Organizational Ambidexterity and the Hybrid Middle Manager: The Case of Patient Safety in UK Hospitals

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ORGANIZATIONAL AMBIDEXTERITY AND THE HYBRID MIDDLE MANAGER: THE CASE OF PATIENT SAFETY IN UK HOSPITALS

Abstract

This paper focuses on knowledge management in UK hospitals as an area in which organizational ambidexterity (OA) is a necessary condition. In contrast to much of the literature on OA that looks at senior managers, we focus on the role of 'hybrid' middle managers, professional workers who hold managerial responsibilities, in ensuring that the quality of care delivered is at an optimum 'safe' level for patients. We examine the influence of prevailing tensions and competing agendas characteristic of a professionalized, public sector context upon knowledge exploitation and exploration at the middle levels of the organization. Our study investigates how these tensions are experienced and reconciled at the individual level. We examine the contextual and personal circumstances that enable hybrid middle managers to forge workable compromises between exploration and exploitation to facilitate OA. We find that this process is contingent on professional legitimacy, social capital and a holistic professional orientation. This has wider implications for human resource practice to support the discretion and motivation of hybrid middle managers to facilitate OA for enduring performance and advancement of best practice.

Keywords: organizational ambidexterity; contextual ambidexterity; middle managers; knowledge management; healthcare.

Acknowledgement

Introduction

This is the study of organizational ambidexterity (henceforth referred to as OA), that is, the capability to pursue exploration and exploitation activities (March, 1991), in UK hospitals. OA has been used to analyze a variety of organizational phenomena (see e.g., Birkinshaw & Gupta, 2013; Lavie, Stetter, & Tushman, 2010; Raisch & Birkinshaw, 2008; Simsek, 2009, for reviews). Following calls for the use of narrow and context-specific definitions of exploitation and exploration (Lavie et al., 2010), we focus on OA in the context of knowledge management and define it as an organization's ability to simultaneously use and develop existing knowledge to refine practice (exploitation), as well as generate new knowledge through knowledge search and experimentation to advance existing frontiers of best practice (exploration) (Levinthal & March, 1993; Turner & Lee-Kelley, 2013). Within a public sector context, and specifically healthcare, OA may provide the basis for the best possible service, whilst making efficient use of resources. Through our study of patient safety knowledge, defined as knowledge that is critical to ensure the quality of care delivered is at an optimum 'safe' level for patients, we contribute to the contextual view of OA (Birkinshaw & Gibson, 2004), drawing upon related literatures of organizational learning to frame our analysis (Kang & Snell, 2009; Turner & Lee-Kelley, 2013).

Our study contributes to the literature on OA in several ways. First, our study provides a multi-level perspective on 'contextual' OA, a "nested" concept which "transpires at multiple levels in the organization simultaneously" (Birkinshaw & Gupta, 2013, p. 294). We follow Turner and Lee-Kelley (2013) in their view that extant literature neglects a multi-domain analysis, and that this limits our conceptual understanding of OA and the processes through which OA is facilitated (see also Gupta, Smith, & Shalley, 2006; Raisch & Birkinshaw, 2008; Simsek, 2009). In order to address this limitation we explore how tensions arising from the inter-organizational level and the intra-organizational level are experienced at the level of the

individual. This is important because, while scholars have acknowledged that individuals are likely to play a key role in reconciling tensions between exploration and exploitation activities (Raisch & Birkinshaw, 2008), the specific process through which OA is achieved has rarely been investigated (Jansen, Tempelaar, Van den Bosch, & Volberda, 2009, O'Reilly & Tushman, 2013; Raisch, Birkinshaw, Probst, & Tushman, 2009; Turner & Lee-Kelley, 2013).

Second, we focus on middle managers, which we define as having at least two levels of staff above and below them in the managerial hierarchy (Currie & Procter, 2005; Dutton & Ashford, 1993; Wooldridge, Schmid, & Floyd, 2008). Extant literature focuses upon senior managers managing OA in response to the dynamics of context (Jansen, George, Van den Bosch, & Volberda, 2008; O'Reilly & Tushman, 2008; O'Reilly, Tushman, & Harreld, 2009). To date, however, limited research has explored the role of other players than senior managers for OA (Turner & Lee-Kelley, 2013). Yet, the important role of middle managers in particular has long been noted for their contribution to shaping strategy (Dutton & Ashford, 1993; Wooldridge, Schmid, & Floyd, 2008), organizational learning (Sun & Anderson, 2012; Turner & Lee-Kelley, 2013), and as valuable intermediaries for the implementation of change (Nonaka & Takeuchi, 1995; Balogun, 2003). Further, as Krausert (2014) argues, the study of groups of knowledge workers distinct from senior managers is essential for strategic investment and implementation of human resource practices and systems. Middle managers have to reconcile the practicalities of day to day operations – and the concerns and needs of frontline staff – with the strategic choices and priorities set by more senior managers.

We focus on 'hybrid' middle managers, a particular category of middle managers, which represent professional workers such as solicitors, accountants and doctors, who hold managerial as well as professional responsibility (Llewellyn, 2001; McGivern et al, in press). Since the advent of New Public Management in the 1980s (Hood, 1991), increasing numbers of professionals have adopted managerial roles across public and private sectors. The

hybridization of professional workers into managerial roles has been particularly prevalent within healthcare, with hybrids outnumbering general managers without clinical roles approximately four to one (Buchanan et al., 2013). We contend that hybrid middle managers are uniquely placed to forge workable compromises between knowledge exploration and exploitation, contributing to the literature by establishing a novel link between hybridity and OA.

Third, we identify the contingencies that enable hybrid middle managers to facilitate knowledge exploration and exploitation at an operational level. Hybrid managers are not a homogenous group. Within the healthcare context, hybrids may hold predominantly specialist medical knowledge (such as anesthetists or surgeons), or more generalized and holistic knowledge (such as geriatricians, occupational therapists, matrons and ward managers). Acknowledging such diversity of knowledge among actors within an organization is important for the study of OA because different professional roles give rise to different operational contexts. The ability of individuals to mediate tension at an operational level, critical to OA, may thus be influenced by their role context (Kang & Snell, 2009; Turner & Lee-Kelley, 2013). Indeed, recent literature suggests that some high status medical professionals are evolving into a highly influential managerial elite (McGivern et al., in press), while other professionals, rendered lower status due to the more generalist knowledge that frames their role, such as nurses, may struggle to resolve inherent conflicts between a hybridized managerial and professional role (Croft, Currie, & Lockett, in press). Thereby, while hybridity may relate to individual capability in contributing to OA, it may not be a sufficient condition. Understanding the contingencies that shape the ability of hybrid middle managers to facilitate knowledge exploration and exploitation at an operational level is vital in shaping human resource practices to enhance OA (Jansen et al., 2009; Kang, Snell, & Swart, 2012; Prieto & Pilar Pérez Santana, 2012; Taylor & Helfat, 2009).

The paper is structured as follows. First, we outline how we draw upon, and extend, previous conceptualizations of OA in the context of organizational learning (Turner & Lee-Kelley, 2013). Next we present a synthesis of research related to the strategic role of the middle manager in facilitating OA, and establish healthcare as a fruitful context from which to extend knowledge concerning OA. Finally we outline our contention that hybrid middle managers are uniquely capable of mediating tensions arising from the inter-organizational and intra-organizational context to forge workable compromises between exploration and exploitation to facilitate OA. Our methods section details our data collection methods, and explains our research parameters, methods of analysis and coding structure. We then structure the presentation of our findings in line with our coding structure, reflecting the tensions and competing agendas faced by hybrid middle managers arising from the inter-organizational and intra-organizational context, and the processes employed by them to manage these tensions and facilitate OA. We further highlight the contingencies that determine whether hybrid middle managers are able to reconcile these tensions and forge a workable compromise between exploration and exploitation activities. Specifically, we identify professional legitimacy, social capital, and a holistic professional orientation as key boundary conditions. Finally, we discuss the contributions of our study to the OA literature, its strengths and limitations, and its practical implications.

