HOW CAN CAPACITY DEVELOPMENT PROMOTE EVIDENCE-INFORMED POLICY MAKING?

Literature Review for the Building Capacity to Use Research Evidence (BCURE) Programme

Section 3.What is the evidence on how to build capacity for evidence-informed policy making?

Melanie Punton

Research assistant: Katharine Hagerman

Other contributors: Cheryl Brown, Leandro Echt, Catherine Fisher, Rob Lloyd, Sarah Morton and Isabel Vogel

April 2016

Results in development

Contents

Acronyms

AFREPERN	African Energy Policy Research Network
AIDS	Acquired Immune Deficiency Syndrome
BCURE	Building Capacity To Use Research Evidence Programme
CoP	Community of Practice
CSO	Civil Society Organisation
DDM	Data For Decision Making Programme
DFID	UK Department For International Development
EIPM	Evidence-Informed Policy Making
HIV	Human Immunodeficiency Virus
ICAI	Independent Commission For Aid Impact
ICT	Information And Communications Technology
KB	Knowledge Broker
NGO	Non-Governmental Organisation
PHSI	Partnerships For Health System Improvements Programme
RCT	Randomised Controlled Trial
UK	United Kingdom
US	United States

Introduction

How can capacity development promote evidence-informed decision making? The Building Capacity to Use Research Evidence (BCURE) programme works with policy makers in low and middle-income countries, developing skills, knowledge and systems to improve the use of evidence in decision making. Funded by the UK Department for International Development (DFID) and launched in 2013, BCURE will invest £13 million over three years in a number of linked capacity development projects across Africa and Asia. This literature review was written as part of the evaluation of BCURE, which runs alongside the programme and aims to strengthen the evidence base on capacity development for evidence-informed policy making (EIPM). Further information on the BCURE programme is available here.

This document contains **Section 3** of the literature review, which asks: **what is the evidence on how to build capacity for evidence-informed policy making?** It examines primary evidence from studies of interventions aiming to build capacity for EIPM, adopting a realist synthesis approach to examine what works, for whom, in what circumstances, and why. It investigates the *mechanisms* through which capacity building interventions lead to particular *outcomes*, along with the *features of interventions* and the wider *context* that either enable or hinder these mechanisms.

Secton 1 of the literature review is available here, and discusses the question: **what is 'building capacity for evidence-informed policy making'?** It examines the theories and assumptions underpinning the BCURE programme and the concept of 'EIPM', providing an overview of the diverse and rich theoretical literature on this topic. Section 1 asks three questions: What is 'research evidence', and what makes it 'good quality'? What is 'policy', and how can evidence benefit policy making? What is 'capacity' for EIPM and how do we 'build' it?

Section 2 of the literature review is available here, and discusses the question: **what factors promote and constrain evidence-informed policy making?** It outlines the most significant and well-evidenced barriers to and enablers of evidence use by decision makers, and then goes on to examine some of the individual, interpersonal, organisational and institutional factors that promote or constrain evidence use in policy making.

The full literature review can be downloaded here. It includes background information about the BCURE project and the evaluation, and describes the literature review approach and methodology.

3. What is the evidence on how to build capacity for evidence-informed policy making?

Overview

This section examines the evidence on how to build capacity among decision makers for EIPM – looking at *what works, for whom, in what circumstances, and why.* Following the principles of realist synthesis, it discusses the **mechanisms** through which EIPM interventions lead to particular **outcomes** in different **contexts**, along with the **features of interventions** that either enable or hinder change.

This section discusses 15 primary intervention studies, all of which describe interventions aiming to develop **capacity for evidence use or public sector decision making in health contexts**. Around half of the studies relate to lower and middle-income countries. The majority have observational designs, and a rapid quality assessment deemed them all medium-high quality. Most primary intervention studies did not contain explicit information on mechanisms – and so identifying these involved reading between the lines, looking for common themes and making links to the literature discussed in Sections 1 and 2. This section also draws on relevant evidence from a number of non-intervention primary studies and secondary reviews.

Despite this small evidence base, useful lessons can be distilled from these studies on *how* and *why* different interventions may have resulted in (or not resulted in) change; and the contextual and intervention factors that helped or hinder programme success. The evidence (and its gaps) also has implications for the BCURE evaluation, and more broadly for the study of capacity development for EIPM. The findings are summarised in boxes throughout this section, and in a simplified form in the conclusion. Three of the main insights are as follows:

1. A number of capacity development interventions at individual, interpersonal and organisational levels may work through promoting **self-efficacy**: improving participants' beliefs (or confidence) in their capability to perform a certain task or handle a particular situation. Training, knowledge brokers, and tools and systems may all improve self-efficacy in different ways. However, the concept of self-efficacy is just one way of understanding how learning happens, suggesting the potential merit of bringing learning theory (discussed in Section 1.3.2) more explicitly into capacity development interventions.
2. Although only a small number of studies discussed interpersonal-level interventions, these pointed towards a number of different mechanisms. Knowledge brokers and champions may promote EIPM through **'cheerleading'**, through being **'transformational leaders'**, or **'network facilitators'**, or through exhibiting role-modelling behaviours and thus promoting **'social learning'**. One study suggests that networks may enable **'social processing'** – in which beliefs within a group shift towards a consensus – and this may lead away from EIPM as well as towards it. These different mechanisms may respond in different ways to particular intervention strategies and contextual conditions; suggesting the importance of unpicking what exactly it is a knowledge broker, champion or network is expected to do.
3. A small number of studies suggest that organisational tools and systems may work through **facilitating** behaviour change (making a person's job easier), or **reinforcing** it (through for example rewards, audit or feedback). One study suggests that EIPM tools may also lead to change by **increasing the value staff place on evidence**, through convincing them of the benefits that data can bring to decision making. A virtuous circle may emerge, in which increased use of evidence leads to greater demand based on an appreciation of its value.

This section adopts a realist approach to examine the evidence on how to build capacity among decision makers for EIPM – looking at *what works, for whom, in what circumstances, and why* (Pawson & Tilley 1997). It synthesises evidence from **primary intervention studies aiming to improve capacity for evidence use or decision making.**

Purpose and structure of this section

This section describes the **outcomes** of capacity-building interventions, the varied **mechanisms** through which interventions appeared to lead to these outcomes in different **contexts**, and the **features of the interventions** that either enable or hinder change. This evidence will be used by the evaluation team to develop 'context-mechanism-outcome configurations' – *theories* to help explain *how and why* specific BCURE interventions (such as training, mentoring and organisational systems development) might lead to change in different contexts. These configurations will be empirically tested through the realist evaluation of the programme, in order to draw conclusions on works to build capacity for EIPM, for whom, in what circumstances and why.

The evidence in this section is categorised in line with the BCURE Theory of Change; examining in turn capacity development interventions targeting individual-level, interpersonal-level, organisational-level and institutional-level change (as described in Section 1.3). Several interventions were multifaceted, aiming at more than one of these levels, and so are discussed across several sections.

Nature and limitations of the evidence discussed in this section

This section draws on 15 primary intervention studies as well as relevant evidence from non-intervention primary studies and secondary reviews. The evidence base discussed in each sub-section is summarised in Tables 7-10.

The discussion in this section has a number of limitations:

1. The findings are based on a **limited number of primary intervention studies**, most of which relate to training interventions. Some of the studies found were not included, either because they did not provide information about how and why interventions led to change or because they were deemed insufficient quality. The review originally intended to look beyond the literature specific to EIPM, to examine evidence from wider capacity development interventions that could provide relevant insights. However, in practice this was limited by time. This section therefore provides a detailed but partial overview of the primary intervention evidence base.

2. Most of the intervention studies discussed in this section relate to training interventions. The **evidence on other forms of capacity building is limited** – including evidence on networks, organisational systems, knowledge brokers and champions. The findings relating to these interventions are therefore based on a very small number of studies.

3. All of the primary intervention studies incorporated in this section relate to **interventions in the health field**. This raises a risk that the findings may not be generalisable to other fields, which may have smaller, more diverse and more contested evidence bases; although the inclusion of non-intervention evidence and secondary literature from other fields mitigates this risk somewhat. In addition, although around half of the studies relate to lower and middle-income contexts, many of the studies with the richest information on mechanisms and contextual/intervention features derive from higher-income countries. This suggests the need for caution in applying the findings to lower-income contexts.

4. Most studies provided significant detail on the outcomes of interventions, and discussed (in greater or lesser detail) the features of the interventions that appeared to influence results. However, **very few of the studies explicitly discussed the mechanisms** through which interventions resulted in change, or considered the contexts of the intervention in any great detail. Identifying mechanisms and relevant contextual factors therefore involved reading between the lines, looking for common themes and making links to the theoretical literature discussed in Section 1, to tease out *how and why* interventions seemed to work (or not work) (Pawson 2006b). As the studies analysed below were not written for this purpose, there is some risk that certain mechanisms will have been misinterpreted, or certain contextual or intervention factors overplayed or overlooked. In addition, few studies provide enough detail to derive any insights about *who* benefits or fails to benefit from specific capacity development interventions.

5. The intervention studies considered below often draw (implicitly or explicitly) on rational and linear models of policy change. **Few studies made reference to more recent theories of EIPM discussed in Section 1.2,** which emphasise the messy, contested and political nature of evidence use in policy making, and which have broadly superseded rational and liner conceptions of evidence use in policy within the theoretical literature. This results in some disconnect between the conceptual discussion in Section 1 and the synthesis of primary studies provided below.

3.1. Individual change

Individual-level change includes individuals' development of skills and knowledge, as well as improvements in motivation, attitudes, commitment, values and personal incentives that affect individual behaviour. This section considers evidence from 11 primary intervention studies and one secondary review, summarised in Table 1 below.

Table 1. Summary of evidence relating to individual-level interventions

Source	Field	Geographical context	Type of evidence	Research approach and methods		Quality (/12) [1]
Jacobs et al. 2014	Health	United States	Primary intervention study	Quasi-experimental	Survey: pre- and post- workshop assessments with control group	11
Matovu et al. 2013	Health	Uganda	Primary intervention study	Observational	Quarterly self-assessment and evaluation forms completed by participants; mentors' assessments	6
Pappaioanou et al. 2003	Development Studies	Bolivia, Cameroon, Mexico, Philippines	Primary intervention study	Observational	Case study of DDM project implementation	6
Peirson, Ciliska, Dobbins, & Mowat, 2012	Health	Canada	Primary intervention study	Observational	Case study: 27 semi-structured interviews and FGDs with 70 staff members; and document review	12
Pettman et al. 2013	Health	Australia	Primary intervention study	Observational	Pre- and post- training surveys plus six month follow-up	8
Rolle et al. 2011	Health	Ethiopia	Primary intervention study	Observational	Post-module surveys and end-of-course survey plus 1 FGD with 10 trainees	12

[1] See Methodology for details on the quality assessments of primary intervention studies.

