Translational networks in healthcare? Evidence on the design and initiation of organizational networks for knowledge mobilization

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Abstract

International attention has focused on the variations between research evidence and practice in healthcare. This prompted the creation of formalized translational networks consisting of academic-service partnerships. The English Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) are one example of a translational network. Using longitudinal, archival case study data from one CLAHRC over a 3-year period (2008–11), this article explores the relationship between organizational form and the function(s) of a translational network. The article focuses on the research gaps on the effective structures and appropriate governance to support a translational network. Data analysis suggested that the policy of setting up translational networks is insufficient of itself to produce positive translational activity. The data indicate that to leverage the benefits of the whole network, attention must be paid to devising a structure which integrates research production and use and facilitates lateral cross-disciplinary and cross-organizational communication. Equally, appropriate governance arrangements are necessary, particularly in large, multi-stakeholder networks, where shared governance may be questionable. Inappropriate network structure and governance inhibits the potential of the translational network. Finally, the case provides insights into the movement of knowledge within and between network organizations. The data demonstrate that knowledge mobilization extends beyond knowledge translation; knowledge mobilization includes the negotiated utilization of knowledge — a balanced power form of collaboration. Whilst much translational effort is externally focused on the health system, our findings highlight the essential need for the internal negotiation and mobilization of knowledge within academia.

1. Introduction

This article focuses on the organizational form (structure and governance) within the novel context of translational networks aimed at facilitating knowledge mobilization. This topic falls within the debate in management, organization studies and public administration about how to bridge the gap between research evidence and practice (Mitton et al., 2007; Tetroe et al., 2008). The debate incorporates applicable knowledge (Bartunek and Egri, 2012); processes of translation (Greenhalgh and Wieringa, 2011) and utilizing the management evidence base (Arndt and Bigelow, 2009).

Across all sectors, differing forms of ‘translational’ organizations, from science parks to technology transfer centres to academic health science networks have been established (Comaccio et al., 2012; French et al., 2014). Many ventures involve the formation of organizational networks. In healthcare, international attention has focused on the variations between research evidence and practice, prompting an upsurge in the creation of formalized translational networks consisting of academic-service partnerships (Antil et al., 2003; Tetroe et al., 2008; Cunningham et al., 2012). In the U.K. strong policy pressure resulted from the Cooksey Report (2006) which identified the so-called second translation gap described as the process of ‘translating’ the knowledge produced through research into health care practice. The slow rate and variability of uptake of proven evidence were detected as problems. Despite the continued growth of translational networks, limited research has focused on the structuring of these networks, which remains a key
issue.

Addressing this gap, this article utilizes empirical data from the operation of one translational network, namely a Collaboration for Leadership in Applied Health Research and Care (CLAHRC) in England. The CLAHRCs are networks of organizations whose core purpose is the ‘translation’ of research findings into use in health care practice. The establishment of the nine CLAHRCs in 2008 was an example of a policy intended to harness the capacity of higher education to assist the translation of research into practice through the development of models of community-wide partnership between academia and the National Health Service (NHS). The stated aims were to:

- “develop an innovative model for conducting applied health research and translating research findings into improved outcomes for patients;
- create a new, distributed model for the conduct and application of applied health research that links those who conduct applied health research with all those who use it in practice across the health community covered by the Collaboration” (NIHR CLAHRCs — Call for Proposals to Establish Pilots, 2007. Authors italics).

CLAHRCs were required to focus activity on long term conditions and to produce outcomes within five years. Thus they were mandated translational networks with high expectations. No definitive structure was specified and the nine CLAHRCs all developed differently.

Our core research question is: how does the design and initiation of a translational network aim at facilitating knowledge mobilization impact its modes of operation?

‘Translation’ is an ambiguous and partially understood process and limited research has attended to the structuring (form and governance) of translational networks, so we explore the literature on the processes of ‘translation’ and the structure and governance of translational networks. Following this, we present our methods and then empirical evidence from the CLAHRC, and finally, conclusions.

