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**KNOWLEDGE MANAGEMENT AND COMMUNITIES OF PRACTICE IN THE
PRIVATE SECTOR: LESSONS FOR MODERNISING THE NATIONAL HEALTH
SERVICE IN ENGLAND AND WALES**

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ABSTRACT

The National Health Service (NHS) in England and Wales has embarked upon a radical and far-reaching programme of change and reform. However, to date the results of organisational quality and service improvement initiatives in the public sector have been mixed, if not to say disappointing, with anticipated gains often failing to materialise or to be sustained in the longer term. This paper draws on the authors' recent extensive research into one of the principal methodologies for bringing about the sought after step change in the quality of health care in England and Wales. It explores how private sector knowledge management (KM) concepts and practices might contribute to the further development of public sector quality improvement initiatives in general and to the reform of the NHS in particular. Our analysis suggests there have been a number of problems and challenges in practice, not least a considerable naivete around the issue of knowledge transfer and 'knowledge into practice' within health care organisations. We suggest four broad areas for possible development which also have important implications for other public sector organisations.

BACKGROUND AND AIMS

Following publication of the NHS Plan (Department of Health, 2000a), the health service in England and Wales has embarked upon a radical and far-reaching programme of change and reform. Central to the implementation of the Plan is the Modernisation Agency which has been charged with providing the NHS “with a centre of excellence as to how knowledge and ‘know how’ about best practice can be spread” (Department of Health, 2000b). The Agency also incorporates the NHS Leadership Centre which aims to produce a “step change in the development of leadership within the NHS” and, with it, “a revolution in health care.”

The Plan explicitly commits the NHS to an approach to service redesign that “mirrors the change management approach taken in much of the private sector” (6.14). Following others who have sought to interpret business approaches for public service contexts (Alimo-Metcalfe and Lawler, 2001; Pollitt, 1996), in this paper we investigate private sector knowledge management (KM) practices and assess their likely relevance both to NHS reform, the particular focus in this instance being quality improvement, and to the public sector more generally.

Within the broader context described above, the ten-year NHS Plan singled out one particular methodology for bringing about the necessary step change in the quality of care. ‘Breakthrough Collaboratives’ would provide a “new system of devolved responsibility” and “help local clinicians and managers redesign local services around the needs and convenience of patients” (Department of Health, 2000a). The result of this is that numerous national or multi-regional Collaboratives are to be found operating within the NHS, involving thousands of improvement teams and hundreds of Trusts, and said to be affecting millions of patients (Department of Health, 2002). There are also a great number of Collaboratives taking place in other parts of the world, making it one of the leading methodologies in health care improvement at this time.

Two years on from the Plan, the first progress report by the NHS Modernisation Board (Department of Health, 2002) recently reaffirmed this earlier commitment, describing the Collaboratives as “playing a major role in spreading best practice” and “helping to improve patients’ experiences of the NHS.”

Our paper draws on our extensive qualitative and quantitative research into three Collaboratives in the NHS during the period April 2000 to January 2002 - the Cancer Services, Mental Health (Robert *et al*, forthcoming) and Orthopaedic Services Collaboratives (Bate *et al*, 2002) - and an exploration of contemporary private sector practices with regard to KM and (as one specific part of that) communities of practice. In so doing the paper examines how private sector KM concepts and practices might help in the further development of public sector quality improvement initiatives, in particular the design of a KM based strategy for NHS modernisation.

NHS COLLABORATIVES

The NHS Plan has designated the Collaborative Methodology as one of the preferred ways of carrying forward the modernisation agenda, and key to delivering quality and service improvements on the ground. The methods and materials used by NHS Collaboratives have been adapted from the US-based Institute for Healthcare Improvement’s (IHI) ‘Breakthrough Series’ which:

‘is designed to close the gap between the best available knowledge in healthcare and everyday practice. The Collaborative model relies solely upon the adaptation of existing knowledge to multiple settings in order to accomplish a common goal.’ (Article in Orthopaedic Services Collaborative newsletter, August 2000)

Different Collaboratives generally include many or all of same features. For instance, all Collaboratives perceive the role of measurement as being for the purposes of learning and

improvement (such as from experiment, from others, or from history) rather than for the purposes of judgment or blame (for deciding whether or not to buy or to accept or reject) (Berwick, 1996). However, Collaboratives do vary in the subject chosen for improvement (for example, breast cancer services, acute mental health care services, total hip replacement), the number of health care organisations involved, the resources available, the process through which local teams work and in other respects (Ovretveit *et al*, 2002),.

