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Title page

Structural approaches to knowledge exchange: comparing practices across five Centres of Excellence in Public Health

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Abstract

Background: In 2008, five UKCRC Public Health Research Centres of Excellence were created to develop a coordinated approach to policy and practice engagement and knowledge exchange. The five Centres have developed their own models and practices for achieving these aims, which have not been compared in detail to date.

Methods: We applied an extended version of Saner's model for the interface between science and policy to compare five case studies of knowledge exchanges, one from each centre. We compared these practices on three dimensions within our model (focus, function and type/scale) to identify barriers and facilitators for knowledge exchange.

Results: The case studies shared commonalities in their range of activities (type) but illustrated different ways of linking these activities (function). The Centres' approaches ranged from structural to more organic, and varied in the extent that they engaged internal audiences (focus). Each centre addressed policymakers at different geographical levels and scale.

Conclusions: This paper emphasises the importance of linking a range of activities that engage policymakers at different levels, intensities and points in their decision-making processes to build relationships. Developing a structural approach to knowledge exchange activities in different contexts presents challenges of resource, implementation and evaluation.

Key words (MeSH): Decision Making, Public Health, Research Personnel, Translational Medical Research

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Introduction: structural challenges in knowledge exchange

Research evidence does not speak for itself and needs to be actively mobilised to ensure it has an impact on public health. Specific difficulties are manifold. To generalise into three areas, policy-makers[i] do not know how to (or cannot) access academic research findings, academic timescales often do not align with the policy process, and policy-makers and academics value different types of evidence (1,2).

Various studies (3,4) have pointed out the difficulties faced by academics and health professionals working in collaboration to overcome these barriers and increase the use of evidence in practice. To support this process, dedicated knowledge exchange professional roles have been created, both within evidence-producing (e.g. universities) and evidence-customer organisations (e.g. local government). Research in which post holders reflect on their experiences highlights structural issues around professional boundaries, organisational norms and career pathways (5).

These findings suggest a need for more structural places where academics and health practitioners can come together to collaborate on research projects. In 2008, five UKCRC Public Health Research Centres of Excellence ("Centres") were created to develop a coordinated approach to improving the UK public health research environment. The Centres aim to build local and national research capacity in public health and to engage with policy and practice across the UK to increase the flow between evidence and practice. The five Centres have developed their own models for achieving these aims as appropriate to their own structures, missions and settings. Whilst there has been informal sharing of approaches across Centres, knowledge exchange practices have not been compared in detail to date.

This paper compares knowledge exchange activities with policy makers between the Centres to identify and share good practices. The post holders of various roles, created within each centre to facilitate this process, reflect collectively on their strategies and experiences in knowledge exchange with policy makers, and the methods they have developed for capturing these activities. The paper provides practical examples of different ways of working with policy makers, and discusses barriers and facilitators to engaging policy makers in their research.

To make sense of the different approaches highlighted in this paper, we will use a framework (6) that distinguishes different knowledge exchange activities by focus and function, and add a third dimension to this (7), which differentiates between various types of activities. We will briefly describe our case studies of good practice in knowledge exchange with policy makers. More details on each case study can be found in the text boxes (1-5).

Introducing a three-dimensional framework for analysis

The notion that evidence and policy do not operate in one dimension is explored in the conceptual map developed by Saner (6) for the interface between science and policy. Saner argues that there are many different manifestations of the science/policy interface depending on where research is used within government (internally or externally) and for what purpose, with the latter based on a distinction between the Stop-function of evidence (directed at controlling products and processes) and the Go-function (producing novel ideas and products; see Figure 1).

[Insert Figure 1 here]

According to Saner, each position on these two dimensions is underpinned by different concepts, methods and perspectives on knowledge exchange. While this is a very basic classification scheme, it provides a first step for distinguishing different knowledge exchange activities by focus and function. More detail to the classification scheme can be added through the work of Ward et al. (7), who used a mixed method realist evaluation of an embedded knowledge broker within three service delivery teams to identify five key themes within the knowledge exchange process. One of their themes makes a distinction between different knowledge exchange activities ranging from info management (e.g. gathering, sharing and packaging information), linkage (e.g. bringing people together, facilitating dialogue), capacity development (training, ensuring sustainability) and decision and implementation support (e.g. advising as a critical friend).

