives for acute kidney injury and sepsis | 12 acute hospitals in North Central and North East London | PhD fellow | 0.5 WTE for 18 months | Mostly front line staff and middle managers | NHS England |
| 3 | Health Services Researcher | Improving resident safety in care homes | 80 care homes in Essex | Senior post-doctoral researcher | 0.3 WTE for 30 months | Front line staff and improvement managers | Charitable foundation |
| 4 | Health Services Researcher | Redesigning sexual health services | Multiple service providers in north and south London | Senior clinician and doctoral fellow | 0.7 WTE for 36 months | Frontline staff and managers at all levels | NIHR Knowledge Mobilisation Research Fellowship |

| | | | | | | | |
|---|---|--|----------------------------------|----------------------------------|--|--|-------------------------------------|
| 5 | Multi-disciplinary team including an anthropologist and an operational researcher | A range of projects relating to service improvements which are priorities for the hospital | Single London teaching hospital | Post-doctoral researchers | Variable, part-time over several years | Variable from front line staff to senior managers | Service provider |
| 6 | Operational researchers | A range of projects including improving flow in paediatric cardiac surgical theatres | Single children's hospital | Senior post-doctoral researchers | Variable part-time over several years | Mostly clinicians and service level managers | Service provider |
| 7 | Health Service Researcher | Improving the effectiveness of quality improvement projects | Single acute hospital | Post-MRes Public Health trainee | 0.4 WTE for 12 months | Front line staff, improvement managers and senior managers | National quality improvement body |
| 8 | Social scientist/organisational and management | Redesigning general practice services | One Clinical Commissioning Group | Senior Research Fellow | 0.4 WTE for 12 months | General practice, federation and CCG staff and senior managers | Single Clinical Commissioning Group |

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