

# ESRC

ESRC/The Scottish Government Seminar Series  
Mapping the public policy landscape

Will it work in Scotland?  
Systematic Reviews and Policy Transfer for Scotland



## Foreword

### The Economic and Social Research Council (ESRC)



A wealth of policy relevant research exists, but how can we put this resource to best use in meeting the challenges of policy making in the 21st century? Faced with anticipated public spending constraints, finding ways to better use existing evidence to answer both 'burning' short term, and 'wicked' long-term, intractable policy challenges is a pressing concern for Scottish Government.

In this respect, perhaps the key question for the policy community is how successfully can findings from one context be transferred to another? Put simply, does the body of evidence support a planned intervention?

Systematic reviews are believed to offer a means to address such questions. However, securing impact and knowledge transfer from systematic reviews presents considerable challenges for academic and policy community partners alike. The Scottish Government, the Research Councils UK, ESRC funded academics, The Campbell Collaboration and others who produce systematic reviews all share strategic interests in making the best use of existing evidence and policy transfer. But, to date, systematic reviews have enjoyed limited use in Scotland. Why is this and could the evidence from systematic reviews be utilised more effectively?

With a focus specifically on systematic reviews and their potential to inform policy making, the Scottish Government, the ESRC, and the ESRC Research Development Initiative in Quantitative Synthesis in association with The Campbell Collaboration organised the *Will it work in Scotland? Systematic Reviews and Policy Transfer for Scotland* seminar held at The Scottish Government Victoria Quay, Edinburgh, on Monday 15 March 2010.

This seminar and its three associated training workshops were part of the ESRC's Festival of Social Science 2010. This annual festival provides important insights into some of the country's leading social science research and how it influences our social, economic and political lives.

This brochure, which accompanied the seminar, draws on contributions provided by Professor Mark Lipsey, Peabody Research Institute, Vanderbilt University (US); Dr Mark Newman, Institute of Education, University of London; and Professor Helen Roberts, University College London Institute of Child Health.

We hope that the seminar and this brochure will make both a timely and valuable contribution to the important debate about the role of research and evidence syntheses in informing policy decisions now and in the future.

**Professor Ian Diamond FBA FRSE AcSS**  
**Chief Executive, Economic and Social Research Council**

## The Scottish Government



I very much welcome the publication of this brochure and the debate and discussions that have informed the development and delivery of the ESRC and Scottish Government seminar *Will it work in Scotland? Systematic reviews and policy transfer for Scotland*. This work forms part of our ongoing collaboration with the ESRC and The Campbell Collaboration which aims to improve the accessibility of academic research to the Government 'user' community.

The seminar and brochure have been designed to draw together leading social scientists to stimulate a discussion on how systematic reviews can inform policy. Together with the training workshops which follow the seminar, they showcase current developments in relation to systematic reviews and highlight case studies where systematic reviews have resulted in successful interventions being transferred to other areas of the same country or internationally. Critically, for the Government user community, this activity also provides an opportunity to debate whether a systematic review or a 'systematic approach' can provide an effective contribution to delivery of the National Performance Framework in Scotland, or Government policy objectives further afield.

In my capacity as Head of Profession for Social Researchers in the Scottish Government, I see our involvement in this debate as an important component of our ongoing work in ensuring that the social science contribution to the development, implementation and evaluation of government policies in Scotland is based on the best available evidence.

**Diana Wilkinson, Chief Researcher**  
**The Scottish Government**

# Will it work in Scotland?

## Systematic reviews and policy transfer for Scotland

### Contributors

**PROFESSOR MARK LIPSEY** is the Director of the Peabody Research Institute, Vanderbilt University (USA). Mark's professional interests are in the areas of public policy, program evaluation research, social intervention, field research methodology, and research synthesis (meta-analysis). The topics of his recent research have been risk and intervention for juvenile delinquency and substance use, early childhood education programmes, and issues of methodological quality in programme evaluation research. He serves on boards of, among others, The Campbell Collaboration and Blueprints for Violence Prevention, and is co-editor of the new journal, *Research Synthesis Methods*. He is co-author of the programme evaluation textbook, *Evaluation: A Systematic Approach* and the meta-analysis primer, *Practical Meta-Analysis*.

**HELEN ROBERTS** holds a Chair at University College London Institute of Child Health and has a particular interest in knowledge translation. She is a non executive director of the National Institute for Health and Clinical Excellence (NICE). Helen previously spent a decade as Head of R&D with Barnardo's, the UK children's charity. Her research interests include evidence-based child public health and inequalities in child health. She is also interested in the use of sound research for advocacy. With Mark Petticrew she co-authored *Systematic Reviews in the Social Sciences*. She is on the editorial board of the *Journal of Implementation Science*, is on the Science Advisory Council of the Alberta Heritage Foundation for Medical Research and the international research advisory board for the Li Ka Shing Knowledge Institute, St Michael's Hospital, Toronto.

**DR MARK NEWMAN** is Reader in Evidence-informed Policy and Practice in Education and Social Policy in the Social Science Research Unit, University of London. Dr Newman's background includes health, social sciences and education and he has worked in the NHS as well as in Higher Education. His academic interests span three inter-related areas: developing methods and processes for and producing systematic reviews for policy and practice decision making across different areas of social policy including education; capacity building amongst practitioners researchers and policymakers to produce, critically appraise and utilise research evidence; and methods for the design and evaluation of effective learning environments in professional education.

# Introduction

## Background

Government uses a range of evidence to inform policy decisions, including social science research. While some research is directly commissioned for this purpose, and other work is conducted by social researchers working within government, much of the policy-relevant evidence resides 'elsewhere'.

