

Using evidence to improve policy and practice: the UK What Works Centres

Dan Bristow, Lauren Carter-Davis and Steve Martin

Paper published in Contemporary Social Science 2016

Abstract

The creation of the network of What Works Centres in the UK reflects a belief that the provision of high-quality evidence can improve public policy decisions. The literature on evidence based policy shows that rational, technocratic models belie the complex and contested nature of the policy process and cautions against narrow definitions of evidence. There are wide variations between the What Works Centres in terms of resources available to them, the evidence standards they use, the audiences they address and the approaches they use to transmit evidence. Tracking their development and their impact over time should, therefore, provide valuable evidence about ‘what works’ in evidence based policy and practice. In particular it may shed further light on what counts as ‘robust’ and ‘useful’ evidence and what is the most effective means of mobilising research based knowledge, and enhance our understanding of the contribution that social science can make to evidence-based policy and practice.

Key words:

evidence-based policy, knowledge transfer, public services, What Works Centres

Introduction

Recent years have witnessed growing interest in ways of strengthening the links between the social science research and the ‘real world’ problems facing policymakers and practitioners. Attempts have been made to promote evidence-based policy and practice in a range of public services, including education (Levin, 2004; Alexanderson *et al.*, 2009), healthcare (Black, 2001; Culyer & Lomas, 2006), and crime reduction (Duke, 2001), in many western democracies, including Australia (Marston & Watts, 2003), Canada (Howell, 2009), Ireland (Kennedy, de Brún, Brún & MacFarlane, 2010), Netherlands (Bekker, van Egmond,

Wehrens, Putters & Bal, 2010), New Zealand (Tenbenschel, 2004), Norway, (Ogden, Kärki & Teigen, 2010); Sweden (Soydan, 2010) and the UK (Nutley, Morton, Jung & Boaz, 2010). From the 1990s onwards, British politicians championed the idea that social science research could and should play a role in identifying which policies ‘work’ (Solesbury, 2001). Now faced with a prolonged period of austerity in the wake of the global financial crisis, they are seeking evidence that is able to help guide decisions about where to reduce public spending (Nutley, Powell & Davies, 2012), and the UK government has established a network of ‘What Works Centres’ to identify which social policy interventions are the most cost-effective.

This paper examines the role of the What Works Centres and assesses their prospects. The first three sections provides a brief overview of the literature on evidence standards, the role that evidence can play in the policy process, and the importance of effective knowledge mobilisation. The paper then describes the origins, roles and activities of the What Works Centres and offers an initial assessment of the strengths and limitations of the What Works model and its prospects for success. The final section suggests that the experiences of the What Works Centres may contribute to wider understanding of evidence-based policy and practice and identifies some of the issues on which they may shed light.

Evidence standards

Davies & Nutley (2008) argue that it is important to distinguish between research, evidence and knowledge. We define evidence as research-based findings but we recognise that this is only one of many different types of knowledge that can inform policy and practice. What counts as ‘good’ or ‘high quality’ evidence is a contentious and contested issue (Nutley, Powell & Davies, 2012). Debates tend to focus on the methods used to generate evidence on the assumption that they determines whether it is reliable, and many organisations have developed ‘evidence standards’; frameworks that purport to provide users of evidence with a guide about the level of confidence they can place in different kinds of studies.

In health and social care policy, guidelines produced by the National Institute for Health and Care Excellence (NICE) have been commended as the benchmark for standards of evidence and held up as the direction in which social policy should move (Cabinet Office, 2013a). NICE determines evidence quality according to a top-down hierarchy of study designs that places randomised controlled trials (RCTs) near the top. Standards of evidence frameworks used by other organisations also situate meta-analyses and systematic reviews based on RCTs at the top of a hierarchy, followed by multiple and single RCTs and then non-RCT based

study designs such as non-experimental descriptive studies and studies without control groups. For example, Project Oracle (n.d.), that is funded by the Greater London Authority, the Mayor's Office for Police and Crime and the Economic and Social Research Council and promotes 'quality evidence' about the effectiveness of interventions that seek to improve the life chances of children and young people, defines five 'levels' of evidence quality. Like NICE, it places systematic reviews at the top of the hierarchy and studies based on a theory of change approach at the bottom. The Social Research Unit's (n.d.) evidence standards take account of four criteria: intervention specificity, evaluation quality, intervention impact and public service 'readiness'. It designates evidence from multiple RCTs as 'best quality' and evidence from single RCTs as 'good enough'. The Washington State Institute for Public Policy has developed a similar hierarchy (WSIPP, 2012).

