

## DETAILED PROJECT DESCRIPTION (PROJECT PROTOCOL)

**Title:** 12/5002/20 - Improving the capabilities of NHS organisations to use evidence:  
A Process Model

### Expert Summary

Innovation driven by authoritative evidence – that is, synthesis of evidence made and published by (albeit not exclusively) the National Institute of Health and Clinical Excellence (NICE) – is a current and future priority for the NHS (1, 2). This is reflected in the UK government’s intentions to set up the “NICE Implementation Collaborative” as well as in significant on-going investment into programmes and centres (such as the Centres for Leadership in Applied Health Research and Care – CLAHRCs) aimed at understanding and improving the translation of new knowledge into practice. Multiple evidence-based products and recommendations for improvements in service delivery (e.g. commissioning guidance and disinvestment guidelines) are also increasingly being supplied to NHS organisations and to commissioning bodies in particular, to assist them in making decisions. Yet, it is quite clear that uptake is patchy and that supply of authoritative evidence does not always connect closely to demand (3, 4). Thus the major challenge for NHS commissioning groups is to proactively and strategically consider how their organisations can be better equipped to take hold of, and use, evidence in their service design and delivery decisions – a challenge set against significant changes in the commissioning landscape.

Of relevance to this challenge are findings from a recent rich stream of research, including our own, that has studied the mobilisation and use of knowledge and evidence in different organisations and settings in the National Health Service (NHS) (3-12). This research has helped to highlight and explain processes (social and political) and dynamics of evidence-based decision making in healthcare and the reasons why innovation so often fails to diffuse (13). Gabbay and Le May’s (14) study, for instance, found that, when observed in detail, the actual use and mobilisation of evidence by GPs is locally and socially conditioned and looks very different from that depicted by more abstract evidence-based guidelines. Rather, clinicians rely on ‘mindlines’, socially constructed forms of shared expertise that incorporate evidence derived from a variety of sources in a form that is compatible with their daily activity(11). According to Ferlie et al (2010) the key challenge for knowledge mobilisation in NHS organisations lies thus in “building high learning capacity and appropriate core competencies in NHS organisations, rather than relying on a technological fix...” (15, p. 229).

While much has been learnt from this research about the fluid and unpredictable ways in which evidence diffuses in NHS organisations (and into commissioning groups), further work is needed to identify and articulate how NHS organisations can *develop and improve their capabilities to use evidence more effectively*. What constitutes ‘high learning capacity and appropriate core competencies’ and how can these be developed? More needs to be known about how the ‘journey’ of evidence into healthcare commissioning organisations can actually be improved (16). This gap in knowledge is also reflected in senior decision makers’ concern that a “methodology for using evidence” is still elusive (David Stout, HSJ, 13<sup>th</sup> May 2010). What is required is a more focused research approach, which builds upon the rich understandings of innovation and knowledge transfer generated by previous research, but which delivers realistic opportunities for improving capabilities for evidence uptake.

Accordingly, this research will adopt a comparative research strategy to investigate how the capability of the newly established NHS commissioning organisations – Clinical commissioning groups (CCGs) – to use authoritative evidence, can be enhanced. Specifically, the research aims to identify the organisational and managerial capabilities that CCGs need to develop in order to improve their capacity to mobilise authoritative evidence. We focus on NICE evidence, given its importance to health and social care reforms. Through multiple case studies in 8 NHS organisations (CCGs), we will describe systematically the journeys of *the same* type of evidence used by CCGs in order to explain *how* variation occurs and under what organisational conditions. The research will develop specific

recommendations for capability enhancement by explaining comprehensively how more successful journeys differ from less successful ones and the processes and capabilities that need to be in place.

Furthermore, the focus will be on two kinds of authoritative evidence aimed at innovation in service delivery: (A) evidence that orients healthcare organisations toward adopting service quality enhancements (e.g. new NICE guidelines/guidance for achieving improved, higher standards of care etc.); (B) evidence that orients healthcare organisations towards abandoning outmoded practices (e.g. NICE disinvestment guides recommending complex, even tough, decommissioning decisions). These are chosen because both are essential to deliver innovation in the NHS but they may pose distinctive challenges. For example, pathway change usually means learning to improve existing modes of delivery, whereas disinvestment means jettisoning outmoded practices, or ‘unlearning’. Research suggests that the dimensions underpinning learning and unlearning in organisations, and the capabilities required, may be quite different (17, 18). Moreover unlearning has received scant attention, either in theory or in practice.

The key objectives of our comparative approach, then, are first, to observe and document meticulously how authoritative evidence (types A and B) actually travels in practice into the decisions of CCGs; and, second, to identify the capabilities (practices and enabling conditions) that make the journey and organisational processing of evidence more effective. We will synthesise our findings by developing a process-based model that explains *how and why the travel of evidence becomes more or less effective* in practice (on the basis of common outcome measures, see conceptual framework).

The intended outcome is to provide NHS decision makers in CCGs with a set of practical improvement methods - a *process ‘roadmap’* and associated *diagnostic/benchmarking tool* – which will enable them to assess their organisations’ capabilities to use different types of evidence and identify opportunities for improvement. These will map the route to effective evidence use and take due account of *both* organisational dynamics/complexities *and* the objectives (purpose) of the decision (i.e. service enhancement and/or disinvestment). These outputs will be created via close engagement with NHS practitioners and with a multi-stakeholder advisory panel, who will advise on all stages of the research.

## Background & Rationale

A major provider of authoritative evidence to deliver innovation in service delivery is NICE, which produces evidence-based guidelines (including technology appraisals) that are widely considered to be ‘gold standard’. It is expected that such evidence will increasingly drive innovation and improvement in the UK health system and new legislation is placing NICE at the heart of reforms in health and social care and as central to the QIPP challenge (DoH Review 2011, ‘Innovation, Health and Wealth: Accelerating Adoption and Diffusion in the NHS’). A significant driver of these reforms is to put in place concrete measures to improve the uptake of authoritative evidence, especially that produced by NICE, in order to deliver improved and more cost effective services to patients.

A large number of research studies in different organisations and settings in the National Health Service (NHS) (3-12) has helped to explain variation in the uptake of authoritative evidence and, more broadly, the challenges of translating new knowledge into healthcare practice. These challenges are attributed in large part, to the highly localised, and sometimes hotly contested, nature of knowledge and professional/healthcare practices in the NHS context (6, 19, 20). In Canada, for example, the term ‘knowledge translation’ has been adopted by the Canadian Institute of Health Research (CIHR) to examine and study this process (21). CIHR states that knowledge translation includes a diverse array of activities (21) and needs to be understood as highly complex, not only in technical, but also in social, organisational and political terms (22). Relevant work by Dobrow et al (9) also suggests, persuasively, that evidence-based policy making needs to be conceived as a *context-dependent* and a highly contingent *process*. In a similar vein, Walshe and Rundall highlight (2001) specific challenges to practising evidence-based management: “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” (23, p. 445). Whilst debates continue over how effectively the ‘translation’ metaphor

captures the link between knowledge and practice (24), this growing stream of research has without doubt shed light on dynamics of evidence-based decision making, which were often obscured by more static theoretical perspectives (25-28).