The policy community needs to make better use of this existing research to help it meet its longstanding policy challenges, particularly around health, early years, poverty and inequality. Mechanisms for assessing and accessing this evidence vary, but one of the most powerful tools is the 'systematic review'.

## What are systematic reviews?

Put simply, the systematic review is a method of critically appraising, summarising and attempting to reconcile the evidence on a particular problem.

Systematic reviews focus on measuring the effects of interventions, often using meta-analysis techniques to produce statistical summaries of the combined results of primary studies. Systematic reviews are like scientific investigations in themselves, using pre-planned methods and an assembly of original studies that meet their criteria as 'subjects'. They synthesise the results of an assembly of primary investigations using strategies that limit bias and random error.

An international infrastructure exists for the production and quality assurance of systematic reviews. This includes:

- The Cochrane Collaboration <http://www.cochrane.org/index.htm> prepares, maintains and disseminates systematic reviews of the effects of interventions in health care, and their *Reviewers' Handbook* is a valuable source of guidance on how to undertake and appraise systematic reviews.
- The Campbell Collaboration <http://www.campbellcollaboration.org/> conducts systematic reviews of the effectiveness of interventions in education, crime and justice, and social welfare.
- In the UK, The Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) <http://eppi.ioe.ac.uk/> at the Institute of Education, University of London undertakes and supports systematic reviews in social science and public policy.
- The Centre for Reviews and Dissemination at the University of York <http://www.york.ac.uk/inst/crd/> undertakes systematic reviews that evaluate the effects of health and social care interventions and the delivery and organisation of health care.



## Systematic reviews: reasons for their limited use to date

There has been limited use of systematic reviews to inform policy in the Scottish Government to date. Instead there has been heavy reliance on evaluating single policies – in the first two terms of devolved government over 150 separate evaluations were commissioned to inform policy learning. Over the same period fewer than 20 systematic (or quasi-systematic) reviews were commissioned and virtually all of these were in the health field focusing particularly on effective interventions with smoking, drugs and alcohol.

Why might the use of systematic reviews have been so limited? Some have argued that methodological rigour can narrow the focus too much or exclude studies of potential policy interest. Other possible reasons include:

- the costs attached to conducting systematic reviews and funding constraints has resulted in other research priorities taking precedence
- the time lag that might result between the formulation of a policy question and the completion of a systematic review
- some 'unpromising' results from early reviews; and
- doubt over whether international evidence on context specific interventions are transferable to other countries.

Developments in systematic reviewing have been addressing some of these concerns. A number of different analytical techniques other than meta-analysis are now being used, and there is growing interest in the identification, assessment and synthesis of qualitative studies to help explain, interpret and implement the findings from effectiveness reviews. Whatever the methodological challenges, answering the 'how' and 'why' questions around what works in policy interventions is central to our current interest in improving outcomes for the people of Scotland.



## Seminar aims

The *Will it work in Scotland? Systematic reviews and policy transfer for Scotland* seminar provided an opportunity to consider the value and relevance of systematic reviews, and also to discuss the barriers to their use in public policy.

The seminar and this brochure set out to address the following key questions:

- what information can systematic reviews provide on the transferability of successful interventions to another context?
- are there examples of systematic reviews informing policy transfer and did the resulting intervention work?
- is a 'systematic approach' good enough? Can the principles of systematic review be applied to other methods of evidence synthesis?
- how could the evidence from systematic reviews be utilised more effectively in Scotland?
- what are the most effective type of systematic reviews in terms of informing policy development and policy delivery?

## In this brochure

- **Section 1** highlights the key insight and implications drawn from the speakers' presentations
- **Section 2** summarises three academic perspectives by Dr Mark Newman, Professor Mark Lipsey and Professor Helen Roberts
- **Section 3** concludes with some potential areas for collaboration and future research priorities
- **Section 4** provides further information of contributors to the seminar and brochure.



## Key insights and implications

### Dr Mark Newman

- The desire to use research evidence to help make more informed policy decisions is a common feature of contemporary policy discourse. But policymakers who wish to use research will encounter numerous difficulties because research is carried out in different ways, by different organisations/people and for many different reasons, not only to address policy questions.
- Dealing with these difficulties by conducting a 'review' is problematic. For example, reviews can be subject to bias and assumptions, and may be neither systematic nor transparent.
- Systematic review technology aims to address the problems of simple reviews by, among other things, minimising and making transparent assumptions and biases. Systematic reviews are a powerful and useful tool: systematic review methods are a flexible technology that can be used to answer many different types of question.
- Systematic review technology can be applied to deliver products ranging from systematic databases of research on a particular topic to a full systematic review with multi arm synthesis. These different products have different value to the policy community.
- Realism is required concerning what systematic review products can deliver. For example, they cannot be generated at speed, they do not necessarily make the transfer of knowledge into practice any easier nor do they always provide the answer that was being looked for.
- Mark concludes that the issue of evidence must be considered at an early stage in policy development. Evidence generation must be thought of as an on-going, strategic (not one-off) issue for a particular policy.

