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Professionals as knowledge brokers: The limits of authority in healthcare collaboration

Abstract

Professionals with managerial responsibilities are often seen as natural boundary spanners, brokering knowledge between the professional and managerial domains. However, the tensions implicit in their knowledge brokering activities, especially when the latter are formalized, remain under-researched. Using interviews and observational data, we examine the case of an inter-organizational collaborative research partnership that deployed clinical professionals as designated knowledge brokers across multiple sites. We identify three strategies that such hybrid professionals utilized to surmount challenges associated with knowledge brokering in the fragmented healthcare context: (1) relying on additional boundary 'bridges'; (2) conforming to existing ways of doing things; and (3) shifting from 'facilitating' to 'doing'. An analysis of these strategies highlights the tensions between different dimensions of brokering reinforced by macro-level institutional arrangements, the intertwining of formalized and emergent elements of brokering as a collectively-enacted phenomenon, and the limitations of knowledge brokering professionals arising from their professional expertise and authority.

Keywords

Knowledge brokers; boundary spanners; hybrids; professionals; healthcare

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Introduction

Knowledge brokers are individuals that bridge a gap in social structure and help knowledge flow across that gap by facilitating interaction, exchange of ideas and negotiation of meaning across previously separated practices, groups and organizations (Wenger 1998; Burgess and Currie 2013). Much of knowledge brokering work within and across organizations remains informal, unrecognized and embedded in local contexts (Currie and White 2012) but public and private sector organizations increasingly acknowledge the potential of deliberately-created knowledge brokering roles in enabling the coordination, collaboration and integration of different agencies and professional groups (Ward *et al.* 2009; Chew *et al.* 2013). Institutionalized knowledge brokering can be seen as a form of intentional boundary spanning which is based upon an expectation that the brokered knowledge will be used in the policy and practice decisions (Mitton *et al.* 2007), ultimately influencing the opinions and actions of knowledge recipients (Contandriopoulos *et al.* 2010).

This paper extends the analysis of knowledge brokering beyond the boundaries of a single organization or profession and offers an exploration of quasi-managerial practitioners (Causser and Exworthy 1998, p. 84) who have no formal supervisory or resource allocation duties but act as formally designated knowledge brokers in a fragmented context of inter-organizational collaboration. Whilst professional hybrids are often seen as natural boundary spanners (Ferlie *et al.* 1996; Fitzgerald and Ferlie 2000; Llewellyn 2001), our analysis highlights that reliance on hybrid roles to make an impact on the knowledge and learning processes can be accompanied by unwanted consequences stemming not only from contextual constraints but also, paradoxically, from a high level of professional expertise and authority. Furthermore, we demonstrate how the strategies deployed by brokers to mitigate their lack of power in a fragmented context may lead to the prioritization of more formalized aspects of knowledge brokering over its facilitative dimension, further limit brokers' managerial authority, and eventually result in the reinforcement of existing institutional patterns.

The first section provides an overview of the literature on professionals as knowledge brokers, reflecting on their hybrid nature. The second section explores the challenges experienced by hybrid knowledge brokers in healthcare. The procedures of data collection and analysis are outlined in the *Case and method* section. The *Findings* section describes the strategies deployed by knowledge brokering professionals to mitigate their lack of power in a constraining context. The *Discussion* reflects on the theoretical implications of these strategies while the Conclusion summarizes the key messages, practical implications and limitations of the study.

Professionals as designated knowledge brokers

Knowledge brokers are individuals who, by participating in several communities of practice, enable translation, coordination and alignment between different perspectives and facilitate transactions between previously separated practices (Brown and Duguid 1991; Wenger 1998). They provide continuity of action and interaction at the boundaries, *i.e.* 'sites of difference' emerging through local negotiations and subsequently objectified in the form of social entities (Abbott 1995; Kislov 2014). In many cases, the brokerage of practice-based knowledge through situated interaction would be an intrinsic, and often unrecognized, part of normal, day-to-day work practice (cf. 'internal' knowledge brokering in Currie and White 2012, p. 1335). We highlight our focus on *designated* (also referred to as institutionalized, dedicated, or nominated) knowledge brokers, *i.e.* those who have an explicit remit in knowledge brokering which constitutes their 'core' responsibility and takes up a significant proportion of their time (Knight and Lightowler 2010). Designated knowledge brokers can often be found in fragmented, multi-organizational contexts, such as inter-organizational information systems development projects (Levina and Vaast 2005), voluntary public-private partnerships (Noble and Jones 2006) and university-industry collaborations (Knight and Lightowler 2010), including collaborative research partnerships bringing together producers and users of research (Harvey *et al.* 2011; Rowley *et al.* 2012; Chew *et al.* 2013). Their knowledge brokering remit is often reflected in their official role titles, examples including knowledge transfer associates

(Harvey *et al.* 2011), diffusion fellows (Rowley *et al.* 2012) and knowledge exchange officers (Knight and Lightowler 2010).