In addition, recently completed NIHR funded research (08/1808/244 Swan, 08/1808/240 Checkland) shows that healthcare commissioning is a context where transferring and using evidence and 'best practice' is especially challenging. This is due to the on-going involvement of diverse experts and professionals (e.g. commissioning managers, finance experts, clinicians, public health experts), who jointly arrive at decisions on how to allocate resources in the purchasing of healthcare services (12, 29, 30). Thus there are multiple types of expertise and interests 'at stake' and even what counts as evidence is often hotly contested (4, 6, 13, 15, 31). The significant reforms being rolled out in the organisation of NHS commissioning now make these challenges greater than ever.

While much has been learnt from this work about the complex process of evidence uptake and use, it is still often difficult to *apply* practical insights emerging from studies of specific episodes. The literature says rather little, for example, on the specific ways in which evidence, specific work practices and organisational conditions (context) interact to produce more or less successful outcomes. Yet this understanding is also crucial to improving organisations' capacity to use and apply new knowledge. As emphasised by Greenhalgh et al's (2004) systematic review, and highlighted further in this call for research, research still needs to interrogate the following:

*"How can we improve the absorptive capacity of service organisations for new knowledge? In particular, what is the detailed process by which ideas are captured from outside, circulated internally, adapted, reframed, implemented and routinized in a service organisation, and how might this process be systematically enhanced?" (16, p. 618)*

The focus of this proposal, then, is on **improving** NHS organisations' capabilities to use authoritative evidence in their decision-making practices. Accordingly, our study seeks to investigate and specify **what organisational capabilities matter** in making the 'journey of evidence' into decision making more effective **and how**. We use 'journey of evidence' metaphorically, to capture the idea that evidence use is not simply accomplished through a straightforward linear movement of (objectified) knowledge from supply (providers, e.g. NICE) to demand (decision-makers, e.g. CCGs). Rather, it entails multiple efforts, adjustments and courses of action undertaken over time by human actors (e.g. clinicians, managers, financiers, providers), equipped with various tools and objects (e.g. documents, guidelines, contracts, computers). Whilst the overall journey can be planned, the actual path taken is often circuitous, and sometimes fraught, being subject to local interests, conditions and variations in context. In terms of theory building, this responds to calls to use alternative metaphors which grasp the 'created', 'constructed', 'embodied', 'performed' and 'collectively negotiated' nature of knowledge – knowledge cannot be neatly separated from practice (24). Importantly, in terms of practical improvement, the metaphor highlights that, even though the path can be messy, certain meta-level tools and objects (e.g. 'maps'), capabilities can be developed and used strategically in order to smooth the journey and avoid pitfalls encountered by others.

Our research will build and extend previous work on how evidence finds its way into practice in the NHS. For example, we will build explicitly on the findings of Gabbay and le May (10, 11) who also adopted an ethnographic approach to investigate the travel of clinical evidence. The authors found that while, *prima facie*, practitioners rarely use evidence products, evidence is not ignored. Rather, evidence finds its way into practice by being incorporated into the 'mindlines' that clinicians use as the "templates against which to check their individual practice" (11). Unlike Gabbay and le May, however, our focus will be on administrative, rather than clinical activities, while our focus will be at organizational level rather than GP practices (the site studied by the two authors).

In sum, this research will provide an in-depth examination and systematic comparison of the use of authoritative evidence (NICE clinical guidelines/guidance and disinvestment guides) across NHS organisations (CCGs) in order to identify which capabilities and conditions generate relatively more successful outcomes. In this way we tackle the important problem of absorptive capacity identified by Greenhalgh et al. The study will develop a process model that articulates the dynamics of evidence utilization without losing sight of local work practices and context, and that allows us to generate robust improvement methods (expected in the form of 'roadmap' and associated diagnostic tool).

Hence, it builds upon, and expands, existing interpretative studies of evidence-based decision making (e.g. the NIHR SDO funded projects: 09/1002/38 Holmes, 09/1002/36 Nicolini) and incorporates the recommendation made by the SDO scoping review of Crilly et al (3) for more empirical work in this area.

## **Evidence explaining why this research is needed now**

### *NHS need*

Whilst the production and implementation of authoritative NICE guidelines has long been an important objective for the NHS, the recent Health and Social Care Bill has placed NICE squarely at the forefront as providers of authoritative, evidence-based products/recommendations (e.g. commissioning guidance and disinvestment guidelines) to NHS organisations, and CCGs in particular. At the same time, more stringent measures are being proposed to accelerate the uptake NICE recommendations and ensure they are actually implemented. Expectations are higher than ever that authoritative evidence will drive innovation as well as lower the costs of service delivery in the NHS. These expectations are reflected, also, in government's intentions, announced recently, to set up the "NICE Implementation Collaboratives" (NIC). At the same time major shifts are underway in the landscape of NHS commissioning. Therefore, this research on how newly formed CCGs can be better equipped to use NICE evidence is particularly timely now. The research will contribute to the strengthening of commissioning function, which is of paramount importance to deliver patient benefits through better organisation of health services. It will do so by identifying realistic opportunities to improve crucial organisational processes of CCGs with regards to their ability to accelerate the uptake of scientific evidence.

*The strong support and interest in our research, expressed by 12 CCGs, attests to the fact that our study is well tailored to address important needs of these newly established organisations.*

As well as needing to innovate, NHS organisations are under pressure to achieve huge savings in the coming years, much of which is to be realised by adept commissioning. These dual objectives can only be met by improving existing services and care pathways whilst also jettisoning outmoded (expensive) practices. In either case, commissioning managers need to take decisions based on sound evidence. In light of this, organisational capabilities to use evidence to pursue not only service change, but also disinvestment, need to be carefully nurtured. By focusing on both "do" (change) and "do not do" (disinvest) NICE recommendations, this study will highlight any differences in the ways such different recommendations can be implemented in practice. It will hence provide an important practical resource for front line managers and clinical leaders of commissioning organisations who will be responsible for making some tough decisions over the coming years.

