

## **Facing the challenges of research-informed knowledge mobilization: 'Practising what we preach'?**

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## **Facing the challenges of research-informed knowledge mobilization: 'Practising what we preach'?**

### **Abstract**

The political imperative to make public services more evidence-based has contributed to the growth in the past two decades of both research and practice in the field of knowledge mobilization: the range of active approaches to encourage the creation, sharing and use of research-informed knowledge alongside other forms of knowledge. Paradoxically the growth of the field has made the challenge of encouraging research use much more complex and uncertain, and the roles of knowledge mobilizers much more diverse and demanding. This in-depth interview study of knowledge mobilization in 51 agencies concerned with knowledge for public services breaks new ground in exploring the paradox at the heart of knowledge mobilization practice: the challenges that research agencies face in practising in research-informed ways themselves.

### **Introduction**

Twenty-first century public services need to mobilize knowledge and to do so quickly. As the complex technological, demographic and economic challenges they face multiply and become more acute, so too does the need to bring a range of types of knowledge to bear in addressing these challenges: combining political, cultural and contextual awareness with theoretical knowledge, empirical knowledge from research and the experiential knowledge of practitioners, service users, policy-makers and citizens. The political imperative in the past two decades to base the organization and delivery of public services more firmly on 'evidence' (Nutley *et al.* 2007) together with the more recent and growing requirement for researchers across all disciplines to demonstrate 'impact' from their research (Fazey *et al.* 2014; Pardoe 2014) have drawn greater research and policy attention towards the processes by which research can inform practice in public service sectors including education, criminal justice and health and social care. A range of initiatives, agencies and

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roles have emerged that are intended to increase the use of research in policy and practice (Cooksey 2006; Marshall *et al.* 2014; Heaton *et al.* 2016) and to address the ‘wicked problems’ faced in public services through new organizational forms like networks that have been suggested as better suited to collaboration and knowledge sharing (Ferlie *et al.* 2011).

One sector in which the need to encourage greater coherence between knowledge and practice is particularly acute is health and social care and yet despite this urgency, progress towards this goal has been slow (Wood *et al.* 1998; Graham *et al.* 2007; Salter and Kothari 2016). Although there is much that is not yet known about how best to deliver safe and effective health care in complex systems, there is much that *is* known but is not yet being consistently or appropriately applied. Health and social care labour under the persistent use of unwarranted and outmoded therapeutic and organizational approaches, wasting human and financial resources in suboptimal, inefficient systems.

The growing science of ‘knowledge use’ in organizations helps to explain this picture, showing how knowledge flows (or gets stuck), why these challenges arise and what may help to address them (e.g. Best and Holmes 2010; Contandriopoulos *et al.* 2010; Greenhalgh and Wieringa 2011; Ferlie *et al.* 2012; Pardoe 2014). Knowledge creation and use emerge as relational and political processes (Nicolini *et al.* 2008; Ferlie *et al.* 2012; Oborn *et al.* 2013; The LSE GV314 Group 2014). Knowledge is ‘sticky’ at organizational boundaries (Nicolini *et al.* 2008; Ferlie *et al.* 2009; Currie and White 2012; Powell and Davies 2012; Oborn *et al.* 2013) and more formal research knowledge competes with informal knowledge (Ferlie *et al.* 2009; Gabbay and le May 2011). In turn, behaviour and decision-making by individuals and groups are not wholly rational processes but are subject to a range of contextual, personal and interpersonal influences (Bate *et al.* 2012). It follows that effective initiatives aimed at increasing the use of research and other forms of knowledge in health care practice will also be relational and contextually sensitive (Davies *et al.* 2008; Rycroft-Malone 2014; Jackson and Greenhalgh 2015).

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In this study, we were interested in the extent to which the new theories and ways of thinking about knowledge use were feeding into the knowledge mobilization practices of one group of key players in the research and practice landscape: key research producers, major research funders and significant research intermediaries like policy organizations and think tanks.

Examples of such agencies in the UK NHS include the Collaborations for Leadership in Applied Health Research and Care (CLAHRCs) which bring together health service and research organizations, while cross-sector organizations in the UK include the Economic and Social Research Council and the Alliance for Useful Evidence. Outside the UK, examples include the Institute for Healthcare Improvement in the US, the Canadian Institutes of Health Research and the Sax Institute in Australia. These agencies potentially have a range of key roles in supporting knowledge mobilization (Holmes *et al.* 2012). Our assumption was that it was likely that these agencies would be drawing on the new ways of thinking about knowledge use in developing their own knowledge mobilization practices for three main reasons. Firstly, these new ways of thinking are not that 'new': the literature on knowledge use has grown considerably over a period of around two decades (Ferlie *et al.* 2012). Secondly, these agencies all have an explicit (or heavily implicit) role in encouraging research use in policy and practice settings; it is therefore reasonable to expect that one of the forms of research that they would be seeking to mobilize would be the research on research use itself. Thirdly, many of these agencies (e.g. the CLAHRCs and the Economic and Social Research Council) are themselves active contributors to the research literature on knowledge mobilization.

