

# How to achieve more effective services: the evidence ecosystem

CRIME REDUCTION // HEALTH AND SOCIAL CARE // EDUCATION // EARLY INTERVENTION // AGEING BETTER // LOCAL ECONOMIC GROWTH

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## Author

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# Foreword

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**T**he What Works initiative, or movement, is about the generation and use of better evidence. It is about harnessing scholarship and practice to achieve better outcomes, and about utilising precious resources - time and money - better.

The creation of a set of vibrant, independent 'What Works' centres are a pivotal part of this movement. But, important though they are, as the author of this report points out, the What Works centres are just part of a wider ecosystem of learning and practice. Professor Jonathan Shepherd is one of those rare figures who has lived and breathed this world, and has moved between its elements. As a clinical scientist he integrates research and practice in a way that is now common in medicine but still unusual in other professions. Following the causal chain of the injuries he treats, he has become increasingly well known for his contributions to crime reduction, policing and probation. He is also a long-standing advocate of evidence-based approaches more widely, and of the 'What Works' drive in particular.

In this report, Jonathan ambitiously holds up a mirror to the fields covered by the first six 'What Works' centres, and the landscape of professions and commissioners they seek to influence. It is a report to government and the centres, not of them, which draws on interviews from across sectors. Doubtless, not every contributor or reader will agree with every conclusion he reaches. But it is a powerful and detailed account of how and where we can generate, translate and use evidence better. It challenges government and funding bodies to strengthen further the processes of evidence generation and evidence pipelines. It challenges the What Works centres and academic bodies to push even harder on making research

findings easier to understand and more widely available. And perhaps most of all, it challenges our public service professions, and professionals, to more vigorously embrace and nurture the use and generation of evidence - to become ever more professional in that deepest of senses.

To me, the report lays bare how much we still have to do, not least in building the evidence base on what drives the spread and adoption of evidence itself. But we should welcome and embrace the challenge. We have come a long way in the past few years, and I cannot wait to see what this quiet revolution can do in the coming years to improve the education of our kids, to boost growth, reduce crime, and fundamentally improve the quality of our fellow citizens' lives.

**David Halpern**

What Works National Advisor  
May 2014

# Executive summary

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**T**he creation and adoption of effective policies, programmes and interventions depends on a functional evidence ecosystem. In whichever policy or service area it serves, the purpose of this system is to sustain continuous evidence generation, synthesis and evidence-informed action. As in all efficient systems, form follows function. Not only must each stage be operational but also stages must be connected and the flow of evidence and its translation into “what works” needs to be maintained. This means that at each stage, demand and supply of quality-assured evidence are needed, together with demand for the products of the system by commissioners and end users.

The What Works Centres are an essential part of this ecosystem and need to be concerned not just with evidence synthesis and adoption but with the whole system in their sector so that faults can be identified and put right. This strategic perspective is important if the What Works Centres are to achieve and increase behaviour change.

The generic recommendations listed below, and those specific to each What Works sector, are therefore designed to address both structural and functional problems that were identified in a series of interviews. For some Centres there are major capacity shortfalls, especially for evidence generation; for others there are disconnects, for example, between academics and front line services, and between commissioners in the same sector; for others still, the workforce needs to be categorised and professionalised so that target groups for training and training sources can be identified. Raw and synthesised evidence in the forms in which it is currently published is generally unusable by many practitioners – and sometimes does more harm than good.

Changing course in all sectors on the basis of evidence depends on implementing a range of interventions that motivate practitioners, their managers, commissioners and policy makers to do this. A series of recommendations based on an evidence review is therefore a central part of this report.

## Generic recommendations

Recommendations on adoption are given in Chapter 2, p20, and recommendations specific to each What Works sector are given in Chapter 4, p32.

### Evidence creation

1. A healthy ecosystem generates evidence using appropriate methods. Whilst randomised and quasi-experimental methods will not always be suitable, when they are used well they are the most definitive and least equivocal way of demonstrating impact and should be an integral and indispensable part of evidence-based policy making. This should be reflected in any evidence quality standard developed by the What Works Network.
2. The ESRC should develop a field trials unit in collaboration with Research Councils UK and should identify ways in which all What Works sectors can be represented on its board.

### Evidence translation

3. Institutions and roles that provide more than one ecosystem function help connect the entire system; opportunities to develop these should be explored. Examples include the Education Endowment Foundation (EEF), which both funds evidence production and synthesises

evidence, and the practitioner–academic role (clinician–scientist in medicine), which facilitates both evidence implementation and evidence generation. These institutions and people also act as pipelines in evidence ecosystems – the absence of which impedes the flow of evidence. Safeguards are needed, however, for example to assure adequate separation between evidence generation and standard setting.

4. Evidence-based guidelines and policies and new evidence should be published in short, accessible formats; extensive use of social media such as Twitter, LinkedIn and service magazines and newsletters as sources of evidence across all What Works sectors reflects the urgent need for this targeted approach to dissemination. Evidence that comes in indigestible, exhaustive forms, or which does not address the problems faced by practitioners and commissioners, does more harm than good because it diverts attention from useful evidence, generates scepticism about all evidence and demotivates commissioners and providers alike.
5. The What Works brand should be strengthened to increase evidence visibility, identity and authority. This could help drive evidence production as well as raise awareness and the status of evidence; it could provide a kite mark for professional bodies and training organisations wishing to comply with evidence standards (including intervention fidelity standards) set by the What Works Centres; and it would drive evidence adoption and implementation in the context of the many competing voices in all sectors. Alternatively, or in addition, the successful National Institute for Health and Care Excellence (NICE) accreditation model could be adapted across What Works Centres to signify sector-specific quality assurance.

### **Evidence implementation**

6. All What Works Centres should explore and implement, with national organisations responsible for service quality, ways in which commissioners and regulators can increase traction in their sectors. Organisations with stewardship responsibilities across sectors provide many opportunities to do this.
7. Research assistants in commissioning teams across sectors should be targeted for evidence-skills training; they search for and summarise evidence for commissioners. These personnel have an important evidence role to play in all public services and, since they already exist, there are few funding implications of developing and prioritising their roles. Such training should also be made widely available to policy professionals in Whitehall and be integrated into the commissioning skills training and development supported by the Cabinet Office.
8. Small, local, face-to-face meetings of professionals are hugely important for creating an environment in which people feel compelled and supported to engage with evidence, lead best practice and adhere to guidelines. These learning groups should feature across sectors and include, for example, groups of care home managers, specialist surgeons, education commissioners, teaching school alliances and family support coordinators. They all need sources of authoritative guidelines, support and leadership. They provide the means of connectivity and engagement with evidence and should be developed and maintained in all sectors.
9. Evidence about the effectiveness and cost benefit of interventions and programmes needs to be applied in the context of the settings in which they are implemented. Much of this context-specific evidence is generated in action research (a structured, practitioner-led, reflective process) and should be sought and considered by commissioners and providers alongside this generic evidence. This is perhaps, using the petrochemical industry parallel, the most important example of evidence blending.
10. Any evidence ecosystem comprises many parts and depends on many different agencies. System sensors are therefore needed so that faults are identified and put right promptly; the What Works Centres are in a position to take on this role – to be the eyes and ears of the whole system.



# Introduction

The project described in this report was carried out to deliver to government (and What Works Centres) a set of actionable recommendations on the basis of which evidence generation, mobilisation and implementation in What Works sectors can be improved.

The formation of the What Works Council to lead a network of five new What Works Centres and NICE (the What Works Centre for health and social care) is a new initiative designed to improve the use of high quality evidence in policy making and public service delivery. The new Centres are concerned with education attainment, ageing better, local economic growth, crime reduction and early intervention.

At the start of this project, which was carried out with the What Works Centres, a systematic approach was taken that embraces the distinctly different but related stages of evidence generation, evidence synthesis, formulation of policy and practice guidelines informed by evidence, and evidence implementation. Throughout this report, this overall process is referred to as the 'evidence ecosystem'.

## Drivers for this project

- The What Works initiative is a world first – the first time any government anywhere has prioritised evidence to inform policy through a national approach. This provides an opportunity to describe and improve the evidence ecosystem and to apply it to each What Works sector.
- Comparing sectors can shed new light and provide fresh perspectives on the challenges of effective evidence generation, mobilisation and application.
- Taking a strategic, high level approach to these challenges could help to illuminate gaps in the ecosystem and identify responses likely to bridge them.

## Research questions

1. What are the different elements of the evidence supply chain in each of the What Works sectors and how can they be linked to form a coherent ecosystem?
2. How is evidence pumped or drawn through the system, from generation through to those responsible for taking full account of the evidence in policy making and practice?
3. What are the significant gaps and barriers that interrupt flow and limit evidence application?
4. When they are implemented, which practical recommendations, grounded in the real world of policy development and service organisation, are most likely to improve evidence generation, flow and utilisation?

## Methods

The project relied on three principal methods:

1. A comparison of the evidence ecosystem with a well-established process from an entirely different field: the supply chain represented by the petrochemical industry. This involved a search for descriptions and published representations of this industry, and then generating from it representations of the overall evidence ecosystem and the systems supporting each of the What Works policy and practice areas.
2. A review of published evaluations of interventions designed to drive and improve take up of evidence by policy makers, commissioners, practitioners and others responsible for policy making and service delivery.
3. Semi-structured interviews with a range of stakeholders (listed in the Appendix, p50) to test the evidence ecosystem that emerged in Chapter 1, p9, and also to supplement the findings of the literature review with qualitative data from each of the What Works areas. Recognising that systems need to be dynamic and that evidence demand and supply are needed at each stage, the interviews were also designed to identify incentives and barriers to evidence flow and implementation. The interview sampling frame included at least:
  - One executive from each What Works Centre
  - Three practitioners in each What Works area
  - Three people in professional bodies in each What Works area
  - Three commissioners in each What Works area

This sampling frame was adjusted as the interviews were carried out and as new categories of stakeholder were identified. It was also adjusted if it became apparent that no further useful information was likely if further interviews were carried out. Responses were grouped by What Works sector and summarised thematically. Recommendations were derived from the summaries. Interview findings were also used to test the generic and centre-specific ecosystems described in Chapter 4, p32.

Recognising the benefits of co-production of recommendations, emerging findings were shared and discussed with all the What Works Centres and adjusted in the light of these discussions.

# 1

## The evidence ecosystem

Discussions about evidence often include references to “pipelines”. These usually refer to evidence supply but are sometimes extended to pipeline “leaks” between research and practice, and leaks between evidence awareness and implementation. Because of this, it made sense to design the evidence ecosystem with an industrial analogy (the petrochemical industry) in mind. This comparison is also attractive because, like crude oil, evidence has to be generated, refined, distributed and used if it is to achieve its potential. Another reason this comparison is relevant is that, whereas the petrochemical industry is mature and is maintained and improved by process engineers, the evidence ecosystem is a new concept; design improvements are likely to emerge from such a comparison. Like all analogies though, this one can be taken too far. For example, whereas crude oil occurs naturally, evidence in its various forms needs to be generated. However, a review of the petrochemical supply chain provides the following lessons.<sup>1-5</sup>

- Evidence needs to flow through the ecosystem from generation to end user; it will not flow on its own. In the petroleum industry, “pumps”, and in marketing language, “product push” and “demand pull” are needed at every stage.
- A system cannot function without conduits (pipelines) connecting each stage. In the petroleum industry gathering lines are used to transport crude oil from the field to the main pipeline and transmission lines are used for transport from storage facilities to distribution points (interfaces with end users).
- Evidence is often categorised according to the evaluation method (randomised and quasi-experiments, qualitative approaches etc) used to generate it but this industry offers an additional useful classification according to *usability*. It goes without saying that practitioners and commissioners need evidence in usable forms; usability at this end user stage may be very low if evidence is only available in book or exhaustive systematic review format. Evidence refinement is likely to be needed in this context. Evidence production and synthesis will be wasted if usability is low.
- Product blending is commonplace in the petroleum industry; this may also be a useful context in the refinement of evidence for the end user. For example, evidence from process evaluations might very usefully be blended with evidence of effectiveness from field experiments.
- Evidence can be thought of as fuel. In the same way that fuel demand is stoked up by increase in numbers of car users, so evidence demand will grow as numbers of evidence users

increase. However, unlike the products of the petrochemical industry, evidence is not altered when it is used. It therefore acts as a catalyst; something that causes or accelerates a reaction without itself being affected. In this sense it acts as a prompt to make choices within a range of potential interventions or programmes.

- Waste is inevitable in any system. Waste (unusable) evidence and things which contaminate evidence (eg statistical jargon that may distract users) need to be recognised and minimised. In 2009, *The Lancet* published an analysis<sup>6</sup> suggesting that over 80% of the investment in biomedical research was being wasted. This prompted some research funders to audit the use of their research investments and modify their research management accordingly. Waste in research can take many forms – in deciding what research to do, employing the wrong methods, and missing opportunities to promote findings.
- Product viscosity is a factor in product flow in the oil industry. Evidence viscosity might be an issue in evidence systems; some evidence, however well refined, may be more difficult to pump than others.
- Prices and costs at the various stages of oil production and refinement are very difficult to predict because influences and stages are so complex. There may be similar difficulties with evidence systems, for example with regard to incentives at each stage.

An overall evidence ecosystem is presented in diagrammatic form and adapted for each of the six sectors in which there are What Works Centres (see Chapter 4, p32). Each diagram acknowledges that evidence generation has to be funded; that evidence can come in several forms in each of which quality varies; that evidence needs to be pumped and drawn through the system; that evidence needs to be synthesised and translated into policy and practice guidelines; and that policies and interventions based on evidence need to be adopted and adhered to across sectors.

# 2

## Requirements for the adoption of evidence-based interventions and programmes

Jonathan Shepherd and Charlotte Heales

**H**owever evidence ecosystems are configured, the products they deliver to end users will not deliver better outcomes if they are not used. The literature on the conditions necessary for evidence adoption was therefore reviewed.

The purposes of this review were to identify interventions most likely to improve the implementation of evidence in policy making and delivery and to identify the characteristics of evidence ecosystems that contribute most to their effectiveness and efficiency.

At the outset it was assumed that there are three key elements of an evidence ecosystem that need to be in place in order to facilitate the beneficial use of evidence in policy making and service delivery. These elements are:

- A useful, relevant and dynamic evidence base presented in a way that is usable for policy makers, commissioners and practitioners
- Supportive structures that are dedicated to the effective transmission and uptake of evidence informed interventions and policies.
- A workforce able and motivated to apply evidence for the improvement and commissioning of services.

### Literature search strategy

Key word searches of relevant databases including the Cochrane and Campbell Collaborations and of relevant journals including *Implementation Science*, *Evaluation Review* and *Evidence and Policy* were carried out. Relevant literature was also sought in work published by known experts in this field. At an early stage it was apparent that evaluations of interventions designed to increase evidence implementation and adoption have been carried out far more frequently and for a longer period in healthcare, especially in medicine, than in other What Works sectors.

### A useful and relevant body of evidence

To be able to make greater use of evidence in policy making and practice it is necessary first to have a body of evidence that is fit for purpose. The generation of this evidence involves applying a variety of evaluation methods according to the question asked.

However, far more pressing to the issue of evidence uptake and implementation is the question of how the evidence available serves the people implementing policy. There is no doubt, for example, that Cochrane and Campbell Collaboration systematic reviews are a substantial resource but, in their current form, they are of limited use to policy makers, commissioners and implementers.

The literature on evidence-based policy demonstrates that evidence needs to be reliable, credible and usable.<sup>7-15</sup>

## Usability and reliability of evidence

Policy makers, commissioners and practitioners are often not able to engage with primary research or with systematic reviews because of their complexity and the time necessary to review this literature, crystallise the most important points and then translate the evidence into practical actions.<sup>16</sup> Evidence therefore needs to be translated for them into a format that is usable and reliable.