Finally, an empirical focus on commissioning decision making (an area highlighted in the research brief) is both timely and necessary for two additional reasons. First, the CCGs are newly established organisations, which will be fully operating as the main NHS commissioning bodies from April 2013 onwards. In light of the high expectations for CCGs in the coming years, there is a strong need to ensure that CCGs can develop crucial organisational and learning capabilities. The proposed research will provide a strong evidence base on how these newly forming organisations learn and develop their capabilities (to use evidence) in a shifting institutional context. This will provide practically useful outcomes for CCGs as well as important theoretical insights.

Second, it appears that the thrust of the NHS reforms has been to create a service of clinical commissioners supported by managers. This suggests a changing relationship between managers and clinicians: managers' 'old role' used to be one of engaging GPs/clinicians in commissioning. Their new 'roles' (which are still not fully understood) will be re-defined to account for the fact that GPs/clinicians are now leading the commissioning process. It can be expected that the capabilities of CCGs to utilise authoritative evidence more or less effectively will be influenced by these new modes of working between clinical leaders and managers. There is, therefore, a real need to identify

opportunities for learning *across* CCGs with regards to forming productive relationships between clinical and managerial leadership. The proposed research will also provide unique insights into the ways professional-managerial relationships are being reconfigured in the context of implementing evidence-based recommendations. This is a context where clinical expertise has played a key role traditionally in realising the uptake of authoritative evidence.

#### *Response to the NIHR HS&DR commissioning brief*

This research proposal responds directly to the specific need outlined in the NIHR HS&DR call for “Research on ‘pull’ by service/managers” and on “(1) Measuring absorptive capacity in NHS organisations”. In particular, our study aims to “assess the capacity in healthcare organisations to accelerate innovation” (p. 4) by specifying specific steps for building appropriate capabilities to use authoritative evidence in commissioning decisions. The proposed research will develop a *process-based model and roadmap* aimed at improving capabilities by showing the route to effective use of evidence in decision making. Importantly, the proposed model (and roadmap) will be grounded in *actual* practices occurring in the newly formed CCGs and in principles of *comparative performance*. This, together with an associated diagnostic tool, will provide a practical and much needed resource for CCGs, which will then be in a position both to assess their capabilities to use authoritative evidence, and to improve these by benchmarking against good practice (and, if appropriate, against other CCGs).

The study will also contribute to the second subtheme of the commissioning brief for research on ‘push’ by research/innovation. It will consider the form in which evidence (in this case NICE guidelines, usually text-based) is communicated and how this influences its mobilisation and usage. The proposed research will explain how the properties of evidence (e.g. its material form, message simplicity, perceived advantages) matter to the way it travels in commissioning organisations. Hence, the roadmap will incorporate this crucial aspect of the evidence journey.

#### *Expressed need for the research supported by sustained interest*

This research builds directly on earlier work funded by NIHR-SDO on the use of evidence in commissioning by PCTs (SDO ref. 08/1808/244) and on knowledge mobilisation by NHS Chief Executives (SDO ref. 09/1002/36). Key findings of these studies are reflected in this proposal - for example, that using evidence in the PCT context entails capabilities such as mobilising different kinds of authoritative evidence and local knowledge in a timely manner, managing interfaces across project stages (e.g. between design and procurement), and proactively building and managing relationships among project parties to create coalitions. We will also build on a key finding of our previous large-scale national survey of 345 NHS managers, which suggested that, “the single most important source of evidence identified as having the strongest influence on the [commissioning] decision was ‘examples of best practice from other organisations’” (SDO ref. 08/1808/244)<sup>1</sup>. Accordingly, our research output plan includes the development of rich examples/case histories of how successful organisations apply the necessary capabilities to use evidence effectively.

The primary objective here, however, is not just to generate “rich insights” or “better understanding”, but to show systematically how NHS commissioning organisations can develop their capabilities to use evidence more effectively in this new context of GP-led commissioning.

## **Aims and objectives**

The research aims to identify the capabilities (organisational and managerial) that NHS Clinical Commissioning Groups (CCGs) need in order to become better users of authoritative evidence. The

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<sup>1</sup> A copy of the full report can now be downloaded at URL: <http://www.netscc.ac.uk/hsdr/projdetails.php?ref=08-1808-244>

research focus is on authoritative evidence produced by NICE and aimed at innovation in service delivery (both investment and disinvestment) in commissioning decisions. We have operationalized the following objectives to achieve our research aims:

- To study how the same pieces of authoritative evidence travel in, and are used by, different CCGs – *document ‘evidence journeys’*
- To compare and contrast the travel of evidence across CCGs in order to investigate how and why variations in journeys and uses of evidence occur in practice – *analyse comparatively ‘evidence journeys’*
- To create a process model, roadmap and a diagnostic tool that will guide CCGs through concrete steps to become better users of evidence. Specifically, we will work closely with NHS organisations to develop concrete recommendations that will allow CCGs to assess, benchmark and improve their capabilities to use evidence. These tools will be built on a robust model of the process by which evidence travels in the *real world*, rather than on abstract accounts.

To fine-tune our research objectives we have developed the following research questions:

1. *How does authoritative evidence aimed at innovation (NICE recommendations for investment and disinvestment) travel across the NHS system to reach CCGs?* The research will investigate the processes and routes whereby pieces of authoritative evidence actually travel into CCGs; the study will interrogate the effectiveness of this journey.
2. *How is authoritative evidence mobilised and used within the decisions of different CCGs?* The research will identify the key practices (e.g. collaborating, coordinating, managing information flows and relationships) and enabling organisational and group-level conditions (such as internal organisations structures and procedures and profile/training of staff) that underpin the process of evidence use.
3. *What capabilities (organisational and managerial) and conditions make the journey of authoritative evidence into commissioning decisions more effective?* The study will examine how and why evidence is incorporated into commissioning arrangements and contracts more or less successfully (with regards to e.g. speed, effort, satisfaction, adherence to original recommendations). It will explore the major challenges/roadblocks to this process.
4. *Is the travel of authoritative evidence into commissioning decisions and contracts contingent upon: (i) its intended purpose (investment or disinvestment); (ii) the way in which evidence is presented?* The research will examine how the presentation of evidence (e.g. text, narrative, supporting information) influences the ease of use and interrogate whether distinct capabilities are needed to process evidence aimed at investment or disinvestment. It will also explore whether the evidence needs to be presented in different ways depending on whether the purpose is investment or disinvestment.
5. *What tools and initiatives can be deployed to diagnose and improve the capability of CCGs to use authoritative evidence in decisions?* The proposed study will engage with practitioners (e.g. CCG staff, NICE managers) through a series of structured events (workshops) to co-develop practical resources as well as policy recommendations for NICE.

## Research plan/methods

### Conceptual Framework

In order to improve the journey of evidence into organisational (commissioning) decisions, we have developed a provisional conceptual framework (see figure 1 below). This links evidence (of different types) and its processing to particular outcomes. It builds upon three established organisation science perspectives.