In highly professionalized contexts, such as healthcare, knowledge brokering functions can be assigned to hybrid practitioners who move away from a purely professional role to assume managerial responsibilities while continuing their professional practice to maintain legitimacy with their peers (Fitzgerald *et al.* 2013). Such hybrids include both *managing professionals*, who have a formally designated supervisory or resource allocation responsibilities, and *quasi-managerial professionals*, who either fulfil such roles informally or have responsibilities in other areas of management, such as performance measurement, project management or handling external relations on behalf of an organization (Causser and Exworthy 1998). Hybrid professionals use their in-between positions to support innovation and change through connecting, recombining and translating managerial and professional knowledge across different individuals and groups within and outside an organization (Fitzgerald 1994; Fitzgerald and Ferlie 2000; Burgess and Currie 2013). Retaining membership, identification and accountability with clinical communities of practice, hybrids are perceived by their clinical colleagues as more credible to broker knowledge than managers without a clinical background (Fitzgerald and Ferlie 2000; Llewellyn 2001; Burgess and Currie 2013).

Activities performed by designated knowledge brokers can be clustered along the following three dimensions (Ward *et al.* 2009; Turnhout *et al.* 2013): (1) *information management*, which is underpinned by a linear view of knowledge sharing and involves supplying relevant expertise to knowledge users, often through the codification of tacit knowledge and its presentation to knowledge recipients in an appropriate format; (2) *linkage and exchange*, involving interaction with different groups, contextualization of knowledge in their local work practices and mediation between different perspectives; and (3) *facilitation*, which implies helping relevant groups translate the situated knowledge into action and thus create sustainable solutions for the problems at hand.

The boundary spanning work of formally designated knowledge brokers involves a blend of these functions tailored to specific contexts (Chew *et al.* 2013) and incorporates a constant interplay between tacit and explicit knowledge.¹ Explicit, articulated, codified knowledge (often sourced from outside an organization) needs to be fed into organizational members, applied in practice and made tacit. At the same time, tacit knowledge brokered through social interaction and action often has to be codified to become transferrable to new generations of organizational members (Crossan *et al.* 1999; Tsoukas and Vladimirou 2001).

Knowledge brokering professionals embody *collaborative* (Adler *et al.* 2008), or *connective* (Noordegraaf *et al.* 2014) *professionalism*, whereby collaboration is not restricted to maintaining sheltered jurisdictions with peer professionals but increasingly embraces other professional and managerial groups which are seen as interdependent and interconnected.² This interconnectedness implies the collective and situated nature of knowledge brokering (Currie and White 2012). Waring *et al.* (2013, p. 85) show that it is rare for any one individual to fulfil the full range of knowledge brokering activities, especially when the relationships are constrained by the formalized role specifications, and that 'broker chains' can improve the sharing of knowledge between communities. Effectiveness of designated knowledge brokering professionals also rests on their ability to participate, at least peripherally, in the actual practices they are brokering knowledge into and on their recognition as legitimate negotiators in these practices (Levina and Vaast 2005). This process often faces a number of challenges which will be examined in more detail in the following section.

Challenges for knowledge brokering professionals in healthcare

There is often a mismatch between the actual practices of institutionalized knowledge brokering and expectations others have of these roles (Levina and Vaast 2005; Mørk *et al.* 2012). Brokers are expected to identify, select and obtain information from the environment and efficiently transmit it

within and across the organizations according to needs, but practical difficulties may arise from the competition between different sources (*e.g.* scientific, clinical or managerial) and types (*e.g.* tacit or explicit) of knowledge as well as between opinions, preferences and interests of multiple knowledge users (Contandriopoulos *et al.* 2010). In case of knowledge brokering professionals, these issues can be aggravated by the ambiguous and contested nature of the hybrid position itself, which ‘both represents the professional agenda and embodies its disciplining by the managerial one’, thus threatening the stability and sustainability of the role (Ferlie *et al.* 1996, p. 194). Furthermore, the work performed by knowledge brokering professionals can be complicated by the tension between the performance-orientated facet of policy, which encourages the utilization of codified knowledge to control professionals, and a more recent emphasis on inter-agency collaboration, partnership and horizontal knowledge sharing in the form of linkage and exchange and facilitation (Currie *et al.* 2007; Waring and Currie 2009).

Another set of challenges arises from a complex landscape of practice in which these hybrids operate (Kislov *et al.* 2011) and the existing power arrangements within that landscape (Currie *et al.* 2007). Senior clinician-managers, such as medical directors, report the lack of managerial autonomy and authority to determine priorities for clinicians (Hoque *et al.* 2004) and can struggle managing relationships with their peers (Fitzgerald 1994). Legitimacy to broker knowledge may be limited to the hybrid’s own profession, community of practice and/or organization, with much less knowledge brokering to higher status professionals, such as doctors, or to external organizations (Currie and White 2012; Burgess and Currie 2013). Formally designated knowledge brokers placed in a fragmented and multilevel arena might also (at least initially) lack an in-depth contextual knowledge of the actors involved and the ties between them, which can only be acquired in practice through cross-boundary experience, networking and collaborative working (Williams 2012). This can be compounded by the lack of an institutionalized career path and lack of engagement of host organizations in knowledge mobilization projects (Currie *et al.* 2007).

A number of strategies potentially mitigating the challenges above have been described.³ Senior managing professionals often rely on subtle mechanisms of influencing through collegiality, reciprocation and normative values, rather than autocracy, when managing peer professionals (Fitzgerald and Ferlie 2000; Sheaff *et al.* 2003; Hoque *et al.* 2004; Numerato *et al.* 2012). For lower-status managing professionals, it is argued, power status differentials may be successfully mediated by their proximity to frontline practice and a high degree of connectedness with others within an organization (Burgess and Currie 2013). Chew and colleagues (2013) have shown that role ambiguity associated with a formally designated full-time knowledge brokering role can be mitigated by privileging one side of the boundary over the other; by relying on social support within emerging communities of practice of knowledge intermediaries; and by using positional ambiguity to craft the intermediary role from the 'bottom up' and find novel opportunities. At the same time, these strategies are contingent on organizational flexibility, have questionable sustainability in the long term and can potentially threaten the equanimity of a knowledge brokering role.