Rowe et al. 2010	Health	Liberia	Primary intervention study	Observational	Post-course survey	10
Tomatis et al. 2011	Health	Peru	Primary intervention study	Quasi-experimental	Pre- and post-course surveys with 220 course participants	10
Uneke et al. 2012b	Health	Nigeria	Primary intervention study	Observational	Pre- and post-workshop survey and focus group discussion	10
Waqa et al. 2013	Health	Fiji	Primary intervention study	Observational	Process evaluation involving pre-training semi-structured interviews and survey to assess baseline capacity. Records of training outcomes (e.g. production of policy briefs, use of templates)	9
C. J. J. Uneke et al., 2011	Health	Nigeria	Primary non-intervention study	Observational	Survey of self-reported EIPM capacities	
Walter, Nutley, & Davies, 2005	EIPM	Global (mainly developed countries)	Secondary review	Systematic Review		

Most of the studies discussed in this section report on the outcomes of training interventions, aiming to improving the capacity of public sector workers to use evidence in developing and implementing policy. The majority of studies derive from lower-income contexts.

Training was generally formal, longer term, and targeted at government officials to increase knowledge and technical or soft skills.

Nature of training: Interventions mainly consisted of standalone training courses, mostly in low-income contexts. Some interventions combined training with other support, such as mentoring (Waqa et al. 2013) or the employment of a 'knowledge broker' (Peirson et al. 2012).

Purpose of training: Some courses specifically aimed to **increase EIPM** (e.g. Pettman et al. 2013; Tomatis et al. 2011). For example, one course involved training in how to ask 'answerable questions', find evidence to answer these questions, assess the trustworthiness of evidence, integrate evidence with expertise and other factors, and evaluate activities to generate evidence to feed back into the process (Pettman et al. 2013). Other courses aimed to **build wider skills of relevance to EIPM**, including management and problem-solving skills (Rowe et al. 2010), analytical skills for health sector management (Rolle et al. 2011) and ICT skills (C. J. Uneke et al. 2011).

Length of training: Most training courses were longer term. Three were short, lasting between 1 and 5 days, and delivered in either a single burst or in a modular format over time (Jacobs et al. 2014; Tomatis et al. 2011; Pettman et al. 2013). The remaining courses were either integrated into longer-term multifaceted capacity development interventions (Peirson et al. 2012; Waqa et al. 2013), or conducted in intensive bursts of 1–2 weeks over several months (Rolle et al. 2011; Pappaioanou et al. 2003; Matovu et al. 2013).

Target groups: Participants in the training courses were mainly government officials, usually health officials, working at a national or sub-national level. Some interventions also targeted in-service health professionals and NGO workers (e.g. Matovu et al. 2013). There was very little discussion within the studies on whether some participants benefitted more than others from the training, and if so why.

Most studies provided evidence from self-assessments to suggest EIPM-related skills had improved, which can be understood through the mechanism of 'self-efficacy'.

The majority of the studies provided evidence (mainly from pre- and post-course surveys, and in some cases only post-course surveys) that participants felt their EIPM-related **skills had improved** (Pettman et al. 2013; Rowe et al. 2010; Rolle et al. 2011; Tomatis et al. 2011; C. J. Uneke et al. 2011). Surveys mainly measured improvements in skills or knowledge; although a small number assessed broader capacity change (as discussed in Section 1.3.1) such as attitudes (Pettman et al. 2013) or 'competencies' (C. J. J. Uneke et al. 2011; Jacobs et al. 2014). However, self-assessments are not necessarily the most reliable measure, as individuals may over-estimate improvements in capacity (known as 'self-esteem bias') (Deans & Ademokun 2011) and most studies did not triangulate self-assessments with other forms of skills assessments. One study from the US reported **perceived increases in EIPM** within participants' wider organisations, which may be subject to the same bias (Jacobs et al. 2014). Only a minority of studies provided more objective measures of skill increase or behaviour change – such as the **production of policy briefs** (Waqa et al. 2013); **improvements in test scores** and **observed data-based recommendations/conclusions** (Pappaioanou et al. 2003), or **enhanced organisational use of evidence** as demonstrated through the development of EIPM processes and procedures (Peirson et al. 2012).

None of the studies considered in this section explicitly link training approaches to any formal models of learning and individual skills development, such as those discussed in Section 1.3.2. It was the therefore not clear *how* (through which mechanisms) the courses expected to result in individual learning, and which (if any) theories of adult learning they were based on. However, several studies imply that training increases participants' confidence in their ability to apply EIPM-related skills, which can be understood in terms of the concept of **self-efficacy** discussed in Section 1.3.2 (e.g. Jacobs et al. 2014; Pappaioanou et al. 2003; Rolle et al. 2011). Self-efficacy relates to a person's beliefs about their capability to perform a particular task or handle a particular situation. For example, one training course implemented in Bolivia, Cameroon, Mexico and the Philippines resulted in teams reporting a 'feeling of empowerment' from the training, in that it enabled them to use data to identify and solve important health problems in their communities (Pappaioanou et al. 2003). As discussed in Section 1, self-efficacy is one concept within a wide range of adult learning theories, and is therefore certainly not the only way to conceptualise the how training leads to behaviour change. However, there is little explicit detail in the primary studies examined here to provide an insight into what other mechanisms might be at work.

> "Self-efficacy relates to a person's beliefs about their capability to perform a particular task or handle a particular situation."

Some studies suggest that training may also contribute to interpersonal and organisational change.

One study suggested that the course played a role in 'paving the way' to 'discuss, promote and facilitate integration' of EIPM concepts in participants' day-to-day work – not only through developing skills, but **'raising awareness among agency leadership'** which meant **leaders become more supportive of new efforts to integrate EIPM** into programme activities (Jacobs et al. 2014). Similarly, a study from Canada found that training (combined with mentoring and knowledge brokering interventions) resulted in **staff becoming more comfortable and familiar with EIPM**, as the 'language' of EIPM permeated throughout the organisation (Peirson et al. 2012). The latter study also found that training helped to **strengthen internal relationships** between staff, which links to findings in Section 3.2 around interpersonal mechanisms promoting EIPM. These

interlinkages between individual-level training and change at interpersonal and organisational levels suggest the relevance of considering capacity development as multi-dimensional, as discussed in Section 1.3.1.

Self-efficacy may be enabled in some contexts through use of practical and work-based projects, and linking content directly to participants' professional roles.

The studies contain limited evidence on how the style of teaching influenced course outcomes. However, several studies used some **combination of classroom-based training and on-site projects** which were linked to self-reported skill increases, such as incorporating projects in which participants were required to use their new skills to implement a work-based project or develop action plans and budgets (Rowe et al. 2010; Pappaioanou et al. 2003; Rolle et al. 2011; Matovu et al. 2013). For example, participants in a leadership course in Ethiopia consistently reported that the course was increasing their skills and confidence because the content was directly applicable to their work (Rolle et al. 2011). Another in Uganda was structured so managers could return to their institutions between modules to apply learning, which was viewed as an important feature of the approach (Matovu et al. 2013).

This provides some evidence to suggest that this style of training, along with the **direct applicability of training content to participants' roles**, helped enable the mechanism of **self-efficacy.** This approach may also be associated with **longer-term** training, although there is insufficient evidence to judge how the length of a training course affects outcomes. Although an applied model of classroom-based training plus work-based projects may not be possible for shorter courses, one study of a short course on EIPM in Australia similarly emphasised the importance of **tailoring the course to policy decision making contexts**, which was associated with increased post-course ratings of self-reported practice, knowledge, confidence and attitudes as the course content shifted over time (Pettman et al. 2013). Similarly, evidence from Fiji suggests the importance of ensuring course participants will have the **opportunity to apply EIPM skills** as part of their roles – in this case it was found that more senior participants were more likely to have the ability to use their skills in an organisational setting (Waqa et al. 2013). Another study suggested that training was successful due in part to a **locally recognised institutional need for capacity development**; the decentralisation of health systems had opened up an 'immediate need to strengthen capacity' at sub-national levels, which was met by the very hands-on training programme (Pappaioanou et al. 2003). These findings all resonate with the learning theory of andragogy discussed in Section 1.3.2, which suggests that adults learn best when they can put their learning into practice.

A cross-sector review of interventions aiming to promote evidence-based practice also found that passive approaches and interventions of **one day or less** were unlikely to result in improved skills and knowledge for EIPM. These findings link to one of the core principles of adult learning identified in Section 1.3.2 – that adults need extended contact in order to assimilate learning. Courses that involved individual instruction, supportive materials and opportunities to test practice were more likely to result in increases in skills (Walter et al. 2005).

Several studies emphasise the importance of supportive organisations, and follow-up support to promote sustained behaviour change.

A number of contextual factors identified in the primary intervention studies related to the nature of training participants' organisations and work commitments. Several studies stressed the importance of participants having **supportive organisations** – particularly in terms of managers being aware of and supportive of participation, or being willing to adjust workloads to enable participants to fully engage with course activities (Waqa et al. 2013; Jacobs et al. 2014; Tomatis et al. 2011). In a study from Fiji, this was seen as one of the factors enabling participants to achieve a course outcome (producing a policy brief), as **other work**

commitments proved a major obstacle to the 'larger than expected' proportion of participants who did not complete the policy brief (Waqa et al. 2013). Participants in the Ethiopia Leadership course had to balance the course with routine work assignments, partly due to a shortage of public health professionals in regional offices. Future courses were shorter in length, resulting in higher retention rates (Rolle et al. 2011).

Time and other commitments were common obstacles noted in several studies. Two studies from HICs found that lack of time was a major reason cited by training participants for not implementing their new knowledge (Jacobs et al. 2014; Peirson et al. 2012). In one case, a 'culture of doing' in the organisation resulted in staff feeling overwhelmed with the day-to-day demands of their jobs and unable to make space to consider evidence (Peirson et al. 2012). These findings link to evidence discussed in Section 2.3, which suggested that individual lack of time to use evidence can reflect an organisational culture that does not sufficiently value or encourage evidence use.

A study from Uganda also found that work commitments presented a major risk to longer-term, modular courses, as trainees would often get absorbed back into routine workplace tasks. The intervention feature of post-training support visits were considered essential to mitigate this, through assisting participants in conducting successful work-based projects using their new skills (Matovu et al. 2013). Another study also emphasised the importance of post-workshop assistance in the form of ongoing mentoring support, finding that without 'supportive follow-up and supervised application of skills, participants frequently continued to use the same work practices that they had used before'. The authors discuss an example from Cameroon where, just after a workshop on epidemics, decision makers were notified that an actual epidemic of bacterial meningitis might be occurring. Participants were ready to leave for the weekend and start the response on Monday, but the visiting trainers worked with the Cameroonian colleagues over the weekend to initiate an immediate response. The positive effects of this 'emphasised for the trainees the importance and effectiveness of timely action' (Pappaioanou et al. 2003).

A study from Uganda and one from Liberia found that the interventions actively engaging participants' organisations to secure support and permission for trainees proved an important predictor of success in the completion of course projects (Matovu et al. 2013; Rowe et al. 2010). One study emphasised that gaining this buy-in took time; and later interventions reduced drop-out rates by limiting admittance to trainees whose institutions made active commitments to support trainees (Matovu et al. 2013).

Sustainable or longer-term change may be promoted by secure funding for ongoing training, a clear institutional 'home' for new training courses, and/or a 'training of trainers' approach.

