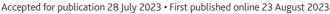
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review

Improving evidence use: a systematic scoping review of local models of knowledge mobilisation

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Background: While the rhetoric of evidence-based policymaking and practice is pervasive and persuasive, the extent to which either have been achieved is contested. Both require effective approaches to research-based knowledge mobilisation, particularly at the local level where context specificities undermine generic 'what works' claims. There has been limited research on *how* local processes of knowledge mobilisation happen, the practices they employ and why, and what can be learned from them.

Aims and method: We undertook a systematic scoping review of local models of knowledge mobilisation to address these gaps in process understanding. Keywords associated with knowledge mobilisation at the local level were identified, and searches of two international databases were conducted in May 2023.

Findings: Our review identifies three key features of knowledge mobilisation at the local level: it is relational; it involves the integration of different forms of knowledge; and it recognises the need for approaches to knowledge mobilisation to be tailored to local contexts, culture and capacity for evidence use by individuals and organisations, and at system level. Our findings advance understanding of how knowledge mobilisation at the local level can be designed to improve evidence utilisation in policy and practice.

Discussion and conclusion: The paper highlights important gaps in current knowledge – namely a lack of understanding of the informal processes that underpin local knowledge mobilisation and of the determinants of demand for and the impacts of mobilising evidence – and it suggests ways in which future research might address these.

Keywords knowledge mobilisation • local government • evidence-based policymaking • research impact

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Background

The rhetoric of evidence-based policymaking (EBPM), and evidence-based professional practice (EBP) has been widely adopted by governments and public

services at all scales across the world, and particularly in anglophone countries such as the UK, Canada, Australia, and South Africa. However, the extent to which evidence has a direct, instrumental, and observable impact on either is contested and examples are rare (Weiss, 1998). Rather, many commentators suggest that where evidence influences policymaking and practice it is in a variety of in-direct (for example, via issue advocates), conceptual (for example, by changing understandings of problems and their solutions over time) and diffused ways, that interact more-or-less favourably with political values and preference, professional expertise, and public opinion. Therefore, evidence-informed policymaking and practice (EIPM/P) may be a more realistic aspiration (Weiss, 1998; Young et al, 2002; Nutley et al, 2003).

Achieving either EBPM/P or EIPM/P requires processes and approaches for bringing evidence (usually meaning research-based evidence) to policy/practice settings and awareness, bringing policy/practice issues to research settings and awareness, and increasing research utility and evidence utilisation. This review reports on the *approaches* – practices and everyday crafts – involved in this knowledge mobilisation activity at local levels of policy/practice decision making. By 'local' policy and practice decision making we mean the activities of local governments and local public bodies involved in the design and delivery of public services at the community level. This could take place in settings such as public health clinics, classrooms, children's services, housing offices, local environmental services, community services, and so on. We identify approaches related to key *features* of knowledge mobilisation process which map well onto existing reviews of the functions of knowledge brokers that work to connect research, policy, and practice. We briefly describe this scholarship before outlining the contribution our review makes to understanding how these functions are operationalised in local-level research-policy-practice interactions.

Best and Holmes (2010: 146), identify 'three generations of thinking' about how research interacts with policy and practice. The first defined linear models of interaction; the second, relationship models; and the third (and most recent) systems models of interaction. The linear model describes unidirectional efforts to 'push' research findings as 'knowledge products' out to policy/practice (often termed research dissemination), with limited consideration of how they would or could be used in decision making (Dobbins et al, 2002; Armstrong et al, 2013). Similarly, Young et al (2002) describe a unidirectional model whereby policy and/or practice affects a 'pull' on the direction of research priorities to better fit policy/practice needs. The limitations of linear models are well-reported; particularly that they underappreciate the uncertainties and interconnectivities (complexities) of policy and practice settings; misunderstand the motivations of research and overstate the availability and certainty of research evidence for policy; and overlook the range of factors that influence decision making, for example, political agendas, electoral cycles, professional perspectives, public perception, and resource constraints, and so on (Young et al, 2002; Boaz et al, 2008; Boswell, 2017; Cairney, 2019; MacKillop et al, 2020).

A growing literature echoes Best and Holmes' (2010) call for more sophisticated 'knowledge mobilisation' approaches. These involve nuanced processes for non-linear and iterative interactions between diverse actors and forms of knowledge (including but not limited to research-based evidence), which are created within research-policy-practice systems and translated and transferred across multiple scales, including individual, organisational and system-wide levels, in ways which increase their utility and useability in decision making (for example, Graham et al, 2006; Best and Holmes,

2010; Murdock et al 2013; Rycroft-Malone et al, 2015; Kim et al, 2018; Gabbay et al, 2020; Lamont and Maxwell, 2021).

The need for translation and transferal of knowledge has led to increasing interest in the work of knowledge-brokering individuals and organisations (MacKillop et al, 2020), who bridge the gap between research and policymaking/practitioner 'communities' (Caplan, 1979). Existing reviews advance understanding of the functions of knowledge brokers and the strategies they employ (Ward et al, 2009; Bornbaum et al, 2015; Neal et al, 2022; Neal et al, 2023). Knowledge brokers are typically described as carrying out knowledge management: for example, navigating the research landscape, interpreting, translating and disseminating evidence to policy/practice audiences, and helping to articulate policy-relevant research questions; linkage and exchange: for example, developing and strengthening relationships between researchers and policymakers/ practitioners; and capacity building: enabling researchers to better communicate evidence and enabling policymakers/practitioners to develop the analytical and interpretive skills to utilise it (Ward et al, 2009). To this list Neal et al (2023), add finding alignment: mediating difference and seeking agreement on the shared agendas of evidence producers and users and bringing together multiple sources of knowledge on issues to coproduce solutions; and directly advising decisions using research. In general, the approaches – practices and crafts – of knowledge mobilisation are not the focus of these reviews, but examples are offered: for instance, brokers are described as translating knowledge via accessible synthesis and summary, building capacity via educational outreach, and facilitating relationships through networking events, one-to-one interactions and communities of practice (Ward et al, 2009; Neal et al, 2023). An exception is Bornbaum et al (2015), who map the activities of knowledge brokers in health-related settings on to the core functions identified by Ward et al (2009).