We focused on this group of players in the knowledge mobilization field because they are potentially highly influential and yet to date there has been relatively little empirical work focusing on organizations at this level. Exceptions include an interview study conducted in 2003-4 of 33 health research funding agencies from seven countries (Tetroe *et al.* 2008) which concluded that much knowledge mobilization activity was ad hoc and arose out of a range of diverse factors including the face validity of particular interventions, local expertise

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and resources and stakeholder interests. Later work (Smits and Denis 2014) found that health research funding agencies struggled to sustain 'linkage and exchange' approaches and were not able to consider the more effective systems approaches. Both studies showed considerable variation between agencies. A recent study of 44 research brokering organizations in Canada (Cooper 2014) similarly found considerable diversity and a marked emphasis on a traditional approach based on research products. In addition, external evaluations of the UK CLAHRCs programme (Kislov and Boaden 2015) highlight significant difficulties in collaborative working around research use. What the (relatively sparse) empirical research has shown therefore is that research agencies working in the knowledge mobilization field struggle to work in research-informed ways themselves. We wanted to examine this interesting paradox in more depth; our research aim was to assess whether and how the knowledge mobilization approaches used by research agencies are informed by the growing knowledge mobilization research literature.

The issues that we explore are relevant both to public sectors like health and social care, education and criminal justice and to the knowledge mobilization field as a whole. That is, they can shed light on the challenges that agencies face in bringing new understandings about the nature of knowledge and knowledge mobilization to their own knowledge mobilization approaches and activities.

The paper is structured as follows. Firstly, we summarise the state of the knowledge mobilization literature as it relates to research agencies at this level. After describing our methods, we present interview data on the ways in which research agencies were responding to this literature and the challenges they faced. In the discussion section, we reflect on the relationship of the findings to the existing literature and on the implications of our findings for future research and practice in knowledge mobilization.

## **Background: what does the knowledge mobilization literature say about facilitating research use in health care organizations?**

The literature on knowledge mobilization in health care has grown substantially over the past two decades. Research in a range of fields like implementation science and organizational theory has contributed insights into effective practice change (Fazey *et al.* 2014). New terms to encapsulate knowledge use strategies have been coined and debated (e.g. Graham *et al.* 2007; Davies *et al.* 2008) including knowledge translation, knowledge exchange, knowledge transfer and knowledge mobilization (the umbrella term we use in this paper for the range of active approaches to encourage the creation, sharing and use of research-informed knowledge alongside other forms of knowledge). A plethora of new models and frameworks to describe the knowledge mobilization process have been developed (Graham *et al.* 2007; Davies *et al.* 2008; Ward *et al.* 2009; Nilsen 2015), while existing theories from cognate fields have been re-examined to explore their relevance and utility to understanding research utilisation (Oborn *et al.* 2013).

The limitations of the knowledge mobilization literature - for example the limited number of empirical studies on major models and frameworks and on approaches in use - have been widely discussed (e.g. Ferlie *et al.* 2012). However, our own review of major reviews published in the period 2000-2015 (Davies *et al.* 2015) and our survey work with research agencies (Powell *et al.* 2016) showed that there are a growing number of key principles, underpinned by research evidence and finding widespread support, that can be used to inform the development of knowledge mobilization activities.

First, there has been a growing shift since 2000 in the health sector and general management literatures towards more *relational approaches* to knowledge sharing (Ferlie *et al.* 2012): knowledge is seen as being constructed from social interaction and negotiation and is therefore value laden, dynamic and contested (Davies *et al.* 2008; Marshall 2014). Encouraging research use thus depends on fostering interaction, on networks and

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collaboration and on ‘co-production’ of knowledge (Bowen and Graham 2013; Rycroft-Malone 2014).

Second, the knowledge use literature increasingly emphasizes that many types of knowledge are not universal but instead are *inextricably bound to their context* (Currie and White 2012; Oborn *et al.* 2013). Knowledge mobilization interventions therefore need to enable knowledge to be adapted and integrated into the local setting with its particular networks, resources and constraints (Harvey *et al.* 2011). There is thus a growing interest in broader, multi-level ‘systems approaches’ to knowledge mobilization which recognize that local relationships and processes are embedded in larger organizational and social structures (Best *et al.* 2009; Riley 2012; Willis *et al.* 2014; Riley *et al.* 2015; Holmes *et al.* 2016). The challenge for knowledge mobilizers then increases, and the lack of operational models and robust case examples is keenly felt (Best and Holmes 2010; Willis *et al.* 2014; Holmes *et al.* 2016).

Third, it is increasingly recognized that research-based knowledge does not occupy a privileged dominant position (Nicolini *et al.* 2008; Contandriopoulos *et al.* 2010; Gabbay and le May 2011; Oborn *et al.* 2013). Instead *research exists alongside and competes with other ways of knowing* (e.g. the tacit knowledge of health professionals or the knowledge and experience of patients and carers (Glasby *et al.* 2007)). Hence, addressing a service problem requires synthesizing and integrating these different types of knowledge (Bowen and Graham 2013). Applying these arguments reflexively, so too do knowledge mobilization approaches need to be informed by different types of knowledge (Glasby *et al.* 2007; Harvey *et al.* 2011): theoretical knowledge about knowledge mobilization, empirical and experiential evidence about knowledge mobilization interventions and a deep understanding of local context.

Fourth, *the principle of evaluation* is well established in the knowledge mobilization theoretical literature (Ward *et al.* 2009). However, research agencies face two major

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challenges: firstly, the very limited empirical evidence base for many common knowledge mobilization interventions (Tetroe *et al.* 2008; Ward *et al.* 2009; Pentland *et al.* 2011; Oborn *et al.* 2013), including deliberative dialogues (Boyko *et al.* 2012), partnership approaches (Mitchell *et al.* 2009; Greenhalgh and Wieringa 2011) and knowledge brokers (Chew *et al.* 2013; Sebba 2013). Secondly, key aspects of knowledge mobilization practice, like how to measure 'real world' knowledge use (Banzi *et al.* 2011; Barnes *et al.* 2015), are still at an early stage of development. Knowledge mobilization practice by research agencies is therefore necessarily exploratory and experiential, but it is not straightforward to test and evaluate these approaches.