In one US study, one of the two most significant reasons cited by participants for not utilising knowledge gained from training was lack of funding for ongoing training (Jacobs et al. 2014). These findings are supported by a study of a multifaceted EIPM capacity development programme in Canada, which found that a decision to commit long-term core funding to training was critical to the strategy's success (Peirson et al. 2012). Another study emphasised the importance of existing institutionalised training programmes which could provide a 'home' and continued funding for the training in future. For example, in Mexico and the Philippines a 'capable core group of applied epidemiologists' already existed who could assimilate the new training into their health systems. However, in Bolivia there were no similar applied training programmes, and as a result it proved difficult to sustain capacity development efforts (Pappaioanou et al. 2003). Another study emphasised that course participants later became trainers, as part of the transition from external intervention to full ownership of the course by a Peruvian faculty (Tomatis et al. 2011).

Other contextual and intervention factors that may affect training include the initial skill levels of participants, the provision of practical tools, the inclusion of co-workers, and pre-existing beliefs about the importance of EIPM.

The **initial skills-base of participants** seemed to be an important contextual factor affecting intervention success in some studies. A study from Fiji found that one factor constraining the achievement of EIPM skills was the low level of initial technical capacity and awareness of course participants – which was not anticipated by course managers (Waqa et al. 2013). Similar, a training course implemented in four lower-income contexts discovered the need to build participants' proficiency in basic quantitative skills in order for them to grasp the core course content. This proved time consuming and required longer-term concerted efforts (Pappaioanou et al. 2003).

Some studies emphasised the importance of **providing tools to support EIPM** as a feature of training interventions, in order to help participants put knowledge into practice (Pappaioanou et al. 2003; Rowe et al. 2010). For example, one study provided clear technical guidelines and training materials on how to 'collect, calculate, interpret and use a threshold rate' required to initiate a response to an epidemic (Pappaioanou et al. 2003). Tools for EIPM are further discussed in Section 3.3.

Another US study found that one of the largest contextual barriers to implementing new skills was the fact that participants' **co-workers were not trained**, suggesting that having a number of individuals from the same organisation attending a course created a 'critical mass' necessary for behaviour change (Jacobs et al. 2014). This suggests that courses aiming to promote change at an organisational level may need to consider the networks of participants as well as their roles within the organisation, in line with the theories of complex systems and multi-dimensional capacity development discussed in Section 1.3.1.

Finally, a potentially interesting contextual factor highlighted in one study was that participants **already placed a high importance on EIPM**. Although not explicitly discussed by the authors, this may have contributed to course success (Jacobs et al. 2014). The same study also notes **an increase in focus on EIPM by other actors**, such as funding and accreditation agencies – possibly providing external incentives to change behaviour. This may explain why the control group in this study also saw mean increases in perceived importance of evidence use, and evidence availability (Jacobs et al. 2014).

There was limited acknowledgement of the role of politics and power in evidence use in the studies examined.

Rational and linear models of evidence use discussed in Section 1.2.1 appeared to explicitly or implicitly underpin the content of several training courses – one contained content on 'what constitutes a policy and the policy cycle' (Waqa et al. 2013) and another provided guidance on the use of evidence at different stages which clearly align with the policy cycle (e.g. asking an answerable question; finding the evidence to answer it; assessing its trustworthiness and evaluating to feed back to the process) (Pettman et al. 2013). Other courses were focused more on technical aspects of evidence interpretation than on the political question of how to use evidence in policy processes (Tomatis et al. 2011; Rolle et al. 2011). The **'pluralism and opportunism'** model of EIPM was also implicitly reflected in some studies – for example Pettman et al. (2013) acknowledge the 'wide range of competing information inputs required for decision making', and describe how the course they report on spent 'proportionally more time…addressing issues in *applying* evidence' such as 'working in the gaps where evidence is insufficient' and 'strategies to support individuals to work in an 'evidence-informed way' in their organisations.' However, there was little or no reference to the '**politics and legitimisation'** model and associated theories, which suggest the centrality of power and politics to the processes of evidence use.

Linked to this is the observation that **studies contained limited reference to the political, cognitive, cultural and institutional factors promoting and constraining evidence use** discussed in Section 2 – for example the influence of different actors and the political environment on the application of new skills in the workplace. This suggests some disconnect between the theories and empirical evidence discussed in Sections 1 and 2, and the primary intervention evidence summarised above.

Summary: in what ways does training support EIPM, how, in what circumstances and why?

This review examined ten primary intervention studies presenting evidence that professional training can lead to the outcomes of **improved individual capacity** for EIPM – understood as improvements in skills, knowledge and attitudes relating to the access, appraisal and use of evidence. Although the overall quality of studies is medium-high, the majority of studies are based on self-assessments of EIPM skills through pre- and post-course surveys, and involve limited triangulation with other sources of evidence. This raises some doubts about the reliability of the findings given the risk of self-esteem bias. Only two studies provided more objective evidence of individual and organisational **increase in the access, appraisal and use of evidence**.

Several studies suggest that training may lead to improvements in capacity through the mechanism of **self-efficacy –** by improving participants' confidence in their capability to perform a certain task or handle a particular situation. However, none of the primary studies link training approaches to any formal models of learning and individual skills development, which may provide other ways to conceptualise the mechanisms through which training leads to behaviour change.

The studies discussed several features of training interventions and the wider context thought to contribute to the outcome of improved individual capacity:

- One of the most significant intervention features suggested as important in the literature was **combining classroom training with on-site projects**, or at least **ensuring the applicability of course content to participants' roles**, perhaps through **providing tools to support EIPM.**
- The importance of **supportive organisations** was widely mentioned, suggesting the need to **actively engage and ensure support** when designing training courses, and to consider whether there is a **locally recognised need for capacity development.**
- Organisational support may also help mitigate the risk of **other work commitments or lack of time,** preventing individuals from putting their new EIPM knowledge and skills into practice. Some interventions also successfully addressed this risk through **post-training visits or mentoring.**
- Finally, some studies discussed the sustainability of capacity development interventions, emphasising the role of **longer-term core funding** or a **training of trainers approach** in promoting sustainability, or linking courses to **existing institutional training programmes** that can provide a long-term home for capacity development efforts.

However, these contextual factors largely reflect features of *organisational* but not *institutional* contexts. Studies contained **limited reference to political, cognitive, cultural and institutional factors** promoting and constraining evidence use, such as those discussed in Section 2.

3.2. Interpersonal change

'Interpersonal change' refers to relationships and networks between individuals and groups, and how these influence EIPM. The studies discussed in this section are summarised in Table 2 below.

Table 2. Summary of evidence relating to interpersonal-level interventions

Source	Field	Geographical context	Type of evidence	Research approach and methods		Quality (/12)
Dobbins, Hanna, et al. 2009	Health	Canada	Primary intervention study	Experimental	Randomised controlled trial of knowledge-broker intervention	11
Dobbins, Robeson, et al. 2009	Health	Canada	Primary intervention study	Observational	Observational findings relating to above experimental study, including reflective journals	8
Gabbay et al. 2003	Health	UK	Primary intervention study	Observational	Case study drawing on observation and interviews	11
Pappaioanou et al. 2003	Development Studies	Bolivia, Cameroon, Mexico, Philippines	Primary intervention study	Observational	Case study of project implementation	6
Peirson et al. 2012	Health	Canada	Primary intervention study	Observational	Case study: 27 semi-structured interviews and FGDs with 70 staff members; and document review	12
Traynor et al. 2014	Development Studies		Primary intervention study	Experimental and observational	2 interventions discussed: a randomised controlled trial and a separate qualitative case study	10
Armstrong et al. 2013	Public Administration	Canada	Primary non-intervention study	Observational	Case study of design process for EIPM intervention	
ICAI 2014	Development studies	UK	Primary non-intervention study	Observational	Document review; analysis of DFID staff surveys; semi-structured interviews and FGDs with 92 individuals	
Nisbett et al. 2014	Health	Kenya, Ethiopia, India, Bangladesh	Primary non-intervention study	Observational	Interviews with 89 individuals	
Walter et al. 2005	Health	Global (mainly developed countries)	Secondary review	Systematic review		
Gagliardi et al 2014	Health	Mainly high-income countries	Secondary review	Systematic review		
Greenhalgh et al. 2004	Health	Global	Secondary review	Systematic review		
Liverani et al. 2013	Health	Global	Secondary review	Systematic review		
McCormack et al. 2013	Health	Mainly high-income countries	Secondary review	Other review (realist review)		
Pawson 2004	Sociology	Global, including lower-income contexts	Secondary review	Other review (realist review)		
World Bank 2015	Development studies	Global, including lower-income contexts	Secondary review	Other review		

The studies discussed in this section cover three main categories of interpersonal-level interventions: networks, knowledge brokers, and champions. These are discussed in turn below.

Networks

Networks are 'formal or informal structures that link actors (individuals or organisations) who share a common interest on a specific issue or a general set of values'. A network might be virtual (e.g. a web-based portal) or physical (a group that meets in person), or a combination of the two (Perkin & Court 2005). This section considers four primary intervention studies containing evidence relating to networks for public sector decision making and/or practice (Pappaioanou et al. 2003; Dobbins, Robeson, et al. 2009; Gabbay et al. 2003; Peirson et al. 2012). It also draws on insights from two secondary reviews (Walter et al. 2005; Perkin & Court 2005) and two non-intervention primary studies (ICAI 2014; Armstrong et al. 2013). There is considerable wider literature relating to how networks between researchers and policy makers can result in EIPM; but this relates largely to evidence on 'supply side' factors promoting EIPM, which is outside the scope of this review.

"Networks are 'formal or informal structures that link actors (individuals or organisations) who share a common interest on a specific issue or a general set of values'."

In three of the four intervention studies, networks were created as part of a multifaceted capacity development intervention for EIPM (Peirson et al. 2012; Dobbins, Robeson, et al. 2009; Pappaioanou et al. 2003). Networks consisted of: formal clubs for staff with common interests to meet regularly (Peirson et al. 2012); settings such as workshops where decision makers and technical experts could interact (Pappaioanou et al. 2003); and a facilitated forum to connect public health decision makers across Canada (Dobbins, Robeson, et al. 2009). In all three cases, the networking aspect of the intervention was a relatively minor component. The fourth study focuses directly on how health 'CoPs' in the UK used evidence to formulate ideas for health and social policy change (Gabbay et al. 2003). This study is interesting, as it is one of the only empirical studies in this review that considered in detail how interactions between people shaped the interpretation of knowledge, in line with more recent theories regarding the role of relationships and networks in shaping evidence use discussed in Section 1.2.2.

There is limited evidence on the behaviour-change outcomes of networks, but studies imply that networks can facilitate behaviour change through the mechanisms of 'social learning' or 'social processing'.

Three of the four primary intervention studies emphasise the role of networks in promoting the outcome of **knowledge sharing or exchange** within or between organisations (Peirson et al. 2012; Pappaioanou et al. 2003; Dobbins, Robeson, et al. 2009). This outcome is also highlighted in some non-intervention primary studies (Armstrong et al. 2013; ICAI 2014). All three primary studies imply that networks play a role in facilitating the mechanism of **'social learning'**. 'Social learning' is a theory discussed in Section 1.3.1 – suggesting that learning happens through opportunities to discuss ideas with and observe the behaviour of others, resulting in increases in individual or collective knowledge and understanding. For example, informants in one study emphasised that formal workplace 'clubs' provided 'occasions to think, exchange, train and work with colleagues'. In another intervention, regional webinars were used to connect participants from different public health organisations around the country, providing opportunities for participants to discuss EIPM

issues, identify implications of evidence for policy and practice, and develop innovative ideas to promote EIPM in their organisations (Dobbins, Robeson, et al. 2009).