Evidence must be relevant to policy makers and practitioners and must be presented in a manner where the outcomes of evidence informed policies and interventions are clear and the recommendations are actionable.<sup>11,17</sup> A great deal of research is presented in an obscure style and sometimes with as much emphasis on research caveats as on the main findings and their policy implications.<sup>18</sup> This tendency to caveat and qualify findings is important from an academic perspective and, indeed, can be helpful when policy makers are trying to create nuanced and context-based policy. But for most policy makers, commissioners and practitioners the obfuscation, confusion and the uncertainty this generates can significantly reduce the chances of implementation. As the interviews show (see Chapter 3, p22) this obfuscation can do more harm than good.

In an evaluation of the implementation of NICE guidelines, substantial variability in uptake from one guideline to the next was found. This reflected the stability and the reliability of the evidence, whether or not implementation costs were met, and the strength of professional support.<sup>19</sup> It was also found that guidance needs to be both clear and reflective of service realities. To be implemented, evidence needs to be timely, clear, relevant, and generated using relatively uncontested methods.<sup>12</sup> It also needs to be credible.<sup>7</sup>

Ease of implementation is also a factor in the uptake of evidence informed interventions.<sup>9,10,15</sup> There are particular challenges associated with changing practice in services where interventions demand high levels of technical skill, in surgery for example, where fondness for particular techniques also needs to be overcome.<sup>20</sup> Prior knowledge also impacts upon how evidence is actually used; people adopt interventions that resonate with

them or do not challenge their beliefs. Evidence that is difficult to swallow because it shows that a paradigm shift is needed will be ignored for longer than evidence that a more incremental change is needed. A culture of evidence-based practice and policy making can help overcome this problem.<sup>11</sup>

### 1 NICE accreditation

The NICE Accreditation Programme assesses the quality of the processes followed by guidance producers so that users can recognise sources of quality information.

Accredited organisations, which include a range of bodies such as the Royal College of Obstetricians and Gynaecologists, the College of Occupational Therapists and the British Thoracic Society, can display the NICE Accreditation Mark on guidance produced through the approved process – the ‘seal of approval’ that assures health and social care professionals that they are accessing some of the best information available to make informed decisions about patient and social care.

## Researcher–practitioner partnerships

Guidance and recommendations derived from evidence must reflect practical realities.<sup>19</sup> Practitioners experience the realities of policy implementation on a daily basis and, when evidence does not speak to the experience of the practitioner, it is often ignored.<sup>10</sup> Clearly, although evidence is usually generated, synthesised and reported by academics, in the main, academics are not in a position to apply it. In healthcare however, academics and practitioners are often the same people and this helps overcome this problem.

*“The clinician scientist of the future will be better equipped to adapt their research effort and specialist practice in response to clinical demand and research opportunity”<sup>21</sup>*

The integration of researcher and practitioner roles for the purpose of evidence creation is a central theme in the literature. Practitioner–academics (clinical scientists such as professors of surgery and general practice) have been responsible for the exponential increase in randomised experiments in

healthcare.<sup>22,23</sup> Indeed, the history of randomised trials in medicine strongly suggests that the demand for them and their completion largely reflects the day-to-day responsibility of clinical scientists for their own patients in university hospital settings.

This integration of roles drives and facilitates both evidence generation and communication and there seem few reasons not to apply it in other sectors though doing so presents some organisational challenges.<sup>12</sup> Whether or not this can be achieved, frequent interaction between researchers and practitioners is key to success.<sup>12</sup>

## Supportive structures

Whilst a persuasive evidence base is necessary for the adoption of evidence-informed policy, programmes and interventions, it is not in itself enough to engender change. Intermediaries who translate this evidence into usable forms and who provide support for those in a position to implement it are also necessary.

### Knowledge translators

Knowledge translators are intermediaries who sift through the evidence and synthesise, consolidate and pump it to those in positions to capitalise on it in accessible and usable forms.

Whilst formal systematic reviews draw together quality-assured evidence on the effectiveness of different strategies, the production of such reviews is not enough, on its own, to promote uptake.<sup>24</sup> Rather than teaching practitioners to search the literature, a process for which they neither have the expertise nor the time, knowledge translators should synthesise evidence and promote it in short summaries.<sup>25</sup> Practitioners are rarely systematic when looking for evidence;<sup>26</sup> they can therefore assign too much significance to evidence that happens to cross their desks or which confirms their preconceptions. The role of knowledge translators, then, is to distil all the available findings into forms ready for use by service commissioners, practitioners or other users.

### Implementation networks

Studies of the impact of educational materials show that on their own they have little or no effect on adherence to guidelines or other application of evidence.<sup>24,27</sup> An overview of systematic reviews demonstrated a median improvement in categorical process outcomes following provision of educational materials concerning X-ray requests, prescribing, and smoking cessation interventions of only 4.3% (range -8.0% to +9.6%).<sup>28</sup> Compliance rates differ according to the culture and needs of different groups;<sup>29</sup> some groups engage with educational materials with no additional support but this is rare.

The experience of What Works Centres is consistent with this. The Education Endowment Foundation/Sutton Trust (EEF/ST) commissioned a survey of their target audience and found that 36% of headteachers were using their toolkit and that this proportion is growing steadily as the EEF/ST continues to engage the workforce. But it also shows that, despite clear financial and performance related incentives, universal or even majority use is not guaranteed. In healthcare too, guidance is not enough. A national study of compliance with NICE guidance on antibiotic choices in the event of caesarean sections showed that whilst 93.4% of respondents claimed to be aware of such guidance only 52% of respondent units had changed behaviour as a result.<sup>30</sup>

Professional bodies like the medical royal colleges, the College of Policing and the UK engineering institutions are powerful and authoritative influences on practitioner behaviour. Local learning groups run by these institutions can facilitate learning and professional development. Using large scale data sets to investigate how innovations are adopted, it was found that informal networks and local intermediaries made a significant difference among general practitioners (GPs).<sup>15</sup> Increasing uptake of, and adherence to, evidence based interventions needs to involve networks of practitioners.<sup>31</sup> Apart from providing mechanisms for engaging practitioners with evidence, these networks also promote and sustain an evidence-reliant culture among their members.

## 2 Blueprint for a new, independent College of Teaching (Prince's Teaching Institute 2014)

“A new College of Teaching should promote and work for the generation of useful evidence and disseminate evidence that enhances students’ learning. It should also provide advice to teachers, school leaders and policymakers based on current evidence, to the benefit of what is taught in the classroom. The knowledge gained would also be used to inform the professional standards used by the College.

A College of Teaching should not only clarify and disseminate the science of education, but also recognise and celebrate the art and craft of the classroom. In this Blueprint, the College has a function that would:

- Curate research – reviewing existing international research, select relevant research, and disseminate it through online media. The College could also establish a shared view on research, for the benefit of education policymakers and practitioners
- Share knowledge with and between practitioners using online media, including sending regular digests and communications to College members
- Provide fora in which teachers debate issues of professional practice and identify solutions for teachers and schools”

## 3 The General Medical Council’s handbook *Good Medical Practice*.

“You must keep your knowledge and skills up to date throughout your working life. You should be familiar with relevant guidelines and developments that affect your work. You should regularly take part in educational activities that maintain and further develop your competence and performance.”

“You must keep up to date with and adhere to, the laws and codes of practice relevant to your work.”

## A workforce able and eager to use evidence

Interventions that increase uptake of evidence include:

### Educational meetings

Educational meetings have been shown to increase uptake and, in the right format, they can be instituted at relatively low cost.<sup>32</sup> Their effectiveness depends on how they are organised, and how well they take account of audience needs.<sup>10,24,32,33</sup>

It was found that the median improvement in outcomes after all kinds of educational meetings was just 6.0% (interquartile range +1.8–15.3%).<sup>32</sup>

Educational meetings come in different forms:

- Didactic formats, for example lectures.
- Interactive formats, for example workshops.
- Combined formats

### *Didactic formats*

Didactic formats include the more passive forms of teaching and learning. This method is best represented by the traditional lecture. This is the form of educational meeting that has been shown in multiple systematic reviews to be the least effective. Some studies concluded that they can have no effect at all.<sup>24</sup>

### *Interactive formats*

Educational meetings and conferences that are interactive or which incorporate elements of interactive learning are more effective than didactic approaches.<sup>10,33</sup>

Other factors can also affect the impact of educational meetings:

- **One off meetings are less effective:** A systematic review of the evidence on interventions designed to improve hand-washing showed that single meetings had only a small impact and that the behaviour change they produced was not sustained.<sup>34</sup> Stand-alone courses have little effect without on-going support.<sup>35</sup>



- **Complexity of the behaviour can make adoption more difficult:** Educational meetings appear to have less impact when they are used to change or teach complex behaviours.<sup>32</sup>
- **Size of the group can be important:** Smaller groups are often more effective than larger ones; small interactive groups have more positive effects than large scale conferences.<sup>10</sup>

### Audit and feedback

Audit and feedback is another way in which adherence to evidence-informed interventions by practitioners and policy workers can be improved. Here, summaries of performance against evidence-based standards are considered by practitioners together with feedback on areas of good practice and areas for improvement. Meaningful metrics or information on which to judge performance are necessary.

## 4 NHS Revalidation

Revalidation is the process by which the UK medical regulator, the General Medical Council (GMC) confirms the continuation of a doctor's licence to practice. Its purpose is to assure patients and the public, employers and other healthcare professionals that licensed doctors are up to date and fit to practise.

NHS England works with the Department of Health, GMC and designated bodies to deliver an effective system of revalidation for doctors in England.

For revalidation, doctors must demonstrate regular participation in activities that review and evaluate the quality of their work. These activities must be robust, systematic and relevant and include an element of reflection and action and, where possible, should demonstrate an outcome or change. Audit and other quality improvement activity should reflect the breadth of professional work over each five-year revalidation cycle.

Not surprisingly, effects are variable.<sup>10,24,27,33</sup> For example, in one study, an absolute increase of over 40% in the median weighted rate of prescriptions of generic drugs was achieved after audit and feedback<sup>33</sup> but another study found an average improvement of just 6.7%.<sup>32</sup>

The effect of feedback can be enhanced if it includes information about the consequences of uptake<sup>9</sup> and if practitioners have the time, space and support to adapt the intervention to their particular context. Audit and feedback seems to be particularly effective for implementation of recommendations that are less compatible with clinicians' norms and values.<sup>8</sup>

### Educational outreach visits

#### *Outreach by experts and facilitators*

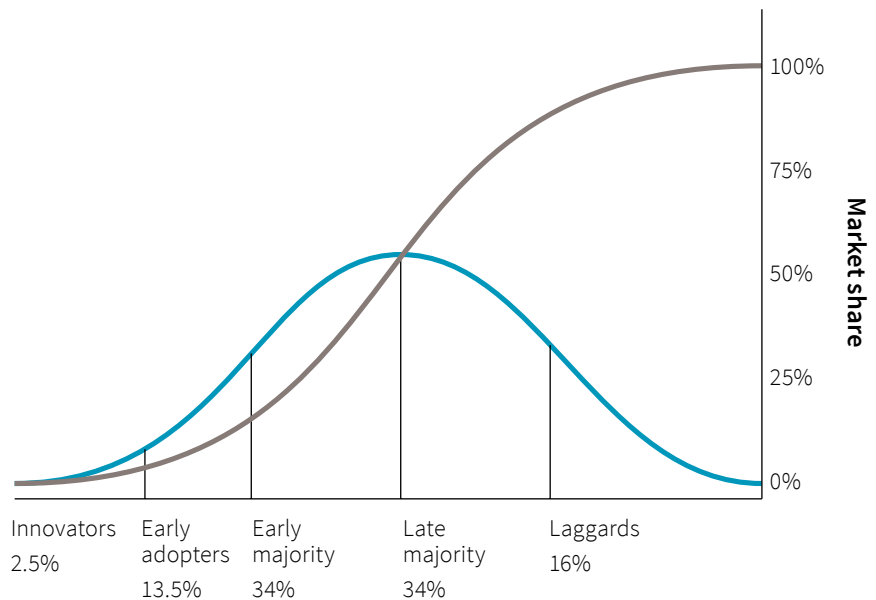
Educational outreach visits by experts or trained facilitators can be very effective<sup>10</sup> but in most cases the effects are more modest. Combining outreach visits with other strategies can overcome this variability problem.

#### *Outreach by local innovation leaders*

The literature distinguishes between outreach visits by experts and facilitators on one hand and educational outreach by local innovation leaders on the other.

Innovation leaders are high performing practitioners who are particularly committed to evidence based policies and who can be appointed as evidence advocates. They increase innovation uptake.<sup>7,15,25</sup> However effects, whilst positive overall can vary.<sup>24,33</sup> In one meta-analysis of 18 randomised trials for example, median percentage change in intervention uptake was 12% (interquartile range +6.0% - +14.5%).<sup>26</sup>

The Cochrane Effective Practice and Organisation of Care (EPOC) Group defines 'local opinion leaders', among other criteria, as people who are identified by their peers. The leadership they offer is not a side effect of their position in a formal hierarchy (e.g. their job title) but is a side effect of the respect and appreciation in which they are held by their peers for their abilities, and the trust their colleagues have for their judgement. They can reduce apprehension among practitioners about 'interference'.



**Figure 1.** The ‘Diffusion of Innovation’ principle, showing the adoption of innovation.<sup>36</sup>

The ‘Diffusion of Innovation’<sup>36</sup> principle (**Figure 1**) states that interventions are developed by a very small number of innovators, then taken up first by a slightly larger group of early adopters, then taken up by early and late majorities, leaving a long tail of laggards. In this context, innovation leaders provide a catalyst for change from within the practitioner and policy making community itself, accelerating adoption.

Overall then, innovation leaders are an effective strategy for increasing the uptake of evidence based practices, though success is not always guaranteed.

### Media campaigns

A systematic review of 22 evaluations of the impact of mass media campaigns on health service utilisation concluded that they are effective.<sup>37</sup> This effect is mediated through patients who, as a result of campaigns, remind their doctors about vaccination, screening and other early interventions.<sup>10</sup>

Media campaigns are not concerned with changing the behaviour of practitioners directly but with encouraging service users to take a more active role in seeking specific evidence-based interventions and, of course, to change behaviour themselves. Examples include campaigns encouraging health screening for at-risk groups and campaigns educating the public about assistance with smoking cessation. Media campaigns can also increase appropriateness of health service use, discouraging unnecessary accident and emergency (A&E) visits for example, and are more effective when personal budgets are involved.

The utility of media campaigns beyond the health sector will depend on the relationship of service users with practitioners. The close relationship between health professionals such as general practitioners and their patients underpins the indirect effect of media campaigns; one to one conversations in the confines of a consultation provide the opportunity and the context for knowledge transfer from patient to clinician and *vice versa*. With these circumstances in mind, similar effects might be generated in conversations between parents and teachers in school parents’ evenings and between police officers and citizens in police–community meetings. On the other hand, these circumstances may not be available in some What Works contexts, for example in the context of local economic growth.

### Computerised reminders and decision support

Computerised reminders and decision support provide prompts to practitioners that are intended to improve their decision making by increasing information recall. They can have significant and positive effects;<sup>10</sup> in one systematic review they had the largest effect of all the interventions assessed. However, efficacy depends on highly computerised environments where decisions are taken, as in GP surgeries where contemporaneous computerised recording of patients’ histories, tests ordered and prescribing is the norm. During such computer-based tasks there are opportunities for timely reminders.<sup>32</sup> This makes generalisability to What Works settings, which are less computerised, more difficult or even impossible.