The literature highlights a number of problems with judging evidence quality in this way that divide the social science community. One of the main concerns about RCTs is that they privilege quantitative data and methods. There is a substantial literature comparing qualitative and quantitative methods (Berg, Lune & Lune, 2004; Spencer, Ritchie, Lewis & Dillon, 2003), and passionate proponents and opponents of the use of RCTs to evaluate social policy interventions (Mullen & Striener, 2006; Petticrew & Roberts, 2003; Pollitt, 2013). Their supporters argue that RCTs are the best means of isolating confounding factors and controlling for measurement errors; they maintain that the use of strict protocols provides quality assurance, and standardised reporting formats mean that results can be understood by non-specialist audiences. However, critics believe that RCTs can conflate causality and association and are ill suited to the study of complex interventions in complex social environments (Oakley *et al.*, 2003). There has also been debate surrounding the ethics of RCTs and, in particular, whether it is possible to justify withholding potential beneficial interventions from participants who make up controls groups (Edwards, Lilford & Hewison, 1998). Crucially perhaps, it is argued that evidence from RCTs may not take sufficient account of context. What works for one group or in one locality may not be effective in other contexts, not least because of the risk of poor implementation. For this reason, Pawson & Tilley (1997) argue that evaluations must pay attention to context as well as to mechanisms (i.e. interventions) and outcomes. In line with this approach, the EMMIE framework, which has been developed to evaluate crime reduction interventions, takes account of implementation and economy (i.e. the cost of the intervention) as well as context, mechanism and outcomes (What Works Crime Reduction, 2015).

Advocates of mixed methods accept that RCTs are a valuable tool but can only answer certain kinds of questions (Petticrew & Roberts, 2003) and need, therefore, to be used in conjunction with ways of generating evidence (Bonell, Fletcher, Morton, Lorenc & Moore, 2012). Nutley, Powell & Davies (2012) provide support for this view. They suggest that what counts as ‘good’ evidence depends on the nature of the question that is being considered, and on the purpose for which the evidence is being used. If policymakers and practitioners are content to know whether conditions have improved, RCTs may be sufficient. However, if they are interested in understanding the views of stakeholders, or the way in which administrative processes have worked (or been worked around), what counts as ‘useful evidence’ may look very different.

In response to these challenges, some standards of evidence frameworks suggest that it is important to articulate the theoretical underpinning, or programme theory, which informs interventions. For example, the evidence standards developed by the SRU specifies that the ‘best’ evidence will involve RCTs in combination with a sound ‘theoretical rationale’, which gives reasons for the observed effects (Nutley, Powell & Davies, 2012, p. 14). This, in turn, can be used to map an ‘evidence journey’ or the logic chain that connects an intervention to the desired effects. NICE (2014) accepts that evidence reviews need to be tailored to the question they seek to answer. Its manual for developing guidelines categorises different types of research questions and the evidence that is most appropriate for answering them, explicitly acknowledging that this will vary depending on the nature of the issue that is being studied.

A final concern about the use of evidence standards is that it may preclude forms of knowledge that policymakers and practitioners find useful. Therefore, in addition to evidence standards, some researchers provide a ‘strength of recommendation’ rating, such as the GRADE system, which is used in the development of the NICE guidelines. This system recognises that high-quality evidence does not necessarily imply ‘strong’ recommendations, and that strong recommendations can be developed from low-quality evidence (Guyatt *et al.*, 2008). The danger is that evidence standards may sift out knowledge that decision makers would find useful. In particular, in social policy domains where few, if any, studies have used RCTs or other forms of experimentation, ignoring evidence from other sources, such as observation or case studies, creates the misleading impression that there is an evidence vacuum (Ogilvie, Egan, Hamilton & Petticrew, 2005).

Evidence and the policy process

It is clear that 'rigour' is not the only determinant of whether policymakers and practitioners use evidence. They also need evidence that is relevant, timely and accessible (Puttick, 2011). Writing of the 'utilisation crisis' in the US a generation ago, Alkin, Daillak & White (1979, p.13) mourn the fact that,

In the graveyard of ignored or disregarded evaluations rest not only those technically inferior studies which earned their consignment to oblivion; there are also many studies seemingly of high quality which somehow failed to move their audiences to action.

One of the reasons for these failures is a flawed understanding of the nature of the policy process. It is not uncommon for policymaking to be presented as a circular process, which begins with the identification of an issue that needs to be addressed or a goal to be achieved, then moves on to an assessment of what is known about the issue and how to address it, followed by the development, implementation and evaluation of a policy, the results of which feed back into future policy debates, for example the ROAMEF policy cycle (HM Treasury, 2003).

Attempts to encourage evidence-based policy are often underpinned, explicitly or implicitly, by rational and technocratic models of this sort (Ayres & Marsh, 2013). However, evidence use in the policy process is known to be more complex than this model suggests. Weiss (1979) developed a typology for the ways in which research is employed by policymakers, from which Davies & Nutley (2008, 11-12) identify six models:

1. Knowledge-driven: where research findings inform or compel action;
2. Problem-driven: a particular issue initiates a search for evidence;
3. Interactive: researchers and 'users' of research interact and this sustained interaction informs both the research agenda, and the way in which research is used;
4. Enlightenment: in this model, research affects practice through 'gradual sedimentation' of research findings;
5. Political: where research findings are deployed by competing interests to support their preferred policies;
6. Tactical: research is used to justify (in)activity in response to pressure for action.

