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HR practices and knowledge brokering by hybrid middle managers in hospital settings: The influence of professional hierarchy

Abstract:

Drawing upon the ability-motivation-opportunity (AMO) framework, our study extends understanding of the interaction between HR practices and the brokering of knowledge by hybrid middle managers. Examining healthcare delivered to older people in a hospital setting, our study highlights that hybrid nurse middle managers broker knowledge downwards through professional hierarchy to their peer group, but find it difficult to broker knowledge upwards. Meanwhile, because they lack legitimacy with doctors, they lack opportunity to broker knowledge inter-professionally. Hybrid medical middle managers are potentially more able to broker knowledge within their peer group. Some, of lower status intra-professionally, may however, like nurses, lack legitimacy and opportunity to do so. Meanwhile, higher status medical middle managers may lack motivation to engage in knowledge brokering with peers outside their specialism. We suggest inter- and intra-professional power and status has important implications for HR practices to support knowledge brokering by hybrid middle managers. Should HR practices fail to support ability, motivation and opportunity for knowledge brokering across and within professions, then a 'broken', rather than 'broker', chain may result.

Key words: HR practices, AMO framework, healthcare, hybrid, middle managers, knowledge broker

Introduction

In line with research that examines how health outcomes are impacted by HR practices (Buttigieg, West, & Dawson, 2011; West et al., 2006), we need to understand how such management practices best support the knowledge brokering role of hybrid middle managers. Knowledge brokering is a specific phenomenon within the wider knowledge mobilization literature, defined as 'getting the right knowledge, into the right hands, at the right time' (Currie & White, 2012; Hargadon, 2002; Verona, Prandelli, & Sawhney, 2006), which has been particularly applied to middle managers (Delmestri, 2005). Hybrid middle managers are defined as 'mediating persons' capable of working through sets of ideas belonging to management and those belonging to clinical practice (Llewellyn, 2001). These unique

managers are crucial brokers for knowledge, upwards and downwards within a healthcare provider, for quality improvement (Burgess & Currie, 2013).

To understand this phenomenon, we draw upon a burgeoning literature on the interaction of HR practices with knowledge mobilization (e.g., Collins & Clark, 2003; Foss et al., 2009; Kang, Morris, & Snell, 2007; Kang, Snell, & Swart, 2012; Krausert, 2013; Minbaeva, Foss, & Snell, 2009). More specifically, we draw upon the ability-motivation-opportunity (AMO) framework to understand how HR practices best support the knowledge brokering role of hybrid middle managers (e.g., Blumberg & Pringle, 1982; Bos-Nehles, Van Riemsdijk & Looise, 2013; Gagné, 2009; McDermott et al., 2013; Minbaeva et al., 2009; Prieto & Pilar Pérez Santana, 2012). Whilst literature is burgeoning around how HR practices mediate knowledge mobilization, there is little consideration of its impact in professional organization, characterized by power and status hierarchies. Such considerations are crucial in understanding the functioning of professional bureaucracies, such as hospitals (Mintzberg, 1979).

We focus upon care of older people in English hospitals and brokering of patient safety knowledge, defined as knowledge that is critical to ensure the quality of care is at an optimum safe level for patients. Safe care of older people represents a significant issue globally, due to increasing numbers of older patients, the high costs of their more complex condition (co-morbidity), and the tendency to remain in hospital longer (Appleby, 2013). A recent government level inquiry within the English NHS, highlighted failure in the delivery of care of older people at one hospital, the Mid-Staffordshire NHS Foundation Trust, which has driven system level change across England to enhance quality. A large part of this relies on the development of hybrid middle managerial capacity to achieve the needed improvements in quality of care through brokering of patient safety knowledge (Francis, 2013). Within our study, we examine knowledge brokering by hybrid middle managers

around the most common patient safety issues in the English NHS for older people, of patient falls, medication management, and transition (within hospitals between departments and between hospitals and the patient's home, care home, or intermediate care setting) (National Patient Safety Agency, 2007). Our study draws data from three hospitals, encompassing 127 interviews, 16 hours of focus group discussion with 48 clinical staff, and 60 hours of observation. As prior academic commentaries have emphasized, unique insights into the interaction of HR practices with knowledge mobilization are likely to be gleaned from the study of employees, rather than the HR function itself (Bowen & Ostroff, 2004; Kehoe & Wright, 2013; Piening, in press; Wright & Boswell, 2002).

Knowledge Brokering by Hybrid Middle Managers in Healthcare Organizations

'Hybrid' refers to managers, who are skilled in an alternative profession. Llewellyn (2001) describes the hybrid concept using a metaphor of a 'two-way window', where middle managers with a clinical background act as 'mediating persons' capable of working through sets of ideas belonging to management and sets of ideas belonging to clinical practice. In the English National Health Service (NHS), hybrid middle managers have different professional backgrounds, and are located at different levels of the organization. Within our case studies, for example, hybrid middle managers encompass senior nurses with responsibility for ensuring clinical governance, those leading care delivery teams at ward level, and consultants leading medical teams in different specialties. We highlight, whilst general managers or 'pure plays' represent around 3 per cent of the management workforce, hybrid managers have been calculated to represent around 30 per cent of staffing of a typical hospital in the English NHS (Buchanan et al., 2013; Walshe and Smith, 2011). Thus, their strategic role is potentially significant, and so we might expect attention to HR practices that support enactment of a knowledge brokering role from hybrid middle managers. In theory, hybrid middle managers, through brokering knowledge, influence strategy in a downward manner, convergent with

senior management plans, but also exert strategic influence upwards and divergent from senior management plans (Floyd & Wooldridge, 1992, 1997).

In considering knowledge mobilization within healthcare settings, it is necessary to acknowledge the nature of a professional organization, which is hierarchical (Abbott, 1988; Freidson, 1988). Regarding their strategic contribution, Shi, Markoczy & Dess (2009) highlight some hybrid middle managers enjoy more legitimacy, and hence opportunity, than others, to broker knowledge across organizational and professional boundaries. Within a healthcare context, there is a distinct and significant status and legitimacy differential between doctors and other actors, such as nurses, managers, and professions allied to medicine (Abbott, 1988; Freidson, 1988; Oborn & Dawson, 2010). Not only are there inter-professional status differentials, but intra-professionally, there is further stratification (Currie & White, 2012). For example, geriatricians have historically been considered inferior status to surgeons or anesthesiologists (Barton & Mulley, 2003). Yet often it is those relatively lower status staff in inter-professional or intra-professional terms, such as nurses and geriatricians, who occupy hybrid middle manager positions, and are closer to the delivery of frontline care for older people, so able to broker practice-based knowledge for the strategic benefit of the organization (Burgess & Currie, 2013; Currie & White, 2012).

This analysis of professional organization implies that we need to understand how HR practices best support the knowledge brokering role of hybrid middle managers, with attention to complexities of inter-professional and intra-professional hierarchy, in ensuring high quality, patient-safe, clinical care. In the next section of our paper, we review what is known about the role of HR practices in promoting knowledge flows.