First, we will adopt a *process perspective* that understands the spread and circulation of innovation and evidence as a dynamic process (16). A process perspective invites us to map a thick and realistic journey of evidence *as it happens* and to relate this to concrete outcomes (32, 33) (**yellow boxes in figure 1**). This means that mobilising and transferring evidence – a tangible set of authoritative recommendations (usually texts) – from one domain into another entails a dynamic sequencing of practices (for example, sourcing and deciding to use evidence; interpreting, reframing and expanding on evidence) to produce certain outcomes, such as decision to change service standards (25, 27, 34). Conceiving the journey as inherently dynamic and uncertain is particularly suitable to study the realities of commissioning decision making, which, previous research has shown, is far from linear and ‘rational’ (29). That said, it is possible, by mapping processes against outcomes, to produce more generalizable findings aimed at improving organisational performance (33).

Second, we will address the uptake and use of evidence in organisations as a *practical accomplishment*. A practice approach highlights that using evidence *requires work* – ‘knowing how’, not just ‘knowing what’ (35, 36). For example, knowing how to cross professional boundaries and how to manage the negotiation of contracts appears to be crucial to getting commissioning tasks done (12). A focus on practice makes us understand “the conditions (e.g. human, social, structural, financial, technological, infrastructural) under which skilful performance is more and less likely to be enacted” (35, p. 270). In this study, we focus on such enabling conditions at two levels: (i) the *organisational* (e.g. resources available, organisational form and governance procedures), and (ii) the *decision-making group* (e.g. skills profiles, role structures and accountabilities, negotiations and power dynamics, project management). We thus conceptualise capability to use evidence as the combination of *processes, practices and enabling conditions* needed to achieve a particular purpose, rather than as a static variable or characteristic of the individuals involved (**see green boxes in figure 1**). In short, organisational capabilities are understood as the means that effect the achievement of a specific end – in this case the use of authoritative evidence in commissioning decisions/contracts. The benefit of adopting this view of organisational capabilities is that it provides a direct link from research findings to actionable recommendations. As mentioned above, our study will build explicitly on previous work by Gabbay and le May (10, 11) albeit our focus will be different (we will study managerial processes and organizational capabilities rather than clinical activities). Our study will also take into account the results of the current HS&DR Project - 09/1002/09 ‘Knowledge exchange in healthcare commissioning: GPs, PCTs and external private providers’ led by Dr Wye from Bristol. Although the two projects have a rather different focus (according to the protocol, Dr Wye’s project is especially focussed on how commissioners decide whether and when to call on private management consultants and how they use their information), it is our intention to approach the team as soon as possible to establish forms of collaboration and knowledge sharing. We have done this in the past with great benefits for all parties.

Third, we build on the established tradition of explaining variations in the travel of evidence and new technology implementation (37-39) by comparing similar cases. We will follow, in particular, the approach of Harvard professor Amy Edmondson (40), who studied differences in the extent of adoption of an innovative cardiac surgery technology in 16 US hospitals (all high performing). Edmondson et al examined the different process and journeys followed by organisational groups and were able to link their implementation success to particular capabilities (e.g. team learning). Hence, we will explain variation by comparing and contrasting the processes and work practices of different CCGs dealing with the same piece of evidence (the same NICE recommendations). To this end we will utilise a number of key indicators that will enable us to benchmark the journey of two well-identified NICE products in terms of how successfully they make their way into different CCGs. Although the exact indicators will be developed in the first part of the study, likely candidates are: the time taken for evidence to travel into CCG decisions; the amount of effort and resources required; the degree of adaptation of the original evidence-based recommendation; and the satisfaction level of decision-

makers and stakeholders (*see orange box in figure 1*). Proxies will also be used to compare variation in the incorporation of evidence in a commissioning arrangement (e.g. change in contract or decommissioning). The development of a set of indicators will also facilitate cross-case analysis utilising Qualitative Comparative Analysis (41, 42) (see data analysis).

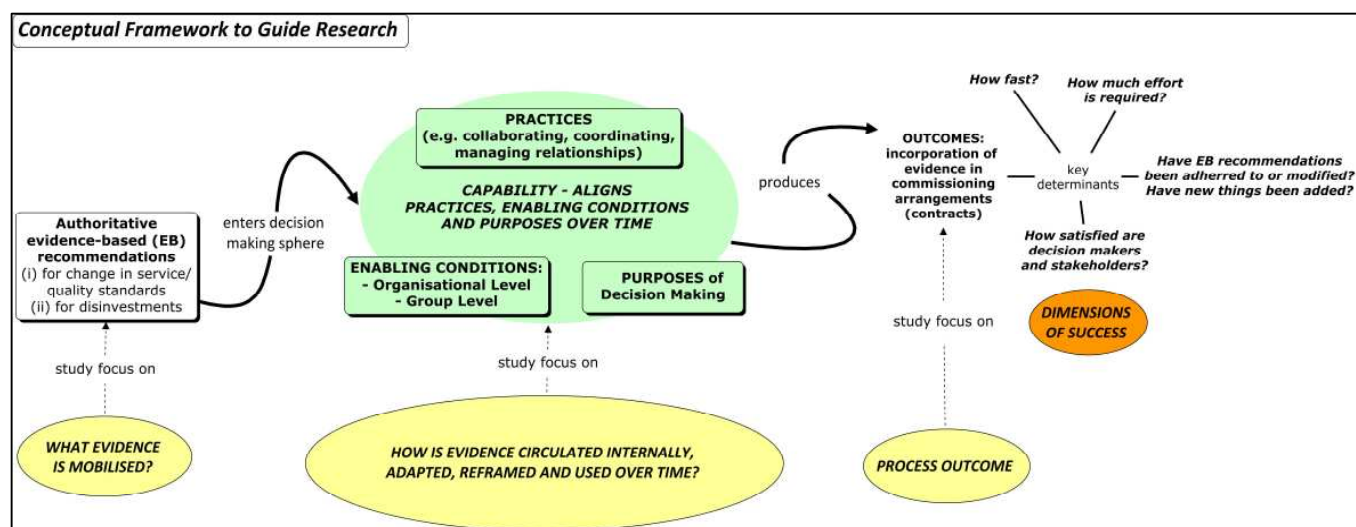


Figure 1. Conceptual Framework

The above conceptual framework provides a *more holistic explanation of variation* in evidence use by linking capabilities (work practices, conditions, decision purposes) to outcomes. It also takes into account the realities of decision making, including planned and unplanned aspects. While the framework will be further refined as part of the project, it provides a robust approach to describe and assess the capacity of healthcare organisations to use evidence.