To sum up, the developments in the knowledge use literature in the past two decades have provided many applicable insights but have also increased the challenges facing research agencies in applying these insights in context. Furthermore the issues outlined above arise not in isolation but combine with each other with different emphases depending on the particular setting. Our study aimed to explore whether and how individuals in knowledge mobilization roles in research agencies were engaging with and deploying these ideas in planning and carrying out their knowledge mobilization activities.

## Methods

We conducted semi-structured interviews in 2013-4 with individuals engaged in knowledge mobilization at 51 research agencies (key research funders, major research producers and significant research intermediaries like research collation agencies and think tanks) (Box A).

We focused primarily on health research agencies in the UK and the main English-speaking countries/regions known to be active in knowledge mobilization (Canada, the US, Australia, New Zealand, Norway and the Netherlands). To gain further insights into knowledge mobilization in the UK context we also included cross-sector research agencies, social care agencies (which increasingly work in tandem with health care) and education agencies (which share similar political and other contextual challenges).

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We purposively sampled agencies that were most likely to be exhibiting the phenomenon of interest (Silverman 2000): in our case, those agencies that were actively grappling with the challenges of developing research-informed knowledge mobilization programmes around the research that they funded or carried out or sought to share with policy-makers and practitioners.

We created our sample by reviewing websites, through an iterative process of consulting a panel of expert reviewers ( $n=20$ ) drawn from all of our sectors and countries of interest, and by posting the emerging list to two email discussion lists with 550 and 200 subscribers respectively. We were looking for research agencies that were *major* players in terms of the scale or degree of innovation of their knowledge mobilization work. Our criteria for determining what constituted ‘major’ were necessarily ‘broad brush’ because this mapping exercise was the first of its kind. We therefore sought from the reviewers and from email list subscribers not consensus but instead a pragmatic assessment of whether we had included the ‘main players’. At the end of this iterative process we had a list of 55 agencies. We then emailed a study invitation to a named individual known to have a particular responsibility for knowledge mobilization in each of these agencies, with a request for an alternative or additional colleague if appropriate.

Four agencies declined to participate or did not respond, leaving 51 agencies (Box A). Health care agencies formed the largest group (31): UK (13), Canada (7), US (6), Australasia (3), continental Europe (2). The other agencies from the UK comprised nine cross-sector agencies, six from social care and five from education. In total we conducted 52 interviews with 57 individuals from the 51 research agencies. To protect the anonymity of participants we do not list individual job titles, but the people we interviewed were senior post-holders with job titles such as head of knowledge services, implementation lead and senior manager for knowledge exchange.

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The semi-structured interviews were based around a topic guide (Box B) and were taped and transcribed. The majority were conducted by phone and lasted from 30-60 minutes. The main topics covered (sent to participants in advance) included: the development of the knowledge mobilization approaches used; any models and frameworks used from the literature; formal or informal evaluations; and formative learning or practical experience.

Interviews were conducted and analysed by all three authors; additional assistance with 13 interviews came from an experienced research assistant. Data were analysed thematically using a combination of inductive and deductive analysis: following initial review of the data to draw up a preliminary framework of emergent themes around the development of knowledge mobilization approaches by the agencies, that initial framework was augmented and adapted with reference to the main themes underpinning the topic guide and to the key themes from the research literature described in the background section. We used three mechanisms to ensure robustness of data analysis: the involvement of all three research team members in data analysis; close engagement with the study's international advisory board of experts (n=8); and three stakeholder workshops (n=21, 31 and 36) held at different time points in the study to explore the emerging study findings. For anonymity, we allocated each agency a number; these numbers are used to label verbatim quotations in this paper. The study was approved by the University Teaching and Research Ethics Committee at the University of St Andrews.

## Results

A strong theme that emerged from our interviews was that there was a spectrum of engagement with the literature. Around half of our sample explicitly referred to drawing on models or theories from the literature. Around half of these interviewees named specific models that they used to structure their activities (e.g. the knowledge to action framework (Graham *et al.* 2006), the PARIHS framework (Kitson *et al.* 1998)) and one agency described how they had deliberately used the ideas of key thinkers (e.g. Lomas 2000, Best

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et al. 2009) to challenge the dominant ‘linear’ model of knowledge exchange in the public health sector and to encourage a more relational approach to sharing knowledge. In addition, some agencies had commissioned support from academic researchers to review the literature and make recommendations or had been influenced by key individuals in the field with whom they had worked. Other agencies had reviewed the literature themselves and had selected a combination of models that made most sense to them and to their service partners; several expressed the view that no one model was adequate and that a combination of models was therefore essential.

Around a quarter of the agencies we interviewed had developed their own models to guide their knowledge mobilization programmes. Many of these agencies described how they had struggled with the existing models and had found them hard to translate into practical action or inappropriate to the agency’s size or objectives: *‘I just found it [the knowledge mobilisation literature] utterly theoretical and just not useful in offering suggestions about how you would actually do this.’* (41). One interviewee noted that the existing literature was less relevant to their agency: *‘There’s not very much about what to do if you’re a national organization and you’re putting information out into the system to make it work.’* (40). Developing a bespoke model was also challenging: finding an approach which was acceptable and feasible to the NHS practitioners often required several iterations.