### Professor Mark Lipsey

- Few of the intervention programmes routinely used in education, criminal justice, social welfare, and the like have been tested for effectiveness against a credible standard of evidence. Nor do the practitioners, clients, and advocates of these programmes show much inclination to ask for such evidence.
- When social programmes and practices *are* evaluated for impact on their target outcomes, however, frequently no measureable benefits are found. Peter Rossi, one of the giants in the field of social programme evaluation, once referred to research on the effectiveness of social programmes as 'a parade of null results'. Even more troubling are the instances where adequate evidence has shown the effects to be harmful.
- One antidote to unproven and possibly harmful social programmes is the growing movement towards evidence-based practice. This, however, is an ambiguous term and clarification of what should qualify as evidence-based practice is required.
- At least three approaches to practice and evidence can currently be identified. These are: practice in the form of specific programmes and evidence based on direct evaluation of those programmes; practice based on established programme protocols and evidence based on evaluation of some programmes using those protocols; and practice within generic programme types and evidence from syntheses of evaluation research on programmes of that type. Each has advantages and disadvantages as an approach to guiding evidence-based practice.

- Mark's research synthesis of 600 controlled studies of interventions for juvenile offenders compares generic programmes and reveals great variation in the effects on re-offending rates, ranging from negative effects to rather large reductions. This variation is not only related to the type of programme, but is also related to the amount and quality of service and the risk status of the juveniles treated.
- Mark has found that some relatively simple practice guidelines can be derived from this synthesis such as, for example, placing emphasis on the allocation of resources to higher risk cases and monitoring service quality. Further studies show that these practice guidelines can actually guide practice towards more effective outcomes.

### **Professor Helen Roberts**

- There is a danger that policymakers and practitioners may seize on 'evidence based practice' as a way to solve problems. In reality, as researchers are inclined to say, more research is needed to help policymakers deal with complex interventions and evidence.
- Systematic review methods, originally developed by social scientists, have now percolated widely and can be seen in fields as diverse as software engineering and religion. Broad acceptance of the general principles of systematic reviews means that they are now commonplace in health: systematic review methods, for example, underpin the approach taken by NICE in producing guidance.
- Systematic reviews can 'work' but they are a tool, not a rule. They need to be embedded in an intelligent assessment of context, and with a close eye to problems of implementation.
- Even where reviews provide an answer, or a partial answer; they cannot substitute for social value judgements, such as whether, in order (for instance) to reduce inequalities, some groups should be prioritised.
- The philosophical and methodological challenges in this field are considerable. But such reviews, performed thoughtfully, and with the input of users, can help to redress the emphasis still placed on single studies, and form a rational, basis for evaluating social interventions, and supporting decision making.



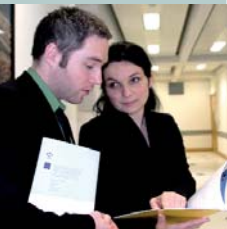
## What can systematic reviews do for policy?

**Dr Mark Newman of the Evidence for Policy and Practice Information and Coordinating Centre (EPPI-Centre), Institute of Education, University of London considers the ‘new’ research technology of systematic review and discusses both its potential and limitations in terms of helping the policy making process.**

### Employing research evidence to inform policy

The desire to use research evidence to help make more informed policy decisions appears to be a common feature of contemporary policy discourse internationally.

At the 2010 Department of Children, Schools and Families (DCSF) research conference<sup>1</sup> John Coles, DCSF Director General for Schools, and head of the policy delivery profession, articulated the view widely held across UK government that good policy requires the three inputs illustrated in Figure 1.



**Figure 1: Requirements for good policy**



### What is ‘evidence’ and how is it used?

It is important to note that evidence, in this context, can include a wide variety of knowledges of which ‘research’ evidence is only one. There is much important debate about what constitutes ‘evidence’, how evidence is and can be used by policymakers and the motivations of all the various stakeholders involved in the process of generating and using evidence<sup>2</sup>.

### Systematic reviews: a ‘new’ research technology

These debates are all salient to the question of ‘what can systematic reviews do for policy?’ However, discussion of these issues, what might loosely be called ‘evidence based policy making,’ are beyond the scope of this presentation except insofar as they relate specifically to the particular practical problem of using research evidence to inform policy making decisions. The focus of this presentation is on the potential ‘help’ that systematic reviews, a ‘new’ research technology, can provide in dealing with these problems.

## The difficulties of using research in policymaking

Any policymaker wishing to make use of research will encounter numerous difficulties. Research is carried out in different ways, by different organisations/people and for many different reasons, not only to address policy questions. Hence, the policymaker will find:

- there is a lot of research
- It is unclear what questions the research answers
- research is disorganised, inchoate and stored in a variety of places
- research uses multiple approaches and methods
- research varies in quality.

The multiplicity of research available and the range of places in which it can be found is illustrated below. Box 1 outlines the all the search sources examined in the development of a systematic map of evidence on accidental injury in young people<sup>3</sup>.

### Box 1: Finding evidence on accidental injury, risk-taking, behaviour and the social circumstances in which young people (aged 12-24) live:

Search sources	
16 databases	10 Journals hand searched
5 expert websites	Google search
Contact with experts	Bibliographies checked
Number citations found/screened: 3656	Included: 168 reports of 143 studies

Source: EPPI-Centre review<sup>3</sup>

## The problem with reviews

The traditional approach to dealing with these problems has been to conduct a 'review'. While the principle of research reviews is well established the appropriate process and purpose of such exercises is contested.

Although it is dangerous to over generalise, typically these reviews do not indicate what question is being answered, how the 'evidence' within the review was found or selected, or the quality of the primary research included within the review. This means that such reviews can be subject to the effects of particular biases and assumptions both on the part of those conducting the review and within the original research. Importantly, these biases are not apparent to the consumer or reader of the review. Moreover, as such reviews are neither systematic nor transparent, it is difficult to update or extend them. They are, in effect, one-off, unsustainable products<sup>4</sup>.