Organizational Ambidexterity

OA represents the capability to pursue and achieve two different types of related objectives or ends, for example, radical (explorative) and incremental (exploitative) innovation (Birkinshaw & Gupta, 2013; Buyl, Boone, & Matthyssens, 2012; Huang & Kim, 2013; Lin, McDonough, Lin, & Lin, 2013). It captures a process of managing (or reconciling) trade-offs in a manner that enables an organization to exploit existing capabilities to refine practice, while at the same time invest resources towards exploration activities in order to

ensure long term survival in the face of external pressures (March, 1991; see, for example, Cantarello, Martini, & Nosella, 2012; Huang & Kim, 2013; Lin et al., 2013; O'Reilly et al., 2009). Too much focus on exploiting existing organizational capabilities at the expense of exploring new ideas can lead to a 'success trap' (March, 1991). The organization may be very efficient in the way it chooses to serve its market, yet risks falling behind as others develop new and innovative ideas, thereby causing poor performance in the long term (Lavie et al., 2010; Junni, Sarala, Taras, & Tarba, 2013). Alternatively, while necessary for long term survival, exploration is typically inefficient, associated with an "unavoidable increase in the number of bad ideas" (O'Reilly & Tushman, 2013, p. 325).

OA theory has evolved following a phased development (O'Reilly & Tushman, 2013). Early research conceptualized exploitation and exploration activities as 'sequential' (Duncan, 1976), requiring temporal separation. Subsequent research viewed exploitation and exploration activities as 'simultaneous', requiring structural separation (Tushman & O'Reilly, 1996), and later combining structural separation with processes for integration (O'Reilly & Tushman, 2004). Birkinshaw and Gibson (2004) proposed 'contextual ambidexterity' as complementary to the structural approach. Contextual ambidexterity emphasizes the agency of individuals in deciding how and when to put effort into exploration and exploitation within wider contextual circumstances (Gibson & Birkinshaw, 2004). As Birkinshaw and Gupta (2013, p.293) state: "If ambidexterity is the organization's ability to do two things equally well, then we need to give careful consideration to the role of managerial capability in making ambidexterity possible." Jansen et al. (2008) highlight that ambidexterity poses challenges for key strata of management, who need to allow for adaption and necessary variety in line with frontline concerns and principles, yet also ensure collective action and overall strategic coherence (cf. O'Reilly et al. 2009). In other words, they must both "handle stability and manage change", using both existing knowledge and capabilities, and through exploring new

and innovative ways of doing things (Mootee, 2012, p. 3). As these managers face role conflicts and ambiguities, they are expected to deal with any emergent contradictions and orchestrate the necessary trade-offs between exploration and exploitation (O'Reilly & Tushman, 2011).

Importantly, the organizational context determines whether ambidexterity at lower hierarchical levels is successful (Jansen, Simsek, & Cao, 2012). We investigate OA in relation to organizational learning and follow Turner and Lee-Kelly (2013) who define it as "the ability to refine existing domain knowledge (exploitation) and create new knowledge to overcome knowledge deficiencies or absences identified within the execution of the work (exploration)" (p. 180). Within the context of our study, we specifically define OA as an organization's ability to use and develop existing knowledge to refine patient safety practice across the organization (exploitation), as well as generate new knowledge through knowledge search and experimentation to advance existing frontiers of best practice (exploration) (Levinthal & March, 1993; Turner & Lee-Kelley, 2013). We deepen the empirical basis of this conceptualization through adopting a multi-level perspective on contextual ambidexterity and organizational learning, looking at the case of hybrid middle managers in the health sector (cf. Birkinshaw & Gibson, 2004). We consider the influence of organizational context at two levels. We examine the inter-organizational context, specifically those external organizations that generate and diffuse patient safety knowledge to hospital settings. The inter-organizational context highlights the multitude of competing agendas faced by healthcare organizations, how the organization responds to these pressures, and how the organizational response influences the choices made by middle managers in deciding how best to invest resource between knowledge exploration and exploitation activity. We also examine the influence of the intra-organizational context, and consider the impact of professional organization and status upon a hybrid middle managers' ability to facilitate

knowledge exploration and exploitation of patient safety knowledge both horizontally across professional groups and vertically to shape strategy and enhance OA.

Why Middle Managers?

Much of the literature on OA to date has focused on the role of senior leaders (Jansen et al., 2008; O'Reilly & Tushman, 2004; 2008; 2011; O'Reilly et al., 2009) and top management teams (Carmeli & Halevi, 2009), neglecting the role of the middle manager. We argue that middle managers are critical for OA because of their role as organizational connectors (Taylor & Helfat, 2009), spanning boundaries through linking activities (Wooldridge et al., 2008), mediating and adjusting strategy through their position at the middle levels of the organization (Floyd and Wooldrige, 2000; Nonaka, 1988), and managing change through their relationships with frontline workers (Balogun, 2003). To facilitate OA, managers need to be both able and willing to "host contradictions" (Mom, van den Bosch, & Volberda, 2009, p. 813), which result from ostensibly conflicting agendas of exploration and exploitation. They need to fulfill multiple roles and switch between short-term and long-term orientations (Mom et al., 2009; Birkinshaw & Gibson, 2004). We explore how managers experience the contradictory demands for exploration and exploitation, and investigate the process through which they reconcile these tensions.

In the next section we highlight the healthcare context as one in which OA is a necessary condition for enduring performance and survival, followed by a discussion of the hybrid manager as an agent for OA in a professionalised context.

OA in the Healthcare Context

The public sector, and in particular health care related to older people, is a fruitful context for the study of OA, with tensions existing both externally and internally to the organization. Patient safety is an important and globally pertinent area of concern. Research suggests that around 10 per cent of patients admitted to acute hospitals in the UK experience

an adverse event of which half are identified as preventable, costing the NHS around £1bn a year in terms of additional bed days (Vincent, Neale, & Woloshynowych, 2001). Global healthcare systems are facing significant pressures in light of an exponential increase in the number of older patients and associated complexity of their conditions, to which governments have to respond. In the face of quality scandals related to the care of older people, for example in England (Francis Report, 2013), and of an ever increasing proportion of GDP allocated to healthcare (currently 9.4% of UK GDP and 17.9% of GDP in the US [World Bank Group, 2014]), radical ways of organizing the delivery of healthcare, which are evidence-based, are being pushed by policymakers globally. In short, it is not just exploitation of knowledge that is highlighted, but for long-term survival hospitals must explore new knowledge in order to meet future demands for high quality patient care.

Specifically, we focus on knowledge related to in-patient falls, medication error, and poor transition of care for older people, to reflect the most frequently reported patient safety incidents to occur in UK hospitals (NRLS, 2012). Poor quality of care can directly 'block beds' (e.g., because a patient has fractured their hip following an in-patient fall), and incur frequent episodes in hospital (e.g., because the social care package is inadequate in the light of cognitive impairment, such as dementia, and/or there have been problems related to medicine management), both of which are very costly. The impact of poor quality care however is not just limited to the strain on resources, but also to the individual patient, who may be harmed as a result of care that is sub-optimal and inconsistent.

Older patients take up increasing hospital resources to the extent their care may be characterized as 'mainstream business' (i.e., relevant to a broad range of medical specialties), rather than specialist (i.e., restricted to dedicated resources for the care of older people, such as geriatricians). For OA, specialist knowledge concerning the care of older people needs to be exploited across professions in order to refine practice and reduce variation in care.

Simultaneously, healthcare organizations must also explore new ways to deliver care to a growing population of older people with an increasing complexity of conditions (often characterized as co-morbidity, such as simultaneously suffering from diabetes, dementia, and respiratory disease), with limited financial resources.

At an inter-organizational level, the external healthcare environment is characterized by a range of external stakeholders and regulatory agencies, who issue patient safety knowledge in the form of guidelines and performance targets. While intended as catalysts for improvement in both the efficiency of service delivery and the quality of service delivery, research has shown that performance targets can lead to a variety of unintended consequences. In particular managerial demands to comply with externally-imposed targets may over-ride professional concern with the quality of care (Ghobadian, Viney & Redwood, 2009). Externally derived and centrally imposed agendas generate a turbulent, fast-moving environment (Smith, Walshe, & Hunter, 2001; cf. Osborne & Strokosch, 2013), with a frequent influx of new guidelines, performance management and efficiency targets that the organization is required to adhere to.