## Financial interventions

Financial incentives or interventions that highlight the financial consequences of choices are also often effective in changing behaviours which have known cost implications for decision makers. For example, fundholding and the availability of information about the cost implications of choices affect spending.<sup>10</sup>

## Combination of strategies

There is convincing evidence that multifaceted approaches are consistently more effective than single interventions.<sup>24</sup> A review of 235 trials came to this conclusion.<sup>10</sup> Effectiveness varies, however, according to which and how many interventions are combined. The combination, for example, of educational materials and feedback is effective but not necessarily more effective than each intervention alone.<sup>27</sup> In contrast, combination of group education and feedback was more effective than either intervention alone. The optimum intervention combination differs according to the particular barriers to change in any particular context.

Importantly, it is not necessarily the case that utilising lots of interventions to solve a particular problem will increase evidence adherence.

**Figure 2** shows that effect size may not increase as the number of interventions is increased.

It is therefore rational to choose combinations of strategies based on context-specific barriers to change and with a clear understanding

of the instrumental mechanisms that bring about behavioural change.

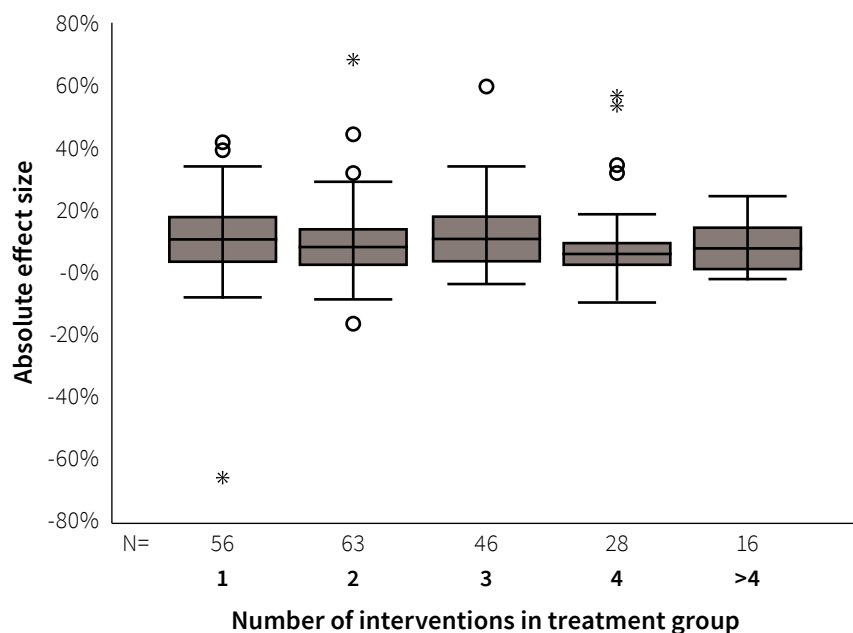
## Appraisal and readjustment

This literature review shows that no one strategy is likely to have unequivocal and universal effects on adoption. For interventions that have an overall positive effect, effect sizes can vary substantially.

Intervention choices should be governed by the needs of the practitioners and policy makers in particular sectors and environments where an intervention is being deployed; these may differ according to which guideline is being implemented. Whilst combined didactic and interactive educational meetings might be useful for sharing knowledge and information about new technologies, techniques such as audit and feedback, reminders or innovation leaders may be required when trying to bring about changes in entrenched behaviours.

*“If potential adopters can adapt, refine, or otherwise modify the innovation to suit their own needs, it will be adopted more easily.”<sup>9</sup>*

Strategies should be reviewed as they are being used<sup>9,10,12,17</sup> and should be recognised as capable of adjustment.



**Figure 2.** Effect sizes of multiple behavioural change interventions.<sup>38</sup>

## Targeted interventions

Understanding the context and the audience is crucial to bringing about behaviour change. Success will not simply reflect the effect sizes of the interventions chosen but also whether or not these interventions overcome the particular barriers to change in specific circumstances. Work at the Stanford Persuasive Technology Lab has identified three prerequisites for behaviour change:

**Ability:** Does the audience have the ability to carry out what is desired? Do they have the necessary knowledge and technical ability? Do they have access to the technology and resources (time, money, personnel etc.) needed to facilitate change?

**Motivation:** Is the workforce sufficiently motivated to change? Motivation can be positive (rewards offered for uptake) and negative (sanctions in the case of lack of implementation) and these approaches can be successfully combined, for example when an organisation is required to consider how to balance costs and benefits.

**Trigger:** Even where ability and motivation are in place a point of decision (the moment in which a practitioner decides to change course) is required. This requirement means that triggers (prompts) are needed; these need to be stronger or weaker according to the difficulty the target audience experiences in adopting the new course.

In a similar categorisation of the barriers to change, ‘capability’ (physical and psychological), ‘motivation’ (automatic and reflective) and ‘opportunity’ (social and physical) have been identified as the key prerequisites for intervention uptake; these need to be considered when deciding which strategy will work best.<sup>39</sup>

*“There is consensus that evidence and evidence visibility is becoming increasingly important across all professions. Arrangements are necessary not just to synthesise evidence but also to generate new, reliable evidence, and for professional bodies to pump it to professionals primed to apply it”<sup>40</sup>*

## 5 Royal College of Surgeons CPD requirements

“Continuing professional development (CPD) is a continuing learning process that requires surgeons to maintain their knowledge base and performance throughout their working life.

Surgeons should agree a personal development plan of CPD with their appraiser.

All doctors are required to complete 250 credits over a five-year period (50 credits per year, where one credit equates to roughly one hour’s activity).

CPD for surgeons generally falls into three main categories – clinical, professional and academic (including managerial). CPD should be balanced across all of these. There is a huge variety in the number and kind of activities that can be considered as CPD, not all of which are “formal” – such as journal reading. The activities you undertake should be planned and discussed at your appraisal to ensure it fits with your learning needs”.

## Summary

**Figure 3** summarises the effectiveness of strategies designed to prompt uptake of evidence-informed interventions and policies.

## Brands and branding

Branding can be used as a social marketing tool to engender behaviour change.<sup>41</sup> A brand is a product, service or organisation, considered in combination with its name, its identity and its reputation.<sup>42</sup> A brand name identifies the product and services of a seller and serves to differentiate the seller from its competitors.<sup>43</sup> Branding can overcome barriers such as resistance to change.<sup>41</sup> By using traditional marketing techniques an idea or a product can be “sold” to staff as well as to external audiences, facilitating change management.

There is a difference between a brand and branding. Branding is the process of designing, planning and communicating a name and identity in order to build

**Figure 3.**  
The effectiveness of strategies designed to prompt uptake of evidence-informed interventions and policies

Effectiveness in causing behavioural change	Intervention	Can be useful when...
<p><b>Less effective</b> These interventions are useful for disseminating information but are less effective in bringing about behaviour change.</p>	<p><i>Guidelines and written educational materials</i></p> <p><i>Didactic educational meetings</i></p> <p><i>Educational outreach by experts</i></p>	<p>Disseminating information to individuals responsible for changing practice, eg managers etc.</p> <p>Educating large groups on new practices, though barriers to change (beyond ignorance) must be addressed to ensure that these are taken up.</p> <p>Educating smaller groups on more complex practices. As with didactic meetings, education does not mean change; other barriers to change must be addressed before such education is effective.</p>
<p><b>More effective</b> These interventions are most likely to bring about adoption of new interventions and guideline adherence, including where existing behaviours are entrenched.</p>	<p><i>Audit and feedback</i></p> <p><i>Local innovation leaders</i></p> <p><i>Mass media campaigns</i></p> <p><i>Reminders and decision support</i></p> <p><i>Financial incentives</i></p> <p><i>Interactive meetings/workshops</i></p> <p><i>A combination of strategies</i></p>	<p>Monitoring and improving the implementation of an intervention but changes may be incremental rather than large scale.</p> <p>Trying to inspire confidence in a new technique or intervention and add credibility to the idea that the intervention will produce better outcomes.</p> <p>Influencing the behaviour of service users either directly or through pressure on their practitioners to adhere to evidence informed policies – but success here depends on close relationships between service users and practitioners.</p> <p>Practitioners make regular choices where reminders (prompts) to adhere to guidance can be introduced easily, for example, where practitioners record decisions electronically.</p> <p>Implementers are responsible for their own budgets and are therefore interested in cost-benefits. They work well where successful business cases depend on an evidence informed approach.</p> <p>Trying to impart new skills and disseminate information as part of targeted support for a particular audience faced with a particular challenge. They also help implementers understand practitioner challenges. But more than one event is necessary; one off events work far less well.</p> <p>Where there are multiple barriers to change or where an audience needs reinforcement to change behaviours. For example, interactive meetings can be used to disseminate information whilst concurrent audit and feedback is used to reinforce and refine the behaviour change.</p>
<p><b>Most effective</b> The best way to ensure that behaviour is changed.</p>	<p><i>Targeted strategies</i></p>	<p>There is a good understanding of the barriers to change in the context of a particular intervention or programme and the behavioural change strategy has been chosen with these in mind.</p>

or manage a reputation. There are four aspects of a brand: identity, image, purpose and equity.<sup>42</sup>

Six attributes of a successful brand have been identified:<sup>44</sup>

- **Simplicity** reduces consumer dependence on detailed product knowledge. Effective brands present “a few high quality pieces of information”.
- **Uniqueness** provides the personality and attributes of the brand; the way it is conveyed. A brand should be presented as something which is at the heart of a profession for example, and not another fad.
- **Safety**; an effective brand is reassuring and a guarantee of standardisation and replication.
- **Aspirational**; a brand evokes a particular vision of the ‘good life’ and holds out the promise of personal enhancement based on a set of values.
- **Value based**; brands symbolise the internal values of a product or company.
- **Credibility**. For a product or service to be successful the workforce involved must believe in it.<sup>41</sup>

The effects of a robust branding campaign can be characterised as:<sup>45</sup>

- Reinforcement of a good reputation both of a product and of those who deliver it.
- Generation of loyalty among those who deploy branded products.
- Affirmation of those who adopt or buy the branded product – they feel they are making a difference
- Creation of a sense of community.

## 6 Professional bodies and their roles

Professional bodies are independent national institutions, usually with charitable foundations, which set and advance professional standards through their membership examinations, education programmes, authoritative journals and evidence informed position statements and standards. Some, such as the Royal College of Surgeons, which is managing 42 trials in 2014, do much to generate evidence. They typically have no interest in terms and conditions of service or any other trades union functions, or in the regulation of the professions which is a role of regulators such as the General Medical Council. Neither are they higher education institutions. This separation of powers focuses the work of professional body, regulator and universities on the core aims of each.

The period 2012–14 has seen a rapid expansion in the number of professional bodies and this separation of functions. The College of Policing and the College of Social Work were founded in 2012–13. In 2014, the Probation Institute was founded and a blueprint for a College of Teaching was published. None of these professions had these foundations previously.

## Recommendations

1. The dissemination of evidence should be accompanied by organised, audience specific strategies to maximise the chances that interventions and programmes supported by evidence will be adopted.
2. The conclusions of systematic reviews of evidence must be translated into accessible, brief guidance for those in a position to implement evidence based change.
3. What Works Centres and professional bodies should collaborate to set up supportive local learning groups comprising front line practitioners and those who search for evidence – for example for their service commissioners and executives.
4. Local supportive learning groups should be connected in regional or national service-specific networks managed by authoritative professional bodies which have the respect and trust of learning group members.
5. These local supportive learning groups should meet, face to face, on a regular basis; they facilitate engagement with evidence and provide the space and time for participants to make decisions to adopt new or modified interventions or programmes.
6. Professional bodies should appoint strategic “innovation leaders” and local evidence champions identified and trusted by their peers to support local learning groups.
7. Formal lectures and didactic presentations should not be the basis of work to bring about evidence based behaviour change. Instead, an interactive approach to evidence presentation should be adopted.
8. Work to bring about the adoption of interventions should not rely on one off meetings or stand-alone courses. Rather, meetings which are organised for this purpose need to be part of an on-going work to implement change.
9. As the complexity of evidenced based behaviour change increases, the design of learning groups and support for them, for example using innovation leaders (“What Works advocates”), should receive greater emphasis; smaller groups are often more effective than larger ones.
10. Audit against evidence based guidelines and feedback is an important part of the adoption process; adequate time should be set aside for target policy makers and practitioners to absorb feedback and make decisions to change course.
11. Given the costs involved and the problem of audience fatigue associated with multiple campaigns, media campaigns should be carried out only when no other intervention or combination of interventions are likely to have the same effect.
12. When the financial implications are known to decision makers, financial incentives can be a powerful motivator and should be considered across all What Works sectors.
13. Combinations of strategies should be carefully selected with the specific intervention and target group in mind; simply increasing numbers of behaviour change interventions without regard to this will probably not increase adherence and can increase costs significantly.
14. Branding can be used as a social marketing tool to engender behaviour change and should be used to drive the adoption of evidence informed policies and interventions

# 3

## Characterising the evidence ecosystem: evidence sources, transmission lines, problems and incentives

**F**ifty-five semi-structured interviews were carried out with a structured sample of personnel in each What Works sector to identify evidence sources, transmission lines, problems and incentives across What Works sectors. These domains were chosen because they cross ecosystem boundaries and facilitate the collection of information about evidence demand (evidence pull) and promotion (evidence push). The findings are summarised below. Generic and What Works specific recommendations flowing from them are listed in the next chapter.

Except where indicated, the findings presented here are a distillation of interview data. It is possible, even probable, given the limited sample size, that some evidence challenges have been missed or are not fully represented here. This was kept in mind when drawing up the recommendations.

### Crime reduction

#### Sources

For the crime reduction What Works Centre, the main evidence sources are the Campbell Collaboration Crime and Justice Group, specific universities in the UK commissioned by the College of Policing, universities in Australia and the US, and NICE. For inspector-level officers, the main evidence sources are the College of Policing, “hit and miss” internet searches, other police forces, and local Community Safety Partnerships. From the evidence of the interviews, for chief officers the main sources are their force leads for each crime type (usually superintendents or inspectors) “who are expected to know the evidence”; Association of Chief Police Officers (ACPO) crime-type leads; the College of Policing; Warwick Business School, which advises, among other forces, West Midlands, States of Jersey, Warwickshire and Leicestershire forces; local university PhD students; and the Society for Evidence Based Policing (SEBP).

#### Transmission lines

From the interviews in this study, at the level of senior officers evidence is mainly communicated at the strategic command course, chats with local colleagues and during visits to new or fashionable initiatives detected through the police grapevine, via Twitter and in meetings with force and ACPO crime type leads. Evidence channels used by police commissioners include academics with knowledge in specific areas, the Association of Police Commissioners and the Police Science Institute in Wales.

#### Problems

UK evidence wells are shallow and on the dry side. UK randomised trial capacity is low – most



academics don't have statistical expertise and, according to respondents in this study, often don't know what the important questions and problems in policing are. This means that the evidence which is produced is often unusable. Academics are often not good at explaining research findings, campaigning on the basis of evidence, or engaging with the policy and practice process; they get bogged down in statistics and caveats. There is no police evaluation funding scheme equivalent to the National Institutes for Health Research (NIHR).

For officers at inspector level – the level at which they are expected in the police command and control culture to act as evidence sources in their forces and for commissioners – there appears to be a lack of understanding of what evidence is and few or no connections with people who have this understanding. This poor connectivity is also a problem for academics, who are very often not well connected with forces or the Campbell Collaboration and do not publish or communicate their work for potential evidence users. There is little understanding of the need for fidelity when implementing evidence informed interventions.