Mulgan (2005) and Davies (2007) both draw attention to the fact that research evidence is only one of many factors that influence policy development. Public opinion, the political process, and the media are all important influences, with the result that even where there is broad consensus in the research community about 'what works', this is not always reflected

in policy. Nutley, Powell & Davies (2012, p.16) found that research evidence is less frequently used by policymakers than ‘street evidence’ (urban myths and conventional wisdom), ‘lay evidence’ (constituents’ experiences), ‘media evidence’ and ‘ideological evidence’. The knowledge used most frequently and widely was ‘expert evidence’ provided by consultants and think tanks.

Best and Holmes (2010) describe ‘three generations’ of thinking about the way knowledge and evidence inform the policy process: linear models, relationship models, and systems models. They describe linear models as conceptualising policymaking as a one-way process involving a transfer of knowledge from suppliers (researchers) to users (policymakers). Relationship models build on this thinking, emphasising the importance of interactions among people producing and using evidence. Systems models incorporate the principles of linear and relationship models, but also seek to account for the cultural and institutional context in which the interactions happen, and the idea that this context and the processes of interaction are shaping each other on an ongoing basis. They argue that the way in which policy and evidence interact

...is best understood as a complex adaptive system, whose theoretical underpinnings are: systems are dynamic and constantly changing; systems themselves exist within other, interdependent systems (e.g. individual, organisation, community); changes in one part of the system can have unexpected changes in other parts of the system. (Best & Holmes, 2010, p. 148).

Knowledge mobilisation

Knowledge mobilisation involves activities designed to ensure that evidence can be translated into action. It reflects a growing recognition that evidence does not naturally flow into policy and practice and needs to be generated and communicated in ways that maximise the chances that policymakers and practitioners will find it accessible and useful.

Like Best & Holmes, Shepherd (2014, p. 5) suggests that it helpful to think of the policy process in systems terms, and he argues that ‘a functional evidence ecosystem’ is characterised by ‘continuous evidence generation, synthesis and evidence-informed action’ and effective feedback loops that produce high quality evidence and encourage a targeted approach to dissemination. Traditional approaches to communicating research via peer reviewed journals are, Shepherd (2014, p. 11) claims, an ineffective way to mobilise evidence. Policymakers and practitioners require succinct, clear and actionable accounts

based on 'supportive structures that are dedicated to the effective transmission and uptake of evidence informed intervention and policies'.

What Works Centres

The propositions that the policy process needs to be informed by high-quality evidence and that this requires effective knowledge mobilisation have gained traction in the UK in recent years. The allocation of research funding to British universities is now informed by an assessment of the impact of their work, and research councils have introduced a range of instruments to encourage knowledge exchange. The creation of the What Works Centres is part of this broader trend. Since 2013, six centres have been established to generate and transmit evidence on effective approaches to early intervention, stimulating local economic growth, promoting wellbeing, reducing crime, improving educational attainment and enabling people to age better (Cabinet Office, 2013b). Together with NICE and two centres funded by the Scottish and Welsh Governments, they form a What Works Network (Cabinet Office, 2014a). The network reflects a belief in government circles that research-based evidence should make a greater contribution to improving policymaking and delivery and is underpinned by an assumption that it is possible to identify those interventions that are most effective and provide the best ‘value for money’, thereby bringing to social policy the same kind of evidence base that is available in health care (Cabinet Office, 2013a).

The Centres operate as knowledge brokers working on the boundary between research, policy and practice. They subscribe to an agreed set of ‘core principles’, committing them to use ‘consistent metrics for assessing the effectiveness and cost effectiveness of interventions, which enable direct comparison between the utility of different interventions’ and ‘publish and disseminate findings in a format that can be understood, interpreted and acted upon’ by policymakers and practitioners (Cabinet Office, 2014b, p. 2-3). However, significant differences exist between the Centres in terms of funding, functions, maturity and their approaches to generating and transmitting evidence (Table 1).

INSERT TABLE AROUND HERE

Most receive a combination of Government and Research Council funding, but the size of their budgets varies considerably. The Education Endowment Foundation (EEF) has an endowment of £125m from the Department for Education, NICE received an annual grant of £66.4m in 2013 from the Department for Health, and the Centre for Ageing Better has been awarded £50m from the Big Lottery Fund. By contrast, the Centre for Wellbeing has a budget

of just £4m over 3 years, What Works Scotland has a budget of £3m and the Public Policy Institute for Wales has a budget of £2.3m over three years of which just £500,000 is focused on what works in tackling in poverty.

The range of activities that Centres engage in also varies, and they have different niches within the ‘evidence ecosystem’. The Centre for Local Economic Growth (WWG) focusses on systematic reviews of existing research, whereas the EEF, which has access to far greater resources, is able to commission and evaluate trials of its own. The Early Intervention Foundation (EIF) and WWG undertake reviews in-house. By contrast, the Centre for Wellbeing is out-sourcing reviews.