2. Literature review

2.1. Understanding knowledge translation

As form follows function (Mintzberg, 1983), a first observation is that CLAHRCs were mandated translational networks intended to bridge the ‘evidence to practice gap’. However, there are differing conceptualizations of the process of translation and of the nature of this gap (Greenhalgh and Wieringa, 2011) and hence potential ambiguity over the functions of a translational network and even over terms. These differences reflect epistemological positions on the contested nature of knowledge, subject to varied interpretations across the policy, medical and social science domains (Ferlie et al., 2012; Harvey, 2013). Within the policy domain, translation is perceived as a staged, linear process, described by Cooksey as knowledge production, knowledge transfer, knowledge reception and knowledge use (Cooksey in Treasury (2006)). The term translation implies the adoption of research evidence to contexts before it can be utilized by practitioners. Within health care, the Evidence Based Medicine (EBM) paradigm predominates, favouring explicit knowledge, produced by researchers using scientific, transparent and reproducible techniques (Evans, 2003). EBM sets a specific standard for robust evidence, but contributes less to understanding ‘translating’ and ‘utilizing’ as processes.

Within the social science domain, knowledge is typically perceived as socially constructed and situated, including explicit and tacit dimensions (Dopson and Fitzgerald, 2005; Oborn et al., 2013) and influenced by social structures and power (Contu and Willmott, 2003). Authors (Brown and Duguid, 2001; Szulanski, 2000, 2003) suggest that a socially embedded concept of knowledge explains why knowledge may be ‘sticky’ and not ‘flow’ across organizational or professional boundaries. Social scientists (and the current authors) argue knowledge translation is not a linear, straightforward process of ‘implementing’ evidence, but is complex and interactive. Language shifts from discussing ‘the organization’ as a rational entity to ‘organizing’ as a process. The dominant conceptualisation of knowledge translation influences one’s view of the functions of a translational network. Accepting Ferlie et al.’s (2012) point that a focus on ‘translation’ does not always include uptake and use, we initially adopt Cooksey’s term and describe the CLAHRC as a ‘translational’ network and later return to discuss the difference between ‘translation’ and ‘mobilization’.

Szulanski (1996, 2000, 2003) offers a substantial body of research on the processes required for effective translation of knowledge, based on the transfer of best practices within large organizations. He produces a process theory of the ‘stickiness’ of knowledge to account for the difficulties of transfer, including the characteristics of the knowledge, of the actors and of the context. He conceptualises transfer as a protracted iterative process, influenced by the characteristics of knowledge, but also the characteristics of the stakeholders in the exchange and the characteristics of the context. The limited empirical data on knowledge translation processes in networks (McGivern and Dopson, 2010; Currie and White, 2012; Scarbrough et al., 2014) suggests that the evidence to practice gap may accurately be conceptualized as issues of knowledge co-production and exchange requiring active facilitation. Scarbrough et al. (2014) confirm the variable conceptions of knowledge translation in the three CLAHRCs they studied. We conclude that the processes of knowledge translation and mobilization are under-researched and the functions of translational networks remain ambiguous.

2.2. The structuring (form and governance) of translational networks

2.2.1. Structural form

In structuring a translational network, one might draw on a vast repository of research on organizational design, here; a brief review demonstrates core facets of structure. Research on organizational design has moved through phases (see Buchanan and Huczynski, 2010), with early work highlighting control, information processing and decision making (Cyert & March 1963; Thompson, 1967). Key structural dimensions included centralization and formalization (Pugh and Hickson, 1976), with choices for co-ordination through rules, plans or mutual adjustment. Subsequent research examined strategy and the interactions between the external environment and the organization (Lawrence and Lorsch, 1967). Mintzberg (1983) argued that organizational design consisted of a configuration of variables. In a globally competitive market, matrix organizations and M form organizations (Bartlett and Ghoshal, 1993) enabled internationalization. Now, Anand and Daft (2007) suggest is the era of the virtual or boundary less organization. Permeable organizations provide flexibility, through processes such as outsourcing. Myriad forms of collaborative organizations and alliances emerge raising issues of linkage and the mode of governance. Before reviewing research on the structuring of networks, we reiterate that core elements of structure are tasks; unit grouping; co-ordinating mechanisms; and planning and control systems, including formalization and centralization.