*“Rogue police who implement things which are not supported by evidence... faith in the “magic wand” of officers including some police leaders”*

### Incentives

Poor force performance is an incentive to find out and apply what works. The new and thriving SEBP and the College of Policing provide encouragement and incentives to adhere to the evidence. Fulfilling “moral and public service obligations... and knowing what the latest thinking is” are incentives for chief officers. Low levels of evidence awareness on the part of police commissioners mean that incentives for them to seek and commission on the basis of evidence are few.

## Health and social care

### Sources

NHS consultants' sources are mainly specialist journals in their own fields – often published by

the BMJ publishing group and the medical royal colleges – small discussion groups, often under the aegis of their medical royal colleges; deaneries; local clinical audit meetings; and international meetings devoted to their specialist interests. For some specialists, NICE guidance is “too general to be useful”. But for GPs and A&E specialists, whose responsibilities cross all fields, NICE is a major source of evidence. General medical journals like *The Lancet*, *New England Journal of Medicine*, the *BMJ* and professionally moderated websites such as EMIS and doctors.net are more important sources for GPs than they are for other doctors. Clinicians often source evidence from the British National Formulary (BNF) on drug-related evidence, though the BNF does not yet carry NICE accreditation.

Like other specialist communities in medicine and surgery, the psychiatry community submits research articles to its royal college, which applies quality controls and publishes high quality evidence in its peer-reviewed journals and position statements. These journals appear to be widely read by college members. Apart from creating new evidence, the college, like all medical royal colleges, has developed and maintains an evidence ecosystem across psychiatry and mental health more widely. The joint collaborating centre for mental health (comprising the Royal College of Psychiatrists, British Psychological Society and NICE) is based in the College and provides transmission lines for prompting new evidence reviews and guidelines and for accessing new evidence.

The larger medical royal colleges generate evidence through their own research boards. For example, the Royal College of Surgeons has five surgical trials centres which, in 2014, manage 42 randomised trials – 33 of which are funded by the NIHR. These centres are led by practising surgeons across surgery who are jointly appointed by their specialist associations and the college. They identify priorities for trials (a consensus process) and ensure specialists ‘buy in’ and own the trials themselves and the evidence they generate and are trained in trial recruitment by the college. Trainee surgeons and medical students, when trained to do so, make excellent recruiters to trials – according to respondents in this study, they “easily exceed recruitment targets” – and present trials at meetings.

A regional approach to trial recruitment works well. Each specialty in medicine has developed its own style of accessing evidence – styles which are further fostered in and by their royal colleges and specialist societies. In emergency medicine, for example, there appears to be more reliance on podcasts and instant access. But small group discussion, including in clinical governance meetings, is at the heart of evidence implementation throughout medicine.

From the evidence of the interviews, clinical commissioning group (CCG) leads – not always GPs – mainly rely on medical royal college consensus statements; NICE commissioning guidelines; Scottish Intercollegiate Guidelines; “flicking through the *BMJ*”; courses on evidence; Google searches; *Bulletins* from NHS England; Twitter; LinkedIn (see Incentives for negative influences) and selected clinicians.

### Transmission lines

For clinicians, journals aimed at their specialist areas in hard copy appear to be as important as online evidence access. Practice-changing engagement with evidence seems to take place mainly in small group discussions. CCGs depend on their commissioning teams to summarise evidence. From the perspective of NICE, professional specialisation has resulted in health systems “with many structural holes” (see Box 1, p12). NICE does not carry out primary research but engages closely with the NIHR and other research funders that support evidence generation across the NHS.

### Problems

According to some interviewees, lack of some contextual evidence such as on drug effects on children is a problem. Health technology assessment (HTA) appraisals are “not fit for purpose” in the opinion of some senior practitioners in more than one major area of medicine (the NIHR HTA programme publishes evidence on the effectiveness, costs and broader impact of healthcare). An example of the perceived problem is the (perceived) costly failure to reach consensus on the best hip prostheses. At the British Orthopaedic Association annual meeting, it was reported, there are often 60–70 trade stands each marketing a different prosthesis. If the prostheses associated with the best outcomes are identified, it is felt by some interviewees, substantial cost savings

could result. The National Joint Registry (of knee and hip replacements) is seen as a source of high quality data. Skiing holidays for surgeons sponsored by equipment manufacturers are seen as a problem.

Products of Cochrane evidence reviews are often seen as unusable; a problem here appears to be that review funders tend not to insist on usability of review products. Paucity of audits by NHS trusts against published guidelines explains why, even in the face of the evidence, some practitioners don't comply. Information overload is a problem for many, “it's just finding it all”; this is a worry shared by NICE. The Goldacre campaign on unpublished findings has generated unjustified scepticism among some clinicians about a great deal of evidence – “I don't believe it any more...”

According to some respondents, the academic language, backroom image and status of evidence are barriers. Agencies other than NICE are competing for influence. ‘Evidence based’ means different things to different people. Lack of engagement with evidence processing standards in some medical royal colleges may be a problem – this could be overcome if NICE accreditation is marketed more widely and more keenly sought.

Nursing research appears to be overly concerned with theory and does not generate useful evidence to the extent it should. According to respondents, this is because nurse academics are very largely confined to university departments – away from patient care – and, as non-practising practitioners, they have lost touch with practical nursing problems. There appears to be a huge credibility gap between practising nurses and nursing academia. However, there appears to be broad consensus in university nursing schools that nurses should continue to practise when they become academics but substantial problems remain in implementing this. These problems are perceived to include NHS reorganisation (such as the development of Health Education England). The group discussing this in nursing is a forum rather than an executive group (it does exist though, includes relevant senior people and is taking on a more campaigning role); there appears to have been no attempt yet to engage health ministers on this.

## Incentives

Location of a NICE unit in a medical royal college provides a built in incentive to engage with and apply evidence. Some colleges have set up centres for quality improvement (eg the Royal College of Psychiatrists' College Centre for Quality Improvement (CCQI)), which accredits services according to compliance with NICE guidelines. NHS trusts join CCQI on a voluntary basis and a sizable minority of trusts providing children's services do this (about 30%; £3,000 per annum subscription fee) but trusts providing services for adults do not. CCQI also audits social services. The Royal College of Surgeons' Clinical Effectiveness Unit (CEU) outcome data are motivating because they are produced by an authoritative board, which gives a powerful message to surgeons that "we mean business".

*"Doing better for patients"*

According to some respondents, the biggest incentive for practitioners is peer pressure – "no one wants to be at the wrong end of a performance chart". Fear of being seen not to comply with medical royal college or NICE guidelines, fear of missing opportunities to save time; and feelings of ownership, being part of something, inclusion, connection with colleagues and "being loved by colleagues" are all related incentives. Competitiveness among clinicians to be seen to know about the latest evidence is an incentive.

The Quality Outcome Framework provides a powerful financial incentive in general practice but this can't work in hospitals, it is said, because of dependence on paper based records. Some, CCG respondents did not seem to be very strongly motivated to achieve value for money.

From the interviews, NICE guidance on head injury treatment changed practice "because it was obvious it had relevance and value". The statutory duty (Health and Social Care Act) of NHS England and CCGs to implement NICE guidelines within three months is a powerful incentive.

The pharmaceutical industry doesn't appear to contact commissioners in their official roles

but communicates through LinkedIn "all the time" saying that the CCG can save money "get cash back" if they commission their drug and asking "can I talk to you about diabetes care?" and so on. Other parts of the health industry, for example IT providers, also market themselves to healthcare commissioners through LinkedIn.

## Education

### Sources

According to respondents, frontline teachers mainly rely on evidence obtained in Inset (in-service training) days, from private sector providers who contribute to Inset days, from head teachers, from action research in their own schools and sometimes from social media, especially Twitter. In early 2014, only a minority of teachers appeared to have heard of the EEF Toolkit. Education commissioners depend on their networks, which include the Department for Education, increasingly the EEF, the Association of Commissioners of Children's Services (weekly newsletter), and commissioners in similar counties. Sourcing evidence is often a collaborative effort with regional commissioner colleagues.

### Transmission lines

Teachers mostly update themselves on the art and craft of teaching from other teachers – in networks that vary widely in quality and can be impenetrable to newly appointed teachers. Otherwise, communication lines for teachers seem sparse. A major attraction among the teaching profession for a new, standard-setting, independent professional body is that it would improve communication, curate research, synthesise and disseminate evidence and motivate teachers to apply it. In other words, such an institution would contribute to the whole ecosystem (see Chapter 4, p32). Poor headteachers and poorly performing schools are generally not well connected. Any new college should communicate evidence using social media such as Twitter and through small groups of teachers, for example at Inset days. Education commissioners in local authorities often rely on their research assistants to search for evidence, to exercise editorial evidence control and to email evidence summaries to them.

## Problems

Problems include the availability mainly of low quality evidence, not enough evidence, the low credibility of the academics who produce evidence (“If you’re not in the classroom how do you know?”), lack of funding to support Inset days, and lack of context-specific evidence.

*“You don’t encounter (evidence) after you’ve finished training”*

According to some respondents, Ofsted is a problem – as too big a stick, as imposing too many interventions, “it gets in the way”. “It generates antibodies” and evidence “push back” from schools and teachers – as do edicts from government. Not using the pupil premium for evidence-based purposes and interventions is seen as a problem.

*“No one wants to have to drill down into the stats”*

## Incentives

According to teacher interviewees, implementation comes through ownership of the evidence and social effort – in the kind of community (professional home) that a College of Teaching could provide. The higher status brought about by proud membership of a new professional body and a “students-first culture” are seen as incentives. The main incentives identified by teachers to seek and apply evidence are to improve their skillset, quality of life and efficiency. Edicts from heads “you’ve got to do it” are demotivating. It was reported that performance management doesn’t work very well because unions maintain the status quo whereby teachers still get pay enhancement for long service rather than performance; “brilliant teachers don’t do any better pay wise”.

*“A lot of teachers are quite content doing what they’ve always done”.*

Good headteachers pull in evidence to find out if what they are doing is effective or not and what works in other schools. They do this to realise their ambition to manage improvement in their school. At the root of this search for evidence is uncertainty about what’s working and what isn’t. This curiosity, where it exists, appears to

be a powerful driver to seek evidence and then change course for the better based on it.

For commissioners of education, important incentives appear to be fear of punishment after poor education results and critical Ofsted local authority reports. Other incentives are to improve the reputation of the local authority and to attract better recruits to teaching in their county. The success of income generating ‘education services’ arms of local authorities is understood to depend on the quality of the services they provide. In turn, quality depends on these services being founded on good evidence.

## Early intervention

### Sources

Sources for the What Works Centre and commissioners are mainly UK university social scientists and the international crime and health research literature, reflecting the diverse nature of early intervention opportunities across crime reduction, health and social work. Other sources identified by respondents include the Local Government Information Unit and local authorities; The Dartington Trust Research into Practice website; SOLACE (the local authority chief executives’ organisation); in-house policy teams; Twitter feeds (especially from government departments); Children and Young People Now; Collaborate; The Institute for Research and Innovation in Social Services (IRISS); Office of Public Management; Institute for Government; Inlogov (research provider); specified universities such as the University of East Anglia and Oxford Brookes University; the Evidence for Policy and Practice Information and Coordinating Centre (EPPI) at the Institute for Education; local family support services; the Pakenham Project; Chance UK; Family Action; National Family Intervention Programme; the Department for Children, Schools and Families; and the Department of Health’s Commissioning Support Unit. The ESRC and the Early Intervention Foundation (EIF) have announced a strategic partnership to fund more research into early intervention.

Sources also include LinkedIn (especially, it appears, for children’s centre managers); a range of early intervention websites such as Nurse

Family Partnerships, Washington State Institute and Colorado Blueprints against violence sites; NHS England commissioners; other UK areas that have implemented nurse–family partnerships; or other interventions such as Multi Systemic Therapy (Sheffield), and named experts in the field such as Caroline White - an expert on children and adolescent mental health services, and Leon Feinstein, Director of Evidence at the EIF. Greater Manchester performance and intelligence, commissioning hub and public service reform teams are examples of sources of evidence in larger authorities.

### Transmission lines

Commissioners often rely on paper reports on evidence from their policy teams and on Twitter. Children’s centre leads depend on local authority ‘on-the-job’ training courses, LinkedIn and local meetings – which act as supportive learning groups. Dartington Social Research Unit, Incredible Years and EIF newsletters are widely read and the sector seems to rely particularly heavily on local, informal meetings as means of communication.

Evidence pipelines need to be developed across the early intervention workforce but particularly with middle-tier personnel where training is currently exceptionally limited; reflecting this, evidence utilisation by this group does not seem high. Professionalisation of this group is an EIF priority.

The What Works Centre has triaged the highly diverse early intervention workforce according to training need:

**Professionals in universal services:** Teachers, nurses, general practitioners and other professionals who work with children and families.

**Middle-tier practitioners:** This diverse range of practitioners often work in Children’s Centres many of which are run by third sector organisations such as Kids Company and Action for Children or private sector organisations. They also include outreach workers and those who work in family or community support. They provide parenting assistance, training and family support, and deal with most of those who might benefit from early

intervention. This component of the workforce provides targeted support for high risk groups to prevent the development of social problems.

**Professionals in specialist services:** These professionals include social workers, probation officers and police officers. They respond when an issue has already developed. It is hoped that early intervention can reduce the demands on the services provided by this tier.

### Problems

According to respondents, most research in this sector is sociological criticism or too theoretical to be useful. The lack of an ESRC field trials unit to generate usable evidence and lack of trials or other evaluation expertise among the academic workforce are real problems. Reflecting these problems, research findings are often seen by potential users as “too complicated, too wide ranging and foreign”. It is impossible to scale up some international models because context is different from country to country. Evidence usability is low. There need to be more academics spending time in applied early intervention contexts.

The diverse nature of delivery by many occupational groups and practitioners (for example ex health visitors working in third sector organisations, Positive Parenting Programme (‘Triple P’) volunteers and day nursery personnel), across almost all public and third sector services is a real challenge. Lack of taxonomy for the early intervention workforce is a problem that makes targeted effort and training difficult to implement – as a first step to solving this problem, three workforce tiers have been identified. Paucity of EEF-style guidance on cost benefit and reliability was perceived to be a problem. Although some local authorities find academic journals useful sources, access to them is patchy. The evidence on which some government policy changes are made is rarely made available according to some respondents, making these changes appear irrational to the early intervention workforce. There is a late intervention rather than an early intervention culture across services.

For frontline children's centre leads, the main problems were reported to be low quality local authority and NVQ training, lack of reliable outcome measures for estimating the impact of their own services and that very little evidence gets down to the front line workforce. According to respondents, Ofsted demanded that children's centres 'evidence' their outcomes but "no one on the ground had any idea how to do this – and there was no support to train people". A professional body or some other mechanism to increase professionalisation is lacking in the opinion of some, though other respondents think there are too many organisations in the sector already.

The huge diversity in this sector also extends to knowledge about evidence – some respondents had PhDs in relevant research areas but for others, "evidence" was a meaningless term.

### Incentives

Some commissioners' thirst for evidence is clear as is their feeling that applying evidence makes a difference, getting financial returns on investment (especially if the city is fiscally devolved), and seeing better outcomes. Other incentives for commissioners are meeting central government statutory functions and success in delivering integrated services. Freedom to act on evidence rather than having policy dictated by other agencies when this wastes funds on low value, centrally driven initiatives, and freedom to withdraw funding from services which are not adhering to evidence-based practice (fidelity issues) are also seen as incentives. Academic training can motivate policy makers to rely on good evidence. For children's centre managers, giving practitioners confidence and Ofsted ratings provide incentives: high ratings help to get funding, improve reputation and improve popularity.