### Research Design

The research will be *inductive* and *qualitative* in nature and will adopt a *comparative* research design (43). It will combine real time observations with retrospective inquiry, based on interviews and documents, to examine the journeys of **two** pieces of authoritative evidence aimed at innovation in service delivery across **8 organisations**. The study will embrace a ‘key parameter’ design to compare and contrast a *similar type of process* (in our case journeys of the same type of evidence) across organisations. As Barley & Kunda argue (2001): “the design’s forte is that it enables researchers to articulate more clearly how key contingencies differently shape work practices and, hence, engender different patterns of organising” (39, p. 85).

### Research setting and Sampling

The major research sites will be newly established clinical commissioning groups (CCGs) led by general practitioners. However, we will also collect data on the wider commissioning entities surrounding CCGs – for example on the ancillary activities of Commissioning Support Units and NHS Commissioning Board local area teams – where they are shown to play a critical role in influencing the evidence journey into CCGs and its outcome. CCGs will be chosen via purposeful sampling to reflect a mix of variation on spending, deprivation, geography, number of competing providers. To address our questions, we will focus on the ways 8 different CCGs mobilise and use *two types of evidence* produced by NICE (clinical guidelines and disinvestment guides). We selected this sample size (N=8)



to maximise opportunities to observe and explain variation, whilst paying close attention to the contextual and processual dimensions of the phenomenon of interest. Our main inclusion criterion for the selection of CCGs is to use the same authoritative evidence.

Our **unit of analysis is the ‘evidence journey’**: the travel evidence takes from the date/point of its release (NICE) to the date/locus of incorporating (some of) its recommendations in a commissioning decision (usually modification in contracts with healthcare providers). This unit of analysis gives us, then, the flexibility to focus on organizational capabilities (i.e. by comparing evidence use in CCGs) but also to incorporate the role played by the wider commissioning entity in the evidence journey. During this journey evidence may well go through different organizational arenas. For example, it may well go first to the NHS commissioning board, then to CCGs, then to commissioning support units, then back to CCGs, which negotiate contracts with providers. Core capabilities in CCGs may indeed prove to include their ability to interface with, and use particular kinds of support from, these organizations. In order to render comparison across cases possible and meaningful, however, we need to keep the ‘end of the journey’ constant (the start of the journey – NICE – is also given). In order to achieve the objectives of our study, we have proposed that the end of the journey be a change (e.g. enhancement of scope of services, inclusion of new monitoring indicators consistent with NICE evidence, or decommissioning) in contracts *between CCGs and other* healthcare providers (most likely acute Trusts or community trusts). In other words, even if NICE evidence may travel across different organisations, the end of the journey and, therefore the major locus of the analysis, should be CCGs.

In parallel, we will select, in close consultation with our Scientific and Stakeholder Advisory Panel, two particular forms of evidence from NICE aimed at innovation in service delivery (not just minor adjustment). We will select one piece of evidence recommending pathway changes on the basis of emerging scientific evidence (“Do recommendations”, e.g. NICE Clinical Guidelines on Diabetes in children), and another recommending decommissioning of certain healthcare services or treatments (“Do not do recommendations”, e.g. regarding mucolytic drugs as per NICE guidance CG101). We will also draw on Sheldon’s work (44) and incorporate some of the criteria that are recommended there. Of course, our focus is a different one (the focus of Sheldon studies was on implementation by healthcare providers [Acute Trusts], rather than on the implementation by commissioners), yet some of the criteria used by Sheldon are relevant, as pointed out by the Board. More specifically, we will incorporate the following sampling criteria, i.e. for which NICE evidence journeys to follow: (a) **Date of NICE evidence release**: we will look at NICE evidence, which will have been published for at least 3 months (when we begin data collection), but no longer than 2 years. (b) **Care setting**: although usually implementation of NICE evidence may span care settings, we will focus mainly on NICE evidence that is targeted at commissioners and acute trusts. We consulted with NICE early this year (2013), and they suggested that Quality Standards, (<http://www.nice.org.uk/aboutnice/qualitystandards/qualitystandards.jsp>) may also be a fruitful area to investigate, as well as commissioning guides. (c) **Cost consequences**: we will select NICE evidence that has some important cost implications. (d) **Message clarity**: finally, we will select evidence, which draws some clear (according to the producers of evidence, i.e. NICE) recommendations for practice. The latter will make it easier to evaluate the extent to which the changes implemented in practice actually match NICE guidance.

While authoritative evidence for innovation and improvement in service delivery comes, of course, from a range of sources, we focus on that produced by NICE for four reasons. First, the NICE Implementation Collaborative is central to the reforms set out in the DoH 2011 ‘Innovation, Health and Wealth’ Review. Second, recommendations in the area of commissioning and de-commissioning are significantly under-explored, as most prior research has been conducted focussing on clinical evidence. Third, by focussing on NICE recommendations it is possible to clearly identify the beginning (first release by NICE) and end of an evidence journey (e.g. change in contract, formal commitment to alter clinical practice). Finally, NICE recommendations apply to many, and often all, NHS organisations - CCGs and this facilitates the application of a comparative research design. For example, NICE clinical guidelines for the hyper-acute stroke pathway affect all commissioning organisations, which need to review services and modify their contracts to use such guidelines effectively.

## *Research Methods*

Data collection will be conducted by using a combination of the following well-validated qualitative research methods.

**Participant observation** is aimed at understanding and representing a particular aspect social life through gaining close familiarity and observing “from within” an organised group of individuals or community (45). Critical to this approach is the assumption that an intensive involvement with people in their natural environment over an extended period of time gives access to ways in which the members of the researched group make sense of their world and perform practices (enact capabilities, in our conceptual framework). Participant observation often involves the collection of **documents**, which a group of individuals draws upon, modifies and/or produces to accomplish their tasks.

**Ethnographic interviews** are open-ended interviews especially designed to understand in a systematic way the conduct of people studied from their own perspective (46). They are usually conducted within the context of observational research, both as a way to collect contextual information before the commencement of observation and later to clarify and/or expand the understanding of themes emerged during the observation. When utilised within the appropriate design, ethnographic interviews produce a wealth of highly contextualised research data that other more traditional approaches fail to capture (47).