2.2.2. Network structure: form and structuring

Predominantly, research has focussed on governmental
networks (Mandell, 2001; Agranoff, 2010). Compared to translational networks, such networks have different objectives and vertical forms and are frequently governed through contract. Research on translational networks in health and social care yields indicators of their effective design. McGivern and Dopson (2010) illustrated a mandated network, with a few university and clinical stakeholders co-ordinated via a network manager, reporting to a stakeholder board. Currie et al. (2013, 2014) demonstrated the complex epistemic boundaries within a translational network. Their findings illuminated the impact of factors such as antecedent conditions of the CLAHRC formation and the role of leaders, but say little concerning structures. Cunningham et al. (2012) and Ferlie et al. (2013) displayed structures with a variety of vertical levels and horizontal units and patterns of co-ordination. Ferlie et al.’s findings on eight health and social care networks suggested that network complexity is a function of the number of participant organizations, the history of prior relationships and the breadth of stakeholders’ professional and disciplinary knowledge bases. Thus embryonic research results describe translational networks as flat forms with between 4 and 90 member organizations. It suggests that the benefits of a network structural form intended to facilitate knowledge translation may be counter-balanced by the power of a professional group in an evolving network, where the efficacy of processes is not yet established. Scarbrough et al. (2014) showed that efforts to engineer a process of knowledge translation may fail because structure, management and governance are inappropriate to the task. This review demonstrates gaps in the evidence on the structure of translational networks, underlining the need for further empirical studies.

Whilst prior research on organizational design portrayed structural form as the skeleton, illuminating levels of hierarchy, and number of units, grouping and centralization, it incorporated additional important elements for example, co-ordinating mechanisms and control systems. Scarbrough et al. (2014) evaluated three CLAHRCs and three international translational networks arguing a translational network needed to have two core capabilities, ‘integrative capability’ (the ability to move back and forth between scientific evidence and practical application) and ‘relational capability’ (the ability of groups and organisations to work together). Lateral co-ordination across professional and epistemic boundaries is demonstrably as important as inter-organizational co-ordination in flat structured translational networks (Currie and White, 2012). Long et al.’s (2014) findings on promoting connectivity echoed other research, identifying geographic proximity, professional group membership and prior history of collaboration as the factors influencing effective translational processes. Extensive research (Gittell, 2009; Gittell et al., 2010) has demonstrated that lateral relational co-ordination in health care organizations leads to better clinical and efficiency outcomes. Arguably, in translational networks, with complex inter-linkages, relational co-ordination is crucial.

2.2.3. Governance of networks
The ‘superstructure’ of the whole network co-ordinates the member organizations, and may consist of several elements, including a network manager and a board. Board level governance in public health care organizations and network governance, related to centralization and control is a particularly under-researched area. Research on acute hospital boards (Ferlie et al., 1996) and a review (Chambers et al., 2013) suggested that health care boards mimic private sector boards in their functions, namely strategy making, performance monitoring and probity and accountability. But public sector boards operate in a different domain with a closer resource–dependency link to the environment and embedded in political systems.

Provan and Kenis (2008) offer well-grounded but not empirically tested models of network governance. They argued that in goal–directed, managed networks “some form of governance is necessary to ensure that participants engage in collective and mutually supportive action, that conflict is addressed, and that network resources are acquired and utilized efficiently and effectively (p. 231)”. Their three models are ‘shared’ governance where the network is governed by all the member organizations; or, governance by a single ‘lead’ organization; and finally, network members may divide governance responsibilities among various subsets of network members. The authors argued that the appropriate form of governance depends on four key contingencies: trust, size (number of participants), goal consensus, and the nature of the task (specifically, the need for network-level competencies). They projected the argument that, as the number of participants gets larger and trust becomes less densely distributed, goal consensus declines, and as the need for network-level competencies increases, brokered forms of network governance, like a lead organization, are likely to become more effective than shared-governance.

Addicott (2008) observed that the network board played a minimal role in strategy formulation. Limited evidence suggests networks are more effective when governed by inclusive boards and managed by collective executive leadership teams, but larger networks struggled with the balance between inclusivity and decision making (Ferlie et al., 2013). Ovseiko et al. (2014) examined the governance arrangements of Health Innovation and Education Clusters (HIECs) which all created a governing body and met regularly. However, decision-making processes were described as ‘passive’, lacking clarity on roles attributed to the vague mandate and the challenging nature of cross-sector working.

Summarizing, this review identifies gaps in prior research. Despite considerable growth in the development of translational networks in the health care domain, limited research has focused on the appropriate network structures to support knowledge translation. There is demonstrable ambiguity concerning the activities of ‘translation’. Network governance is the second research gap identified. Whilst models of network governance have been proposed, they have not been empirically investigated.

