Mobilising knowledge in public health: reflections on 10 years of collaborative working in Fuse, the Centre for Translational Research in Public Health

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Abstract:

Background

Fuse was established in 2008 as one of five public health research centres of excellence in the UK funded by the UK Clinical Research Centres collaboration. The centre works across five universities in the North East of England. This is an innovative collaboration and enables the pooling of research expertise. A prime focus of the Centre is not just the production of excellent research, but also its translation into usable evidence, a dual focus that remains uncommon.

Aims/ objectives

This practice paper outlines Fuse's approach to knowledge exchange by reflecting on 10 years of collaborative research between academics and policy and practice partners in the North East of England. We will describe the principles and assumption underlying our approach and outline a conceptual model of four steps in Fuse's knowledge exchange process to develop collaborative research and achieve meaningful impact on policy and practice.

Key conclusions

Our model describes a fluid and dynamic approach to knowledge exchange broken down in four steps in the KE process that are concurrently, iterative and vary in intensity over time: awareness raising; knowledge sharing; making evidence fit for purpose; and supporting uptake and implementation of evidence. These steps support the relational context of knowledge exchange. Relationship building and maintenance is essential for all stages of knowledge exchange to develop trust and explore the meaning and usefulness of evidence in a multi-directional information flow that supports the co-creating and application of evidence.

Key words: Knowledge Brokering; Translational Research; Public Health; Embedded Research

Funding details:

Funding from the British Heart Foundation, Cancer Research UK, Economic and Social Research Council, Medical Research Council, the National Institute for Health Research, and the Wellcome Trust, under the auspices of the UK Clinical Research Collaboration, is gratefully acknowledged.

Acknowledgements:

We would like to thank all Fuse staff and our policy and practice partners in the North East that we had the privilege to work with over the last 10 years. In particular, we would like to acknowledge the helpful discussions with the Fuse's Knowledge Exchange Group (KEG).

Background

1.1 Aims and objectives

Fuse was established in 2008 as one of five public health research centres of excellence in the UK funded by the UK Clinical Research Centres collaboration. The centre works across five universities in the North East of England. This is an innovative collaboration and enables the pooling of research expertise. A prime focus of the Centre is not just the production of excellent research, but also its translation into usable evidence, a dual focus that remains uncommon.

The challenges of using research to inform policy and practice are well documented, including in public health where the evidence base for interventions or programmes is patchy or contested. The evidence base may not address the precise questions that stakeholders want answered. Research may not appear to be relevant to the local context and may be subject to social and political influences (Author's own, 2017).

In response to these challenges, several models and frameworks have been developed in recent years that try to define the translational research process. Extensive reviews of this rapidly growing literature have produced various typologies (Nilsen, 2015), categorisations (Tabak et al., 2012) and archetypes (Davies et al., 2015). While these reviews are helpful for clarifying different components of implementation strategies and provide some guidance on different steps in the translational process, they are equally bewildering for practitioners and researchers venturing into the field of translational research. They find it hard to choose an appropriate model when many of the suggested categorisations and dimensions overlap in practice. Moreover, many of these models and framework remain at a conceptual level and do not describe in practical terms what research translation on the ground looks like (Masood et al. 2018). There appears to be a growing gap between a prolific conceptual literature among academics and a distinctive field of practice which is based on pragmatism and experimentally-led strategies and actions (Davies et al 2015), which is ironic given the bridging aim of translational research.

Therefore, we aim to do make a humble contribution to bridging work in this paper by reflecting on a practice-based model of translational research that has been developed in Fuse over the last ten year. We did not aim to develop a new model or use an existing theoretical framework that we could adapt to our purposes, but developed our model more reflexively over the years in conversations between core members of our research centre, similar to other models which have been developed this way, such as the Stetler Model (Stetler, 2011) and the Iowa Model (Titler, 2001). We acknowledge that these reflections are context-specific, developed by a particular group of people at a particular time, but hope that they provide some insights for other practitioners and researchers seeking more specific information on ‘how to do’ translational research.

In our reflections, we were keen to understand and make explicit our own tacit knowledge of trying to mobilise research evidence in public health. This type of knowledge is often overlooked in the development of models and frameworks (Kothari, 2012). The intrinsic motivations, beliefs and ethos of knowledge mobilisers are important components of any translational research strategy but are difficult to find in the literature and tend to be skirted over in traditional training schemes, which focus more on practical activities, tools and approaches (Ward, 2017). These reflections can point in turn to relevant literature and methods (as we will do in our discussion section).