## Ageing better

### Sources

Sources for those advising commissioners include a great deal of contextual evidence from action research carried out with care home staff, the Joseph Rowntree Foundation, Care Quality Commission (CQC), Social Care Institute of Excellence and the

Department of Health. The respondents included an excellent example of an evidence broker in this sector. According to respondents, for many care providers, evidence is not important, "local authorities just want you to do what they tell you". For care commissioners, who often have assistants who collect evidence for them, the main evidence sources seem to be care home managers and care teams including in organisations such as Housing 21, Age UK and the Alzheimer's Society, local dementia strategy groups, other local authorities who have taken a lead in particular care areas, UK universities with dementia research interests, care nurses from Denmark, and Dementia Action (local and national) Alliances.

For this sector, NICE (with one or two exceptions), does not, yet, seem to be an important source.

### Transmission lines

The "My Home Life" knowledge broker and his facilitators identified in this study are pipelines through which usable evidence flows to care home managers both in small group meetings and in writing "not more than three/four lines long". In this example, the facilitators have established trusting relationships with care home managers; these long-term relationships make for the free flow of evidence and its implementation. This sector, like all the others, relies on local, face-to-face meetings ("there needs to be the ability to meet and ask stupid questions") for evidence engagement but seems less reliant on electronic communication.

### Problems

According to respondents, sector networks provide an intimidating snowstorm of information and guidance, often "chucked at care homes from on high" but most of it is seen as unusable, far too extensive to be read, irrelevant or obvious. For example, guidance to "deliver dignity" is seen as worthless without guidance on how this can be achieved. Some evidence lacks credibility because it has been generated, it was reported, without recourse to service users and without experience of care settings. The avalanche of information and profusion of conferences appears to be actually harmful because, as interviewees stated, it hides useful evidence, delivers a message that there's something wrong with the care sector, generates anxiety among care managers and increases stress

levels which inhibit good communication with their staff. Conferences are expensive and people have to take a lot of time off work in order to attend them. “E learning doesn't work very well; people try to put time aside to do it but then life gets in the way”. For all these reasons, knowledge transfer in the sector seems poor and evidence usually does not appear to reach or affect the front line.

Lack of connectivity in the emerging ecosystem is a problem as is lack of evidence relevant to particular care circumstances, though it seems generally accepted that evidence needs to be interpreted in the light of these.

*“Evidence in medical or academic language is impenetrable, totally inappropriate and scares people”.*

*“At the moment the people on the ground are living in a completely different world to the one envisioned by policy”.*

### Incentives

A powerful incentive identified in the interviews is knowing about and continually experiencing the “horrible lives (that) older people often lead...the shock, horror” of their situations and specific incidents. Detached relationships between care providers and commissioners reduce incentives because they eliminate opportunities to engage with the evidence.

For some commissioners, delivering what is known to be the Prime Minister’s strategy is an incentive, as is seeing the dementia strategy as coming from 10 Downing Street rather than all the intervening layers of government. Local authority cost cutting is a disincentive to try things which are exciting but aren’t evidence based. This implies that a difficult economic climate is actually an incentive to adhere to the evidence but provides less stimulation (there is a message here that keeping the pressure on expenditure could make evidence-informed practice more rather than less likely.) Bids for funding which succeed are sometimes seen to need to be based on relevant up to date evidence.

## Local economic growth

### Sources

According to respondents, sources of evidence are very limited. It was reported that controlled evaluations are rare and only a few economists have the necessary expertise. For local agencies which support business and enterprise, most knowledge is institutional and does not comprise evidence of intervention effectiveness. ‘TechCity’ have conferences for the sharing of good practice. Local enterprise partnership (LEP) executives look to local authority reports and Local Government Association (LGA) reports. Department of Business, Innovation and Skills (BIS) and National Audit Office reports are valued because they include “evidence of impact” though it appears that cause and effect is very rarely investigated or understood. Some growth agencies post calls for evidence on their websites. LinkedIn, Office of National Statistics (ONS) data, business sector groups such as the Housing Association, Engineering Employers Association, Chambers of Commerce, the National Farmers Union and LEP survey data are sources of non-evidential information.

For LEP economists, sources include academic articles accessed through JStor (the search engine; Journal Storage), the *Economist*, ONS, BIS and Bank of England reports, economists such as Andrew Hebden (Bank of England, Deputy Agent, North East), consultancies such as Ekosgen (an economic, social and regeneration consultancy based in Sheffield) and reports of natural experiments – where they exist.

There is some awareness and application of Intervention Logic (an evidence-based, reasoned description of the links between outcomes and outputs). Some research is commissioned by local authority business managers; examples are projects on job advertisement trends to improve advice to school leavers, and on the needs of new small and medium enterprises (SMEs) after they have got past “stage one”. Sources also include the Chief Economic Development Officers Network; selected universities such as Newcastle University’s Economic Development Group, De Montfort and Leicester universities; consultancies such as Grant Thornton; and the What Works Centre director (for cost-benefit information relevant to competing for City Deal status).

## Transmission lines

The main lines of communication for LEP executives appear to be email, hard copy reports, informal local telephone networks and an (as yet) low profile LEP network, in-house enterprise partnership teams, the *Local Government Chronicle*, *Municipal Journal*, and local business newspapers. The What Works Centre interacts with LEP chairs, chief executives and networks.

From the What Works Centre perspective, since there are many competing voices, a strong evidence brand seems an important priority though it might be too early for this given the embryonic state of this What Works sector. For the front line, short courses on evidence in the workplace are a perceived need rather than classroom teaching. Peer to peer influence through evidence champions can be powerful, as in Manchester.

## Problems

*"Published reports glorify correlations".*

*"We've done this (authors report) and unemployment went down".*

*"Implying causation is just a deception".*

There appears to be very little awareness for most in this sector that experimental evidence on effectiveness might be useful. Evidence is taken to mean statistical information from HMRC, for example, about numbers of start-ups surviving one year, UK government city comparisons of numbers of VAT-registered companies, Institute for Chartered Accountants data on local top 100 growing businesses and so on; it appears to be obtained locally and is not evidence in the What Works Centre sense. Few university, think tank, or social media sources were cited. Few respondents knew about relevant courses or other CPD opportunities.

There is a major evaluation shortfall - there are too few controlled economic evaluations of interventions. According to respondents, economic evaluations are usually unsound. Publishing bias is a problem; "no one wants to publish evidence of ineffectiveness". Funding for the What Works Centre to interact with LEPs appears too limited. There are too

few evidence champions. Standardisation of the many growth measures is needed – especially in government; these need to take account of the contributions of high tech industries where there are fewer and higher value jobs which contribute to a more favourable import/export balance than those in the manufacturing sector.

Communication "up to" LEPs can be difficult; there appear to be few opportunities for feedback; a less linear way of doing business is needed. Researchers don't talk enough to people on the ground and they are not embedded in the sector, according to interviewees. Connections throughout the ecosystem need to be strengthened for evidence flow in both directions.

*"It's the same things get regurgitated"  
(evidence on what works).*

*"I'm not aware of anything  
new in the last 15 years"*

Businesses often think local authority enterprise managers will go to the HMRC with confidential turnover data or share sensitive knowledge with other businesses on new products, new markets and new customers to their unfair advantage (it was suggested that a generic confidentiality agreement might help; this suggestion was welcomed). Unavailability of some evidence is a problem ("some evidence is not circulated") for example evidence generated by the Cambridge University Land Economy Department and a similar department at Reading University. Lack of an evidence database is seen as a problem.

*"The sector is incapable of  
engaging with evidence".*

There are (as of March 2014) 39 LEPs of which, according to respondents, only three are fully engaged. The private sector gets evaluation funding from local authorities but these private sector evaluators, it was reported, "are not fit for (evaluation) purpose". Lack of awareness of some private sector organisations with the necessary expertise and capacity is probably also a problem.



*“There’s nothing you can do to get people to value one kind of evidence over another”.*

*“Anything which looks top down is a disaster”.*

Government inconsistency in its choice of evidence necessary to win Strategic Economic Plan funding is perceived as a problem (eg Gross-Value-Added measures). “This makes my job impossible”.

### Incentives

There appear to be few incentives in the sector to access useful evidence; for many of those responsible for supporting local business and enterprise getting “a huge amount” of institutional knowledge” from day-to-day contact with the sector is all that appears necessary. There are incentives to create replacement jobs for ex public sector workers but little or no comprehension that evidence on how to do this might be useful – this seems to be foreign territory. Businesses rarely provide any incentives – asking them for evidence “feels like interfering”. However, there is an incentive to use evidence to build business cases.

*“Evidence ensures that you have a position to argue from”.*

To be successful, applications for City Deals (which allow cities to borrow against projected tax revenues over a long period), Strategic Economic Plans (which pave the way for growth deals for LEP areas), European Regional Development Funding, European Social Funding and LEP funding, such as from the Growing Places Fund, all need evidence foundations (doing this is part of intervention logic).

For the What Works Centre there is an incentive to create a loud and persuasive voice to get attention in the fierce competition to be heard – “There are many rival voices” – including, respondents reported, from ESRC and the Institute for Economic Development.

There seem to be few personal financial incentives for LEP executives to access and apply evidence (“and they wouldn’t work unless they were at least 30% of salaries”). For LEP economists, ensuring best use

of public money is an incentive, not least because career progression is more likely if work is founded on reliable evidence. An incentive identified by a few respondents for finding and applying evidence is that this reduces the chances of doing the wrong thing. An example of the perceived harm which results if evidence is not adhered to is the waste of public money represented by “the construction of shiny new buildings – there’s no evidence this increases local growth”. “They just like cutting ribbons.”

# 4 Recommendations: What should the evidence ecosystem look like and what could be done to improve it?

This chapter is organised as follows. First, a generic form of the evidence ecosystem is presented followed by a list of generic recommendations which address issues across all What Works sectors. Second, the ecosystem adapted for each What Works sector is presented followed by lists of recommendations for each sector.

As in diagrammatic representations of the petrochemical industry, the diagrams included here do not attempt to capture every influence at the various stages of evidence production and use. The focus here is on the flow of evidence. Because of this, feedback loops are not included. There are many of these, including, for example, feedback from What Works Centres to funding bodies (for some WWCs such as the EEF which also fund evaluations this feedback will be internal rather than involving external links); feedback from the front line to evaluators especially from action research; and feedback from commissioners to What Works Centres. The nature of feedback loops will vary from sector to sector. Although a principal concern of What Works Centres is synthesis of evidence of effectiveness and cost benefit of programmes and interventions/approaches, the results of this study suggest that they should keep in mind and be prepared to help refine the whole ecosystem in their sector. To reflect this, recommendations are concerned with evidence generation as well as evidence synthesis and adoption.

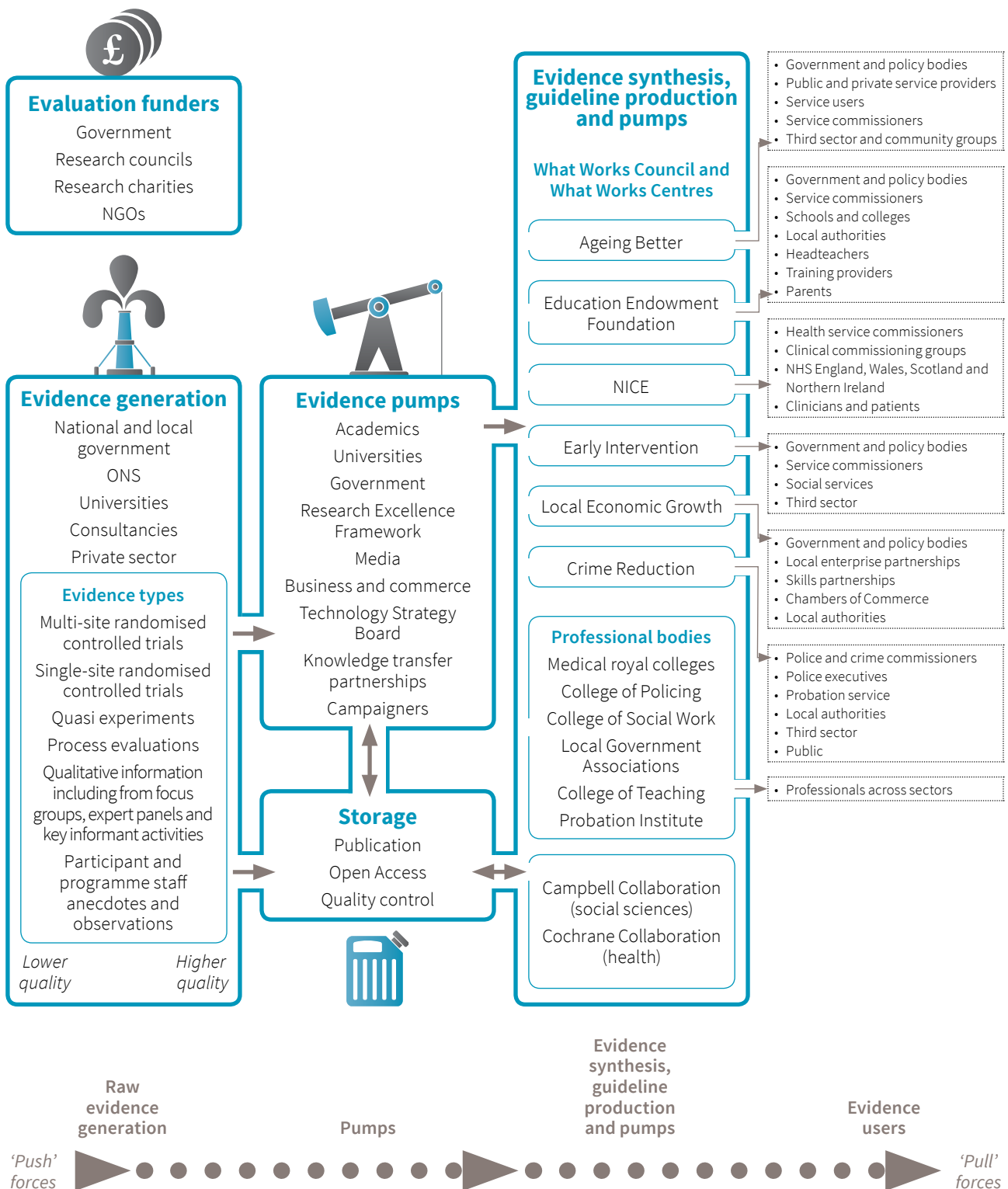
## Generic recommendations

The implementation of the recommendations listed below will facilitate the flow of evidence in its raw and refined forms through the evidence ecosystem (Figure 4). It will break down barriers to evidence flow, for example between evidence synthesis by the Campbell Collaboration and guideline producers, and between professional bodies set up to raise standards and What Works Centres. It will increase evidence demand at all stages, for example by motivating academics to produce relevant evidence, by motivating commissioners to focus on evidence informed solutions and by motivating providers to audit services against evidence informed guidelines.

Implementation will increase the generation of primary evidence, especially experimental evidence, across sectors. From the evidence of the interviews carried out in this study, curiosity of academics equipped with the necessary evaluation skills combined with the service ethos in government and public services is the beating heart of evidence production and perfusion. Examples of this integrated approach range from the My Home Life model in the better ageing sector, through the behavioural insights team working in HMRC, to university teaching hospitals. Accordingly, recommendations are designed to apply this principle throughout What Works sectors.

Recommendations target specific personnel, for example the research assistants and practitioners in all What Works sectors who source and summarise evidence for commissioners and service executives. Engagement with evidence, and decisions to change course based on evidence are made in small groups in all sectors; accordingly, recommendations are designed with this in mind.

**Figure 4.**  
The evidence ecosystem



An important principle derived from the petrochemical industry (see Chapter 1, p9) is that the products of any process must be usable. It is clear not only that this is crucial when it comes to evidence but also that unusable evidence can do more harm than good. The recommendations here are therefore designed to draw attention to the urgent need for What Works Centres to publish evidence in usable formats through carefully targeted media. Across sectors, it is clear that, to create and increase demand, high grade evidence and the products of the What Works Centres need to be quality assured and marketed well.