Some agencies were not using specific models but were drawing conceptually on the literature (e.g. Nutley et al 2007) to underpin their knowledge mobilization activities: *‘We’ve got in our head how to cook translational cake ... and we pull it in, but not necessarily as a recipe, it is just an underpinning kind of set of skills and orientation.’* (24). As another interviewee explained, *‘The philosophy of co-production has underpinned everything ...not just in implementation improvement work but in the research as well.’* (23). Among the theories that interviewees referred to were systems theory, organizational change theories and theories from political science. The choice of theory was often related to the individual’s disciplinary background, the agency’s history or the service setting with which the agency

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worked. At times it was driven, as in this case, by the individual's sense of what was useful:

*'I think understanding complexity in health systems... is just so key, because it moves you beyond a linear progression of health research evidence into practice, you know, this step and that step and then the next step.'* (34). In contrast, several interviewees sought to play down the place of theory in their agency's work and to emphasize the use of informal heuristics instead: *'It's much more just a pragmatic [guide]: what would a healthy ecosystem look like in a given set of political jurisdictions?'* (36).

Some interviewees struggled to name any theories on which their knowledge mobilization work was based, but described initiatives (e.g. the use of benchmarking and peer pressure to encourage adoption of research-informed practice) which appeared to have *implicit* underlying theories. We also observed gaps between documented practice (what appeared on an agency's website as an account of their underpinning theory or model) and what interviewees described. One interviewee commented that there was a contradiction between the agency's explicit rejection of the traditional linear model of knowledge mobilization and the ways that their actual activities were designed and carried out.

In sum, explicit engagement with the literature as described by interviewees was a mixed picture: for some agencies (around half of those we spoke to), there was close and explicit engagement with models, theories and frameworks from the literature while for others, the links between their knowledge mobilization programmes and the literature were more tangential and more diffuse. Although around three quarters of the agencies in our sample did describe a range of ways that they were influenced by the literature, for the remainder, other factors had a stronger influence on their work. These included the experience or disciplinary orientation of key individuals in knowledge mobilization roles, objectives set by key stakeholders and changes in the service sector. For a handful of interviewees, the practical experience of others working in the knowledge mobilization field was a strong driver: *'I'm not that focused on, you know, rigorous scientific research, I think we should have more of an experience-based knowledge base'* (27). However, actively drawing on

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practical experience in a sustained way was not widespread: we note below the limited role that documented experience played in the design of knowledge mobilization activities in the majority of agencies.

Having explored what agencies told us about their explicit orientations, we turn now to consider the extent to which we could discern the influence of the new ways of thinking about knowledge mobilization in the activities that agencies described. To recap, the past two decades of the literature have seen a move away from the traditional linear approaches to dissemination towards a more social and interactive approach towards encouraging research use. This emphasizes four key principles: the need to foster and sustain relationships between researchers and research users over time (Kothari and Wathen 2013); the need to pay attention to the research users' context (Evans and Scarbrough 2014; Squires *et al.* 2015); the need to integrate different kinds of knowledge alongside knowledge from research; and the need to test and evaluate knowledge mobilization interventions in use.

We could see the influence of the first three of these principles (to varying extents in different agencies) in the activities that interviewees described. Although we drew our sample from the 'top end' of knowledge mobilizing research agencies, the agencies were heterogeneous in size, age, organizational history and resources. Nevertheless, there was a strong emphasis on, or at least a strong understanding of the need for, relational approaches. Addressing the deficiencies of the traditional linear approaches to research use, which assume an unproblematic and apolitical approach to 'knowledge' and embody sharp distinctions between research producers and research users, relational approaches seek to develop knowledge in ways that recognize its fluid nature and that blur these unhelpful distinctions.

Many agencies were therefore increasingly involving research users throughout the research process, enabling different perspectives to be shared and prompting richer discussions with

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research users about how the research base might contribute to addressing policy and practice changes. These interviewees often recognized that the investment of time and other resources could lead to a range of benefits in encouraging research use: '*You're building a kind of a sea of champions*' (33).

Agencies used a range of approaches including facilitating networks, developing regular meetings of researchers and practitioners to discuss practice challenges, supporting peer to peer introductions and setting up fellowships and secondments. Agencies also contributed to teaching programmes to equip practitioners to use research in their professional practice.

Many funding agencies included research users on their assessment panels. Some agencies had broadened their knowledge mobilization activities to engage with research users at multiple levels of the health service and thus increase their reach from policy through to practice.

We asked all interviewees about their involvement of patients and service users (as potential research users) in their knowledge mobilization activities. Only a handful of agencies in our sample currently involved these groups; these agencies tended to be in the social care and mental health sectors. Other agencies were sympathetic to the principle but emphasized the lack of clear guidance on how to involve patients and members of the public in meaningful ways or a lack of experience or skills in this kind of engagement.

In summary, an understanding of the importance of relational approaches was fairly widespread but it was often challenging to carry out these more sustained relational initiatives in practice.

