

7 Evidence on evidence-informed policy and practice

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Knowledge brokerage and knowledge mobilisation are generic terms used to describe activities that enable the use of research evidence to inform policy, practice and individual decision making. Knowledge brokerage intermediary (KBI) initiatives facilitate such use of research evidence. Drawing on examples from existing brokerage initiatives, this chapter is structured in five parts. Each part seeks to address areas where KBIs could be more evidence-informed in their work: 1. Needs analysis; 2. Integrating evidence use in wider systems and contexts; 3. Methods and theories of change; 4. Evidence standards; and 5. Evaluation and monitoring. For each area, questions are suggested that explore how the principles are being followed in practice. Recommendations for KBIs, policy makers and funders are provided at the end of the chapter. The chapter is adapted from an open-access paper published in *Evidence & Policy*.

Introduction

Policy, practice and individual decisions are informed and influenced by many factors. Research findings can be an important source of information.¹ Over recent years, there has been concern that research evidence has not always been used to its full potential in decision making (Boaz et al., 2019^[1]) or has been used to justify decisions that have really been made on other grounds (Weiss, 1979^[2]). A number of strategies have been used to enable the greater consideration and use of research evidence (Cooper, 2014^[3]; Langer, Tripney and Gough, 2016^[4]; Gough, Maidment and Sharples, 2018^[5]). Knowledge Brokerage Intermediaries (KBIs) are individuals and organisations that aim to broker the intermediary space between the use and production of research evidence (see Box 7.1).

Box 7.1. Examples of KBI organisations and strategies

KBI organisations can include:

- Portals to communicate research findings to potential users of evidence.
- Knowledge brokerage organisations, including What Works Centres (WWCs) and research observatories (such as the International Public Policy Observatory on COVID-19).
- University offices to communicate research findings.
- Evidence advisory systems for governments.

Strategies to integrate research findings into decision making:

- Access: initiatives to raise awareness of research evidence and make it more available to potential users of research.
- Uptake: strategies to support and encourage decision makers to make use of research evidence in their work.
- Science advice: researchers' availability to advise decision makers as in expert advisory committees, academic secondments to government departments or in partnerships between universities, policy makers and professional practitioners.
- Co-production of research and its use: by researchers, users of that research, and intermediaries between the two.
- Impact: measures to encourage researchers to enable their work to influence decision making.
- Implementation: strategies to support changes in practice that are based on decisions informed by research evidence.

This paper builds on the work of Powell, Davies and Nutley (2016^[6]) to contribute to and extend the debate on the importance of KBIs themselves being evidence-informed in how they go about their work. If KBIs do not take an evidence-informed approach to their own work, they may be less effective than they could be. They may also lose credibility and trust by not following their own advice on using research evidence in decision making. This chapter argues that a more overt focus on being evidence-informed can help KBIs reflect on and develop the theory, practice, and study of their work in at least five areas:

1. Needs analysis: appraisal of the pre-existing evidence ecosystem that initiatives wish to influence.
2. Integrating evidence use in wider systems and contexts.
3. Methods and theories of change: initiatives' activities and methods, and the basis for belief they will produce the outcomes desired.
4. Evidence standards: the quality and relevance criteria for evidence claims made by KBIs.

- Evaluation and monitoring: KBIs' evaluation of their own activities and their contribution to the knowledge base on evidence use.