Some centres work with local agencies; others influence national policy; some do both. The Public Policy Institute for Wales works directly with Welsh Government Ministers. It has a particular focus on poverty but also provides analysis and expert advice on the full range of functions that are devolved to the Welsh Government. By contrast, What Works Scotland works with four Community Planning Partnerships to develop local approaches to public service reform. It uses a collaborative action research approach to develop a clearer understanding of local needs and to increase local capacity to generate, use and interpret evidence to determine how best to meet them. The EIF adopts a similar approach in its work with on early intervention with local authorities in England, and WWG has developed capacity building initiatives and demonstration projects with local authorities and Local Enterprise Partnerships. The EIF draws on insights from its work with localities to advise government departments on what is happening ‘on the ground’. The Centre for Crime Reduction is hosted by the College of Policing, which enables it to feed evidence into national police training programmes. The EEF works with schools and head teachers both to set up trial and to disseminate the results of its analyses.

All of the Centres, except for What Works Scotland, seek to generate evidence through systematic reviews of the evidence base from the UK and further afield, and several use ‘toolkits’ that rate interventions according their effectiveness, their cost and the robustness of the evidence base. Early examples include the EEF’s toolkit on enhancing educational attainment, and a crime reduction toolkit based on the EMMIE framework. Like the Coalition for Evidence-Based Policy in the US, which promotes the use of ‘well-designed and implemented randomized controlled trials’ to identify social policy interventions that ‘produce sizable, sustained benefits’ (CEBP, 2014, p. 1), most of the What Works Centres draw primarily on evidence generated by research based on experimental methods. Several

regard RCTs as the best form of evidence and meta-analysis as superior to single RCTs. However, they have adopted different approaches to reviews. The EIF uses a six-point scale ranging from ‘ineffective/harmful’ to ‘consistently effective’ interventions (EIF, n.d.). WWG conducts systematic reviews using the Maryland scale (Sherman *et al.*, 1997) to sift the evidence, with the consequence that few studies meet the criteria. NICE employs a multi-stage process that starts with an articulation of the question and the evidence that best fits, and concludes with a stakeholder review designed to build consensus.

Most of the What Works Centres have only been established in the last two years and some have not yet begun reviewing evidence. So it is too early to attempt to evaluate their impact. They are some promising early signs. The EEF’s toolkit has, for example, been adopted at local level by many schools in England and been integrated into a national funding allocation for the pupil deprivation grant in Wales. It has also attracted interest internationally. NICE, which is by far the longest established centre, has systematically monitored the uptake of its guidance using data published in abstracts, journals and audits. According to this analysis, adoption is highly variable, both between guidance topics and within guidance topics. For example, the rate of uptake of guidance on the diagnosis and management of Parkinson’s disease in primary and secondary care varies from 0% to 94% depending on the specific recommendation (NICE, 2015). Independent research confirms these findings, suggesting that adoption of advice has been variable and depended on the level of professional experience of and ‘buy in’ from clinicians (see for example Sheldon *et al.*, 2004; Wathen & Dean, 2004; Vyawahare, Hallas, Brookes, Taylor & Eldabe, 2014). There is also evidence of time lags between the publication and uptake of guidance (NISCHR, 2014). NICE has a far larger budget than other What Works Centres (with the exception of the EEF and the Centre for Ageing Better). It also has a higher public profile and strong backing from the Department of Health. It is probably not, therefore, a reliable guide to the kind of impact that other centres might reasonably expect to achieve. However, the evidence about its impact suggests that it will be important for other centres to secure ownership of their findings by policymakers and practitioners.

Discussion

National politicians in the UK have expressed high hopes for the What Works Centres. They are on record as saying that the Centres have the potential to transform the way in which evidence is used in Whitehall. In particular, they could exert pressure on government

departments to adopt a theory-based approach to policymaking, which includes ex-ante, evidence-based assessment of the potential costs and benefits of interventions. The assumption is that governments currently allocate considerable sums of money to policies that are not cost effective and identifying and cutting these interventions could help to reduce public spending and make government more efficient. It remains to be seen whether the What Works model can live up to these expectations, but the Centres are certainly well placed to play a pivotal role in their respective ‘evidence ecosystems’. They also provide useful case studies, which can enhance knowledge about what works, and what does not work in mobilising knowledge from social science research, an area in which, according to Davies, Powell and Nutley (2014), few of the existing models have been tested empirically.

As we have shown, the literature on evidence-based policy offers three important insights that we believe will be important to the success of the What Works movement in the UK and could be of interest internationally. First, evidence standards need to be applied intelligently, taking account of the kinds of questions that policymakers and practitioners wish to address. Second, it is important to be aware of the complex and contested nature of the policy process. Third, research-based evidence will not inform policy and practice without carefully designed and targeted approaches to knowledge mobilisation. It will be instructive for researchers in the UK, and internationally, to track over time how the What Works Centres perform against these benchmarks.