## The advantages of systematic review technology

Systematic review technology is simply a set of methods and processes that seeks to minimise and make transparent such assumptions and biases. The technology further assesses the possible effects of such biases on the answer generated in response to any particular question<sup>5,6,7</sup>. The technology itself is described in detail elsewhere (see the EPPI-Centre website for further details<sup>8</sup>) so is not repeated here. Instead, this discussion highlights how systematic reviews can help address the difficulties highlighted above.

## Systematic reviews: a flexible process

Much of the controversy about systematic reviews has been generated by the assumption that systematic review equals meta-analysis of quantitative experimental studies. From this perspective it follows that advocating a greater role for systematic reviews equals advocating a greater (some would argue inappropriate) role for quantitative experimental studies.

In reality, systematic reviews are a powerful and useful tool. Crucially, the technology is a flexible process that can be used in a number of ways to deliver different types of products. Hence, systematic review methods are a flexible technology that can be used to answer many different types of questions.



## Key features of the systematic review process

Thus the first stage of a systematic review is to identify the question that you are seeking to answer. The question is derived from, and reciprocal with, the particular approach to the issue that the 'users' wish to adopt. The question drives the review process including the decisions made about where and how to search for studies and which studies to include in the review.

The process of selecting studies involves the application of selection criteria that follow from the approach and question. The criteria are specified prior to undertaking the review and applied consistently to all the research identified as having potential to answer the question. The quality of the included research is appraised using a transparent method appropriate to the approach, review question, and research types included in the review.

There are also a number of quality assurance processes built into the review itself. This is illustrated in Box 2 below which draws on a review of young people's views about obesity, body size, weight and shape conducted by the EPPI-Centre<sup>9</sup>.

### Box 2: Illustrating the features of a systematic review: the example of an EPPI-Centre review into young people's views about obesity, body size, weight and shape.

- **Approach:** To investigate what children themselves think/say about obesity, body size, weight and shape as this is important to understanding how effective policies might be designed.
- **Question:** What are children's views about the meanings of obesity or body size, shape or weight (including their perceptions of their own body size), and what experiences do they describe relating to these issues?
- **Search strategy:** Eighteen electronic databases, searched three key journals and sixteen websites by hand, scanned reference lists, looked for papers that had cited key studies, and contacted key informants for research to include in the review.
- **Inclusion criteria:** Studies needed to have provided findings for children in the UK aged four to eleven and to have described basic aspects of their study methods. They needed to have been published since the start of 1997.
- **Study quality assessment:** Study findings were assessed in terms of whether the studies had used rigorous methods and whether they provided rich data that were likely to be rooted in children's perspectives.
- **Review Quality assurance processes:** Involvement of key stakeholders in design of review, moderation, double data extraction, and synthesis discussed with young people.

Source: EPPI-Centre review<sup>9</sup>

## Systematic review products

Conventionally the systematic review is viewed as a particular 'product'. However, it should more properly be viewed as a technology that can be applied flexibly to deliver a range of different products. The EPPI-Centre has been involved in developing a number of systematic review products using this technology. Examples of these products include:

- systematic databases of research on a particular topic
- systematic maps that describe the research in a particular field
- systematic Rapid Evidence Assessments – that answer a specific research question within a more finite period of time
- systematic review of reviews
- full systematic reviews with meta-analytic synthesis
- full systematic reviews with narrative synthesis
- full systematic reviews with mixed methods synthesis
- full systematic review with multi arm synthesis.

Examples of these products are given in Box 3. Different products may have different values to the policy community. For example, full systematic reviews with synthesis may address a specific policy question, systematic maps may identify where more research is needed, and systematic databases provide a resource for more systematic rapid responses to calls for evidence on a particular issue.

### Box 3: Examples of different systematic review products produced by the EPPI-Centre

- Systematic database: eg database of research on engagement, impact and value in culture and sport for the Department of Culture, Media and Sport (DCMS).
- Systematic map: eg research literature on the relationship between obesity and sedentary behaviour for the Department of Children, Schools and Families (DCSF).
- Systematic Rapid Evidence Assessments: eg interventions for High Cost High Harm Household Units for HM Treasury.
- Systematic review of reviews – eg interventions for 'Targeted Youth Support' for DCSF.
- Full systematic review – meta analysis: eg the impact of timetabling on secondary school students' attainment for the DCSF.
- Full systematic review – narrative synthesis: eg interventions to reduce in-work poverty for the Department of Work and Pensions (DWP).
- Full systematic review – multi-arm mixed methods synthesis: eg review of young people and healthy eating for the Department of Health (DH).

## The limitations of systematic reviews

Realism is needed in terms of what systematic review products can deliver. They do not, for example, tell you what decision to make. Neither do they always give you the answer you are looking for. Nor indeed do they necessarily make the transfer of knowledge into practice any easier. Furthermore, there is much work to be done on making systematic review products accessible to the general policy audience.

It is also true that systematic review products cannot be generated at a speed which fits easily into typical policy timescales (i.e. days or weeks). Rapid Evidence Assessments may offer a solution to the timing issue on some occasions but are subject to specific limitations of their own (see the GSRU REA toolkit for further discussion<sup>10</sup>).

Hence, it's vital to consider the issue of 'evidence' at an early stage in policy development and to think of evidence generation and management as an on-going, strategic (not one-off) issue for a particular policy. Then the next time a Minister asks for all the evidence to support the case for funding 'X' within three days, there may at least be a database of all the research on 'X' from which to start.