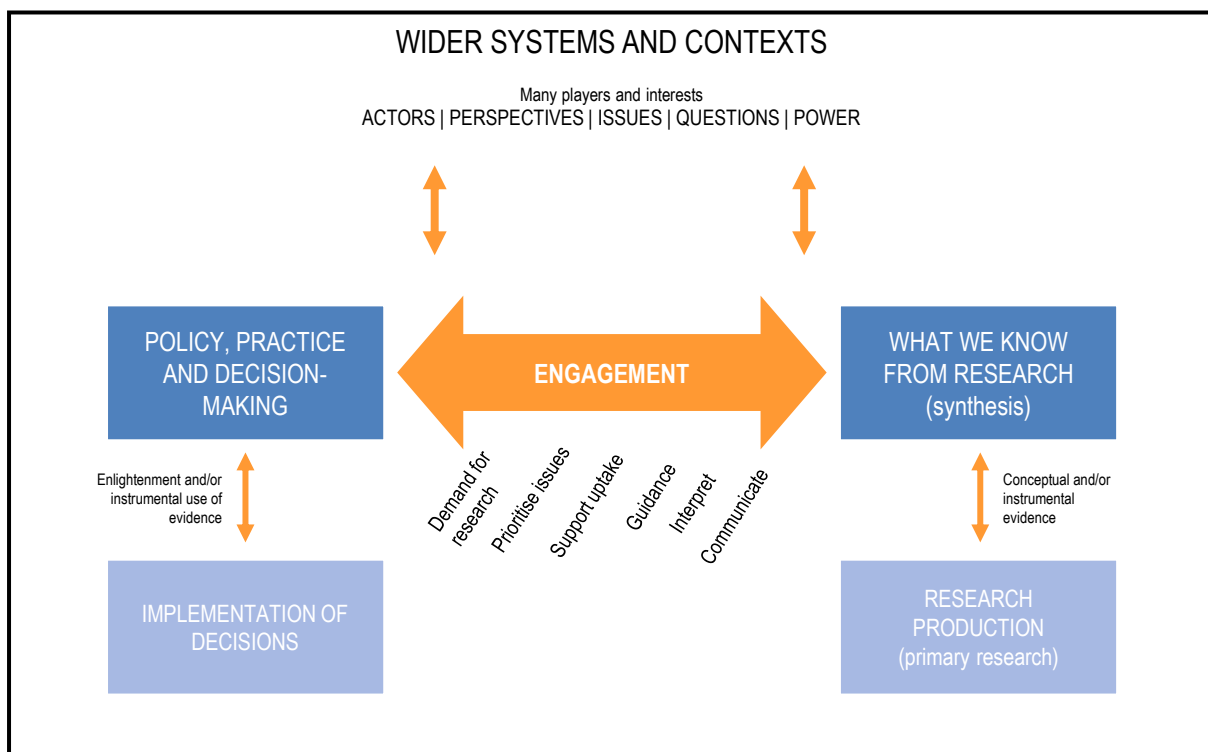
Although the focus is on the work of KBIs in the United Kingdom, the principles and considerations should be relevant to other countries' contexts.

Evidence-informed in their aims and needs analysis

Evidence-informed policy and practice is where relevant research findings are used in an appropriate and useful way to inform decision making. Evidence claims may be justified in some contexts but applied to decisions where they have no or limited relevance; for example, evidence about what works on average may be ineffective or even harmful in specific circumstances (and vice versa).

Matching the needs of the decision maker to the questions asked and the contexts in which they apply involves some engagement between decision making and research production. This can be conceived of as an evidence ecosystem operating within a wider system of various stakeholders influencing research production and research use (Best and Holmes, 2010^[7]; Gough, Thomas and Oliver, 2019^[8]). The main components of such an evidence ecosystem include decision making, research production, and some engagement between such decision making and research production. All of this activity interacts with wider systems and contexts. An awareness of the components and functioning of evidence ecosystems (as in Figure 7.1) can help KBIs and other actors plan and assess their work.

Figure 7.1. Evidence ecosystem



Note: In this model we have purposely placed 'evidence production' on the right-hand side to guard against evidence use being seen as a process of 'pushing' evidence from producers to users (typically represented as moving from left to right).

Source: Gough, D. et al. (2011^[9]), *Evidence Informed Policy in Education in Europe: EIPEE Final Project Report*, http://www.eippee.eu/cms/Portal/41/EIPEE%20final%20project%20report_250711.pdf?ver=2011-11-17-135453-957.

KBIs aim to facilitate the functioning of evidence ecosystems. An obvious starting point, therefore, is to assess the functioning of the evidence ecosystem they are currently or plan to work within. What is the pre-existing nature of research production, engagement with that research by users, and actual use of evidence in decision making? This kind of assessment can inform the choice of strategies to promote the use of research evidence.

So, to what extent do KBIs systematically appraise the relationship between the use and production of research evidence in their field? And having made such an appraisal, what are their strategies for improving the functioning of that evidence ecosystem?

What Works Centres (WWC) are one type of KBI and evidence-use infrastructure. In a study of WWCs in the United Kingdom (Gough, Maidment and Sharples, 2018^[5]), the most common aims identified were:

- Primary research base: development of primary research.
- Co-production: by researchers and users of primary and secondary research.
- Synthesis: clarifying the knowledge base.
- User access to research: communication of the evidence to professional practitioners.
- Supporting evidence uptake: enabling the consideration and uptake of research.
- Evidence-informed guidance: developing guidelines/recommendations for practice.
- Enabling implementation: of decisions that have been informed by research evidence, including the use of strategies informed by the behavioural needs of users.