Overall, whilst challenges associated with the pursuit of hybrid professional roles are well documented (Fitzgerald 1994; Fitzgerald and Ferlie 2000; Llewellyn 2001; Sheaff *et al.* 2003; Hoque *et al.* 2004), there is lack of theoretical understanding of how institutionalized knowledge brokering influences the actual knowledge processes unfolding in practice. First, the tensions implicit in the day-to-day tactics of designated knowledge brokers in complex organizational settings remain under-researched (with a recent exception of Chew *et al.* 2013), including the relationship between the (possibly conflicting) dimensions of knowledge brokering. Second, the interaction between institutionalized knowledge brokering and other organizational arrangements, both formal and informal, requires more attention (Foss *et al.* 2010). Finally, whilst hybrid roles are seen as an organizational panacea for reform in professionalized contexts (Croft *et al.* 2015), it is useful to expand the exploration of their limitations beyond the micro-processes of role and identity transition (Kippist and Fitzgerald 2009; Croft *et al.* 2015; Spyridonidis *et al.* 2015) by focusing on the

potential negative consequences of actions undertaken by hybrids when discharging their professional duties.

This study aims to address these gaps by presenting a case of an inter-organizational collaborative partnership deploying clinicians in a formalized knowledge brokering role located within multiple sets of co-existing and overlapping boundaries (Hernes 2004; Kislov *et al.* 2012), including organizational boundaries and those between different 'domains of practice' (Mørk *et al.* 2012, p. 268), such as science, medicine, management and policy. It is guided by the following two research questions. What strategies do knowledge brokering professionals deploy to alleviate the challenges associated with fulfilling a hybrid role in a multiprofessional and multi-organizational landscape? What are the implications of these strategies for theoretical understanding of institutionalized knowledge brokering as deliberate and action-oriented boundary spanning embedded in broader organizational and institutional context?

Case and method

The study was conducted in a large-scale UK-based collaborative partnership (hereafter referred to as 'Collaboration') between a university and healthcare organizations, which included a number of (largely self-contained) disease-specific projects focused on implementing the findings from existing health research in day-to-day clinical practice. Halfway through the five-year period of funding (2009-2013), the leadership of the Collaboration decided to employ clinical professionals as part-time designated knowledge brokers bringing their expertise in a specific clinical domain and professional legitimacy to existing project teams.⁴ Apart from knowledge brokers, each project team included a clinical lead, a management academic and several managers who supported knowledge brokers in their frontline boundary spanning activities in the National Health Service (NHS) organizations, where research evidence was to be implemented. Evidence underpinning the clinical aspects of the projects was determined by nationally adopted clinical guidelines; the format of the projects was co-developed by the members of the project teams, including the knowledge brokers;

the frontline knowledge brokering activities were mainly driven by knowledge brokering professionals themselves.

We used a single embedded case study methodology and focused on three projects ('Heart', 'Kidney' and 'Brain'), selected based on the following criteria: (1) part-time secondment of at least two NHS clinicians (hereafter referred to as 'secondees') into designated knowledge brokering roles; (2) involvement of the secondees in both clinical and non-clinical aspects of project delivery; and (3) knowledge brokering as an explicit part of the project as well as of secondees' core responsibilities. Whilst each project worked with a different group of primary care practices and deployed different secondees, all of them shared a management team represented by non-clinical managers. The characteristics of the projects are presented in Table 1. It is important to note for subsequent analysis that regardless of their organizational affiliations as clinicians, most of the secondees' knowledge brokering activities were performed in multiple primary care organizations ('general practices') taking part in the projects. Although internal to the NHS as a whole, the secondees were therefore often external to the organizations they were brokering knowledge into.

Table 1

Within the case, a purposive sampling strategy was used, with 57 research participants drawn from the three projects and the management team to represent different sectors (primary, community and secondary care) and occupational groups (doctors, nurses, care coordinators, managers, *etc.*⁵) (Table 2). Semi-structured interviews served as the main method of data collection and were conducted in two stages. The first stage (March 2012-March 2013), which was mostly project-specific, explored the secondees' roles in different settings, mapped out the processes of institutionalized knowledge brokering, and induced a list of theoretical propositions to guide further data collection and analysis. In the second stage (March-October 2013), centred on the identification of common themes across projects, these propositions were tested to uncover the strategies used

by the secondees to perform their knowledge brokering roles in the multiprofessional and multi-organizational context. Interviews lasted from 30 to 95 minutes, with an average length of around one hour. Some of the secondees and members of the management team were interviewed twice. For the purpose of triangulation, the interviews were supplemented by direct observation (14 hours) of team meetings, educational sessions and practice visits which involved the secondees, as well as by numerous informal face-to-face conversations with research participants.⁶