One study of an intervention in four lower and middle-income contexts aiming to improve health leadership found that **bringing together researchers and policy makers –** through creating settings (e.g. workshops) where decision makers and technical experts could interact – led to the outcome of **improved understanding and communication** between decision makers and technical experts (Pappaioanou et al. 2003). The mechanism here seems to be '**social processing**,' in which opportunities to interact led to participants' beliefs and understanding shifting towards a consensus. The authors report that the approach 'contributed toward decision makers understanding epidemiologic questions that were relevant to their policies or programs, and epidemiologists understanding the importance of framing an issue for a local policy or program in a social and political context'. This resonates somewhat with ideas of 'policy networks' and knowledge 'co-production' in the theoretical EIPM literature discussed in Section 1.2.2, which depict actors from the policy and research worlds as working together to interpret and 'construct' evidence to inform decision making.

A literature review also emphasised the potential of networks to lead to the slightly separate outcome of **improved trust** between researchers and policy makers – for example the AFREPERN network, which has enabled researchers to secure confidential documents not available in the public domain (Perkin & Court 2005).

Studies suggest a number of contextual and intervention features that may increase use of networks – including external input, the support of senior management, and formal opportunities for meetings.

Although the studies discussed in this section provide limited evidence on the mechanisms through which networks can result in behaviour change, there is some evidence on intervention features and contextual factors that make networks more or less likely to be used. For example, local government staff interviewed in a qualitative non-intervention study from Australia felt that knowledge sharing was enabled by **networks with external input**, e.g. from other government agencies and academics. They also emphasised the importance of networking opportunities being attended by **senior individuals**, and felt the **support of senior management** was necessary to ensure that networking drives action (Armstrong et al. 2013). Supportive management was also emphasised by participants in DFID's informal Urban Virtual Network, which was set up proactively by a number of DFID staff in different offices and roles who were working on common issues in urban development. This was described as providing a 'safe space' to discuss a topic of mutual interest (although it is not clear whether or how exactly it contributed to changes in practice). Staff commented that the network was inhibited by an absence of senior management support, meaning that it relied on the volunteered time of staff members (ICAI 2014). One study from Canada emphasised the importance of **providing formal opportunities to meet regularly** for staff with common interests (Peirson et al. 2012). Another study emphasised **strategies to enable remote participation** such as teleconferences and webinars, along with a **knowledge broker to facilitate the network** (Dobbins, Robeson, et al. 2009).

Networks can lead to evidence being interpreted by participants in ways that result in evidence non-use.

One qualitative study from the UK demonstrates the role of networks in *interpreting* the meaning of evidence, in ways that may not always result in positive outcomes (Gabbay et al. 2003). The study examined how two multi-agency Communities of Practice (CoPs) in the UK's National Health Service processed and applied knowledge in formulating their views. The two CoPs involved health staff, members of the public and individuals from the private sector coming together to work on 'improving specific aspects of health and social services for older people'. This study found that the groups went beyond sharing and pooling knowledge;

together they collectively 'transformed' the meaning of evidence, often gradually and imperceptibly over time. This appears to be an example of the mechanism of **social processing**, and again resonates strongly with theories of knowledge 'co-production' in policy networks discussed in Section 1.2.2. In one example, a group of participants extracted portions of text from evidence sources based on cursory appraisal, and then shared what they took to be the important features with the other members – in effect transforming the evidence 'to convey their own experience and knowledge'. These claims, which were not representative of the evidence base as a whole, then became accepted wisdom within the group. This ultimately led to the outcome of the group delivering **non-evidence-based recommendations about interventions.** The authors caution against drawing overly strong conclusions from these two small-scale case studies, which are focused more on examining the relationships and processes of knowledge translation than on the outcome. However, the findings do imply the need to consider the potentially powerful role of personal experience and group dynamics in affecting the interpretation and use of evidence within networks.

Gabbay et al. (2003) also describe several contextual factors which appeared to result in social processing leading to non-use of evidence. They found that sources of evidence – such as systematic reviews and statistical data – were more likely to be accepted and used by the group when **evidence chimed with existing experiences**, or was **communicated by a person considered an 'expert'** or who possessed **good interpersonal and communication skills**. The former factor resonates with the theories discussed in Section 1.2.3, which emphasise the role of mental models and cognitive biases in shaping how individuals understand and interpret evidence.

The study also found one contextual factor *promoting* the discussion and use of evidence by the group – **the organisational business case that required a discussion of evidence.** The study authors feel this may have resulted in the groups using more evidence than they would have done otherwise. This echoes evidence discussed in Section 2.3, suggesting that individual motivation for EIPM can be promoted by evidence being clearly valued within an organisation.

Summary: in what ways do networks support EIPM, how, in what circumstances and why?

This review discussed four medium-high quality intervention studies referring to networks established to promote EIPM, alongside a number of secondary reviews and non-intervention studies. These largely suggest that networks can help promote the outcome of **knowledge sharing or exchange**, but do not specifically measure this outcome or provide evidence on *how* knowledge sharing may result in behaviour change. Networks may also **help improve understanding and communication** between different groups.

Some evidence suggests that networks may lead to change through the mechanism of **social learning**: discussing ideas with colleagues through a network provides the opportunity for people to be influenced by others. However, there is little detail on how exactly social learning might influence behaviour change through networks. Two studies also suggest that the mechanism of **social processing** contributed to change – opportunities to interact led to participants' beliefs and understanding shifting towards a consensus. In one case, this mechanism seems to have helped **build trust** between researchers and policy makers. However, another study emphasises that social processing does not necessarily lead to improved use of evidence; it may in fact result in evidence being collectively 'misinterpreted' by networks, resulting in the negative outcome of **evidence non-use**.

The evidence provides limited insights into the contextual or intervention features that may make networks more likely to change behaviour. However, as with training, **supportive management** was seen to be important

to the success of networks in two studies. One study suggested that the **input of external experts and senior individuals** may also encourage participation.

One study discusses the contextual factors that influence social processing – suggesting that evidence was more likely to be accepted within a network if it **chimed with existing experience**, was **relayed by an expert** or was **communicated by someone with good interpersonal skills**. In this study, an **external incentive** in the form of an organisational business case process helped steer the group towards considering more objective evidence. These findings resonate with theories on cognitive processes and evidence co-construction in policy networks, discussed in Section 1; and also with evidence from Section 2 on the importance of organisational incentives in promoting evidence use.

Knowledge brokers

Knowledge brokers (KBs) are defined in this report as individuals who play a *formal* (usually paid) role in *connecting* decision makers with research and research producers. KBs are increasingly employed in health organisations to 'link researchers and decision makers, facilitating their interaction so that they are better able to understand each other's goals and professional culture, influence each other's work, forge new partnerships and use research-based evidence' (Traynor et al. 2014). KBs may work inside a policy making organisation or external to it.

"Knowledge brokers are defined as individuals who play a formal (usually paid) role in connecting decision makers with research and research producers."

There is considerable overlap between the terms 'knowledge broker' and 'champion' in the literature, and both are variously referred to as 'change agents', 'opinion leaders', 'facilitators' and 'linking agents' (McCormack et al. 2013). There is also some overlap with **work-based mentoring**, which can be understood as an 'interactive, facilitative process meant to promote learning and development' (Gagliardi et al. 2014), usually involving a formal or informal relationship between staff members in an organisation and a 'knowledgeable guide' (Pawson 2004). Several reviews discuss the broad and diffuse nature of the evidence base on these types of interventions, which often vary drastically in context, design and their use of terminology – making it difficult to meaningfully synthesise evidence on outcomes (McCormack et al. 2013; Gagliardi et al. 2014; Walter et al. 2005).

This section discusses two primary intervention studies examining the role of KBs in promoting EIPM (Traynor et al. 2014; Dobbins, Robeson, et al. 2009). Several secondary reviews (Walter et al. 2005; World Bank 2015b; Greenhalgh et al. 2004; Gagliardi et al. 2014; Liverani et al. 2013; McCormack et al. 2013) also provide insights into the mechanisms that enable knowledge brokering to lead to EIPM-related behaviour change.

Knowledge brokers can contribute to the outcome of increased use of research evidence within organisations.

Two interventions are discussed in the two primary intervention studies considered in this section:

1. Both studies consider a randomised control trial (RCT) of a KB intervention in Canadian public health agencies (Traynor et al. 2014; Dobbins, Robeson, et al. 2009). The RCT results are reported in full in Dobbins, Hanna, et al. (2009).
2. Traynor et al. (2014) also consider a case study of a separate Canadian KB intervention – the Partnerships for Health System Improvements (PHSI) programme.

In both interventions, the KBs were external experts working within Canadian health departments to provide tailored support to health department staff, including group training, one-on-one consultation, and virtual support. The RCT found a statistically significant **increase in evidence-informed decision making** at follow-up – but only among organisations that had a low initial 'culture of evidence use' (measured through a staff questionnaire) at baseline. The case study also found a statistically significant increase in **individual and organisational EIPM skills and capacities** and a large and statistically significant **increase in EIPM behaviours**, although at the time of writing these results were not yet published in detail (Traynor et al. 2014).

Knowledge brokers may contribute to change through the mechanisms of self-efficacy and 'cheerleading' for EIPM.

In both interventions, KBs appeared to help promote behaviour change through the mechanism of **self-efficacy**. This seems to have occurred through the **direct transfer of expertise** as the KB delivered coaching and training activities which resulted in increases in knowledge and skills (Dobbins, Robeson, et al. 2009). It also appears to have occurred *indirectly*, as the KB helped to informally **build the confidence in staff** in their ability to apply EIPM skills, mitigating 'the anxiety inherent with the uncertainty of learning something new' (Traynor et al. 2014). This mechanism seems to have been assisted by the intervention feature of **personalised and in-person guidance and support to staff members**.

A systematic review of mentorship as a knowledge translation strategy also found evidence of the 'transfer of expertise' mechanism in 12 studies, in which mentors providing coaching and other professional support resulted in the outcome of **improved knowledge, skills and performance of mentees** (mainly self-reported, although three studies measured objective increases in professional skills). This study could not isolate factors of the mentoring programmes that resulted in success, but did emphasise the need for **resources to support mentoring activities**, as well as **clarity in mentoring goals** (Gagliardi et al. 2014).

KBs also appeared to play a role in *contextualising* evidence to the specific practice issues participants were facing, suggesting that KBs may build **self-efficacy** through **direct provision of relevant contextualised evidence demanded by decision makers** (relating to the 'demand-pull' model discussed in Section 1.2.2) (Traynor et al. 2014). Implicit in this mechanism is the need for a context in which **decision makers actively demand evidence** which the KB can supply.

Finally, the KBs in both interventions appeared to also act as **cheerleaders –** a mechanism involving KBs **stimulating and maintaining staff enthusiasm for EIPM** (Traynor et al. 2014). Through recommending tools and resources and providing personal guidance on how to search for, identify and appraise research evidence, KBs helped to 'maintain momentum' among staff for skills development. Implicit in the study is that this mechanism operates in an intervention context involving **multifaceted capacity development interventions**, which incorporate other support (such as training) alongside a KB.