Building on existing scholarship, our review sought to identify the approaches to knowledge mobilisation at local levels of research-policy-practice interaction, without restriction on policy field. Most studies of knowledge mobilisation have focused on national policymaking rather than local policy or practice (Kim et al, 2018), albeit with some notable exceptions (Neal et al, 2015; Rycroft-Malone, 2015). Our focus recognises that the national-level experience does not easily read across to these local settings where contextual specificities can undermine confidence that generic 'what works' claims will be applicable (Best and Holmes, 2010; Armstrong et al, 2013), and where professional expertise (determined by training, experience, and judgement), local politics and knowledge play powerful roles in informing decision making and action (Biesta, 2007; Fleming and Rhodes, 2018). Also, given the increasing recognition of the importance of research-policy-practice interaction (for example, Armstrong et al, 2013), we focused on approaches that involve direct contact between researchers, policymakers, practitioners, and actors seeking to broker those interactions.

This paper presents key findings from the review and makes an important contribution to advancing knowledge on the interaction of research, policy, and practice at the local level. It reports on the approaches involved, which were then categorised as related to three key features of knowledge mobilisation: it is relational; it involves the integration of different forms of knowledge; and it is tailored to local contexts, culture and capacity for evidence use at individual, organisational and system levels. These features relate well to existing scholarship on the functions of knowledge brokers, and the approaches identified operationalise how these features/functions are realised in practice: a) how

relationships are developed and maintained; b) how local knowledge and experience-based challenges to decontextualised evidence are integrated, alongside research evidence, as a result of these relationships and relational processes; and c) how this integrated knowledge engages with the wider context of policymaking and practice – including the multilevel structures and systems within which this happens – in order for that knowledge to be useful and usable in decision making.

Since our findings focus on tangible approaches – practices and crafts – adopted across and within different local-level knowledge-mobilisation contexts, we provide insight on how knowledge mobilisation at the local level can be designed, operationalised and improved. This will be of particular interest to knowledge brokering organisations (such as evidence centres, policy and practice-facing university researchers and research centres, professional public service bodies and membership organisations); decision makers and practitioners working at a local level; and scholars researching how knowledge is transformed into action. It also contributes to wider efforts to understand how evidence can be better mobilised to address complex 'real-world' challenges.

The next section of the paper describes our methodology. We then report the approaches – practices and crafts – under each key feature of knowledge mobilisation at the local level. Finally, we highlight two important gaps in knowledge that remain following our review. Firstly, while a focus on approach is useful in determining how knowledge mobilisation is done at local levels of policy/practice decision making, there remains limited detail on these – the practices and everyday crafts of knowledge mobilisation – and what makes them effective. Secondly, there is limited engagement with demand for and effectiveness of knowledge mobilisation, for example, its impact on policy/practice. We conclude by suggesting ways in which further research might address these gaps.

Methods: systematic scoping review

We conducted a scoping review to identify local models of knowledge mobilisation and the key approaches involved. Our review progressed in five core stages: defining the research question; identifying relevant studies; selecting studies for inclusion; charting the data; and analysing and interpreting findings (Arksey and O'Malley, 2005; Levac et al, 2010). At each stage our approach was systematic and transparent, following the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines (Moher et al, 2009) to ensure reliability and reproducibility (Mays et al, 2001). The review did not include registered review protocol.

In keeping with scoping review methodologies, our research question was defined in exploratory terms as: 'what are the models (processes) and approaches (practices) of knowledge mobilisation at the local level described in published knowledge mobilisation research studies?'. Related to this, we were concerned with how knowledge mobilisation processes and practices were described (assumptions about research-policy-practice interaction), and how demand for and effectiveness of knowledge mobilisation was reported. While we use the term knowledge mobilisation, there is a wide range of other terms used in the literature to describe the same/similar processes (Doran and Sidani, 2007; Campbell, 2010). This is partially a consequence of the conceptual evolution of thinking about research-policy-practice interaction over time (Best and Holmes, 2010), and partially due to preferences for different terms in

different countries and disciplines. We found little attempt to define or differentiate the different terms that are in use. Graham et al (2006) are a notable exception.

We did not attempt to resolve this lack of clarity over terms but dealt with it by defining our search query broadly and including variable spellings. It was constructed as follows: (knowledge mobilisation OR knowledge mobilisation OR research mobilisation OR research mobilisation OR knowledge utilisation OR knowledge utilization OR research utilisation OR knowledge exchange OR knowledge transfer) AND (process* OR model OR framework) AND (local govern* OR local authorit* OR council OR public service*). Searches were conducted in May 2023 and two international research databases were interrogated: Scopus and Web of Science. To ensure our scoping was as comprehensive as possible, additional records were identified through citation searching and recommendations from academic experts. We did not set a time span to restrict our search.

Our inclusion/exclusion criteria were initially broad and subsequently refined as the scale and range of the literature was established (Arksey and O'Malley, 2005; Colquhoun et al, 2014). Once duplicates (n=73) were removed, one of the research team (R1) screened all abstracts against the initial inclusion criteria: academic, peerreviewed journal papers, available in English, on the mobilisation of knowledge or evidence in a local policy/practice setting (see Table 1). A randomly selected sample of 50 (10%) were checked for consistency by a second member of the team (R2). R2 independently screened these without sight of R1's screening, and any inconsistencies identified were discussed and resolved (this resulted in three excluded abstracts from the wider corpus being re-included). Eleven were not available in English, three were not academic journal papers, and 298 were not relevant. In total, 223 studies were screened at full text and categorised by R1 according to

Table 1: Inclusion and exclusion criteria

Stage	Inclusion	Exclusion
Initial criteria	Academic, peer-reviewed paper on the mobilisation	Study does not describe the mobilisation of knowledge or evidence in a local policy/practice setting.
	of knowledge or evidence in a local policy/	Full paper not available.
	practice setting.	Full paper not available in English.
		Book chapter(s).
Further criteria	Study describes in detail models or approaches to the mobilisation of knowledge or evidence process in a local policy/	Knowledge mobilisation process model or approach not described in detail, for example, terms used superficially before reporting on the types of evidence used in local policymaking and practices, enablers and barriers (including the politics of knowledge mobilisation) and/or outcomes.
	practice setting.	Knowledge mobilisation does not relate to research- derived knowledge, for example, mobilisation of learning from peer experience or tacit/organisational knowledge.
		Knowledge mobilisation does not involve direct interaction between researchers and policy/practice professionals, for example, study describes professional development, independent study by practitioners, and community engagement in evidence-based practice.
		Models for data use, for example, smart-cities/e-governance.

the core theme of the paper. R2 provided a second opinion on 47 studies where overlaps or ambiguities were identified. These were discussed and agreement on categorisation was reached.