Table 2

Interviews were digitally recorded and transcribed verbatim; interview transcripts and observation field notes were coded and analysed with the aid of NVivo software. The process of coding was organized in three rounds. In the first round, each of the three project-specific datasets were coded separately and template analysis (King 2004) was deployed to systematize the codes into three initial templates, which allowed a sense of distinctiveness of each of the three subcases to be gained. The second round of coding, which was conducted across subcases, aggregated previously identified contextual factors (*e.g.* lack of seniority, performance management, teamwork, *etc.*) with a number of emerging categories (*e.g.* adapting to the knowledge patterns within a general practice, 'internal and 'external boundary bridges', 'facilitation', *etc.*). Producing the final template was accompanied by matrix analysis (Nadin and Cassell 2004) to compare and contrast the three subcases. Finally, in an iterative process of refining categories, detecting patterns and developing explanations, existing codes and categories were transformed into three main themes (relying on additional boundary 'bridges'; conforming to the existing ways of doing things; and shifting from 'facilitating' to 'doing'), which reflected the emergent strategies of knowledge brokering relevant for all of the three subcases. Member checking⁷ and triangulation of data obtained from different groups and by different methods were used to ensure the validity of research findings.

Findings

Relying on additional boundary bridges

In all of the three projects the knowledge brokering professionals mainly focused on those aspects of work that required clinical skills, such as auditing the general practice registers, coordinating the patient journey between different providers or helping the primary care staff improve the management of chronic disease patients. 'Knowledge' that they were brokering was not, however, limited to explicit research evidence in the form of clinical guidelines. In most cases, it represented 'bundled action proposals' (Contandriopoulos *et al.* 2010, p. 464), intertwining a set of actionable ideas about how clinical guidelines (scientific knowledge) could be applied in practice (clinical knowledge), underpinned by the tacit understanding of the healthcare context (contextual knowledge). At the same time, most of the generic coordination activities were undertaken by the Collaboration's management team, who had expertise in project management and quality improvement and were often seen as more knowledgeable than the secondees about the organizational landscape of primary care. The managers thus complemented the knowledge brokering role of the secondees:

Quite often in a feedback session I might have some knowledge in relation to a clinical picture, but then [the manager] might have some information that's from a non-clinical side that I might not have been aware of and also... if neither of us know an answer, she'll help you do some digging as well and she'll feed back to the practice. (S2; Heart)⁸

The secondees were occasionally seen as lacking seniority and thus having limited influence within their own organizations or localities, which also required the involvement of the management team and was critically perceived by some of the managers:

...I would confess to... probably taking a back seat a little bit and observing and letting [the managers]... do all the talking [in the meetings with senior people]... (S3; Brain)

...I don't know if [the secondee] could actually set something up on her own and go in to negotiate with people at the CCG⁹ level... She wouldn't have the influence or the credibility to set up and deliver projects on a bigger scale... That seems like an awful waste of resource from the [Collaboration's] point of view, to have somebody babysitting a secondee all the time... (M1; Management team)

There was also a perceived need across all of the projects to identify and collaborate with a number of key individuals from within the primary care practices. In a different way to the Collaboration managers, these people also acted as 'bridges' between the secondee and the rest of the practice, by ensuring that the knowledge and skills brought in by the secondee became assimilated within the organization. Ideally, these boundary bridges would include representation from different professional groups, *i.e.* medics, nurses and administrators, but in some of the practices the communication was going through one person, which sometimes made the transfer of knowledge to other professional groups problematic and thus undermined local sustainability of change introduced by the secondees' knowledge brokering activities:

...Having a clinical link and a sort of admin link and probably a link with one of the practice nurses... within the surgery seems to be the best model to have... And there's a couple of surgeries where that's not the case, and that probably works less well... The communication with [one of the surgeries]... is difficult because it all goes through one person who isn't a clinician and it's hard to know how much information that's sent to her is disseminated. (S5; Brain)

...If the wrong GP got [blood test results], they didn't get actioned or worked on at all... If anyone had any queries they would sort of send them all to me and then I would go to [the secondee]... (CC2; Kidney)

To sum up, whilst the secondees remained the main knowledge brokering actors bridging the organizational (between the Collaboration and general practices) and professional boundaries (between their own clinical fields and the fields of knowledge users), their activities were significantly influenced by additional boundary 'bridges' linking them with wider professional and organizational groups at different levels of the hierarchy.

Conforming to the existing ways of doing things

In all of the projects, a lot of face-to-face knowledge sharing took place at meetings conducted within primary care organizations, in which the secondees actively participated. Many of them highlighted the importance of 'being flexible', which meant accepting and making the best use of the procedures offered by the general practices, rather than trying to impose their views on who should be present in the meetings and how they should be organized:

You have to be flexible, you have to go with their way of working; otherwise they just won't want the meetings to take place... You can't just go in with a blueprint of how it's going to work... (S5; Brain)

...In one instance we did feedback to the advanced nurse practitioner at a practice, we had asked the GPs and other people to be there, but it was just this advanced practitioner in the end, and it was very good, we went through everything, but we were almost relying on the fact that that person disseminated to the rest of the practice then. (S1; Heart)

Another important strategy utilized by the secondees was linking the knowledge they were trying to broker with the national performance management system for the primary care sector in England, the Quality and Outcomes Framework (QOF)¹⁰. Those secondees who were new to primary care quickly had to learn that helping the practices get extra QOF points (and thus increase their financial income) could be a strong motivator both for 'selling' the project to participating organizations and for overcoming their resistance:

...We have tried to show the GPs who've shown initial reluctance what we've managed to achieve by coding all their patients correctly which will ultimately not only make much better for patient care but will also improve their practice figures. ...GPs and practice managers are very keen on their QOF figures. (S10; Kidney)