### References/further reading:

- 1 Coles J (2010) Making policy happen: Improving practice in the DCSF. DCSF Research Conference 2010. The use of evidence in policy development and delivery. London 9 February 2010 QEII Conference Centre.
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- 3 Thomas J, Kavanagh J, Tucker H, Burchett H, Tripney J, Oakley A (2007) *Accidental injury, risk-taking behaviour and the social circumstances in which young people (aged 12-24) live: a systematic review*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- 4 Gough D & Elbourne D (2002) 'Systematic research synthesis to inform, policy, practice and democratic debate', *Social Policy and Society*, vol. 1, no. 3, pp. 225-236.
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- 6 Pettigrew M & Roberts H (2006) *Systematic reviews in the social sciences: A practical guide*. Oxford. Blackwell Publishing.
- 7 Oakley A (2006) Resistances to 'new' technologies of evaluation: education research in the UK as a case study. *Evidence and Policy* 2(1): 63-87.
- 8 EPPI-Centre website : <http://eppi.ioe.ac.uk/cms/>
- 9 Rees R, Oliver K, Woodman J, Thomas J (2009) *Children's views about obesity, body size, shape and weight: a systematic review*. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London.
- 10 GSRU. Rapid Evidence Assessment Toolkit.  
[http://www.gsr.gov.uk/professional\\_guidance/rea\\_toolkit/index.asp](http://www.gsr.gov.uk/professional_guidance/rea_toolkit/index.asp)

## Practice, evidence and evidence-based practice: the role of research synthesis

**Professor Mark Lipsey of Vanderbilt University, USA, highlights the ambiguity surrounding our current understanding of 'evidence-based practice', outlines three different meanings of 'practice' and 'evidence' currently in play, and points to the value of research synthesis in developing effective practice guidelines.**

### **Social programmes lack evidence on 'what works'**

Few of the programmes routinely used in education, criminal justice, social welfare, and the like have been tested for effectiveness against a credible standard of evidence. Nor do the practitioners, clients, and advocates of these programmes show much inclination to ask for such evidence. It would be a simpler world, and one in which improving the human condition would be far easier, if we could confidently assume that most such endeavours were effective without requiring systematic evidence.

### **Programme benefits are difficult to find**

When social programmes and practices are evaluated for impact on their target outcomes, however, we frequently find no measureable benefits. Peter Rossi, one of the giants in the field of social programme evaluation, once referred to research on the effectiveness of social programmes as 'a parade of null results'. Even more troubling are the instances where adequate evidence has shown the effects to be harmful.

Prison visitation programmes of the 'Scared Straight' genre, which expose juvenile offenders to prison conditions and adult inmates who warn them in graphic terms of the consequences of continued criminal behaviour; for example, have enormous intuitive appeal and were widely adopted in the US during the 1980s. As controlled studies slowly accumulated, the results showed almost without exception that juveniles subjected to these programmes committed more crimes afterwards, not fewer.

### **A movement towards evidence-based practice**

The interjection of unproven social programmes into people's lives under the guise of helping is little more than quackery. One antidote is the nascent, but growing movement toward evidence-based practice. 'Evidence-based practice', however, is an ambiguous phrase that has been translated to mean many different things, often in ways that provide little assurance that what is practiced as a result is effective. Clarifying what should qualify as evidence-based practice requires close attention to what is meant by 'practice' and what is meant by 'evidence'.

Taking juvenile justice as an example for the purposes of this presentation, we find that there are at least three approaches to 'practice' and evaluation of the 'evidence'.

## Three approaches to practice and evidence

### 1. Practice based on specific operating procedures (SOP)

*What is the practice?* Here, practice refers to a particular programme implemented in a particular setting; that is, the specific operating procedures (SOP) of that particular programme. For example, the TGIF Social incentive programme at Stonewall Jackson Youth Development Center in Concord, North Carolina, a locally developed and implemented programme for juvenile offenders, is an SOP.

*What is the evidence?* The most direct evidence of effectiveness for such a programme is a credible impact evaluation of that particular programme. The advantage of this form of evidence is that it applies directly to the programme at issue. Its disadvantage is that it has, at best, uncertain generalizability to any other programme. It is also technically difficult and relatively expensive for a single programme to develop such evidence. As a broader approach to evidence-based practice, requiring such evaluation for every programme implementation would be impractical.

### 2. Practice based on an established protocol

*What is the practice?* In this approach, practice refers to a 'brand name' programme; that is, any instance of a programme that follows an established protocol defining the programme and specifying how it is to be implemented. Such programmes have familiar names; examples include Functional Family Therapy, Multisystemic Therapy, Multidimensional Treatment Foster Care, and Aggression Replacement Training.

*What is the evidence?* Evidence for the effectiveness of these programmes comes in the form of evaluations of particular implementations of the respective protocols in different places. Positive effects from those studies then imply that any programme that follows the protocol faithfully might expect to also be effective.

These protocol programmes are the ones that appear on the lists of evidence-based programs compiled by various agencies, eg, Blueprints, the US National Registry of Evidence-based Programs and Practices (NREPP), and the like. The advantage of this form of evidence is that each programme need not replicate it to demonstrate effectiveness, but needs only to follow the protocol with fidelity. The disadvantage is that there are typically relatively few studies of any given protocol, leaving questions about whether the results will generalize to other situations in which it is implemented.

Moreover, service providers often have difficulty following a protocol exactly; they feel they need to adapt it to local circumstances. Rarely has the research on protocol programmes identified the features that can and cannot be altered if the programme is to retain effectiveness. Hence there is no assurance that local variations will be effective.