The early signs are that, for the most part, the activities of the UK’s What Works Centres reflect these lessons from the literature. However, generating, synthesising and translating evidence in ways that lead to tangible improvement in policy and practice is a tall order, and the Centres will need to remain alert to a number of risks. There is a risk that the principles to which the Centres have signed up could restrict unduly the range of evidence which they draw on in ways that will not necessarily be helpful to practitioners and policymakers. A focus on synthesis of evidence produced using experimental methods to the exclusion of all other forms of knowledge could mean that other important information is overlooked or disregarded. This is a particular issue where little, if any, ‘robust’ evidence about interventions currently exists. The absence of (a certain kind of) evidence does not make it sensible or safe to assume that an intervention does not ‘work’, though this stance might appeal to policymakers seeking to cut public spending in order to reduce the UK’s deficit.

The experience of NICE highlights the risks of disregarding evidence generated by non-experimental approaches and of the importance of expert judgement in weighing the findings

of systematic reviews. Greenhalgh *et al.* (2013) highlight the danger that evidence-based medicine runs if it encourages unthinking adherence to protocols that are not sufficiently attuned to the needs of individual patients. They argue that practice has to be informed by clinical judgement as well as national guidance and in fact NICE invests considerable time and effort in expert analysis and interpretation of the evidence that is produced by the systematic reviews that it commissions. It recognises the importance of presenting and testing out results with stakeholder groups in order to secure ownership of its guidelines. NICE also acknowledges that, even in medicine, the same approach will not work everywhere and for every patient. Medical practitioners, therefore, need to apply guidelines flexibly and use their professional experience, expertise and judgement to decide what is the most appropriate intervention for each patient. The same must be true of social policy interventions. Social workers, head teachers, economic development staff and police officers will need opportunities to be exposed to and to debate and contribute to the toolkits and other forms of evidence produced by What Works Centres. However, some sectors will find it difficult to engage. The understandable desire to protect ‘frontline services’ means that the analytical and ‘absorptive’ capacity of some public service organisations, particularly local government, has been hollowed out (Allen, Grace & Martin, 2014), and What Works Centres cannot take it for granted that practitioners will have time to engage with their findings.

It will also be important to avoid simplistic binary distinctions between the interventions that ‘work’ and those which do not ‘work’. As we have argued above, it is important to take account of local context and implementation capacity. A focus on RCTs may encourage a mind-set that implicitly ‘works on’ communities rather than ‘working with’ them and is at odds with the dependence of many social policy interventions on co-production with and behavioural change by citizens, service users and communities. Furthermore, as NICE has shown and Shepherd (2014) has argued, it is essential that practitioners are convinced by evidence. The ‘toolkits’ produced by the What Works Centres must provide the kinds of evidence that policymakers and practitioners want in formats that they find useful. The What Works model presupposes that the need is for organisations that collate, synthesise and translate the evidence. While this may improve the ‘supply side’, if the potential users of evidence do not want it or lack the capacity to engage with it, findings may be ignored or misinterpreted.

At present, the What Works Network operates through a very loose structure, and the variations between centres belie government rhetoric, which seems to imply the existence of a strong What Works ‘brand’. We are not arguing for greater conformity. It is likely that

different approaches suit different sectors, and the diversity of approaches has the benefit of providing opportunities to compare and contrast the results of different ways of working. However, it is noticeable that the number and foci of the centres have evolved rather than being designed and there may be benefit in greater co-ordination of their activities and more opportunities and incentives for information sharing. Whereas the activities of individual centres are underpinned by their own (sometimes implicit) assumptions about evidence standards and the best ways to mobilise knowledge, they do not seem to share an explicit theory of how to improve policy, practice and public services outcomes. The variations between centres in terms their origins, funding and approach offers opportunities for increasing understanding ‘what works’ when it comes to encouraging evidence based policy and practice, and we believe that they would be benefits to be gained from comparing the theories of change and approaches to evidence which they employ, as well as their impacts.

Finally, the What Works Centres need to be seen as just one part of a much broader ‘evidence ecosystem’. At best they will, therefore, only ever be a partial solution. Using evidence to improve policy also requires a re-alignment of other parts of the system, including, *inter alia*, a change of culture of both central and local government, an increase in absorptive capacity, a greater willingness on the part of politicians to act on evidence, and increased commitment by academic institutions to processes of knowledge mobilisation.

References

- Allen, T., Grace, C.L., & Martin, S.J. (2014). *From analysis to action: Connecting research and local government in an age of austerity*. London: Local Government Association.
- Alexanderson, K., Beijer, E., Bengtsson, S., Hyvönen, U., Karlsson, P.-Å. & Nyman, M. (2009). Producing and consuming knowledge in social work practice: Research and development activities in a Swedish context. *Evidence & Policy*, 5, 127–39. doi: 10.1332/174426409X437883.
- Alkin, M. C., Daillak, R. & White, P. (1979). *Using evaluations: Does evaluation make a difference?* Beverly Hills, CA: Sage.
- Ayres, S. & Marsh, A. (2013). Reflections on contemporary debates in policy studies. *Policy and Politics*, 41, 643–663. doi: 10.1332/147084413X674001.
- Bekker, M., van Egmond, S., Wehrens, R., Putters, K. & Bal, R. (2010). Linking research and policy in Dutch healthcare: Infrastructure, innovations and impacts. *Evidence & Policy*, 6, 237–253. doi: 10.1332/174426410X502464.