Internally, professional stratification has been shown to significantly limit the ability of healthcare organizations to integrate new knowledge into professional work (Currie & White, 2012; Martin, Currie, & Finn, 2009). Knowledge that proposes new ways of working may threaten professional roles and status. To simultaneously ensure quality of care for increasing numbers of older people in a way that does not extend the cost base means reducing preventable admissions that result from poor transition into and out of hospital settings, ensuring medicine management regimes are held to by patients and carers, and incidents of falls are reduced both within and outside hospitals. Evidence to mediate these problems (patient safety evidence) include the introduction of nurse led discharge teams, mental health nurses working alongside doctors, and stratifying older patients on the basis of likelihood of

falls rather than clinical condition. These evidence-based changes disrupt professional organization and threaten traditional practice of nursing and doctors, and are thus likely to be resisted (Currie, Lockett, Finn, Martin, & Waring, 2012).

For a healthcare organization concerned with quality improvement in patient safety, achieving OA is crucial. First, services need to draw upon best practice evidence and the latest scientific advances, in the form of new research papers, and national guidelines, recommendations and alerts, which are intended to stimulate exploration and innovation to advance existing frontiers of best practice (Gabbay & Le May, 2004). Second, the organization needs to exploit the tacit knowledge embedded in frontline practice that produces nuanced understandings of the quality problem and potential solutions, and pull this upwards for a system level effect across the hospital, refining practice to reduce costs, and improve service quality (Waring, Currie, Crompton & Bishop, 2013).

Hybrid Middle Managers, Healthcare and OA

As noted above, our study explores the role of 'hybrid' middle managers in reconciling tensions and competing agendas for knowledge exploration and exploitation at the operational level to facilitate OA, a role for which they are not only ideally situated, but inevitably have to perform. We investigate how hybrid middle managers experience and manage these tensions and agendas in practices, exploring the contingencies of this process, and the corresponding implications for human resource management and development.

In the context of healthcare, Montgomery (1990; 2001) foretells the emergence of medical hybrids as a legitimate professional elite, a premise increasingly supported across various professions beyond medicine, and thereby an increasingly important strata of management. Hybrid middle managers are notable for their ability to adopt 'two-way windows' (Llewellyn, 2001). In other words, they have access to, and understanding of, disparate pools of knowledge belonging to both managerial and professional worlds.

Specifically, the hybrid middle manager has an important strategic role of mediating and resolving tensions relating to managerial and professional goals (Burgess & Currie, 2013).

However, the successful transition from 'professional' to 'hybrid' varies. A study by McGivern et al. (in press) employs identity theory to illustrate variance amongst professionals in constructing new 'hybrid' identities to encompass their co-existing professional and managerial roles. Focusing upon medical hybrids, the authors concluded that some professionals were willing to enact hybrid roles, while others assumed the role by obligation. Another study found that some hybrids, in this case from the ranks of nurses, had difficulty reconciling the tension between a managerial and clinical role, perceiving professional dissonance and dislocation (Croft, Currie & Lockett, in press). Thereby the ability to mediate tensions between managerial and clinical priorities may be enhanced or impaired according to a combination of professional status and personal context.

Method

Reflecting our multi-level approach to the study of OA, our dataset was generated through a total of 91 semi-structured interviews carried out across three overlapping research phases. The study took place from March 2011 to December 2012. All interviews took place at the respondent's place of work, across three phases of research.

Phase one explored the external regulatory environment to understand the inter-organizational context in relation to the production and dissemination of patient safety knowledge related to in-patient falls, medication error and transition of care. 17 interviews were conducted with external producers and disseminators of patient safety knowledge. Table 1 details our respondents and their respective organizations.

Insert Table 1 about here

We asked our phase one respondents to describe the desired and perceived outcomes of centrally imposed agendas and guidelines that are produced externally. This first phase was designed to illuminate the tensions between the external regulatory environment and the organization regarding the intended impact of centrally imposed agendas and guidelines (i.e. to encourage knowledge exploration and/or exploitation), and the perceived outcome (i.e. whether our respondents felt the approach was successful). We also asked our respondents to comment on what they believed to be effective and ineffective mechanisms for stimulating knowledge exploitation and exploration activities within healthcare organizations.

Phase two explored the processes within the organization, specifically the role of hybrid middle managers in integrating tensions between the external environment, managerial goals, and the professional clinical environment to facilitate OA. We interviewed 43 middle managers in two acute general healthcare organizations of similar size in England, part of the National Health Service in the UK (Hospital A and Hospital B). Of our middle managers, 13 were non-hybrid and 30 were hybrid. The inclusion of non-hybrid middle managers is to contrast and differentiate the unique capability of the hybrid middle manager to facilitate knowledge exploration and exploitation. Following Currie and Procter (2005), we define middle managers broadly as having at least two levels of staff above and below them in the managerial hierarchy, thereby our hybrid and non-hybrid respondents ranged from lower status middle managers such as ward managers, matrons, and mental health nursing leads, through to higher status clinical leads, such as geriatricians and other doctors leading specialist teams, extending to directorate managers, and patient safety governance managers. Table 2 details our respondents in phase two.

Insert Table 2 about here

Phase two interviews focused, first, upon the response of middle managers to patient safety knowledge produced by external parties in the form of centrally imposed agendas and guidelines (i.e., did such externally pushed knowledge incite middle managers to engage in knowledge exploration and/or exploitation). This provides an illuminating counterpoint to the expectations and perceptions of our phase 1 respondents. Our interviews were broadly structured to elicit an emergent portrait of the role of hybrid middle managers in facilitating OA in the face of competing tensions. Respondents were encouraged to elaborate on the drivers and barriers experienced in relation to knowledge exploration and exploitation activity, and how they mediate tension in order to facilitate OA. Combined, phase one and two highlight the competing tensions healthcare organizations face, both externally and internally, and how these tensions shape the response of managers in relation to how they decide to invest resource in knowledge exploration and exploitation to facilitate OA.

A third and final phase of our study sought to evaluate knowledge exploitation and exploration in response to patient safety incidents at the clinical frontline. We focused on the root cause analysis process (RCA) that follows patient safety incidents as context for OA. Root Cause Analysis refers to "a systematic investigation technique that looks beyond the individuals concerned and seeks to understand the underlying causes and environmental context in which the incident happened" (NPSA, 2010). Specifically, we evaluated knowledge exploration and exploitation activity by hybrid middle managers following the occurrence of patient safety incidents related to in-patient falls, which resulted in moderate harm to the patient, for example, a bone fracture. Learning from patient safety incidents is recognized as vital to enhance quality of care. In the event of a patient safety incident, hospital organizations in England are required to conduct 'root cause analysis', involving the completion of a template form designed firstly to establish the 'root cause(s)' of the incident and secondly to establish an action plan for service improvement. We highlight that this search and

investigation activity (the RCA process), represents knowledge exploration in response to a patient safety incident. Further, once the RCA process is complete, it follows that the knowledge arising from the process should be exploited to refine practice across the organization. The research team studied RCA documentation relating to inpatient falls of older patients in Hospital A that occurred between October 2011 and July 2012, and conducted 21 semi-structured interviews with frontline 'ward' staff , including hybrid middle managers (see Table 3 for details of RCA cases and associated respondents). The interviews sought to examine specifically what new knowledge was created as a result of the RCA and if/how such new knowledge was subsequently exploited across the organization to refine practice and advance patient safety.

Insert Table 3 about here

Whilst phase three does not solely interview middle level managers, the aim of phase three was to understand further the role of the hybrid middle manager in facilitating knowledge exploitation and exploration at the operational frontline. Interviews with frontline operational staff such as nurses and healthcare assistants helped to delineate the contingencies shaping the role of the hybrid middle manager in relation to OA.

Across all three phases of research, encompassing 91 respondents in total, each of our interviews lasted approximately one hour and all but two respondents consented to the recording of interviews allowing for full verbatim transcription. Once interviews were complete, transcripts from research phases one and two were assembled into a single data file. Two of the authors then conducted a fine-grained reading of the data (Strauss & Corbin, 1990), systematically and inductively creating a list of first-order codes from our data. We then consolidated all of our codes, structuring the data into second-order concepts and more general aggregate dimensions (Corley & Gioia, 2004; Corbin & Strauss, 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). Tables 4 and 5 present an overview of our coding structure.

Insert Tables 4 and 5 about here

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 theorizing (Wodak, 2004) by triangulating our coding across analysts (Mantere, Schildt, & Sillince, 2012). We present our data analysis in line with Pratt (2009) and Gioia et al.'s methodology (2012), using raw data in the form of quotations to give voice to our respondents and illustrate how we move from the raw data to the theoretical and thematic interpretation of that data, and to further illuminate the human organizational experience in terms that are adequate at the level of scientific theorizing about that experience (Gioia, Nag, & Corley, 2012), i.e. to highlight the contingencies that shape the role of the middle manager in facilitating OA.