HR Practices and Knowledge Mobilization

A growing literature has addressed the role of HRM in building knowledge stocks and promoting knowledge flows in organizations (Kang et al., 2007; Lepak, 1999; Minbaeva et

al., 2009). Entire HR systems (Patel, Messersmith, & Lepak, 2012; Prieto & Pilar Pérez Santana, 2012) and specific individual practices (Collins & Clark, 2003; Foss et al., 2009; Kang et al., 2012) explain knowledge sharing and associated behaviors. HRM supports organizational learning and intellectual capital development through its influence upon stocks of human capital, organizational capital and social capital (Lepak, 1999; Lepak & Snell, 2002; Youndt, Subramaniam, & Snell, 2004; Youndt et al., 1996). Individual networking and relationship building behaviors are central to support the development of social capital, and so maintain flows of knowledge required to support organizational learning (Collins & Clark, 2003; Lepak, 1999; Prieto & Pilar Pérez Santana, 2012; Yan et al., 2013).

A dominant framework for understanding the impact of HR policies, practices and systems on individual and collective performance is the ability-motivation-opportunity (AMO) framework (e.g., Blumberg & Pringle, 1982; Bos-Nehles, Van Riemsdijk & Looise, 2013; Gagné, 2009; McDermott et al., 2013; Minbaeva et al., 2009; Prieto & Pilar Pérez Santana, 2012). The AMO framework has a long history in the study of work performance (e.g., Aldag & Brief, 1979; Cummings & Schwab, 1973; Dachler & Mobley, 1973). The framework acknowledges that work behavior is a function of individual capacity to perform a task, willingness to engage with that task, and freedom from inhibiting environmental factors, as well as access to supportive external factors. Related to our study, the AMO model has also been deployed to explain the formation of social capital (Adler & Kwon, 2002) and knowledge sharing behavior (e.g., Argote, McEvily & Reagans, 2003).

HR policies such as staffing, training, incentives, and job design, each impact ability, motivation, and opportunity to engage in the formation of relationships and exchange of knowledge (Kang et al., 2007; Kaše, King, & Minbaeva, 2013). Through staffing and development practices, HRM influences the creation or enhancement of human capital available to the organization in the form of skills and knowledge. This development of human

capital supports the development of organizational capital – the knowledge available to the organization that is embedded in practices, processes, systems, culture, and codified in databases, information systems, patents and manuals (Kang et al., 2007; Youndt et al., 2004). HRM also influences the creation and maintenance of social capital by providing the skills, incentives, climate and rewards for developing positive social and instrumental exchanges within the organization and beyond its boundaries (Espedal, Gooderham, & Stensaker, 2013; Kang et al., 2007; 2012; Lepak, 1999; Minbaeva et al., 2009; Yan et al., 2013). Collaborative knowledge exchange is further supported by human capital development through training, team building, and socialization (Kang et al., 2007; Patel et al., 2012; Prieto & Pilar Pérez Santana, 2012). In sum, a number of HR practices support the potential for knowledge exchange, through creation of individual ability in the form of human capital, and collective capacity in the form of social capital.

Rewards are a significant driver of employee innovative behaviors, including knowledge sharing (Minbaeva et al., 2003). In combination with other practices, performance based-compensation is a significant driver of motivation. However, when it comes to knowledge sharing, extrinsic motivation is not the entire story. Extrinsic rewards can only function where effective monitoring or recording of contributions/outcomes occurs, and where the incentives themselves are perceived as fair and meaningful. In addition, a key component of motivation for knowledge sharing is intrinsic (Foss et al., 2009; Gagne & Deci, 2005), deriving from personal values and professional identity and norms.

Job design is another important mechanism for promoting knowledge sharing in organizations (Foss et al., 2009). The design of jobs influences the ability that employees have for knowledge sharing, when a job requires a broad understanding of a wide range of tasks, and where they limit the degree of specialization. At the same time, job design influences the opportunity that employees have for knowledge sharing by determining

whether there are overlapping responsibilities, which require interpersonal coordination and therefore force individuals to share knowledge in order to accomplish task objectives (e.g., Kanter, 1984). Finally, and perhaps most importantly, job design influences the motivation of individuals to engage in knowledge sharing (Foss et al., 2009). When job designs allow autonomy, they increase the chances of individuals behaving proactively and taking the initiative (Frese et al., 1996; Parker, Wall, & Jackson, 1997). In addition, both task identity and feedback are associated with employee intrinsic and extrinsic motivation to share knowledge (Foss et al., 2009; Gagne & Deci, 2005).

Where the focal task is knowledge sharing, opportunity is significantly influenced by the availability of receptive others (Cabrera & Cabrera, 2005), which implies that the perceived legitimacy of the source of knowledge is likely to play an important role. Absence of legitimacy creates a situational constraint (Bacharach & Bamberger, 1995; Blumberg & Pringle, 1982; Villanova & Roman, 1993) that inhibits the opportunity to engage in knowledge sharing. At the same time, legitimacy to participate in a particular task represents an aspect of individual motivation (Blumberg and Pringle, 1982). In the language of expectancy theory, perceived personal legitimacy would increase the expectancy of success and therefore increase motivation, for example, to engage in knowledge sharing. This exemplifies the type of interrelatedness of the AMO dimensions that has created controversy over the years (e.g., Campbell & Pritchard, 1976). Professional and occupational status differences may serve as both sources of personal motivational inhibition, and as substantial situational constraints on behavior. Yet the role played by legitimacy and occupational status has not been examined in the context of the AMO perspective as either situational constraint (i.e. inverse of opportunity) or source of motivational inhibition.

In summary, HRM literature thus highlights a number of very clear prescriptions, that share a common theoretical logic within the AMO framework, and which have received a

reasonable degree of empirical support. However, missing from this literature is a consideration of the ways in which professional organization serves to inhibit or modify behaviors, even where there are obvious overarching strategic and shared norms, as in the healthcare professions where ultimately patient health and wellbeing are a common objective for all involved. In professional organizations, dual identities are common: a professional identity and the identity of manager coexist. This occurs in academic institutions, law firms, accounting firms, but perhaps is most strongly apparent in healthcare where doctors and nurses have very strong professional identities, and at the same time organizational identities. This is further complicated by a hierarchical relationship between and within these professional groups.

Research Design

The research study was conducted across three sequential research phases from January 2011 to August 2013 in the English NHS. In phases one and two, we mainly used semi-structured interviews to help develop a deep understanding of the knowledge-brokering role of hybrid middle managers in relation to patient safety for the care of older people. In phase three, we combined semi-structured interviews, focus groups and observations of risk management committees, tracing knowledge brokerage by hybrid middle managers following a ‘serious untoward incident (SUI)’, defined as an incident that occurs in a healthcare setting, which results in unexpected/avoidable death, or moderate/serious harm to a patient (Nicolini, Waring & Mengis, 2011).

In phase one of the study (2011), we conducted 17 exploratory, semi-structured interviews, averaging around one and a half hours in duration, with a wide range of external and internal stakeholders well placed to discuss how knowledge is brokered in hospitals; e.g. executive managers responsible for clinical governance with medical or nursing backgrounds,

policy actors, senior academic researchers. All interviews were audio recorded and transcribed (except in two instances where respondents declined to be recorded).