The centres thought that it was important for decision makers to have access to research evidence or guidance informed by research. And, that it is more efficient for a national service to identify relevant research evidence than individual policy makers and practitioners. Nevertheless, it is not always clear why WWCs' predominant aim was to provide access to research evidence when other aspects of the evidence ecosystem could be attended to. At the time of the study, some centres took a more holistic approach to appraising and enabling all parts of their evidence ecosystems and the wider systems within which these existed (including political dynamics), though these might not be included in public descriptions of their work. There was also some explicit discussion of how different KBIs might relate to and interact with each other.

There are also differences in the type of policy and practice issues, and related research evidence that KBIs work with. Many KBIs focus on the identification and implementation of effective interventions or “what works”. For some of these, the emphasis is on manualised programmes for intervention with a concern for fidelity of application. Others emphasise effective strategies and mechanisms that can be applied differently in different contexts (Gough, 2021^[10]).

There has been development over time in the aims and methods of WWCs in the United Kingdom. Most started with a focus on the synthesis and communication of evidence, and then developed an increased focus on user engagement and implementation. The Education Endowment Foundation (EEF) in particular has invested in developing, and, most importantly, evaluating a number of different strategies for enabling the use of evidence (Sharples et al., 2019^[11]), including how schools use research as a result of engaging with the Research Schools Network (Gu et al., 2020^[12]), and the scale up of research-informed practice in regards to the use of teaching assistants in schools (Maxwell et al., 2019^[13]). Another example is the Early Intervention Foundation's (EIF) work on “Supporting evidence-use in policy and practice” (Wadell, 2021^[14]), which advocates a better understanding of the behavioural needs of users (Waddell and Sharples, 2020^[15]). Bache (2020^[16]) has also written about the role of evidence in the work of the What Works Centre for Wellbeing.

A similar principle applies to expert scientific advisory committees as to WWCs. They provide science advice to parliaments and government departments. What is less clear is the rationale for developing this type of structure. There are other ways governments can access research evidence, such as through academic societies and government research analysts (Gough, 2020^[17]).

Ultimately, there are limits to what KBIs can achieve within their context, therefore making well-informed strategic decisions on how, and where, they place their effort and resources is important. KBIs should be more explicit about their analysis of the ecosystem in which they are intervening; what is needed to improve the functioning of this system; why they have chosen their specific strategy; and how their contribution fits into this wider picture. For questions to consider, see Box 7.2.

Box 7.2. Questions about being evidence-informed in aims and needs analysis

The following questions are worth considering by KBIs when establishing their aims and roles:

- **Analysis of the evidence ecosystem:** How has the KBI assessed the pre-existing relationships between the use of research and its production, and the ways in which it proposes to enhance this? The aims may be evident from a KBI's name but is there justification of why a particular approach has been chosen over others?
- **Specific aims:** Which particular parts of the pre-existing evidence ecosystem does a KBI wish to change? What does it wish to change? What type of user issues and what types of research evidence and evidence claim does it focus on?
- **Users and beneficiaries:** Who will use and/or benefit from the KBI's work?
- **KBI development over time:** What changes are there in the focus of their work overtime and the reasons for this (including changes in the wider evidence ecosystem or their position within it)?
- **Collaboration within the evidence ecosystem:** What interactions are there with the other actors (including overlaps with the aims and work of other KBIs and collaboration with them)?

Integrating evidence use in wider systems and contexts

A key consideration for KBIs as intermediary organisations is how they sit and work within wider systems and contexts. This includes not just the systems of evidence production, mobilisation and use they are part of but also the wider political and societal systems in which the benefits of evidence use will be realised. Evidence activities do not work in isolation. They sit within complex systems outside of research, with multiple actors and influences, each with their own priorities, processes, timescales and motivations e.g. policy, improvement, funding, accountability systems (Best and Holmes, 2010^[7]). In this type of “systems” model, KBIs are effective when they integrate well with external organisations and the systems in which they operate. Put another way, you could, in theory, create an elegant evidence ecosystem with excellent, well-connected processes yet have little impact if those activities fail to achieve traction in the wider systems.

The study on What Works Centres in the United Kingdom found that all centres face challenges in impacting these wider systems. This should not come as a surprise. Firstly, the systems that WWCs are trying to engage with – such as accountability, funding, and policy systems – are often predominant influences in the sector. For example, the high-stakes accountability system in English education has a huge influence on the decisions schools make, meaning that the Education Endowment Foundation needs to find a way of complementing, rather than competing with, these accountability processes.

Secondly, the wider systems are not always structured in a way that is receptive to research evidence, and cannot naturally accommodate the work of the WWC. For example, the relatively short timeframes for government policy making are not necessarily commensurate with the longer timeframes of designing, conducting, synthesising, interpreting and using research.