Aims

In this paper, we will outline a practice-based action model (Nilsen 2015) that details the specifics of adapting and tailoring research evidence. We will outline Fuse’s approach to knowledge exchange by reflecting on 10 years of collaborative research between academics, policy and practice partners in

the North East of England (and beyond). We will describe the principles and assumptions underlying our approach and outline a conceptual model of four steps in Fuse's knowledge exchange process.

These principles and assumptions were developed over a number of years in meetings of the Knowledge Exchange Group within Fuse, a group of core staff across the five North East Universities with an interest in knowledge exchange that was set up to support translational research across the different research programme within the Centre (KEG, 2014). The principles guided the development of our model as the underlying rationale for each step, helping us to make explicit our tacit knowledge, beliefs and ethos on translational research.

1.2 Principles and assumptions underlying our strategy

We acknowledge that:

- Multiple types of knowledge exist and are used differently by stakeholders across many contexts.
- Exploring and incorporating such knowledge is vital to developing useful, acceptable, and feasible services and interventions in public health.
- This requires expertise to be shared across professional, organisational and sector boundaries.
- Knowledge exchange is a social process, requiring trusting relationships to be developed and maintained.
- Opportunities for sharing knowledge need to be actively created and fostered over time.
- Sharing knowledge is not sufficient for impact. For instance, research evidence is typically not readily applicable to practice but needs to be actively mobilised and made fit for local commissioning and intervention development purposes (Author's own, 2018).
- To support the uptake and implementation of evidence, ongoing support and capacity building is required, alongside understanding of the local context. Implementation takes time.
- New ways of producing and using evidence are critical to delivering rigorous, relevant and timely research that makes a difference and has an impact on public health outcomes. For instance, co-located embedded research (Author's own, 2018) and participatory approaches, involving research users and producers working together.
- There is no one size that fits all: diverse approaches in knowledge exchange are needed. There is no single interface or a single key issue for collaboration between decision makers, practitioners, policy makers and public health academics.

2. Steps in building collaboration/ knowledge exchange

Our approach to impact has been to use practitioner, policy and public engagement, through a fully developed communications function and knowledge brokerage to co-create relevant research, influence policy and practice debates and promote evidence uptake.

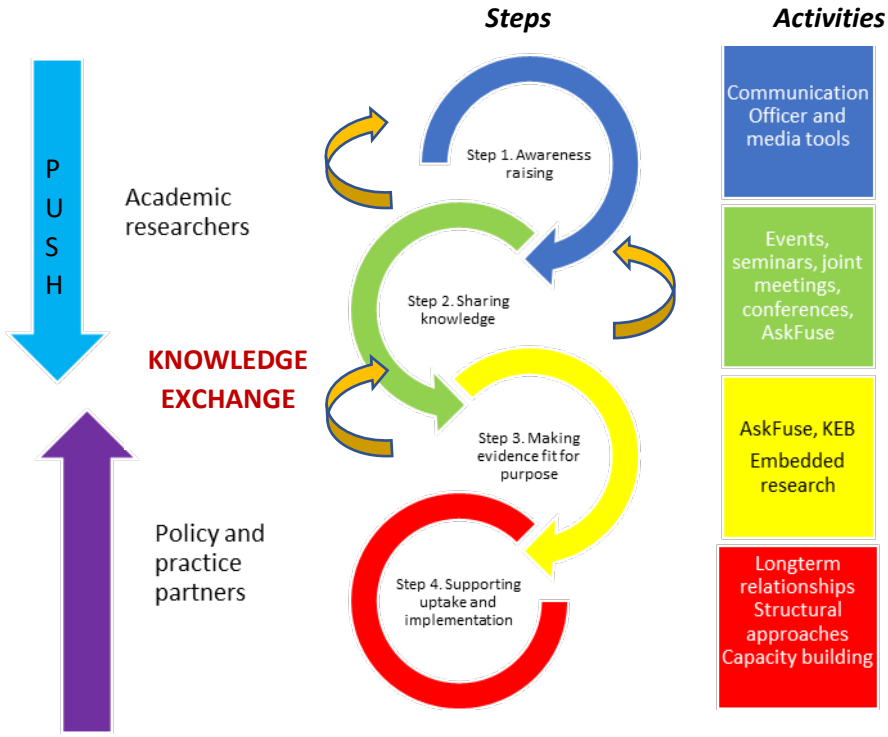
These functions support four steps in our knowledge exchange process (see Figure 2):

- Step 1. Awareness raising: making evidence users and sponsors (funders and support organisations) aware of Fuse, our research and engagement opportunities, including early involvement for our partners to set the agenda for future research.
- Step 2. Sharing knowledge: Creating opportunities for research users and producers to come together to explore opportunities for mutual learning and share knowledge through collaborative events, our responsive research service (AskFuse), patient and public involvement etc.