### 3. Practice based on generic programme types

*What is the practice?* Here, practice refers to distinguishable generic programme types that encompass both brand name and specific operating procedure programmes, eg, interpersonal skills training, family therapy, group counselling, and cognitive behavioural therapy.

*What is the evidence?* Evidence for the effectiveness of these programmes comes from impact evaluations of any instance of a programme of the respective type, and there are often many such studies. The advantage of this form of evidence is that it provides a broad evidence base that typically includes diverse programme variations and implementation conditions. This, therefore, allows for greater generalisation from the results.

The disadvantage is that the programme effects also vary and the characteristics of those variants that produce larger and smaller effects must be identified for this evidence to provide useful guides to practice. The role of systematic research synthesis is especially important in this situation. Properly done, it can identify key programme characteristics associated with better and worse outcomes that, in turn, can be the basis for formulating practice guidelines for effective programmes of a given type. This approach yields practice principles to be followed rather than a specific protocol that must be implemented to the letter:

#### Producing effective practice guidelines

The work my colleagues and I have done on interventions for juvenile offenders provides an example of the application of research synthesis to generic programme types to yield effective practice guidelines. A synthesis of nearly 600 controlled studies has shown great variation in the effects on juvenile re-offending rates, ranging from negative effects (increased offending) to rather large reductions.

That synthesis has also shown that this variation is mainly related to (a) the type of service provided, (b) the amount of service, (c) the quality of the service, and (d) the risk status of the juveniles treated, all of which are defined more specifically by the contributing research. Relatively simple practice guidelines have been derived from this synthesis that focus on:

- promoting the more effective types of service
- setting target values for the amount and quality of service, and
- placing emphasis on the allocation of resources to higher risk cases.



## The impact of effective practice guidelines

The critical question, of course, is whether these practice guidelines actually guide practice toward more effective outcomes? That is, what is the evidence that evidence-based practice is effective?

Validation studies in the juvenile justice systems of two US states have shown that the juveniles served by programmes that more closely match these guidelines have lower re-offending rates than comparable juveniles served by programmes which depart significantly from the guidelines. Moreover, these guidelines have proved to be more acceptable to service providers, and more practical to implement, than the alternative of requiring adoption of brand name protocol programmes in place of the more generic programmes already implemented.

### Further reading:

Cooper, H. M. *Research synthesis and meta-analysis: a step-by-step approach*. Sage Publications, 2009.

Cooper, H., Hedges, L.V., & Valentine, J.C (Eds). *The Handbook of Research Synthesis and Meta-Analysis* (2nd edition). NY: Russell Sage Foundation, 2009.

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Lipsey, M.W., & Wilson, D.B. *Practical Meta-Analysis*. Thousand Oaks, CA: Sage Publications, 2001.



## Systematic reviews in policy and practice

**Drawing on two published papers<sup>1,2</sup>, Professor Helen Roberts of UCL Institute of Child Health explores the value of systematic reviews and offers a case study example of the potential dangers of introducing interventions on the basis of only some of the evidence.**

### What do systematic reviews offer?

The question of 'what works' is a fundamental one not only for politicians and policymakers who need to devise or implement policies on everything from reducing juvenile crime to increasing the national wealth, but it is also fundamental for citizens on the receiving end of interventions.

In clinical decision making, uncertainty about the effects of interventions has been an important stimulus to the adoption of systematic reviews as a way of marshalling robust scientific evidence and bringing it to bear on decisions. Broad acceptance of the general principles of systematic reviews means that they are now commonplace in health: systematic review methods, for example, underpin the approach taken by National Institute for Clinical Excellence in producing guidance.

These methods, originally developed by social scientists, have now percolated widely and can be seen in fields as diverse as software engineering and religion. Put simply, the systematic review is a method of critically appraising, summarising and attempting to reconcile the evidence on a particular problem. They offer:

- a synthesis of studies in a particular field which no policymaker or practitioner, however diligent, could hope to read themselves
- a challenge to received wisdom – a challenge that comes from close examination of the underpinning evidence.



**IN CLINICAL DECISION MAKING, UNCERTAINTY ABOUT THE EFFECTS OF INTERVENTIONS HAS BEEN AN IMPORTANT STIMULUS TO THE ADOPTION OF SYSTEMATIC REVIEWS AS A WAY OF MARSHALLING ROBUST SCIENTIFIC EVIDENCE AND BRINGING IT TO BEAR ON DECISIONS**



### The challenges of systematic reviews

Considerable technical and conceptual challenges face systematic reviewers. To take one example, as the main determinants of health (and other) inequalities are social, then the interventions of most interest to reviewers with an interest in reducing inequalities are social interventions: social projects, programmes, and policies. Interventions in the housing, transport, environment, employment, justice and many other sectors are potentially eligible for inclusion. Robust evaluations of the outcomes of such interventions are, however, uncommon.

Systematic reviews in this area require flexibility and thought (like any piece of research), but there is no inherent reason why they cannot be made to answer useful and important social questions, and in some cases challenge conventional wisdom.

## Making reviews more user friendly

One particular criticism of reviews from the point of view of practitioners and end point users is their readability. A method to improve these aspects of reviews, used in the ESRC-funded *What Works for Children?* project ([www.whatworksforchildren.org.uk](http://www.whatworksforchildren.org.uk)), designed to bring research evidence and social care practitioners closer together, was the development of 'evidence nuggets'. These distil systematic review and other evidence into a few simple messages (see Box 1), but allow those who wish to 'drill down' to the studies on which these messages are based.

Feedback from practitioners on 'evidence nuggets' suggested that accessibility was more highly valued than detail. Such products, written in plain English, have the potential to promote a more democratic partnership between researchers, professionals, and users of services.