At the same time, conforming to the QOF had a number of influences on the overall focus and direction of the projects and tended to shift the secondees' knowledge brokering activities towards 'QOF-able' aspects of work. This resulted, for instance, in privileging the auditing phase of the Heart

and Kidney projects, aiming to identify new patients and thus meet performance targets, over the feedback phase, aiming to help the practices improve the clinical care of these patients according to clinical guidelines:

...One GP said to me last week, 'There's no incentive for me to do heart failure reviews'. People will get better care but he was talking in terms of remuneration because of the QOF points and things that they get... As part of the QOF they have to have people with heart failure and they have to have had a diagnosis and then they have to be on ACE inhibitors and beta blockers. It doesn't go much further than that... (S1; Heart)

...[The practices] are probably motivated by the case finding because... what they've done when we've given them the results, they've tended to look at the case finding and work on that first because the case finding will add the patients to the register and increase the prevalence. So they've tended to work on that. (M2; Management team)

Such conformance significantly shaped the content of 'action proposals' brokered by the secondees. Robustness of the research evidence and clinical authority of the brokers proved to be insufficient for engaging the general practices if the proposed activities were to involve a radical alteration of the usual organizational routines or did not explicitly link with the adopted performance indicators.

Shifting from 'facilitating' to 'doing'

At the outset, the secondees were expected to 'transfer' their knowledge and skills to primary care organizations and support them in undertaking appropriate actions to improve the quality of care for the relevant groups of patients. In reality, in all of the projects the relationship between 'facilitating', i.e. helping others to implement change (Harvey *et al.* 2002), and 'doing', i.e. implementing change for others, turned out to be more complicated, with a general tendency for the designated knowledge brokers to become more involved in the actual processes of implementation than initially envisaged:

We have been given the repeated message that achievement against objectives is the be-all and end-all, and to this end, our secondees have been encouraged and pushed towards *doing* rather than *facilitating* to achieve these outcomes. (M7; Management team)

The degree of the shift from 'facilitating' to 'doing' varied across the projects, which may be explained by project-specific contextual differences (Table 3). In the Heart project, the secondees were heavily involved in auditing the registers, which was enabled by the fact that they possessed specialist clinical expertise required for undertaking this aspect of performance measurement and were seen as clinically legitimate by all professional groups in primary care. The audit was conducted without much involvement from the primary care staff who were later expected to act upon its results:

[The Heart secondees] were explicitly hired for their specialist knowledge... I would never, ever, ever call them a [Collaboration] facilitator... They're less facilitating perhaps than doing the work, because of the nature of the project, and they are doing the work for the practices, so they are auditing; whereas in [Kidney] work, the practice audits with the support of [the Collaboration]. (M8; Management team)

The facilitation aspect of knowledge brokering was indeed more pronounced in the work of the Kidney project secondees, although they often chose to do more than they had initially envisaged, especially when the practice staff were not given protected time to work on the project, expressed little interest in implementation or needed encouragement:

Sometimes, especially with workloads, it's been very, very difficult for [the practices]; I've actually gone in and done some work with them and also on my own, working through the registers to try and help them tidy up their lists and to generate patients that need reviews... (S10; Kidney)

In the Brain project, the main responsibility of the secondees was to provide clinical coordination between primary, secondary and community care and generate concerted action aiming to improve the provision of healthcare services. Although the ultimate responsibility for undertaking these

actions lay with the primary care staff and/or community-based care coordinators, the secondees were under pressure to expand their role towards doing more work for the practices in order to build better relationship with the primary care staff and help them meet their targets:

...The restriction of having a [secondee] that, yes, *links* into the rest of the mental health teams, but isn't specifically there to *do* that job... is slightly frustrating... (GP6; Brain)

...One of the problems is that [the practices] perceive we're going in and doing something that's useful for us but they're not getting anything in return. So, I'm trying to offer things that are useful to them in return, even perhaps when it's slightly above and beyond the remit of the project as a way of forming relationships. (S5; Brain)

Table 3

Doing some work for the practices was often presented as a way to create a favourable atmosphere for knowledge sharing. At the same time, a high level of the brokers' involvement in the process of implementation inevitably shifted their attention away from such aspects of knowledge brokering as facilitation and linkage and exchange, potentially undermining practice-based learning and capability development within primary care organizations.

Discussion

We have described three broad interconnected strategies that designated knowledge brokers utilized in the fragmented healthcare landscape. The first strategy entails the transfer of some of the knowledge brokering responsibilities, such as facilitation and 'linkage and exchange', to other clinicians and managers involved in the knowledge mobilization projects alongside the hybrids. These individuals acted as boundary bridges, which could be external or internal in relation to the healthcare organizations the knowledge brokers were working with. The *external boundary bridges*, such as managers from the Collaboration's management team, were often perceived as having more

managerial authority than the secondees. The *internal boundary bridges*, on the other hand, were instrumental in brokering knowledge between the secondees and their own uniprofessional and multiprofessional communities of practice (Kislov *et al.* 2012). Both groups of boundary bridges compensated for the secondees' lack of managerial authority, social capital and contextual knowledge. However, the designated knowledge brokers had limited influence on selecting the boundary bridges and often had to make best use of those members of the primary care organizations who were self-nominated or appointed by the organizational leaders but had limited authority within the organization and/or were not ideally suited for fulfilling the boundary spanning role. Whilst internal boundary bridges can act as peer opinion leaders adapting exogenous knowledge to local circumstances (Locock *et al.* 2001), we show that their sanctioned authority to translate knowledge into action can be limited by their lower status in local hierarchies, strong intra-organizational boundaries and an overall deprioritization of knowledge sharing in a performance-oriented climate.

