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Evidence in Management Decisions (EMD) - advancing knowledge utilization in healthcare management

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Evidence in Management Decisions (EMD) - advancing knowledge utilization in healthcare management

INTRODUCTION, AIMS AND OBJECTIVES

The rise of evidence-based healthcare (Shortell et al., 2007) and the challenges of translating research into practice (Tetroe et al, 2008) have focused attention on improving the ways in which healthcare managers exploit evidence in their decision making. Significant efforts have been devoted to developing tools, guidelines and information systems (referred to for simplicity as 'knowledge products') to capture and transfer 'evidence'. Research, however, continues to show poor diffusion of 'evidence' across managers of NHS organizations and patchy uptake of knowledge products – difficulties attributed in large part to the highly localised nature of knowledge and professional/healthcare practices (Lavis et al., 2005; Dopson and Fitzgerald, 2005; Nicolini et al., 2007).

These problems of knowledge utilization are particularly challenging in Primary Care Trusts' (PCTs) commissioning decisions. PCT spending accounts for 75% (£69 billion) of the NHS budget in England (DH, 2008) and yet there is significant variation in spending patterns, only partly explicable by local population needs (King's Fund, 2008). By highlighting *'unanswered questions about why PCTs reach different decisions about their spending priorities',* the Kings Fund work stresses the need to better understand the utilization of evidence in commissioning and how this is influenced by the decision processes of health care managers and other stakeholders. This need is underlined by major efforts to systematize the commissioning process such as the recently announced World Class Commissioning programme (DH, 2007) and knowledge products aimed specifically at helping commissioners improve their decisions (e.g. NLH Health Management Library on commissioning).

This research aims to investigate the utilization of knowledge in management decisions, focusing in particular on PCT commissioning. We start from the position that the dominant treatment of 'evidence' in existing work – i.e. as something produced and validated separately from practice - is problematic for understanding management decision-making. Our research proposes a fundamental shift towards viewing 'evidence' (and what counts as evidence) as being produced and utilized *through*, not independently of, the interacting practices of a range of professional and managerial groups, including commissioning managers, public health experts, finance managers and clinicians. We use the term, 'co-production of evidence' to describe this pattern of knowledge utilization. Our objectives are:

1. To provide greater understanding of knowledge utilization in healthcare management by analysing the co-production of evidence by different groups within PCTs' commissioning decisions.

2. To explain how and why the available knowledge products aimed at managers are synthesized and applied (or not) within the commissioning process, in order to identify how such products might be more effectively configured for demand and use.
3. To analyse the way in which different managerial groups interact in co-producing evidence for commissioning decisions so as to identify: (i) the roles of inter-group contestation/ collaboration, and; (ii) the micro-dynamics of knowledge utilization, where evidence for decision-making emerges from the exchange of material objects (including knowledge products) within the framing supplied by discourses and policies.
4. To develop a comparative theoretical framework, derived from multiple case contexts, which links the roles played by different groups and the use of different sources of knowledge and information to decisions being made in commissioning, helping to explain variation across PCTs.
5. To develop practical guidance for policy makers and managers on knowledge utilization in commissioning by engaging stakeholder groups in all stages of the research (PCT Managers, NHS Evidence - National Knowledge Service (NKS), the National Library for Health (NLH) - NHS Institute, King's Fund, DH and academics).

RELEVANCE TO SDO CALL FOR PROPOSALS

The proposal contributes directly to Theme 5 of the SDO programme by:

- Examining the ways in which different forms of knowledge and evidence are produced and used by healthcare managers.
- Explaining the uptake and application of 'evidence' on commissioning made available through knowledge products produced by national agencies (e.g. NLH, NKS, NICE).
- Examining, through systematic cross-case comparisons and survey, organizational constraints on the co-production of evidence and identifying promising practices.

Importantly, the timing of the research will allow us to explore how new guidelines and tools produced under a major policy initiative – DH World Class Commissioning - are actually taken up and applied by healthcare managers.

The proposal relates additionally to:

- Theme 2 - by examining how managers and professionals construct and warrant ideas of clinical and cost 'effectiveness' in commissioning.
- Theme 3 - by considering how managers' constructions of evidence are shaped by roles and identities.