### Box 1: Extract from 'Evidence Nugget' on Traffic Calming

#### Key messages

- Child pedestrian injury arising from road accidents is a leading cause of accidental death.
- Children in poor neighbourhoods are five times more likely to be injured by a car than those in affluent areas.
- Area-wide traffic calming is designed to control traffic in urban residential areas and has been shown to be effective in reducing child accidents.
- Introducing an area-wide traffic-calming scheme is likely to be an effective measure in reducing inequalities in child health.

Source: Liabo, K. (2004), 'Traffic calming and childhood injury on the road', National Children's Bureau, London, 2 pages.

## The multiple functions of systematic reviews

Crucially, assessing 'what works' is only one of the many tasks that systematic reviews can fulfil and the others are often undersold. For example:

- systematic reviews have a simple stocktaking function – sometimes referred to as 'mapping' the evidence base. Simply knowing with some degree of accuracy what has been done previously, is important, if only to identify (and possibly shift) researchers' current priorities
- systematic reviews may act as drivers of future research by identifying gaps where future studies are needed
- finally, the reality – checking function of systematic reviews is important as they, like other forms of research, provide a parallel commentary on current policy or practice - often implicitly or explicitly challenging the evidence base underlying specific decisions.

## Conclusions

- Systematic reviews can 'work' but they are a tool, not a rule. They need to be embedded in an intelligent assessment of context, and with a close eye to problems of implementation. For example, while home visiting schemes have shown considerable promise, a group that has worked extensively in this area cautions against its use in circumstances of severe domestic violence<sup>3</sup>.
- Even where reviews provide an answer, or a partial answer, they cannot substitute for social value judgements, such as whether, in order (for instance) to reduce inequalities, some groups should be prioritised.
- The philosophical and methodological challenges in this field are considerable. But such reviews, performed thoughtfully, and with the input of users, can help to redress the emphasis still placed on single studies, and form a rational, basis for evaluating social interventions, and supporting decision making<sup>4,5,6</sup>.

### Box 2: Interventions: handle with care

#### Mentoring to reduce anti-social behaviour

Anti-social behaviour in childhood and adolescence is a problem for young people, their families, the police, communities and politicians. This has made finding a solution a political as well as therapeutic imperative. In 2003, the Government announced funding for mentoring schemes in England, arguing that 'mentors can make a real difference to... some of the most vulnerable people .... There are ... excellent examples of schemes which really work'<sup>7</sup>. Mentoring is non-invasive and does not require drug treatment. It is easy to see why it might work, and why it might be attractive to politicians and policymakers.

#### The evidence

A problem with interventions such as mentoring for anti-social behaviour that become politically attractive, and to which large sums of money are attached, is that some of the nuances or gaps in research evidence may be lost. Worryingly for instance, a three year follow up study of one well-designed scheme found that a subgroup of mentored young people, some of whom had previously been arrested for minor offences, were more likely to be arrested after the project than those not mentored<sup>8</sup>.

#### Conclusions

The political attractiveness of an intervention such as mentoring highlights the problems of action based on only some of the evidence. Mentoring may indeed work: there are many different kinds of mentoring, and some show better evidence of effect than others. But, clearly, social interventions are complex and are capable of doing as much or even more harm than medical ones. These interventions need to be thoroughly evaluated before and after implementation – with a focus on what happens in real life settings.

There is a danger that policymakers and practitioners will seize on 'evidence based practice' as a simple way to solve problems. In reality, as researchers are inclined to say, more work is needed to help policymakers deal with complex interventions and evidence.

Source: Roberts, H., K. Liabo, P. Lucas, D. DuBois, and T.A. Sheldon (2004), 'Mentoring to reduce antisocial behaviour in childhood', *British Medical Journal*, 328: 512–514.

## References/further reading:

- 1 Petticrew, M. and Roberts, H. Systematic reviews – do they 'work' in informing decision-making around health inequalities? *Health Economics, Policy and Law* (2008) 3: 197-211.
- 2 Roberts, H., K. Liabo, P. Lucas, D. DuBois, and T.A. Sheldon (2004), 'Mentoring to reduce antisocial behaviour in childhood', *British Medical Journal*, 328: 512–514.
- 3 Eckenrode, J., Ganzel, B., Olds, D., Henderson, C., et al. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. *Journal of the American Medical Association*, 284, 1385-1391.
- 4 LaPelle, N.R., R. Luckmann, E. Hatheway Simpson, and E.R. Martin (2006), 'Identifying strategies to improve access to credible and relevant information for public health professionals: a qualitative study', *BMC Public Health*, 6: 89.
- 5 Lavis, J., H. Davies, A. Oxman, J.L. Denis, K. Golden-Biddle, and E. Ferlie (2005), 'Towards systematic reviews that inform health care management and policy-making', *Journal of Health Services Research and Policy*, 10(1): 35–48.
- 6 Dobbins, M., S. Jack, H. Thomas, and A. Kothari (2007), 'Public health decision-makers' informational needs and preferences for receiving research evidence', *Evidence Based Nursing*, 4(3): 156–163.
- 7 Home Office. Mentoring capital grant round 2003/4. [www.homeoffice.gov.uk/docs/capital\\_mentoring\\_grants.html](http://www.homeoffice.gov.uk/docs/capital_mentoring_grants.html) (accessed 13 Aug 2003).
- 8 O'Donnell, C.R., Lydgate, T., Fo W,S,O. The buddy system: review and follow-up. *Child Behavior Therapy* 1979;1:161-9.