- Berg, B. L., Lune, H. & Lune, H. (2004). *Qualitative research methods for the social sciences* (vol. 5). Boston, MA: Pearson.
- Best, A. & Holmes, B. (2010). Systems thinking, knowledge and action: Towards better models and methods. *Evidence and Policy*, 6, 145–159. doi: 10.1332/174426410X502284.
- Black, N. (2001). Evidence-based policy: Proceed with care. *British Medical Journal*, 323(7307), 275–279. doi: 10.1136/bmj.323.7307.275.
- Bonell, C., Fletcher, A., Morton, M., Lorenc, T. & Moore, L. (2012). Realist randomised controlled trials: A new approach to evaluating complex public health interventions. *Social Science and Medicine*, 75, 2299–2306. doi: 10.1016/j.socscimed.2012.08.032.
- Cabinet Office. (2013a). What works: Evidence centres for social policy. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/136227/What_Works_publication.pdf
- Cabinet Office. (2013b). *What Works Network*. Retrieved from <https://www.gov.uk/what-works-network>
- Cabinet Office. (2014a). *What works? Evidence for decision makers*. Retrieved from <https://www.gov.uk/government/publications/what-works-evidence-for-decision-makers>
- Cabinet Office. (2014b, December 17). *What Works Requirements*, Unpublished Paper to the What Works Council.
- Cameron, A., Salisbury, C., Lart, R., Stewart, K., Peckham, S., Calnan, M. & Thorp, H. (2011). Policy makers' perceptions on the use of evidence from evaluations. *Evidence & Policy*, 7, 429–447. doi: 10.1332/174426411x603443.
- CEBP. (2014). *Top Tier Evidence Initiative: A validated resource used by congressional and executive branch officials to distinguish research-proven social programs from everything else*. Retrieved from <http://coalition4evidence.org/wp-content/uploads/2012/07/Top-Tier-Project-Overview-July-2012.pdf>
- Coalition for Evidence-Based Policy. (2014). *Top Tier Evidence*. Retrieved from <http://toptierevidence.org/>
- Culyer, A. & Lomas, J. (2006). Deliberative processes and evidence informed decision making in health care: Do they work and how might we know? *Evidence & Policy*, 2, 357–371. doi: 10.1332/174426406778023658.
- Davies, P. (2007, November 26). Types of knowledge for evidence-based policy. *Presentation to NoRFACE seminar on evidence and policy*. University of Edinburgh.
- Davies, H. T. & Nutley, S. (2008). *Learning more about how research-based knowledge gets used*. Unpublished Working Paper. William T. Grant Foundation.

- Davies, H.T., Powell, A. & Nutley, S. (2014) *Mobilising knowledge to improve UK health care: Learning from other countries and other sectors*. Retrieved from <http://www.nets.nihr.ac.uk/projects/hsdr/11200410>
- Duke, K. (2001). Evidence-based policy making? The interplay between research and the development of prison drugs policy. *Criminal Justice, 1*, 277–300. doi: 10.1177/1466802501001003002.
- Early Intervention Foundation. (undated). *The EIF standards of evidence*. Retrieved from <http://guidebook.eif.org.uk/the-eif-standards-of-evidence>
- Edwards, S. J., Lilford, R. J. & Hewison, J. (1998). The ethics of randomised controlled trials from the perspectives of patients, the public, and healthcare professionals. *British Medical Journal, 317*(7167), 1209–1212. doi: 10.1136/bmj.317.7167.1209.
- Flinders, M. (2013). The politics of engaged scholarship: Impact, relevance and engagement. *Policy and Politics, 41*, 621–642. doi: 10.1332/030557312x655783.
- Green, L. W. (2006). Public health asks of systems science: To advance our evidence-based practice, can you help us get more practice-based evidence? *American Journal of Public Health, 96*, 406–409. doi: 10.2105/ajph.2005.066035.
- Greenhalgh, T., Howick, J. & Maskrey, N. (2014). Evidence based medicine: A movement in crisis?, *British Journal of Medicine 348*. Article ARTN g3725.
- Guyatt, G. H., Oxman, A. D., Vist, G. E., Kunz, R., Falck-Ytter, Y., Alonso-Coello, P. & Schünemann, H. J. (2008). GRADE: An emerging consensus on rating quality of evidence and strength of recommendations. *British Medical Journal, 336*(7650), 924–926. doi: 10.1136/bmj.39489.470347.ad.
- Howell, M. (2009). Policy analytical capacity and evidence-based policy-making: Lessons from Canada. *Canadian Public Administration, 52*(2), 153–175. doi: 10.1111/j.1754-7121.2009.00070_1.x.
- HM Treasury (2003). *The Green Book: Appraisal and Evaluation in Central Government*. Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/220541/green_book_complete.pdf
- Jung, T., Nutley, S., Morton, S. & Millar, A. (2010). Linking research and policy in Scotland. *Evidence & Policy, 6*, 213–235. doi: 10.1332/174426410x502455.
- Kennedy, P., de Brún, T., Brún, M. O. & MacFarlane, A. (2010). An exploration of evidence-based policy in Ireland: Health and social inclusion. *Evidence & Policy 6*, 255–268. doi: [10.1332/174426410X502473](https://doi.org/10.1332/174426410X502473)