The decision to categorise all sources reflected a recognition that the corpus was diverse and, while all papers were relevant to aspects of knowledge mobilisation (for example, reporting barriers and enablers to research utilisation or views on what counts as evidence), many did not provide the detail on knowledge mobilisation process and practice at the local level required to answer our research questions. We therefore discussed and tightened the focus of the review and agreed further inclusion and exclusion criteria; additionally requiring a detailed description of process and practice, that knowledge mobilisation involved research-derived evidence, and that direct interaction occurred between researchers, brokers, and policymakers/practitioners (see Table 1). A table categorising the core themes of studies excluded on the grounds of further criteria at full text, and the numbers of papers excluded against each, is provided in Appendix 1. In total, 195 records were excluded at this second stage and 28 included as in scope (see Figure 1 for the PRISMA flow chart). A table of all included studies is provided in Appendix 2 and available from https://osf.io/yfjvw/. This records study location, policy/ practice field, study design, the nature of the knowledge mobilisation interaction, and the knowledge mobilisation terms used.

We used a data extraction chart developed in Excel to record key information on each study, including how the authors described the knowledge mobilisation process and its motivations, the core processes and practices involved, and how demand for and effectiveness of knowledge mobilisation are reported. The complete data extraction chart is available at https://osf.io/yfjvw/.

R1 and R2 first agreed a narrative description of the included studies, focusing on how authors described the knowledge mobilisation process (for example, linear or complex/interactive), and the motivations for carrying it out. Secondly, we agreed a set of descriptive analytic categories (Table 2) relating to core approaches – practices and crafts – involved in knowledge mobilisation at the local level. These were iteratively adapted throughout the descriptive coding process carried out manually by R1. An additional category was added relating to how/whether demand for and impact of knowledge mobilisation were reported, as this was identified as a gap during coding. From the descriptive codes that emerged from the data, R1 and R2 defined a set of interpretive categories (Table 2) that were found to broadly relate the approaches to local-level knowledge mobilisation identified to more general features of knowledge mobilisation and the roles and strategies of knowledge brokerage discussed in the wider literature we refer to above.

Findings

Key features of local knowledge mobilisation

Our review sought to understand the specific approaches – practices and everyday crafts – adopted in local-level knowledge mobilisation processes. Related to this principal aim, and to situate our findings on practice, we were concerned with how local-level knowledge mobilisation was described and what motivated it, as well as the demand for knowledge mobilisation and its effectiveness or impact.

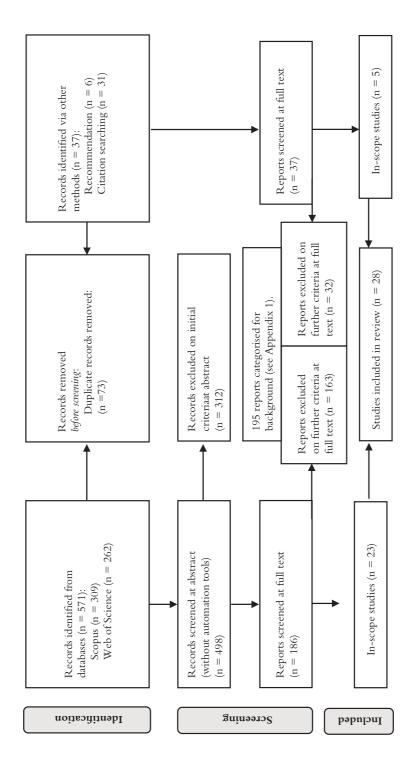


Figure 1: PRISMA flow chart

Table 2: Key features of local models of knowledge mobilisation

Approaches (descriptive categories)	Features (interpretive categories)
Networks and interaction	Relational
Creating usable information	Integrative
Skills and attitudes	Contextual
Organisational culture change	
Structural and system change	
Measurement or evaluation	Take demand and impact for granted

Knowledge mobilisation was described across the included studies as a complex, dynamic and contextually contingent process – often explicitly in antithesis to linear, transactional models – and the approaches and features outlined below reflect this. However, our review found little engagement with the demand for knowledge mobilisation and its effectiveness or impact (see also Ward et al, 2009; Bornbaum et al, 2015; MacKillop et al, 2020; Neal et al, 2023). While motivations for knowledge mobilisation were usually clear (for example, improving decision making or service provision), it was less often clear whose these motivations were (that is, whether demand came from policy/practice and if so, how) or whether motivations varied (Rycroft-Malone, 2015). Furthermore, many studies did not report on the efficacy of the processes they described or proposed and, where they did, these were often self-reported and lacked depth. We address these limitations of the studies reviewed in the discussion. The remainder of this section deals with our findings on approaches to knowledge mobilisation at the local level: the tangible practices and everyday crafts involved.

Our review identified six approaches involved in local-level knowledge mobilisation. Most of the included studies discussed all these approaches, which were typically adopted as overlapping strategies within a wider knowledge mobilisation process (Ward et al, 2009). The approaches were the development and maintenance of networks and other forms of interaction between researchers and policymakers/ practitioners (for example, advisory groups, communities of practice, and so on); the creation of usable knowledge (for example, evidence synthesis, toolkits, and other policy/ practice-oriented outputs); developing skills and attitudes of researchers and policymakers/ practitioners (for example, through training or embedded research); achieving culture change at the organisational level (for example, through incentives, strategy, and resources); structural and system change (for example, funding arrangements, disciplinary norms, policies/initiatives); and the measurement or evaluation of processes and/or impacts (Table 2).

Table 2 shows how these approaches relate to key *features* of local knowledge mobilisation described in the literature. This section explores the first three of these features: relational processes of interaction; the knowledge integration which is said to result; and the engagement with organisational and system contexts involved in transforming knowledge into action. A fourth feature: the assumption that there is demand for evidence and that using it was desirable/beneficial (impactful) – we treat as a limitation of the studies and is a theme to which we return in the discussion.