Findings

In presenting our findings we first outline how the inter- and intra-organizational context influence middle managers' engagement in knowledge exploration and exploitation. This provides insights into how middle managers experience the tensions involved in allocating their time to these conflicting demands. Our findings reveal contextual factors at each level that interfere with middle managers' ability to contribute to OA. Whilst non-hybrids may be more strongly impelled towards compliance, in engaging with the professional world hybrid middle managers are in a stronger position to forge compromises between exploration and exploitation activities. Examining data related to research phases 2 and 3, we explore the role of middle managers for OA in more detail and highlight that hybrid middle managers are

uniquely placed to facilitate knowledge exploration and exploitation at the middle levels. We provide insights into the process through which hybrid middle managers contribute to OA. Finally, we note that not all hybrid middle managers exhibit agency towards OA. We identify contingencies that frame hybrid middle managers' role in facilitating knowledge exploration and exploitation for OA.

The inter-organizational context: Centrally imposed agendas suppress knowledge exploration

External producers of patient safety knowledge highlight the need to simultaneously deliver consistent quality of care, at the same time as lament the stifling capacity of centrally imposed agendas towards innovation and change:

> *"Nobody's really thought about how you re-engineer hospitals to deal with the future and how you re-engineer behavior on wards in terms of nursing behavior; for example, how you actually address the needs of the person who's being admitted as opposed to the condition that's being admitted. Basic care is not difficult, but it does require resources and it requires training and it requires management and monitoring by ward managers, which hasn't gone on. So it's really just viewed as a huge problem as opposed to trying to think how it might be better addressed."*

(National Allied Health Research Institute: Professor K)

The quote above encapsulates the need for hospitals to focus on innovation and change on the one hand (requiring knowledge exploration), whilst on the other, high levels of basic care must be standardized, refined and developed (requiring knowledge exploitation). Furthermore, our respondent identifies the importance of the hybrid middle manager (ward manager) for facilitating knowledge exploration and exploitation at an operational level; an insight shared with other external producers of patient safety knowledge:

> *"Really important people for us are ward managers in terms of you cannot get research done on a ward unless they've bought in. So even if you're a senior clinical manager, and your doctor has bought in, it's hard unless you can get access. The ward manager can stop you getting access to a ward."*

(National Allied Health Research Institute: Professor F)

Externally, at the inter-organizational level, policy makers sought to stimulate knowledge exploration at the level of the organization by 'pushing' new patient safety knowledge down to service providers in the form of evidence-based guidelines and 'quality alerts'. Our respondent, a representative of the former National Patient Safety Agency (NPSA), refers to a 'reverse gravity', where the role of the NPSA shifted from one of extensive research into patient safety issues, releasing guidelines only after a period of knowledge search and experimentation, to one that merely highlights the problem, locating the task of knowledge exploration with the individual healthcare organizations themselves.

> *"What you had was this political shift, where everything had to be quicker and simpler. They [the governmental regulator] wanted to just say [to hospitals] "Look, here's a problem. Go and sort it out."*
>
> (National Patient Safety Agency, Respondent C)

However, patient safety guidance in the form of safety alerts from external producers may not engender the type of exploratory knowledge search and experimentation response from hospitals that policy-makers desire:

> *"Somebody at the Department of Health or in one of the other national agencies writes something that says, "this needs change," or "this is dangerous," and then sends it out to the service. People in the service just go, "oh, another piece of paper. Another instruction, another kind of bit of work to do" and actually that's not necessarily a kind of motivating and empowering thing."*
>
> (Non-hybrid Middle Manager: Patient Safety & Governance, Hospital B)

In recognizing that policy-pushed knowledge is often not explored and translated into practice at the clinical front line, a second respondent at the NPSA defends the necessity of targets in inciting change, stating that without them, only half of hospitals will respond at all.

> *"To me it relates to the cultures of Trusts... I would say there was 50 per cent who took it [action to prevent in-patient falls] on when it wasn't an order, but there's another 50 per cent that won't take it on till you give them an order...unless someone says "You have to do it by X or else," you don't do it, do you?"*
>
> (National Patient Safety Agency, Respondent C)

However, whilst a target led approach does promote compliance, it also appears to suppress OA. Managerial resource constraints force middle managers to focus upon

demonstrating compliance in response to centrally imposed agendas, rather than towards

knowledge exploration at the individual level.

> *"My big corporate role is to look after the Clinical Risk Committee. My other corporate role is I look after on-line [patient safety] incident reporting. So for clinical incidents, we generally look after a couple of directorates each and we provide governance support to the directorates and then we have a couple of committees. Now I used to support the Falls Committee [IPFC] and the Transfusion Committee. Currently I'm not, because I've been taken out of some of my work to concentrate on NHSLA [compliance]."*

<div align="center">(Non-Hybrid Middle Manager: Patient Safety & Governance W, Hospital A)</div>

These tensions arising from the inter-organizational context seemed to influence middle

managers' engagement in exploration and exploitation activities. Hybrid middle managers

seemed to experience and manage these tensions in different ways to their non-hybrid

counterparts. Within the hospital sites in our study, the exploration of new knowledge for

quality improvement in relation to patient safety was frequently perceived by non-hybrid

middle managers to be a secondary objective, with non-hybrid middle managers enacting

clinical governance systems, and focusing upon performance compliance and assurance

procedures as required by external stakeholders. Hospital A's Director of Strategy admits:

"*Effectively what gets measured gets managed* [with the corresponding result], *all the actions*

take place in the [clinical governance] committee and nothing on the ground [clinical

frontline]". This highlights an unintended consequence of centrally imposed agendas directed

from above. Whilst they may intend to encourage knowledge exploration in order to facilitate

advancement in patient safety, in practical terms, this often goes hand in hand with the

imposition of rigid targets and routines. Non-hybrid managers adhere to such targets in a

mechanistic manner that stunts creativity and initiative and ties up resources towards

demonstrating compliance as opposed to stimulating exploration.

> *"Alerts and such like are done through an electronic system and they go to key managers to action. My role is to keep an overview of that and the compliance on that... We have established within our governance structure within the directorate a health, safety and risk group, so each month we are highlighting what alerts have come out,*

have we responded, have we responded within the timeframe, because we are performance managed quite heavily."

(Non-Hybrid Middle Manager: Patient Safety & Governance W, Hospital A)

The above quote highlights that external efforts to stimulate knowledge exploration are "managed" by the organization in a way that undermines contextual OA. Rather than allowing hybrid middle managers to decide how they divide their time between exploration and exploitation activities, the organization attempts to centrally manage responses to externally derived patient safety guidance through mechanistic performance management targets.

Whilst non-hybrid managers are focused upon compliance, hybrid middle managers experience a conflict between managerial pressures to improve efficiency to meet a target versus professional goals of improving the quality of care. The result is a curtailment of knowledge exploration in favor of quickly satisfying demands from above.

> *"No-one said you'd got to go and do it in the best possible way and get knowledge into your system, the knowledge that you need is how do you do it quickly. "How do you do it? How do you get away with it?" ...How do you get round this problem?" That was the knowledge they [senior managers] wanted, not safety knowledge. "Because we [senior managers] want to hit our targets and get our money and we don't want to be penalized".*

(Geriatrician G, Hospital A)

Here, it appears that centrally imposed targets are perceived to be about efficiency rather than advancing patient safety knowledge. Whilst hybrid middle managers may have the capability to engage with and mediate between two professional worlds, that is, a managerial world and a clinical world, the reconciliation of managerial with clinical objectives was frequently regarded as problematic. The following quote implies a balancing act (rather than a reconciliation), between clinical goals of quality of care on the one hand, and managerial performance goals driven by centrally imposed agendas on the other, with managerial goals frequently dominating clinical goals.

> *"Targets like infection control, they're all driven, aren't they, from a political bent rather than a clinical bent. It's targets because targets are money. I have a little bit of difficulty with that as a nurse; not as a manager, as a nurse. As a manager, I understand*

that it creates the internal market because we are a business now and it doesn't matter how much we say as an NHS we're not."