3. Methods
Our research question is: ‘How does the design and initiation of a translational network aimed at facilitating knowledge mobilization impact its modes of operation?’. Specifically, the objective is to describe the structure and governance of one CLAHRC over a 3 year period and to analyse how this impacted upon modes of decision-making and knowledge translation at a network and unit/project level.

3.1. Study design
Our research is a single, longitudinal case study of a translational network — a CLAHRC — in its first three years of existence. We employ retrospective analysis of archival data to analyse the case. We elected to study a single case for a number of reasons. Firstly, we were employed as social science academics within the CLAHRC in question, with a role to advise upon and evaluate knowledge translation activities. This provided an insider perspective of a CLAHRC, in contrast to the published literature to date which mainly presents external evaluations of translational networks. Secondly, this insider status provided us with access to range of meetings, written documentation, minutes and observations as members of particular network and unit level teams (Coghlan, 2003). Thirdly, the in-depth case study methodology (Yin, 2009) enabled us to track the network formation and functioning at
multiple levels, at strategic, super-structure and unit levels, longitudinally. This facilitated building a rich picture of a translational network in action, exploring the relationships between structure, governance and knowledge mobilization.

3.2. Data collection

The primary source of data is archival, documentary data relating to the first 3 years of the CLAHRC (2008–2011). Informed by key themes identified from the literature review, we developed a framework to inform data collection and analysis at distinct levels of inquiry that were relevant to the research question, namely: the CLAHRC task and strategic, network and unit levels of CLAHRC activity (see Table 1). These data were accessed through formal minutes and meeting notes, supplemented with data from the project evaluation reports, including clinical outcomes and attitudinal data from staff and patients. The authors participated in many of these meetings and observed the interchanges of staff. Ethical approval was not sought as there was a commitment to embedded learning and evaluation within the CLAHRC; the study used archival data and was conducted in accordance with university ethics requirements.

3.3. Data analysis

Applying a framework analysis (Ritchie and Spencer, 1994), the framework that was used to source data was applied to structure the analysis process. Documents were initially read to establish familiarity with the data and then reviewed, identifying and noting key points relating to the four areas of task, overall structure and unit grouping, coordinating mechanisms and planning and control systems. Annotations were added if noteworthy points relating to influences on translational networks from the literature were observed (for example, antecedent conditions, epistemic boundaries and professional power). Analysis was initially undertaken on an individual basis, without the aid of a software package. Once the first round of analysis had been completed, the authors met to discuss, compare and agree findings, including corroborating documentary data against personal observations. This led into the second stage of analysis which involved examining the relationships between structure and governance and how these impacted upon the translational tasks of the CLAHRC.

4. Empirical data and analysis

4.1. The structure of the CLAHRC

The CLAHRC was a translational network comprising one university and a total of 19 co-located NHS organizations representing primary and acute care, mental health and ambulance services. It was funded for 5 years from October 2008 to 2013 and focused on improving cardiovascular health in the local population. Funding was provided from two sources: the Department of Health National Institute for Health Research and from the 10 primary care organizations that were part of the network.

The structure of the CLAHRC is set out in Fig. 1. This illustrates that there was a flat structure, but within the superstructure there were separate Divisions and strands of activity (entitled in the network structure as ‘Research’ and ‘Implementation’), led and managed by different individuals. These titles reflected the bidders’ interpretation of the funding brief. This reinforced the separation between groups of academics within the university involved in the Research Division (mostly from a clinical/health services research background) and clinicians, management and social science academics within the Implementation Division. These two Divisions largely worked in parallel but separately, with the Research teams undertaking applied research to ‘produce’ evidence and the Implementation teams concerned with ‘implementing’ research evidence into healthcare service delivery and researching the process. Thus, the Implementation teams became the main point of connection between the university and NHS stakeholders. At the outset the plan was that translation activity would focus on supporting NHS stakeholders to apply existing evidence on cardiovascular health, switching mid-way through the life of the CLAHRC, to focus on translating new research evidence produced by the Research teams.