## *Data collection*

Using these methods, we will collect the following data:

- ➔ Detailed participant observation notes of 40 meetings at 2 CCGs, documenting discussions, attendees, and documents/artefacts used. These will provide the foundational evidence base of the dynamic processes, on-going capabilities and success factors we are interested in. The main inclusion criteria for meetings will be their significance as regards the use and/or implementation of the selected NICE evidence into the commissioning process. (Collected during Stage 2 – see plan of investigation)
- ➔ 40 ethnographic interviews at these 2 CCGs to expand upon and triangulate ethnographic notes. Interviewees will be sampled on the basis of their participation in ‘evidence journeys’, and are likely to include senior, middle and operational managers, representatives from different professional groups including medical doctors, nurses and allied health professionals, patient representative groups, and administrative personnel. Interviews will be audio recorded and transcribed verbatim, only after consent has been given (by interviewees themselves). Where needed, we will conduct initial and follow-up interviews with key individuals (e.g. decision group chairs or sponsors). (Collected during Stage 2 – see plan of investigation)
- ➔ Further 120 ethnographic interviews at 6 CCGs, as per our objective for retrospective inquiry. These interviews will be conducted after the observations and interviews in the above 2 CCGs and will be based on an interview protocol. This will be developed to incorporate findings from a preliminary analysis conducted after the naturalistic observation at the 2 CCGs. Interviewees will be sampled on the basis of their participation in ‘evidence journeys’. Same inclusion criteria apply as above. (Collected during Stage 3 – see plan of investigation)
- ➔ 32 interviews (allowing for 2 per evidence journey) with leaders in organizations in the wider commissioning complex (e.g. Commissioning Support Units, Commissioning Board local area teams) found to play a significant role in the evidence journey into CCGs.
- ➔ Documents/artefacts of two kinds: (i) confidential documents, which are drawn upon during meetings in all 8 CCGs, and (ii) publicly available documents, which are used/referred to by our research participants in order to frame and legitimate their strategies and actions. (Collected during Stages 2 & 3)

## **Data analysis**

Data will be analysed through thematic analysis (48) and comparative case study analysis (43). We will follow the approach used by Gioia et al (49) and start by drawing out the chronology of critical events in the evidence journeys we observe. We will then use inductive coding to identify capabilities (practices, conditions and purposes) that appear to play a role in enabling evidence use at different stages. We will collate all data (e.g. statements, observations) that relate to capabilities via open coding (50). From these we will draw together common statements to form provisional categories (first-order codes), using NVIVO software to support and record the coding process. The entire project team will hold two full-day workshops in order to compare field notes and engage in data analysis, i.e. identifying themes from the data (rather than from theory) that had particular bearing on our research objectives.

Findings will be shared with our case study participants in the form of interim feedback. This exercise will test the face validity of the findings and also provide an opportunity to further enrich our results. We will then move to axial coding (51), integrating our first order categories into higher order, researcher-induced themes pertaining to capabilities (i.e. capability clusters). Existing theoretical themes and categories from findings in other empirical settings will also be used, however, alongside inductive coding as these can help to generate multiple interpretations for the data set (52).

In order to map processes, we will adopt established methods for analysing process data, especially the *temporal bracketing strategy*, which requires analysis of the various phases of the process as well as *visual mapping strategy* (53). This will enable us to conduct constant comparisons across the different phases of evidence journeys and across all case studies. For example, we will compare in our dataset how the evidence arrives at a CCG decision group and how the evidence leaves the decision making context. This will enable us to unpack what kinds of capabilities (as coded previously) are applied and to rank the performance of the 16 different evidence journeys using the following ‘success’ criteria: (1) **Time**. From the initial realise of a NICE guideline (or disinvestment guide), how long does it take to *a*. recognise that NICE evidence needs to be used, and *b*. actually incorporate NICE evidence in commissioning arrangements (which boils down to contracting arrangements, I suppose)? (2) **Effort/resource**. How many meetings does it take to implement NICE evidence in commissioning? How many resources (people’s time) have been deployed? (3) **Reported satisfaction** by decision makers and stakeholders. On the basis of a Likert-scale type of measurement, we want to capture how satisfied commissioners and providers as well as other stakeholders are from the process and outcome of implementation. The inclusion in our ‘time’ measure of two main elements (a and b) also aligns well with the two major aspects of absorptive capacity identified in other research (54, 55). These are, first, the ability of an organization to acquire new knowledge from external sources and recognise its value (potential absorptive capacity) and, second, the ability of an organization to combine that new knowledge with existing knowledge and exploit it for practical benefit (realised absorptive capacity).

Given the nature of our study, the list of success criteria may also evolve to include contextual parameters and factors relating specifically to the type of NICE evidence we will be investigating. For example, one criterion for our sample (above) is to include NICE evidence that has very clear recommendations. This appears to warrant the use of a further success criterion - **the degree of modification of NICE recommendations** (i.e. the more modified the recommendations, the less successful the journey) - which could be evaluated by NICE. We are, however, aware of the need to exercise caution when interpreting this measure – for example, there could be justifiable reasons to modify guidance in specific contexts, not anticipated by NICE upon its release. CCGs may also deploy their own self-report measures to evaluate the extent to which they are capable of using NICE evidence and it may be feasible to adapt these for broader use, in addition to our own comparative measures. The advantage of so doing is that commissioning managers are likely to see these as useful (so encouraging engagement). However there may be lack of agreement across commissioning groups on the broader utility of measures that have been locally produced. We intend, then, to consult very carefully with our Scientific and Stakeholder Advisory Panel, on the inclusion and labelling of additional measures of success, recognising, of course, the political sensitivity that metrics can incur. This analysis will yield insights as to what processes, practices and conditions make evidence journeys ‘lengthier’ or ‘more expensive’.

Finally, we will use Qualitative Comparative Analysis – a well-established method to conduct rigorous comparison across qualitative cases (41, 42). Qualitative Comparative Analysis uses Boolean algebra to conduct systematic paired comparisons along a variety of dimensions. The methodology, which is now fully computer-supported, tabularises and highlights similarities as well as commonalities in causal paths and contextual conditions (in our conceptual framework, capabilities). The methodology is especially recommended for a small sample ( $N < 30$ ) and in the presence of a high number of variables. This makes it particularly suitable for our research.

### **Plan of investigation – see attached timetable and flow chart on last page**

The research will be conducted in five, partly overlapping, stages. Prior to the official project kick-off, we will consult senior NHS managers and academics to elicit their feedback on our proposals and to prepare the ground for conducting the research. We have already consulted with 12 clinical commissioning groups (CCGs), who have shown a willingness and strong interest in participating. If and when the proposed research receives full funding, the study will proceed as follows.

#### **Stage 1: Ethical approval, collection of background information and confirmation of access (Months 1-6)**

This stage is aimed at finalising the ethical approval process (which will be started before the beginning of the project), conducting preparatory work for the project and establish relationships with participating organisations. In the first months of the project we will also conduct a short scoping review on recent studies on the topic so that the project builds on the most recent available know how. In this stage we will also liaise with the team currently conducting the HS&DR Project - 09/1002/09 'Knowledge exchange in healthcare commissioning: GPs, PCTs and external private providers' to establish forms of knowledge sharing and avoid duplications.