The second key principle from the literature that we could discern as influencing the knowledge mobilization work of agencies was the emphasis on the need to tailor approaches to the research users' context. Interviewees from many agencies described how they sought to tailor both the content and the format of their approaches to particular contexts. As one

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agency described, ‘*We were beginning to get feedback [from practitioners] saying “how are we supposed to manage this?”, “what should we do with the other?”*’ (40). Agencies tried to ‘ride policy waves’ and synchronize their activities with policy developments: ‘*So it’s about understanding what the national drivers are, what the pressures are on an organization, and capitalising on those.*’ (23). Agencies also aimed to ensure that their knowledge mobilization activities fitted particular groups of users: ‘*Even though we had thought we would come in and programme the [names of three regions] work like we did [name of region], they said, “No, that’s not how we want to do it”*’ (5). One interviewee described how they provided detailed practical advice to practitioners about implementing evidence: ‘*...if you wanted to get started on this tomorrow you could just take this one document and start working through it.*’ (30). Thus agencies aimed, through awareness of the contexts in which potential research users were working, to make implementing evidence feasible and attractive rather than an additional burden.

A third key principle from the knowledge mobilization literature is that research-based knowledge is only one form of knowledge: it needs to be integrated with other forms of knowledge. Interviewees from several agencies emphasized the importance of demonstrating awareness of the multiple influences on practice and policy, and of adopting a stance of relative humility in encouraging research use. This meant acknowledging the limitations of research-based knowledge and openly showing respect for other forms of knowledge (e.g. the tacit knowledge of practitioners and managers). As one interviewee explained: ‘*...you have to say “you are the ones who are doing this every day, you have to let us know if it’s too burdensome, or how we can adjust it”*’ (30). Knowledge mobilizers also had to be open to the diverse kinds of knowledge mobilization *activities* that research users might choose based on other ways of knowing: ‘*... we are not there to tell people what to do, we are there to bring people together and provide them with the structures to think and talk and arrive at their own conclusions about what they want to do.*’ (11). Agencies also emphasized that at times it was important to balance this humility with advocacy for

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research-based evidence and its value in decision-making in policy and practice: 'We certainly don't see evidence as the only way decisions are made...but we had to make the case of why it's valued and not just take it for granted.' (16). Thus agencies had to maintain a careful balance between promoting the importance of using research in policy and practice and acknowledging the limitations of research and the salience of other forms of knowledge.

Finally, we could discern that the fourth key principle from the literature, that of evaluating knowledge mobilization activities and sharing that knowledge with potential users, was well understood and accepted by interviewees but was the most challenging of the four to put into practice. Agencies fell into two broad categories: those agencies (the minority) which carried out a range of evaluations and those agencies (the majority) in which interviewees were somewhat apologetic about the lack of formal evaluation and expressed intentions to do more in the future.

Requests to all interviewees for information about formal and informal evaluations and for written reports of formal evaluations only produced written reports from seven of the 51 agencies [reference withheld for peer review], although in total we were told of formal evaluations by around one third of the agencies in the study. Interviewees in these agencies typically described specific local and broader rationales for evaluating their knowledge mobilization activities: '*I'm very committed to being part of a scientific community and making sure that the work we do is contributing to theory-building and the collective gradual accretion of empirical evidence ... there's a very active kind of feedback loop...*' (21); '*So everything that we set up, we think of as both trying to contribute to better decision-making, but also as a laboratory to try different stuff out.*' (36).

In such agencies, evaluation typically encompassed a mixture of formal approaches (e.g. specific evaluations of individual programmes) and more informal approaches (e.g. collecting impact stories, taking informal soundings from knowledge brokers): '*you must be constantly thinking, always changing*' (4). Such evaluations were designed to feed into future strategy

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and could result in significant changes to programmes over time: '*...we've gained a lot of experience and tried a lot of things out and I think we're now in the phase that we say...there are some things that work better in certain circumstances and contexts than other things.*' (27).

The literature emphasizes the challenges of robust evaluation (Lavis *et al.* 2003; Cooper 2014; Morton 2015) and so too did our interviewees. Many expressed concern at their agency's shortcomings in this area: '*It's been a frustration and a lost opportunity... this is an under-appreciated and under-studied area [by us], despite the fact that we have a specific programme whose mission is these very issues....*' (37). Agencies faced methodological and logistical difficulties: in measuring impact and in teasing out the contribution of different strands of activity, in minimising reporting burdens for busy stakeholders and in clarifying the underlying objectives of specific activities: '*...we would do an evaluation of a programme and you realise you can't really evaluate it because you don't know what it was meant to do.*'

(34). Measuring indirect impact was particularly hard to do, especially in complex areas like changing learning cultures and assessing the impact of that on service delivery. Faced with these obstacles many agencies resorted to process measures or simple metrics (e.g. downloads of publications, website traffic) rather than more comprehensive formal evaluations. In sum, the need to carry out formal evaluations of knowledge mobilization activities was well recognized but was a source of considerable challenge for many agencies and frustration for many interviewees.

Although formal evaluations were particularly exacting, there was another potential source of learning for agencies in the form of informal evaluations and lived experience. However, although many interviewees in the study described in detail rich learning through experience, it was clear that there was typically very limited sharing of learning or expertise across agencies, either within or between sectors. As one interviewee from a major UK national agency observed ruefully: '*I think we're probably a bit too insular with probably not a very wide knowledge of what other organizations are doing.*' (41). There were few organizational

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or individual incentives to capture and share informal learning. This isolation may have contributed in part to the diversity of practice we observed: organizations were relatively unaware of what their peer organizations were doing.