The research also complements the recently announced SDO programme on 'The Practice of Health Care Commissioning'. Our study is certainly relevant to the wider '*challenges in implementing world class commissioning'* outlined in that programme. However, a close reading of the programme's subthemes (relating to more macro dynamics of commissioning procedures, contractual arrangements and processes) makes it clear that, whilst our study of the utilization of different forms of knowledge/evidence is complementary, it *does not* actually fall within the scope of the programme. We have selected commissioning as a research site precisely because it offers opportunities to see multiple forms of knowledge being utilized (or neglected) within a decision-making process that is critical to long-term public health

outcomes. In this respect, the new programme amply underscores this choice and we are keen to explore links with its research findings should our project be funded.

BACKGROUND

At the core of evidence based management (herein EBMgt) literature is the view that, whilst management is 'a craft that can be learned only through practices and experience', health managers and policy makers should take up and use evidence derived from well conducted research wherever possible (Pfeffer and Sutton, 2006; MATCH, 2006). Debates focus on the, often limited, use of evidence and the relative advantages of different forms of evidence in management decision- making (e.g. research-based vs. colloquial, and generalisable vs. localised, forms - Rousseau, 2006).

Recent research suggests that a major reason why evidence *is not* used in healthcare management is because existing approaches focus on the *supply* of knowledge/information at the expense of understanding *demand*, including the organizational context in which knowledge is to be applied (Newell et al., 2002; Dopson and Fitzgerald, 2005). Healthcare management decisions, moreover, typically draw from diverse forms of expertise and information, often embedded in knowledge products. Commissioning decisions, for example, draw from commissioning managers, public health and finance experts, and clinicians, as well as information on clinical effectiveness, cost, quality and public health/population benefit. In short, 'evidence' is highly contested, negotiated and legitimated socially, emerging from a range of sources of experience and information. Recent work has focused, then, on the need to translate and transform (rather than simply transfer) knowledge across both professional and organizational boundaries, and different 'epistemic cultures' (Knorr Cetina, 1999) in order to improve its utilization (Dopson and Fitzgerald, 2005; Carlile, 2002; Swan et al, 2003).

These strands of work incorporate a closer focus on the *demand* for evidence. Yet, there is still a strong tendency – particularly in the EBMgt literature - to view 'evidence' as existing separately from the decision-making practices and organizational contexts of healthcare managers. This is reflected in terms such as 'uptake of evidence' and 'best available evidence'. Our study seeks to build on this existing work by developing a distinctive contribution to both the theory and practice of management decision-making within the NHS, focusing on commissioning as a critical arena for such decision-making.

The institutionalisation of 'Evidence Based Medicine' (EBM) in clinical care has positioned EBMgt as a normative response to the challenges of the 'research-practice gap' in healthcare (Rousseau, 2006). As yet, however, the success of this approach as a framework for ***management*** practice is limited (Rousseau, 2006). Some recent work has sought to explain these limitations by highlighting the differences between managerial and clinical practices – e.g. in culture, research base and decision-making processes – which are seen to have important implications for the way in which evidence is produced, translated and used by clinical and managerial groups, respectively (Walshe and Rundall, 2001). As Walshe and Rundall note, 'because of the constrained, contested, and political nature of many managerial decisions, it may be difficult for managers to apply research evidence even when it is available.' (p. 445).

The implication is that current understandings of EBMgt are too heavily coloured by clinical practice, and too little by management practice. Compared to management, research and practice in medicine are located within a shared institutional environment defined by the medical professions and related scientific disciplines (albeit recognising variation). In this environment, research outcomes are generally widely valued and able to travel across domains of practice, if not directly into practice itself. In contrast, the field of management

lacks this shared institutional environment due to, at best, weak professionalization (Starkey and Madan, 2001), and a fragmented and highly inductive knowledge-base which is based more on competing business functions than established disciplines. As a result, the direct travel of information across research and practice is highly problematic (Van de Ven, 2006), and its utilization limited by the uncertain and context-dependent relationships between managerial decision-making and outcomes (Whitley, 1995).

This work strongly suggests a need to renew EBMgt through research which addresses the realities of managerial decision-making and relaxes EBM-based assumptions about the nature of evidence and its use. In outlining an agenda for such research, we deploy an epistemological approach which views knowledge and its utilization through the lens, not of the scientific model, but of *social practices* (Schatzki et al., 2001). This highlights the context dependent aspects of knowledge production and utilization (Gherardi, 2006) in political arenas depending on inter-group collaboration (Swan et al, 2007) and interactions between experts and managers (Nicolini et al., 2008). It is an especially appropriate approach to apply to knowledge utilization in healthcare management, given the constrained and contested features noted by Walshe and Rundall (2001).