The most critical activity during this stage we will be finalising our sample and establishing working relationships with 8 NHS Clinical Commissioning Groups, our research sites. For each organisation, we will identify a local contact, collect background information on the current organisation of work and how the CCG handles recommendations and other evidence products originating from NICE. This information will be used to plan in detail the observation to be carried out in stages two and three. During this stage we will also consult with senior members of NICE and national level NHS managers ( $N=10$ ), who will advise on the kinds of authoritative evidence the research can focus to maximise practical impact and academic relevance. We will hence ensure that our research responds to the needs of our multiple stakeholders (the NHS, the NIHR SD &HR programme, and the academic community).

Finally, we will consult with our Scientific and Stakeholder Advisory Panel (SSAP) members, from whom we will receive feedback on our research plans and design. The main outcome of this stage will be a refined version of the conceptual and methodological framework and an even more realistic plan of investigation.

#### **Stage 2: Naturalistic study of journeys of NICE evidence in 2 CCGs (Months 5-13)**

This stage is aimed at in-depth study and real-time documentation of performed capabilities to identify, appropriate and embed authoritative evidence in commissioning decisions made by 2 NHS organisations. We will conduct naturalistic observations of the journeys of 2 types of NICE-produced evidence in 2 organisations using mainly participant observations ( $N=40$ ) complemented with ethnographic interviews ( $N=40$ ) and documentary analysis (see data collection). These observations, while certainly very time consuming and laborious (from a research point of view), will provide the necessary evidence base to develop key insights into the phenomenon of interest. Such insights will enrich our conceptual framework by adding context, as well as dynamic and often 'hidden' parameters underpinning the use of authoritative evidence use in the newly established CCGs.

Furthermore, we will conduct preliminary analysis of this data as a way to derive interim results and direct the following stage of data collection and refine a developing interview protocol. In particular, we will use inductive coding analytical techniques to identify core capabilities underpinning the travel of evidence in CCGs (see data analysis section). At this stage we also aim at presenting some of our preliminary findings at UK Healthcare Management Conference (such as the NHS confederation) to elicit feedback from NHS stakeholders, as well as at an international academic conference in Europe (OBHC 2014) to receive feedback from the scientific community.

### **Stage 3: In-depth interview based study of journeys of NICE evidence in 8 more CCGs (Months 13-20)**

In this stage we will expand our investigation and use ethnographic, semi-structured interviews (N=120) to document and investigate the journeys of the *same* 2 pieces of evidence in 6 additional NHS organisations (N=120). In each organisation we will conduct at least 20 interviews, 10 for each piece of evidence under consideration. Overall, then, we will study 16 'evidence journeys': i.e. 2 pieces of authoritative evidence (one aimed at investment/improvement and one aimed at disinvestment/decommissioning) across 8 organisations. We will also conduct semi-structured interviews (N=32, i.e. allowing for 2 per evidence journey) with leaders of those organization in the wider commissioning entity (e.g. NHS Commissioning Board local area teams, Commissioning Support Units). Documentary analysis will complement data collection in this stage.

### **Stage 4: Data Analysis (Months 19-26)**

In this phase all the collected data will be collated and systematically analysed through the approach described above. We will proceed by conducting a within and across case study analysis first. The 16 cases will be then tabulated and compared utilising Qualitative Comparative Analysis techniques, as described above. These analyses will be used to finalise our Process Model. We will discuss our findings and plans with the Stakeholder panel at a half-day workshop. At this stage we also aim at presenting preliminary findings at the NICE Conference, as well as at the major international academic conference organised by the Academy of Management in USA.

### **Stage 5: Design of Roadmap, Development of Diagnostic Tool and Dissemination (months 23 -30)**

At this stage, we will hold a *half day workshop* with stakeholder advisory panel members and CCG staff (anticipated N=20). The purpose will be to co-design with these stakeholders the process roadmap and diagnostic tool and resources for improving capabilities to use evidence. Hence, the workshop will be aimed at converting the results of our empirical study into actionable initiatives and instruments. The workshop is therefore in itself a way to disseminate and translate into practice the results of the project.

The research outputs will also be disseminated via appropriate media, including, but not necessarily limited to, podcasts, as well as practitioner-focused (e.g. HSJ) and academic publications. At the end of the project we will organise a national workshop (in the form of Action Learning Workshop) at the University of Warwick, in which we will invite senior and middle managers and decision makers in the NHS (estimated N=70). The workshop will be highly interactive and will aim to test the validity of our tools and to identify ways to circulate these practical resources more widely. This stage will conclude with the collective write-up of a final report to be submitted to the NIHR Health Services and Delivery Research (HS&DR) Programme.

## **Dissemination and projected outputs**

### *Plan for engagement*

Engagement with NHS organisations – mainly clinical commissioning groups – is an essential and on-going aspect of the proposed research. This is reflected in the composition of our research team, which includes, as **core members** (co-applicants), two very senior NHS managers, Dr David Sharp (currently Chief Executive of NHS Derby City and Derbyshire County), and Professor John Powell (currently on NICE's programme for Interventional Procedures Guidance, formerly Clinical Director at NHS Choices). David and John will provide support towards, and in some cases will lead, the project's engagement activities with key NHS stakeholders. Such activities will include the following.

Throughout the duration of the study, we will involve regularly experienced NHS managers, key opinion leaders, academics and members of the public/patients by way of setting up a Scientific and Stakeholders Advisory Panel (SSAP). This group will: offer directions for enhancing the practical relevance of our research; ensure scientific and end user input into the research direction and emerging findings; advise on effective dissemination of the research to various stakeholder groups. It will meet face-to-face **two times** during the project and will also be consulted regularly via email as and when issues arise.

SSAP members will be the following:

- Val Moore (Guidelines Implementation Programme Director, NICE)
- Claudia Roginski (NHS South Warwickshire CCG)
- Sue Lacey Bryant (Sue Lacey Bryant Consulting Ltd)
- Professor Eivor Oborn (University of Warwick)
- 2 members of the public and/or patients through Warwick UNTRAP to include:  
Jane Whitehurst

Furthermore, the study team will engage with CCG staff (e.g. GPs and NHS managers) to co-develop a process-based, practical roadmap and a diagnostic tool (beginning of Stage 5) through one **half-day user 'engagement workshop'**. In this workshop we will:

- Present the provisional results of the research
- Trigger structured discussion in order to test the validity of the findings and elicit ideas and reactions by participants.
- Capture important feedback (e.g. need to change wording etc.)