In phase two of our study (2012), we conducted 54 semi-structured interviews, averaging around one hour in duration, with a representative sample of hybrid middle managers (35 hybrid middle managers with a nursing background, and 19 with a medical background were interviewed), across three hospitals (A, B and C). With respect to hybrid middle managers with a medical background, 7 were geriatricians, whilst 12 were drawn from other medical specialties that delivered care to older people. Hospital cases were selected for their representativeness of their broader population in the English NHS, regarding the proportion of older patients they cared for in the year in which the study started (2011), around 50 per cent of the total patient population in English Hospitals (Appleby, 2013). Multiple cases were selected as it enables a more robust basis for theory building (Yin, 2003) and often yields more accurate and generalizable explanations than a single case study approach (Eisenhardt & Graebner, 2007). However, readers might note that Hospital B was proving increasingly difficult to access in the wake of elderly care problems that emerged in the course of the first year of study, so the number of interviews carried out is less (only 8 interviews), and study of Hospital B was not progressed into phase three of the study. Within our hospital cases, in phase two of study, we asked what patient safety knowledge in care of older people gets brokered, by and to whom, how and why. All interviews were audio recorded and transcribed. Alongside interviews in phase two, we collected archival data and observational field notes. We observed relevant meetings, such as clinical risk committees, action groups concerned with reducing falls amongst older people in the hospital, and ward meetings concerned with quality improvement for the care of older people (totaling 20 hours in total). These helped elaborate our analysis, and provided some check on claims in interviews about knowledge brokering.

In phase three (2013), we conducted our studies in two organizations, Hospital A and Hospital C. In Hospital A, we examined 8 SUIs of moderate patient harm (e.g. bone fracture) resulting from an inpatient fall involving older patients. When a SUI occurs, hospitals not only take action to minimize damage to patients, but also re-evaluate policies and procedures to prevent a recurrence. Thus, each SUI involved the completion of a root cause analysis (RCA) template form, including an action plan for improvement, which was then presented to a clinical risk committee. We studied the completed RCA forms following their presentation at the clinical risk committee, prior to interviewing staff on the ward where the incident occurred and relevant hybrid middle managers to establish how knowledge was brokered for service improvement in care of older people following the RCA. A total of 21 interviews (11 hybrid middle managers with a nursing background, and 10 nurses), averaging around one hour in duration, were conducted at Hospital A. Of note is the fact that no specialist doctors, including geriatricians, although potentially connected with an incident, responded to requests for interviews. As one respondent explained, ‘when it comes to the nitty-gritty of serious incidents, they (doctors) in the main, don’t want to know’ (Hybrid Nurse Manager N, Hospital A). We further discuss this later in the paper. These interviews were followed up by four focus groups (each of two hours duration) of a wider range of clinical staff involved in the clinical areas where the most incidents occurred, in which we sought to derive what quality improvement actions were brokered by hybrid middle managers to follow up incidents and root cause analysis. Of the 48 clinical staff participating in focus groups, again notable was relative absence of specialist doctors. Although many doctors were invited to participate, only 2 attended the focus groups (a geriatrician and a cardiac surgeon). Given the proportion of nurses to doctors in English hospitals is around two-to-oneⁱ, across the different research phases, we might have expected a larger number of doctors to agree to be interviewed and attend focus groups, particularly those that hold managerial positions as

clinical directors or medical team leaders. In short, we wanted to sample those doctors in hybrid middle manager positions other than geriatricians, to assess knowledge brokering within the medical group, however their participation in our study proved limited.

At Hospital C, to validate and further elaborate analysis of RCAs in Hospital A, we studied a further 2 SUIs, both of which involved patient deaths, one resulting from a medication error and the other an error related to the transfer of a patient from one place of care to another. That there were patient deaths involved might explain why doctors were prepared to be interviewed, compared to the SUIs in Hospital A, where patients might 'merely' suffer from a broken hip. Regarding the first SUI, we interviewed 27 respondents working on the Acute Medical Unit where the incident occurred, including 2 doctors. These averaged around one hour in duration. The number of interviewees for the transition error was rather smaller, totaling 8 respondents, including 2 doctors. All interviews and focus groups in Hospitals A and C were audio recorded and transcribed.

In this third phase of research, a further 60 hours were spent observing wards and departments, and clinical risk committees concerned with RCAs, with a focus upon the knowledge brokering role of hybrid middle managers (both nurses and doctors). In both Hospitals A and C, we studied the organization's high-level reports, prior to conducting semi-structured interviews with the staff involved. Where available, we collected minutes of the meetings we observed, and similar meetings that preceded these over the previous 12 months. Second, we examined relevant Government White Papers and associated publications (Department of Health, 2001; 2009). In Gephart's (1993) terms, we were able to collate "a substantial archival residue" (p. 1469).

In advance of the analysis, we assembled all of the documents, interview transcripts and observational field notes for each of the cases into a single data file. We began with a fine-grained reading of the data (Strauss & Corbin, 1990), and then inductively created a list of

first-order codes from the case evidence. We then consolidated all of our codes across the three cases, progressing with axial coding, structuring the data into second-order concepts and more general aggregate dimensions (Corley & Gioia, 2004; Strauss & Corbin, 1990). In doing so, we engaged in deductive reasoning whereby we linked our inductive codes with existing concepts and frameworks, derived from our literature review (Walsh & Bartunek, 2011). While we accept that our accounts are one of many potential interpretations (Van Maanen, 1988), we worked to ensure that we did not retro-fit the data to service our theorising (Wodak, 2004) in two ways. Firstly, we triangulated between data types; then, secondly, we triangulated across analysts (Mantere, Schildt, & Sillince, 2012). Our approach follows Pratt (2009), and is designed to move from the 'raw' data to the theoretical and thematic interpretation of that data.

Findings

Within our hospital setting specific to the case of delivery of care to older people, the key hybrid middle managers for brokering knowledge are: geriatricians (doctors), leading medical care teams; senior nurse hybrid middle managers, with responsibility for quality and clinical governance; matrons and ward managers (both represent hybrid middle managers) responsible for the direct delivery of care by nurses. While geriatricians leading care teams hold expert knowledge about the complex challenge of medical care, the hybrid nurse middle managers are responsible for ensuring that hospital systems and practices are appropriately designed, and observed by nursing staff. Medical specialists from other clinical units outside of care of older people, such as surgeons, lead teams that also deliver care to older people, but outside the specific confines of elderly care wards. Their care is delivered at an arm's length relationship when it is needed within the pathway for delivery of care to older patients; e.g. relating to a particular surgical procedure, such as a hip operation. Nevertheless, we might expect surgeons, for example, to experience SUIs related to older people, and thus

engage with improvement in patient safety. The challenge faced by hybrid middle managers responsible for delivery of care to older people, is to connect knowledge within and across medical and nursing professional groups to engender a knowledge brokering chain to produce patient safety improvement (Burgess & Currie, 2013; Waring et al, 2013).

In examining knowledge brokering by hybrid middle managers within and across professional groups, we consider the matter of professional power and status, and the role of HR practices in supporting the ability of, willingness of, and opportunity for, knowledge brokering by hybrid middle managers. Our empirical analysis is structured according to the following four themes -- (i) intra-professional hierarchy within nursing; (ii) inter-professional hierarchy between hybrid nurse middle managers and doctors; (iii) intra-professional hierarchy within medicine; and (iv) creating opportunities for knowledge brokering through HR practices.

Intra-professional hierarchy within nursing

The organization of the nursing profession, as described by our respondents, was ‘very hierarchical’, a characteristic of professional organization for this group that is confirmed in literature (see, for example, Allen, 2001; Robinson, Murrells, & Marsland, 1997). This imparts a correspondingly clear demarcation of power and status leading to a tightly linked chain where patient safety knowledge can be brokered effectively from the top to the bottom:

If you were to look at a clinical department, every nurse in that department will in some way be in a structure, which is below that of their clinical nursing lead. There will be a pathway through that lead. For doctors, this is not the case because there’s not that recognized hierarchy that means the lead of service medically are some way superior...they’re seen as equals. One of them happens to be lead for service, but in no way are they in an elevated position. (Anesthetist, Hospital A).