A third, related, challenge for WWCs is that they typically operate in sectors with historically weak track records and cultures of engaging with research. Indeed, many WWCs see an important aspect of their work as encouraging a long-term culture shift towards research engagement and use as part of evidence-informed policy and practice. This challenge is even greater when the remit of a WWC includes changing perspectives and understandings on the focal issue itself, such as is the case for the What Works Centre for Wellbeing.

The challenges WWCs face is typical of most KBIs, research organisations, universities and funding bodies that are trying to influence wider decision making. In this respect, there are potential advantages to having a single organisation such as a What Works Centre acting as a focal point for evidence-informed decision making. By operating in the synthesis, communication and engagement domains of the evidence ecosystem (see Figure 7.1), WWCs process and coordinate a large, and, potentially, overwhelming, body of evidence. Consistent standards, processes and styles can help develop a brand where users expect a certain type of output, leading to increased confidence in the results.

However, if KBIs are working predominantly in only one element of the evidence ecosystem, how do they best go about influencing the wider, non-evidence systems? Where and how does that wider coordination take place?

In this context, the natural progression we observed for WWCs to take on a broader remit – such as supporting more active uptake of evidence – is a logical response in providing more coordination to the system by doing more functions. An alternative strategy is to retain a tighter remit and operate in a system where there is more overarching coordination (e.g. the National Institute for Health and Care Excellence [NICE] in the healthcare system). In this scenario, KBIs may attempt to manage some overarching coordination, influence it or stay largely removed.

Whatever the approach, KBIs need to be adept at identifying levers of influence, nimble in capitalising on opportunities as they arise, and persuasive in their approach. Doing so relies on being able to understand and influence the wider systems and contexts in which they operate. Some of this knowledge can be sophisticated without being explicit. Indeed, we noted that having an implicit awareness of, and influence on, wider systems at leadership level was an important strategic advantage for What Works Centres. At the same time, we saw few examples of attempts to explicitly analyse the evidence ecosystem and its relationship with the wider systems. It is notable that the model describing the What Works Network did not include a representation of the non-evidence systems (Cabinet Office, 2018_[18]). See questions to consider in Box 7.3.

Box 7.3. Questions about awareness of the wider systems

The following questions are worth considering by KBIs in relation to their interactions with wider systems and contexts:

- **Analysis of wider systems:** Is there a receptive infrastructure for the work of KBIs? What is the relationship between a KBI and that infrastructure? What strategic choices are KBIs making to engage with the wider systems?

- **System-level coordination:** Whose responsibility is it to create a receptive infrastructure for the work of the KBIs? Who coordinates the overall evidence ecosystem and the wider systems?
- **Relationships:** What relationships exist between different actors in the evidence system and wider systems (e.g. government)? What is the quality of those relationships and how do they impact on the work of the KBI?

Evidence-informed in their methods and theory of change

In addition to, and highly related, to the aims of the KBIs, are the methods and theories of change by which these aims will be achieved. If the aim is, for example, to synthesise and communicate evidence, KBIs will likely state the methods they use to achieve this. The study of WWCs (Gough, Maidment and Sharples, 2018^[5]) and another study of evidence web portals (Gough and White, 2018^[19]) found considerable variation in the nature and extent of their description of KBI methods of work in terms of:

- The use of standardised specific methods, guidance that allows flexibility, or individual project specific methods.
- Explaining and justifying the choice of specific methods.
- The quality of reporting of those methods.

KBIs are increasingly developing Theories of Change i.e. an evidence-based rationale that builds on causal analysis and explains how a set of interventions is expected to lead to a specific change. In doing so, they are explicit about how their methods will achieve their fundamental aims (Bache, 2020^[16]; Gough, 2021^[10]; Wadell, 2021^[14]). But there are still instances of KBIs assuming an approach will be effective and useful without being explicit about why.

This is well illustrated by the communication of research findings, a default approach to supporting user engagement and decision making (Davies, Powell and Nutley, 2015^[20]). But evidence from “research on research use” shows that the communication of research findings on its own is not associated with increased use of those findings (Langer, Tripney and Gough, 2016^[4]). EEF has shown this through its multi-armed randomised controlled trial of different ways to communicate research on literacy to teachers, where no evidence was found that any of these strategies were effective on their own (Lord, Rabiasz and Styles, 2017^[21]). Communicating evidence does not guarantee it will be used.