Applying this approach to PCTs' commissioning decisions can shed new light on the basic questions of what counts as evidence, how it is used, and how it influences decisions made. It provides a new direction for EBMgt research as follows:

- Exploring how evidence is assembled from a wide range of materials, including objects, routines and framing discourses (e.g. EBMgt, World Class Commissioning), which help managers adjudicate between, and make sense of, competing and contested sources of information.
- Distinguishing between 'evidence', 'information' and 'outputs'. In management practice, information only becomes persuasive and legitimizing 'evidence' at the point of decision-making through its selection, synthesis and active deployment by different groups to achieve (or confirm) certain outcomes.
- Highlighting the productive role of a range of groups including intermediary groups in conjunction with the craft practices of managers at a local level (Newell et al., 2003).

We use the term *'co-production of evidence'* to describe this pattern of knowledge utilization within management. The present study will contribute to theory by developing and testing this framework through empirical study of the PCT commissioning management arena. The framework outlined here is provisional rather than fixed, and provides a more inclusive approach to an arena in which decision-making is contested, heterogeneous, and political, and a source of significant variations in outcomes. Developing, through this research, a co-production perspective on PCTs' commissioning decisions offers several advantages:

i. it provides a more even handed approach to the supply of, and demand for, knowledge
ii. it helps us understand the influence on commissioning decision outcomes of the roles, interests and practices of the groups producing evidence.
iii. It underlines the localized nature of the management practice helping to explain the wide variation seen in commissioning decisions across NHS Trusts.
iv. it helps to explain low take-up at local level of promising new forms of management practice in the NHS (including EBMgt itself - Rousseau, 2006).

PLAN OF INVESTIGATION

Within this co-production framework, our study aims to reveal how evidence is actually assembled and deployed within PCTs' commissioning decisions.
The research will be conducted in four partly overlapping stages (see figure 1 for a summary), designed as follows:

Stage 1: Collection of background information

Duration: Months 0-4

This stage is aimed at ensuring access and ethical approval, establishing working relationships with 4 PCTs, and collecting background information on the commissioning process and its variations across NHS organisations. Information will be collected through 20-24 meetings/interviews in the 4 PCTs. We will also consult their associated Acute Trusts, and SHAs. Further background information will be obtained by accessing documents on commissioning strategies and functions. During this preliminary stage we will also conduct a scoping review of the literature on decision-making and 'evidence' utilization in healthcare management, and agree the practicalities of the research activities in Stages 2 and 3 (including how the presence of the researchers can be of benefit for the organisation).

Stage 2: In-depth investigation of the co-production of evidence

Duration: Months 5-16

This stage is aimed at in-depth study and documentation of evidence co-production and barriers to knowledge utilization in the commissioning process, focussing especially on Objectives 1, 3 and 4 of the research. Objective 1 will be pursued through detailed observation of current commissioning practices in the 4 participating PCTs. During this stage we will conduct 100-120 days of naturalistic observation and data collection in the four sites.

In order to place such practices in organizational context we will complement naturalistic observation with case-study analysis at each site. Case data will be collected through documentary analysis and 20 semi-structured interviews in each Trust (N=80). At the end of the data collection we will carry out a systematic cross-case comparison to identify critical organisational factors, enablers and barriers to effective co-production and effective use of evidence (objective 4). The results of this work will inform the design of the survey.

Stage 3: Generalisation of findings through national survey

Duration: Months 12-20

During this stage we will conduct a survey targeted at a nationally representative sample of managers (N=200-250). The survey is aimed at linking emerging findings from Stages 1 and 2 with quantitative data on the application of knowledge products in the deployment of evidence for commissioning, responding to Objective 2 of the research. The survey will be preceded by an engagement exercise whereby members of the research team will visit all the target organisations, explain the aims of the project, share the provisional results, and raise the interest for the research, with a view to disseminating provisional results and increasing the survey response rates.

Stage 4: Feed-back and engagement with users and user outputs

Duration: Months 18-24

This stage will address Objective 5 and focus on user engagement, dissemination and feedback. We will: explore the validity of research findings convening two user engagement workshops; develop guidance for target audiences; and disseminate the findings and recommendations of the research as whole during a national workshop, with invited international keynote speakers, to share promising practices.