(Hybrid Middle Manager: Head of Nursing, Hospital B)

In summary, the inter-organizational context encouraged a compliance culture within healthcare organizations, which appears to drive out exploration at the individual level, as managerial staff sought to find, and professional staff were co-opted towards, ways to satisfy centrally constructed guidelines and recommendations in order to meet targets and avoid penalties. Top down and centrally imposed agendas are ostensibly intended to provide the organization with new knowledge in the interests of advancing patient safety. Paradoxically, organizational procedures aimed at enforcing and managing a central response to new knowledge, combined with constrained resources, appear to undermine ambidexterity at the individual level by driving out knowledge exploration in favor of compliance.

The intra-organizational level: Professional specialization suppresses knowledge exploitation

One of the problems policy makers seek to address is substantial variation in care and capabilities. Our findings so far have shown how centrally imposed agendas tend to hinder rather than facilitate knowledge exploration, with managerial resources tied up with evidencing compliance. Examining influences within the organization, our data further reveals difficulties in exploiting patient safety knowledge across professional groups. In particular, we note that specialist doctors appear reluctant and unwilling to exploit existing capability, preserving variation in patient care across the organization.

"We've got a body of expertise on this ward where the nurses are well trained and au fait with dementia care and how people exhibit signs and symptoms and, you know, the living with dementia. We've got medical staff who equally are very expert and very well trained and well-motivated around all this stuff and that's fantastic, award winning and wonderful, but people with dementia don't all go through that ward. Dementia expertise only exists in pockets across the whole organization. ... You know, elderly care isn't sexy stuff, so how do you get orthopedic doctors or surgeons to engage with all of this?"

(Hybrid Middle Manager: Geriatrician, Hospital A)

"It's very interesting that you can get nursing staff to go to mandatory training things, but you can't get doctors to. The problem is if you set up one to one training they [doctors] just sort of switch off and do nothing"

(Hybrid Middle Manager: Geriatrician S, Hospital B)

Agency to engage in knowledge exploitation varies across professional groups. An unwillingness to exploit patient safety knowledge by less holistic medical disciplines creates a particular problem for healthcare organizations, since older people are the predominant patient group that is cared for not only by geriatricians and nurses specializing in care of older people, but by the majority of specialties across the organization.

"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. So it's okay that an older person is delirious, that's what they're like, and they won't treat the delirium actively"

(Hybrid Middle Manager: Geriatrician A, Hospital B)

In practical terms, this highlights the extent to which frontline capabilities are unevenly spread. Hybrid middle managers not only have to reconcile downward and frontline pressures and capabilities, they also need to manage diversity in the latter. There are strong clusters of best practice capability resulting from successful knowledge exploration that are not fully exploited for improvement across the organization as a whole. Issues of training, socialization and professional identity seem key to the more holistic understanding of different areas of component knowledge that require integration for improved quality of care for older people:

"Most of the people who are interested in falls are geriatricians, matrons and specialist nurses from an elderly care background usually. So they're quite good at being holistic. Geriatricians, more than any other doctors, are very, very good at swings and roundabouts and thinking "Well okay, this might solve their chest infection, but if it [certain medication] does that to them is it worth it? You know, how does it all add up together?"

(External Knowledge Producer: NPSA, Respondent H)

In general, many specialist doctors (i.e., outside the ranks of geriatricians) may struggle to integrate exploration and exploitation activities and thus facilitate OA, and one wonders how such doctors might behave when placed in a hybrid middle manager role and confronted with the additional pressures for radical changes from above. Indeed, in the context of elderly

care, surgeons, for example, are portrayed as 'carpenters' who view patient care in a transactional and short-term manner, as opposed to a holistic and longer-term orientation of geriatricians.

> *"Because of the ingrained culture of surgery, you will see it is carpentry, it is literally 'what is the problem, here is the fix, here is the rehab period, there you go home', or it is 'we will do our bit and then we will transfer to the other people'"*
>
> (Hybrid Middle Manager: Mental Health Nurse, Hospital B)

In short, not all hybrid middle managers are likely to behave in a way that supports OA, and their professional affiliation might explain this in part. Doctors with a more 'holistic' orientation towards elderly care, for example, 'specializing' in geriatrics, may more effectively enact a hybrid middle manager role for OA.

In Hospital A, we see an example of 'co-location' of more narrowly-oriented specialists alongside those with a more holistic orientation towards care, in an attempt to mediate hierarchical structure and integrate healthcare professionals into multi-disciplinary teams. A 'one team' philosophy is viewed as a way of compensating for the influence of power and status in order to facilitate better integration of knowledge exploitation and exploration across professions, however, professional orientation and status, may continue to prove an unyielding barrier to change.

> *"Too often [specialist] consultants have been allowed to destroy or break up or compromise change for petty or non-petty reasons...having co-location will break down the tension that exists in all hospitals between doctors and nurses...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. Of course their professional society, their training, their education, their ethical duty is to ensure that, but lots of nurses don't do that. They don't feel able to do it and they don't feel empowered to because of that mainly hierarchical structure… you won't get rid of hierarchy overnight, but having one team's very good."*
>
> (Hybrid Middle Manager: Geriatrician K, Hospital A)

The Role of the Hybrid Middle Manager in Facilitating OA

Building on our findings from phase two, we analyzed data from phase three in order to examine the processes employed by hybrid middle managers in integrating exploration and

exploitation in the face of tensions arising from inter-organizational and intra-organizational context. Phase three of our research enabled a more nuanced analysis of the role of the hybrid middle manager in facilitating OA. Our findings suggest that hybrid middle managers of a relatively low professional status, such as ward managers, were able to facilitate knowledge exploration and exploitation at an operational level, influencing OA more generally. The following quote presents an example of a ward manager facilitating ambidexterity by taking a proactive approach to improving falls awareness, bringing together externally derived research based evidence with local understandings of the care system.

> *"The views of falls has probably changed on here over say the last year. There was a certain amount of shrugging of shoulders and inevitability, "Well patients are always going to fall," whereas now it's a little bit more proactive. I actually got my Deputy to do a project to do with falls in terms of what the figures were – not just purely for this ward, but across the service in terms of was our falls rate higher or lower than other areas and if so, why it was; looking at what sort of times the falls happened. Was it around meal times when they're likely to be disturbed or was it around sort of waking up, needing a wee and trying to get to the toilet and realizing they can't get there on their own? So she was sort of looking at sort of cause and effect. I've sent her on a conference down in London to do with falls and so on, so she's been able to follow up with that and she's quite interested in the detail of it and tried to get staff to sort of think about things in a different way from what we were doing before."*
>
> (Ward Manager, *RCA Case 4*)

In Cases 1 and 4, a number of serious patient safety incidents on the ward presented a catalyst for proactive integration of external knowledge sources with existing local knowledge, so that a contextualized solution is developed for improving patient safety for older patients. Based on a commitment to improve performance at a local level, both ward managers actively promoted quality improvement via focused 'time out' days to engender a collective approach to refining practice and improving patient safety.

> *"What I do is I have what they call time-out days every 3 months and half the staff go to one, one week, and then a fortnight later the remainder of the staff go to the next one. So everybody attends the meeting and it's a whole day. It's not just a couple of hours… And then falls I'll say we had that many that month, that many that month, the themes are blah, blah, blah, this is why. And if there's an RCA, I'll do the whole RCA and then the action plan and all the rest of it with the staff."*
>
> (Ward Manager, Case 4)

We see additional features of the hybrid middle manager role and contingencies around OA revealed in the quote above. The ward manager creates a local climate that is focused towards exploratory and exploitative learning (Kostopoulos & Bozionelos, 2011). Complementing this, she encourages team members to search for new knowledge from external sources, and to integrate this with local understandings of the care problem. More generally we note that the ward manager in Case 4 has social capital. In further interrogating her interview transcript, we note that she is a long serving member of staff in the hospital and has worked across many wards beyond her current location. This seems to have engendered relationships with others across the organization, and an understanding of their perspectives upon problems and solutions. In short, the contingencies outlined mean the ward manager was able to facilitate, and integrate, explorative and exploitative knowledge activity, thereby facilitating OA.