There are behavioural factors to consider, such as the capacity (personal attributes), opportunity (environmental attributes) and motivations (psychological processes) that enable the use of evidence (Michie, van Stralen and West, 2011^[22]). Research use activities can often be driven by a desire by researchers for their findings to have impact, rather than by user demand for research on particular topics and perspectives, or more nuanced interactions between evidence and policy (Boswell and Smith, 2018^[23]; Langer, Tripney and Gough, 2016^[4]). This can be addressed by KBIs, for example in the previously mentioned EIF project that designed KM strategies based on an understanding of the behavioural needs of research users (Waddell and Sharples, 2020^[15]).

There are also strong examples of KBIs integrating user perspectives into their work. The National Institute for Health and Care Excellence (NICE), for example, has a stakeholder-driven process for identifying health and social care practice questions; commissioning systematic reviews to address these issues (including the cost/benefits of different actions); and then stakeholder-driven interpretation of this to make recommendations for practice. The process is supported by research on stakeholder engagement, synthesis of evidence, social values, and the importance of contextual information (Gough, 2021^[10]; NICE, 2020^[24]).

Some KBI strategies put an emphasis on building relationships between researchers and potential users of research, as in, for example, the secondment of researchers to government departments. However, “research on research use” indicates that such relationships are, again, a necessary but not sufficient condition. Relationships can have an effect on research use as long as it is accompanied by efforts to increase the capacity, opportunity and motivation for the evidence to be used in practice (Langer, Tripney and Gough, 2016^[4]).

Similar questions about the nature of the brokerage activity can be asked of expert scientific advisory committees. There is not always clarity about how they identify and select experts to be members (including skills, topic areas, relationships with and perspectives shared with government). The functioning of the committees and how they make decisions is also unclear (Gough, 2020^[17]; Geddes, 2020^[25]). As the methods and processes are not explicit, theories of change about their outcomes (and how this would differ from other ways to provide science advice) lack clarity.

In sum, KBIs could build further confidence in their value and impact by demonstrating that their ways of operating are based on evidence on research use. See questions to consider in Box 7.4.

Box 7.4. Questions about methods and theories of change

The following questions are worth considering by KBIs when establishing their methods and theories of change:

- Has there been **overt consideration** of:
 - i) both the demand (‘pull’) as well as the production (‘push’) components of the evidence ecosystem
 - ii) the engagement of the planned users and beneficiaries in the work and their role and power in such decision making
 - iii) the capacity, opportunity and motivation of decision makers to use research evidence in their work
 - iv) potential negative effects and risks from the KBI’s work and how will these be avoided or ameliorated
 - v) sustainability of the aims, methods and theories of change and capacity of the KBI to achieve this over time?
- **Theory of change:** What specific methods are being used and what is the causal chain by which these are thought to achieve the interim and ultimate aims of the KBI?
- **Fitness for purpose and effectiveness:** What is the basis for believing that the methods and theory of change are appropriate and effective and that this is supported by “research on research use”?

Credible standards for making justifiable evidence claims

KBIs aim to increase the use of research evidence by decision makers. In communicating selected research evidence, they are making claims about the trustworthiness and relevance of research evidence, and so the criteria they use for making such evidence claims are key. The strength of evidence required to inform a decision may depend, of course, on the importance of the decision and the opportunity costs of making a decision one way or another. A short-term response to an immediate crisis is not the same as a long-term policy strategy. Whatever the nature of the decision, there is the danger that if the evidence claims are based on weak or inconsistent standards (and so not justifiable), then the users of research

may be misled. Similar arguments can be made for the use of evidence provided by expert witnesses in courts (Ward, 2015^[26]) and scientific advisory committees. The evidence claims need to be both justifiable from the research and relevant to the issue at hand.

An evidence claim may not be justified for many reasons including:

- Representativeness of the evidence base: The claim is made on the basis of research findings that are not representative of all of the relevant and trustworthy studies on an issue.
- Quality and relevance: The research is not of sufficient quality (methodologically trustworthy) and relevance to be relied upon.
- Extent of evidence: The research is of sufficient quality and relevance but is not sufficient in extent to make the specific evidence claim (for e.g. trustworthy relevant evidence may be available on a large population but it might not be able to make justifiable claims about some sub-populations).
- Interpretation and application: The research findings are not being applied appropriately to the issue under consideration.

When making a claim about what is known about a particular research question, it is, of course, important to consider all of the relevant evidence rather than individual studies that may not be representative of all of the relevant and trustworthy evidence. The appraisal of evidence, therefore, requires an assessment of: (i) the ways that the evidence has been identified and brought together; (ii) the quality and relevance of the studies included in such reviews including ethical issues; (iii) and the nature and extent of the totality of all of the relevant evidence (Gough, 2021^[10]).