#### **Facing the challenges**

A strong theme that emerged from the interviews was that knowledge mobilization was skilled practice: working flexibly in the ways informed by the knowledge mobilization literature was highly demanding for individuals. Several interviewees emphasized that the skills and attributes needed (e.g. high levels of self-confidence, the ability to reflect and draw on experience, to think creatively and tolerate uncertainty) could not be easily taught and required considerable experience: '*you're always working right on the edge of your comfort zone.*' (21). Relational approaches and co-production of knowledge with research users were much harder to do well than more traditional 'push' and 'pull' approaches and required considerable commitment and stamina alongside sufficient resources: '*I think that the reports don't necessarily pick up quite so much about just how hard this is and how intensive it is in terms of resource, and how much time it takes.*' (43). Part of the challenge was balancing the needs and expectations of stakeholders for different approaches and resources, as one interviewee described: '*...our clinicians are always very taken by very concrete solutions like mobile decision support... but the reality out there is much more about how we support the interaction and the facilitation and the building of networks...*' (38).

Given the limitations of knowledge mobilization models and of the associated empirical evidence base, agencies needed to adopt a flexible approach and to be able to live with uncertainty. As one interviewee explained: '*The approaches we take - none of them are as we envisaged. They've all morphed in relation to need and contextual changes, and have evolved over time*' (24). This flexible, 'trial and error' approach often ran counter to an agency's usual risk-averse ways of working.

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Faced with the range of organizational challenges inherent in adopting these newer ways of working, it was sometimes difficult for agencies to break away from traditional approaches to knowledge mobilization. Although we had selected agencies that were identified as major players in knowledge mobilization in the scale of their activities or the degree of innovation, there were significant variations between them in terms of how central knowledge mobilization was to their work. Many agencies described how organizational mandates, powerful stakeholders or turbulent contexts made it very difficult to work in the flexible and 'experimental' ways necessitated by the state of knowledge in the knowledge mobilization field. It was therefore unsurprising that several agencies reported that they were continuing to rely heavily on more traditional and less resource-hungry approaches to sharing research (e.g. creating and disseminating research 'products') despite their intentions to do things differently. For example, in several agencies the internal reporting requirements (e.g. to communications departments) focused on measuring traditional dissemination activities like making reports available on request. Other interviewees described how their agency had no appetite for a radical change to their dissemination approach: '*So at the minute we kind of just put stuff on our website, and hope people see it and use it. I think we're looking to kind of draw attention to [the website] a bit more*' (6). An interviewee from a major UK funding agency acknowledged that the agency struggled to fulfil its own objectives around research use: '*We are very clear that our purpose in commissioning the research that we do and making awards to support research is to try to influence what happens in practice. However, I think we haven't found a way to crack that yet.*' (41).

These comments were not isolated: they were part of a broader impression across many agencies that there was some uncertainty and ambivalence around knowledge mobilization and its place in the agency's work. For example, one interviewee suggested that there were conflicting views within their agency about whether knowledge mobilization was really a central objective for the agency and something it would have focused on without a requirement from government. An interviewee from a different agency went further and

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described having to use internal knowledge brokers to change attitudes to knowledge mobilization within the agency itself: '*Some of that brokering is internal, to be honest, because we're changing the culture of our own organization as well*' (42). For some interviewees, such attitudes were contributing to a lack of progress being made in the research use field as a whole: '*There's still a sort of disseminate and hope attitude. It's surprising how many funders are really unimaginative about this. They've picked up that you need an executive summary and you'll probably want to put it on a website and you might want to give a seminar or two. But thinking more creatively about [it]...*' (21). The ambivalence and uncertainty around the importance of a proactive approach to encouraging research use that some interviewees described within their own agencies is but one symptom of a broader malaise.

## Discussion

To date we have known relatively little about the knowledge mobilization practices of major research agencies. Our study addresses this lacuna. We drew our sample from research funders, research producers and research intermediaries known to be particularly active in knowledge mobilization in terms of scale or degree of innovation and had detailed and engaged discussions with individuals in key knowledge mobilization roles within those agencies in which they reflected on their agency's knowledge mobilization practice and its challenges. The practice of these agencies is important in three key respects: *practically*, in terms of the knowledge mobilization activities they carry out or fund and the research knowledge that therefore feeds into policy and practice; *theoretically* in their contribution to the conceptual literature and the empirical evidence base on knowledge mobilization; and *symbolically* in terms of the messages conveyed explicitly by the agency and implicitly in the priority given to knowledge mobilization in the agency's overall programme of work. Despite some exceptions (e.g. Cooper 2014; Smits and Denis 2014), and in particular the recent evaluation of the work of the UK CLAHRCs (see for example Kislov and Boaden 2015; Soper *et al.* 2015), there has so far been relatively little empirical examination of the actual

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knowledge mobilization work and its conceptual foundations in these agencies. A significant contribution that we have made is to throw light on important aspects of current knowledge mobilization practice by these key players. In exploring whether and how the knowledge mobilization approaches used by research agencies were informed by the knowledge mobilization literature, we found a mixed picture: agencies were drawing directly and indirectly on the literature but faced significant challenges in doing so. This meant that the processes of encouraging greater coherence between knowledge and practice in health care, social care and education were not as effective as they could be. Agencies were unable fully to ‘practise what they preach’.

Four key observations then emerge. Firstly, the efforts to work in ‘research-informed’ ways in knowledge mobilization were hampered by the limitations of the evidence base, which provided key principles to inform activities but few well-evidenced approaches or practical tools to put these principles into practice. Thus agencies had to do much of the ground work and ‘interpretation’ themselves. One area that was particularly under-developed was the involvement of patients, service users and members of the public in encouraging research use.