Examining the above further, we can delineate what the hybrid middle manager actually does and the contingencies that frame this making for OA. We note a level of proactivity from our ward managers. So, as a first contingency, we need to understand under what circumstances a hybrid middle manager behaves in a proactive, rather than reactive, manner to make a strategic contribution and improve practice at the frontline. In Case 3, the ward manager attests to *"a very extensive nursing background…service improvement training…and quite a lot of work with some consultants in service improvement"*. It is this prior socialization and training, unique to a hybrid role that has enabled the ward manager in Case 3 and Case 1 to establish linkages with actors of higher professional status, and then leverage these connections to manage inter-organizational and intra-organizational tensions to facilitate OA. In the following quotes, we see how the contingencies described above shape the approach of a hybrid manager to forge a workable compromise between top down managerial demands for compliance and targets with a longer-term view of improving

practice via engagement in knowledge exploration to determine the 'root cause' of patient safety issues.

> *"You have to be very careful because externally and higher up in the organization people will try and interpret figures when they don't really understand… so what we will really focus on is "Right, let's get to the root cause of this." Because on the surface people will say it's because xyz… Let's get to the root cause…sometimes we look at something very superficially and we jump from problem to solution without actually looking and then 2 weeks later it happens again."*
>
> (Ward Manager, Case 3)

> *"[Patient safety] is everybody's problem, not just my problem. It's not just me making the target, it's not just me saying we have to have less than so many falls a month, it's everybody's job to stop people from falling. I picked [high status doctor] particularly because I've known his character. I knew that he would back me up and he would challenge the medical staff. So you need somebody else. So for instance you have me as the ward sister leading the nursing staff and challenging them in their behavior, but you also need somebody from the medical side that will challenge and will take on board what I'm trying to get through to the medical staff because I don't feel it's my role and necessarily that they would listen to me"*
>
> (Ward Manager, Case 1)

Akin to Case 3, the ward manager in Case 1 also describes how her involvement in leadership training facilitated connections through informal conversation with very senior actors including the Chief Executive and the Director of Nursing. These connections can provide critical leverage to negotiate tensions between managerial and professional goals.

> *"I wasn't getting where I wanted to get. I wanted something doing and I was going round in circles with the people that I was told I'd got to speak to and in the end I just thought "Whatever, I'll email the boss. I'll get what I want if I email the boss," and I got what I wanted."*
>
> (Ward Manager, Case 1)

Incorporating data from phase 2, we evidence further our contention that hybrid middle managers, located close to the clinical frontline, are well-placed to exploit and explore knowledge. The following example describes a nurse led intervention that integrates external and internal sources of knowledge via an acute liaison team across the hospital, disseminating mental health knowledge on a peripatetic basis:

> *"This is a nurse led service, an experiment led by Dr Walker [a geriatrician]. Nobody wanted this to start off with, so it was a problem for the consultants, rather than a joy. We are totally autonomous here, totally. We get referrals and if we feel the doctor needs*

to see them we will speak to the doctor. Whatever level the doctors are at, the issue we are dealing with for them is not their area and they are very happy to say 'the cavalry is here, psychiatry take it away from us thank you."

(Mental Heath Nurse, Hospital B)

In the above quote, we see a hybrid middle manager pulling together a range of professionals that might be considered of higher status than him, in driving service improvement. He overcomes power and status differentials, which we earlier highlighted as bounding nurse interaction with doctors and limiting knowledge exploitation. Thus, the mental health nurse enables knowledge exploitation beyond that expected for a profession lacking legitimacy to do so beyond its own ranks. This ability to establish legitimacy seems crucial for hybrid middle managers to facilitate OA. To emphasize, ward managers and other relatively lower level hybrid middle managers are ideally located between clinical governance systems and structures, and frontline clinical practice, to facilitate OA. It remains a matter of creating the conditions under which they can do so:

> *"Ward managers are the gatekeepers. They're the ones that can make the difference to their wards. If they are on the ball, acutely aware, and are driving this as an agenda, then their staff will follow them."*
>
> (Professor F, Applied Health Research Institute)

Thus, despite the illustrations above about how hybrid middle managers with a nursing background facilitate OA, we suggest that professional legitimacy remains an important determinant of those seeking to enhance OA. In this light, hybrid middle managers with a medical background appeared more capable of exploiting existing knowledge upwards for a system level quality improvement effect in the hospital. In the following quote, we see that a hybrid middle manager, (who was also a geriatrician), employs managerial language and data to raise an issue in a way that "*sets alarm bells ringing at the top for quality improvement in relation to patient safety*":

> *"The hospital board have commonly responded to any reporting on in-patient falls with: "That's very interesting Pete. Thanks very much. Cheerio," but actually it's only when we've said "People die as a result of this. We have 50 hip fractures a year as a result of*

someone falling in hospital."...One way of attracting people's attention in this world of risk management is to put a risk score of 20 or above. That really does grab people's attention very quickly".

(Hybrid Middle Manager: Geriatrician P, Hospital A)

Following through claims that quality improvement was now focused on falls, we note that a new falls operational group was established to complement the falls committee. The operational group is the hospital equivalent of a task force, designed to proactively reduce in-patient falls to zero. The group meets monthly, its importance evidenced by being chaired by the Hospital Chief Executive. Indeed, the operational group now proved an effective conduit for exploiting patient safety knowledge related to falls that transcends professional silos. Interestingly, in the light of our claim that hybrid middle managers located closer to the clinical frontline, are crucial to facilitating OA, we note the groups' membership was dominated by ward managers from across the hospital.

Discussion

In line with the literature on contextual OA (cf. Raisch et al., 2009), this study highlights the importance of setting, and the role of agency within particular contextual circumstances, which can both enable and hamper OA. Existing work on contextual OA proposes that ambidexterity at the organizational level can be achieved by enabling managers to deal with conflicting demands for exploration and exploitation at the individual level (Gibson & Birkinshaw, 2004). We contribute to this literature by exploring the under investigated process of how middle managers facilitate OA, and how middle managers experience tensions related to knowledge exploration and exploitation. Tensions at the organizational level, arising in part from the regulatory context, were experienced by hybrid middle managers as a conflict between their professional duty of care, and the need to comply with targets, which often necessitate efficiency, suppressing knowledge exploration. Our findings highlight that middle managers, specifically 'hybrid' middle managers, find ways of facilitating exploration and exploitation activities as appropriate, at the operational level. Rather than achieving an

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equal balance between the two types of activities or engaging in both simultaneously, the reality of a complex, professional, hierarchical and dynamic environment requires managers to forge workable compromises (Turner, Swart, & Maylor, 2013).

Extending previous conceptualizations of contextual ambidexterity, we explored the influence of organizational context at two levels. We examined how the inter-organizational context, specifically those external organizations that generate and diffuse patient safety knowledge to hospital settings, influences middle managers' exploration and exploitation activities. Organizational procedures aimed at enforcing and managing a central response to new knowledge, combined with constrained resources, seemed to undermine ambidexterity at the individual level by driving out knowledge exploration in favor of compliance.

We also examined the influence of the intra-organizational context, and considered the impact of professional organization upon a hybrid middle manager's ability to facilitate exploration and exploitation of patient safety knowledge. We found that where exploration takes place, new patient safety knowledge often remains 'silo-ed' within clinical groups or departments. Professional specialization may act as a barrier to knowledge exploitation by those outside a silo, contributing to significant variation in practices within organizations related to the care of older people. Professional groups high in power and status, such as doctors with highly specialized knowledge, are particularly likely to see patient safety knowledge related to the care of older people as outside their professional role. Their professional status also made it more difficult for other professional groups, such as nurses, to engage them in knowledge exploitation.

Middle managers experience tensions in different ways. Our data highlights that hybrid middle managers experience tensions related to a conflict between managerial and clinical goals, and it is this tension that necessitates ambidexterity at the middle levels of the organization. We posit that hybrid middle managers, with responsibility for professional

service delivery, are uniquely placed within hospitals to mediate the effects of performance-oriented policy, professional hierarchy, and managerial hierarchy upon OA. Hybrid middle managers are potentially able to exploit and explore the flows of knowledge from the governance system and from the frontline, which is necessary for quality improvement in line with patient safety beyond that of mere compliance. Hybrid middle managers thus play a vital role in both facilitating and integrating exploration and exploitation capabilities, both horizontally across professions to influence practice, and vertically to influence organizational policy. A hybrid middle manager is continually exposed to sets of ideas belonging to management and sets of ideas belonging to clinical practice (Llewellyn, 2001). This unique position provides hybrid middle managers with the legitimacy required to develop social linkages and broker knowledge across professions (Burgess & Currie, 2013), key characteristics of the ambidextrous manager (Birkinshaw & Gibson, 2004). Despite this, some hybrid middle managers seem to be more able, and more inclined to facilitate OA than others.