METHODS AND PLAN OF ANALYSIS

A mix of qualitative and quantitative methods have been selected, both to advance specific research objectives outlined above, and to triangulate findings across different strands of work to ensure validity and generalisability of the study. There is general agreement in the literature that the combination of these methods yields results that are both robust and significant (Newman and Benz, 1998) and that a mixed-methods approach is particularly useful in healthcare settings (Steckler et al., 1992; Green and Caracelli, 1997).

Objectives 1 and 3 – understanding the co-production of evidence within different contexts – are principally addressed through the use of naturalistic methods (i.e. observation of real-life decision-making) linked to case study research. The case studies will locate the observations of practice in context by comparing selected organizational settings (PCTs) so as to determine the influence that these exert on the co-production of evidence.

Objective 2 – analysing the demand for knowledge products - will be principally addressed through the survey of managers within PCTs. Survey design will be informed by the findings derived from earlier qualitative work and will also extend the generalisability of such findings, especially as they relate to the patterns of use for knowledge products. Remaining objectives will be addressed through the synthesis of findings from the above methods, together with the user engagement activities outlined below.

In the early stages, we will also conduct a scoping review of the literature on decision-making, 'evidence' utilization in healthcare management, and knowledge products for managers both internationally and in the NHS. The literature review will ensure that the study builds on existing EBMgt research and on the current and projected NHS policy environment.

Naturalistic study

Naturalistic data will be collected using well-validated naturalistic methods including: participant observation and shadowing; ethnographic interviews; video recordings and video/or photo diaries; work and activity logs.

These methods will help to identify the role and implications for decision outcomes of the following features of the commissioning process:

- objects, such as information available via different knowledge products (e.g. the NLH, NKS, NICE guidelines, World Class Commissioning materials) and other 'boundary objects' that link groups;
- management routines (including structures and procedures);
- cultural (especially epistemic) and temporal repertoires of organizational roles in different PCTs (finance, public health, commissioning managers);
- discourses used to frame and legitimize evidence (e.g. World Class Commissioning, EBMgt, EBM).

PCTs will be selected for the 4 case studies to represent a mix of: variation on spending; deprivation; geography (using ONS Supergroup); number of competing providers; "quality" ratings using Healthcare Commission data; and known prevalence of exemplar chronic conditions , for example, chronic obstructive pulmonary disease (COPD) and coronary heart disease (CHD). Likely PCTs will include: Westminster, Milton Keynes, Dorset, and Knowsley. We will focus observations initially on commissioning decisions for these same conditions across sites to disentangle organizational variation from any effects of disease-specific knowledge. CHD and COPD have been chosen as focal areas because both are extremely common, preventable conditions which account for substantial mortality, morbidity and healthcare resources. They display clear needs for secondary care, evidence based government targets and a welter of published evidence on methods for delivering care.

Plan of analysis

Data will be analysed through; ethnographic methods and thematic analysis (Braun and Clarke, 2006); Conversation Analysis and talk-in-interaction methods for video and audio materials (Ten Have, 1999; van Leeuwen and Jewitt, 2001). The naturalistic study will also provide videos, vignettes, and scenarios to be used during the engagement activities.

Case studies

Each PCT will be treated as a discrete case study in order to contextualise the findings and allow cross-case comparison (Ragin, 1994; Stake, 1995). In each case we will:

- Collect data on the professional backgrounds, roles and grades of commissioning managers within PCTs.
- Conduct semi-structured interviews on the knowledge needs and challenges of the commissioning process with all organisational members involved.
- Identify sources of information, and characteristics of evidence used in the different phases of commissioning, including discussion around exemplar conditions of CHD and COPD.
- Observe the commissioners' individual attitudes to EBMgt, practices of evidence production and use, and implications for decision outcomes.
- Document in detail the frequency, mode of use, synthesis and persuasive effect of knowledge products from management research, from well-known consultancies (e.g. Dr Foster Intelligence), and from relevant sources of clinical information e.g. NICE Guidance, the NLH products, NKS.
- Analyse the processes through which commissioning decisions are made– location, type, and timing (e.g. at meetings, forums, online discussion, etc.) - and how evidence is handled and conflicts addressed.