The contrast between organization of nurses (hierarchical) and doctors (more collegiate) made by the anesthetist is an interesting one. We return to his particular claim about doctors in a later empirical section and question such assertions. In particular, we highlight that

doctors may also be organized hierarchically, but more based upon the status of their specialism.

With respect to nursing hierarchy, hybrid nurse middle managers in clinical governance roles influence nursing activity through their status and formal position in the organization, but they are dependent upon those nurses delivering frontline care, to gain knowledge required for systematic patient safety in care of older people. However, intra-professional status differences and norms actively discourage the upward sharing of knowledge from the clinical frontline. The following quote highlights a conservative disposition of ward managers, which inhibit their motivation to broker patient safety knowledge. Instead, they appear more concerned to present an image of a well-managed ward:

I went onto a ward a few months ago and one of the non-registered nurses asked me if I wanted a Mars bar. She stopped me and said, 'Have you had anything to eat today?' I said, 'No.' She said, 'Do you want my Mars bar?' It was a really nice conversation. When I went back to that ward later on, she came over and said, 'I'm really sorry if I offended you on the Mars bar.' Her [nurse] team leader had told her that it was inappropriate to talk to me that way. I tell this story to illustrate communication blockages when we are disseminating knowledge. Team leaders don't want me to hear things, because that's a reflection on them. So I have to circumvent and go round and look at the data. You know, I was the same when I was at that level in the organization. I did not want my boss to know everything, because it might reflect failure on me (Hybrid Nurse Middle Manager A, Hospital B).

We find similar behavior in Hospital A, where the hybrid nurse middle manager, responsible for the acute medicine department, acknowledged that nursing staff were unlikely to raise issues directly with her:

When I came into my post as clinical lead it was like, 'oh she's a senior manager, don't talk to her!' As a change agent I need to be part of the team as well as a manager. (Hybrid Nurse Middle Manager T, Hospital A).

The challenge of brokering knowledge upwards through nursing ranks seems more than a matter of cultural norms, but also a structural problem, with management structures for clinical governance decoupled from frontline clinical practice, limiting both opportunity and motivation to broker knowledge upwards. There seemed little overlap in design of roles for

those holding formal managerial responsibility for compliance with clinical governance, and those for the management of frontline service delivery:

The governance structure is very much a ‘black box’. Admittedly I am new in post, but I really have no idea how to push knowledge upwards to influence change” (Nurse C, Hospital A).

They [nurse team leaders] know that there are certain bits of this unit that just don’t work. I’m pretty sure that they will tell their bosses, but it seems to stop there, and it feels like nothing goes further (Nurse D, Hospital A).

To circumvent behavior linked to such cultural norms and structural challenges, hybrid nurse middle managers conducted ‘patient safety rounds’ in an attempt to pull knowledge directly from the nurses on the ward:

The problem with the hierarchy we have is with more junior nursing staff. It would really be a very big deal for them to knock on the door or e-mail me. It does happen occasionally, but it’s much more me going to find them. We have patient safety rounds and the nurse manager walks around quite a lot. What we are trying to move towards really is shared governance and visible leadership in terms of people at all levels, including those more senior, like me, being visible to people on the wards talking about safety (Hybrid Nurse Middle Manager M, Hospital A).

The examples above highlight the strategic role of hybrid nurse middle managers in proactively creating opportunities for more junior nursing staff to broker knowledge upwards, and the role of the hybrid manager in fusing knowledge from the operational frontline with the strategic knowledge they hold. These actions also influence perceived legitimacy by junior staff that it is acceptable to share knowledge upwards in the hierarchy, and thereby influence their motivation and opportunity to do so. However, it also highlights that hierarchy and professional status and culture can serve as a one-way valve, in which knowledge may be more readily brokered horizontally or down hierarchical levels than up.

Inter-professional hierarchy between hybrid nurse middle managers and doctors

We highlight hybrid nurse middle managers found it challenging to broker patient safety knowledge across to doctors, due to inter-professional hierarchy, a feature of professional organization within a hospital that is confirmed in sociological literature (Abbott, 1988, Freidson, 1988). In all our hospital cases, there was decoupling of nurses and doctors in the brokering of knowledge for quality improvement following a SUI, even though the clinical activity of both groups commonly contributed towards the incident; i.e. opportunity for knowledge brokering across professions was relatively absent. Again, the design of roles, this time across professions, did not engender overlapping responsibility, with patient safety located firmly within nursing practice. Despite protocol requiring contribution from a senior doctor, engagement rarely occurred beyond the proffering of a signature on the form:

There were a lot of doctors involved because there were quite a few medical issues pertaining to that particular patient. [Interviewer: So you were able to go to doctors and get them to reflect and contribute to the RCA?] Well no. I sort of got involved with the patient, but we didn't get involved with the doctors. [Interviewer: Why was that?] I don't know in all honesty. Looking back, I suppose we [nurses] very much think of doctors as, "we'll deal with our issues and you'll deal with yours", when actually it should be a bit more of a multi-disciplinary team approach (Hybrid Nurse Middle Manager C, Hospital A, Focus Group 2).

This is indicative of lack of opportunity for knowledge brokering that derives from status differences and perceptions of legitimacy with respect to collaborative working that are internalized within professions. The root of the problem appears to be multifaceted, stemming from early career education, which was followed by socialization as doctors and nurses entered the workplace and then reinforced by the elitist view across hospitals about primacy of medical professionals that promotes specialism and introspection. A respondent in Hospital A suggested that some doctors are not disposed towards implementing basic patient safety practice, believing it to be the role of nurses.

I think they [doctors] have the power to influence junior doctors on the wards. I have seen instances reports where doctors have been in the bay and patients have fallen and they've paid no attention, which is alarming. However, again they perceive, "It's nothing to do with me. I'm stood here writing my notes at the trolley." So I do think that they [ward managers] need to get the message out, "This is not just about the nurses. This is about a team approach,

a multidisciplinary approach. It's nurses, doctors, physiotherapists, occupational therapists. (Hybrid Nurse Middle Manager B, Hospital A)

The necessity of a team approach was emphasized by nursing hybrids and geriatricians in both Hospital A and B. Engaging medical consultants, outside the ranks of geriatricians, in patient safety improvement for the care of older people, is considered paramount for success in an organization that requires collaboration from a number of professionals to provide optimal safe care to the patient. Yet cultural and structural norms shape motivation with respect to brokering knowledge across professions. Not only do these norms influence the motivation to share, but the opportunity to do so. This stems from the legitimacy that is granted to the sharer by the (potential) recipient:

Classically, the relationship that's most fundamental in the NHS, is the consultant's relationship with everybody else. Too often, consultants have been allowed to destroy or break up or compromise change for petty or non-petty reasons... We should all be one team and I myself say this phrase, "One team. We're in it together". [But regardless,] people will view their professional identity in their own vision. So a nurse will have the right to question a consultant, but they don't feel empowered to because of hierarchical structure. (Hybrid Medical Middle Manager K, Geriatrician, Hospital A)

In the context of knowledge brokering, there is interdependence between motivation and opportunity that is a function of legitimacy and the inherently dyadic nature of this process. Where the hybrid nurse middle managers did persist in their pursuit of engagement from doctors, the process would become elongated, extending across many months. This impacted the timeline between the incident, subsequent learning from the incident, and devising an action plan to improve service quality based on the incident and brokering the knowledge back to the ward for implementation. One hybrid nurse middle manager complained that she has been waiting two months for a doctor to complete his section of the root cause analysis:

I was so focused on nurses, nurses, nurses, around the root cause analysis, that it took the In-Patient Falls Committee Chair [geriatrician in a hybrid middle manager role] to say, "Hang

on, where was the doctor in all this?" I thought, "Oh crikey, yes!" It took that meeting to make me realize we [nurses] had become complacent in engaging the doctors (Hybrid Nurse Middle Manager E, Focus Group 3, Hospital A).