This adds a third dimension to our scheme, which could be roughly summarised as the type of knowledge exchange activities on a scale from relatively low to high engagement. This could also include the element of scalability, e.g. the number of potential evidence users that an activity can reach (a website can theoretically reach millions, but one person can only reach a few people at a time). We will apply these three dimensions (focus, function, type) to our five case studies presented below.

Comparing knowledge exchange practices between Centres

The Centre for Diet and Activity Research (CEDAR) is a partnership between the University of Cambridge, the University of East Anglia and MRC Units in Cambridge. Their case study (no 1.) is based on work with transport policymakers on active travel and demonstrates that effective knowledge exchange, like modifying the environment to support behaviour change, is in essence a

complex intervention. Acknowledging that there is no single initiative sufficient to effect the necessary change, the centre worked on the premises of a system of interdependent interventions. Developing short evidence summaries with researchers in the centre allowed for easy and quick dissemination to policy bodies and also improved these researchers' knowledge exchange skills and provided them with calling cards to initiate relationships with policymakers for further collaborative research (see case study 1). Individual initiatives were often complex in themselves; for example, developing the evidence briefs took many iterations of approach and format, and pilot testing with non-academic audiences. These iterations are ongoing: with increasing demands on the attention of evidence users, more innovative approaches such as data visualisations have grown out of the standard text-based approach.

[Insert Figure 2 here]

If we consider, as the CEDAR case study suggests, knowledge exchange as a complex intervention, and therefore the needs for a diversity of activities that are linked to each other to create impact on policy and practice, what might this look like as a structural approach, and where do you start as a research centre? The case study from the Centre for Development and Evaluation of Complex Interventions for Public Health (DECIPHer) illustrates an approach to relationship building between academics and policymakers through structural integration of policy makers in the co-production of research (no. 2).

DECIPHer is a strategic partnership between Cardiff, Bristol and Swansea Universities. The centre set up the Public Health Improvement Research Network (PHIRN) in 2005 to link key public and third sector organisations in Wales with academic public health improvement researchers and beneficiaries to generate research questions, facilitate studies and promote evidence to practice. The most critical components of PHIRN's activities are Research Development Groups (RDGs), which enable the formation of collaborations to produce high quality grant applications. RDGs have been very successful in securing funding for collaborative research projects.

[Insert Figure 3 here]

This systematic approach to networking for co-producing knowledge has also been adapted by the Centre of Excellence for Public Health Northern Ireland (CoENI). CoENI was established as a

partnership with a broad range of non-academic stakeholders in the practitioner, policy making and third sector communities (across Ireland) and representatives from Queen's and Ulster University. CoENI has adapted DECIPHer's successful PHIRN model and established the Northern Ireland Public Health Research Network. Additionally, the centre was also keen to keep informed policymakers who were not represented on the network and thus have presented on multiple occasions at the Northern Ireland Assembly Knowledge Exchange Seminar Series (KESS; case study 3).

[Insert Figure 4 here]

Systems and structures are often not within the power of research groups to change, and other Centres have therefore adopted approaches focused instead on changing processes. The fourth case study by Fuse focuses not on structure, but on the brokering process between academics and policy and practice partners. To support this process, Fuse launched AskFuse: a rapid response and evaluation service to provide decision-makers with an easy-to-access portal for public health evidence in the North East of England. Although the service was designed to provide a simple portal to academic expertise, it tried to facilitate an iterative knowledge brokering process for formulating and refining the scope of research projects in collaboration with policy and practice partners. In doing so, it provided a backstage for intense negotiations about research objectives, what counts as evidence, how to produce useful knowledge and what is feasible within available resources and timeframes.