- Step 3. Making evidence fit for purpose: Localising and tailoring evidence through a dedicated knowledge broker, embedded research, and by increasing awareness of contextual pressures in health policy, practice and academia.
- Step 4. Supporting uptake and implementation of evidence: developing long-term relationships with policy and practice partners to co-create evidence, build capacity and change practice and policy.

We will discuss each step below in more detail.

Figure 1. Fuse Knowledge Exchange model



2.1 Step 1: Awareness raising

Awareness raising and providing evidence of value have been major planks of our strategy. A wide range of methods have been utilised to promote Fuse, disseminate its work, and link its activity with public, policy and practice partners and jointly develop research partnerships. This work is led by a dedicated Communication Officer (Author's own, 2018). These include:

- The Fuse website, including use of film and animation to deliver key messages
- Jointly authored articles in academic journals
- General branding (e.g. business cards, letterheads, PowerPoint templates)
- Attendance at conferences and academic events
- Participation in public and professional events (e.g. practitioner conferences, science festivals)
- Participation on national committees and advisory boards (e.g. funding panels of UK research councils)
- Press releases/media events
- Flyers and Fuse briefs (http://www.fuse.ac.uk/research/briefs/)

- Electronic newsletters – inFuse
- Social media, e.g. Twitter and Facebook
- Award winning Fuse blog (http://fuseopenscienceblog.blogspot.com/)

Awareness raising also includes facilitating an increased mutual awareness of the structures and challenges and competing priorities under which public health professionals and researchers work (e.g. a different evidence-based cultures in Local Authorities, more rigid tendering processes, while fewer financial resources are available in a climate of austerity). Conversely, public health professionals do not always understand the high costs of research (or have access to the resources needed), the rigorous demands of research governance and ethics procedures and associated demands on time, and institutional pressures to publish in high-impact journals (Author's own, 2017).

To overcome these structural issues, opportunities are required for exchange, such as open forums and events (see Step 2) and embedded research opportunities , for instance by academic researchers spending time in policy or practice settings and vice versa (see Step 3).

2.2 Step 2: Sharing knowledge

Whilst we continue to support awareness raising through our communications team, we also work in different ways to deepen collaboration. These approaches enable the two-way communication of views, the sharing of different knowledge types and joint activity. Some examples of these are given below.

Quarterly Research Meetings (QRMs)

Fuse QRMs are planned and delivered in conjunction with a policy or practice partner around a chosen theme. They provide opportunities for dissemination of research, dialogue about the implications for policy and practice, making new and strengthening existing contacts, and building a dialogue around research results while identifying gaps to address in potential future projects. In short, they act as a forum for knowledge exchange. Fuse QRMs have continued to draw in and build collaborations with policy and practice partners, and partnerships are deepened by working together on the development of such events.

Development of an institutional knowledge brokering service

Following consultation with local senior decision-makers regarding their research needs, our responsive research service, AskFuse, was established in June 2013 as a portal through which policy and practice partners could approach Fuse and make enquiries or seek help about research or evidence needs (Author's own, 2018).

AskFuse provides access to academic expertise and assistance of all kinds but it has gradually transformed from simply being a place where requests for small local evaluation projects to a safe place for serious conversations about how to develop the evidence base or case for commissioning and planning decisions (Author's own, under review).

Responsive research services like AskFuse provide an important back stage for negotiations between academics, practitioners and policy makers, away from public view, where informal conversations can get at the heart of what policy makers want to know or do, and what limits there might be

around academics' ability to respond to that. We have identified five distinct functions that responsive research services could provide back stage:

1. Providing a conversational space for health practitioners and academics in which to meet and engage in conversations about local research needs;
2. Discuss the different audiences each actor communicates with (e.g. elected members, funders, service commissioners, service users);
3. Rehearse and synchronise their performances across different stages (e.g. conferences, research events, council sessions, staff meetings);
4. Share and hide 'destructive' information about their performances (e.g. lack of funding, limited appetite for collaboration); and
5. Negotiate new evidence bases by considering multiple types of evidence and applying new methods to make them accessible and affordable to different contexts and need (Khangura et al., 2014) (e.g. affordability versus impact).