Hybrid Nurse Middle Manager E went on to explain that, unwittingly she accepted disengagement from doctors around patient safety. She highlighted a cultural difference between doctors and nurses that disposed her to adhere to policies and guidelines more than doctors in her professional practice:

Nurses are much better at doing what they are told than doctors. Nurses by and large want a policy. They want a way of doing it. Their culture is one where they feel they will be told off if they don't do it the policy or guideline way (Hybrid Nurse Middle Manager E, Focus Group 3, Hospital A).

In Hospital A, of the limited number of doctors (4 out of 48 staff) who attended the four focus groups, two had drawn motivation from an incident that had affected them personally, specifically the death of a patient that they had recently operated on following an in-patient fall:

All I knew is she fell over, and died. But there is no mechanism for following up on things that happened and passing on information. If we were to identify something, for example not enough staff, we can put our weight behind changing that. If we don't know about it, then we can't. We need to something about this (Cardiac Surgeon, Focus Group 2, Hospital A).

The above quote highlights that doctors are motivated to broker knowledge when they perceive a personal interest in the patient, but even so, may struggle to do so where knowledge brokering mechanisms are not evident.

Meanwhile, for nursing hybrid middle managers, they may be over-burdened, time constrained, and face situational constraints in the form of limited legitimacy, as they enact a role, which, in practice, is squeezed by clinical and managerial demands. Consequently, they revert to a basic coping mode in which they do what they can in order to evidence

compliance with organizational requirements, but fail to broker knowledge relating to the incident locally to nurses and doctors on the ward for improved patient safety.

I'm just going to present the incident at my meeting and that's out of the way, I can get on with the rest of my work (Hybrid Nurse Middle Manager G, Focus Group 1, Hospital A)

We haven't got time to actually do any actions [such as broker knowledge to other health professionals], because we're too busy writing action plans [to comply with organizational requirements following an incident] (Hybrid Nurse Middle Manager A, Focus Group 3, Hospital A).

Following interest expressed by a cardiac surgeon in doing something about falls (see above), it took a geriatrician in his hybrid middle manager role, to convene a meeting of cardiac surgeons. A part of the explanation may be that geriatricians have a deeper pool of component knowledge (Kang et al., 2007) that enables them to broker knowledge from other specialists. It may also be related to geriatrician's ability to build trusting dyadic relationships with their medical peers as a result of their perceived expertise in care of older people.

Doctors typically derive legitimacy through their technical expertise and associated status.

However, they often lack the motivation to share knowledge. Where higher status, specialist doctors, other than geriatricians, are motivated to share knowledge for patient safety

improvement, such as in the example of the cardiac surgeon described above, an opportunity

is created for knowledge brokering to take place across the organization, which can be

facilitated by hybrid medical middle managers:

No doctor wants somebody to go through, as in this case, a very complex, expensive and successful intervention only for the patient to then fall over and die. Being involved in all of that (RCA) has brought this sort of home to me and the geriatrician has taken me and colleagues through the falls toolkit, which I hadn't previously seen and which does really open your eyes (Cardiac Surgeon, Focus Group 2, Hospital A).

The contrasting cases outlined in this empirical section reinforce the significant role played by status and legitimacy on both motivation and opportunity. Professional status acts

as a barrier to some, while creating opportunity for knowledge brokering for others.

However, these barriers and opportunities are entirely predictable from differences in relative professional status. We consider the knowledge brokering interaction between doctors in more detail in the next section.

Intra-professional hierarchy within medicine

Within the medical profession, intra-professional hierarchy was evident across doctors, which impacted upon knowledge brokering, with clear differences between those who of higher status, such as surgeons, versus those who are lower status, such as geriatricians (Barton & Mulley, 2003). This counters an earlier claim by the anesthetist (Hospital A) about the more collegial medical organization. As one geriatrician explained, ‘Some [doctors] are more equal than others, both across medical firms, and within medical firms. Let’s not pretend we operate in a power vacuum’ (Hybrid Medical Middle Manager K, Geriatrician, Hospital A).

Despite exceptions, such as the example outlined in the previous empirical section, focused upon engagement of the cardiac surgeon in patient safety, specialist doctors, other than geriatricians, pay little attention to patient safety knowledge related to falls, transition and medication management. They fail to recognize the relevance and importance of such patient safety knowledge to their own patients. For example, the Chair of the In-Patient Falls Committee (IPFC) at Hospital A, a geriatrician, claims that his repeated requests to certain other specialist doctors to attend the IPFC (due to a high level of falls in their area) were frequently met with resistance to the point that some doctors would respond glibly, ‘why are you bothering me with this nonsense? It’s of no concern to me’ (Hybrid Medical Middle Manager B, Geriatrician, Hospital A).

Those specialist doctors, other than geriatricians, typically didn’t see distinctive aspects of care related to the older patient group as a core part of their role, even though commonly

there were a large proportion of older patients passing through or occupying beds within specialist clinical departments other than specific elderly care wards:

There are still a lot of people working within a hospital that don't see elderly care as part of their business, or they see abnormalities as part of normal ageing, even though loads of our patients in every area are elderly. For some specialists in areas other than the elderly care department, it's okay that an older person is delirious, they won't treat the delirium actively, and seek out knowledge about it, even though it could lead to a fall, for example (Hybrid Medical Middle Manager A, Geriatrician, Hospital A).

This stymied any opportunity for geriatricians to broker relevant patient knowledge to their higher status medical peers, even where it proved essential to safe care of older patients located in other specialist areas.

At the same time, higher status doctors lacked motivation to broker patient safety knowledge for care of older people, in part because the majority of patient safety initiatives are designed to be nursing led, involving routine tasks and protocols for implementation by ward nurses. Linked to this, where a doctor is required to complete a patient safety related task, nurses seek to audit the process as far as possible, in line with their managerial responsibilities. For example, a doctor is required to medically evaluate the patient following a fall on the ward. The doctor is then required to place a sticker in the patient notes to evidence that this assessment has taken place. However, in light of the variability of doctor's willingness to complete this very basic task, ward managers have taken to doing it on their behalf. Formal response to incidents was a responsibility located within nursing management practice:

No disrespect to my medical colleagues, but they're not the greatest at following procedures and putting stickers and things in, which is why we've kind of thought "Well, if we staple it onto the post-falls check list, the nurse always does a post-falls check list when someone's fallen so will see the sticker and put it in the notes" (Hybrid Nurse Middle Manager N, Hospital A)

The problem of engaging specialist doctors, beyond the ranks of geriatricians, in knowledge brokering was a common issue noted in all three hospitals. As doctors progress their careers in a specialist area, they become further removed from any notion that they interact with others to broker knowledge beyond that pertaining to the intervention for which they are responsible. Normative behavior supports a crude distinction between those who seek to 'cure' and those who seek to 'care'. Inter-professionally, nurses perceive the role of doctors to be very different from their own: 'they do their job, and we do ours' (Nurse, Focus Group 2, Hospital A). Intra-professionally, we observe similar differences between the geriatrician, and their higher status medical counterparts. To emphasize our earlier point above, inter-professional and intra-professional hierarchy combine so that responsibility for brokering patient safety knowledge is ceded to nurses in managerial roles, or the lower status doctors, such as geriatricians:

The surgeons' view is that, "You have got a broken bone, we (surgeons) fix the broken bone, if there is a problem beyond that we will transfer them to the healthcare of the older person's wards". Surgeons are probably the most difficult to change because they approach everything like that" (Hybrid Nurse Middle Manager L, Hospital B).