The second strategy is conformance to the format of boundary interactions that suit the preferences of the powerful individuals and groups within primary care practices, tailoring the objectives, procedures and content of knowledge mobilization projects to the targets specified by the performance measurement system. Tapping onto the existing intra-organizational routines can be a way of alleviating resistance to change and embedding knowledge introduced by the knowledge brokering professionals while QOF can act as a boundary object helping to align the perspectives on multiple communities of practice and translate knowledge into collective action (Kislov *et al.* 2011). At the same time, in most practices the knowledge brokers could do relatively little (except, perhaps, for some backstage discussions) to alter organizational routines that were dysfunctional and impeded knowledge sharing. Those project components that required a significant change in day-to-day local practice and/or were not aligned with the financial incentives of the QOF were more likely to be marginalized in the process of translating knowledge into action even if seen as beneficial for healthcare outcomes. The conformity of knowledge brokering professionals may, at least partially,

be explained by their lower position in a hierarchy compared to doctors, which resonates with previous observations that nursing managers are more likely to buy into managerial goals than are medical managers (Hoque *et al.* 2004). In addition, the QOF can be seen as a natural continuation of the evidence-based medicine movement which originated from within the medical profession and is thus less likely to be perceived as an instrument of managerial control by clinicians (Cheraghi-Sohi and Calnan 2013).

Finally, the third strategy denotes an increasing involvement of the secondees in the activities lying beyond their designated knowledge brokering remit and often entails involvement in the actual 'doing' or implementation of change in the participating organizations. In some cases 'doing favours' to the local staff may be interpreted as an exercise of 'soft' influence aimed at building good working relationships and inducing reciprocation (Sheaff *et al.* 2003). In some practices, however, doing work for the staff becomes *the* way to achieve the objectives of a knowledge mobilization project, especially when the local system of additional boundary bridges is not effective. In such cases, designated knowledge brokers are at risk of being seen as an 'extra pair of hands' provided by an external project, with their knowledge having a relatively low impact on local organizational routines, capacity development and sustainability of change. As shown in Table 3, the degree of the shift from 'facilitating' to 'doing' differed across projects and was contingent on a number of project-specific factors. It was the highest in the case where project leaders lacked experience in implementation science and/or service improvement; where the participating practices did not receive financial remuneration for their participation in the project which would enable them to allocate protected time to project work; where the project had originally been designed around the notion of knowledge codification; and where the knowledge brokers possessed highly specialized, as opposed to generalist, professional expertise.

The strategies deployed by designated knowledge brokers reveal a number of broader theoretical insights. First, our findings reveal a tension between different dimensions of institutionalized

knowledge brokering. Whilst organizational learning literature maintains that institutionalization of knowledge normally takes place after it becomes interpreted and embedded in the local group-level practices (Crossan *et al.* 1999), we show a potential for the marginalization of 'facilitation' in the contexts where other forms of brokering (such as information management) or practices located outside the brokering remit (such as 'doing') are perceived as less resource-intensive and less contingent on local cooperation but can still produce results satisfying the performance objectives. Not only were we unable to find evidence of local resistance to information management as a form of managerial control (Waring and Currie 2009), but the pressure to focus on this dimension often came from practitioners into whom knowledge was being brokered. While it has been argued that controlling the content of shared knowledge might negatively influence its perceived local relevance (Agterberg *et al.* 2010), our findings suggest that a strong link between the 'action proposal' being brokered and performance targets can make the former appear relevant for both broader organizational needs and local practices. Furthermore, it is often not the *type* or the *source* of knowledge embedded in the 'action proposal' but the (perceived) implications of the latter for local routines that determine its inclusion or exclusion in the inherently political process of institutionalized knowledge brokering.

Second, our findings enhance a theoretical understanding of knowledge brokering as a collective phenomenon (Currie and White 2012), responding to the call to 'look into how brokers combine and work together across organizational boundaries' (Waring *et al.* 2013, p. 86). We highlight the utilization of additional boundary bridges as a mechanism converting the hybrids' emerging social capital into a strategic influence and describe a potential configuration of an emerging 'broker chain' (Waring *et al.* 2013) in a multi-organizational and multiprofessional context. The composition of the chain, consisting of a designated knowledge broker and two emergent types of additional boundary spanners, leads us to question the dichotomy between the external and internal knowledge brokering, whereby the former refers to the brokering of (formal) knowledge from outside the organization and the latter denotes the sharing of (tacit) knowledge at a local level (Currie and White

2012). We suggest that while the initial source of knowledge (often combining the tacit and the explicit components) may indeed originate from outside the organization, its successful local assimilation is only possible when this external knowledge is spread within the organization through internal knowledge brokering embedded in collective practice. This can involve boundary spanners emerging locally as well as designated knowledge brokers working across organizations (the latter may be external to an organization as a whole but internal to the professional communities of practice cutting across organizational boundaries) (also see Brown and Duguid 1991).