The real innovation (and distinguishing feature) of Collaboratives lies in the creation of horizontal networks which cut across the hierarchical and relatively isolated organisations that make up the NHS. Such networks enable a wide range of professionals in a large number of organisations to come together to learn and ‘harvest’ good practice from each other, and to go back and apply this to their own services. They also empower relatively junior staff to take ownership for solving local problems by working with clinicians who have taken change leadership roles:

‘Best practice exists everywhere. What you are really good at will help others, what you do need improvement on, you can be helped by others. By and large this doesn’t happen naturally and so the power of this is tremendous - the power is that there are other organisations working with you, exchanging ideas, experiences and particularly things that have not worked. There is a greater ability to share ideas very rapidly: to customise and localise but not reinvent.’ (Leader of a NHS Collaborative summarising benefits of the approach to participants, May 2000)

Through such mechanisms Collaboratives aim to implement an incremental bottom-up improvement process (a learning-based approach to change) rather than simply applying an ‘off the shelf’ top-down methodology.

At the heart of Collaboratives, though unstated, lie many KM concepts: the importance of cross-boundary knowledge transactions, knowledge transmission and transfer, and communal exchange

through both face-to-face and virtual means. The basis of KM is that individual knowledge is largely unknown to others and therefore wasted (Quintas, 2002), and in this context the whole point of a Collaborative is to liberate that knowledge and enable others to benefit from it.

IMPROVING QUALITY IN THE NHS: OUTCOMES FROM NHS COLLABORATIVES TO DATE

The published literature on the ‘Breakthrough’ method contains no independent evaluations, with the exception of views and commentary pieces from various proponents of the method (Kilo, 1998; Lynn *et al*, 2000; Kerr *et al*, 2002). Hence, the decision to take up the approach in the NHS, and subsequently to extend it to other areas of the service, continues to be more ‘faith driven’ than ‘research driven’. In seeking to overcome this, our recently completed research on three NHS Collaboratives (Bate *et al*, 2002; Robert *et al*, forthcoming) has employed a combination of qualitative and quantitative methods. These methods have included literature reviews, telephone interviews, face-to-face semi-structured interviews, focus groups, observation of key events, documentary analysis, patient-level data analysis and postal questionnaires.

Notwithstanding the difficulties of researching total quality management (TQM) and continuous quality improvement (CQI) strategies (Maguerez *et al*, 2001), past attempts at securing big improvements in both public and private sector service quality appear to have proved difficult, with anticipated gains often failing to materialise or to be sustained in the longer term. This is broadly consistent with the findings which, whilst showing positive and by no means insignificant outcomes, suggest something more modest than originally hoped for or claimed.

For example, in the Orthopaedic Services Collaborative the main objective for the majority of the participating NHS Trusts was to reduce their average length of stay (LOS) for total hip replacement. Our analysis indicated that on average the post-operative mean LOS decreased by

1.0 day to 7.2 days between the quarters ending December 1999 and December 2000. This represents a 12.2% decrease in mean LOS. Sixty one percent (17/28) of the Trusts recorded a statistically significant reduction. In our view this represented progress, although at a modest level in comparison to the claims made at the outset of the Collaborative about a 'breakthrough' change in service provision.

This profile of outcomes and levels of success that are less - sometimes considerably less - than originally planned or predicted has been widely documented in the organisation development and strategy literatures, and often referred to as the 'implementation gap' (Centre for the Evaluation of Public Policy and Practice, 1994; Shortell *et al*, 1995; Ovretveit, 2000; Coyle-Shapiro and Morrow, 2001; Iles and Sutherland, 2001; Counte and Meurer, 2001). In the context of the NHS Collaboratives we studied, reasons for such a shortfall include, firstly, that there may be difficulties in creating and sustaining horizontal networks across organisations: the challenge, as well as the benefits, of such a cultural shift should not be underestimated. Secondly, that maintaining motivation and commitment from hard-pressed staff for over a year requires strong local leadership and support (both clinical and managerial). Thirdly, that identifying appropriately skilled frontline staff to lead and participate in what may seem to be daunting change programmes, as well as overcoming deficiencies in IT skills and systems, may hamper progress. Consequently, there is a danger that this approach may not lead to any sustained organisational learning and local objectives and processes will remain relatively unchanged (so-called 'single loop' learning) (Argyris and Schon, 1996).

Clues as to where to begin to look for ways of increasing the impact and effectiveness of Collaboratives lie in recognising that the method depends upon the creation of a network organisation for the sharing of knowledge, experience and good practice, the knowledge network being the 'lifeblood' of the approach:

‘We will work together for nine months to achieve the collaborative goals by sharing ideas and knowledge, setting specific goals, measuring progress, sharing methodology for organisational change, and implementing iterative tests for change...continual mutual support is the *lifeblood* of the Collaborative in creating an environment for mutual self-improvement in the quality of local services’ (Founding documents of Orthopaedic Services Collaborative, 2000.)

Collaboratives thereby represent one approach among many to attempt to build learning and knowledge networks between participating health care organisations. As we examine the wider literature on networks and KM and explore contemporary private sector practices, we shall question the extent to which Collaboratives, as they are presently constituted, are effective mechanisms for knowledge transfer and joint learning, and what potential they might have of becoming so. We ask, is there something we can learn from the private sector, especially service organisations, about KM that can lead the NHS to realize more from this methodology? Might there be better ways of bringing people together and of interactively developing and sharing their knowledge? And a broader question, to what extent does the KM perspective help us to develop new concepts and vocabularies for interrogating, and ultimately improving, existing approaches to health care quality?