Within the network ‘superstructure’, at the unit level this article focuses solely on project teams in the Implementation division, reflecting the fact that these teams were the interface with practitioners and held the remit of knowledge translation. All four Implementation teams had similar multi-disciplinary membership, comprising a lead clinician in the relevant specialist area (as the designated project leader), a social scientist as an ‘Academic Lead’, a programme manager (responsible for project management), two individuals in knowledge broker roles (the regular point of contact

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<th>Table 1</th>
<th>Levels of inquiry and data sources.</th>
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<td>Core elements of network structure</td>
<td>Issues of interest</td>
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<td>Task</td>
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<td>Clarity of goals; level of consensus</td>
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<td>Conceptualisations of knowledge and knowledge translation</td>
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<td>How impacted by structure governance</td>
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<td>Overall structure &amp; unit grouping</td>
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<td>What structure and how organized</td>
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<td>Engagement in knowledge translation — processes and outcomes</td>
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<td>Leadership and management</td>
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<td>Decision-making and communication</td>
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<td>Planning and control systems</td>
<td>Governance</td>
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<td>Board structure, role and functioning</td>
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<td>Leadership and management</td>
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between the translational project and NHS staff and organizations participating in projects) and an information analyst. The knowledge brokers’ core tasks involved daily contact with practitioners, communicating evidence in a user-friendly way, supporting and facilitating groups. Knowledge brokers were trained by their clinical and social science colleagues. The concept of a multidisciplinary team was to incorporate clinical expertise to assess research evidence and provide credibility to NHS stakeholders, alongside social science knowledge on the processes and established systems of health care change and improvement, backed by project management and data analysis skills.

4.2. Network governance: planning and control systems

The CLAHRC board comprised representatives of all the 20 stakeholder organizations, including the CLAHRC executive team plus additional co-opted members (Fig. 1). The Board was chaired by the Chief Executive of one of the primary care partner organizations and met on a quarterly basis. The evidence illustrated that the CLAHRC experienced several issues in defining its role and governance. Board attendance by NHS partners was low, sporadic and inconsistent. A quarter of the meetings following the establishment of the CLAHRC were not quorate. Only 5 of the 10 primary care organizations providing financial support were present at six or more of the 15 board meetings; one primary care organization sent no representative to any board meetings. Member organizations’ representatives varied, for example, only one primary care organization was represented by the same person at all board meetings. In the remaining organizations, between 2 and 5 different people attended board meetings. Given their financial investment in the network, this pattern of participation in board meetings raises questions about their level of engagement in and commitment to the CLAHRC at a strategic level. Analysis of decision making suggested a lack of clarity around the board’s role and revealed differing priorities amongst network members, particularly in relation to the CLAHRC’s core purpose. From the commencement, members questioned how the work programme had been decided. Topic selection appeared to have been driven by existing university research strengths with limited NHS stakeholder engagement at this design stage. But, the meeting was informed that with funding approved, the planned work programme could not change. Tension between research-led priorities and local, service focused priorities was an ongoing feature of discussions. NHS stakeholders focused on linking the CLAHRC activity to service improvements and sought to produce concrete performance metrics. University partners primarily focussed on securing academic credit for their work and enhancing patient recruitment to trials. Evidentially, NHS stakeholders conceptualized knowledge translation as matching research evidence to local priorities for service improvement, whilst university board members perceived knowledge translation as research-driven, with researchers generating ‘evidence’ which would subsequently and automatically, be accepted and implemented within health care. Opportunities for co-production of research were inhibited by the structure of the CLAHRC. The Research division pursued a predetermined programme of work and their main contact with NHS stakeholders was as a research setting and to recruit participants. Without facilitated communication, any research objectives identified by NHS stakeholders could not be incorporated into the research programme.

Over time, some primary care stakeholders withdrew their financial support to the CLAHRC; by mid-2011 half the organizations had withdrawn funding. The data indicated that the reasons for withdrawal predominantly related to the economic downturn, alongside policy changes signalling radical restructuring of primary care organizations from April 2013. A perceived lack of engagement and involvement in the strategic planning and control mechanisms of the translational network contributed. Some organizations who withdrew funding had raised issues at board meetings relating to the progression of work and a lack of focus on knowledge translation.

Overall, the analysis demonstrated limited evidence of a goal-oriented approach to network governance. Whilst attempts were made to generate stakeholder inclusivity, no strategy to address deficits was developed. Though the structure was malleable, the board and senior management did not revise it.
4.3. Coordinating mechanisms: decision-making and communication

As Table 1 indicates, two regular decision-making forums existed at the whole network level. Membership of these groups reflected the division between the Research and Implementation divisions in the CLAHRC and highlighted a separation of the clinical leaders of the Implementation teams from the social scientists whose role was to advise on knowledge translation from an empirical and theoretical perspective. Some additional meetings occurred, for example, the clinical and research leads met as separate groups. On rare occasions, joint meetings were set up between different groupings, such as the clinical and academic leads, usually in response to a request from staff to improve understanding, information sharing and joint working. These joint meetings were organised on a reactive, ad hoc basis and were not an integral part of CLAHRC processes. So, opportunities to bridge disciplinary boundaries between groups such as clinicians and social scientists were lost.