Third, our findings shed new light on the limitations of quasi-managerial hybrids as designated knowledge brokers. Most of extant literature tends to see hybrids' professional knowledge and skills as an important source of legitimacy and authority enabling their boundary spanning function. This study shows that, paradoxically, professional authority can sometimes become an impediment to a successful realization of all dimensions of knowledge brokering. This is well illustrated by the Heart project, where the brokers with the high level of specialist skills and professional authority remained relatively disengaged from facilitating practice-based learning and situated interaction (Table 3). In addition, the managerial legitimacy of hybrid brokers can be challenged by non-clinical managers who do not necessarily see them as legitimate negotiators at the senior level and, as a result, take over the representational function. These processes may further increase *professional authority* of hybrid clinicians to carry out their professional activities (and to transfer some of the tasks seen as peripheral to their professional expertise to managers) but decrease their *managerial authority* over financial or organizational decisions which are related to the work of other professionals (Farrell and Morris 2003). This may help explain why, despite the brokers' undisputed clinical expertise, we found more evidence of adjustment, accommodation and reliance on soft influence than attempts to induce the radical renegotiation of the boundaries (cf. boundary-shaking in Balogun *et al.* 2005, p. 262). Our findings suggest that through their coping strategies the brokers are more likely to reproduce original institutional arrangements than alter the constraining context of action.

Conclusion

Formally designated knowledge brokers operating in a multiprofessional and multi-organizational arena mitigate the constraining power of context by transferring some of their knowledge brokering functions to managers and clinicians; by conforming to the local ways of doing things, such as the incorporation of the pay-for-performance system into the core professional work; and by complementing (and even replacing) the situated processes of knowledge brokering by the supply of knowledge and skills to clinicians wishing to achieve their organizational performance objectives. These strategies reveal how, through the agency of knowledge brokers, macro-level institutional arrangements exert influence on the dynamics of knowledge processes unfolding in practice, how the formalized and emergent elements of knowledge brokering as a collectively-enacted phenomenon are intertwined, and how the professional expertise and authority of hybrids can become an impediment to their knowledge brokering function.

Initiatives deploying designated boundary spanning roles could possibly benefit from diversifying the pool of knowledge brokers to include managers, quasi-managerial professionals and professionals with formal managerial responsibilities, and supporting the formation of links between knowledge brokers working at different levels. Since the facilitative dimension of knowledge brokering is at risk of becoming marginalized, it is also crucial to encourage the active involvement of knowledge recipients in the process of organizational change that is supposed to be induced by the mobilized knowledge, which may require amending the local reward systems as well as providing direct remuneration. At the policy level, the discourses of coordination, collaboration and knowledge sharing need to be accompanied by strategies promoting the development of *internal capacity* of public sector organizations to utilize research evidence, rather than relying on external agencies that have to overcome multiple boundaries to achieve influence within these organizations (Kislov *et al.* 2014).

Our findings represent an attempt to identify common themes that reflect the experiences of knowledge brokers across all of the projects and organizations involved in the study. This is why an analysis of variability in micro-level interaction between the designated knowledge brokers and (differentially receptive to change) host organizations was beyond the scope of this paper. Also, since our study only looked at a relatively early stage of the professionals' involvement in institutionalized knowledge brokering, it may well happen that the strategies described here could change over time. A longitudinal exploration of the individual trajectories of hybrid professionals through the ambiguous boundary space between managerialism and professionalism may be a fruitful area of future research. This study has indicated that the legitimacy of knowledge brokers is not limited to the credibility of their professional knowledge or acceptance of their intermediary position; exploring the legitimacy of *actions* that are induced by brokerage and can differentially affect multiple groups may form another direction of potential empirical enquiry.

Beyond healthcare, our findings may apply to a wide range of professionals who are expected to broker knowledge, influence their peers and drive change in networks and other fragmented contexts involving multiple organizations. Mitigating strategies described here are likely to be generalizable to the groups of quasi-managerial professionals and external consultants, who enjoy professional legitimacy but lack formal authority due to their lower status and/or external position. Finally, insights gained into knowledge brokering as a group phenomenon involving both internal and external dimensions can potentially inform further analyses of collaborative partnerships, knowledge networks and other boundary organizations that have to reconcile the tensions between different types, forms and sources of knowledge held by multiple actors operating in inconsistent policy environments.

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¹ While the purpose of institutionalized knowledge brokering is sometimes limited to the translation of *research evidence*, as the preferred form of ‘knowledge’, into practical action (Mitton *et al.* 2007; Ward *et al.* 2009), we follow Contandriopoulos *et al.* (2010) in adopting a broad view of knowledge, which encompasses all types of information used in practice, and viewing institutionalized knowledge brokering as a set of ‘*generic processes unrelated to the internal validity of the information exchanged*’ (*ibid.*, p. 458; emphasis in original).

² This focus on establishing continuity of action and interaction across the boundaries (Kislov 2014) conceptually distinguishes knowledge brokering from *boundary work* (Gieryn 1983) which denotes discourses and practices aimed at establishing epistemic authority of one group over the other(s) in order to monopolize, expand or protect its jurisdiction in a contested field.

³ Following Mintzberg and Waters (1985, p. 257), we adopt a broad definition of strategies as ‘patterns in streams of actions’, with a particular interest in *emergent strategies*, *i.e.* those realized ‘despite, or in the absence of intentions’, as opposed to *deliberate strategies*, which are underpinned by the analytical process of establishing goals and action plans followed by their realization as intended.

