Research Utilisation & Knowledge Mobilisation: A Scoping Review of the Literature

Executive Summary for the National Institute for Health Research Service Delivery and Organisation programme

July 2010

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Executive Summary

Background

There is a now a well established literature on the utilisation of *clinical* evidence in health care; however, there has so far been less consideration of how *management* research and evidence might get into practice in health care organisations. This second literature stream redirects our attention from the clinical practitioner level to the organisational level. Over the last decade or so, there has been a rapid growth of the literature on knowledge management and mobilisation within the growing generic (i.e. non-health care specific) management literature. What implications does it have for understanding and designing knowledge mobilisation processes in health care organizations?

Aims

The aim of this review is to explore the literature on knowledge mobilisation and research utilisation, looking for evidence of work at the meso (organisational) level. It is a scoping review, intended to identify gaps and opportunities for future research.

About this study

We undertook a structured review of 29 predominantly high-impact, peer reviewed academic journals in the generic management and health sector literature (Phase 1). A supplementary (Phase 2) search of electronic databases used systematic methods to capture practitioner and grey literature.

The two bodies of literature – generic management and health – were compared and contrasted to explore which management sub-literatures have crossed into the healthcare stream and which have not.

Phase 1 generated 585 titles and abstracts, 43% (251/585) of which were selected as papers for more detailed review. Ten thematic categories were identified in the management literature and mapped onto the health stream. Phases 1 and 2 identified a further two health-specific domains.

The twelve domains of thought were analysed to develop propositions as guides to future research. An earlier draft of this study (3rd July 2009) informed the SDO research call "KM259: Research Utilisation and Knowledge Mobilisation by Healthcare Managers".

Exemplar papers were identified in Phase 1 as a way of signposting the domains in the generic management literature. The most cited paper (based on Web of Science) was selected along with a paper of notable interest.

Key findings

The domains are listed here with accompanying propositions, which may or may not be true: they are designed to articulate a research agenda.

1. Nature of Knowledge and Knowing is a line of philosophical enquiry, important in both literatures.

PROPOSITION 1. Epistemology matters. For example, knowledge-as-data, knowledge-as-meaning, or knowledge-as-practice reflect different epistemologies that demand different responses to create and exploit knowledge.

The literature in both health and generic management fields has been grappling with the question of 'what is knowledge or evidence?' and 'how do we know what we know?'. There is a broad distinction between explicit information, that can be codified into a protocol or decision support system, and tacit or more messy knowledge that resides in people's minds. Some important streams of the literature lay emphasis on the importance of tacit knowledge. For practitioners, it suggests that knowledge transfer happens through experience in the field, often informally, rather than through directives.

There is a sharp debate about what constitutes good knowledge, research or evidence. Conventional wisdom, privileging systematic evidence through randomized control trials, is being challenged. The role of patient experience lies at the heart of this debate. The medical hierarchy of evidence, placing systematic review of RCTs at the top and patient experience at the bottom, infuriates theorists who argue that the patient experience is a legitimate form of evidence, communicated through narrative.

Exemplar Papers:

Tsoukas, H. & Vladimirou, E (2001). What is organizational knowledge? *Journal of Management Studies*, 38 (7), 973-993.	The theoretical overview of the literature makes an important connection between knowledge and organization.
Tranfield, D., Denyer, D. & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14 (3), 207-222.	The paper argues that evidence acquired through systematic methods is the only sort worth defending and that narrative methodology lacks rigour.

2. Evidence Based Health Care is the largest domain within health, overlapping with the Nature of Knowledge and Knowing domain. There is no consensus on what constitutes evidence-based management.

PROPOSITION 2: All management knowledge is contested.

This proposition reinforces the difficulty in identifying authoritative evidence that can be applied in the management field. The literature provides no clear understanding of what we mean by management – as opposed to medical – evidence that is capable of being put into practice. Early views that Evidence Based Medicine provided a model for Evidence Based Management have been challenged. The model of strict hierarchies of evidence within clinical practice has been portrayed as a naïve model that does not take account of human behaviour

or learning.

Exemplar Papers:

Freeman, A. C. and K. Sweeney (2001). "Why general practitioners do not implement evidence: qualitative study." BMJ 323(7321): 1100-.	This early critique of EBM found that clinical evidence did not necessarily fit with the patient's life. The idea of linear implementation was shown to be unrealistic.
Walshe, K. & Rundall, T.G. (2001). Evidence-based management: from theory to practice in health care. *The Milbank Quarterly*, 79 (3), 429-457.	The paper was influential in describing how Evidence Based Management could learn from the Evidence Based Medicine movement.