- Levin, B. (2004). Making research matter more. *Education Policy Analysis Archives*, 12, 56. doi: 10.14507/epaa.v12n56.2004.
- Marston, G. & Watts, R. (2003). Tampering with the evidence: A critical appraisal of evidence based policy making. *Australian Review of Public Affairs*, 3, 143–163. Retrieved from: http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCEQFjAA&url=http%3A%2F%2Fwww.australianreview.net%2Fjournal%2Fv3%2Fn3%2Fmarston_watts.pdf&ei=XxAUVb_DOsKC7gaxzYCwCA&usg=AFQjCNFtmngelkKfGOUkKnW1sImj7UJNuOA&sig2=Y1O9xPAAhoXKkKSPmL18Zw&bvm=bv.89217033,d.ZGU
- Mulgan, G. (2005). Government, knowledge and the business of policy making: The potential and limits of evidence-based policy. *Evidence & Policy*, 1, 215–226. doi: 10.1332/1744264053730789.
- Mullen, E. J. & Streiner, D. L. (2006). The evidence for and against evidence-based practice. *Foundations of Evidence-based Social Work Practice*, 21–34. doi: 10.1093/brief-treatment/mhh009.
- National Institute for Health and Care Excellence. (2014). *Developing NICE guidelines: The manual*. Retrieved from <http://www.nice.org.uk/article/pmg20>
- National Institute for Health and Care Excellence. (2015). *Measuring the uptake of NICE guidance*. Retrieved from <https://www.nice.org.uk/about/what-we-do/into-practice/measuring-the-uptake-of-nice-guidance>
- NISCHR. (2014). Using research evidence to improve health and social care. A NISCHR AHSC Workshop to Explore Strategies in Knowledge Transfer, Angel Hotel, Cardiff, 6th May 2014.
- Nutley, S., Morton, S., Jung, T. & Boaz, A. (2010). Evidence and policy in six European countries: Diverse approaches and common challenges. *Evidence & Policy*, 6, 131–144. doi: 10.1332/174426410x502275.
- Nutley, S., Powell, A. & Davies, H. (2012). *What counts as good evidence?* Alliance for Useful Evidence: London.
- Ogden, T., Kärki, F. & Teigen, K.S. (2010). Linking research, policy and practice in welfare services and education in Norway. *Evidence & Policy*, 6, 161–177. doi: 10.1332/174426410x502293.
- Ogilvie, D., Egan, M., Hamilton, V. & Petticrew, M. (2005). Systematic reviews of health effects of social interventions: 2. Best available evidence: How low should you go?

- Journal of Epidemiology and Community Health*, 59, 886–892. doi: 10.1136/jech.2005.034199.
- Oakley, A., Strange, V., Toroyan, T., Wiggins, M., Roberts, I. & Stephenson, J. (2003) Using random allocations to evaluate social interventions: Three recent UK examples. *The Annals of the American Academy of Political and Social Science*, 589, 170–189. doi: 10.1177/0002716203254765.
- Pawson, R. & Tilley, N. (1997). *Realistic evaluation*. Sage.
- Petticrew, M. & Roberts, H. (2003). Evidence, hierarchies, and typologies: Horses for courses. *Journal of Epidemiology and Community Health*, 57, 527–529. doi: 10.1136/jech.57.7.527.
- Pollitt, C. (2013). 40 years of public management reform in UK central government: Promises, promises.... *Policy & Politics*, 41, 465–480. doi: 10.1332/030557312x655710.
- Project Oracle (u.d.). *How it works: Standards of evidence*. Retrieved from <http://project-oracle.com/standards-of-evidence/>
- Puttick, R. (2011). *Ten steps to transform the use of evidence*. Blog retrieved from www.nesta.org.uk/library/documents/TenStepsBlog
- Rhodes, R. A. W. (2013). Political anthropology and public policy: Prospects and limits. *Policy and Politics*, 41, 481–496. doi: 10.1332/030557312x655684.
- Sheldon, T. A., Cullum, N., Dawson, D., Lankshear, A., Lowson, K., Watt, I., ... & Wright, J. (2004). What's the evidence that NICE guidance has been implemented? Results from a national evaluation using time series analysis, audit of patients' notes, and interviews. *BMJ*, 329(7473), 999.
- Shepard, J. (2014). *How to achieve more effective services: The evidence ecosystem*. Retrieved from http://www.vrg.cf.ac.uk/Files/2014_JPS_What_Works.pdf
- Sherman, L. W., Gottfredson, D. C., MacKenzie, D. L., Eck, J., Reuter, P., & Bushway, S. D. (1998). *Preventing Crime: What works, what doesn't, what's promising*. Research in Brief. National Institute of Justice.
- Social Research Unit (undated). *'What Works' evidence standards*. Retrieved from <http://dartington.org.uk/projects/what-works-evidence-standards/>
- Solesbury, W. (2001). *Evidence-based policy: Whence it came and where it's going* (Working Paper 1), Swindon: ESRC UK Centre for Evidence-Based Policy and Practice, Retrieved from <http://kcl.ac.uk/schools/sspp/interdisciplinary/evidence/publications/wp1.html>
- Soydan, H. (2010). Evidence and policy: The case of social care services in Sweden. *Evidence & Policy*, 6, 179–193. doi: 10.1332/174426410x502301.