Plan of analysis

Case specific data will be analysed using a systematic cross-case comparison activity based on Qualitative Comparative Analysis (QCA). This approach employs Boolean algebra to identify common and diverging causal paths across different case contexts (Ragin, 1987; 1994). Being software enabled, this methodology allows for more sophisticated paired comparisons than visual matrices. The cross case analysis will complement the thematic analysis from the naturalistic observation, feeding directly into the design of the survey.

Survey

The survey will be targeted at a nationally representative sample of all those at senior level in each of 15 PCTs and two Strategic Health Authorities (equating to a sampling frame of N=200-250, and an estimated response rate of 75% (150-180) usable responses). We will use stratified random sampling to select a sample of PCTs not used in previous stages and to reflect geographical areas using ONS "Supergroups" and key Healthcare Commission indicators of "quality" and "use of resources". Within each identified PCT, we will select all eligible staff reflecting four underlying groupings - senior executive team including non executive directors; commissioning managers; finance managers; and public health managers.

The survey will allow for multiple response modes: postal, email and computer-assisted telephone interviews. It will be carefully piloted and response rates will be maximized through site visits and engagement meetings.

The questionnaire will be developed using current policy, previous research and emerging findings from Stages 1 and 2 of the project (provisional sections in Figure 2). Questions will use statements and 5-point Likert scales with points ranging from "strongly agree" to "strongly disagree." The survey will include a mixture of closed and open-ended questions for respondents' own views.