These functions were generated by analysing conversations between the AskFuse Research Manager and policy and practice partners accessing the service between June 2013 and March 2017 (Author's own, under review). In our analysis, we applied Goffman's dramaturgical perspective (1959) to reframe these conversations as different performances by academics, practitioners and policy makers that need to be effectively managed, using Goffman's front and back stage analogy. The AskFuse service gives the performers access to an informal conversation space that enables them partners to reflect on performances gone wrong, helps them construct new impressions that will help them to cope when acting on different front stages to different audiences.

2.3 Step 3: Making evidence fit for purpose

However, sharing knowledge alone is not sufficient for impact. For instance, research evidence is typically not readily applicable to practice but needs to be actively mobilised and made fit for local commissioning and planning purposes. We have developed two mechanisms for this within Fuse: employing a fulltime Knowledge Exchange Broker and creating 'researchers-in-residence' or embedded research posts.

Fuse knowledge exchange broker

Fuse created the role of knowledge exchange broker (KEB) to assist practitioners in the use of research evidence. A defining key task of the role is to facilitate and enable the use of research evidence (and other types of information e.g. local statistics) in decision-making processes, i.e. they mobilise evidence. KEB roles can act as the go-between or mediator to translate differences in performances between policy makers, practitioners and academics into a collective acceptable presentation. Moreover, KEBs can help to make evidence fit for local commissioning and planning purposes by localising evidence (relate evidence to local context and needs) and tailoring it (present actionable messages). It is these steps that render evidence both useful and usable in decision-making. KEBs can help to inform what knowledge is relevant in a particular context (localising), while using local relationships to design and deliver actionable messages (tailoring). Understanding, identifying and supporting the role of KEBs is key for successful knowledge mobilisation. Their expertise and knowledge could be used more systematically to champion a research positive culture and infrastructure within public health organisations that encourages knowledge sharing and mobilisation (Author's own, 2018).

Embedded researchers

Fuse has gathered expertise in embedded research by working in collaboration with Local Authorities in North East England. With a seat alongside local authority partners, and a remit to help develop researchable questions, embedded researchers can introduce local research evidence at the point of decision-making helping to inform the shape and future of local public health provision.

Embedded researchers are defined as individuals who are either university based or employed with the purpose of implementing a collaborative, jointly owned research agenda in a host organisation in a mutually beneficial relationship (McGinity and Salokangas 2014). Embedded research (ER) is recognised as one way to strengthen the integration of evidence into public health practice, where the researcher is part of a team that generates and uses research results. This type of research is attracting growing interest as an example of a joined-up approach to knowledge production and use, which takes account of context and stakeholder interests. Relatively little attention has focused on the experiences of ER in public health in local authorities. It has been suggested that public health deserves 'special attention' given the ways in which tacit knowledge is embedded in programme planning and delivery, the importance of local government's organisational context, politics, and the wider challenges of achieving large-system transformation in health care and sustaining organisational culture change (Author's own, 2018).

ER's potential lies in its ability to facilitate interactive contact, collaborative relationships between researchers and end users, the involvement of decision makers in research processes and timely access to research, all of which are factors associated with improved use of evidence in different settings. Fuse's innovative experience of embedded research in [anonymised] Council has been published in a series of co-authored papers (Author's own, 2017; 2018).

2.4 Step 4: Supporting uptake and implementation of evidence

Knowledge Exchange Broker and embedded research posts not only facilitate knowledge exchange but also build longer-term relationships between academic researchers and policy and practice partners. It is these long-term relationships that are required to embed the uptake and use of evidence outside academia. Long-term relationships are essential for establishing trust to engage in frank and open conversations about what evidence is useful, how it could be applied locally and to increase mutual understanding of the structures in which each profession operates.

New ways of producing and using evidence (co-production and co-creation)

The fourth step in our model is therefore developing new ways of producing and using evidence based on established relationships that respect different types of knowledge and encourage various ways of applying knowledge. KEB and embedded researchers support different ways of working on the feasibility, acceptability and relevance of research. This often included participatory approaches (working with research users and stakeholders rather than doing research on them), which acknowledge the value of professional and lay expertise and tacit knowledge. (Author's own, 2018).