Petticrew, M. and Roberts, H. (2006) *Systematic reviews in the social sciences: a practical guide*, Blackwells, Oxford.



# Conclusions

## Some potential areas for collaboration and future research priorities

As well as informing Government social researchers on how to make best use of existing evidence, it is anticipated that this publication and seminar will generate potential questions and ideas for future collaborative activity between the policy, practice and academic communities.

Key issues highlighted to date in discussions with academics and policy and practice communities suggest the following potential areas for future movement:

- further exploration of 'reviews' to support outcomes-focused Directorate programmes in Scotland. This includes, in particular, reviews of the evidence underlying links and assumptions in the logic models that inform outcomes-based activity
- use of the Government Social Research (GSR) and academic networks and units, to further promote the potential use of quality assured systematic reviews by other Government Departments across the UK. This has the potential to include joining up with other evidence users in UK Departments to more clearly articulate user needs. For example, collaboration is underway between the National Policing Improvement Agency and The Campbell Collaboration. Disseminating information on academic and quality assured private sector providers of systematic reviews may also be helpful
- a more in-depth consideration of how language or practice barriers between policymakers, practitioners and academics could be addressed to improve knowledge exchange. The Campbell Collaboration User Group has the potential to explore how an international 'Government Users network' could be established to promote knowledge exchange between reviewers and policy administrators and analysts (social scientists) within Governments. The work of The Cochrane Collaboration also has the potential to inform such an initiative
- activity to improve our shared understanding of 'transportability' (i.e. will the intervention work elsewhere), policy transfer; and the factors which are likely to contribute to the success of an intervention through greater dialogue between academics, Research Councils, policy administrators and Government analysts
- looking to the past, exploration of the 'impact' of reviews, and identifying the types of review most likely to have (or have had) maximum impact on informing policymakers or practitioners; and looking to the future, encouraging systematic consideration of research evidence as early as possible in the policy cycle
- development of capacity building work (in partnership with Research Councils and The Campbell Collaboration) that would enable academics to think about how directly to engage Government users in the review process. Methods workshops for early career stage social scientists to promote high quality skills in the use of existing evidence could be considered. This could include expanding the principles of systematic reviews and applying them to other methods.





## Further information

### **Social Research in The Scottish Government**

For 40 years social researchers have played a key role in the development, implementation and evaluation of government policies in Scotland. Led by the Chief Researcher there are currently over 90 social researchers employed by the Scottish Government. They provide social research expertise to the five core Ministerial portfolios of Economy, Education, Environment, Health, and Justice & Communities, and to corporate services.

Some of the current functions of social researchers include:

- the interpretation of evidence, critical analysis and the provision of research based advice to Ministers and policymakers
- conducting reviews of published research and the existing evidence base
- carrying out research projects in-house
- commissioning and managing external contractors to carry out research projects on behalf of the Scottish Government
- engaging with academics and others in the research community to bring expert knowledge to policymaking
- disseminating Scottish Government research findings and encouraging their wider use.

Social researchers work closely with other analysts in the Government including statisticians and economists. They are also part of the wider UK Government Social Research (GSR) service and subscribe to its professional standards and code of conduct. Further information on Scottish Government Social Research can be found at: <http://www.scotland.gov.uk/socialresearch>

### **The Campbell Collaboration**

The Campbell Collaboration (C2) helps people make well-informed decisions by preparing, maintaining and disseminating systematic reviews in education, crime and justice, and social welfare.

The Campbell Collaboration is an international research network that produces systematic reviews of the effects of social interventions. The Campbell Collaboration is based on voluntary cooperation among researchers of a variety of backgrounds. The Campbell Collaboration's strategic and policy making body is the Steering Group and The Campbell Collaboration currently has five coordinating groups: Social Welfare, Crime and Justice, Education, Methods, and the Users group. The Coordinating Groups are responsible for the production, scientific merit, and relevance of The Campbell Collaboration systematic reviews, and they provide editorial services and support to review authors. For more information see:

[http://www.campbellcollaboration.org/about\\_us/index.php](http://www.campbellcollaboration.org/about_us/index.php)

## Seminar speakers

The presentation slides for speakers at ESRC/The Scottish Government Public Policy Seminar, Will it work in Scotland? Systematic reviews and policy transfer in Scotland, held in Edinburgh on 15 March, 2010 are available on the ESRC Society Today website at: <http://www.esrcsocietytoday.ac.uk/ESRCInfoCentre/about/CI/events/esrcseminar/systematicreviewseminar.aspx>

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### The Campbell Collaboration

[www.campbellcollaboration.org/about\\_us/index.php](http://www.campbellcollaboration.org/about_us/index.php)



### The Scottish Government

The Scottish Government is the devolved Government for Scotland. Established in 1999, it is responsible for most of the issues of day-to-day concern to the people of Scotland, including health, education, justice, rural affairs and transport. [www.scotland.gov.uk](http://www.scotland.gov.uk)

### Photographs contributed by:

ESRC and Celia McKenna, Scottish Government Office of Chief Researcher. Photographs feature Scottish Government Staff, and ESRC postgraduate interns Paul Jordan (University of Glasgow) and Beatrix Futak-Campbell (University of St Andrew's). The ESRC and SG internship scheme enables ESRC 2nd or 3rd postgraduate students to undertake three month fully funded internships with Scottish Government, many of which involve evidence review work.

### Gradskills

<http://www.st-andrews.ac.uk/GRADskills/>

### Scottish Funding Council Knowledge Transfer Scotland

Policy and Practice Conference: <http://www.hw.ac.uk/ktconference/>





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