KNOWLEDGE MANAGEMENT AND COMMUNITIES OF PRACTICE

Knowledge Management

The purpose of KM as a field of research and practice is how to better utilize the knowledge or ‘intellectual capital’ contained in an organisation’s network (Cummings, 2001; Stewart, 1997; Teece, 2000). KM may therefore be defined as any process or practice of creating, acquiring, capturing, aggregating, sharing and using knowledge, wherever it resides, to enhance

organisational learning and performance (Scarborough *et al*, 1999). KM recognises that knowledge, and not simply information, is the primary source of an organisation's innovative potential (Castells, 1996; Marshall, 1997). What KM does is make knowledge a problematic: it says that the mere possession of potentially valuable knowledge somewhere within an organisation does not mean that other parts of the organisation benefit from this knowledge (Szulanski, 2000). And further to this it says that just because a knowledge network (such as a Collaborative) exists does not necessarily mean that the desired knowledge flows are actually occurring.

Academic interest in KM has increased rapidly since the mid-1990s as reflected in the burgeoning literature and attempts at identifying the key success factors for implementing a KM strategy (Davenport and Prusak, 1998). Such interest is mirrored in, indeed probably derivative of, practice, as the majority of major companies now have a KM strategy and related policies and practices for building knowledge highways across traditional structures:

‘Knowledge and learning have become the new strategic imperative of organisations. At least one half of US companies and up to 72% of overseas firms, have some kind of KM initiative underway ... Chief Knowledge Officers and Chief Learning Offices are popping up everywhere.’ (Allee, 2000).

A similar picture can be found in Europe: a European survey of 100 European business leaders reported that 89% considered knowledge to be the key to business power (Murray and Myers, 1997). Around 85% of the companies believed a value can be attached to knowledge and over 90% had plans to exploit it.

Quintas (2002) suggests that for most firms the priorities are the ‘capture’ of employees’ knowledge, exploitation of existing knowledge resources or assets, and improved access to expertise. Amongst others he cites Ernst and Young’s sharing knowledge and best practice

initiative, Dow Chemical's leveraging intellectual assets project and Skandia's efforts to measure and audit the value of knowledge and intangible assets. It is the first part of KM, the storage of information, that is most often described (Martensson, 2000) and most work relates to practice-based descriptions of information systems and information technology - the 'hardware' of KM. In contrast, there is a relative scarcity of empirical, especially in-depth case study based, work on the 'people issues' - the 'software' - and almost no reference to KM in the public sector.

Socially constructed KM models assume a wide definition of knowledge and represent knowledge as being intrinsically linked to the social and learning processes within an organisation (McAdam and Reid, 2001) and thus are most closely related to the theoretical underpinnings of the Collaborative approach. In such models, interest in the second aspect of KM (more pertinent to NHS modernisation) - the transfer of knowledge - builds on the work of Polanyi (1958; 1966) and others who make an important distinction between different types of knowledge: *explicit* knowledge consists of facts, rules, relationships and policies that can be faithfully codified in paper or electronic form and shared without the need for discussion (Wyatt, 2001) whereas *tacit* knowledge is engrained in the analytical and conceptual understandings of individuals ('know what') and also embodied in their practical skills and expertise ('know how') (Kogut and Zander, 1992; Nonaka, 1994). The value of such tacit knowledge has long been recognised by private sector companies (Hauschild *et al*, 2001; Grant, 2001)

Our research on NHS Collaboratives offers further support for this alternative 'social constructivist' view of knowledge: knowledge is not objective but exists subjectively and inter-subjectively through people's interactions, through working together, sharing knowledge, respect and trust:

'Our view is that [Collaboratives] should retain the basics of what they are doing but avoid overemphasising the 'rules, regulations and reporting relationships' and develop a

parallel OD programme to deal with all the important (but missing) ‘people’ processes. This calls for a very different perspective on the task at hand, one that puts less weight on mechanics, programme rules and regulations (‘Collaborative as a machine’) and more on the idea of nurturing a social and community process (‘Collaborative as an organic entity’).’ (Bate *et al*, 2002)

However, individually-held tacit knowledge is a ‘precarious way of storing, maintaining and transferring knowledge’ (Argote, 1999) as, although individuals can improve their performance as they gain experience with a task, they may not be able to articulate what strategies they used to achieve this improvement (the notion “we know more than we can tell”). Consequently, tacit knowledge is ‘sticky’ and often travels poorly between organisations (Zander, 1991; Szulanski, 1996; Schulz, 2001) which has important implications for NHS modernisation.