There can be dangers in only focusing on individual studies on their own. An example is the pressure that academics can be under for their research to have an impact. Their individual studies may be of high quality, but a decision maker would be better informed by knowing and being able to take account of all relevant justifiable research claims.

One way to examine the evidence standards of KBIs is to examine the evidence claims in their summaries of “evidence-informed” policy and practice interventions, as in evidence portals and toolkits. The recommendations of portals may have widespread effect. Results for the United States, for example, has produced an Economic Mobility Catalog, a web-based resource for local governments to identify strategies that are effective in driving upward social mobility. The ratings of “good enough” evidence are based on the ratings provided by a number of evidence portals that may have different evidence standards.²

The previously mentioned small international survey of 15 national and international evidence portals found that only six of the portals used a formal (systematic) method of identifying and synthesising evidence informing users of research about effective interventions (Table 7.1). In some cases, there was variation in the standards used within a single centre.

Two of the portals used expert reviews, where a researcher uses their knowledge of a field to provide an overview of what is known. Such reviews may be excellent but rely on the knowledge of the expert, which may not be systematic in the depth and detail that they are able to identify, evaluate and synthesise knowledge from different studies.

Five of the portals in the survey based their evidence claims on the basis of one or two good studies. The danger with such an evidence standard is that it is not considering the whole knowledge base and there may be many other good quality studies that found an opposite result. It is interesting that most of the portals using the “1 or 2 good studies” criteria were focused on the effectiveness of intervention programmes (a specific combination of intervention components) rather than evidence of particular intervention strategies. Specific programmes are useful for indicating efficacy where there is intervention fidelity but may be less adaptable to contexts that differ significantly from those in which the programmes were developed. Table 7.1 shows that for the five portals providing evidence on programmes, just one or two studies were enough for the evidence portals to inform users that the programmes were effective.

The evidence standards of at least one of these portals have improved since the survey but it is clear that the standards of some KBIs for making an evidence claim of effectiveness can be quite low.

Table 7.1. Web-based portals evidence standards for making evidence claims of efficacy

Basis for applying criteria	Intervention programmes	Intervention approaches
Systematic review	0	6
'Narrative/ expert reviews'	0	2
Listing studies and results	0	2
Vote counting	0	0
One or two good studies*	5	0
Total N=15	5	10

Note:

* Maybe plus no evidence of harms from the intervention.

Source: Adapted from Gough, D. and H. White (2018_[19]), *Evidence Standards and Evidence Claims in Web Based Research Portals*, <https://eppi.ioe.ac.uk/cms/Default.aspx?tabid=3743>.

Specific standards will depend on the research questions being asked and the evidence claims made in response to these (Gough, 2021_[10]). The nature of the evidence and the standards for making evidence claims vary between, for example, research evidence on the effectiveness of an intervention, and the evidence in support of a causal model by which it had its effect.

The term “evidence standards” itself can be problematic in that it is used to describe a range of different approaches to supporting or appraising research to make justifiable evidence claims. These approaches can include (Gough, 2021_[10]):

- Methods standards criteria (methodological criteria for making an evidence claim).
- Methods guidance (advice as to appropriate research methods to make justifiable evidence claims).
- Internal quality assurance (processes for ensuring that research methods are performed appropriately).
- Reporting standards (criteria for transparent reporting of the execution of research).
- Methods appraisal (procedures for checking and reporting on the relevance and trustworthiness of research studies and the basis of their evidence claims).
- Stage of development, appraisal of effectiveness, and implementation of interventions (the extent that a certain policy or practice intervention has research evidence to justify its effectiveness and use).

All of these may be specified in extensive or minimal detail. There is, thus, much potential for confusion about what “evidence standards” means, as well as the bases or making judgements within each of these different types of standards. Clarity about these issues is an important area for KBIs to be clear, consistent and coherent.

In sum, inadequate or inconsistent evidence standards could lead to audiences misinterpreting or placing too much trust in the findings and guidance presented. See questions to consider in Box 7.5.

Box 7.5. Questions about the use of credible evidence standards for making evidence claims

The following questions are worth considering by KBIs when establishing and reporting their evidence standards:

- **Transparency:** Do the KBIs fully and explicitly report their specific methods and criteria for making evidence claims? Are these simple lists or are they manuals providing detailed explanations of the nature and basis of such judgements?
- **Consistency:** Are the KBIs consistent in their methods and criteria for making different evidence claims in different outputs?
- **Clarity:** Are KBIs clear about the nature of the evidence claim and how it is relevant and fits the needs of those to whom the claim is being communicated?