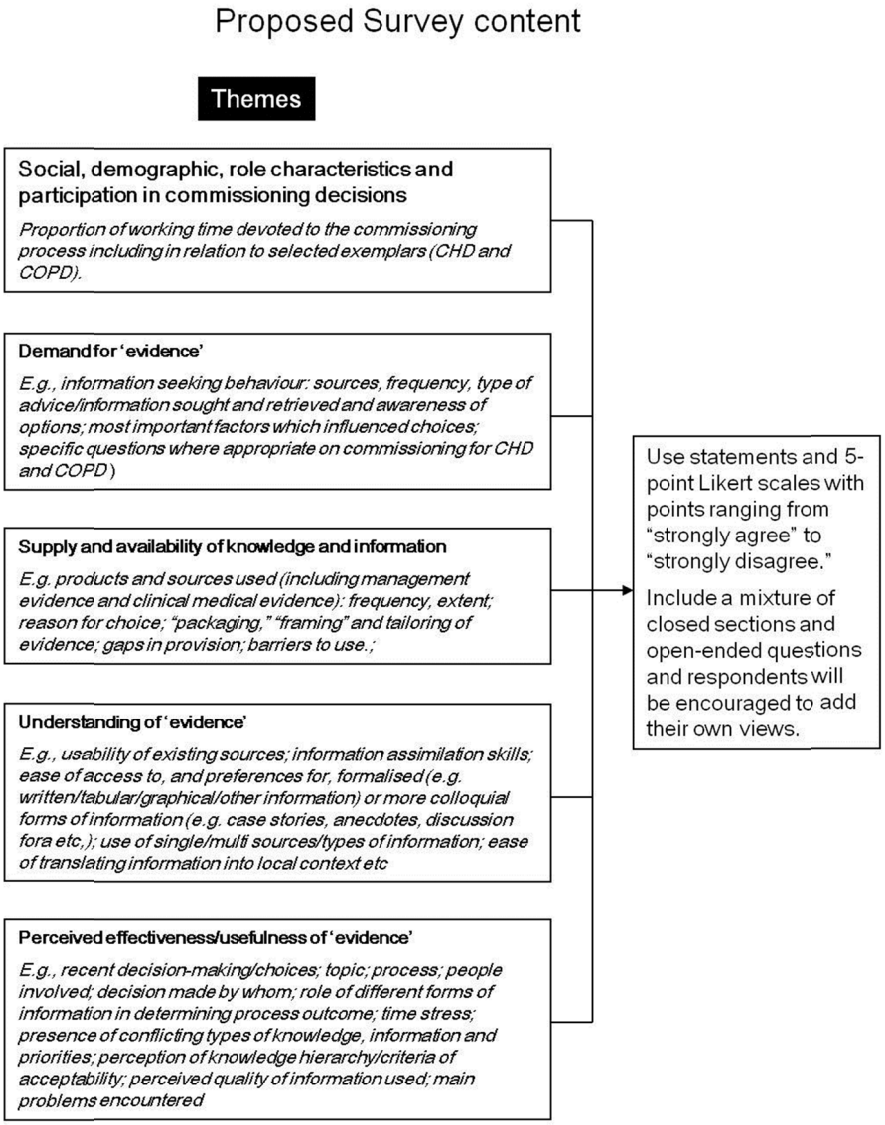


Figure 2

Plan of analysis

Data will be analysed using a combination of descriptive statistics and hypothesis testing (sample sizes should allow detection of a 0.125 difference in estimates of prevalence). Multiple regression will be used to investigate relationships between attitudinal/behavioural and socio-demographic/role-related variables. The 5-point Likert scales will be analysed using regression models for ordinal data (McCullagh and Nelder, 1989). Open-ended questions will be analysed qualitatively using the methods, themes and conceptual framework already established from previous Stages (1 and 2) of the research.

Overall integration of findings

Findings from the quantitative and qualitative sections of the work will be synthesised using the conceptual 'co-production of evidence' framework developed in the first two stages of the project. This will allow us to: explore the generalisability and validity of findings across the different stages; understand further how the framework applies to a wider range of

organizational contexts in the NHS; and develop and refine targeted recommendations for target audiences of PCT managers, policy makers and knowledge product providers.

Key findings from this synthesis will include: a greater comparative understanding of the role which different groups play in knowledge utilization within healthcare management; analysis of the selection and use of knowledge products within commissioning; identification of ways in which such products can be more effectively configured for identified patterns of demand and use; and empirically-based recommendations for improvements in 'EBMgt' and 'World Class Commissioning' that better address the actual dynamics of knowledge utilization.

BENEFITS OF THE RESEARCH TO THE NHS

Current health reforms in the NHS in England and the NHS Next Stage Review Final Report (DH, 2008) have emphasized the role of commissioning in the improvement of population health and health services. By focusing on this critical arena, the research will inform understanding of knowledge utilization by healthcare managers of different grades and at various stages of the NHS commissioning cycle, in one of their most important and high profile roles. In this way, the results will be of direct relevance both to the daily work of many NHS managers wishing to improve the effectiveness of knowledge utilization in commissioning, and to the public for whom services are commissioned.

The timing of our study will also allow an analysis of the impact on commissioning decisions of changes introduced as a result of the DH World Class Commissioning programme and the Darzi Review. This will provide an ideal example of how managers in different NHS organizations are evaluating and understanding the guidelines being introduced through these initiatives. The co-production framework will benefit commissioning managers in participating PCTs and policy makers working on these latest reforms by helping to understand the *actual practices* of commissioning and the variation seen across PCTs. The wider survey will test and develop implications of this analysis for more effective knowledge utilization in commissioning management through the NHS. These stakeholders will be better placed to identify the barriers and facilitators (organizational, cultural, practical, and political) to evidence-based practices in NHS management.

The insights into how different knowledge products are co-produced, appraised, used or discarded within the commissioning process will be of direct benefit to national agencies (e.g. NHS Evidence Programme, NLH, NKS) attempting to effectively configure such products for use.

We will ensure these benefits are realized through a full programme of targeted dissemination to key management audiences at local and national levels and through engagement of key opinion leaders.

INVOLVEMENT OF STAKEHOLDERS

Engagement with NHS participating Trusts is an essential and ongoing aspect of the research design. In addition, we will engage the following stakeholders

1. Groups representing service users, families and carers in the research design through our close liaison with UNTRAP *(Universities/User Teaching and Research Action Partnership)* - a partnership between users of health and social care services and carers, and the Universities of Warwick and Coventry and the NHS.

2. Key opinion leaders and relevant national agencies' support by a Scientific and Stakeholders Advisory Panel (SSAP) – see applicants list (Advisory Group). This group will ensure: scientific and end user input into the research direction and emerging findings; effective dissemination of the research to stakeholder groups; directions for future research. It will meet face-to-face three times during the project and will also be consulted regularly via email as and when issues arise.
3. Members of participating PCTs who will be actively involved in interpretation and refinement of the data through the two user engagement workshops and site visits across 15 sites in preparation for Stage 3 (survey).