A relational process

The papers in our review demonstrate the key role played by relational processes of interaction between diverse actors – researchers, policymakers, public service providers and wider stakeholders – throughout the knowledge mobilisation cycle. This interaction typically extends well beyond traditional linear notions of 'research dissemination' (for example, Cummins and McKenna, 2010; Miszczak and Patel, 2018), and involves the continuous, cyclical engagement of policymakers and practitioners as partners, beginning with 'upstream' research planning and production (for example, Murdock et al, 2013; Kim et al, 2018). There is broad consensus that this improves the relevance, applicability, and acceptability of research evidence (for example, Campbell, 2010; Stansfield and South, 2018). Interactive approaches focus on developing and sustaining the engagement of researchers, policymakers and practitioners through both formal and informal processes, which are summarised in Table 3.

Table 3: Approaches to facilitating and maintaining interaction.

Approach	Aims	Examples
Collaborative networks: large groups organised around a shared interest/ goal/concern	Facilitating long-term collaboration, 'mutual learning' (Williams et al, 2008) and 'coalition building' (Stansfield and South, 2018); sharing knowledge, research findings and best practice; co-conceptualising issues, identifying research needs/gaps; supporting implementation by providing a platform for sharing experience (Bangar et al, 2015).	'Communities of practice' (Cooke, 2021); 'community policy forums' (Williams et al, 2008); events, conferences, seminars, workshops (Murdock et al, 2013; Kim et al, 2018); and membership networks (Bangar et al, 2015).
Stakeholder/ advisory groups: smaller groups specifically selected to reflect or represent different interests or experiences around a particular issue or focus area	Providing structured, formal engagement opportunities across institutions, disciplines, sectors, to enable information sharing and collaborative agenda/priority setting and 'problem' identification, improving research acceptance and application/implementation (Armstrong et al, 2013) by facilitating regular interaction (van Eyk et al, 2020) between 'researchers' and 'end-users' on a given project (Hoekstra et al, 2020).	Stakeholder/advisory groups (Murdock et al, 2013; Bangar et al, 2015); policy advisory groups (van Eyk et al, 2020); steering committees (Williams et al, 2008).
Embedded expertise: researchers, policymakers, or practitioners being employed/ seconded or 'placed' to work in different policy, practice, or research settings	Promoting mutual experiential learning, capacity building and knowledge sharing (Williams et al, 2008; Gabbay et al, 2020; Cooke, 2021; Fynn et al, 2021); disrupting established patterns of knowledge production and associated sectoral divides (Miszczak and Patel, 2018); and supporting implementation by building the skills, understanding and culture to support evidence mobilisation among diverse research 'producers' and 'users' (Duan and Jin, 2022).	Embedded action researchers (Williams et al, 2008); secondment (Stansfield and South, 2018); two-way 'people placement' or practice-research 'coproduction sabbaticals' (Miszczak and Patel, 2018); 'research translator' roles (Morgan et al, 2011); collaborative PhD programmes placing researchers in policy/practice settings (Reid and McCormick, 2010); research internship schemes, fellowships, and placements (Cooke, 2021).

Papers focus primarily on formal interactions, highlighting the importance of researchpolicy-practice engagement being structurally, organisationally or institutionally embedded (for example, El-Jardali and Fadlallah, 2015; van Eyk et al, 2020; Schoenberg et al, 2021). The processes described typically seek to establish and maintain longterm, cross-sectoral, cross-disciplinary engagement between diverse actors, from research conception to implementation (Murdock et al, 2013; Bangar et al, 2015). Eleven papers identify specific approaches to facilitating these interactions, ranging from the establishment of broad, collaborative networks such as 'communities of practice' (for example, Cooke, 2021) to more focused stakeholder groups such as 'policy advisory groups' (for example, van Eyk et al, 2020). Seven papers describe interaction through a variety of 'embedded expertise' approaches: formal arrangements through which researchers spend time working in policy/practice settings (for example, a local government department or hospital), or practitioners/decision makers in research settings (for example, university research centre or knowledgebrokering organisation). Ten papers propose using multiple overlapping strategies across different (also overlapping) stages of the knowledge mobilisation cycle (for example, Stansfield and South, 2018; van Eyk et al, 2020). For example, stakeholder groups are commonly reported to be involved in early engagement (defining issues and research question), but also dissemination (their involvement may be structured differently accordingly); collaborative networks can support research dissemination and good practice implementation, as well as providing a platform for collaborative agenda setting or question framing; likewise, embedded expertise approaches can facilitate evidence production, dissemination and implementation. All these approaches typically constitute, or sit beneath, formal partnerships between research, policy, and practice institutions, for example, government, public services, and research bodies (van Eyk et al, 2020; Pettman et al, 2013).

Knowledge integration

The shift towards interactive models of knowledge mobilisation (Armstrong et al, 2013) has both practical and epistemological implications for the knowledge being 'mobilised' (Gabbay et al, 2020). Twelve papers describe the interaction that occurs between a range of actors as resulting in an *integration* (or similar term) of research-derived knowledge with diverse other forms of knowledge, such as tacit, professional, experiential, local, or contextual (for example, Hoekstra et al, 2020; Gabbay et al, 2020). Informal discussion between a knowledge broker and a healthcare practitioner might determine the bodies (scope) of research that broker chooses for an evidence synthesis, and the way that research is framed and analysed.

This integration contributes to the continuous (re)production of the evidence itself (Williams et al, 2008; Ferdinand et al, 2017; Gabbay et al, 2020), and means that evidence is reshaped through the knowledge mobilisation process, rather than being delivered; as is implied by research diffusion/dissemination models (and wider EBPM rhetoric) that seek to transfer a 'piece' of evidence from 'producers' for example, researchers, to 'users' for example, policymakers and practitioners (Bynner and Terje, 2021). Like the interaction it stems from, this integration is seen as critical to enhancing the accessibility and acceptability of evidence. It adds richness and diverse perspectives which enable policymakers and practitioners to apply it to complex

problems (Gabbay et al, 2020; Schoenberg et al, 2021). Four papers therefore call for a deliberate broadening of knowledge bases beyond academic research, and argue against evidence hierarchies, which privilege some forms of knowledge over others (for example, Murdock et al, 2013; Miszczak and Patel, 2018; Bynner and Terje, 2021).