3. Information Science and Information Technology literature in health has focused on systematic reviews of clinical decision support systems, but there is an increasing interest in the human factor within IS/IT. The literature is inevitably a long way behind the experience of real life where interaction through the internet (e.g. wikis and blogs) plays a vital role in shaping knowledge.

PROPOSITION 3: IS/IT will become increasingly social and interactive in its application within the work place.

Exemplar Papers:

Alavi, M. & Leidner, D.E. (2001). Knowledge management and knowledge management systems: conceptual foundations and research issues. *MIS Quarterly,* 25 (1), 107-136.	This is a seminal paper, the most cited in the whole review. It established that KM systems, even in their technical form, need to be responsive to forms of knowledge, and therefore informed by theory.
Skok,W. & Kalmanovitch, C. (2005). Evaluating the role and effectiveness of an intranet in facilitating knowledge management: a case study at Surrey County Council. *Information and Management*, 42 (5), 731-744.	The case study uses a conceptual framework (cognitivistic view, connectionistic view, autopoietic view) to describe mental models of intranet users in the public sector.

4. Barriers to Transfer and Facilitators of OD literature typically focuses on barriers rather than enablers to knowledge sharing. Culture is the dominant barrier while relationships and interaction are at the root of most enablers.

PROPOSITION 4: Knowledge mobilisation is more than a technical activity. It is also cultural and political.

Exemplar Papers:

McDermott, R. & O'Dell, C. (2001). Overcoming cultural barriers to sharing knowledge. *Journal of Knowledge Management*, 5 (1), 76-85.	This paper is business-oriented and provides guidelines to organizations on how they might succeed in sharing knowledge.
Morris, T. & Lancaster, Z. (2006). Translating management ideas. *Organization Studies*, 27 (2), 207-233.	The paper is relevant to healthcare where distant top-down policy initiatives are routinely announced and need to be adapted for local consumption.

5. Knowledge Transfer/Translation and Performance

There are many models that capture the dynamic flows and processes of knowledge transfer, in the context of performance and competitive advantage. In healthcare there is a focus upon research translation, moving along the path from

bench-to-bedside. Policy statements in the NHS highlight the importance of growth through innovation in the future.

PROPOSITION 5: Productivity and efficiency will be increasingly important in a climate of spending restrictions, so knowledge transfer and diffusion of innovation will be essential to the health and performance of NHS organisations.

Exemplar Papers:

Newell, S., Swan, J. & Galliers, R.D. (2000). A knowledge-focused perspective on the diffusion and adoption of complex information technologies: the BPR example. *Information Systems Journal*, 10 (3), 239-259.	Business Process Reengineering is a complex technology that was diffused through suppliers with an incentive to 'blackbox' complex ideas. According to the model, suppliers push ideas and receptive users pull them into the organisation.
Parent, R., Roy, M. & St-Jacques, D. (2007). A systems-based dynamic knowledge transfer capacity model. *Journal of Knowledge Management*, 11 (6), 81-93.	This is an up-to-date account of knowledge transfer theory using a coherent framework based on capacities. It acknowledges the socially constructed, context-specific role of knowledge.

6. Organisational Learning is a rapidly growing field that draws together social and cognitive psychological approaches, human resources and organizational studies. It describes the aspiration to acquire knowledge, process it and distribute for re-use later in organizations.

PROPOSITION 6: Organisational learning is not a unified field. The management literature offers a wide research agenda, e.g. in relation to organisational boundaries, specific groups of actors and unlearning.

Exemplar Papers:

Lam, A. (2000). Tacit knowledge, organizational learning and societal institutions: an integrated framework. *Organization Studies*, 21 (3), 487-513.	Lam integrates three major strands of literature: organizational learning, resource based view of the firm, and national learning institutions. The paper is rare in drawing a link between micro, meso and macro levels.
Orzano, J.A. *et al* (2008). A knowledge management model: implications for enhancing quality in health care. *Journal of the American Society for Information Science and Technology*, 59 (3), 489-505.	Orzano *et al* have surveyed the literature on KM and show how it can be usefully applied in primary health care. The paper links individual to organizational learning and performance.

7. Organisational Form is insufficiently addressed within health literature.

PROPOSITION 7: Boards will need to construct a meso perspective and take a view on organisational design. Partnership and network-based organisational forms are more effective at knowledge sharing than markets or hierarchies. There is payoff in collaborating.

The NHS is no stranger to organizational reconfiguration, but there is little in the way of a theoretical base when we look at knowledge mobilisation. The management literature draws a link between organizational form (e.g. markets, hierarchies, communities, strategic alliances), types of knowledge and transfer. Academic Health Science Centres are a recent example of NHS organizations formed to drive translational research.