Secondly, the research agencies seeking to practise knowledge mobilization were largely doing so in a parallel stream to the conceptual development of the field that was being carried out in academic institutions. Although some research agencies in the study (e.g. the UK CLAHRCs) were embedded in academic institutions that were conducting knowledge mobilization research, even in these agencies a divide between theory development and practice has been observed. Recent studies (e.g. Currie *et al.* 2014; Kislov 2014; Fitzgerald and Harvey 2015) have found structural problems and internal tensions within knowledge mobilization networks in CLAHRCs. For example, in one study (Kislov 2014), the CLAHRC’s own organizational structure, with a division into research and implementation themes, seemed to perpetuate the traditional divide between research and implementation and to reinforce a linear, staged view of the relationship between the two.

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Thirdly, a combination of contextual factors made it harder for agencies to work in these more effective relational ways and caused many agencies to be pulled back towards more traditional ‘dissemination’ approaches despite their intentions to develop a broader range of activities in line with the evidence. Agencies juggled a range of competing functions and objectives, with the resultant risk that knowledge mobilization (resource-intensive, lacking ‘off the shelf’ practical guides, requiring medium to long term input, hard to measure) was often given a lower priority or was carried out in an ad hoc rather than a systematic way. The policy and practice contexts in which agencies sought to encourage research use were also turbulent and struggling with multiple competing objectives. Thus the key principle of paying attention to the research users’ context was hard to uphold in practice: a sensitive awareness of the significant challenges facing practice and policy settings made the task of developing feasible and effective knowledge mobilization approaches more daunting and seemingly intractable.

Finally, the conceptual and logistical challenges that agencies face in evaluating their knowledge mobilization activities risk undermining the development of an ongoing evidence base that would enable agencies to practise knowledge mobilization more effectively in the future. Taken together with the absence of mechanisms for sharing informal and experiential knowledge within and between agencies, this means that agencies are largely unable to draw on key potential sources of knowledge in developing their activities. Thus the principle from the knowledge mobilization literature that research use is most effective when research knowledge is combined with other forms of knowledge is not fully upheld by most agencies.

In sum, the (somewhat ironic) research-practice gaps exposed and dissected in this study are not of course unique to the knowledge mobilization field but they do remain a significant challenge.

*Facing the challenges of research-informed knowledge mobilization**Implications for policy and practice in knowledge mobilization*

The most significant of our findings is that comprehensive evaluation of knowledge mobilization approaches was absent or limited in the majority of agencies in the study. A study conducted in 2001 (Lavis *et al.* 2003) found that only around one in ten applied health, economic or social research organizations in Canada did any evaluation of their knowledge mobilization work while an international study in 2003-4 (Tetroe *et al.* 2008) found that only around a quarter of the agencies in the study had some form of framework or plan to measure the impact of some at least of their knowledge mobilization activities. Our finding that around a third of the agencies in the study had conducted formal evaluations suggests that there has been some improvement since these earlier studies but that further measures are needed. Further progress in learning about knowledge mobilization (about the effective creation, sharing and use of research-informed knowledge alongside other forms of knowledge) is likely to be slow if even these knowledge mobilizers (drawn from those agencies considered by field experts to be among the most active and innovative) find it hard to mobilize the meta-knowledge from their own field and if there is no cumulative evidence base emerging to assist research agencies in developing and evaluating their own practical knowledge mobilization activities. Without the ongoing creation of a stronger knowledge base in the knowledge mobilization field, there is a risk that the pragmatic approach that may be appropriate to early development of the field could become a long term 'scattergun' approach and waste time, resources and social capital.

Effective evaluation in real-life settings will require a range of methodological approaches to evaluation that capture the nature of knowledge use processes and outcomes and pay attention to the interaction between knowledge, context and users (Harvey and Kitson 2015). This will require much closer collaboration in future between those working on conceptual development in knowledge mobilization in academic institutions and *their* potential research users, the research agencies (funders, producers and intermediaries). At present, a combination of multiple pressures and frustrations with the knowledge mobilization literature

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seems to have resulted in many agencies working in a parallel ‘stream’ to the conceptual development in academic institutions, with only occasional points of intersection. Embracing the concept of co-production of knowledge (Wehrens 2014; Greenhalgh *et al.* 2016) in the knowledge mobilization research field itself would enhance conceptual development and practical application alike. Knowledge mobilization researchers may need to resist the temptation to add to the existing confusing plethora of terms, models and frameworks by developing more, and knowledge mobilization practitioners may need to abandon the quest for generic evaluations of interventions and focus instead on the skills and resources they need to enable them to conduct robust ‘evaluations-in-context’ of knowledge mobilization activities designed according to the ‘best available’ evidence. Agencies face two key future challenges (and research questions). The first challenge is how they can best combine the generic learning from the knowledge mobilization field with the local knowledge and understanding of “*how the problem of interest is created and maintained in a particular community, organisation or system*” (Howarth *et al.* 2016, p. 115). The second is how to carry out robust contextually-sensitive ongoing evaluations that can inform both local practice and the wider knowledge mobilization field.