Contingencies that shape the role of the hybrid middle manager in facilitating OA relate to professional orientation, where those of a more holistic orientation towards care of older people, focused on advancing patient safety, were particularly likely to facilitate exploration and exploitation activities. Such hybrid middle managers were identified as being more proactive in their practices. Their professional orientation involved an appreciation of complexities of care experienced by older people, which required integration of knowledge from different specialist areas, in order to ensure high quality of care. This, in turn, facilitated a greater appreciation for the need to explore and exploit knowledge across the boundaries of professional specialisms, which translated into a greater ability to facilitate OA. Similarly, a focus on improving practice seemed to motivate hybrid middle managers to engage in knowledge exploration and exploitation, and to involve others in this process.

Further, we identified that hybrid middle managers were more likely to span professional boundaries and overcome status and power differences when they had developed appropriate social linkages. Social connections provided a critical lever for engaging more specialist professions in knowledge exploitation to refine practice. The role of social connections highlights the relevance of professional legitimacy in facilitating OA. Hybrid middle managers within the nursing profession are capable of facilitating OA, where they have established legitimacy with more powerful actors gleaned from cultivating social capital across the organization. The cultivation of social capital followed a process of boundary spanning, working across different departments within an organization and working alongside professionals beyond their peers. Similarly, social capital was gleaned through participating in training courses with hybrid managers of higher professional status than themselves.

Implications for Human Resource Management

Our findings have a number of implications for human resource management. Most importantly, our paper highlights the unique position of hybrid middle managers for OA. In our context, this involved hybrid middle managers' engagement in clinical, as well as managerial practices. Their clinical background provides them with the legitimacy required to overcome power and status differentials to facilitate knowledge exploration and exploitation.

Our study highlights the need for human resource practices that give middle managers the space and opportunity to cultivate the type of professional legitimacy that allows them to involve others in exploration and exploitation activities, regardless of departmental or professional boundaries: in other words, legitimacy resting not only on medical qualifications, but also on the capacity to engage, mediate and exchange knowledge. This would suggest the usage of appraisal and reward systems that not only promote the attainment of clinical and patient care performance targets, but also more difficult to measure inter-personal skills and capabilities.

Organizations can further enable these social processes, for example, by creating multi-disciplinary teams to mediate power and status differences and facilitate a better integration of knowledge exploitation and exploration across professions. Developmental events that introduce and allow hybrid middle managers to interact with senior managers can lead to valuable social connections that can help hybrid middle managers negotiate tensions for OA. In line with this argument, cross-functional interfaces have repeatedly been highlighted as critical for OA by providing platforms for the generation and reorganization of knowledge (Taylor & Helfat, 2009; Jansen et al., 2009). The multi-disciplinary teams at Hospital A constitute an example of an interface intended to integrate knowledge exploitation and exploration across professions.

The literature on hybrid middle managers emphasizes both the opportunities and essential contradictions in this role which combines line and professional authority, in improving service quality through both managing down, and in managing demands and concerns of superiors. In turn, this would highlight the value of HR policies and practices that encourage dialogue and cooperation, facilitated by interdependence between different categories of employees within an organization; the latter represents the product of relative security of tenure, and the resources devoted to ongoing human resource development (Whitley, 1999).

Further, our multi-level perspective on contextual OA highlights how the inter-organizational and intra-organizational context can hamper hybrid middle managers' ability to contribute to OA. Contextual OA is achieved by individuals making "their own judgments as to how best to divide their time between the conflicting demands" for exploration and exploitation (Gibson & Birkinshaw, 2004, p. 211). This ability arises from the features of the organizational context. Previous research has suggested that to facilitate OA, human resource practices need to provide middle managers with sufficient discretion (Gibson & Birkinshaw,

2004), recognizing the potential worth of both exploration and exploitation (Patel, Messersmith, & Lepak, 2012). Ambidexterity is dependent on stretch, discipline, support and trust (Gibson & Birkinshaw, 2004; Patel et al., 2012). Our findings go beyond these previously identified factors and highlight the impact of external regulations and how their consequences are mediated by middle managers.

At the intra-organizational level, our findings underline the impact of professional specialization, drawing our attention to the influence of socialization and professional identity on organizations' ability to exploit knowledge across different professions and units. The extent to which professional identity, when enacting hybrid roles (Croft et al., in press; McGivern et al., in press), impacts on the development and dissemination of explorative knowledge, whilst reconciling this with external pressures and demands, is a central theme of this paper. As such, professional identity is critical to understanding the nature of the ongoing human resource development in health care, and, indeed, other sectors where hybrid middle managers play a central role.

We further found that managers whose professional specialization required them to transcend the narrow boundaries of clinical specialisms were particularly likely to facilitate OA. However, pressures towards a compliance culture may drive out exploration at an individual level. Whilst acknowledging that clinical specialism is the bedrock of high quality patient care, in the case of patient safety knowledge that is relevant across all specialties and business units within an organization, hybrids of a more holistic orientation appear more likely to exhibit agency to facilitate OA, proactively integrating external knowledge sources, and local knowledge and understanding. This has implications for personnel selection, and training and development practices, which emphasize a holistic orientation.

Limitations and Future Research

Our study has a number of strengths, such as the large number of interviews and cases, which allowed us to explore in depth how hybrid middle managers experience the tensions between exploration and exploitation, but it also has limitations. Our empirical study is set in a particular context, healthcare in England, and specifically focuses on knowledge relating to the safe care of older people. As such, we need to consider its transferability. Historically, the National Health Service in the UK, of which England is part, is vertically organized, with a strong emphasis upon 'command and control' management styles (Hood, 1991; Ferlie, Ashburner, Fitzgerald, & Pettigrew, 1996; Pollitt & Bouckeart, 2000). Such a top-down relationship between government agencies and local service delivery impacts knowledge exploitation and exploration, as evident in our analysis. Other professionalized public services contexts may exhibit a different relationship between policymakers and service delivery organizations. Indeed, the UK context has been characterized as an extreme example of policy forces derived from New Public Management, and therefore may represent a less representative case globally (Martin et al., 2009). The top down pressures evident in the UK National Health Service may be less evident elsewhere, and the role of hybrid middle managers in facilitating OA may play out differently. Hence, we encourage further research in professionalized public services contexts, where top-down policy forces are less evident.

We also suggest that our empirical study provides insight into the role of hybrid middle managers around OA in professionalized settings more generally, which are characterized by hierarchy. Hybrid middle managers represent a global phenomenon that exists across all public services domains (Burgess & Currie, 2013). Whilst a healthcare context might be considered at the more extreme end of professional organization and hierarchy, it does allow for generalization about OA applicable to other professionalized settings more generally, characterized by hierarchy, such as further and higher education (Alexiadou, 2001; Clegg &

McAuley, 2005) and local government (Keen & Vickerstaffe, 1997). Further research might examine these contexts, as well as professionalized settings outside the delivery of public services in areas such as accounting and law, which are subject to top down regulation.

In the present study, we took a multi-level approach to contextual ambidexterity as a "nested" concept (Birkinshaw & Gupta, 2013, p. 294), employing semi-structured interviews. The literature on contextual ambidexterity suggests that OA can be achieved by creating a context that allows individuals to decide how to allocate their time to exploration and exploitation activities. Our qualitative approach allowed us to go beyond previous quantitative work on contextual OA to investigate how exploration and exploitation activities are experienced and integrated at the level of the middle manager. In the present study however, we did not investigate whether hybrid middle managers' efforts to integrate exploration and exploitation activities contributed to OA at the organizational level. Further research is needed to more clearly establish this link. A sample comprising multiple organizations would have allowed us to explore contingencies at the organizational level.

A further limitation of our study is that doctors are relatively absent in our respondents, beyond those we note are more 'holistic' in their orientation, specifically geriatricians occupying hybrid middle manager roles. Burgess and Currie (2013) have noted that doctors may eschew responsibility for patient safety in hospitals, viewing the domain as the responsibility of nurses and governance managers. Further, doctors' lack of participation in the empirical study may reflect professional hierarchy and poor managerial-medical relations (Currie et al., 2012). Nevertheless, we might expect doctors to contribute to OA, particularly when positioned in hybrid manager roles. Hence, we encourage more research to surface doctors' contribution to OA in the healthcare sector.