Four papers emphasise that knowledge integration should happen at all stages of knowledge mobilisation, from research conception through its production, dissemination, and application, though it is seen as being particularly important in earlier stages (for example, problem definition). However, the main approaches to knowledge integration which they describe (evidence synthesis and the production of evidence-based guidelines) generally come *after* research production, and typically start with pieces of already produced information deriving from research which is perceived – mostly by researchers in the first instance – as relevant to policy and practice (Dobbins et al, 2002).

All papers describe active processes of transforming the research evidence to render it more accessible, acceptable, and applicable for the intended users. These involve various 'knowledge behaviours' (Gabbay et al, 2020) including translating, tailoring, contextualising, filtering, clarifying, evaluating, summarising, synthesising, presenting, scrutinising, and validating evidence (Campbell, 2010; Gabbay et al, 2020; Hoekstra et al, 2020). Graham et al (2006) describe them as taking place within a 'knowledge funnel', where research-derived knowledge becomes increasingly 'useable' as it moves through three 'generations' of knowledge behaviours: from research generation to evidence synthesis to evidence-based toolkits/guidelines. Ten papers in our review described processes of coproduction and collaborations in generating research which helped secure buy-in and ownership of policymakers and practitioners (for example, Journal Club Team, 2022). Nine papers highlighted examples of evidence synthesis which collated, summarised, and contextualised evidence in ways that were tailored for particular audiences: for example, 'translating' exercise guidelines into local clinical and community contexts (Hoekstra et al, 2020); and four papers described the use of toolkits and guidelines to support decision making, assist implementation, change ways of thinking and measure impact (Table 4).

Papers also describe practical steps to increase the *accessibility* of evidence, for example, through navigable digital tools/platforms, visual/graphic depictions, and the use of 'plain' language (Williams et al, 2008; Bangar et al, 2015; Hoekstra et al, 2020), as well as its *acceptability*, for example, through demonstrating coproduction or collaboration and aligning with research 'user' priorities (Murdock et al, 2013; Stansfield and South, 2018).

Engagement with context, culture, and capacity

The papers included in our review describe how the processes of knowledge integration described above interact with organisational culture and capacity; the specificities and contingencies of the context in which evidence is being applied and competing pressures within policy and practice environments (Gabbay et al, 2020). The wider literature on EBPM and EBP typically focuses on the skills, capabilities, and attitudes of individual researchers, policymakers, and practitioners (Graham et al, 2006), and advocates training and development programmes as the primary means of bridging the research-practice 'gap' (Richardson, 2013); for example, workshops

Table 4: Approaches to creating accessible and usable information

Approach	Aims	Examples
Coproduction or collaboration in research generation: the involvement of 'research users' from research conception through production	Establishing 'buy-in' and ownership among 'research users' and increasing the accessibility, acceptability, and applicability of primary research by considering their priorities, contexts, and perspectives (Campbell, 2010; Graham et al, 2006).	Approaches to facilitating interaction outlined in Table 3: collaborative networks or stakeholder groups.
Evidence synthesis: collating, summarising and contextualising evidence for the intended audience	Increasing evidence accessibility, acceptability, and applicability by placing it in context, for example, of specific legislative requirements or policy/practice aims (Armstrong et al, 2013); producing short, solution-oriented outputs with key, actionable, relevant, and timely messages; capturing interest/attention, for example, using innovative outputs and social media (Murdock et al, 2013; Kim et al, 2018).	Systematic reviews of research evidence on a given topic; summaries of the most relevant evidence for target audiences; policy briefings to present key findings from evidence synthesis for policymaking and practice audiences.
Evidence-based tools or guidelines: subjecting evidence to further 'funnelling' to produce actionable resources/ tools/guidelines	Supporting decision making, instigating action, or changing ways of thinking and measuring impact by tracking tool utilisation (Cooke, 2021); considering research evidence alongside implementation context (Fynn et al, 2021), sometimes involving further processes of coproduction or collaboration (Hoekstra et al, 2020).	Toolkits, resources, or guidelines to suggest tangible actions with consideration of implementation context.

to develop skills in identifying, critically assessing and synthesising evidence. Almost all (26) of the papers in our review acknowledge the role of skills development among policymakers and practitioners in fostering 'buy-in', 'attitudes' or 'cultures' that are receptive to evidence use (El-Jardali and Fadlallah, 2015), as well as skills in researchers to contextualise evidence (Reid and McCormick, 2010), and describe a variety of approaches to formal training and experiential learning (Table 5). But all also emphasise the influence of structural factors (Armstrong et al, 2013; Pettman et al, 2013) which explain the 'patchy' success of approaches that focus exclusively on capacity building at the individual level.

The recognition that individuals' skills, attitudes, and behaviours are influenced by wider structural factors (for example, Morgan et al, 2011; Miszczak and Patel, 2018) points to the importance of a multilevel approach to knowledge mobilisation that takes account of organisational and system-wide enablers and barriers of evidence use (for example, Armstrong et al, 2013; Stansfield and South 2018). For example, Morgan et al (2011) describe how disciplinary norms, expectations and career progression structures in academia can create hostility towards knowledge translation roles – which can become perceived as irrelevant, unhelpful, or risky to engage with. Conversely, Cummins and McKenna (2010) describe how designating time, roles and/or funding for knowledge mobilisation can support the development of the shared spaces and shared values that are foundational to the development of interactions between researchers and policymakers/practitioners. Papers in our review therefore advocate creating organisational cultures that are receptive to evidence use by engaging 'key stakeholders' and 'opinion leaders'; involving policymakers and practitioners 'upstream';

and using the media to shape public attitudes and highlight tools for using evidence, governance processes and resource allocations as factors that shape the wider systems within which individuals choose to use (or not to use) evidence (Table 5).