Capacity building

However, these approaches need to be taken forward by professionals across academia and health organisations to develop an institutional culture of knowledge exchange. Otherwise, these approaches risk becoming silo-ed in separate K* functions that are not aligned and incentivised by

the wider structures in which they operate. This requires new skills among academic researchers and wider stakeholders and therefore ongoing capacity building within organisations.

Capacity building in knowledge exchange skills throughout academic career pathways is essential to ensure ability and interest in collaborative research with policymakers and practitioners. For a truly structural approach to knowledge exchange that links various knowledge exchange activities across different organisational levels and time, it will be imperative that all researchers within academic institutions play an active part.

For instance, AskFuse brokered the funding of PhD studentships with matched funding from one of the Fuse member universities to enable a value-added evaluation of public health interventions. Other PhD students are exploring related translational issues: the nature of knowledge brokerage; the use of quality improvement approaches; and effective ways of improving evidence uptake in schools-based interventions. A public health PhD student is jointly supervised by the embedded researcher in [anonymised] and an ESRC funded PhD student will start work on a project of use to the Local Authority in October 2018.

Embedded research posts have also enabled public health staff in local authorities to get involved in research and developed their research skills by learning on the job with the embedded researcher; for example, by jointly completing ethics applications and co-authoring publications.

Linking knowledge exchange activities effectively (structural approaches)

Given the fluid and dynamic nature of our model, we recognise the importance of linking a range of activities (a structural approach to knowledge exchange) that engage policymakers and practitioners at different levels, intensities and points in their decision-making and development processes to build relationships (Author's own, 2018).

For example, in advance of organising a Quarterly Research Meeting to promote and discuss the findings from a research project with our policy and practice partners, we develop tailored research briefs that summarise the research findings in an accessible and visual way, emphasising recommendations for policy and practice. These research briefs are circulated at the meeting and uploaded to our website to make them more widely available. Developing these briefs with researchers in the centre allows for easy and quick dissemination to policy bodies and also improves these researchers' knowledge exchange skills, while provides them with calling cards to initiate relationships with policymakers for further collaborative research. These conversations are often followed up with specific requests to AskFuse for applying the research findings in a different context or conducting additional research, supporting capacity building and implementation. We also follow-up events with blogs written by a practice partner, where possible, about their experiences of the event and their reflections on the usefulness of the research findings and its application to different contexts.

Developing structural approaches takes time and requires long term, trusting relationships between academics, practitioners and policymakers, which can be challenging given the short time span of policy cycles, lack of institutional incentives within academia and differences in personalities. This might be achieved by starting small, developing co-produced 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. Flexible research funding schemes are needed to support these models at national and local levels.

In summary, relationship building and maintenance is essential for all stages of knowledge exchange to build trust and explore the meaning and usefulness of evidence in a multi-directional information flow that support the co-creating and application of evidence.

Conclusions

As a UK Centre of Excellence for Translational Research in Public Health, Fuse has gained substantial experience of undertaking research with public health colleagues. Reflecting on our practices over the last 10 years, we distinguish four interconnected stages/ steps in the knowledge brokering process: awareness raising; knowledge sharing; making evidence fit for purpose; and supporting uptake and implementation.

Initial activities in the first five years of operation focused on steps 1 and 2 by raising awareness of the centre and its research activities through our website, social media platforms and research briefs, and by discussing our research with practice and policy partners at Quarterly Research Meetings and other events. In these interactions it became clear that our partners were looking for additional support to use new and existing evidence and tailor its messages for the local context (step 3), which led to the development of the AskFuse service in 2013 as a means to continue the conversations with our partners about particular questions and needs.

The development of step 4 (implementing and sustaining) came out of reflections in a joint paper (Author's own, 2017) with knowledge brokers from other UK Centres of Excellence in Public Health research. Our collaborative discussions highlighted the importance of linking different knowledge exchange activities together in a structural strategy, utilising the four interconnected steps in our model, to engage with different policy makers at different levels and times in the decision making process.

In our reflections we found the Knowledge-to-Action (K2A) model (Graham et al., 2013) particularly useful as it helped us to focus on questions about how to adapt knowledge to local context and tailor it to overcome barriers for action. What our model adds to this framework and other reviews mentioned in the background section of this paper is a practical understanding of how research evidence can be localised and tailored to address translational barriers (Mitton et al., 2007), while acknowledging a more fluid process of knowledge exchange through iterative cycles of four main activities that can occur concurrently.