Exemplar Papers:

Inkpen, A. (2000). Learning through joint	Inkpen develops the learning-based

ventures: a framework of knowledge acquisition. *Journal of Management Studies,* 37 (7), 1019-1044.	concepts of alliance knowledge accessibility and knowledge acquisition effectiveness, in the context of Joint Ventures.
Nonaka, I., Von Krogh, G. & Voelpel, S. (2006). Organizational knowledge creation theory: evolutionary paths and future advances. *Organization Studies*, 27 (8), 1179-1208.	Nonaka is a significant author in the field, drawing western attention to Japanese organizational knowledge. The concept of 'ba' or 'space' is introduced as a condition for knowledge generation.

8. Resource Based View of the Firm is an economics perspective, absent from the health literature. We have identified RBV as a potential 'cross-over' theory from generic management to the NHS. It argues that the organization is the sum of the resources at its disposal and that it gains competitive advantage by protecting and mobilizing these resources, one of which is knowledge.

PROPOSITION 8: The NHS needs to consider how knowledge and information can be used to improve productivity, innovation and performance. The Resource Based View of the firm has application in health.

Exemplar Papers:

McEvily, S. & Chakravarthy, B. (2002). The persistence of knowledge-based advantage: an empirical test for product performance and technological knowledge. *Strategic Management Journal*, 23 (4), 285-305.	There is little empirical work to support the link between knowledge and performance. McEvily and Chakravarthy plug this gap by testing the theory of competitive advantage at the heart of RBV. Their results broadly support RBV theory.
Wilcox King, A. & Zeithaml, C. (2003). Measuring organizational knowledge: a conceptual and methodological framework. *Strategic Management Journal*, 24 (8), 763-772.	The paper tests the problem of identifying and measuring knowledge resources in the textile and health industries. Only one comparable measure emerged: "cost containment for hospitals and managing costs for textiles" (p769).

9. Critical Theory is the term used to describe a skeptical perspective of knowledge management, as opposed to the positivist approach of RBV and IS/IT. Influences can be traced to Marx and Foucault, and theorists perceive knowledge as a tool of power. "Managers plan, organize, co-ordinate and control" whereas workers work. Health sector sites have frequently been used as case studies in the literature to illustrate power conflicts between, for example, doctors and managers, doctors and patients, doctors and nurses.

PROPOSITION 9: The health sector makes greater use of critical discourse than the management sector. The role of power among occupational groups in health systems makes it appropriate to temper all positivism with scepticism.

Exemplar Papers:

Alvesson, M. & Karreman, D. (2001). Odd couple: making sense of the curious concept of knowledge management. *Journal of Management Studies*, 38 (7), 995-1018.	A knowledge intensive firm (KIF) of mainly young consultants is used as a case study. The conclusion is that knowledge cannot be managed and, rather, that it is the workers who are managed.
Currie, G. & Kerrin, M. (2004). The limits of a technological fix to knowledge management: epistemological, political and cultural issues in the case of intranet implementation. *Management Learning*, 35 (1), 9-29.	The paper identifies a tension between labour and capital. It argues that employees may wield their own power and render IS/IT ineffective for purposes of knowledge sharing.

10. Communities of Practice (CoP) is a theory that has crossed from management into health literature. It describes the process of shared learning and practice, or situated learning, that occurs when goups of people with common objectives interact and work together. The concept is readily adapted to the health sector, since occupational groups such as nurses and doctors form natural epistemic communities. Researchers and practitioners can also be analysed as separate CoP.

PROPOSITION 10: Organisational form is a mechanism for bridging gaps between communities of practice, e.g. through vertical integration or lateral formation of networks.

Exemplar Papers:

Orlikowski, W. J. (2002). Knowing in practice: enacting a collective capability in distributed organizing. *Organization Science*, 13 (3), 249-273.	Orlikowski provides a lucid account of knowing in practice through an empirical study of a high-tech organization. She shifts emphasis away from 'knowledge' into 'knowing'.
Swan, J., Bresnen,M., Newell, S. & Robertson, M. (2007). The object of knowledge: the role of objects in biomedical innovation. *Human Relations*, 60 (12), 1809-1837.	The focus of the paper is innovation, in the context of 'knowledge boundaries' set by specialized practice. Situated learning is integrated with theories of knowledge objects.

11. Anthropology, Culture and Conversation is a small domain, indicating that (a) the research methods are seldom applied and (b) where the methods are used, the subject matter is often described elsewhere, e.g. in communities of practice.