- Spencer, L., Ritchie, J., Lewis, J. & Dillon, L. (2003). Quality in qualitative evaluation: a framework for assessing research evidence. Government Chief Social Researcher's Office, London: Cabinet Office.
- Spyridonidis, D. & Calnan, M. (2011). Opening the black box: A study of the process of NICE guidelines implementation. *Health Policy*, 102, 117–125. doi: 10.1016/j.healthpol.2011.06.011.
- Taxman, F. & Belenko, S. (2012). Identifying the evidence base for 'what works' in community corrections and addiction treatment. In F. Taxman & S. Belenko (Eds), *Implementing evidence based practice in Community Corrections and Addiction Treatment*. Springer Science + Business Media.
- Tenbensel, T. (2004). Does more evidence lead to better policy? The implications of explicit priority setting in New Zealand's health policy for evidence-based policy. *Policy Studies*, 25, 190–207. doi: 10.1080/0144287012000277480.
- Vyawahare, B., Hallas, N., Brookes, M., Taylor, R. S., & Eldabe, S. (2014). Impact of the National Institute for Health and Care Excellence (NICE) guidance on medical technology uptake: analysis of the uptake of spinal cord stimulation in England 2008–2012. *BMJ open*, 4(1),.
- Washington State Institute for Public Policy (2012). *Inventory of evidence-based, research-based, and promising practices*. Retrieved from <http://www.wsipp.wa.gov/pub.asp?docid=e2shb2536>
- Wathen, B., & Dean, T. (2004). An evaluation of the impact of NICE guidance on GP prescribing. *British Journal of General Practice*, 54(499), 103-107.
- Weiss, C. H. (1979). The many meanings of research utilization. *Public Administration Review*, 426–431. doi: 10.2307/3109916.
- What Works Crime Reduction (2015). *About the crime reduction toolkit*. Retrieved from <http://whatworks.college.police.uk/toolkit/Pages/About.aspx>

Table 1: What Works Network

	Focus	Established	Funding	Evidence standards	Dissemination
National Institute for Health and Care Excellence	Health and social care	1999	Annual grant of £66.4m from the Department for Health	Multi-stage process of evaluating evidence using the GRADE Approach plus expert opinion and stakeholder engagement	National guidance to clinicians and commissioners
Sutton Trust/Educational Endowment Foundation	Educational achievement	2011	£125m endowment from Department for Education	Assesses interventions using systematic reviews or meta-analyses and develops and funds trials.	Teaching and Learning Toolkit which rates interventions according to impact on educational attainment, cost and strength of evidence
College of Policing What Works Centre for Crime Reduction	Crime reduction	2013	£3.28m from College of Policing and ESRC	Assesses interventions using the EMMIE Framework.	Crime Reduction Toolkit which rates interventions by impact, cost, where they work, how they work, and implementation plus outreach programme including an innovation fund and masterclasses
Early Intervention Foundation	Early intervention	2013	Three year grant from Department for Communities and Local Government, Department for Education, Department of Health and Department for Work and Pensions and ESRC	Evaluates evidence according to the EIF Standard of Evidence, a hierarchy based on methodology.	EIF Guidebook which summarises effectiveness of early intervention programmes and strength of evidence plus capacity building with Pioneering Places network
What Works Centre for Local Economic Growth	Local economic growth	2013	Three year grant from Department for Business, Innovation and Skills, Department for Communities and Local Government and ESRC	Evidence reviews using minimum standard based on the Maryland Scientific Methods Scale	Reports that assess interventions according to effectiveness and cost effectiveness plus capacity building workshops with LEPs and local authorities and demonstration projects
What Works	Public	2014	£3m over three years	Collaborative action research in four case	Knowledge broker network and an

Scotland	services reform		from Scottish Government and ESRC	study localities	Evidence Bank
Public Policy Institute for Wales	Poverty plus other devolved functions	2014	£2.3m over three years from Welsh Government and ESRC	Evidence reviews, primary research and expert workshops	Reports which assess effectiveness, cost effectiveness and strength of evidence plus knowledge exchange workshops with policy makers and practitioners
Centre for Ageing Better	Improved quality of life for older people	2015	£50m from Big Lottery Fund	Under development	Under development
What Works Centre for Wellbeing	Wellbeing	2015	£4.3m over three years from the ESRC, Public Health England and others including several government departments	Four evidence synthesis programmes	Under development