This was confirmed in our other hospital cases, for example, where a cardiac surgeon admits he was not disposed towards brokering knowledge that might improve patient safety for an older patient:

If there is a problem beyond [our specialty] we will transfer them to the healthcare of the older person's wards. We won't tell the rehabilitation wards they are confused, because they won't accept them if they are confused (Cardiac Surgeon, Hospital A, Focus Group 4).

At one level, the challenge might be characterized as an educational one, regarding older patients and their complex conditions. Our respondents recognized that care of older patients was 'mainstream business for the hospital' given that this group occupied around 50 per cent of hospital beds (in all three Hospitals A-C), and a similar proportion of all emergency department visits. Nevertheless, as apparent in the quote above, others were keen to pass on

older patients to 'specialist' geriatricians. Thus, the ability to broker knowledge both ways between doctors in different specialties appears limited.

It appears that even where motivated to do so, doctors need more awareness locally that an older patient is at risk within their area; for example from falls. However, there is not currently a mechanism to enhance their ability to manage falls. This lack of information stems from the dual effect of inter and intra-professional hierarchies on legitimacy to engage in knowledge brokering. Status hierarchies and their associated professional norms both impact the extent to which specialists make themselves available to receiving information (opportunity) and the extent to which lower status individuals share information with them. The tangible constraints on opportunity that these status differences create are evidenced in the ways in which both nurses and doctors conduct their work. The examples above indicate the difficulties of knowledge brokering between doctors located in different specialties. Geriatricians have the motivation and the technical knowledge and skills to broker knowledge for patient safety improvement for older patients, but because they are traditionally a lower status profession within the medical ranks, they lack opportunity to broker knowledge to their peers of higher status, such as surgeons:

I have no stick to beat them with. All I can say is, "You should have come to my meeting and you didn't," and they go, "What are you going to do about it?" They wouldn't say that to an Executive Director. I need some more teeth in my committee. Specifically I want an Executive Director to lead it (Hybrid Medical Middle Manager M, Geriatrician, Hospital A).

Interestingly, junior doctors develop potential ability to broker knowledge across professions during their early career on the basis they move across clinical areas rapidly during training, and so develop diverse understandings and relationships. However, they are discouraged at early stage from engaging with patient safety knowledge:

Following a patient safety incident, one of us asked for assistance with completing an incident form. The response from the senior doctors was, "don't bother your barney, it's a nursing role" (Junior Doctor, Hospital B).

Further, geriatricians aside, who interact with their peers across many different clinical departments where older patients are located, as doctors progress their careers, commonly their diverse knowledge base, experiences and network connections, are not maintained:

Just when they get potentially good at understanding patient safety around medications management, they become specialized and bracketed off into different areas (Pharmacist, Hospital A, Focus Group 5).

So, we observe a paradox within the ranks of doctors. We see individuals in possession of a diverse knowledge base, but lacking sufficient legitimacy to broker knowledge, and individuals who have legitimacy to broker knowledge, but limited disposition (motivation) to do so. Unlike the nursing profession, there appear to be fewer structures and processes designed to resolve the ensuing chasm around patient safety knowledge within medical ranks.

Creating opportunities for knowledge brokering through HR practices

In the empirical sections above, we highlighted how the nursing hierarchy facilitates knowledge brokering downward, but not upward from the front line. A hybrid nurse middle manager, located in a clinical governance role, described various dimensions of HR practice that supported her efforts to drive knowledge brokering downwards for patient safety improvement:

My role is to facilitate the bedside nursing. I set up the frameworks so that effective and safe care can be developed and maintained on the wards. I might develop the workforce. I might change HR practice. For example, I facilitate education and training for my staff [nurses delivering elderly care] around quality. I might even focus upon target setting and engaging my staff in developing these targets, and how they might exchange information to meet these targets. (Hybrid Nurse Middle Manager E, Hospital C).

Generally, however, frontline nurses lack willingness to broker upwards to those hybrid nurse middle managers, where targets are not set and staff performance managed around patient safety issues:

People are dying from falls and no one seems to be bothered about it. We have this falls meeting every month and we don't seem to be getting anywhere because it's not seen as high importance within the Trust. Infection control is seen as high importance and everybody has to go and attend. If you're summoned to attend to do a root cause analysis for a bacteraemia you go, but when you're summoned to attend from the inpatient falls committee meeting because a patient's fallen and broken their leg, we get all these people that don't turn up. They might do the root cause analysis, but they don't turn up on the day because they don't see it as important that they've got to come and present it, but they will if you make them come (Hybrid Nurse Middle Manager W, Hospital A).

However, the data does provide some illustrations that counter this general tendency. In one instance, in order to broker knowledge upwards, a frontline nurse seized an opportunity during a leadership development course, where participants had to present a mini-project to hybrid nurse middle managers, and the hospital's chief executive. She drew upon her success in reducing falls on her ward and asked hybrid nurse middle managers and the chief executive directly why there was no support for reducing falls across the organization at an executive level, following which, 'So about two months later, the chief executive implemented a new operational group with nurse managers on it, to focus on falls prevention across the whole organization' (Hybrid Nurse Middle Manager W, Hospital A).

The examples above illustrate the important role played by targets, performance management and leadership development to encourage brokering of knowledge upwards in professional hierarchies. In particular, accountabilities must be enforced to ensure procedures are followed, including participation in information sharing meetings. More commonly though, nurses delivering frontline care and those responsible for clinical governance in hybrid middle manager roles were decoupled, with little overlap in terms of responsibility.

In other examples, a limited number of nurses were able to draw upon their social capital to broker knowledge upwards through the nursing hierarchy to hybrid nurse middle managers. One nurse described, 'I knew her [a hybrid nurse middle manager] years ago from working on another ward and she was matron, so I could share information with her' (Nurse

E, Focus Group 2, Hospital A). This suggests that knowledge brokering upwards may be engendered, through the development of strong dyadic relationships between hybrid nurse middle managers and nurses (Kang et al., 2007).

Where organization of clinical practice fails to provide opportunities for individuals to broker knowledge upwards to higher status clinicians, motivated individuals must create their own opportunities in order to influence change. For example, a geriatrician in Hospital A wanted to galvanize the organization, particularly other doctors, towards proactive falls prevention for patient safety. He set out to educate medical peers of higher status about falls prevention, presenting it as not just pertinent to the care of older people, but relevant right across the organization to young patients, new mothers, cardiovascular patients, stroke patients. He then used his social capital, built up over 30 years working in the hospital, to co-opt a senior nurse occupying the hybrid middle manager role as ‘Clinical Quality, Risk and Safety Manager’, into prioritizing falls as an organization wide issue. Thus, we see patient safety knowledge was brokered within the group of hybrid middle managers, but across inter-professional boundaries. Again, the importance of performance management is highlighted:

We used to know that people fell. We used to know that they might have had a fracture. However, we didn’t know that they then went on to die because we stopped at that point. We didn’t gather any more data. Now we’ve measured it, which enabled us to increase our risk score for falls. It’s now up the agenda and we can have something done about it (Hybrid Medical Middle Manager F, Geriatrician, Hospital A).