Discussion and conclusions

The previous section outlined tangible approaches relating to three key features of local-level knowledge mobilisation: it is a relational process which is supported by mechanisms that facilitate iterative interaction between researchers, policymakers, and practitioners; different knowledge types are integrated to create usable information; and approaches to knowledge mobilisation are tailored to local contexts, culture and capacity for evidence use at individual, organisational and system levels. These features relate well to functions and activities of knowledge brokers identified in previous reviews (Ward et al, 2009; Bornbaum et al, 2015; Neal et al, 2023). These reviews highlight knowledge brokering as linking research and policy/practice; managing the translation and dissemination of knowledge and finding alignment between agendas and knowledge types; building capacity to communicate and use evidence; and advising decisions. The associated approaches that we identify (see also Bornbaum et al, 2015) are important because they offer researchers, policymakers, and practitioners practical insights into the kinds of practices and crafts which they could build into attempts to ensure that research evidence can applied to 'real-world' challenges in local settings. But it is imperative that future research addresses two important gaps that we (and many authors themselves) have identified in the papers reviewed: more detailed empirical analysis of what actually happens when the approaches to knowledge mobilisation they advocate are operationalised (the more elusive practices or crafts described as difficult to capture); and an in-depth understanding of the demand for and impacts of knowledge mobilisation at local level.

What actually happens in local knowledge mobilisation?

The papers that we reviewed conceptualise local knowledge mobilisation as a relational process and advocate a range of approaches for facilitating and maintaining interactions among researchers, policymakers, and practitioners. However, most are unable to capture the complex 'crafts' underpinning and resulting from these interactions (for example, the craft of relationship building, the 'art' of persuasion, or the role of informal interaction). Six papers note the importance of informal interactions and 'soft skills' for developing relationships, rapport and trust (also Ward et al, 2009; Rycroft-Malone et al, 2015; Neal et al, 2023) but, again, emphasise the difficulty of capturing these (Jacobson et al, 2003; Murdock et al, 2013; Miszczak and Patel, 2018; Gabbay et al, 2020; Bynner and Terje, 2021; Schoenberg et al, 2021).

The challenges of determining these more elusive dynamics of interaction is starkest when it comes to 'upstream' stages of research conception and production, where interaction is considered particularly important (Richardson, 2013; Miszczak and Patel, 2018). Three papers draw on the broader coproduction/participatory research literatures to highlight the need to overcome the separation between research production/producers and use/users (Campbell, 2010; Richardson, 2013; Kim et al, 2018). However, analysis of the role of policymakers, practitioners, and

Table 5: Approaches to building capacity and cultures for evidence use

Approach		Aims	Examples
Individual skills	Professional/workforce development: developing skills and attitudes to increase and improve evidence use in policy and practice settings	To develop critical and interpretative skills (Stansfield and South, 2018) and the understanding and communication of evidence needs at a practice level (Murdock et al, 2013); to increase 'buy-in' to evidence use by presenting its rationale and benefits (Ferdinand et al, 2017) and build shared values or attitudes (Cummins and McKenna, 2010). Internal organisational training (Ferdinand et al, 2017) and build organisational change (Schoenberg et al, 2021); 'righ-profile' workshops and conference programmes shared values or attitudes (Cummins and McKenna, 2010). (Murdock et al, 2015).	Internal organisational training (Ferdinand et al, 2017); sector-wide structured programmes to support and increase capacity of 'key individuals' to incite organisational change (Schoenberg et al, 2021); 'high-profile' workshops and conference programmes (Bangar et al, 2015); 'capacity building clusters' (ESRC) (Murdock et al, 2013).
	Researcher development: developing understanding of intended research 'users', their contexts, and the skills to engage with them	To develop contextual understanding; research brokerage and collaboration skills, and skills for producing accessible outputs, syntheses and summaries for practice or policy audiences (Reid and McCormick, 2010; Morgan et al, 2011; Et-Jardali and Fadlallah, 2015; Cooke, 2021).	None specified (some reference to experiential learning opportunities outlined below).
	Mutual learning through experience: 'unilateral' (Neal et al, 2015) or 'bi-directional' learning (Schoenberg et al, 2021) through experiential (rather than formal) learning opportunities (Cooke, 2021; Duan and Jin, 2022)	To develop skills (Reid and McCormick, 2010; Murdock et al, 2013; Miszczak and Patel, 2018) as well as new perspectives and ways of thinking through interaction across diverse sectors, disciplines, and institutions (Cummins and McKenna, 2010; Schoenberg et al, 2021; Cooke, 2021).	Mechanisms for interaction detailed above (networks, partnerships, and embedded expertise) said to provide collaborative architectures' for learning through experience (Cooke, 2021).

(Continued)

Table 5: Continued

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Approach		Aims	Examples
Organisational culture	Evidence advocates: influential individuals supported to promote and enable evidence mobilisation in their policy, practice, or research setting	To gain leverage and influence at organisational or sectoral decision-making levels through various approaches to identifying and engaging 'key stakeholders' or 'opinion leaders' (Pettman et al, 2013; Bangar et al, 2015; Miszczak and Patel, 2018; Kim et al, 2018; Stansfield and South, 2018; Cabbay et al, 2020). Employing 'super-users' with 'insider status' to promote devider status' to promote use among potentially hesitant practitioners (Cabbay et al, 2020); engaging and supporting 'early adopters' to promote evider status' to promote evider status' to promote and supporting early adopters' to promote use among potentially hesitant practitioners (Cabbay et al, 2020); engaging and supporting 'early adopters' to promote use among potentially hesitant practitioners (Cabbay et al, 2018; Stansfield and South, 2018); utilising diverse forms of brokerage such as 'gatekeepers', 'representatives' and 'tinerants' (Neal et al, 2015).	Employing 'super-users' with 'insider status' to promote evidence use among potentially hesitant practitioners (Cabbay et al, 2020); engaging and supporting 'early adopters' to promote wider system change (Stansfield and South, 2018); utilising diverse forms of brokerage such as 'gatekeepers', 'representatives' and 'itinerants' (Neal et al, 2015).
	Research ownership: creating 'receptive' research cultures through the upstream engagement of policymakers and practitioners outlined above	To develop shared values, priorities and perspectives (Cummins and McKenna, 2010; Stansfield and South, 2018); to build trust and mutuality so that participants feel their engagement is genuine; to avoid creation of tensions where research 'with' becomes research 'on' (Murdock et al, 2013).	Approaches to facilitating interaction outlined in Table 3.
	Media engagement: utilising the reach and reputation of different (social) media outlets or platforms for different purposes	To influence public opinion around the use of evidence (its benefits and limitations) (Williams et al, 2008); to share information about specific issues (Hoekstra et al, 2020); to change perceptions among diverse audiences, thus moving beyond a (sole) focus on evidence that is actionable/ implementable towards how broader cultural shifts might change the parameters of what is actionable/ implementable (Hoekstra et al, 2020); Bangar et al, 2015).	National-scale media engagement for reach and legitimacy (Bangar et al, 2015); social media for experimental outputs; trusted local news outlets for community engagement (Hoekstra et al, 2020); art or alternative media for shifting cultural perceptions (Bangar et al, 2015).