[Insert Figure 5 here]

The more organic development of knowledge exchange activities illustrated in the Fuse case study is also echoed in the case study from the UK Centre for Tobacco Control and Alcohol Studies (UKCTAS). Their case study describes an expanding range of knowledge activities that build on each other to produce significant changes in national policy development. However, efforts to develop knowledge exchange activities organically were sometimes impeded by structural barriers, such as lack of communication resources and the geographical dispersion of research units within the centre.

[Insert Figure 6 here]

Discussion: comparing case studies on three dimensions of knowledge exchange

The case studies presented illustrate a range of knowledge exchange activities that were developed by the Centres in response to the needs of local policymakers while operating within existing structures. Although the use of knowledge exchange activities in each case study is different, common approaches for linking activities can be identified using our extended model of Saner (6). The model also helps to explore differences between the Centres. These similarities and differences are summed up in Table 1 on three dimensions (the function of the evidence used in knowledge exchange; the focus of this evidence; and the type of activities/ scale applied to facilitate this process), and are further discussed below.

[Insert Table I here]

The first case study from CEDAR describes activities that shift their focus between internal and external audiences: internal academics learn new skills by developing non-academic summaries and gain knowledge of the policy environment by directly engaging with external policy makers. These external relationships create opportunities for stakeholder feedback to internal audiences which can spark new research questions and projects. Therefore, CEDAR's activities highlight the fluidity of the Focus-dimension in our model, whereby knowledge exchange activities continuously move up and down this axis by purposefully linking different types of activities: information management (developing non-academic material), linkage (stakeholder engagement and events) and capacity development (training academics in translational writing and improving evidence use outside academia).

DECIPHer's case study presents more insight on the Go-function of knowledge exchange by discussing Research Development Groups (RDGs). They bring together mixed teams of academics, policymakers and practitioners that identify and explore research priorities for a topic (usually through a free seminar or event). This momentum and enthusiasm is subsequently galvanised to develop collaborative research proposals for submission to suitable funding bodies and the delivery of these research projects in co-production with these teams, when successful. RDGs facilitate Saner's (6) Go-function by producing novel ideas and research products for both internal and external audiences. Moreover, external partners are internalised as they become part of the centre's operation through the RDGs. Initial linkage activities (bringing people together to set research

priorities at an event) are developed into a temporary structure for decision making and implementation support (type).

Without the additional mechanisms that DECIPHer employ (including networking seminars and a strategic board), the RDG-strategy would only engage a selected group of policy makers. To address this potential limitation, the third case study from CoENI illustrates additional mechanisms for including a wider range of policy makers in the exchange process. These include presenting at the Northern Ireland Assembly Knowledge Exchange Seminar Series and through regular breakfast meetings with politicians who are not able to attend the more intensive RDG meetings. These mechanisms also help to strengthen relationships with other statutory bodies.

The fourth case study by Fuse presents a different approach, not by trying to alter the wider structure for knowledge exchange between academics and policymakers, but by focusing on the brokering process between these actors. Their AskFuse service facilitates a process that can take many different shapes and forms, which are often unclear when the brokerage process begins. AskFuse directly targets external audiences (function) by opening the door for policymakers and practitioners to academic expertise. During the brokering process, multiple types of activities are provided by the service, such as signposting to evidence reviews (info management); setting up meetings between policymakers and academics to explore needs (linkage); skills development through embedded research (capacity development); and providing advice on intervention development and evaluation (decision and implementation support).

These different activities are not necessarily linked, as is the case in the CEDAR case study, but can be stand-alone activities. However, experiences over time indicate that policymakers follow up initial enquiries about info sharing with further enquiries that aim to develop capacity or implementation support through conducting larger evaluation projects. This illustrates a more organic progression from one end of the typology axis to the other.

This is also evident from the UKCTAS case: a range of knowledge activities are used and build on each other to produce significant changes in policy development. Initially, a PhD research project highlighs a relevant policy issue: high levels of indoor pollution for both inmates and staff due to smoking, which is picked up by the UK Government through promotion on web and social media (info management). The generated evidence is debated in a specially set up smokers' panels that brings academics and policymakers together (linkage) and supports the implementation of a smoke-free policy across the prison sector in Wales and England (decision and implementation support). Comparable to the Fuse case study, there is a natural progression of activities that build

relationships and trust between academics and policymakers. In this case, evidence was used to control a problem (indoor pollution in prison).