In effect, the internal decision-making and communication processes meant that different groups of people working within the network met in a series of parallel meetings, with the CLAHRC senior managers acting as the main points of coordination and communication. This method of organizing led to several issues, including bottlenecks at the senior level and misunderstandings and lack of clarity on roles, responsibilities and the respective contributions of Research and Implementation divisions. It meant that there was little opportunity to develop mutual understanding which would have enhanced internal knowledge translation. Post establishment, difficulties in integrating the Research and Implementation divisions were recognised; for example, some research teams challenged the implementation model that the Implementation teams adopted, including the utilization of knowledge broker roles. However, the Research and Implementation divisions continued to operate as vertical silos and the systems and processes for communication were not amended, minimizing opportunities to resolve differences of opinion. Another missed opportunity arose when, by chance, it was revealed that two Implementation teams had separately developed context assessment processes, which had not been shared with other teams. In a relatively flat network, with a structural split between the activities of Research and Implementation and a requirement for communication between CLAHRC personnel and multiple network stakeholders, the necessity for facilitated lateral communication was paramount.

4.4. Unit activity: understanding knowledge mobilization in practice

Our analysis of unit level activity within the network focuses on two project teams within the Implementation division of the CLAHRC. These were projects relating to diabetes and kidney disease of which the authors had the most direct knowledge. The same disciplinary boundaries were applied in all four Implementation teams. The primary care stakeholder engaged and the clinical leads of implementation projects provided credibility and were influential in selecting the evidence underpinning projects. In the initiation stages, negotiations with senior primary care leaders culminated in agreed support for the project focus and a plan for engaging patients and staff, including general practitioners, nurses and administrative staff. These initial, higher-level negotiations typically involved CLAHRC senior managers, the clinical leaders and project managers; at the local unit level, the knowledge brokers played a central role in presenting the proposed project to clinical professionals and general practice teams and securing (and maintaining) their involvement. These early processes of contracting and agreeing were more protracted than anticipated and involved a collaborative negotiation of the CLAHRC agenda as against local agendas.

Once project frameworks were agreed, the focus shifted towards developing practices, tailored according to stakeholders’ needs and the local political context. Negotiation and, occasionally, persuasion were crucial to gaining and maintaining partners’ engagement and commitment to projects. Fundamentally, the work of the Implementation teams involved linking people, research and concepts and helping people to apply these to their individual context by packaging evidence in a user-friendly way. A proportion of this work included capacity building, sustaining and embedding new ways of working and research. Table 2 summarizes the two projects studied, including evaluation data that illustrated project achievements in relation to knowledge translation and promoting evidence utilization in practice. By applying processes of stakeholder engagement, negotiation and facilitation and providing practical support for translation at a local level, the projects demonstrated evidence-based improvements in practice and patient care. It was observed that Implementation teams gave precedence to communication and co-ordination activities with practitioner partners over internal communication with other teams. Consequently, there was a lack of detailed knowledge sharing about individual projects and outcomes, within the CLAHRC super-structure and across the network organization members. Within teams, there was clear evidence that outward-facing knowledge mobilization was prioritized.

4.5. Network task: clarity of goals and purpose

Clarity and agreement around the core task of a translational network remained elusive throughout the first 3 years of the network. From a university perspective at board level, the network task was research-driven and reflected a researcher-led, ‘push’ model of knowledge translation. From a stakeholder perspective, a more situates and engaged conceptualization of knowledge translation was apparent, with the network task centred on service improvement and delivering local policy imperatives. Similar differences were observed between the Research and Implementation teams within the CLAHRC super-structure. Divergent views persisted and were supported by the structural division between the teams and separate lines of coordination and communication. These disparities in interpreting the core task and goals of the network were not reconciled, though mechanisms to resolve differences might have been established.

5. Conclusions: theory and policy

In concluding, we put forward policy and theoretical contributions.