Evaluation of KBIs and contributing to the “use of research” knowledge base

For KBIs to be evidence-informed, it would be expected that they evaluate their progress in meeting their aims and modify their activity in response to their evaluations (as per Section 2 on the KBIs’ theories of change). Such evaluation would also allow KBIs to provide research findings to contribute to the scientific knowledge of “research on research use”.

KBIs are naturally focused on the activities that they have been funded for. There may be few resources available for them to commission external independent or internal self-evaluations. There are, of course, exceptions, with some KBIs formally evaluating most of their activities.

Where evaluation does take place, a distinction can be made between monitoring work activity, measuring the achievement of desired outcomes (KBI goals), and the processes by which these are achieved. Monitoring activity can be relatively straightforward, such as recording numbers of meetings or products produced. For measuring the extent of desired outcomes, a distinction can be made between interim and final outcome measures. Interim measures can be testing stages in a hypothesised theory of change and the processes involved.

Assessing detailed theories of change are rare and interim measures of assessing change can be very simplistic, such as web analytics of visits to KBIs web pages. These may indicate that users at least have had some contact with KBIs’ resources, though this does not necessarily mean that this has then informed decision making, policy and practice. “Use of research” means that research evidence was considered though it may not always be easily apparent what role the research had in the decision-making process.

The case of expert scientific advisory committees for government is relevant as there do not seem to be clear methods by which they are evaluated. There has been a focus on how government uses advice to respond to health emergencies such as the Bovine spongiform encephalopathy (BSE) crisis (Hincliffe, 2001^[27]) and now the COVID-19 pandemic, with the latter subject to an inquiry by the UK parliament’s Science and Technology Committee.³ There is also research on the use of evidence by legislatures (Geddes, 2020^[25]; Kenny et al., 2017^[28]).

Final outcome measures are often weakly specified. If the overall aim of a KBI is to increase the use of evidence, then any data showing use has increased may be a measure of success (though in such “natural experiments” the data is correlational and one cannot be sure what the cause of the changes are). This does not necessarily mean that the research has been used wisely or appropriately – just that it has been used. Even where the research has been wisely used, it may have led a decision maker to stop a planned action and so the influence of the KBI may be difficult to measure.

A more detailed way of appraising outcomes is to assess the effects on the intended beneficiaries of a KBI's work. KBIs occasionally do measure changes in achievements of their ultimate beneficiaries (e.g. pupil attainment), although this is rare (for e.g. Sibietta and Sianesi (2019^[29])). For expert scientific advisory committees, final outcome measures could be based on whether the advice was acted upon and by the nature of the outcomes ultimately achieved.

In sum, external or self-evaluation is important in determining whether and to what extent KBIs are meeting their objectives, and how they or others can better meet such objectives in the future. See questions to consider in Box 7.6.

Box 7.6. Questions about evaluation of KBI's work and contribution to the knowledge base

The following questions are worth considering by KBIs in terms of being evidence-informed in evaluating their work:

- **Rigorous evaluation:** Are KBIs indicating how they are meeting their aims (and other positive and negative effects) through the planned interim and final outcomes and appraisal of their theory of change?
- **Strategic development:** How do KBIs use their evaluations to adjust and develop their work over time?
- **Evidence of effect:** Are KBIs providing justifiable and relevant evidence claims about their positive contribution to the users and/or planned ultimate beneficiaries of their work?
- **Evidence standards:** Is there evidence for making any such claims (including the methods used to assess change and the use of subjective or objective measures of change)?
- **Research on research use:** Is KBIs' work contributing to the knowledge base on "research on research use"?

Discussion, implications and recommendations

There are relatively few studies of "research on research use" despite it being a key area of social science with major practical implications. The use of evidence is an issue for all sciences and its study is the one area of social science that applies to all other sciences.

This chapter contributes to the debate on how knowledge brokerage intermediaries (KBIs) can advance the study and practice of using research evidence by using evidence in their own decision making. It has provided some examples of how KBIs have become more explicit about being evidence-informed, particularly in regards to their aims, beneficiaries and methods to enable the uptake of research evidence. A number of recommendations are outlined in Box 7.7 below.