PROPOSITION 10: We need more research at the distinctive meso level, using more sophisticated methodological designs.

Within the health literature there is little real focus on the meso level. Behaviour tends to be observed at the practitioner (micro) or policy (macro) level and qualitative research is mainly undertaken through interviews. More complex methodological designs involving, for example, ethnography are expensive and therefore rare.

Exemplar Papers:

Carlile, P.R. (2002). A pragmatic view of knowledge and boundaries: boundary objects in new product development. *Organization Science*,13 (4), 442-455.	Carlile spent a year observing product developers in a manufacturing firm. He found that boundary objects, such as drawings, were essential in providing a shared syntax or language between individuals.

12. Super Structures deals with funding and commissioning agencies in health care. In general the literature has focused on getting research into practice, with reference to researcher-practitioner and researcher-policy maker interfaces. Infrastructure issues appeared in Phase 2 of this scoping review but did not feature strongly in the Phase 1 search. The implication is that insufficient attention is being paid to the macro structure (or *deus ex machina*) that funds research priorities.

PROPOSITION 12: There is insufficient research into the structures which fund

R&D.

The criteria of exemplar papers was not applied in Phase 2 but, for completeness, we mark out two significant publications.

Significant Publications:

Allen, P., Peckham, S., Anderson, S., & Goodwin, N. (2007). Commissioning research that is used: the experience of the NHS Service Delivery and Organisation Research and Development Programme. *Evidence & Policy*, 3 (1), 119-134.	The paper addresses the problem of commissioning research that meets the needs of the NHS. Commissioning problems precede the challenge of putting research into practice.
Nutley, S.M., Walter, I. & Davies, H.T. (2007). *Using evidence: How research can inform public services.* UK: The Policy Press.	The book is a comprehensive review of research utilization. Research infrastructures are located within a supply-demand relationship between researchers and commissioners.

Conclusions

This scoping review has paid particular attention to the management literature to look at what it can offer. Healthcare has imported generic management theorems in the past to good effect, drawing on theories of tacit knowledge and sensemaking, e.g. in Communities of Practice, to construct models that competed with the prevailing orthodoxy of Evidence Based Health Care.

The health sector has a well developed sense of power structures that has been exported to the generic literature. It is also aware of the macro environment in which institutions work.

We have identified a gap between management and health in the form of the Resource Based View of the firm, an economic perspective of the organisation in the context of competition and advantage. We conjecture that there is scope to develop this perspective in the health arena, but are mindful of the need to temper private sector models with health sector realities. The role of doctors as the dominant occupational group is not trivial. It needs to be factored into theoretical frameworks that deal with knowledge mobilization and research utilization in health care.

Theoretical Research Gaps

The scoping review supports the use of a theoretical framework to inform healthcare research. The following gaps are identified as priority areas for further research:

- Organizational form and design – there is currently an absence of high quality literature in this area;
- Competing accounts of organizations through RBV and critical theory will inform questions of organizational form;
- Conceptual epistemological questions, e.g. “what is evidence?” are fundamental and underpin all enquiries into knowledge mobilization in the NHS.

End User Research Gaps

Areas with more immediate end-user relevance concern processes and flows of knowledge mobilisation, with focus on:

- Application of information systems and technology;
- Models of knowledge transfer, innovation and diffusion – we have identified several models. Empirical work is needed to evaluate those that have greatest application to the NHS;
- Barriers and facilitators – there is a considerable body of work in this area. It is underpinned by an assumption that managers have power and autonomy to deliver knowledge mobilization. This needs to be tested through empirical research, given the presence of powerful professional groups.

Post Script

The review has explored a divergent literature speaking different languages. There is no unified theory or discipline to cover the field. Researchers will need to read-up and become acquainted with unfamiliar disciplines, equivalent to learning new languages.

PROPOSITION 13. The multi-disciplinary discourses concerning knowledge, evidence and research will never converge.

Disclaimer

This report presents independent research commissioned by the National Institute for Health Research (NIHR). The views and opinions expressed therein are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the SDO programme or the Department of Health

Addendum

This document was published by the National Coordinating Centre for the Service Delivery and Organisation (NCCSDO) research programme, managed by the London School of Hygiene and Tropical Medicine.

The management of the Service Delivery and Organisation (SDO) programme has now transferred to the National Institute for Health Research Evaluations, Trials and Studies Coordinating Centre (NETSCC) based at the University of Southampton. Prior to April 2009, NETSCC had no involvement in the commissioning or production of this document and therefore we may not be able to comment on the background or technical detail of this document. Should you have any queries please contact sdo@southampton.ac.uk