(Continued)

Table 5. Continued

Approach		Aims	Examples
System/ structural change	Tools/systems: digital or non-digital systems for accessing, filtering, interpreting, and applying academic research	To allow access to journals (Miszczak and Patel, 2018); to support with filtering and interpreting research evidence (Gabbay et al, 2020); to guide the application or implementation of evidence in policy or practice contexts (Armstrong et al 2013).	Electronic systems/software (Miszczak and Patel, 2018, Gabbay et al, 2020); non-electronic tools such as evidence prompts, toolkits, resources, templates, plans, job aids, technical support, or guidelines (Pettman et al, 2013; Armstrong et al, 2013; Kim et al, 2018; El-Jardali and Fadlallah, 2015; Schoenberg et al, 2021).
	Procedure and governance: formalised ways of working at organisational and sectoral levels	To organisationally and systemically embed evidence use into planning processes, management practices and governance structures (Lester, 2018; Fynn et al, 2021; Journal Club Team, 2022).	Mechanisms for interaction (for example, partnerships or embedded expertise); mentoring and research groups or embedded expertise); mentoring and research groups (Armstrong et al, 2013; Pettman et al, 2013); statutory guidance or legislation (Jacobson et al, 2003); contract and grant requirements (Cooke 2021); peer review processes (Morgan et al, 2011); recognition/reward/contract structures ((Morgan et al, 2011); outcome monitoring and evaluation, audits and inspection, and reporting, feedback and assessment (Jacobson et al, 2003; Lester, 2018; Schoenberg et al, 2021).
	Financial and human resourcing: designating time, roles and resources to knowledge mobilisation	To support research capacity in time and resourcestretched policy and practice contexts (Murdock et al, 2013; Graham et al, 2006; El-Jardali and Fadlallah 2015; Miszczak and Patel 2018; Cooke 2021); to organisationally embed evidence use (Armstrong et al, 2013; Kim et al, 2018).	Protecting time and creating specific roles or teams; financial resourcing, particularly in low/middle income countries (EL-Jardali and Fadlallah, 2015); non-financial 'workarounds', for example, 'barter arrangements' (matched/in-kind funding or skills/resource swaps across research-policy-practice settings) (Murdock et al, 2013; Cooke, 2021) or non-monetary 'market mechanisms' (for example, career incentives or reward vouchers) (Cooke, 2021; Schoenberg et al, 2021; Jacobson et al, 2003).

individual knowledge brokers in research conception and production, and the nature of their interactions, is often limited to discussions of formal mechanisms – such as communities of practice (Ward et al, 2009; Bornbaum et al, 2015) – or descriptions of process rather than the practices underpinning it. This leaves gaps in understanding which approaches to interaction work best in different contexts or phases of knowledge mobilisation, and why (Ferdinand et al, 2017; van Eyk et al, 2020); how collaborations are created, managed, and maintained; and the costs when they break down (Ferdinand et al, 2017).

Given the importance of relational processes, questions around representation and inclusion also merit more attention: who is involved and why (van Eyk et al, 2020), or where and how does the interaction take place and who does this work for (van Eyk et al, 2020; Kim et al, 2018; Schoenberg et al, 2021)? The studies indicate unanswered questions about the implications for participation: what relational processes enable 'research with' rather than 'research on' (Murdock et al, 2013); what is the difference between establishing 'buy-in' versus 'ownership'; and what are the implications for processes and outcomes (van Eyk et al, 2020)? Given the challenges involved in EIPM/P (for example, navigating the complexities of policy/practice settings, the uncertainty of evidence, and the politics of decision making) discussed in the background (for example, Young et al, 2002; Nutley et al, 2003) and reflected in the functions of knowledge brokers (Ward et al, 2009; Neal et al, 2023), addressing questions of inclusion and participation, and gaps in understanding the less-tangible dynamics of interactions will be crucial for understanding the effectiveness of relational processes on evidence production and use.

Another key gap in terms of what actually happens in local approaches to knowledge mobilisation relates to the second feature of local knowledge mobilisation identified above: the integration of research-derived knowledge with diverse other knowledge types for contextualisation. This is a product of relational processes but is less commonly discussed in the wider literature on knowledge mobilisation (with the notable exception of Neal et al, 2023). Our review suggests it was an important feature at the local level. Studies in our review highlighted a need for more attention to the dynamics of knowledge integration. In particular, to unanswered questions around research integrity and rigour: how to ensure that the 'trace' of research evidence is not lost through contextualisation and (re)application; whether the associated 'transformation' of research evidence (Gabbay et al, 2020) constitutes its 'dilution' (van Eyk et al, 2020); and what level of 'transformation' is acceptable/appropriate in different settings. For example, what is acceptable in evaluative research (for example, measuring the efficacy of a policy or intervention), where externality is considered key to validity (Richardson, 2013); in clinical research where multi-actor collaboration raises conflicting conceptions of rigour (Morgan et al, 2011); or when balancing independence and relevance where policymakers coauthor research (van Eyk et al, 2020). Two papers argue that, while methodologies associated with participatory research and coproduction are seldom recognised as producing 'objective evidence', rigour and integrity are not inevitably compromised by them. There is, then, a need to better understand and describe this integrative process (rather than ignore or resist it), so as to develop systematic and rigorous methods for harnessing it without opening to co-optation, 'cherry picking', or losing the evidence 'thread' (Richardson, 2013; Gabbay et al, 2020).