The personal characteristics, strategies and experience of knowledge brokers are important in enabling them to lead to change – along with their position and level of support within an organisation.

A realist review of EIPM strategies found limited evidence on how personal characteristics of 'change agents' (including KBs and champions) affect outcomes (McCormack et al. 2013). However, a number of other studies offer insights. Traynor et al. discussed contextual and intervention features that appear to have contributed to the increase in EIPM capacities among staff in two KB interventions – including the KB possessing **strong teaching and interpersonal skills**, which enabled the development of trusting and collaborative relationships, and **expertise in both EIPM-related skills and the health field**, which conferred credibility. The study also suggests that self-efficacy of staff members was promoted by KB's **ability to pick up knowledge quickly**, and to

provide objective direction (Traynor et al. 2014). A systematic review of political influences on the use of evidence in health policy found that policy makers were more likely to adopt solutions proposed by research intermediaries if the proposed solutions were compatible with the wider policy agenda of central government, suggesting the importance of a KB with sufficient understanding of political agendas and priorities (Liverani et al. 2013).

Another study found that early one-to-one contact correlated with greater utilisation of KB services by staff members over the course of the intervention (Dobbins, Robeson, et al. 2009). A realist review of EIPM strategies in healthcare suggested the importance of KBs being accessible and organised and being culturally compatible with the target group – in terms of having a perceived connection, for example in age (McCormack et al. 2013). A systematic review also found evidence that the reputation and professional legitimacy of the institution supplying the KB may contribute to a KB's success (Liverani et al. 2013).

Both KB interventions discussed in Traynor et al. (2014) and Dobbins, Robeson, et al. (2009) – the RCT and the PHSI programme outlined above – seemed to benefit from the KBs being viewed as 'objective outsiders' separate from organisational politics. However, this may raise issues of sustainability (if KBs take the knowledge with them when they leave); and the KB in the PHSI programme felt that trusting relationships with staff had been developed in part because she had worked with them before (Traynor et al. 2014). The main difference between the RCT and PHSI interventions was time – in the latter programme, the KB spent 22 months rather than 1 year in the organisation. This seems to have allowed sufficient time to build trusting and collaborative relationships, and also to conduct capacity development activities with staff (Traynor et al. 2014). In addition, a realist review of EIPM interventions found that one of the most important predictors of success was for the KB to be embedded in the context – which could be achieved by individuals either inside or outside an organisation (McCormack et al. 2013).

Finally, organisational support for a KB was seen as a crucial enabling contextual factor in both Canadian KB interventions. Occasionally EIPM work 'was not deemed a priority', and staff members were not given enough time or space in their workloads to spend time with the KB. However, the KB in the PHSI intervention helped *create* organisational support, by liaising with management to ensure staff had sufficient time to engage (Traynor et al. 2014). This suggests that a successful KB with the requisite skills can help influence managers towards recognising the value of EIPM in an organisation. This finding is supported by a realist review of EIPM strategies, which emphasised that KBs with good interpersonal skills, respect, positivity and responsibility are more likely to be able to influence managers, although this study also highlights the risks posed by KBs facing unrealistic expectations from managers (McCormack et al. 2013). There are also echoes of this finding in a primary study of nutrition champions, which found that although a champion's ability to influence change is shaped by the wider environment, at the same time part of what makes a champion effective is his or her ability to influence this environment (Nisbett et al. 2014).

Summary: in what ways do knowledge brokers support EIPM, how, in what circumstances and why?

KBs are defined in this report as individuals who play a *formal* (usually paid) role in *connecting* decision makers with research and research producers. This section discussed findings from two medium-high quality intervention studies (both from Canadian knowledge-broker interventions), and several secondary reviews. This evidence suggests that KBs can lead to the outcomes of increased individual and organisational EIPM capacities, as well as an increased number of programmes and policies supported by research evidence in certain types of organisations.

Both studies suggest that KBs help achieve these outcomes through the mechanism of **cheerleading** – in that they help stimulate and maintain staff enthusiasm for EIPM, including among managers. One study suggested that KBs can promote the mechanism of staff **self-efficacy**, through either formal training or coaching, or more informal support and encouragement which build staff confidence. This may involve directly supplying evidence demanded by decision makers – in line with the 'demand-push' model discussed in Section 1.2.2.

Evidence from both primary studies as well as several secondary reviews suggests a number of features and qualities of KBs that may influence their effectiveness at achieving EIPM outcomes:

- The ability of a KB to **quickly pick up evidence** and **provide objective guidance** that takes into account wider policy agendas, implying the need for **sufficient political understanding**.
- Skills in **teaching and EIPM** (such as accessing, appraising and interpreting evidence), as well as some **background in the technical field** in question (e.g. health).
- **Interpersonal skills and qualities** such as respect, leadership, positivity and responsibility.
- **Cultural compatibility** of KBs with the target group.

Both primary studies emphasised the importance of KBs having sufficient **organisational support**. Although successful KBs are able to build this support, a basic level of managerial buy-in appears important. Finally, one study suggests that **early contact** with staff members may promote staff use of knowledge brokering services, and also that KBs benefit from **more time** in general in order to build up trust.

Champions

In contrast to KBs (who play a formal role in translating knowledge for policy makers, and are often external to an organisation) **champions** are defined in this review as people *embedded within* an organisation or institutional context, who (formally or informally) promote EIPM practices. Two primary intervention studies found through the evidence search relate to the role of champions in promoting EIPM (Pappaioanou et al. 2003; Peirson et al. 2012). Two non-intervention studies (ICAI 2014; Nisbett et al. 2014) and four secondary reviews (Greenhalgh et al. 2004; McCormack et al. 2013; World Bank 2015b; Walter et al. 2005) also provide insights into the role of champions in promoting EIPM.

The intervention studies find evidence that champions can contribute to the outcome of increased use of research evidence within organisations.

Both the intervention studies discussing champions related to multifaceted EIPM interventions, in which 'champions' emerged informally.

1. The first study examines the first two years of a ten-year EIPM strategy within a Canadian public health organisation. In this case, certain senior staff members (both with and without formal EIPM responsibilities) played a role in 'championing' EIPM within the organisation, and were considered essential to achieving the outcome of **higher visible use of research evidence and EIPM processes** (Peirson et al. 2012).
2. Another study discusses the Data for Decision Making (DDM) programme in Bolivia, Cameroon, Mexico and the Philippines; an intervention based on training and mentoring and discussed in more detail in Section 3.1 above. Again, champions were not a formal part of the intervention, but 'talented, visionary and strongly motivated senior health officials who championed DDM concepts' were found to play an essential role in achieving the outcome of **country ownership of EIPM goals, objectives and activities** and in ensuring **improved use of evidence in health policy making** (Pappaioanou et al. 2003).

Champions (and also knowledge brokers and mentors) may influence behaviours through the mechanisms of social learning, 'transformational leadership' and 'network facilitation'.

A systematic review examining the 'diffusion of innovations' through service organisations found that organisational innovations can be promoted by champions acting as **'transformational leaders', who influence, persuade and build support for change** among other members of the organisation (Greenhalgh et al. 2004). One study of a Canadian health EIPM intervention appears to demonstrate this mechanism – emphasising the role of a senior individual in catalysing, 'steering and staying the course for change' throughout the organisation. This individual also promoted change through **securing resources**, in the form of significant and stable funding and time for staff to dedicate to EIPM (Peirson et al. 2012). Another intervention study also emphasised the role of 'a talented, visionary, and strongly motivated senior health official who championed [EIPM] concepts' and who was 'essential for country ownership of goals, objectives, activities, and project success' (Pappaioanou et al. 2003). KBs may also act as transformational leaders – one study emphasised the role of knowledge brokers in 'championing' EIPM by liaising with managers and persuading them to ensure staff had enough time to meet with and learn from the KB (Traynor et al. 2014).

There is also some evidence that champions may promote change through the mechanism of '**social learning**,' a theory of learning discussed in Section 1.3 and in relation to networks above, which holds that people are more likely to change their behaviours when practices are adopted by those close to them (World Bank 2015b). For example, a systematic review of EIPM interventions emphasised the role of champions as 'opinion leaders' who can exert influence on the beliefs and actions of their colleagues, which in one study was found to be a key success factor in achieving the outcome of **improved learning and clinical change**. However, overall the systematic review found mixed results on the role of opinion leaders in promoting EIPM in healthcare settings (Walter et al. 2005). A realist review of strategies to promote evidence-informed healthcare also emphasised the role of knowledge brokers in modelling EIPM behaviours that others in the organisation copy, which is more likely to lead to change in contexts where the KB has **gained the respect of staff members by demonstrating leadership** (McCormack et al. 2013).

A secondary review also suggested that change can be promoted through the mechanism of **'network facilitation'**, in which champions **develop cross-functional coalitions among different groups** within the organisation (Greenhalgh et al. 2004). A non-intervention study of nutrition champions in Bangladesh, Ethiopia, India and Kenya demonstrates this mechanism – finding that the most effective champions actively sought to bring different groups of stakeholders together (in different ways depending on the country context, discussed further below) (Nisbett et al. 2014).

The personal characteristics, strategies and experience of champions are important contextual factors enabling them to lead to change – along with their position within an organisation or society.

Two intervention studies emphasise the importance of the **seniority** of champions; particularly in relation to the **transformational leaders** mechanism (Pappaioanou et al. 2003; Peirson et al. 2012). The individuals described as 'champions' in non-intervention studies are frequently senior members of organisations or institutional environments – for example DFID's Chief Scientist **established new EIPM practices** within the Research and Evidence Division by **bringing in external experiences** from the health field (ICAI 2014; see also Nisbett et al. 2014). However, one systematic review found evidence that opinion leaders do not always need to have leadership roles to promote **social learning** – rather, it seemed important that they came from **the appropriate level of an organisation** at different stages (e.g. experts at early stages of an intervention, and peers during implementation) (Walter et al. 2005).

Another non-intervention study of nutrition champions in Bangladesh, Ethiopia, India and Kenya found that champions were viewed as particularly effective in mobilising and influencing others (acting as **network facilitators**) to act on nutrition when they demonstrated '**post-conventional' stages of personal development**; for example they were able to recognise assumptions and the presence of dynamic systems, and were able to deal with complexity and a lack of certainty (Nisbett et al. 2014). Similarly, a study of a Canadian health intervention emphasised the importance of champions' '**vision and commitment**' and **unwavering support for EIPM**, which also seemed linked to their role as **transformational leaders** (Peirson et al. 2012).

The study of nutritional champions also highlighted the importance of the **institutional location of champions**, closely linked to the **political and policy environment**, in enabling champions to act as **network facilitators.** For example, it was only in India that members of civil society were clearly viewed as influencing change; in Kenya key individuals within government were seen as the most important; and in Ethiopia very few individuals were considered influential, potentially reflecting a more authoritarian political structure (Nisbett et al. 2014). This study also suggested that champions used and moulded networks in different ways to build coalitions around issues, depending on the context. For example, the nutrition network in Bangladesh was relatively fragmented, and individuals cited as being the most effective in terms of contributing to positive changes in nutrition policy were able to span separate domains. In Kenya, leaders contributed to 'building a more mature network', facilitating participation in it, and then leveraging it to bring about change. In India, leaders demonstrated an ability to cross boundaries between civil society, academia and the state (Nisbett et al. 2014). These findings relate strongly to EIPM theories of 'policy networks' discussed in Section 1.2.2, which suggest that researchers, policy makers and other groups (such as members of civil society and the media) often work together across professional divides, bound by shared value systems, political interests or specific problems.