5.1. The issue of network achievements

Despite the achievements of individual units, we question...
whether this translational network has achieved more than the sum of its parts. This large scale translational network, novel in its inception and with complex professional groupings nevertheless had a representative ‘shared’ board. To be effective, the network structure has to facilitate knowledge translation. Local success criteria for ‘knowledge translation’ need to be debated and identified. In devising appropriate governance arrangements, the scale of the network and the variety of participant organizations should be considered. It is questionable whether shared boards are suited to large scale networks. Such a network requires a clear directional strategy to facilitate knowledge translation within and across the network participants. Finally, in a novel organization with an ambiguous mandate, there will need to be an iterative process of strategy making and review.

5.2. Structural form and network governance

The initial structural design of the CLAHRC did not facilitate its function of knowledge translation. Overall, the flat super-structure relating to multiple organizational participants presented extreme challenges to lateral communication. The internal division in the network super-structure between the Research and Implementation divisions with separate systems of accountability was not facilitative of intra-network knowledge translation. Though the structure, its form and process were malleable, the senior management did not instigate refinements. The units in the Implementation division of the super-structure had strengths and weaknesses. The units consisted of an internally, co-supportive group with a strong cross-disciplinary base and outward looking.

So they were effective in building ‘integrative capability’ with member organizations (Scarborough et al., 2014). But they were far less suited to internal, relational capability. The lateral links across the network needed facilitation and directed mechanisms for knowledge sharing and translation. Few mechanisms were implemented and there was no board direction on cross-organizational knowledge translation. Over the years, the board did not re-evaluate the impact of this structure, though the structure was evidently a mismatch to the function.

The mode of governance, the composition and the processes of operation of the network board were flawed. Our data empirically support Provan and Kenis’ (2008) proposition that ‘shared’ governance is not well suited to a large, complex network. The tensions between inclusivity of multiple stakeholders and effective decision making processes are evident. Ferlie et al. (2013) illustrated differing models of network governance, for example, cancer network boards with fewer stakeholders developed a strategy which was then successfully enacted by a cohesive but diverse, collective leadership. An alternative two-tier model was presented in the complex ‘care of older people’ networks. This model had a higher tier, ‘representative’ body of stakeholders, with a second tier decision-making body. This approach demonstrated similar problems to the present case here, since the ‘representative’ body complained of restricted influence. The policy imperative to form translational networks sets a broad framework, but this case evidences that considerable care and sustained effort is required to produce an effective form of structure and governance.

Using the cumulative evidence, one begins to distinguish the determinants of success in a translational network. It is evident that

Table 2
Summary of two implementation projects.

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<tr>
<th>Project focus</th>
<th>CLAHRC actors</th>
<th>NHS stakeholders</th>
<th>Knowledge mobilization processes</th>
<th>Outcomes</th>
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<tr>
<td>Project 1: Identification and management of chronic kidney disease (CKD) in primary care</td>
<td>Kidney consultant; 2 knowledge brokers; Academic lead (social scientist/adviser on implementation); Programme manager; Information analyst</td>
<td>4 primary care organizations; 30 GP practices</td>
<td>Topic selection: Informed by a national clinical guideline. Expert stakeholder group agreed aims and measures for the project. Negotiating access and involvement: Negotiation with primary care leads to recruit GP practices to participate. Implementation approach: Structured improvement collaborative, with tailored, practice level support and active facilitation by the knowledge brokers, supported by the wider project team. Combination of large learning and networking events and practice level action periods, facilitated by knowledge brokers. Monthly feedback on progress. Learning from project collated into CKD improvement guide.</td>
<td>Improved case finding: participating practices recorded an increase of 30% (n = 1863) of patients with CKD on their practice registers. Improved management of blood pressure: from 34 to 74% of patients meeting recommended targets in the 1st project and from 58 to 83% in the 2nd.</td>
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<td>Project 2: Behaviour change in people with impaired glucose tolerance (IGT)</td>
<td>Diabetes consultant; 2 knowledge brokers; Academic lead (social scientist/adviser on implementation); Programme manager; Information analyst</td>
<td>2 primary care organizations; Patients with IGT recruited from 15 GP practices</td>
<td>Topic selection: Informed by existing research on the benefits of behaviour change interventions for people with IGT. Negotiating access and involvement: Discussions with key primary care stakeholders to agree evaluated trials of the way to implement the evidence in their context. Implementation approach: 2 translation approaches developed to fit with local models of care delivery and existing health improvement programmes. One involved face-to-face provision of lifestyle advice via a health trainer; the other a telephone based support service, run by trained health advisors. Presentations to boards; circulars to GPs to refer patients to the services; small negotiation meetings with health trainers and telephone advisors; developing collaborative agreements with nurse supervisors.</td>
<td>Both services resulted in improvements to oral glucose tolerance tests, 2 h plasma glucose and weight. In the telephone intervention, 47.3% of participants achieved both normal fasting plasma glucose and normal plasma glucose levels and had a mean weight loss of 3.3 kg. In the face-to-face intervention, 46.3% achieved normal plasma glucose and a mean weight loss of 2.9 kg.</td>
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the policy of setting up networks is insufficient, of itself to produce positive translational activity. Yet many health systems are establishing translational networks de novo without utilizing the evidence on networks, governance and knowledge translation, which would lead to greater clarity in design. Currie et al. (2013) and Lockett et al.’s (2014) findings demonstrated the importance of the social position of senior CLAHRC managers and the antecedent conditions. Scarbrough et al. (2014) highlighted the necessity of social position of senior CLAHRC managers and the antecedent conditions of the terms knowledge across the themes and across the disciplines.