### Evidence creation

1. A healthy ecosystem generates evidence using appropriate methods. Whilst randomised and quasi-experimental methods will not always be suitable, when they are used well they are the most definitive and least equivocal way of demonstrating impact and should be an integral and indispensable part of evidence based policy making. This should be reflected in any evidence quality standard developed by the What Works Network.
2. The ESRC should develop a field trials unit in collaboration with Research Councils UK; and should identify ways in which all What Works sectors can be represented on its board.

### Evidence translation

3. Institutions and roles which provide more than one ecosystem function help connect the entire system; opportunities to develop these should be explored. Examples include the EEF which both funds evidence production and synthesises evidence, and the practitioner academic (clinical-scientist in medicine) role which facilitates both evidence implementation and evidence generation. These institutions and people also act as pipelines in evidence ecosystems the absence of which impedes the flow of evidence. Safeguards are needed however, for example to assure adequate separation between evidence generation and standard setting.
4. Evidence-based guidelines and policies and new evidence should be published in short,

accessible formats; extensive use of social media such as Twitter, LinkedIn and service magazines and newsletters as sources of evidence across all what works sectors reflects the urgent need for this targeted approach to dissemination. Evidence that comes in indigestible, exhaustive forms or that does not address the problems faced by practitioners and commissioners, does more harm than good because it diverts attention from useful evidence, generates scepticism about all evidence and demotivates commissioners and providers alike.

5. The What Works brand should be strengthened to increase evidence visibility, identity and authority. This could help drive evidence production as well as raise awareness and the status of evidence; it could provide a kite mark for professional bodies and training organisations wishing to comply with evidence standards (including intervention fidelity standards) set by the What Works Centres; and it would drive evidence adoption and implementation in the context of the many competing voices in all sectors. Alternatively, or in addition, the successful NICE accreditation model could be adapted across What Works Centres to signify sector specific quality assurance.

### Evidence implementation

6. All What Works Centres should explore and implement with national organisations responsible for service quality, commissioners and regulators ways in which they can increase traction in their sectors. Organisations with stewardship responsibilities across sectors provide many opportunities to do this.
7. Research assistants in commissioning teams across sectors should be targeted for evidence skills training; they search for and summarise evidence for commissioners. These personnel have an important evidence role to play in all public services and, since they already exist there are few funding implications of developing and prioritising their roles. Such training should be also be made widely available to policy professionals in Whitehall, and be integrated into the commissioning skills training and development supported by the Cabinet Office.

8. Small, local, face-to-face meetings of professionals are hugely important for creating an environment in which people feel compelled and supported to engage with evidence, lead best practice and adhere to guidelines. These learning groups should feature across sectors, and include, for example, groups of care home managers, specialist surgeons, education commissioners, teaching school alliances and family support coordinators. They all need sources of authoritative guidelines, support and leadership. They provide the means of connectivity and engagement with evidence and should be developed and maintained in all sectors.
  
9. Evidence about the effectiveness and cost benefit of interventions and programmes needs to be applied in the context of the settings in which they are implemented. Much of this context-specific evidence is generated in action research (a structured, practitioner-led, reflective process) and should be sought and considered by commissioners and providers alongside this generic evidence. This is perhaps, using the petrochemical industry parallel, the most important example of evidence blending.
  
10. Any evidence ecosystem comprises many parts and depends on many different agencies. System sensors are therefore needed so that faults are identified and put right promptly. The What Works Centres are in a position to take on this role - to be the eyes and ears of the whole system.

## Crime reduction

### Recommendations

In the context of the crime reduction evidence ecosystem (Figure 5), the implementation of the recommendations listed below will increase the production, relevance and usability of evidence; will motivate researchers to evaluate the effectiveness of police and other crime reduction interventions – especially in close collaboration with practitioners; will disseminate evidence from evaluators to forces and research questions from forces to researchers; will provide conduits for evidence from the College of Policing to force personnel responsible for sourcing evidence; will translate the findings of evidence reviews into products usable in forces and by the College of Policing; and will motivate forces to implement interventions which are informed by evidence – including through the commissioning process.

### Evidence creation

1. A crime reduction evaluation funding scheme equivalent to the NIHR in the NHS would do much to increase the generation of evidence on which police and other crime reduction service improvement should be based. Potential leads include the Home Office. This could be achieved by building on the Police Innovation Fund.
2. The crime reduction research community should be represented on the ESRC board.
3. The College of Policing should build a small number of well-resourced university–force collaborations to co-produce useful evidence and provide the connections (transmission lines) necessary in the crime reduction evidence ecosystem.
4. The College of Policing should, with its university partners, explore the development of honorary or substantive university appointments for officers with research qualifications, and of formal career progression routes for officers who wish to combine police and academic roles.

### Evidence translation

5. National and regional groups of analysts – those who search and summarise evidence for force crime type leads – should be established by the

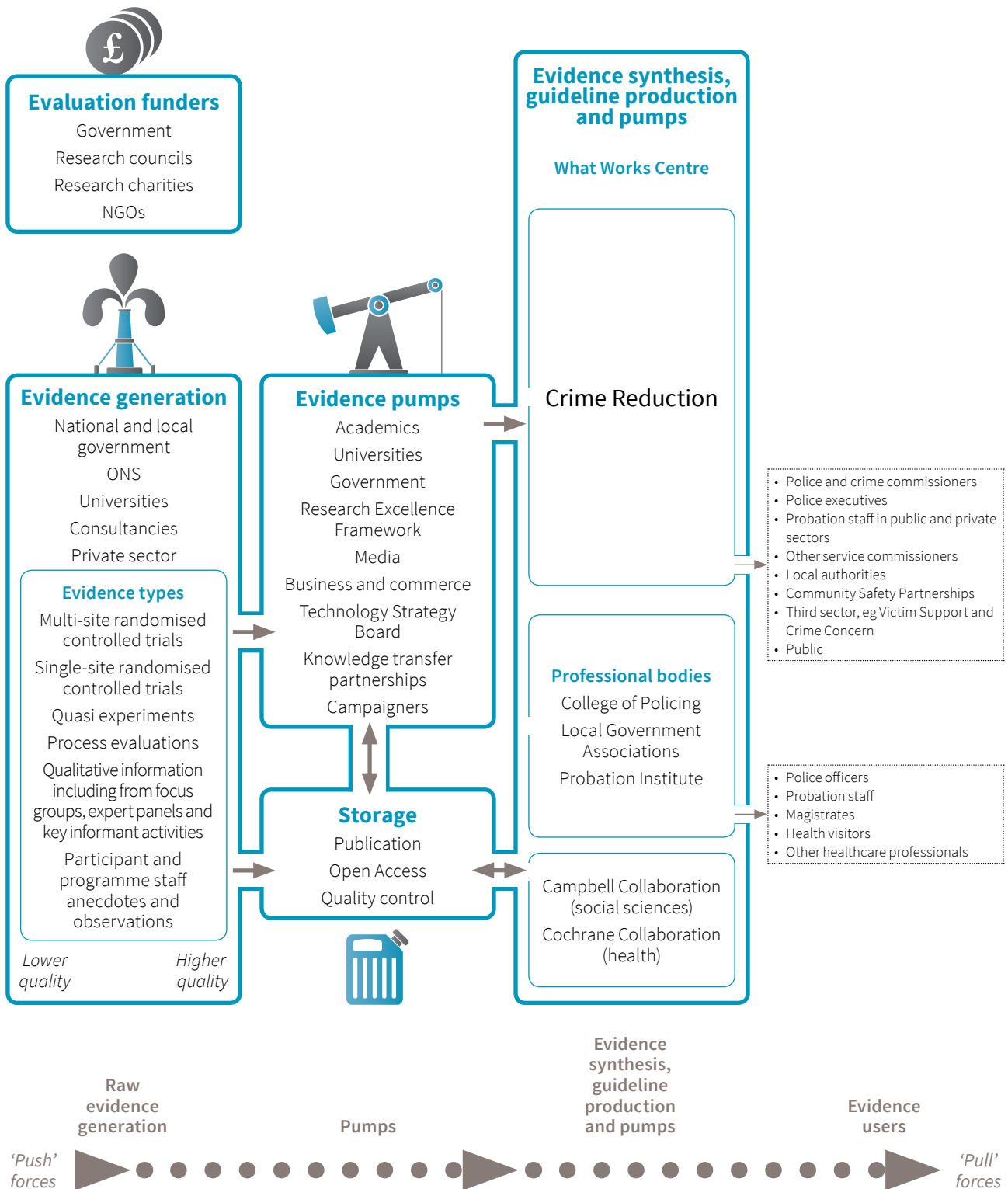
College of Policing to provide the supportive environment known to increase evidence knowledge and implementation. These groups should meet regularly. Similar arrangements should be introduced for those who source evidence for police commissioners.

6. To tackle the low visibility/usability of Campbell collaboration systematic reviews, the College of Policing should, building on its current work in this area, prioritise the translation of Campbell findings into officer friendly guidelines which are accessible to those in forces who are responsible for sourcing and summarising evidence for their force leads.
7. Convincing new evidence should be published in very short summaries in widely read police publications such as Police Professional and Police Review, and tweeted by the College of Policing.

### Evidence implementation

8. The College of Policing has responsibility for developing and publishing authorised professional practice and national police training curricula and for delivering police examinations and assessment. The College should ensure that it continuously refines and fully applies all these levers to achieve evidence informed practice.
9. To provide the supportive structures necessary for evidence implementation, police force leads on the various crime types should be members of crime-type specific supportive networks. There is scope for College of Policing to bring this about.
10. The College of Policing should work with the Association of Police and Crime Commissioners (APCC) to educate PCCs about evidence and with Her Majesty's Inspectorate of Constabulary (HMIC) on the importance of implementation fidelity.
11. Forces should carry out regular audits of police work against College of Policing guidelines and provide officers with regular, organised opportunities to discuss findings; HMIC should expect forces to provide them with evidence that these audits have been done and have led to service improvements.

**Figure 5.**  
The evidence ecosystem for crime reduction



## Health and social care

### Recommendations

In the context of the health and social care evidence ecosystem (Figure 6), the implementation of the recommendations listed below would increase the responsiveness of NIHR and other evaluation funders to evidence gaps identified by NICE; would increase the production, relevance and usability of evidence necessary to improve nursing services; would, through NICE accreditation of increased numbers of organisations, assure evidence processing and guidance standards among specialist what works centres represented by the medical Royal Colleges and other specialist societies; would provide more powerful incentives for practitioners and health trusts to engage with evidence and implement what works; and would weaken incentives to implement interventions which work less well.

### Evidence creation

1. Ways in which NICE works with research funders in the health and care sector should be reviewed and adjusted to make sure that research questions and funding competitions are framed as well as they need to be.
2. Nurses who are academics should continue to practise in the ward, community clinic or operating theatre – this would increase evidence relevance, production and implementation.

### Evidence translation

3. NICE and the international, independent Cochrane Collaboration should review their relationship to ensure that it works to best advantage.
4. NICE guidelines are a crucially important resource for commissioners and practitioners in primary care and emergency medicine, but many medical and surgical specialists rely for evidence and guidance much more on specialist societies and Royal Colleges. Since engagement of these organisations with NICE is limited, and the numbers of NICE collaborating centres based in the Royal Colleges are decreasing, NICE should advertise its successful blue iris accreditation programme more widely and work with commissioners to increase incentives for these organisations to seek this accreditation.

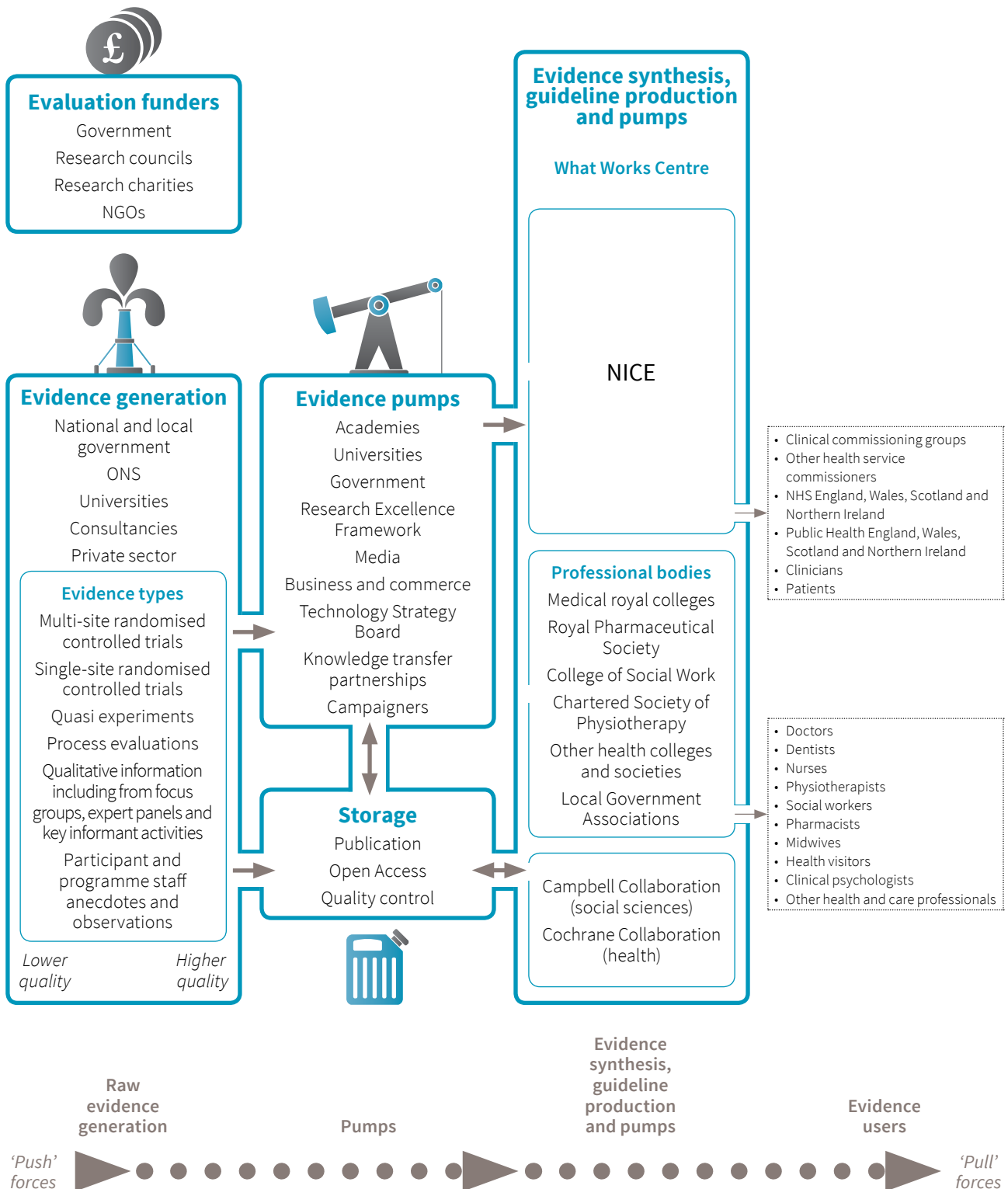
5. Some clinicians perceive that the Goldacre campaign on unpublished evidence has eroded the authority of a great deal of evidence. In response, NICE should explore ways in which it can explain and market its processes and products more effectively. Increased take up of its accreditation scheme could be an important part of this.