"Champions are defined as people embedded within an organisation or institutional context, who (formally or informally) promote EIPM practices."

Finally, interview respondents in one Canadian study raised concerns relating to the **stability and continuity of champions**, which was seen as necessary to give time for EIPM to become embedded throughout the organisation. One respondent said 'If a new Medical Officer of Health … came in and said "we're not going to do this," people wouldn't rally up and say "you can't take that from us, that's ours and we own that." It's not there yet' (Peirson et al. 2012).

Summary: in what ways do champions support EIPM, how, in what circumstances and why?

Champions are defined in this review as people *embedded within* an organisation or institutional context, who (formally or informally) promote EIPM practices. This section discusses evidence on the role of champions in promoting EIPM from two medium-high quality intervention studies, two primary non-intervention studies and four secondary reviews. In both intervention studies, 'champions' emerged informally (rather than as an official part of the intervention). These studies considered champions to be essential in achieving the outcome of **improved use of evidence within organisations or institutional environments.**

The literature suggested three main mechanisms that enabled champions to promote increased use of evidence, and provided insights into the contextual factors which enabled these mechanisms.

First, some studies suggest that champions can bring about change through the mechanism of **transformational leadership** – building support for change within an organisation, or securing new resources.

The personal characteristics, strategies and experience of champions appear to be important contextual factors in enabling them to lead to change – with various studies emphasising the importance of **vision, commitment and dedication** to EIPM, champions' **seniority**, their **stability and continuity** within an organisation, and their ability to **apply external learning** from a different job or field within a new context.

Two secondary reviews shed light on a second mechanism that may enable champions to lead to change; that of **social learning**, in which people modify their behaviours when they are adopted by those close to them. This mechanism was also found in relation to networks, and links to the 'role modelling' or 'opinion leading' role of champions. One study suggests that seniority is not necessarily the most important factor – instead it may be more important for **champions to exist within 'appropriate levels' of an organisation** at different stages of an intervention, with peers potentially more influential when change is underway.

Finally, one study suggests that champions may act as **network facilitators**, developing coalitions between different groups or individuals. This study found that network facilitation is affected by the **institutional location** of champions and the **wider political environment**, which affect the kinds of networking strategies that champions can successfully employ. This evidence resonates with theories of policy networks discussed in Section 1.2.2; which suggest that evidence use in policy processes is influenced by a wide and fluid range of actors working both within and outside government.

3.3. Organisational change

Organisational change refers to change in the systems, policies and procedures, practices, culture or norms within an organisation. This section draws on evidence from five primary intervention studies, six non-intervention studies and three secondary reviews – as summarised in Table 3 below.

Table 3. Summary of evidence relating organisational-level interventions

Source	Field	Geographical context	Type of evidence	Research approach and methods		Quality (/12)
Dobbins, Robeson, et al. 2009	Health	Canada	Primary intervention study	Observational	Observational findings relating to above experimental study, including reflective journals	8
Gabbay et al. 2003	Health	UK	Primary intervention study	Observational	Case study drawing on observation and interviews	11
Nutley et al., 2013	Health	Kenya	Primary intervention study	Observational	13 IDIs with tool users and non-users	10
Peirson et al. 2012	Health	Canada	Primary intervention study	Observational	Case study: 27 semi-structured interviews and FGDs with 70 staff members; and document review	12
Yost et al., 2014	Health	Canada	Primary intervention study	Observational	Reflective diaries kept by KBs, semi-structured interviews, document reviews	12
ICAI 2014	Development studies	UK	Primary non-intervention study	Observational	Document review; analysis of DFID staff surveys; semi-structured interviews and FGDs with 92 individuals	
Shaxson, 2014	Public Administration	UK	Primary non-intervention study	Observational	Case study of organisational development process	
Waldman, 2014	Development Studies	Afghanistan, Nepal, Sierra Leone	Primary non-intervention study	Observational	52 in-depth interviews and field visits	

Gagliardi et al 2014	Health	Mainly high-income countries	Secondary review	Systematic review
Walter et al. 2005	Health	Global (mainly developed countries)	Secondary review	Systematic review
World Bank 2015	Development studies	Global, including lower-income contexts	Secondary review	Other review

The findings can be categorised into evidence on EIPM 'tools', and evidence on broader EIPM 'systems and incentives'. Organisational 'tools' include checklists, guidance notes, assessment criteria and templates, designed to help individuals search for, assess and interpret evidence. Organisational 'systems' for EIPM are broader; including processes, procedures and events at an organisational level that promote access, appraisal and use of evidence. These may include strategic plans, committee meetings, performance measures and programme approval processes.

"Organisational 'tools' include checklists, guidance notes, assessment criteria and templates, designed to help individuals search for, assess and interpret evidence."

Organisational tools

Two intervention studies considered the role of 'tools' to assist with EIPM.

1. One examined a Canadian EIPM intervention in three public health organisations, assessing how well checklists, guidance notes, assessment criteria and templates helped individuals search for, assess and interpret evidence (for example, a data extraction table helping users to extract relevant information from systematic reviews) (Yost et al. 2014).
2. Another study examined how the District Health Profile (DHP tool) affected health decision making in Kenya (Nutley et al. 2013). The DHP tool aggregated and analysed health data from a number of different reporting spreadsheets, to automatically produce reports and graphs in response to 11 priority health questions (e.g. 'are HIV positive individuals who are eligible for treatment receiving treatment?').

EIPM tools such as guidance, templates, checklists and assessment criteria can result in improved capacity by facilitating behaviour change, increasing self-efficacy, and increasing the value staff place on evidence.

The Canadian study found that tools were perceived by staff as helping to keep EIPM practices 'on track' by providing a structure and concrete process for public health officials to follow (Yost et al. 2014). The tool therefore appears to have resulted in change through the mechanism of **facilitation** – enabling or facilitating staff to adopt EIPM behaviours, which led to the outcome of self-reported **improvements in individual capacity and use of evidence in day-to-day work**. This mechanism is underpinned by change management theories, which 'emphasise the importance of enabling strategies providing practical assistance for individuals and groups to change' – for example, by providing technical, financial, organisational or emotional support (Walter et al. 2005). Similarly, the study of the decision support tool in district health decision making in Kenya found that the tool seemed to work by making users' existing work easier and more efficient – leading to the outcome of **improved data analysis, review and interpretation at a district level**, which in turn enabled staff to solve problems resulting in **better health services** (Nutley et al. 2013). The facilitation mechanism is also evident in a systematic review of interventions to promote EIPM, which found that computerised support

systems can result in the outcome of **improved evidence-based health practice** by *removing barriers* to the use of evidence (Walter et al. 2005).

In the study of the Canadian intervention, tools also seemed lead to change through the mechanism of improving staff **self-efficacy**; increasing staff confidence to use EIPM processes by providing step-by-step guidance (Yost et al. 2014). Another interesting mechanism is discussed in this study, suggesting that tools **increased the value staff placed on evidence** by improving people's confidence in the findings they gathered through tools. Similarly, in Kenya, use of data in the tool by decision makers resulted in increased demand for additional data – a 'virtuous cycle' – by flagging up areas where more data was required that was not currently contained in the tool. The authors suggest that that 'the use of the DHP tool may result in a deeper understanding of the value of data in decision making and in turn result in improved attitudes about the usefulness of data in general' (Nutley et al. 2013).

Contextual factors enabling the success of EIPM tools include pre-existing motivation for EIPM, sufficient ICT literacy, and sufficient instruction and support.

Explicit in the Kenyan study and implicit in the Canadian one is the suggestion that tools help people to do what they are already doing better – implying that **pre-existing EIPM values and practices** are present in the context for tools to build on. This is highlighted by one interview respondent in the study by Yost et al. (2014), who enthused: 'Finally! I'm getting the tools that I need to do the work that I think is the work that I'm supposed to be doing!' A respondent in the Kenya study also 'pointed out that data has to be appreciated in order to embrace [the tool's] usefulness'. Tools also require a **sufficient level of ICT literacy** in order to access and use them effectively – something that requires particular consideration in lower and middle-income contexts where these skills may be especially low (C. J. Uneke et al. 2011). A **low level of skills** in the Kenya study was highlighted as a constraining contextual factor affecting use of the tool, along with a **lack of technological infrastructure** (computers and printers). **Capacity support** was therefore found to be an important intervention feature enabling use of the tool (Nutley et al. 2013), also emphasised by Yost et al. (2014).

The Canadian study also emphasises the importance of several intervention features to promote tool effectiveness, including **simple and clear instructions** and the **accessibility** of tools (e.g. they are easy to find, available online, quick and easy to download, and available in editable Microsoft Word and PowerPoint formats rather than PDFs), and the **relevance and timeliness of tools** to current and anticipated work. This particular intervention also included a **KB who provided support to staff members** to help them use tools effectively (Yost et al. 2014).

Organisational systems and incentives

Two primary intervention studies explicitly considered the role of organisational systems change in promoting EIPM within organisations.

1. One study of a Canadian EIPM strategy in a public health organisation discussed the impact of incorporating EIPM into strategic plans, committee meetings and conferences (Peirson et al. 2012).
2. The second study discusses an RCT of a KB intervention in Canada, in which the KB promoted the inclusion of EIPM components in performance measures, and encouraged managers to require staff to provide evidence to support recommendations while posing critical questions (Dobbins, Robeson, et al. 2009).

In both these studies, changes to systems were part of a broader multifaceted capacity development intervention involving other strategies such as training and knowledge brokering (discussed earlier in this section). Neither study provides much detail on how the organisational systems components of the intervention specifically resulted in change.

Studies suggest that organisational systems may result in change through the mechanism of self-efficacy, as well as through *facilitating* EIPM behaviours and *reinforcing* them.

The study of the Canadian EIPM strategy stressed that systems changes helped staff become more comfortable and familiar with EIPM as its language 'permeated' throughout the organisation. One interview respondent claimed 'staff are more comfortable using the terminology...It's in their minds, in their conversations' (Peirson et al. 2012). This suggests that change at an organisational level can play a role in promoting **self-efficacy** and, in doing so, lead to the outcome of **improved individual capacity for EIPM,** perhaps particularly when **combined with other forms of capacity development** as in this particular intervention. This study also suggested that systems could be used to **facilitate EIPM behaviours**, similarly to the tools discussed above. For example, interview informants talked about the role of annual reviews in making practice into a routine, suggesting that EIPM concepts should be added to the review process. However, it is not clear from the study how far the mechanism of facilitation contributed to the observed outcome of **enhanced EIPM within the organisation**. The facilitation mechanism also seems to have been in play within the UK's Department of Farming and Rural Affairs – in which systems and budgetary processes were developed to help provide a structure for how evidence should be used and handled, helping lead to the **embedding of EIPM principles in the organisation** (Shaxson 2014).