In sum, the five presented case studies share commonalities in the range of activities they use but illustrate different ways of linking these activities, ranging from strategic to organic approaches (and combinations of these, described by one centre director as “strategic opportunism”); and varying in focus on a structure or process (RDGs and rapid response service) to a combination of structures and initiatives (forums, stakeholder events, placements).

The case studies emphasise that to build the long-term relationships necessary to move evidence into practice, it is important to link a range of activities that engage policy makers at different levels and at different points in their decision-making processes. This supports Saner’s (6) argument for a diversity of approaches in knowledge exchange, ranging from media activity to relationship building, depending on local context: there is no single interface or a single key issue for collaboration between policy makers and public health academics. Moreover, activities must be linked in a way that makes it possible to capitalise on their outcomes within a strategy and encourage more structural approaches to knowledge exchange (14).

The case studies illustrate that this is a long-term process with its ups and downs: academics run into barriers, policymakers attempting evidence-informed policy are at the mercy of political and ideological decisions, plans and economics situations change (15). However, engagement with these forces that act beyond academia facilitates the development of new relationships and ideas that will support impact. For example, in CEDAR’s case, iterating the best form of evidence summary and exploring innovations such as data visualisation.

That said, structural barriers remain: lack of local resources and limited institutional incentives to engage in knowledge exchange are ongoing challenges for each Centre (5), while geographical spacing between research units and organisational differences between universities working together in a centre can also hamper knowledge exchange efforts (UKCTAS, Fuse).

Limitations of this study

The case studies are limited in scope and only provide brief insights into the approaches developed by each Centre, and therefore do not to represent the full range of their activities or knowledge exchange strategies. However, the activities presented in the case studies provide an overview of the range of approaches practiced by the five Centres, allowing for a general comparison of similarities and differences in approaches.

Conclusions: structural approaches take more than a knowledge broker

This paper emphasises the importance of a range of interlinked activities that engage policymakers at different levels, intensities and points in their decision-making processes to build relationships. Comparing practices across the five UKCRC Public Health Research Centres of Excellence illustrates different models for developing structural approaches to knowledge exchanges, and highlights context-dependent challenges of resource, implementation and evaluation.

Although the need for structural approaches is increasingly recognised, with the growing salience of the 'impact' agenda throughout academia there is a risk that academics may rely on dedicated knowledge exchange roles to develop structural approaches for them within their institution to define, record and describe this impact for them. Instead, we argue that applying structural approaches to knowledge exchange requires more than just creating more roles for knowledge exchange professionals. While their presence may be necessary, it is not sufficient to ensure impact of research and runs the risk of compartmentalising knowledge exchange as a specialist activity rather than a generalisable way of working. Capacity building in knowledge exchange skills throughout academic career pathways is essential to ensure ability and interest in collaborative research with policymakers. For a truly structural approach to knowledge exchange, it will be imperative that all researchers within academic institutions play an active part.

Developing structural approaches takes time and requires persistence from both academics and policymakers, which can be challenging given the short time span of policy cycles and lack of institutional incentives within academia. This might be achieved by starting small, developing limited projects into larger and longer-term collaborations, and by securing 'quick wins' early on, such as developing helpful evidence summaries. It will also take time to shift the priorities of research funders towards collaborative research with policymakers. This might be achieved through more extensive consultation about service needs when funder-led research agendas are being set (14). Our paper highlights that there is an interest in exploring structural models for knowledge exchange between academics and policymakers. As these models are mostly untested, more research will be needed to develop and evaluate them.

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illustrated in our five case studies, as their work enabled us to discuss and compare knowledge exchange practices across the Centres.

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[i] With policy makers we refer in this paper to professionals who are intimately involved in decision making on public health policies and programmes, including the commissioning of public health services, either at a local or national government level.