Linking performance management with organizational strategic priorities, impacts legitimacy of the patient safety issue for all those, whose performance is measured. By increasing the legitimacy of the topic, and prioritizing it for all members of a team, it increases the probability that knowledge brokering will occur.

Similarly, another geriatrician in Hospital A, focused upon educating junior doctors in basic patient safety practices, emphasizing the 'team' role of doctors, working alongside nurses. He sought to influence medical practice from an early stage in doctors' careers:

I often say to juniors, "every ward round every day, twice a day, it's a doctor's job to give the patient a glass of water and if every doctor gave one or two glasses and every nurse gave one, that's three glasses that you would never have". And one doctor turned round and said, "we haven't got time." "Yeah, you've got time because to put in a drip takes twice as long, to monitor the blood test and see what's going on [if a patient becomes ill due to dehydration]". I know when I've cracked it with them is when I see them [junior doctors] on another ward giving a patient a glass of water. (Hybrid Medical Middle Manager O, Geriatrician, Hospital A)

He explained that such early career intervention increased the motivation of doctors later in their careers to engage with patient safety knowledge and activity, because it routinizes patient safety behaviors and encourages those exposed to such advocacy, to pass on behaviors to other doctors. This approach makes the brokering of knowledge across professional groups legitimate, both influencing opportunity (removing status-based constraints) and motivation to engage. It is something that might readily be incorporated into early career training on a systematic basis.

Our study highlights that managerial identity remains an issue for doctors, which mitigates against their willingness to broker knowledge when positioned in hybrid middle manager roles. Doctors, more than nurses, reported a sense of dislocation when they stepped into a managerial role. Many of the doctors interviewed were keen to discuss their transition to hybrid middle manager roles:

What do SpRs [specialist medical registrar] have to do before they become a consultant? It's compulsory they do a management course. So at the end of my however many years as a registrar, I went up for a two day course and that was it. That was my exposure to management. It's this notion that in two days you can suddenly become a manager. And you think, "We spent five years training to be a doctor and two days training to become a manager and yet I will end up in the position I am with the responsibility that I have with that

little training?” It just doesn’t make sense at all. We are not prepared for our new role (Hybrid Medical Middle Manager S, Geriatrician, Hospital B).

The quote above is a revealing one because it reflects a core HR challenge of supporting transition of doctors towards managerial roles. Within the nursing profession however, we note that an observable career progression of a nurse to ward manager, to matron and beyond, facilitates a gradual evolution of managerial status, aligned to experience, which ultimately serves to empower the hybrid nurse middle manager to influence practice for patient safety improvement. Many of our hybrid nurse middle managers related a desire to improve quality of care for the patient, borne out of early career socialization and experience, as the core impetus for their managerial ascension. However, we note, whilst our nursing respondents had reached an esteemed level of professional managerial status, they each seem to relate more to a clinical, quality improvement disposition than a managerial one.

I stayed at ward level for quite a long time. I was a band 6 for a long time – I loved that role – and then I became a practice development matron and I did that for 3 or 4 years and now I’ve been a modern matron – that is our official title – for 3 years. When modern matron was launched the modern matron’s objective was to look at quality issues, which is actually my passion, but having said that, once I got into this role it’s a lot more to do with looking at what your establishments are, what your overheads are... It’s all to do with finance, your establishments and things like that, which although interest me it’s not my passion.” (Hybrid Middle Manager I, Matron, Hospital A)

In Hospital B, the Head of Nursing talks about ‘identity transition’, highlighting the potential conflict between managerial goals and clinical priorities. Of particular note is the distinction between a ‘public role’ that is quality oriented, and a managerial role that is targets oriented.

Targets like infection control, they’re all driven, aren’t they, from a political bent rather than a clinical bent and it’s targets because targets is money and I have a little bit of difficulty with that as a nurse; not as a manager, as a nurse. (Hybrid Nurse Middle Manager W, Hospital A)

A final point, relates to the purposeful cultivation of direct dyadic relationships between hybrid nurse middle managers with clinical governance responsibility and doctors through engagement and participation in medical oriented meetings:

I go along to that [medical] meeting every Tuesday morning and, if I'm honest, I don't contribute a lot to the meeting and I purposely do that because it's not my meeting, but I will add where needed. But it's something about presence. It's something about telling those doctors that they are important to me and I want to hear their views. (Hybrid Nurse Middle Manager G, Hospital B)

The above quote suggests that hybrid nurse middle managers need to extend their vision beyond a nursing perspective, in order to broker knowledge across to doctors. Participation in medically led meetings can be a valuable mechanism for such knowledge brokering. Doctors motivated to engage in knowledge brokering highlighted the monthly medical meeting as an appropriate forum for engaging them:

A monthly MDT [multi-disciplinary team] meeting with nurse manager involvement to incorporate issues on wards and present serious incidents of patient falls at Mortality & Morbidity Meetings, for example, are crucial to discuss, "this is what happened, this is what the RCA has provided and this is what we're doing about it" (Physician, Hospital A, Focus Group 1).

In Hospital C, some nurses cited a series of teaching sessions led by a medical specialist doctor as another valuable mechanism for knowledge brokering:

His teaching was fantastic. He got members of the team across the board to talk to each other. He made sure you were there, which at the time when you're busy you're "Oh," but it's what you need. You need to be educated and he would... if there were incidents, he would encourage certain things to happen. He would look after us as much as he would look after his doctors (Nurse, Hospital C).

These examples all demonstrate the value of 'putting people together' and enabling, or even coercing, them to see the broader picture. This may be achieved through formal structural mechanisms for putting members of different professional groups together – as in multidisciplinary teams. Alternatively, it is often achieved through the unique predispositions

of individual professionals. However, the HR challenge is to create mechanisms such as job designs, performance management systems, and training and development interventions, which create legitimate space for these interactions to occur, and motivate all participants to engage.

Discussion

Our empirical analysis carried out within the professionalized context of a healthcare organization, suggests, first, hybrid middle managers, whose roles are core to patient safety improvement in service delivery for older patients, may not always hold a beneficial position in inter- or intra-professional status hierarchies (Abbott, 1988; Freidson, 1988). Both doctors and nurses are positioned in key hybrid middle management roles (Burgess & Currie, 2013). Doctors and nurses are socialized differently, and develop distinctive professional identities. Further, nurses are subordinate to doctors (Currie & White, 2013). Intra-professionally, nursing is relatively hierarchical (Allen, 2001; Robinson, Murrells, & Marsland, 1997) in a way that facilitates downward, but stymies upward, knowledge brokering. Our analysis has highlighted that not only vertical differentiation, but also horizontal stratification, specifically within medical ranks, create fault lines across which knowledge flows less readily, and which hybrid middle managers of lower inter-professional and intra-professional status struggle to mediate.