Peirson et al. also suggest the role of organisational systems in **reinforcing EIPM behaviours**; a mechanism involving positive reinforcers (e.g. rewards) or negative ones (e.g. audit and the risk of negative feedback) acting to influence behaviours and actions. The reinforcement mechanism is based on behavioural learning theories; the idea that behaviour can be influenced by controlling external factors (discussed in Section 1.3.1, and in Walter et al. 2005). For example, the study emphasised the importance of including EIPM expectations within performance, accountability and incentive structures, such as individual performance objectives (Peirson et al. 2012). Including EIPM components in performance measures was also encouraged by knowledge brokers in the study of the KB intervention, although the results do not suggest how this aspect of the KB's work helped contribute to the ultimate outcome of **improved capacity for EIPM** and (in certain organisations) **more evidence-based policies** (Dobbins, Robeson, et al. 2009; Dobbins, Hanna, et al. 2009). Interesting evidence on the reinforcement mechanism is also discussed in the 2015 World Development Report, which summarises evidence suggesting that 'non-instrumental incentives' such as status and recognition can be as effective as monetary incentives in motivating people to exert effort. Two examples from Switzerland and Zambia suggest that the outcome of **improved workplace performance** resulted from staff being promised 'non-instrumental' awards for good performance, such as a personal thank you from the manager, or a publicly presented chart to represent sales (World Bank 2015b).

A non-intervention study examining the use of evidence by DFID advisers suggests that the 'business case' process resulted in the outcome of **greater use of evidence in the organisation** (Waldman 2014). Staff were required to complete a 'business case' template, including sections for appraising evidence, in order to secure funding for new programmes. This appeared to work through both the **facilitation** and **reinforcement** mechanisms – by providing a template to guide staff through the process of appraising and applying evidence, and also by setting standards that a programme design must meet in order to receive approval. The study identified the business case as a 'major factor causing staff to seek out relevant research to justify their planned programmes' (Waldman 2014).

Systems (such as 'business cases') to promote EIPM may also result in negative outcomes.

Section 2.1 discussed evidence suggesting that, in contexts where evidence is valued, this can encourage its use as a 'weapon' to confer legitimacy on decisions. The primary evidence on organisational systems sheds more light on this barrier to evidence use and the mechanisms which potentially explain it.

Waldman's study of the use of evidence by DFID advisers in fragile states pointed to some unintended consequences of business cases – policy makers **'recycling' evidence** from previous successful cases in order to improve the likelihood of approval, and inserting widely used terms and concepts in order to **secure 'brownie points' with senior management** (Waldman 2014). These responses appear to be negative manifestations of the **reinforcement** mechanism – organisational systems created perverse incentives for staff to 'misuse' evidence. Waldman found a large amount of 'symbolic' use of evidence in the business case process (a model from the EIPM conceptual literature in which evidence is used to support pre-existing positions, discussed further in Section 1.2.1). This was 'understood as being wholly normal practice.' This review found little evidence on how systems can be designed to avoid perverse incentives, although one report suggested that **independent quality assurance** of DFID business cases has helped improve the use of evidence over time (ICAI 2014).

As well as creating perverse incentives, organisational systems may actually **hinder the facilitation mechanism** by making it more difficult to use evidence effectively. For example, one report mentions the **'unwieldy and overly bureaucratic'** nature of the business case process, which it feels presents a **barrier to organisational learning** (ICAI 2014).

Finally, a study of CoPs in the UK discussed in Section 3.2 above (Gabbay et al. 2003) suggests that without the contextual factor of **existing commitment to and belief in the importance of research evidence**, the business case process did not fully change behaviour – although it did force CoPs to consider evidence more than they may otherwise have done. The study found 'there always remained a tension' between the need to construct a business case using evidence, and the 'default setting in which personal experience was highly valued by the CoPs.'

Summary: in what ways do organisational tools and systems support EIPM, how, in what circumstances and why?

This section draws on evidence from five primary intervention studies, six non-intervention studies and three secondary reviews. The evidence suggests that tools and systems can lead to the outcomes of **improved individual capacity and use of evidence**, for example by improving data analysis, review and interpretation; and in one case resulting in **improved evidence-based health practice**.

Tools and systems appear to lead to these outcomes through two main mechanisms: facilitation, and reinforcement. Firstly, two studies suggest that tools and systems can work through **facilitating staff to adopt EIPM behaviours**, by providing resources and processes that enable and support people to change their behaviour, or make people's jobs easier. Linked to this, two studies suggest that tools can **promote self-efficacy** – for example by providing step-by-step guidance that increases an individual's confidence in her ability to successfully access, appraise or apply evidence; or in a more subtle way by helping to permeate the language of EIPM throughout an organisation, making it an accepted part of the culture. Two studies also suggest that tools may **increase the value staff members place on evidence**, for example through deepening their understanding of the benefits data can bring to decision making.

Secondly, two studies suggest that organisational systems may work by **reinforcing EIPM behaviours** – through positive reinforcers (rewards) or negative ones (e.g. audit and the risk of negative feedback) influencing individual choices and actions. However, one study suggests that using systems to reinforce behaviour may create perverse incentives, for example to recycle evidence, use evidence symbolically to support pre-existing positions, or include widely used terms to secure 'brownie points' with managers. This builds on findings discussed in Section 2.1, suggesting that organisational incentives can act as a barrier to effective EIPM.

A variety of studies suggested a small number of contextual and intervention features that influenced the success of organisational tools and systems for EIPM:

- **Low levels of skills** and **limited technological infrastructure** can constrain the successful use of tools, particularly in low-income contexts. **Capacity support** is important to enable their successful use.
- The use of tools may be promoted by providing **simple and clear instructions** and ensuring **easy accessibility** and the **relevance and timeliness of tools** to current and anticipated work.
- Systems to promote EIPM may be improved by ensuring they are **not overly time consuming or bureaucratic** – factors that can present a barrier to learning. Incorporating **independent quality assurance** into EIPM systems may also reduce the risk of symbolic use of evidence, or using evidence to secure 'brownie points'.

3.4. Institutional change

Institutional change refers to change in the wider operating environment of individuals or organisations. This includes change within civil society and the media, as well as broader social change (e.g. in culture, norms, collective beliefs, attitudes, values) and change in external influencing factors (e.g. global events, political and economic factors, donor influence). While several BCURE projects work with civil society, the programme does not involve institutional-level interventions (an example might be providing capacity development to CSOs or journalists, to help them advocate for EIPM). Evidence on institutional change was therefore a relatively minor part of this review.

The database and snowball searches found limited evidence on capacity development interventions focused on the wider enabling environment (e.g. civil society, the media and the general public), with the aim of promoting EIPM. Most evidence considering institutional factors affecting EIPM related to features of the institutional environment that promoted or constrained EIPM, and is discussed in Section 2.4.

However, due to time constraints this review did not consider the broad literature on empowerment and accountability, which is likely to contain some useful insights. For example, evidence is emerging to suggest that **providing seed funding, capacity development and relationship brokering support to small groups of local actors** to enable them to use evidence and conduct advocacy can result in **policy influence and policy change** (DFID 2014b). This approach clearly links to the theory of 'policy networks' discussed in Section 1.2.3, as it focuses on bringing together various actors from different spheres (including academics, government employees wearing a non-government 'hat', and activists) who are united around an issue (e.g. on state budget advocacy) and who have some influence, rather than drawing a divide between 'researchers' and 'policy makers'.

3.5. Policy change and policy quality

The BCURE Theory of Change hypothesises that a combination of changes at individual, organisational, network and institutional level will catalyse demand for and use of evidence among targeted stakeholders.

This will result in **policy change**, with policy and practice being increasingly informed by evidence. This in turn will lead to improved **quality** of policies and programmes.

This review located a number of papers with insights into the impact of interventions on policy change and policy quality. However, these papers largely focused on the **impact of specific research findings on policy change**. This 'supply-side' evidence was examined in a recent literature review (Newman 2014), which highlighted several collections of case studies detailing ways in which research findings have led to policy change and development impacts (Court & Young 2003; Carden 2009). This literature lies outside the scope of this review, which instead aims to examine the 'demand side' evidence on how and in what circumstances *capacity development interventions* for EIPM have resulted in policy change and improved policy quality.

Five primary intervention studies discussed in Sections 3.1-3.4 present evidence of policy change and improvements in policy quality as a result of capacity development interventions; while one further study provides evidence that CoPs did *not* lead to positive outcomes. Most of these studies did not explicitly attempt to measure the extent of policy change or improvements in policy quality as a result of the interventions – mainly focusing on measuring improvements in capacity, or changes in behaviour (discussed above in Sections 3.1–3.4). The evidence on policy change and policy quality from these studies therefore largely consists of ad hoc examples rather than systematically measured outcomes, and so it is not clear how representative these examples are of overall project success. The studies also provide little insight into *how* change happened at a policy level, or the *contextual* and *intervention conditions* that helped enable change at this level.

The limited evidence available from the six studies is summarised in Table 10, according to whether it relates to change in **policy processes**, **policy decisions or actions**, and **policy outcomes** – three aspects of the broad definition of policy adopted in this review, and discussed in Section 1.2. (see Hallsworth et al. 2011; Jones 2009; Cloete & De Coning 2011; Dunn 2012):

- The quality of **policy processes** refers to factors such as the efficiency, productivity, scheduling, participation and timeliness of the processes used to make decisions and take actions.
- The quality of **policy decisions and actions** refers to the internal logic of the theory underpinning the decision or action; for example its level of compliance with current knowledge, its relevance, or its feasibility.
- The quality of **policy outcomes** refers to *what happens as a result* of a policy decision or action – its impacts on different groups of people.

These three 'levels' of policy quality have their limitations. As Section 1.2.4 discussed, defining 'policy quality' is a challenge as existing definitions are often rational in nature and based on linear conceptions of policy processes, which several EIPM sources examined in Section 1.2.1 reject as unrealistic. These definitions are therefore viewed as a starting point for understanding 'policy quality', which the evaluation team will aim to further develop and nuance as the evaluation progresses.

Table 4. Summary of empirical findings relating to policy change and policy quality

	Nature of policy change		
Source	Policy processes	Policy decisions/actions	Policy outcomes
Dobbins, Hanna, et al. 2009		Statistically significant increase in evidence-informed decision making among a sub-set of health organisations	

Gabbay et al. 2003		Negative outcome: observational evidence that CoPs made recommendations that did **not** make full use of available evidence	
Nutley et al., 2013			Self-reported improvements in the targeting and planning of health services among tool users
Jacobs et al. 2014		Examples in survey responses of health programmes being selected based on evidence	
Peirson et al. 2012	Reports of evidence reviews being used to inform health decision making		
Pappaioanou et al. 2003	Reports of increased use of evidence in health policy making		Anecdotal example of district health officers averting an epidemic using new skills

Improvements in policy processes

Two studies provide evidence that capacity development interventions led to improvements in policy processes. One study of a multifaceted EIPM strategy in a Canadian health organisation found evidence that progress was being made towards 'becoming an evidence informed decision making organisation' – for example inclusion of explicit standards and expectations around evidence use in planning processes. The study suggested that '**reviews using the new methods and tools were being completed and used to inform decision making**', but does not provide any detail on specifically *how* evidence was informing policy change (Peirson et al. 2012). Another study of the DDM programme in Bolivia, Cameroon, Mexico and the Philippines (mainly involving training and mentoring) suggested that the training resulted in **improved use of evidence in health policy making**; although this change was not systematically measured (Pappaioanou et al. 2003).