Finally, to make these efforts most effective, policy-makers and funders need to address the broader environmental constraints (e.g. infrastructure, resources, skills, incentives) that currently hinder research agencies and their academic and other stakeholders from making full use of what is already known about effective knowledge mobilization practice. The observation about health care research made in this journal nearly a decade ago that ‘*It is unclear what the current UK strategy is for encouraging the translation of research results in practice or even which central agency has responsibility*’ (Ferlie *et al.* 2009, p. 849) could legitimately be made today. Such strategies need to be carefully chosen: some authors (e.g. Pardoe 2014; Talbot and Talbot 2015; Holmes *et al.* 2016) have pointed to the ways in which current policy and guidance on research use or increasing research impact may misrepresent what is known from research evidence about the complexity of these

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processes, may create new boundaries to knowledge sharing (Kislov 2014; Pardoe 2014) or may direct researchers' efforts in particular ways that privilege certain types of research whose 'impact' is easier to demonstrate (Greenhalgh and Fahy 2015; Meagher and Martin 2017). Action at policy level is also needed to promote the development of the internal capacity of public sector organizations to use research (Ferlie *et al.* 2009; Kislov *et al.* 2014; Kislov *et al.* 2016).

Do the research-practice gaps that we have demonstrated here in the field of knowledge mobilization practice have implications for wider debates about evidence use? When even evidence 'converts' whose objective is facilitating knowledge use find it difficult to draw on (and contribute to) the knowledge base about their practices, what does this mean for evidence use by other types of practitioners and policy makers in diverse fields? Our view is that the experiences depicted here do not undermine the important objective of making policy and practice more evidence-informed, but that they do underline strongly the challenges of doing so, particularly in those fields in which much of the evidence is partial, provisional, contested and context-dependent (The LSE GV314 Group 2014; Hantrais *et al.* 2015). More is now known about what helps to encourage evidence use (and what does not) than was known two decades ago and although progress has been relatively slow and patchy, there are examples of innovation and development on which others can build (Soper *et al.* 2015; Holmes *et al.* 2016). What is very clear is that facilitating evidence use does not happen by accident: it requires resources, a deliberate focus and a supportive environment. We have set out above some of the measures that are needed.

Attention to all of these measures would make it easier for these key players in the knowledge mobilization field to work in research-informed ways themselves: drawing on the available research evidence and other forms of knowledge, testing it in practice, and using that learning to refine both the theoretical base of the field and future practical strategies. Knowledge is essential to improving lives. Achieving greater coherence between knowledge(s) and practice(s) in health care and other public services would benefit patients,

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carers, service users, practitioners and the wider community. There is an urgent need to speed up the processes that contribute to this aim.

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## 'Practising what we preach' paper: Appendix

### **Box A: Organisations that participated in the interviews**

#### **Health care: UK (13)**

Centre for the Development and Evaluation of Complex Interventions for Public Health Improvement (DECIPHer)  
Fuse  
Health Foundation  
Health Services Research Network (HSRN)  
Healthcare Improvement Scotland  
King's Fund  
NHS Education for Scotland (NES)  
National Institute for Health and Care Excellence (NICE)  
NIHR (National Institute for Health Research) Collaboration for Applied Health Research and Care (CLAHRC) Greater Manchester  
NIHR CLAHRC North West London  
NIHR CLAHRC Yorkshire and Humber  
RAND Europe  
TRiP-LaB (Translating Research into Practice in Leeds and Bradford)

*Practising what we preach***Health care: Europe excluding UK (2)**

Norwegian Knowledge Centre for the Health Services (NOKC)

ZonMW (Netherlands Organisation for Health Research and Development)

**Health care: Australia and New Zealand (3)**

Joanna Briggs Institute

National Health and Medical Research Council (NHMRC)

Sax Institute, Australia

**Health care: Canada (7)**

Canadian Foundation for Healthcare Improvement

Canadian Institutes of Health Research

Evidence Exchange Network

Health Systems Evidence at McMaster University

Mental Health Commission of Canada

Michael Smith Foundation for Health Research (MSFHR)

Public Health Agency Canada

**Health care: US (6)**

Center for Evaluation and Innovation, Kaiser Permanente Care Management Institute

Commonwealth Fund

Hilltop Institute

Institute for Healthcare Improvement (IHI)

Kaiser Family Foundation

Department of Veterans Affairs (VA)/Veterans Health Administration (VHA)

*Practising what we preach***Education: UK (5)**

Centre for the Use of Research and Evidence in Education (CUREE)

Coalition for Evidence-Based Education (CEBE)

Department for Education

Education Endowment Foundation (EEF)

EPPI-Centre (Evidence for Policy and Practice Information and Co-ordinating Centre)

**Social care: UK (6)**

Centre for Effective Services

Institute for Research and Innovation in Social Services (IRISS)

Making Research Count

Research in Practice

Research in Practice for Adults

SCIE (Social Care Institute for Excellence)

**Cross-sector: UK (9)**

Alliance for Useful Evidence

Campbell Collaboration

Centre for Research on Families and Relationships

Colebrooke Centre

Economic and Social Research Council (ESRC)

National Co-ordinating Centre for Public Engagement (NCCPE)

Social Policy Research Unit, University of York

Social Research Unit, Dartington

*Practising what we preach*

Universities UK

**Box B: Interview topic guide**

- Exploration of how the organisation sees its role in relation to knowledge mobilisation
- Exploration of the main knowledge mobilisation activities at this organisation
- Exploration of the thinking behind these approaches being used in the organisation  
(including the use of any models and frameworks, the factors driving the use of these approaches, any recent or planned changes)
- Exploration of the agency's 'target' audience/users
- Exploration of formal or informal evaluation of the organisation's knowledge mobilisation activities (including criteria used to measure impact, main findings, any changes resulting from evaluations)
- Exploration of formative learning and practical experience