Whilst re-balancing mechanisms were possible, these were not put in place. The board had no directed strategy of knowledge translation and mobilization. In our case, the structure did not facilitate internal lateral co-ordination or knowledge translation and tended to restrict communication flows with member organizations. Whilst re-balancing mechanisms were possible, these were not put in place. The board had no directed strategy of knowledge translation or spread, thus the network did not exploit the collective knowledge across the themes and across the disciplines.

5.3. Processes of knowledge mobilization

Relating our findings to theory, we initiate an explicit discussion of the terms ‘knowledge translation’ and ‘knowledge mobilisation’. To date, much of the literature on knowledge translation discusses the transfer of research-based evidence between researchers, frequently perceived as the ‘producers’ of evidence and the practitioners and the situating of these research findings within a specific organizational context (Greenhalgh and Wieringa, 2011; Oborn et al., 2013). But this does not always embrace the utilization of the evidence in practice (Perlie et al., 2012) and it is the inclusion of this additional process which we term ‘knowledge mobilisation’. We make a contribution by distinguishing the negotiated dimension of the knowledge mobilization process. Szulanski (2003) sets out the conditions for successful internal transfer of ‘best practice’. Our work has a broader scope across and within the network, including the macro, meso and micro levels of operation and the boundaries within and across the constituent parts of academia and health care and focuses equally on inter-organizational and intra-network knowledge mobilization. We observe that mobilization occurs through a co-directed strategy, involving both academics and practitioners. The data show that the knowledge in use has to be credible and the evidence base has to be debated. Beyond this, choices frequently exist about which evidence base to use and when, so the mobilization of evidence has to be negotiated against organizational priorities. Thus we see a process of knowledge mobilization produced via negotiation, which we argue is a particular form of collaboration for action. Research evidence must be shared, but knowledge does not ‘flow’ automatically. We suggest that progressing from knowledge translation to knowledge mobilization involves the negotiated utilization of knowledge. Our data underline the consistent theme of negotiation – a balanced power form of collaboration. Our findings extend beyond the conditions for knowledge transfer and translation identified by Szulanski. He does not stress the interactive and negotiable processes which we observed. To move beyond translation to utilization requires a jointly negotiated process of inter-relationships, which situates knowledge within the specifics of an organizational reality.

Translating research into improved health outcomes focusses effort externally — the ‘integrative capability’ described by Scarbrough et al. (2014) — our data reinforce Currie et al.’s (2014) findings of the internal contestation within a CLAHRC and underline the crucial significance of internal knowledge mobilization to achieve collaborative activity. To achieve the core tasks of the CLAHRC networks, the internal barriers within academia must be actively negotiated since historically inter-disciplinary activity has been rare. Prior research (Long et al., 2014; Currie and White, 2012) indicates the influence of prior relationships. Current academic incentives, metrics and career structures typically inhibit working across faculties in universities.

One limitation of this study is that it is based on a single case which draws largely on selected archival data that may not represent a complete picture of events in the entire network; so this research needs broader comparison. As the case is a novel translational network, the skills of network operation and governance may not yet have been acquired. So longitudinal research designs and studies of comparative network functioning are required. A future research agenda should include examining translational networks with different structural forms, comparing these to networks pursuing other functions. Research is needed to empirically test differing models of governance in translational networks, e.g. exploring the advantages and disadvantages of agency models of governance.

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