However, in both studies the increased use of evidence in policy processes is viewed as a positive end in itself. Neither of these studies examine *how* evidence has improved the quality of processes (for example, by making them more efficient, productive or participatory).

Improvements in policy decisions or actions

Three studies provide evidence relating to the quality of policy decisions and actions. One study of an EIPM training course in the US found that 45% of participants felt that EIPM had increased within their agency since completing the training. Examples provided by survey respondents included **programmes being selected based on evidence** (Jacobs et al. 2014).

Another RCT of a knowledge-broker intervention found a **statistically significant increase in evidence-informed decision making** at follow-up, but only among organisations that had a low initial 'culture of evidence use' (measured through a staff questionnaire) at baseline. This finding was reached by combining two measures of EIPM (Dobbins, Hanna, et al. 2009):

- The extent to which evidence was considered in a recent planning decision, as reported by staff members.
- The number of evidence-based policies and health interventions that were being implemented pre- and post-intervention, out of a list of 11 interventions selected by the evaluation team based on systematic review evidence.

However, implicit in these findings is the assumption that policy decisions and actions are matter-of-factly *better* when they are selected based on evidence; which a range of conceptual literature discussed in Section

1 suggests may be an oversimplification given the messy, political and contested nature of evidence use in policy processes.

Finally, Gabbay et al. (2003) examined the workings of two CoPs in the UK's National Health Service, presenting evidence of a capacity-building intervention that did *not* result in more evidence-informed practice. This study found that 'the CoPs did not follow the conventional tenets of an evidence-based model of practice, despite considerable efforts (e.g. facilitation, agenda structuring, library services) to help them to do so.' Rather, as discussed in Section 3.2 above, personal experience, trust in expert opinion and persuasive communication were more important in getting evidence accepted by the group. This ultimately resulted in the groups **making recommendations that did not make full use of the research evidence available to them**.

Improvements in policy outcomes

Two studies provide evidence of improvements in policy outcomes as a result of capacity development interventions. However, in both cases the evidence on improved outcomes is fairly thin and anecdotal rather than deliberately or systematically measured.

One study relates to the DDM capacity development project, which largely involved training for health decision makers. The study provides an anecdotal example of improved policy outcomes, when Cameroon district health officers involved in the training used their new skills to detect an impending meningitis epidemic (with the help of visiting DDM consultants) through the analysis of surveillance data. As a result, participants **averted a large scale epidemic** (Pappaioanou et al. 2003).

In another study examining the impact of a tool for health decision making in Kenya, interview respondents provided examples of the tool leading to programme improvements. Health staff reported that the tool had enabled them to identify trends and problems, resulting in **improvements in the targeting and planning of services**. Specific examples of change included increases in the number of mothers delivering babies at health facilities, and increases in the number of staff and testing kits (Nutley et al. 2013).

Summary: in what ways can capacity development interventions promote policy change and improvements in policy quality, how, in what circumstances, and why?

This section draws on six primary intervention studies providing evidence relating to policy change and policy quality. However, most of these studies did not explicitly aim to measure these outcomes, and so this evidence is sparse and generally ad hoc rather than systematically measured.

Two studies provide evidence that capacity development lead to improvements in the **quality of policy processes**: in that training resulted in increased use of evidence in decision making. However, both studies view evidence use as a positive end in itself, rather than shedding light on *how* evidence improved the quality of processes (for example, by making them more efficient, productive or participatory).

Three studies provide evidence relating to the **quality of policy decisions and actions.** Two provided evidence that capacity development resulted in an increased number of programmes being based on evidence. However, implicit in these findings is the assumption that decisions and actions are inherently better when they are selected based on evidence; which Section 1 suggests may be an oversimplification given the messy, political and contested nature of evidence use in policy processes. A third study presented less positive results, finding that an EIPM intervention involving CoPs ultimately resulted in **recommendations that did not make full use of the evidence available**, because personal experience and group dynamics proved more influential than concerns over the objectivity and representativeness of evidence.

Finally, two studies provide evidence of improved policy outcomes as a result of capacity development interventions – the **averting of an epidemic** following EIPM training, and **improvements in the targeting and planning of health services** as a result of using a decision support tool. Again, in both papers the evidence on improved policy outcomes is fairly thin and anecdotal rather than deliberately or systematically measured.

3.6. Conclusions and implications for the BCURE evaluation

This section has investigated *what works* to build capacity among decision makers for EIPM, *for whom, in what circumstances, and why.* Overall, the evidence on capacity development for EIPM is limited and the majority of papers relate to training courses narrowly focused on improving individual skills and capacity. Many studies do not explicitly discuss mechanisms, consider contextual factors in any great detail, or provide disaggregated information to look at *who* benefits or fails to benefit from capacity development interventions.

Despite these limitations and the small evidence base, useful insights can be distilled from the studies considered in this section on *how* and *why* different interventions may have resulted in (or not resulted in) change, and the contextual and intervention factors that helped or hinder programme success. The mechanisms identified need further refinement and testing, especially in light of the very small evidence base behind certain findings. However, they do provide a useful starting point for the BCURE evaluation, helping to identify the potential ways in which BCURE activities might result in change. They may also be of interest to other policy makers and practitioners grappling with the challenge of building capacity for EIPM; in helping think about not only what types of intervention might be appropriate, but *how* and *why* they might work.

The main outcomes, mechanisms, and contextual and intervention factors discussed in this section are summarised below.

Individual-level interventions: training. Eleven primary intervention studies and one secondary review provide evidence suggesting that professional training can lead to **self-reported improvements in individual capacity** for EIPM, including improvements in individual skills, knowledge and attitudes relating to the access, appraisal and use of evidence. However, there are some reliability issues with self-reported measures, and only a few studies provided more objective evidence that training **influenced EIPM behaviours** (for example improving decision making or resulting in the completion of an EIPM-related task).

The evidence suggests that training may lead to improvements in capacity through the mechanism of **self-efficacy**, by improving participants' beliefs (or confidence) in their capability to perform a certain task or handle a particular situation – although other models of learning may provide valid alternative ways to conceptualise the mechanisms at work within training interventions. Combining classroom training with on-site projects, and actively engaging participants' organisations, were two intervention features frequently linked to training success; especially as supportive organisations seemed to be an important contextual factor influencing the impact of training. The risk of other work commitments or lack of time inhibiting changes in behaviour may potentially be mitigated by post-training mentoring.

Interpersonal-level interventions: networks. Evidence from four primary intervention studies, two non-intervention studies and two secondary reviews suggests that networks for EIPM may **promote knowledge sharing or exchange**, although most studies do not discuss whether or how this results in behaviour change. Some evidence suggests that networks involve a mechanism of **social learning**: discussing ideas with colleagues providing the opportunity for people to be influenced by others. There is little detail on intervention or contextual factors that might make networks successful, although supportive management and the input of external experts or senior individuals may encourage people to participate.

In providing opportunities for participants to interact, two studies suggest that networks may also result in individuals' beliefs shifting towards a consensus, through the mechanism of **social processing.** However, one study finds that social processing does not necessarily lead to improved use of evidence; it may in fact result in evidence being collectively 'misinterpreted' by networks, resulting in non-evidence-based recommendations. In this study, evidence was more likely to be accepted and processed if it chimed with existing experience, was relayed by an expert, or was communicated by someone with good interpersonal skills.

Interpersonal-level interventions: knowledge brokers. KBs play a *formal* (usually paid) role in *connecting* decision makers with research and research producers. Two primary intervention studies and several secondary reviews suggested that KBs can **increase individual or organisational capacity and promote behaviour change.** Both primary studies imply that KBs may influence change through the mechanism of **cheerleading**, stimulating and maintaining staff and managerial enthusiasm for EIPM. One study also suggests KBs may work through promoting **self-efficacy** either through formal training or informal encouragement. The literature suggests a number of skills and qualities that a good KB should possess, including the ability to quickly pick up evidence and provide objective guidance that takes into account wider policy agendas; skills and knowledge in teaching, EIPM and the technical field in question; and interpersonal skills such as respect, leadership, positivity and responsibility. In terms of contextual factors, organisational support was highlighted as crucial by both primary studies. Although successful KBs are able to build managerial support, an initial level of buy-in appears to be important.

Interpersonal-level interventions: champions. Champions are people *embedded within* an organisation or institutional context, who (formally or informally) promote EIPM practices. Evidence from two primary intervention studies, four non-intervention studies and two secondary reviews examined the role played by champions in promoting EIPM. These suggest that champions can help **improve use of evidence within organisations or institutional environments** through (at least) three different mechanisms:

1. **Transformational leaders** may mobilise support for change within an organisation, including through securing resources for EIPM. Champions' seniority and vision, commitment, and dedication seem to be important here, along with their stability and continuity within an organisation.
2. Two secondary reviews suggest that champions may also work through **social learning** as they 'role model' particular EIPM behaviours that others follow, or lead opinion in new directions. In this case the seniority of champions may not necessarily be as important – with peers potentially playing this role as well as leaders.
3. Finally, one study suggests that champions may act as **network facilitators**, developing coalitions between different groups or individuals around particular issues. This study found that network facilitation is affected by the institutional location of champions and the wider political environment, which influence the kinds of networking strategies champions can successfully employ.

Organisational interventions: tools and systems. Five primary intervention studies, three non-intervention studies and three secondary reviews provided evidence to suggest that tools and systems can **improve individual capacity and use of evidence**, for example by improving data analysis, review and interpretation. Four potential mechanisms may help explain the influence of tools and systems:

1. Two studies suggest that they may **facilitate** staff to adopt EIPM behaviours, through providing resources and processes that enable and support them to change their behaviour, or make their jobs easier. These studies suggest the importance of tools being relevant and timely, and having simple and clear instructions. Low levels of skills and limited technological infrastructure can constrain the

successful use of tools, particularly in low-income contexts – suggesting the importance of capacity support.

2. Two studies found that tools may also **increase the value** staff place on evidence, for example through deepening their understanding of the benefits data can bring to decision making.
3. Two studies suggest that systems may **reinforce EIPM behaviours** through positive means (rewards) or negative ones (e.g. audit and risk of negative feedback) – although using systems to reinforce behaviour may also create perverse incentives to recycle evidence or use it in a political or tactical way, particularly if systems are time consuming or bureaucratic.
4. Finally, two studies imply that tools and systems may **promote self-efficacy** – for example by increasing staff confidence in their ability to successfully appraise evidence, or more subtly by helping to permeate the language of EIPM throughout an organisation and make it an accepted part of the culture.

Evidence on policy change and improvements in policy quality: The studies discussed in this section predominantly discuss how far interventions improved capacity or led to behaviour change around evidence use. Evidence on policy change and policy quality as a *result of* increased evidence use is fairly **thin and anecdotal** rather than deliberately or systematically measured. In total, five primary intervention studies provide evidence that capacity development interventions resulted in improved **policy processes**, **policy decisions and actions**, and/or **policy outcomes.** However, these studies tend to view evidence use as a positive end in itself, rather than shedding light on *how* evidence improved the quality of processes. Similarly, implicit in these findings is the assumption that decisions and actions are inherently better when they are selected based on evidence; which Section 1 suggests may be an oversimplification given the messy, political and contested nature of evidence use in policy processes.

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