It is useful to consider why KBIs are not always evidence-informed in their work. One reason may be that the funders of new initiatives and the initiatives themselves are focused on action. The initiatives wish the tasks they undertake to progress, and they may be evaluated and obtain further funding on the basis of such activity, products and outputs. When KBIs are initiated, particularly when the focus is on providing access to research evidence, there may be an expectation of immediate evidence products. Evidence standards may then continue to develop organically rather than systematically and not be applied consistently.

The priorities of funders and initiatives is often on actions to increase research use rather than seeing the actions themselves as something that needs to be evidence-informed. There has only been limited research on KBIs. The Economic and Social Research Council (ESRC) in the United Kingdom, for

example, partly funds some What Works Centres (WWCs), as well as studies of their work, but such studies tend to be administrative appraisals and development work rather than academic studies of the nature and effectiveness of knowledge brokerage (ESRC, 2016^[30]).

A second possible reason is that even though KBIs should be major players within evidence ecosystems, they may not fully take on board an ecosystem perspective. It seems common sense that research needs to be communicated to decision makers in order for it to be used and that the role of KBIs is to provide access to research evidence. Yet, it is the obviousness of this process that hinders reflections on the limitations of simply “pushing” research to users.

Similarly, developing relationships between researchers and decision makers, and seconding researchers in policy departments can seem indisputable. Yet, “research on research use” indicates that such mechanisms in themselves may not be sufficient. What is needed is a holistic approach to examining the evidence ecosystem and using evidence in judging how a KBI can most effectively contribute.

Neglecting “research on research use” jeopardises KBI credibility and effectiveness. The analysis and recommendations in this chapter are intended to help increase the coherence of the planning and evaluation of KBIs and further develop knowledge brokerage as a field. But we must also acknowledge that political issues within the wider ecosystem, within which evidence ecosystems exist, may, of course, have a larger impact than the rational arguments of being evidence-informed.

Box 7.7. Recommendations

Recommendations for KBIs:

- Examine the functioning of the existing evidence ecosystem and make informed decisions as to where best to intervene and how. Clarify the needs analyses and opportunity costs of different possible strategic choices.
- Undertake an explicit analysis of the wider systems and contexts in which the KBI sits, to inform Theories of Change and engagement strategies. Consider whether there is a receptive infrastructure for the work of the KBI and where responsibility lies to coordinate the evidence ecosystem. Seek to actively influence and shape the wider systems and contexts to build readiness and receptivity for the work of the KBI.
- Be explicit in specifying how the methods being used will achieve the interim and overall aims of the KBI e.g. theories of change. Outline the evidential basis for how the methods are appropriate and effective, and supported by “research on research use”.
- Be evidence-informed in the use of credible evidence standards for making evidence claims in terms of:
 - Transparency: Explicitly report specific methods and criteria for making evidence claims.
 - Consistency: Be consistent in the methods and criteria for making different evidence claims in different outputs.
 - Clarity: Be clear about the nature of the evidence claim and how it is relevant and fits the needs of those to whom the claim is being communicated.
- Use external and self-evaluation to determine whether, and to what extent, KBIs are meeting their objectives, and how they or others can better meet such objectives in the future.

Recommendations for policy makers

- Recognise that evidence use and the work of KBIs cannot be considered in isolation but, instead, sits within the broader context in which schools operate. Consider how the wider

systems in education – accountability, school improvement, teacher training etc. – can enhance effective evidence use.

- Promote evidence use as a clear priority throughout the system to encourage alignment and consistent expectations at different levels of the system e.g. leadership, regional policy.
- Actively encourage and support the development of coordinated, trusted and fluid interactions and relationships between KBIs and other actors in the evidence system e.g. schools, policy makers.
- Consider where the responsibility lies to coordinate the overall evidence system, and provide active coordination and support if needed.

Recommendations for funders

- Work with policy makers and KBIs to consider the overall evidence ecosystem and where funding may be best directed to address weaknesses in that system.
- Encourage KBIs to establish clearly defined theories of change as part of funding agreements, specifying how the methods being used will achieve the aims.
- Recognise that short-term funding and budget inflexibility limit the capacity of KBIs to be strategic in the medium- and longer-term – where possible aim for longer cycles of funding and upfront endowments that encourage strategic flexibility.
- Fund monitoring and evaluation of KBIs' activities and outputs, as well as delivering services.

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Notes

¹ This chapter is adapted from an open-access paper published in *Evidence & Policy* (Gough, Maidment and Sharples, 2021^[31]).

² See Results for America, *About the Economic Mobility Catalog*, <https://catalog.results4america.org/about>.

³ For more information see <https://committees.parliament.uk/work/91/uk-science-research-and-technology-capability-and-influence-in-global-disease-outbreaks/publications/>



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