We will also engage policy makers, and in particular evidence producers (NICE), to derive a concrete set of recommendations for making authoritative evidence more useable and for improving existing "implementation guides". *Through co-applicant John Powell*, and Sarah Garner (R&D Lead for NICE) we will directly engage with the relevant programmes within NICE. We will offer to hold a dissemination workshop at NICE for NICE staff, who are directly involved in guidance development and implementation of guidance.

Finally, one national workshop will be organised in the form of **Action Learning Workshop**. Clinical leaders, managers, policy maker and academics will be invited (N=70) to further validate the usefulness of the roadmap and will be asked to offer realistic ideas to further disseminate findings (e.g. through social media).

### *Outputs*

The main outputs of the proposed research will be:

(i) a process-based model and practical roadmap, which will explain what concrete steps are needed to develop capabilities for using evidence more effectively, including ways in which evidence may be presented more productively. The practical roadmap will provide rich descriptions of successful (and less successful) processes observed (which could be stored as electronic appendices). We also envisage that the practical roadmap will specify: key activities entailed in accessing, adapting and using evidence successfully, the sequencing of these activities and the enabling context (factors at the organisational and group levels) required to support and promote the use of evidence. This process will be linked to outcomes (focussing on service change or disinvestment) and will be developed in a form that is academically robust (hence 'model') and useable (hence 'practical' roadmap) by NHS commissioners, reflecting the 'pull' side of this call for commissioned research.

(ii) a *diagnostic tool* that can be used, alongside the roadmap, by CCGs to assess and benchmark their current capabilities and identify areas for improvement. While the roadmap will be a resource for thinking systematically what a successful journey of evidence might ‘look like’, the diagnostic tool will prompt users (mainly NHS decision makers, CCG staff and senior managers) to reflect upon their existing organisational processes, practices and procedures and to think about opportunities to change these. For instance, it may include questions such as the following: “has my organisation prepared to go through these steps and in the recommended sequence? Compared to successful journeys described in the roadmap, what changes in our organisational procedures and roles do we need to make?” etc. The content and design features of the diagnostic tool will be determined jointly with its users and through the aforementioned engagement activities.

(iii) a set of *recommendations to policy makers and evidence producers* (i.e. NICE) on how to design the presentation and uptake of evidence-based products to help ensure their use as well as for exploring opportunities for improving existing ‘implementation guides’.

In addition the proposed research will produce the following interim and end contributions *during the study*<sup>2</sup>:

- 2 Practitioner journal articles (e.g. HSJ, Pulse)
- Poster presentations at NHS confederation conference, NICE conference and BMJ Evidence conference
- 2 academic articles to be submitted to peer-reviewed journals
- Website where updates and other project material will be posted. Towards the end of the study, podcasts and short videos will also be published online.
- 500 user-friendly handbooks of the resultant roadmap and diagnostic tool will be professionally designed by Warwick design/print to be circulated at the final workshop.
- Printed executive summaries specifically aimed at policymakers and evidence-producers. We will target dissemination of these summaries at key decision makers and through utilising the networks of co-applicants, especially David Sharp’s and John Powell’s.
- Descriptions of 2x8 evidence journeys (included in practical roadmap, final report and posted online)
- Comparative tables of evidence journeys (included in practical roadmap, final report and posted online)

As recommended by leading scholars, we will ensure evidence journeys are: “*process oriented*” (illuminating process and context), and “*meticulously detailed*” (documenting contextual details for meaningful comparisons across settings) (16, p. 615-616) to make these more useable for both practitioners and future researchers in this area.

## Project management

The project will be managed through three main mechanisms:

**Clear role structure.** We have developed a clear role structure with clear responsibilities for each project team member (see below expertise required).

**Monthly project meetings.** These will be held at Warwick Business School and, occasionally, virtually. The entire team will attend ALL these meetings. At each meeting we will review progress against our project timetable and research objectives, address emerging issues, and discuss other aspects of the research process. The Lead applicant, Prof. Jacky Swan, will chair and organise all meetings.

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<sup>2</sup> It is expected that more outputs (articles, posters, online material) will be produced after the official completion of the project.

**Stakeholder and Scientific Advisory Panel (SSAP) meetings.** This group will ensure: scientific and end user input into the research direction and emerging findings; effective dissemination of the research to stakeholder groups. It will meet face-to-face two times during the project (one meeting in year 1 and another meeting in year 2) and will also be consulted regularly via email as and when issues arise.

## **Approval by ethics committees**

The study will focus on the travel of authoritative evidence in NHS organisations and will not require any intervention on, or interaction with, patients. The main ethical and design issues have to do with obtaining the necessary informed consent from interviewees, protecting the confidentiality of the data during the research project and after its completion. The researchers are also likely to be exposed to administrative and clinical information. For all these reasons, ethical clearance will be sought for the project.

As far as arrangements for handling ethical issues in practice are concerned, all staff in the organisations taking part in the case studies will receive written notification that they may receive an invitation to take part in an interview. Second, all invitations to take part in an interview will be accompanied by written information ('Participant Information Sheets') about the study, which will make it clear that participation will be voluntary, that participants will be able to withdraw from the study at any time without giving a reason, and which will inform them about the security and confidentiality of their responses. Third, all potential participants will be given the opportunity to ask questions and given time to decide whether or not to take part in the study. All interviews will require written informed consent in advance.

Data will be stored in locked filing cabinets in locked offices on University of Warwick premises. Computer files will be password protected and stored on the network drives (not local hard disks) of password-protected computers. Detailed plans for handling ethical issues will be submitted to a NHS Research Ethics committee. Data collection will only commence after the project receives unconditional ethical approval.

## **Patient and public involvement**

We will engage with groups representing service users, families and carers in the research itself through a close liaison with UNTRAP (Universities/User Teaching and Research Action Partnership). This is a partnership between users of health and social care services and carers, and the Universities of Warwick and Coventry and the NHS. UNTRAP specifically aims to support the involvement of service users and carers in teaching and research so that they can have a direct influence on research, evaluation and teaching agendas. It also provides training and events for its members and helps in recruiting patient representatives with relevant interests to research projects. Members comprise a range of service users/carers interested in research and teaching. UNTRAP offers assistance in developing a role description for a call for involvement, sending the call for involvement to UNTRAP members and advises on how to involve users in the best possible way. Their feedback is appropriate for our research, as we are not focussing on one specific group of patients (e.g. with a particular condition), but, more broadly, on commissioning management across NHS services. We have already approached UNTRAP with an application and they have indicated a willingness to be involved. As well as having regular updates, we will invite 2 UNTRAP members to participate in all four workshops, including SSAP meetings.

In addition, since all CCGs have an appointed lay representative with responsibility for patient/public involvement, we will ensure that this person is fully engaged throughout our research process.



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## Research Flowchart