The result is a 'broken' chain of knowledge within and across nurses and doctors. Strong connections among healthcare professionals are essential for patient safe care delivered to older people. The status of doctors and the sheer size of the nursing group mean that collaboration between the two groups is crucial for patient safe care of older people (Reeves, Nelson & Zwarenstein, 2008). Yet our data reveal that the recognized professional status differences are inhibiting knowledge flows between nurses delivering frontline care, hybrid nurse middle managers, specialist doctors, and hybrid medical middle managers. We have

analyzed the sources of the breaks in the chain of knowledge by drawing upon the AMO framework.

Our empirical work thus highlights two features of professional work environments, status hierarchies and the professional heterogeneity of employees. These features represent sources of situational constraints on behavior (Bacharach & Bamberger, 1995; Villanova & Roman, 1993), which have yet to be examined from the perspective of AMO explanations of knowledge sharing behavior (e.g., Foss et al., 2009; Minbaeva et al., 2009). Situational constraints arising from professional hierarchy and heterogeneity reflect an important consideration for understanding knowledge brokering in professional bureaucracies, such as hospitals (Mintzberg, 1979).

The reason for these fault lines reflects the role of legitimacy in the knowledge brokering process. Since effective knowledge brokering is inherently dyadic, it is important that both sender and receiver perceive their respective participation to be legitimate (Lave & Wenger, 1991). To the extent that sender does not perceive their participation in knowledge exchange to be legitimate, for example, due to professional norms in our study, then they will not be motivated to engage in knowledge brokering. Our examples show that they may also begin to adapt formal processes to enable them to avoid direct knowledge exchange where they perceive this to be inappropriate. On the other hand, where (potential) recipients of brokered knowledge do not perceive their participation to be legitimate, they will shut down opportunities for sharing to occur by ignoring communications or otherwise not joining in with structured sharing activities such as meetings. Thus, both hierarchy and heterogeneity serve to inhibit knowledge brokering both by reducing opportunity and motivation of the participants.

Strategic value for a healthcare organization lies with those who manage quality and patient safety related to the ‘sharp’ end of care. It is possible to imagine numerous other

organizational contexts in which employees of lower status play a key role in brokering knowledge. However, prior work has not to date acknowledged the salience of hierarchy and status in brokering knowledge within and across occupational hierarchies. The implication is that HR practices should be orientated towards supporting hybrid middle managers, whatever their professional status, uniquely positioned as 'linking pins' up and down the organization, as they interact with other employees.

Between hybrid middle managers with a nursing background and nurses delivering frontline care, there exists a high level of general trust, dense networks and shared architectural knowledge, which supports downwards interaction (Kang et al., 2007), in part because patient safety is embedded in their practice. This is derived from HR practices that ensure common education and socialization (Collins & Clark, 2003; Hayton, 2005). However, the hierarchical nature of nursing (Allen, 2001; Robinson, Murrells, & Marsland, 1997) means there is only a partial knowledge brokering chain between hybrid nurse middle managers and their nursing peers, with upwards knowledge brokering between frontline care and clinical governance decoupled (Nicolini, Waring, & Mengis, 2011). The focus of attention should at least include promotion of legitimacy through performance management, job design, and training and development. Furthermore, these efforts would need to include all parties rather than focusing on specific groups. Prior work suggests that this problem would be partially mitigated through job design: specifically overlapping responsibilities (Kanter, 1984) connected to delivery of care and governance within hierarchical nursing structures (Foss et al., 2009).

Meanwhile, for doctors, patient safety knowledge and responsibility is not embedded in their practice, with their education and socialization taking place separately from nurses, and increasingly specialized within medicine early on in professional training (Walby et al., 1994). As a consequence, those geriatricians, who occupy important hybrid middle manager

positions, do not necessarily enjoy trust and dense networks with other specialist doctors, who do not focus upon care of older people in their career paths. Thus, whilst densely connected within their medical 'specialism' of geriatrics, hybrid middle managers with geriatrics background may not develop deep dyadic relationships with some of their peers. Successful individuals were able to exploit their personal networks and credibility. In order to extend this influence to others, HR practices should focus on promotion of network building behaviors by individuals (Collins & Clark, 2003) through training, performance management, and incentives and perhaps most importantly, resources such as time.

Our study also suggests that high status doctors may 'shut down' opportunities for knowledge brokering from geriatricians in hybrid middle manager roles, because they regard them as lower status (Shi et al, 2009). Only when hybrid middle managers with a geriatrics background have developed sufficient social capital with their peers are these negative consequences of status differentials mitigated. Thus, HR practices need to support the development of individual relationships between medical hybrid middle managers and their specialist medical peers, which transcend intra-professional hierarchy. Multidisciplinary team working may be used to increase the development of social capital.

Alternatively, motivation to engage in knowledge sharing is likely to be impacted positively by performance management systems that emphasize outcomes, such as incidence of falls. Importantly, such systems need to extend to all of those parties whose knowledge contributions are required for improvements in elderly care. Furthermore, HRM practices are most likely to be effective when they combine to influence ability, motivation and opportunity to share knowledge (Foss et al., 2009). Currently it is clear that professional status differentials inhibit both motivation and opportunity for knowledge brokering among professional employees, including hybrid middle managers.

Connected to knowledge brokering roles for both doctors and nurses, our study also suggests some transition problems for those moving into hybrid middle manager roles, which impacts disposition towards brokering knowledge for patient safety improvement (Burgess & Currie, 2013). This suggests that HR practices are not consistently socializing hybrid middle managers towards a strategic orientation in enacting their knowledge brokering role (Chreim, Williams, & Hinings 2007; Ibarra, 1999; Pratt, Rockmann, & Kaufmann, 2006). Seen as identity transition, such practices might include educational interventions, organization development that attends to hybrid middle manager group identity, mentoring from champions for the role. In the absence of socialization towards a favorable view of management, hybrid middle managers may prove unable to look both ways through the two way window of professional and management perspectives (Llewellyn, 2001).

In conclusion, this study raises some important further considerations when applying a HRM framework, which emphasizes ability, motivation and opportunity, in the context of professional organizations. We have found that the framework is perfectly appropriate for analyzing and diagnosing knowledge brokering in this context. While of significant practical importance for hospitals and healthcare management, our conclusions generalize to other settings in which professionals must collaborate and engage in the brokering of knowledge. The variations that we have identified, including inter-professional and intra-professional hierarchies, represent important practical considerations with respect to the design of HR practices that support knowledge brokering by hybrid middle managers in the context of a differentiated workforce. Within the healthcare context, we recognize that our interviewee sample was skewed towards nurses in hybrid middle manager roles, with doctors under-proportionately represented. Whilst we offered a potential explanation why this is so (i.e. patient safety is more embedded in nursing practice), nevertheless future research might seek to focus more specifically upon knowledge brokering for patient safety improvement by

hybrid medical middle managers. More generally, future research might consider the implications of our findings for application of the segmented workforce model across organizations with multiple value creation processes.

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ⁱ Walshe and Smith (2011) note that, in 2010 within healthcare provider organizations, 2009 doctors hold senior level hybrid middle manager positions as clinical directors and 777 nurses hold similar level positions as directorate nurse managers. Below this, they further note hybrid managerial numbers are difficult to discern, with lack of accurate data. However, nurses are likely to hold the majority of hybrid managerial positions nearer

the frontline of clinical service delivery. Overall, NHS Confederation statistics shows nurse to doctor ratio in English hospitals is around two-to-one (www.nhsconfed.org accessed 4th April 2014)