### Evidence implementation

6. NHS Trusts should institute far more audits of care against authoritative guidelines, and insist that clinical audit groups audit against published standards. The Care Quality Commission and other health inspectorates should expect NHS Trusts to provide them with more evidence that audits have been done and have led to service improvements.
7. Influences which tend to erode reliance on good evidence should be recognised and reduced through redoubling the efforts of the NICE communications team – including by increasing its social media profile and voice. The influence of the pharmaceutical industry on Clinical Commissioning Groups through LinkedIn, and of the replacement joint and other surgery and dental industries on clinicians should not be underestimated. This influence erodes incentives to respond to evidence, rationalise provision and make cost savings.



**Figure 6.**  
The evidence ecosystem for health and social care



## Education

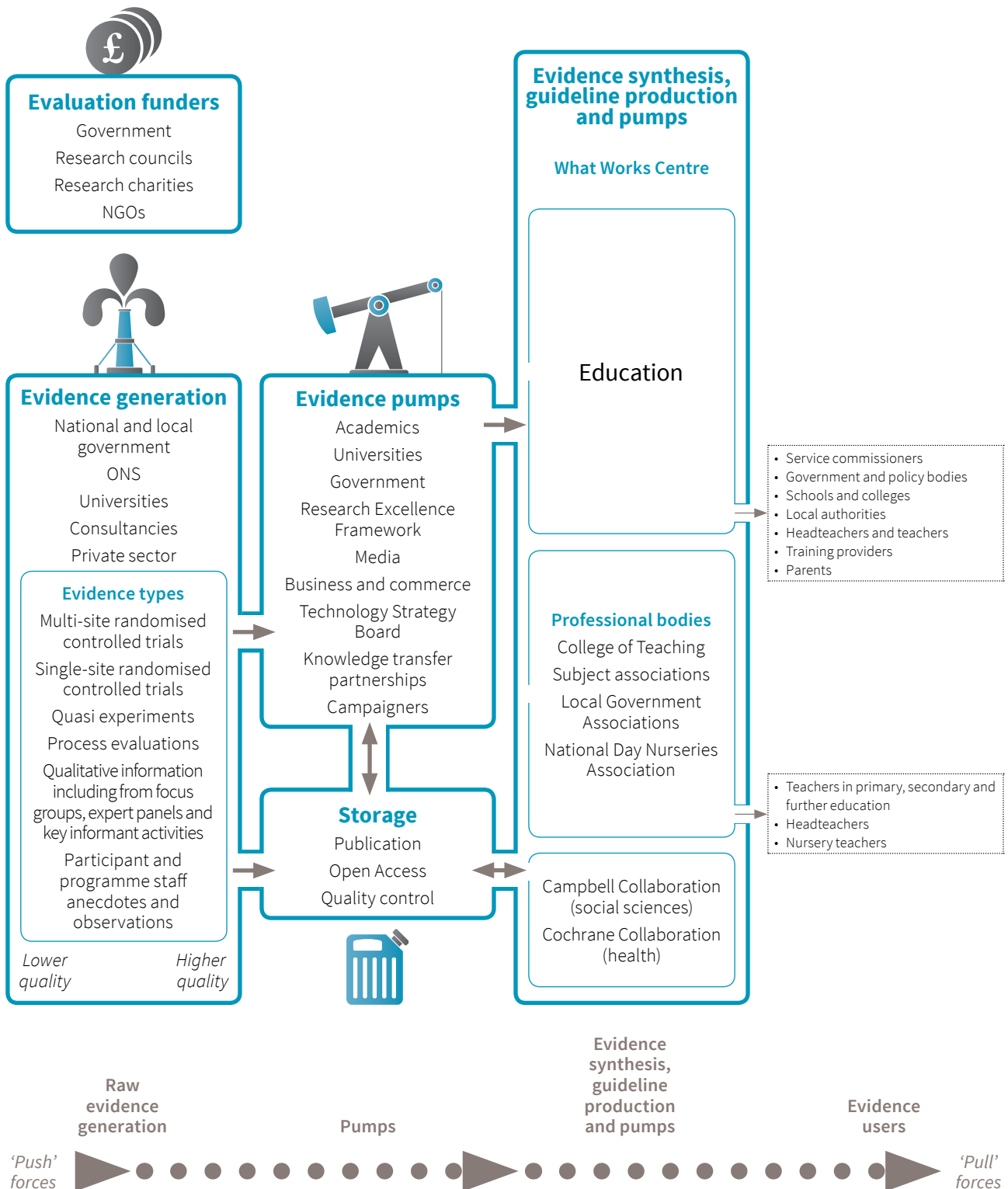
### Recommendations

In the context of the education evidence ecosystem (**Figure 7**), the implementation of the recommendations listed below should help to motivate academics in the sector to generate evidence which is relevant and useful to commissioners, school heads and front line teachers. Recommendations are designed to connect commissioners, to provide conduits through which evidence flows to teachers and to ensure that existing conduits are used to disseminate evidence. They are also designed to connect teachers with the What Works Centre and to motivate them through the proposed professional body (a College of Teaching) and through improved Inset to engage with quality assured evidence and apply it.

### Evidence creation, translation and implementation

1. A national professional body for teaching and teachers akin to the medical royal colleges and the College of Policing should be established. There is wide support for this and a blueprint was published in February 2014. A College of Teaching should:
  - Motivate teachers to improve their skill sets through incentives to progress through the ranks of College membership and fellowship
  - Blend high quality evidence with skills in the art and craft of teaching
  - Facilitate group learning at national, regional and local (including Inset day) levels
  - Provide a mechanism for evidence ownership (“It matters where the evidence comes from”) and standard setting by teachers
  - Through raising the status of teachers and teaching, increase the extent to which teachers engage with and apply evidence
  - Have the empathetic, non-didactic style known to facilitate behaviour change
  - Through partnership with EEF, which, in the style of relationships between the College of Policing and the What Works Centre for crime reduction, provide a conduit between evidence creation/ synthesis and diffusion/implementation
2. The What Works brand should be developed alongside the EEF brand to increase evidence visibility and identity. This would:
  - Help drive evidence creation as well as raise awareness and the status of evidence
  - Provide a kite mark for which training providers which comply with evidence standards (including intervention fidelity standards) set by the What Works Centre could apply
  - Drive evidence adoption and implementation in the context of the many competing voices in the sector.
3. Twitter should be acknowledged and developed as an important evidence vehicle in this sector.
4. The What Works Centre should collaborate with DfE and HEFCE to ensure that when teachers are appointed to academic posts in universities they should continue to teach in the school classroom part time.
5. EEF should scope the potential for courses designed to increase the skills of education academics in trial design, recruitment and delivery.
6. The EEF projects designed to identify the most effective ways of translating research findings into changes in the classroom should have important implications for the sector. Findings should be shared with other What Works Centres (see Chapter 2, p11).
7. Regional networks of education commissioners should be developed and the Association of Commissioners of Children’s Services newsletter should be used to disseminate evidence.

**Figure 7.**  
The evidence ecosystem for education



## Early intervention

### Recommendations

In the context of the early intervention evidence ecosystem (**Figure 8**), the implementation of the recommendations listed below will increase production of relevant evidence and outcome measures of practical value to front line services; will realise the potential of evidence reviews; will focus attention on evidence which can make a positive difference and divert attention away from the large amounts of low value, demotivating information; will increase evidence demand through improvements in children's centre staff training and by promoting evidence of cost benefit; and will provide conduits to and motivation for the strategic, "middle tier" personnel identified by the What Works Centre in its workforce triage exercise.

### Evidence creation

1. Early Intervention Research Institutes should be developed in a small number of research intensive universities in collaboration with leading early intervention services. This might be done through a What Works Centre research strategy group set up to strengthen the academic foundations of early intervention.
2. The opportunity for early intervention across all What Works sectors means that integration with the other centres is needed. The What Works Centre should consider how it can work through the other five centres as well as developing its own, complementary arrangements for evidence generation, synthesis, guideline production and evidence implementation.

### Evidence translation

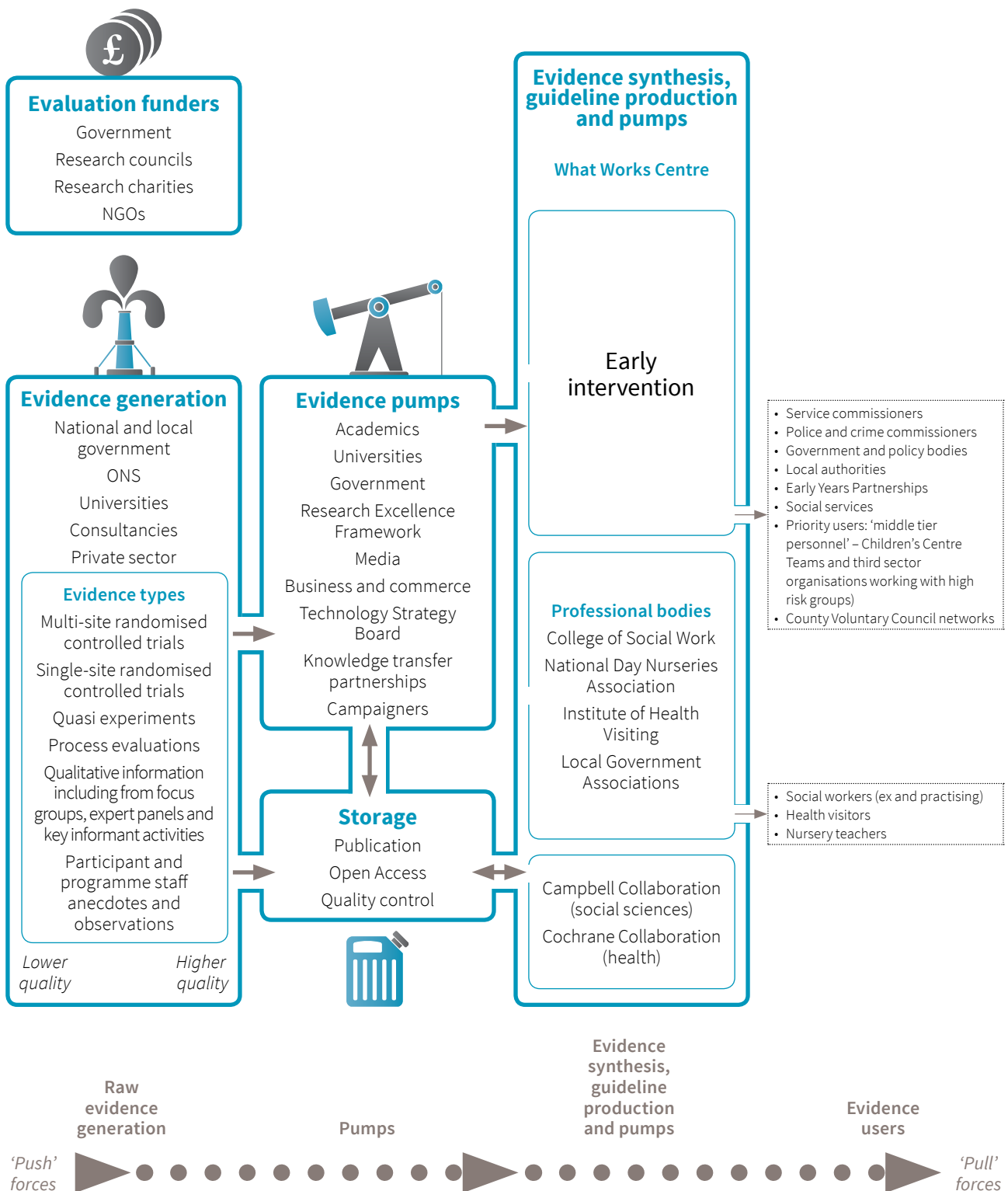
3. To tackle the problem of low evidence usability, the What Works Centre has prioritised the translation of evidence, including the findings of Campbell Collaboration systematic reviews, into bite sized guidance – especially in formats familiar to middle tier workers. The Centre should be supported in this work, so that its open access, online guidebook with its evidence pipelines to and from providers comes to fruition.

4. The What Works brand should be used to increase awareness of evidence and what implementation can do across services. This is especially important in an enterprise which crosses many service boundaries and would mean that police officers and social workers as well as middle tier early intervention practitioners would recognise it and engage accordingly.
5. Usable and reliable measures of local service impact should be disseminated to children's centre managers.

### Evidence implementation

6. "Middle tier" workers (e.g. children's centre staff, local authority and other personnel in third and private sector organisations working with high risk groups – see Chapter 3, p22) in third sector organisations need to be connected for supported group learning - in networks, local and regional meetings, social media and newsletters for example. The Early Intervention Centre has begun to forge these links and should continue to look for opportunities to do this.
7. The Centre should map other steps which could be taken towards professionalisation, which might include a new independent professional body for the sector and/or collaborations with existing professional bodies such as the Institute of Health Visitors, College of Social Work and the Family Forum.
8. Commissioners and service managers should not be expected to engage with academic reports. These are intimidating, often demotivating and likely to divert attention away from useful evidence.
9. Evidence should be marketed in the context of the cost savings which are associated with implementation.
10. The training of children's centre staff would be improved by including training on what works, how to assess the impact of services reliably and how to access evidence-informed guidelines. It is recognised though, that the

**Figure 8.**  
The evidence ecosystem for early intervention



Centre's opportunities to influence training are through training providers and commissioners rather than with the front line directly.

11. The development of a taxonomy which has already helped the What Works Centre to focus attention on its middle tier workforce should be extended to the universal service tier. It seems likely that a triage exercise here would help target early intervention work and integrate these personnel into wider services.
12. Closer working of the What Works Centre with the Chief Social Worker should be explored.

# Ageing better

## Recommendations

In the context of the ageing better evidence ecosystem (Figure 9), the implementation of the recommendations listed below will integrate and increase evidence relevance, production and dissemination; will increase the usability of evidence; will motivate personnel at all levels, including through intermediaries such as Age UK, Citizens Advice and the Association of British Insurers, to generate and capitalise on evidence to provide better services; will connect providers in effective learning groups in which evidence is considered and decisions are made to apply it; and will provide connections between local authorities and third sector providers through which evidence and other information can flow.

## Evidence creation

1. All strategists and academics in this sector - very few of whom have good connections with front line services - should experience regularly the difficulties of older people in home and other care settings; this experience is a powerful motivator to generate relevant evidence and to implement what works. Mixed workshops in care settings are one way to achieve this.
2. Once the Centre for Ageing better is established, relationships with research funders, including the ESRC, need to be made so that fundamental questions can be answered and evaluation challenges met.