It appears that KM transfer is not as simple or straightforward as people once believed, that knowledge dissemination does not work like some highly contagious ‘foot and mouth’ virus, easily caught by those that come near it! Neither physical nor virtual ‘connection’ is sufficient for knowledge sharing and transferability, and it is naïve to assume that by facilitating meetings between individuals the desired knowledge flows will simply occur. The KM literature increasingly shows that human knowledge sharing processes do not work in the same way as say the transfer of a copied computer document from envelope to envelope merely at the click of a button. This view belongs to the misplaced ‘positivist’ conception of knowledge as a commodity that can be transferred in a manner similar to other organisation-specific assets (Newell *et al*, in press).

One way of overcoming such difficulties is to convert tacit knowledge to explicit knowledge - codifiability holding the key to spread - a process that Collaboratives seek to facilitate through discussion of locally designated ‘best’ practice and the subjective experiences of participants, and

using these to inform shared guidelines and protocols. Fundamental to knowledge creation, therefore, is the blending of tacit and explicit knowledge and the need to convert and codify tacit knowledge in order to improve its 'fluidity' or 'transferability' across organisational boundaries:

'The productivity gains associated with conversion of tacit into explicit knowledge are fundamental to rapid rates of economic growth experienced during the past few decades.'
(Grant, 2001)

With this in mind AT & T Global (to take an example) wanted to develop a 'best practice database' for their staff. They began by establishing baseline measures of exactly what they hoped to improve and a study of how learning and knowledge was currently shared. From this they developed a programme, training people in what it means to be a learning community. They followed this by reinforcing rewards and appropriate IT, and finally the database: the organisational task was to create learning communities and networks that would 'get at' the tacit knowledge/know-how inside people's heads. Organisations like Monsanto, Netscape, Oticon, and McDonald's have done similar things in 'best practice' programmes that are not dissimilar in intention from those in the NHS (Day and Wendler, 1998), the difference being their emphasis on tacit knowledge and peer working as the way of doing this.

Given the emphasis attached to the importance of tacit knowledge in the KM literature, the informal processes for knowledge generation and transfer in the three Collaboratives we studied seem very limited. The Collaborative method affords ample opportunity for providing evidence, facts, rules, information and data (explicit knowledge) but relatively little scope for sharing know-how, experience and wisdom (tacit knowledge): a product of the rational scientific paradigm underpinning it. However, an illustration of the potential of facilitating better opportunities to transfer tacit knowledge and to convert tacit to explicit knowledge was the very positive reaction of participants in the Collaboratives to the involvement of patients in their quality improvement

work. User involvement has been a particular strength of the Mental Health and Cancer Services Collaboratives with many participants commenting that this had challenged assumptions and led to new insights:

‘By far the most important piece of work we did at any stage was mapping the patient’s journey and getting an understanding of how they feel going through the process. Had we not done that we’d have been assuming all sorts of things.’ (Project Manager in Mental Health Collaborative)

‘I think sometimes as health professionals you get tied into organisational things - complicated bits of treatment - and the service users are saying well what’s really important is when the tea room is open, not whether I spend half an hour with my key worker every day.’ (Occupational Therapist in Mental Health Collaborative)

‘Mapping the patient pathway was incredibly powerful in that you have from the porter to the clerk to the secretaries, up to the clinicians, and they all have a voice. And they all have the opportunity to speak.’ (Project Manager in Cancer Services Collaborative)

It seemed that the views of patients - and junior staff - were in the event as or more powerful than expert ‘evidence,’ mirroring the dichotomy between ‘folk’ and ‘expert’ knowledge found in cognitive anthropology (D’Andrade, 1995; Holland and Quinn, 1987).

Extensive research carried out in this area has shown that most everyday thinking and practice, even of scientists themselves, is driven by ‘folk,’ ‘naïve,’ or ‘commonsense’ theories rather than ‘expert’ or ‘academic’ theories. If it is indeed the case that folk knowledge is more powerful, dominant and motivating than expert knowledge, then it follows that the NHS needs to find ways of recognizing, and subsequently accommodating and harnessing, this particular variety of cultural knowledge within its quality improvements methods and processes.

‘A commitment to a knowledge-based society means that a premium should be put on research-based evidence, but we also know that other evidence, such as experience and practice wisdom, can be equally important levers for action.’ (Lewis, 2000)

Theoretically, networks are superior to hierarchies in terms of facilitating knowledge generation and transfer and studies within large organisations - and, to a lesser extent, in health care (Go *et al*, 2000) - have consistently pointed to the importance of informal networks and professional communities for bringing about major change. Therefore on the face of it the general thrust of a Collaborative seems absolutely right, for central to the approach is the concept of the network organisation which is ‘infinitely flat’ and much more open to knowledge exchange (cf, Hirschorn *et al*, 1992; Jones *et al*, 1997; Bate, 2000).