The analytical gap around knowledge integration is shown by the discrepancy between the number of papers reporting this feature and the number that present approaches related to it. Like the approaches to interaction described in the papers, the approaches to evidence integration remain relatively instrumental. Papers describe a variety of ways of 'funnelling', 'contextualising' or 'tailoring' evidence, such as systematic review, policy briefings or actionable evidence-based tools (for example, Graham et al, 2006) and active dissemination strategies (Ward et al, 2009; Neal et al, 2023). Further attention could be given to how and with what intention evidence might be translated, transformed and tailored in processes of knowledge mobilisation at a local level, and help unpack 'what actually happens' during the process of knowledge integration. For instance: where does the contextual understanding required to 'tailor' evidence come from? Is it personal relationships and direct experience or formal stakeholder engagement and networks? (for example, Jacobson et al, 2003). How is context integrated and how might the evidence 'change' as a result? (for example, Gabbay et al, 2020). Ultimately, how does knowledge integration (and associated approaches) relate to the relational processes (and associated approaches) described previously? Again, given acceptance of the complex nature of informing policy/ practice with evidence, answering such questions and better understanding not only how but with what implications evidence is integrated, may be important for determining effectiveness and impact of knowledge mobilisation.

Our review provides links between the features of knowledge mobilisation and the practical approaches outlined in relation to them (the crafts and everyday practices linking the two). The third feature outlined in our findings: attention to implementation contexts across individual, organisation and system levels, was less abstracted from the practical approaches described in relation to it (building capacity and cultures for evidence use); that is, there is more attention given in the reviewed studies to 'what actually happens' to operationalise this feature (Ward et al, 2009; Bornbaum et al, 2015). For example, our findings illuminate how organisational or systemic structures (such as human and financial resourcing or procedure and governance) not only facilitate interaction but can shape the values, priorities and perspectives that enable and define the development of these interactions into relationships over time. It is these relationships, not just transactional interactions, through which the relational, integrative, contextual processes of local knowledge mobilisation described above take place.

This increased attention to more elusive attitudes, interactions and craft in the literature that describes approaches for engaging with implementation contexts may reflect a longer history of focus on the enablers of and barriers to evidence utilisation or implementation in policy and practice settings ('what actually happens'). Detail on these murkier underlying processes is still lacking. However, this literature (and wider interest in implementation science), indicates the promise of paying attention to what happens 'on the ground' during processes of knowledge mobilisation more broadly (for example, in knowledge brokerage settings) for addressing this evidence gap.

What is the demand for local knowledge mobilisation and the impact it achieves?

A second gap highlighted by the papers that we reviewed is the lack of analysis of the demand for and impact of local knowledge mobilisation. Twenty-one of the papers are framed explicitly or implicitly by EBPM/P rhetoric and assume that evidence

has a positive impact on policy and practice. A few highlight increased pressures to use evidence in decision making, or to report impact and evaluate programmes in practice (for example, Murdock et al, 2013), but most assume that policymakers and practitioners want evidence and that researchers are eager to provide it. Only five papers critically reflect on how evidence needs are identified and by whom, and the implications this has for the nature of evidence and expertise that is accessed and applied. And only one paper critically reflected on the authors' own position in relation to the motivation to improve knowledge mobilisation understanding and practice (Neal et al, 2015). This matters because, without attention to the demand for evidence or knowledge mobilisation more broadly, it becomes difficult to assess its effectiveness (what is it effective at, for whom, and how does this relate to what it set out to do?).

Existing literature highlights a lack of understanding of the impacts of knowledge mobilisation (Ward et al, 2009; Bornbaum et al, 2015; Neal et al, 2023), and a tendency to produce models or describe processes, without evaluating their effectiveness (MacKillop et al, 2020; Neal et al, 2022). This is echoed in our findings, where only eight papers evaluate the impact (effectiveness) of the local-level models or approaches they advocate. Where they do, their accounts generally rely on self-report or a combination of surveys/interviews (though there are a few notable exceptions which use more extensive evaluation methods and outcomes, for example, Stansfield and South, 2018). Although most of the models described in the literature include a process and/or outcome evaluation phase, many do not carry out this step (for example, Graham et al, 2006; Armstrong et al, 2013; El-Jardali and Fadlallah, 2015) and are not widely applied and tested in different settings (Kim et al, 2018). In many cases papers report that the design of their model was informed by the existing literature (for example, Campbell, 2010; El-Jardali and Fadlallah, 2015; Kim et al, 2018) and their own experience, and honed over many years (for example, Kim et al, 2018), which suggests that there is a craft to knowledge mobilisation that remains under-theorised.

A useful starting point for addressing the above gaps and examining the craft of local knowledge mobilisation could be to (re)interrogate normative assumptions that underpin the EBPM and EBP literature and some of the papers that we reviewed, namely that evidence use is both possible and beneficial. As discussed in the introduction, the political science literature problematises this starting point by emphasising the influence of politics, values, experience, and diverse contextual factors in shaping policymaking and practice (Boaz et al, 2008; Boswell, 2017; Cairney, 2019). Embracing this perspective on the policy process, and the role of evidence therein, may help to plug some of the gaps in and unblock the limitations of existing knowledge mobilisation models (MacKillop et al, 2020). Researchers have (rightly) pointed to the difficulties of capturing, codifying, and communicating the more elusive dimensions of craft, values, relationships, and politics, particularly through rational, stepwise models or frameworks (for example, Murdock et al, 2013; Kim et al, 2018; Gabbay et al, 2020). But delving deeper into these complexities of local-level knowledge mobilisation, and the brokerage roles that seek to facilitate it, will be critical to both doing it better and theorising it more completely. Perhaps knowledge mobilisation at the local level is inherently messier than in other settings, and therefore trickier to capture. But attempts to do so could advance knowledge of some long-standing but under-theorised questions including: how, by whom, and under what conditions can decontextualised evidence be deemed appropriate in local settings? Should research

findings be prioritised over other forms of knowledge? And how can we navigate the interaction between research-based evidence and the politics, complexities, conflicts and contradictions that confront policymakers and practitioners 'on the ground'?

Note

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Research ethics statement

The authors of this paper have declared that research ethics approval was not required since the paper does not present or draw directly on data/findings from empirical research.

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Conflict of interest

The authors declare that there is no conflict of interest.

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