## Evidence translation

3. Guidance which encapsulates an evidence informed intervention or approach in three or four lines is highly valued and should be replicated across the care sector; it strikes a suitable balance between evidence usability and over simplification.
4. In due course, the What Works Centre should consider regional partnerships between university research groups with interests in ageing better and regional commissioners and providers. These would provide much needed connections between evidence

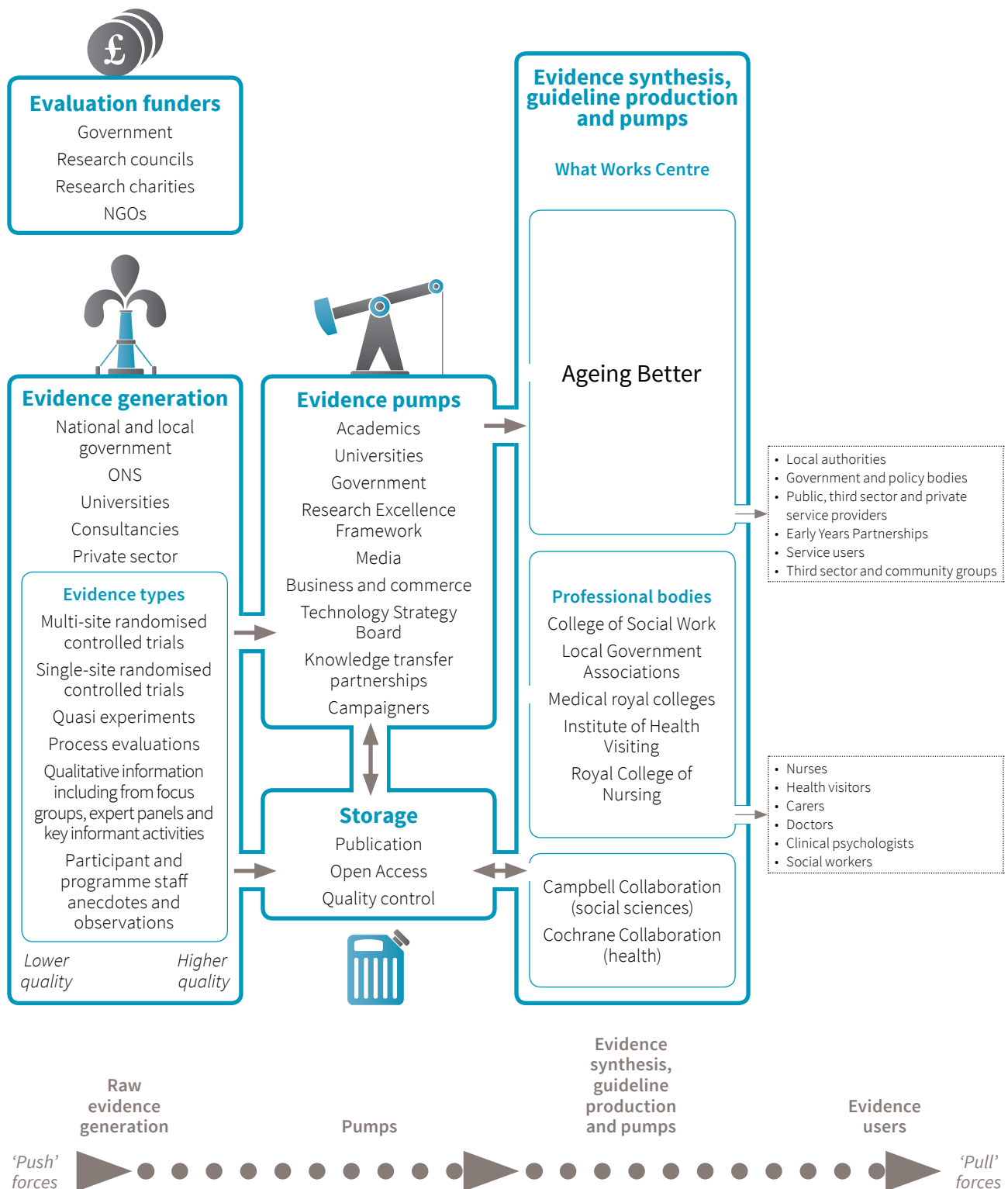
production and implementation, and between research disciplines currently isolated in different university departments.

5. In the context of the blinding “snowstorm” of information from many sources, the What Works brand and intermediaries such as Age UK should be used to raise awareness of evidence informed programmes and approaches
6. Care providers should not be expected to engage with evidence and information which is wrapped in academic, medical and statistical caveats and impenetrable for other reasons; evidence in these forms, however carefully produced, often does more harm than good. Intermediaries such as Business in the Community and the Local Government Association should take account of these barriers.

## Evidence implementation

7. The What Works Centre should explore and implement with national organisations responsible for service quality, commissioners and regulators and with older people ways in which it can increase traction in this sector. Organisations with stewardship responsibilities in the sector provide many opportunities to influence markets, including through evidence retailing.
8. The My Home Life model of evidence distribution by a knowledge broker through facilitators to front line managers should be considered for national implementation across the care sector.
9. The What Works Centre should take steps to establish and maintain evidence pipelines to local authority, private sector and third sector providers alike.
10. As in other sectors, small, local, supportive learning groups are central to engagement with evidence and decisions to implement it. The What Works Centre should consider and decide how best to establish these.

**Figure 9.**  
The evidence ecosystem for ageing better





## Local economic growth

### Recommendations

In the context of the local economic growth evidence ecosystem (Figure 10), the recommendations listed here, which have been developed for and with the What Works Centre, are designed to help develop the knowledge of the local economic growth workforce about the nature of experimental evidence, the need for controlled economic impact evaluations and how evidence derived from them should be used. They are intended to focus attention on the need to increase evaluation capacity and evidence generation; to help motivate economists to carry out controlled studies; to connect public and private organisations which have cost benefit expertise; to help widen evidence dissemination, especially among local economic partnership executives; and to help reduce barriers to information sharing. Fitting with the objectives in the What Works Centre case for support, recommendations are also designed to help create and strengthen national and local networks and increase evidence demand at city and regional levels.

As stated in the introduction, the representation of the evidence ecosystem does not attempt to indicate feedback loops which already exist and which could be developed as this ecosystem evolves. These feedback mechanisms are important however and the Centre might usefully incorporate them into this diagram.

Because this ecosystem and the What Works Centre are at an early stage of development, expectations need to be carefully managed, and sufficient support identified as priorities set out in the case for support are tackled.

### Evidence creation

1. Evaluation capacity in the sector needs to be increased. Although there are many economics departments in UK universities, their capacity for rigorous impact evaluations is limited. A series of demonstrator projects is one way to highlight their advantages. To help improve capacity, the establishment of local economic growth research units in university economics departments should be considered. Should such units be developed, they should have strong links with

local authorities to facilitate co-production and implementation of evidence on local growth.

2. There is scope for an ESRC programme designed to support high quality controlled economic evaluations. This would increase the volume of evidence produced in this needy sector. An alternative source of funds is the funding currently extensively disbursed by local authorities to private sector evaluators who rarely have the expertise to deliver controlled evaluations – and therefore meaningful conclusions. With the What Works Centre, Local Economic Partnerships which exemplify best practice in translating evidence into action should be encouraged to discuss with BIS or the Treasury the option of drawing these funds together to establish a funding stream equivalent to NIHR and EEF. Such a funding stream might be administered on a regional or national basis.
3. Links between university and private sector economic consultancies with controlled evaluation skills appear to be few. The What Works Centre might consider developing incentives designed to strengthen these, including through the Campbell and Cochrane Economics Methods Group
4. In the context that commercial organisations are wary of sharing performance information with local economic partnership managers, a generic confidentiality agreement should be considered, especially where public funds are at stake. Such an agreement might apply only to specified summary information rather than to all information.
5. From the evidence of this study, there is scope for examining Value for Money criteria.

### Evidence translation

6. The What Works Centre should continue to work with partners through which, at a regional level, it can educate the local economic growth workforce; there is little awareness of evidence in this sector or that it relates to the effectiveness or cost benefit of interventions or programmes. Since simple statistical knowledge is surprisingly limited in the sector (associations and before

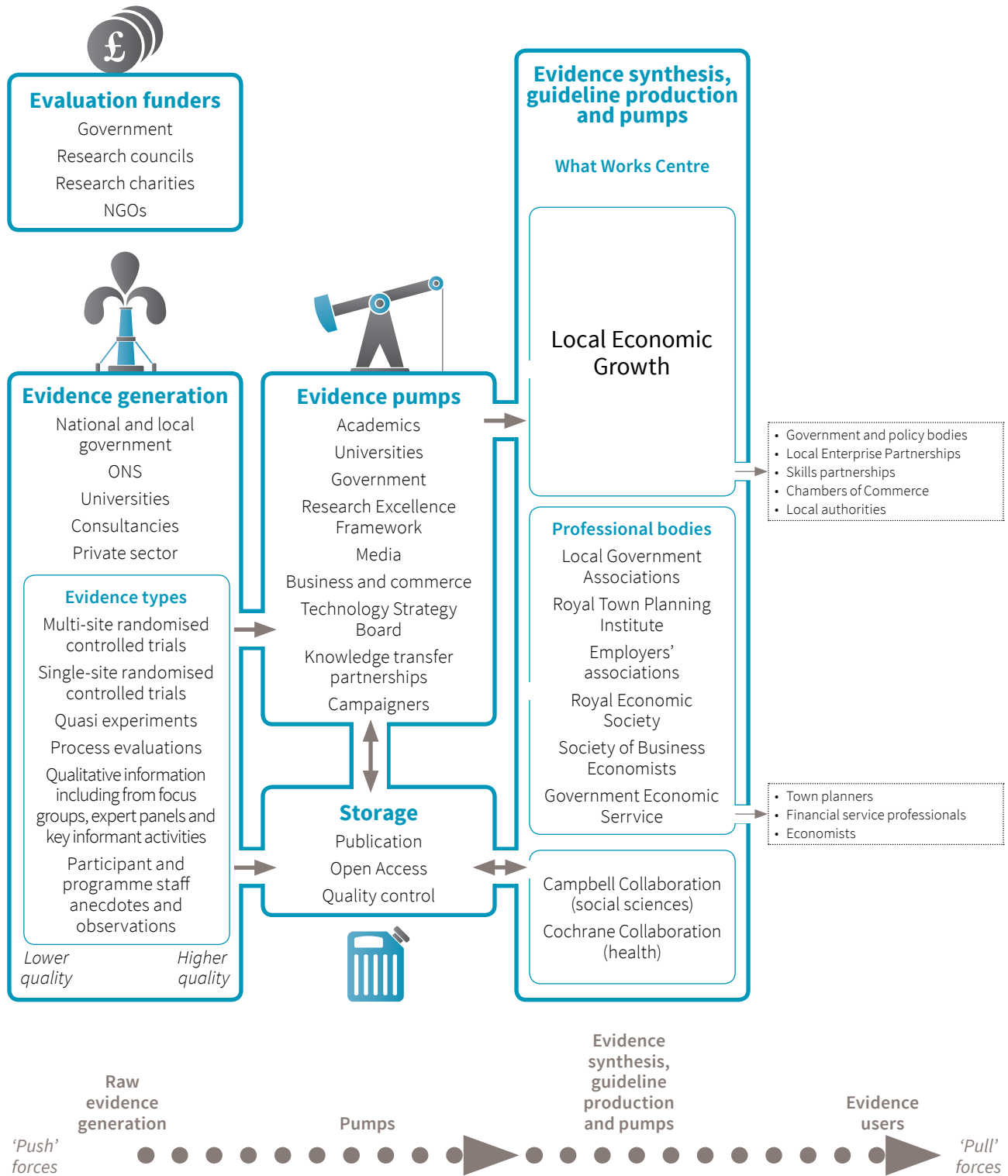
and after comparisons are often interpreted as causal), the What Works Centre should identify ways in which this statistics skills gap can be filled.

7. Consistent with the aims set out in the case for support on the basis of which the Centre was formed, What Works Centre outputs should be summarised in media and formats widely read by practitioners and policy makers across the sector. Examples encountered in this study include the Local Government Chronicle and the Municipal Journal.
8. The What Works Centre should explore ways in which it can establish its identity including with the What Works brand, so that its voice is prominent in a sector where there are many competing, often strident voices.

#### **Evidence implementation**

9. “Intervention Logic” permeates the sector only to a limited extent; ways in which awareness of this can be increased among local growth executives should be identified.
10. As in other sectors, small, local supportive learning groups are likely to drive evidence engagement and implementation. Consistent with its case for support, the What Works Centre should consult with its User Panel to identify the best way to establish and maintain such learning groups – perhaps under the aegis of a new professional body or regional LEP networks. Each of these groups should include an evidence champion. The Centre envisages the development of “communities of practice”; these should take account of the characteristics of supported learning groups known to foster behaviour change (see Chapter 2, p11).
11. Winning City Deal and Strategic Economic Plans relies on applications which are informed by evidence; this provides a powerful incentive to source and apply evidence. The What Works Centre should, with government partners, ensure that such incentives are deployed more widely and that the evidence criteria are well defined.

**Figure 10.**  
The evidence ecosystem for local economic growth



# Appendix

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## Interviewees

### Ageing better

Simon Baker	Head of Older Peoples Services, Bradford City Council
Paul Cann	CEO, Age Oxfordshire
Rachel Daly	Quality in Care Team Lead, Buckinghamshire County Council
Mandy Haslan	Head of Supported Living at East Living
Tom Owen	Director, My Home Life programme at City University
Terry Quinn	Wellbeing & Social Care Adult Services Operations Manager, Goodwin Trust
Bernard Walker	Chair of Adults Faculty, The College of Social Work

### Crime reduction

Sue Fish	Deputy Chief Constable, Nottinghamshire Police
Alun Michael	Police and Crime Commissioner for South Wales
Alex Murray	Chief Superintendent, West Midlands Police and President, Society for Evidence Based Policing
Shaun Ostle	Chief Inspector, Nottinghamshire Police
Rachel Tuffin	Head of Research Analysis and Information, College of Policing

Evidence was also obtained from the Commons Justice Select Committee hearing on 21/1/2014 when **Professor David Farrington**, Institute of Criminology University of Cambridge, **Professor Gloria Laycock**, University College London, **Professor Cynthia McDougall**, University of York, and **Professor Stephen Farrell**, University of Sheffield were interviewed

### Education

Tim Coulson	Director of Education and Learning, Essex Schools Commissioning
John Furlong	Chairman, British Educational Research Association
Tom Herron	Lead Teacher of Literacy, Writhlington School
Nick Johnson	Executive Director, British Educational Research Association
Gary Lockwood	Year Five Teacher (Senior Leadership Team) Griffithstown Primary School
Peter Main	Head of Pre-19 Education, Institute of Physics
Pip Marples	Chairman, National Association for Primary Education
Ian Menter	President, British Educational Research Association
Jonathan Sharples	Partnership Manager, Institute for Effective Education, University of York and Senior Researcher at the Educational Endowment Fund
Mark Sims	Her Majesty's Inspector for the West Midlands and National Inspector, Ofsted
Annette Smith	Chief Executive, Association for Science Education
Charles Tracey	Institute of Physics
George Varnova	National Association for Primary Education

### Early intervention

Jenny Deeks	Manager, Coinstreet Children's Centre
Leon Feinstein	Director of Evidence, Early Intervention Foundation
Emma Katsikides	Family Support Lead, John Smith Children's Centre
Glenda Kellar	Health and Family Support Coordinator, Sure Start Palfrey Children's Centre
Thanos Morphitis	Commissioner of Children's Services, London Borough of Islington
Karen Tyreman	Tri Borough Director of Children's Services for Hammersmith & Fulham, Kensington & Chelsea and Westminster
Shirley Woods-Gallagher	Commissioner of Children's Services, Manchester City Council

### Health and social care

Sue Bailey	President, Royal College of Psychiatrists
Adrian Boyle	Consultant in Emergency Medicine, Cambridge University Hospitals NHS Foundation Trust
Martyn Coomer	Research Director, Royal College of Surgeons
Jonathan Dawson	Consultant Surgeon, Northampton General Hospital
Richard Mendelsohn	Clinical Head of Commissioning NHS Birmingham South Central Clinical Commissioning Group
Clair Raybould	Head of Commissioning, South West Lincolnshire Clinical Commissioning Group
Henry Shepherd	General Practitioner, Brackla Health Centre, Bridgend

### Local economic growth

Kevin McManus	Head of Digital and Creative Industries, Merseyside ACME
Guy Mills	Business and Enterprise Manager, Cambridgeshire County Council
Grahame Nix	Chair, Greater Cambridge/ Greater Peterborough Local Economic Partnership
Henry Overman	Director, What Works Centre for Local Economic Growth and Professor, London School of Economics
Paul Tinsley	CEO, Sheffield Enterprise Agency
Mauricio Armellini	Chief Economist, North East Local Enterprise Partnership

### Additional

Stephen Martin	Acting Director, Public Policy Institute for Wales
Michael Sanders	Head of Research, Behavioural Insights Team

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