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Table 1

Phase One Interview Respondents – External Providers and Disseminators Of Patient Safety

Knowledge

Organization	Role of respondent	Number of respondents
National Patient safety Agency (NPSA)	Knowledge specialist and policy maker for in-patient falls	1
	Knowledge specialist and policy maker for medicines management	1
Department of Health	Policy maker with specialist knowledge in elderly care	4
National Allied Health Research Institutes	Professor of healthcare research	5
Regional provider of Mental Health Services for Older People	Non-Hybrid Senior Manager: General Manager	1
	Non-Hybrid Middle Manager: Patient Safety & Governance	1
	Mental Health Nurse	3
Third sector organization: Age Concern	Chief Executive	1

Table 2

Phase Two Interview Respondents – Middle managers

Organization	Hybrid vs. non-hybrid middle managers	Role of respondent	Number of respondents
Hospital A	Hybrid Middle managers (N = 20)	Geriatrician	4
		Clinical lead	4
		General Practitioner	2
		Matron	3
		Discharge team leader	4
		Ward Manager	1
		Mental Health Nurse	2
	Non-hybrid Middle managers (N = 7)	Patient Safety & Governance	5
		Service Improvement Facilitator	1
		Director of Strategy	1
Hospital B	Hybrid Middle managers (N = 10)	Geriatrician	2
		Head of Nursing	3
		Matron	2
		Mental Health Nurse	2
		Ward Manager	1
	Non-hybrid Middle managers (N = 6)	Patient Safety & Governance	5
		Service Improvement Facilitator	1

Table 3

Phase Three Interview Respondents – Tracing learning following patient safety incidents

Case number	Case	Role of respondent	Number of respondents
1	RCA following patient safety incident March 2012, Ward A	Hybrid Middle Manager: Ward Manager	1
		Hybrid Middle Manager: Deputy Ward Manager	1
		Registered Nurse	2
2	RCA following patient safety incident January 2012, Ward B	Hybrid Middle Manager: Ward Manager	1
		Registered Nurse	1
		Healthcare Assistant	1
3	RCA following patient safety incident October 2011, Ward C	Hybrid Middle Manager: Ward Manager	1
		Registered Nurse	1
		Healthcare Assistant	1
4	RCA following patient safety incident, January 2012, Ward D	Hybrid Middle Manager: Ward Manager	1
		Hybrid Middle Manager: Deputy Ward Manager	1
		Healthcare Assistant	1
5	RCA following patient safety incident, March 2012, Ward E	Hybrid Middle Manager: Ward Manager	1
		Hybrid Middle Manager: Deputy Ward Manager	1
6	RCA following patient safety incident, May 2012, Ward F	Hybrid Middle Manager: Ward Manager	1
		Registered Nurse	1
		Healthcare Assistant	1
7	RCA following patient safety incident, July 2012, Ward G	Hybrid Middle Manager: Ward Manager	1
		Healthcare Assistant	1
8	RCA following patient safety incident, April 2012, Ward H	Hybrid Middle Manager: Ward Manager	1

Table 4 Effects of Inter- and Intra-Organizational Context on Hybrid Middle Managers Knowledge Exploration and Exploitation

	Exemplar narrative examples	1st order code	2nd order code	Aggregate dimension
Inter-organizational level	'What's pushing things in the UK is this awareness of the ageing population, but sort of linked to that there's very little going on in terms of innovation to try and address that… I think something like this sits within the context of a hospital that really has not got its head round the fact that the majority of its patients are elderly…' (National Allied Health Research Institute, Professor F)	Care of older people is a significant priority for external providers. Healthcare organizations must get better at exploring new knowledge to improve service for the long term.	External stakeholders perceive a lack of knowledge exploration by healthcare organizations	Centrally imposed agendas fail to encourage knowledge exploration
	'They tell you it is a carrot which is great, but what they do is if my contract is for, I don't know, 500 million, what they do is take 50 million off me and only give it me back if I meet the CQUIN, so it is a direct financial incentive and it is a stick" (Head of Nursing B, Hospital B)	Incentives are external mechanism for engaging clinicians directly in knowledge exploration	External environment perceives targets and financial incentives as necessary for inciting knowledge exploration	
	"all they talk about here is meeting targets and coming in under budget…the knowledge they require becomes "how do we shunt them" [patients], not how can we explore new ways of delivering better, safer care" (Geriatrician G, Hospital A)	Managers are perceived by clinicians to be concerned with money and targets over patient safety and quality of care.	Centrally driven performance targets are managed by the organization to ensure compliance	
	"if it gets measured, it gets managed" (Non-hybrid manager P, Hospital A)	Managers prioritize compliance with targets, restricting OA more generally		
Intra-organizational level	"60% - 70% of what this Trust does is older people and it needs geriatricians and we are under doctored from a geriatrician point of view." (Geriatrician M, Hospital A)	The care of older people is core business, however, there are not enough doctors with sufficient knowledge to provide safe care.	Professionals who hold more specialized knowledge fail to engage with patient safety knowledge	Professional specialization stifles knowledge exploitation

	"with a lot of the older patients actually all people [doctors] want to do is to get them off their ward… people aren't interested and as a geriatrician I understand this. You can't make people interested in things that they're not interested in. You know, an orthopod is never going to find it interesting however inspirational the speaker, however way that's presented. So that's the challenge, isn't it?" (Geriatrician R, Hospital B) "Dementia's not very sexy. Confusion in the elderly isn't sexy stuff, so how do you get orthopedic doctors or surgeons to engage with all of this? And the problem is, if you set up one to one training they just sort of switch off and do nothing" (Geriatrician A, Hospital B)	Doctors with more specialized knowledge resist engagement with patient safety knowledge outside of their specialism.	residing within the organization to refine practice.	

Table 5: Contingencies at the Level of the Hybrid Middle Manager

Contingencies at the level of the hybrid middle manager	"There's differential engagement by the ward managers and I think that was from whether some of them see it as "Oh, another thing I'm meant to do. I can't be bothered. I'm too busy doing all these other things that I have to do," while other people genuinely see their role in terms of attempting to improve care on their wards and bought into this as a way of trying to improve care on their wards." (External knowledge producer, Professor F)	Some hybrid middle managers are more proactive and willing to explore new knowledge than others	Hybrids with a more holistic knowledge orientation are more proactive and willing facilitate knowledge exploration and exploitation	Holistic knowledge orientation, social connections, professional legitimacy and ability to understand both professional and managerial goals are contingencies that shape the role of the middle manager in facilitating OA
	"Professions that are less high status with more general knowledge base… For example geriatricians, psychiatrists, pediatricians – all lower status and all more open to exploring new knowledge." (Practice Development Matron, Hospital A)	Hybrids with a more holistic knowledge orientation are more open to knowledge exploration and exploitation		
	"You have to have long-term relationships with people who are really committed to this stuff on an on-going basis (External knowledge producer, Professor F) "During one of my leadership training meetings, the Chief Executive did come and we had a sort of informal chat as you do, and I said "I've got a question for you. Why does nobody from the Board think it's important to attend the inpatient falls committee meeting?" He said "you're very right Diane" somebody should be attending. It should be seen as important." Soon after, the Chief executive himself attended and a new operational group was launched". (Ward Manager G, Hospital A)	Building social connections across professions influences a hybrid middle manager's ability to facilitate knowledge exploration and exploitation	Social connections are important source of professional legitimacy	

	"[Junior doctors] are going to take it more from a medical consultant as their peer and their senior than they are from me. So I chose a consultant that I've known for donkey's years. Someone that I knew I could get on well with; somebody that I knew would challenge medical staff" (Ward Manager G, Hospital A)	Professional legitimacy important to facilitate knowledge exploration and exploitation	
	"Before being a matron I was a practice development matron so my role was to try and improve practice on wards. This role is much more to do with operational monitoring of things…but I've still got that passion because I've got that passion and interest" (Matron B, Hospital A) "I introduce myself as a matron to the public definitely because of their perception because head of nursing, to me, sounds very administrative. Although it is an administrative job, for me the public see matron as a quality role, so for me I make that definition when speaking to patients and relatives"(Head of Nursing, Hospital B)	Balancing professional clinical commitment to improving practice alongside managerial goals	Ability to understand both professional and managerial goals unique to hybrid managers