‘What makes the particular change in the case of networks so radical is the fundamental shift of ‘organising principle’ from hierarchical dependency to network interdependency. This, it is claimed, frees the organisation from the shackles of bureaucracy and creates boundless new opportunities for growth and development ... it allows greater fluidity of movement and use of intellectual assets throughout the organisation as a whole.’ (Bate, 2000)

The importance of this concept is based on studies of the ways in which innovations and changes diffuse within large organisations, which have consistently pointed to the importance of informal networks and professional communities as the main drivers for change:

‘Human networks are one of the key vehicles for sharing knowledge. To build a sharing culture, enhance the networks that already exist enable them with tools, resources and legitimization.’ (McDermott and O’Dell, 2001)

Communities of Practice

The term ‘community of practice’ was first coined by Etienne Wenger and Jean Lave in their 1991 book *‘Situated Learning’*. The theory and philosophy shaping this view of social learning have been progressively elaborated in later publications by them (cf. Wenger, 1998) and numerous others, especially Brown and Duguid (1991, 1998, 2000). Wenger and Snyder (2000) define a community of practice as one where people share their experiences and knowledge in free-flowing creative ways so as to foster new approaches to problem solving and improvement, help drive strategy, transfer best practice, develop professional skills and help companies recruit and retain staff.

Companies such as Xerox have chosen to base almost their entire change process upon ‘communities of practice’ rather than any kind of formal change programme, which they claim rarely delivers anything of significance. Such networks or ‘communities of practice’, much more than formal management structures, are vital to how people share experiences, learn about new ideas, coach one another in trying them out, and share practical tips and lessons over time. So Xerox began by commissioning a \$1 million ethnographic study to search out emerging patterns and found that ‘cascaded’ formal information was not very useful to people in getting their work done; the valuable information was that which moved from one field office to another, despite the fact that there were no formal lateral channels of communication. These networks of people who rely on one another in the execution of their work came to be regarded as the ‘critical building blocks of a knowledge-based company’ (Turner, 1999).

Such informal networks and ‘thought communities’ have been studied by anthropologists for as long as their subject has existed but, as part of the growing interest in KM, private sector companies have also come to acknowledge the importance of such networks or communities for learning and change:

‘The subject of communities in the business environment has recently taken on heightened interest among some of the world’s largest companies. Organisations such as BP Amoco, Royal Dutch Shell, IBM, Xerox, The World Bank and British Telecom have all undertaken significant community development efforts in an attempt to leverage the collective knowledge of their employees.’ (Lesser *et al*, 2000)

Argote’s (1999) finding that organisations embedded in a superordinate relationship are able to increase their capacities for learning and knowledge transfer suggest that being embedded in a network improves organisational performance (Fischer *et al*, 2001) and that leaders can help:

‘Rather than building new networks for sharing knowledge, the companies built on already existing ones. In some cases they formalized them into official knowledge sharing networks. In other cases they lightly authorized them by giving them a budget, information systems, space, library support, time for network coordinators to manage network affairs, and recognition of their contribution. They did not dictate who should be part of a network, assign them major projects, and direct them to focus on specific issues, or dictate the way they should work.’ (McDermott and O’Dell, 2001)

This raises many questions about what the NHS must do to encourage the growth and development of communities of practice and to ignite the spontaneous informal processes that create the energy for a successful change effort.

‘Ultimately, we know of no company that has generated significant momentum in profound change efforts without evolving spirited, active, internal networks of practitioners, people sharing progress and helping one another.’ (Senge *et al*, 1999)

Table 1 illustrates the differences between these ‘communities’ and other structural forms that may be found in organisations (Wenger and Snyder, 2000).

{TABLE 1}

The KM literature suggests that knowledge dissemination and transferability only occur when there is a collective identity, and the existence of a wider social network, neither of which seemed to be fully present in the NHS Collaboratives we have studied:

‘We are working on lots of projects on our own as a team but the only time we get to network is when we go down to the Learning Sessions. That’s when you get more time to network and that’s really valuable but we don’t do it in between the Learning Sessions.’
(Project Manager in Mental Health Collaborative)

‘It’s supposed to be about networking. But frankly there’s not that much networking. We are not communicating with a huge number of Trusts. I expected a lot more networking than we have had. Basically, you beaver away at your project and forget the others. We have no sense than our immediate local context.’ (Orthopaedic Consultant in Orthopaedic Services Collaborative)

‘The Cancer Services Collaborative is a local initiative with aim of solving local problems - hence all the time supposedly networking was largely a waste of time.’ (Programme Clinical Lead in Cancer Services Collaborative)

All of this suggests to us overall that the Collaboratives have formed time-limited project teams but not linked and active communities of practice - which puts something of a question mark over the likely sustainability of the changes and quality improvements that have been made. This suggests the need for a more interactive model than has been observed in the NHS to date, a joint problem-solving approach, and more of a social network with greater joint working across and between Trusts. This also suggests the need for additional, smaller, more intimate groupings and less reliance on the large jamborees that are so much a feature of the Collaboratives, but which of necessity are limited in terms of provision for social interaction. These may be characterised as clusters of people coming together and sharing the same space for two days, but which by no

stretch of the imagination approach anything approximating to a ‘community’ or social process. An aggregate or cluster, perhaps, but a group of people with a common task and a common purpose, probably not. Newell *et al* talk about a community of practice engaging in a *process* of constructing meaning:

‘By changing our perspective to one in which knowledge is socially constructed, we move our focus from exploring an individual’s knowledge as an asset to be potentially transferred, to exploring collective knowledge, which is situated and context-specific. In a community of practice, knowledge is constructed as individuals share ideas through collaborative mechanisms such as narration and joint work. Within such communities shared means for interpreting complex activity are thus constructed, often out of conflicting and confusing data. It is this *process* of constructing meaning, which provides organisational members with identity and cohesiveness.’ (Newell *et al*, in press)

Unfortunately, the process of knowledge transfer *between* and *amongst* organisations in general is still not well understood (Argote, 1999). While evidence suggests that firms embedded in networks often demonstrate a greater propensity to transfer information among and between its network partners, the underlying mechanisms have not yet been widely explored. Nonetheless, networks are aiming at realizing ‘collaborative advantage’ (Kanter, 1997) and this is why more and more companies are using business anthropologists to identify such naturally occurring cultural communities: those which hold tacit, yet unvoiced, and therefore unused, knowledge. However, a *community* has to exist before knowledge and learning will begin to spread and this may require specific managerial efforts to develop them and to integrate them into the organisations, so that their full power can be leveraged: this is the role that Collaboratives should seek to fulfill. The remainder of this paper looks at Collaboratives in this context. We believe

that the answers have broader lessons for the modernisation agenda currently being addressed in the NHS.

DISCUSSION AND CONCLUSIONS

As indicated above the vast majority of experience with KM in the UK resides in the private sector and has tended to focus on the development and provision of IT solutions to challenges around knowledge storage and access. 'Softer' KM issues - such as the functioning and value of communities of practice - have received much less attention and the literature around implementing and evaluating KM in the public sector is negligible. Whilst numerous company-specific case studies of a host of KM interventions are available - and Scarborough and Swan (2001) have reviewed the literature in order to examine the implications of KM for the practice of people management - no systematic reviews of the effectiveness of KM in a public (or private) sector context currently exist.

Recent work by the Modernisation Agency demonstrates however that the potentially beneficial impact of KM has now been acknowledged, at least in some quarters of the NHS. There are significant knowledge-related pilot projects and local initiatives underway. At the national level examples of knowledge codification strategies which have been adopted by the NHS include: National Service Frameworks, National Institute of Clinical Excellence guidelines, care pathways and the triage algorithms used by NHS Direct (Wyatt, 2001). The NHS Information Strategy has provided a framework for the development of a KM infrastructure to support these strategies and the National Electronic Library for Health (NeLH) has identified knowledge management as one of its key 'resources' and stated that it will 'promote knowledge management as a core activity for the improvement of health and healthcare.' This being said, KM thinking and practice in the NHS, in contrast to the private sector, are still in their infancy, an aspiration (of the few) rather

than a reality (for the majority). However, the issue in this case may not be of growing something afresh but of looking for existing practices that might act as organisational surrogates for KM concepts.

Many of the lessons from our research into NHS Collaboratives - the need for senior management support, incentives, clinical 'buy in' etc. - are the same or similar as those from earlier change management and/or quality improvement approaches in general (Powell and Davies, 2001). These lessons are likely to apply equally to other elements of the work of the Modernisation Agency. However, adopting a KM perspective and building on the evidence from the private sector provides a different way of examining reasons for the patchy or disappointing results from quality improvement strategies as they have been applied in the NHS to date. From this perspective the Collaborative method itself is good in concept - and certainly addresses the methodology and somewhat neglected 'how' of KM - but our analysis suggests there have been a number of problems and challenges in practice, not least a considerable naivete around the issue of knowledge transfer and 'knowledge into practice' within organisations. Most pertinent is the observation that,

'Organisations vary dramatically in the rate at which they learn: some organisations show remarkable productivity gains with experience, whereas others evidence little or no learning.' (Argote, 1999)

Such variations have been clearly reflected in the outcomes from our research and highlight the need for local customisation of quality improvement approaches (so-called 'localisation') with the overall aim of increasing the absorptive capacity or receptivity within health care organisations and in turn facilitating the internalisation, embeddedness and retention of knowledge. Most of the issues revolve around improving the *process* of a Collaborative, which from a KM perspective

involves finding better ways of encoding knowledge in forms suitable for transmission, and ensuring that local knowledge is transformed into organisation-level knowledge (Schulz, 2001).