⁴ Designated knowledge brokers are conceptually different from clinical champions (Hendy and Barlow 2012), project champions (Noble and Jones 2006) and expert opinion leaders (Locock *et al.* 2001)—established leaders in their organizations and/or communities of practice, who create favourable conditions for boundary spanning, activate the initial stages of innovation and change but do not become intimately involved in the process of implementation itself. By contrast, hybrid knowledge brokers explored by this study worked at the interface between different organizations and professional groups on a daily basis and assumed overall responsibility for translating knowledge into action.

⁵ Since the strategies deployed by hybrid professionals in the process of institutionalized knowledge brokering were the main focus of our study, the secondees were naturally seen as key informants. At the same time, we significantly expanded our sample by including the representatives of different groups who were affected by the work of the secondees because we view knowledge brokering as a boundary process in which ‘no one operates totally alone, and every individual who brings about some change is embedded in some type of structure, whether overt or covert’ (Hernes 2004, p. 27).

⁶ Informal conversations were particularly useful in clarifying the details of what has been observed, member-checking emerging analytical interpretations and, in case of the Collaboration management team members who worked across projects, provided additional insights into similarities and differences between the three subcases.

⁷ The emerging findings of the study were presented at one of the Collaboration’s management team meetings. Research participants also had an opportunity to provide feedback on the transcripts of their interviews as well as on the first draft of this manuscript. Their comments significantly enhanced the factual accuracy and interpretative richness of the account presented in this paper.

⁸ The following abbreviations are used to indicate respondents who are quoted in this section: CC – clinical coordinator; GP – general practitioner; M – manager; S – secondee (a hybrid clinician/manager seconded by the Collaboration from a healthcare organization to perform the role of a formally designated knowledge broker).

⁹ Clinical Commissioning Groups (CCGs) are groups of general practices responsible for commissioning the majority of health services in England.

¹⁰ Quality and Outcomes Framework (QOF) is a prescriptive pay-for-performance system designed to standardize the quality of care provision in general medical practice in the United Kingdom (Cheraghi-Sohi and Calnan 2013).

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Tables

TABLE 1 *Projects*

	Heart	Kidney	Brain
Aim(s) of the project	To improve primary care practitioners' knowledge about the diagnosis and management of heart failure and to increase its recorded prevalence on practice registers	To reduce the gap between the recorded and estimated prevalence of chronic kidney disease (CKD) and to improve the management of blood pressure in CKD patients	To develop an integrated service user pathway supporting the prevention, diagnosis and management of physical health problems in people with severe mental illness (SMI)
Duration of the current phase of the project	February 2012 – November 2013	March 2011 – November 2013	July 2012 – December 2013
Organizations involved	40 general practices	31 general practices	5 general practices and 1 hospital
Number of secondees posts	4	3	2
Secondees' clinical occupation	Specialist nurses	Practice nurses	A nurse and an occupational therapist
Secondees' main place of work	Secondary care	Primary care	Secondary care
Secondees' knowledge brokering role(s)	Performing skills audit, register verification and case finding in primary care practices; feeding back the results to primary care staff; facilitating the changes in day-to-day clinical practice	Providing help to primary care staff with data searches, teamwork development and guideline use; acting as a conduit for knowledge sharing between practices; facilitating the changes in day-to-day clinical practice	Liaising between primary and secondary care; helping the primary and community care staff make joint action plans for the physical health management of SMI patients; searching, analysing and presenting the evidence

TABLE 2 *Research participants*

	Heart	Kidney	Brain	Management team	Total
Secondees	4	3	2	1	10
GPs	5	5	5	-	15
Practice nurses	3	4	2	-	9
Practice/Trust managers	2	2	5	-	9
Healthcare assistants	-	2	-	-	2
Clinical/care coordinators	-	1	1	-	2
Managers	-	-	-	9	9
Researchers	-	-	-	1	1
Total	14	17	15	11	57

TABLE 3 *Contextual differences between the projects and their influence on the shift from 'facilitating' to 'doing'*

	Heart	Kidney	Brain
Setup of the project	Secondary care based secondees with specialist clinical skills brokering knowledge into primary care organizations	Primary care based secondees with generalist clinical skills brokering knowledge into primary care organizations	Secondary care based secondees brokering knowledge between primary and secondary care
Project leadership	Clinical academic on a joint appointment between a university and an NHS Trust with little previous expertise in implementation science or quality improvement	Jointly lead by a clinician and a social science academic, both with a special interest in implementation science and quality improvement	Predominantly led by the Collaboration's management team (including a quality improvement researcher)
Financial incentivization for the participating general practices	None	In March 2011 – March 2012, all but one of the practices received funding from the Collaboration. No funding was provided to the practices joining the project from April 2012 onwards.	None
Prioritized dimension of knowledge brokering in the beginning of the project	Information management	Facilitation	Linkage and exchange
Prioritization of 'doing' over 'facilitation' throughout the course of the project	'Audit' increasingly seen as the key activity, with 'facilitation' limited to one-off (interactive) feedback sessions and (didactic) educational events	Decreasing emphasis on facilitation in 2012-2013, often explained by the limited capacity of primary care clinicians to engage with the project in the absence of financial incentivization	'Doing favours' by the secondees seen as 'building relationships' with the practices, the degree of the shift being less pronounced than in the other two projects—probably, due to the focus on 'linkage and exchange'