SSAB members who have agreed to join are:

- Professor Sir Muir Gray Chief Knowledge Officer of the NHS
- Professor Peter Littlejohns, Clinical and Public Health Director of the National Institute for Health and Clinical Excellence NICE
- Dr Gordana Djuric, Consultant in Public Health Medicine, Warwickshire PCT
- Mr Ray Phillips, Head of Information Services Development, King's Fund
- Ms Margaret Demian, Head of Knowledge management, NHS Institute
- Mr Nigel Edwards, Director of Policy, NHS Confederation
- Caroline de Brun, NLH Knowledge Management Library, NHS Institute
- Professor Yvonne Carter, Dean of the Warwick Medical School (WMS)
- Professor Matthew Cooke, Regional Chair of Darzi Review and Project Director for the National Electronic Library for Health
- Dr David Davies Associate Professor in Medical Education, WMS
- Dr Tim Friede Associate Professor in Medical Statistics, WMS

DISSEMINATION OF RESULTS

A structured series of events will allow the findings and their implications for practice to be actively explored and disseminated amongst user groups. These will begin with two half-day user 'engagement workshops'. In each workshop we will:

- Present the provisional results of the research
- Trigger structured discussion in order to test the validity of the findings. Videos, vignettes, and scenarios will be used to ensure active engagement of the participants in the process.

Feedback from workshops, combined with site visits to Trusts participating in the wider survey, will guide completion of the analysis and dissemination of recommendations for target audiences of PCT managers, policy makers and knowledge product providers on:

- How to overcome the existing barriers to knowledge utilisation and
- What form, and through which channels, information should be provided to service managers to support their daily activity.

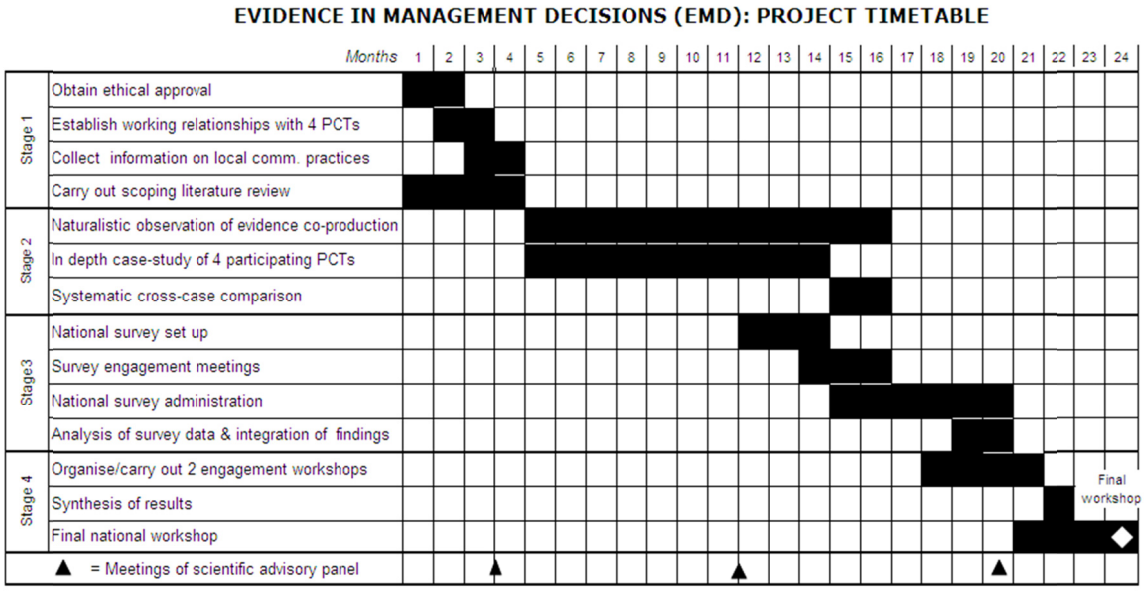
Using our links with key national agencies via the SSAB, we will ensure that a high level of awareness of the outcomes of the project is achieved amongst managers, commissioners and other key professionals. The final results of the research and outputs will be presented at a **national workshop,** with international invited speakers, to be sponsored by the University of Warwick in collaboration with participating organisations.

Published output will include:

- Interim and final reports for the SDO (see below)

- Book chapters and articles in international peer-reviewed journals (e.g. Health Services Journal; Organization Science), including theory paper on co-production
- Articles for health care professionals for the NLH Health Management library and report for DH
- A (non prescriptive) 'toolkit' for commissioning managers that illustrates innovative ways of improving knowledge utilization in the decision process, including 'real life' case examples, vignettes and, where feasible, video examples.

PROJECT TIMETABLE



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