We therefore conclude this paper with some pointers from our examination of the KM literature and private sector practice as to how the NHS might get more from Collaboratives and other service improvement initiatives, and what their future direction of travel might usefully be. Table 2 suggests four broad areas for possible development:

{TABLE 2}

From ‘information’ to ‘knowledge’

On the spectrum of: data - information - knowledge - wisdom, Collaboratives are currently more about data and information than knowledge or wisdom. So much of what people know and feel - and what experience tells them - about how to improve quality remains locked up in their heads, and Collaboratives do little to liberate this. This prompts us to ask, is one of the present weaknesses of Collaboratives that they are information rich but knowledge poor, and is there a need to begin to shift the emphasis from ‘best practice’ to ‘best knowledge,’ from ‘information communication’ to ‘knowledge elicitation,’ and from ‘data dumping’ to ‘knowledge generation’? Knowledge is the step beyond information; it is ‘the capacity to act’ (Sveiby, 1997). In the context of a Collaborative, it is knowing what to do with the best practice you hear about and how to apply it in your local situation - know-how not just know-what (Kogut and Zander, 1992). Information about how one organisation has reduced length of stay for hip replacement patients is not knowledge about how one is going to achieve this in one’s own organisation. It does not necessarily provide the capacity to act. No wonder, then, that information about good practice is often failing to *become* good practice. In Collaboratives, there needs to be a greater emphasis on spreading knowledge as opposed to merely information about best practice - know-how in other words, the ability to put knowledge into practice; knowledge that is actionable and operational.

From ‘knowledge application’ to ‘knowledge creation’

A fundamental distinction in KM is between those activities that involve the application of existing knowledge and those that generate new knowledge. Most management principles deal with the organisation of existing knowledge. The Collaboratives are no exception in this regard. As already stated, they rely solely upon the adaptation of *existing* knowledge to multiple settings. They work on the simple transmit - receive model of: I give you information about how we have improved our services and you, having received it, either discount it or choose to try and do something with it. Knowledge capture as distinct from knowledge creation. There is communication but almost no interaction or exchange between those involved.

Following recent private sector practice in companies like Xerox and 3M, we are prompted to ask whether Collaboratives should be moving, or at least widening out, from ‘knowledge application’ (recipients) to ‘knowledge generation’ or creation (partners), the emphasis thereby shifting from the *communication* to the *co-creation* of knowledge. As opposed to the present model, which assumes someone has the ‘answer’ (which may be true for them but not necessarily for others), co-creation takes place when neither party has the ‘answer’ but by working together they are more likely to generate the knowledge to find it. In this process, the Collaborative becomes less of a listening experience and more of a joint venture, a search for creative solutions, and a sharing of knowledge and wisdom; a creative as opposed to replicative or reproductive act.

From the ‘explicit’ (evidence) to the ‘tacit’ (experience)

While the NHS has been vigorously promoting evidence-based medicine and the use of explicit, expert knowledge in clinical practice, the private sector has been moving in the opposite direction, stressing the value of intuitive, tacit knowledge in its quest for quality excellence. This

again prompts us to ask, is tacit knowledge - the knowledge inside the heads of hundreds of thousands of NHS employees - an untapped source of knowledge and wisdom about good clinical practice in the NHS, and could the contribution of Collaboratives be to find better ways of making tacit knowledge about quality available to participant NHS organisations? Certainly this will mean change to the process itself, and generally speaking less formality and science and more informality and art. For example, the UK Post Office has explored how stories and storytelling may be used to communicate tacit knowledge and experience (Quintas, 2002) - an approach that could easily be accommodated within Collaborative learning sessions alongside the more formal communication processes. The broader challenge in KM terms is to increase the 'bandwidth' of communications within Collaboratives (for example, by using more channels and media: stories, pictures, telephone, email, videoconferencing) and the degree of 'interactivity' or two-wayness between participants.

The issue for future NHS quality improvement initiatives is to find a way of encoding tacit knowledge in forms suitable for transmission between organisations. Such 'conversion' implies beginning by taking the evidence base and adapting and reconstructing it in a local context and is all about getting *your* method, *your* targets to *our* method, *our* targets:

'In tapping the tacit and often highly subjective insights, intuitions and hunches of individual employees ... the key to this process is personal commitment, the employees 'sense of identity' with the enterprise and its mission.' (Nonaka, 1991)

As Wyatt (2001) points out this does not mean that explicit knowledge is without value and that whilst strategies for codifying and transferring tacit knowledge do need to be developed:

'... not at the expense of distracting clinicians, policy makers and funders from the key task of making agreed explicit knowledge readily available in suitable forms.' (Wyatt, 2001)

However, the Collaborative method as currently practised talks solely about ‘replication’ of best practice but not conversion. The general sentiment was summed up by one project manager in the Orthopaedic Services Collaborative:

‘I don’t feel like it’s our Trust’s programme. It’s very organised by the Collaborative.’

(Project Manager in Orthopaedic Services Collaborative)

None of this should mean abandoning evidence-based notions, merely recognising that the ‘chariot’ of quality might be pulled by two horses not one, and making Collaboratives as reliant upon tacit knowledge as explicit knowledge.