In our model the four steps can feedback into each other in different directions. For instance, sharing knowledge (step 2) might raise new questions about evidence and how to communicate this evidence, which brings the process back to step 1 (raising awareness). Similarly, experiences of embedded researchers in step 3 (localising and tailoring) suggest that this step often is concurrent with knowledge sharing (step 2) as they are asked by practitioners in their embedded context to pull in additional research evidence on different topics. Another example of fluidity can be found in step 4 (linking up different knowledge exchange activities), which has involved training for academic researchers in writing lay summaries of their research, or using social media, which are used to share information with practitioners (step 2), while building capacity in awareness raising (step 1)

Therefore, our model is closely aligned to Ward et al. (2012) knowledge exchange framework for practice and policy. Their framework outlines five knowledge exchange components, with our model focusing particularly on the interpersonal element of the knowledge exchange process. This element is most visible in their user context, which the authors conceptualise as a social and political space for knowledge exchange and dissemination. This concept foregrounds interactions, shared experiences and networks, with our model highlighting various stages that are helpful in developing and strengthening these interactions, experiences and networks to support the mobilisation of research evidence (and other types of knowledge) into practice and policy.

In doing so, our model puts a strong emphasis on the relational dimension of these activities. Relationship building and maintenance is essential for all stages of knowledge exchange to build trust, explore the meaning and usefulness of evidence in a multi-directional information flow that support the co-creation and application of relevant, usable evidence.

Weakness and gaps

A weakness of our model is a lack of robust evidence on the relationships between the underlying knowledge exchange interventions and outcomes, such as increased use of research evidence in practice and policy, and improved service delivery and health outcomes in the North East of England. We have not so far systematically evaluated the impact of our model.

This is partly due to the requirements of our funding: the UK Clinical Research Collaboration required annual reports that focused on traditional academic indicators of esteem, such as peer-reviewed publications and obtained grant funding. Our funders do not put much emphasis on documenting knowledge exchange activities and their impact on policy and practice. We are in ongoing conversations with them about expanding their templates to include more space for reporting on these activities and impacts.

What our evidence shows to date is that Fuse has been able to engage considerably with public health practice and policy across the North East of England and beyond, by building capacity for public health research within and outside the partner universities (16 academic appointments, 19 funded PhD studentships), Fuse currently has over 1,400 network members and 266 active associate members. Through the AskFuse service, we have supported over 300 enquiries and helped our partners to access existing knowledge or to work in collaboration to develop new research evidence that is relevant, timely and tailored to their needs and enabled them to find answers to issues that matter. We have also organised or supported over 400 events to date to build and maintain our networks. Fuse has also been successful in bringing in excess of £200m in grant funding to North East England, has had over 1,000 peer reviewed publications and has over 30,000 citations. These indicators suggest that Fuse has been successful in driving change in both public health research and practice, regionally, nationally and internationally.

However, these measures and indicators of impact are largely irrelevant for many of our policy and practice partners. Focusing on them pulls academics away from the relationship-building activities that are central to our knowledge exchange model. To encourage real-world impact, incentive structures for academics to get involved in knowledge exchange will have to change considerably as well as the systems within institutions to record these involvements. This would enable us to demonstrate the impact of our work more clearly.

This knowledge gap is common for many knowledge exchange models and approaches (Gagliardi et al. 2015) and we are trying to address this gap by developing impact case studies for various projects in our centre over the last 10 years that link together various activities in each project, as outlined in our model, to various types of evidence that demonstrate outcomes and sustainability in the form of an outcome chain. We are guided in this by the evaluation framework that has been suggested by Morton et al. (2018), which uses contribution analysis to design, collect and collate evidence of the impact of KE interventions.

Next steps?

Interest is growing in AskFuse, embedded research and the proactive approach to co-producing research as part of the wider knowledge exchange work Fuse has developed over the years. We are keen to build on this experience and welcome views and ideas about how to take this work forward

alongside our partners in the National Institute for Health Research School for Public Health Research (NIHR SPHR).

We are keen to develop and implement an evaluation framework to research more closely the link between the steps in our model and the impact these steps have on the use of research evidence in policy and practice. This will contribute to a better understanding of how research evidence uptake can be improved, and which knowledge exchange activities are particularly useful for who, when, where and in what combinations.

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