From ‘temporary network’ to ‘community of practice’

Tacit knowledge can only be ‘passed’ from one person or place to another if a social network exists. Indeed, the ease of transfer depends entirely on the *quality* of the source-recipient relationship and the *strength* and denseness of that relationship (Szulanski, 1996). Therefore, for knowledge exchange of this kind there needs to be strong personal connections, a high degree of cognitive interdependence among participants (Yoo and Kanawattanachai, 2001) and shared sense of identity and belongingness with one’s colleagues and the existence of cooperative relationships (Bresman *et al*, 1999). In short a community of practice. If, as the KM writers are suggesting (cf. Brown and Duguid, 1998), organisational knowledge is heavily social in character, much greater attention will need to be paid to the social dimension of Collaboratives - creating a social network and providing the necessary informal knowledge exchange mechanisms for tacit knowledge flows to occur. Virtual networking may help but there is no substitute for real face-to-face working and extended social contact ((Iacono and Weisband, 1997; Baughn *et al*, 1997; Davenport and Prusak, 1998).

This may mean more joint learning sessions and regional or special interest groups within the Collaborative network, although we suspect new mechanisms may also need to be found for supporting the social and the informal interactions. One innovative example from Dixon (2000) based on the private sector is ‘serial transfer,’ where the team that is the source of the idea works with the team implementing the idea, repeating the ‘practice’ in the new context - a co-operative relationship that closes the gap between source and recipient and different locales. Another example is the use of ‘translators’ and ‘knowledge brokers’ (Hargadon and Sutton, 1997) to spread knowledge, capture good ideas, and act as go-betweens for participating organisations (Brown and Duguid, 1998). Individual Collaboratives and the Collaborative programme overall might have their own Chief Knowledge Officer, Directors of Knowledge Networks, Knowledge leader or Facilitator of Knowledge Communities, these roles being widespread in the private sector and a more formal expression of the knowledge broker idea.

Unlike the current NHS Collaborative Project Directors, these people are ‘directing’ nothing. Learning communities and networks cannot be directed, only enabled, facilitated or supported. As one person in the private sector who had led community of practice development at both the US National Securities Administration and Buckman Laboratories remarked: “I had to learn that these learning communities are more like volunteer organisations. They simply cannot be managed like a project or team” (Allee, 2000). The NHS, which has a deeply rooted culture of project management and central direction, might do well to ponder this remark. When we see firms like Oticon, the Danish manufacturer of hearing aids, having to abandon their organisation charts, offices, job descriptions and formal roles in order to make their communities work! (Day and Wendler, 1998), we begin to appreciate the scale of the organisational challenge facing the NHS as it moves towards any of these private sector models - the issue being not so much Collaborative development as *Organisational* development. Following Szulanski (1996), one role future research might play in this regard is to begin by identifying the organisational impediments

to the transfer of good practice within the NHS, and the mechanisms that will be required to allow the necessary knowledge conversions and boundary crossings to occur.

This all implies that Collaboratives, or rather the process of collaborating, needs to change, to become more equal, spontaneous, naturalistic, and improvisatory and less routine, hierarchical, structured and orchestrated than it is currently. The consequence of taking away the controls and allowing the Collaboratives to become more self-managing and self-organising - ‘capturing knowledge without killing it’ (Brown and Duguid, 2000) - is that the resulting communities of practice (in contrast to the rather ‘damp,’ half-activated networks we observed) become explosive, fostering invention and allowing new ideas to spark and ignite. As an aim for future Collaboratives, Hedstrom’s (1994) phrase ‘contagious collectivities’ is a good one. Unfortunately, it is also a reminder of how far they still have to go, and how they will need to let go of the prevailing ‘knowledge is power’ mindset (i.e. holding not sharing knowledge) and the underlying culture of rationality, verticality and control.

There has been much talk of networks and partnership in the NHS in recent years, and certainly the concept of a Collaborative embraces both of these. However, our research leads us to conclude that the emphasis needs to move again from partnership to *community*, with ‘quality communities of practice’ becoming the organisational building blocks for the NHS Plan. The merging of KM practices with Collaborative practices is one promising way amongst others of achieving this in the NHS in England and Wales. As other public sector organisations also seek to secure lasting quality improvements they too might benefit from drawing on the experiences and lessons of the private sector with regard to the application of KM concepts.

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Table 1 ‘Communities of practice’

	Purpose?	Who?	Held together by?	How long?
Communities of practice	To develop members’ capabilities: to build & exchange knowledge	Members who select themselves	Passion, commitment and identification with the groups expertise	As long as there is interest in maintaining the group
Formal work group	To deliver a product or service	Everyone who reports to the group’s manager	Job requirements and common goals	Until the next reorganisation
Project team	To accomplish a specific task	Employees assigned by senior management	The projects milestones and goals	Until the project has been completed
Informal network	To collect and pass on business information	Friends and business acquaintances	Mutual needs	As long as reason to connect

[source: Wenger and Snyder, 2000]

Table 2

'Now'	'Next'
Information	Knowledge
Knowledge application	Knowledge generation
Explicit (evidence)	Tacit (experience)
Contrived network	Community of practice