Systematic reviews and impact assessments: Examining the evidence-base for the 'tools' of evidence-informed policymaking in public health.

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Introduction

Concerns about the limited influence of research evidence on decision-making have prompted a plethora of tools intended to present research evidence for policy audiences. These tools concentrate on the 'supply side' of the research-policy interface to channel relevant research findings into the policy process. The two most popular examples of such tools in the field of public health appear to be impact assessments and systematic reviews, each of which has been promoted as a coherent means of channelling evidence into appropriate formats for policymaking purposes (WHO 2013; Petticrew 2009). Cost-benefit analyses may also be used and scenario modelling, which was employed as evidence in high profile policy debates about minimum unit pricing for alcohol (Meir et al, 2010), is becoming increasingly popular. Yet, despite significant attention to refining the processes of reviews, impact assessments and cost-benefit analyses, we know little about how these tools are perceived and utilised within the complex process of policymaking.

Methods

This paper is based on a literature review of the available evidence concerning policymakers' experiences of using these tools, combined with 67 qualitative interviews with public health 'policy actors' (which we take to mean individuals involved in actively trying to influence public health policy, as well as those more directly involved in its construction) across the UK. For the literature review, we systematically searched four key academic databases with combinations of the terms: 'public health' + 'policy' + 'policymaker/decision-maker/civil servant' + [name of tool]. We also checked the reference lists of relevant articles for further publications of potential interest, conducted web searches for relevant grey literature and consulted experts in the specific tools identified for further suggestions. After reviewing abstracts / reports, removing duplicates, 40 potentially relevant publications were identified. After full-text review, 20 publications were deemed to meet the criteria for the review (i.e. that they drew on empirical data to explore policy actors' perceptions, or experiences, of at least one of the 'evidence tools' we were interested in; that the policy actors in question were concerned with public health; and that the publications were, owing to resource limitations, written in English). Data extraction was piloted by both authors, then, after making some refinements, all studies were reviewed and data were extracted by ES. KS then second reviewed all studies. There were few disagreements between the authors in reviewing and those that emerged were resolved through joint discussion.

In addition, we are interviewing a range of actors involved in public health policy debates. By 'policy actors' we mean individuals who are either directly involved in constructing national public health policies (civil servants and ministers), or in

interpreting national policies and developing local policies (individuals working in the NHS and local government), or who work to try to influence national or local public health policies (e.g. academics who work to influence policy, campaigning organisations such as large NGOs, parliamentarians and policy advisors). To date, we have interviewed 67 individuals (see Table 1).

Table 1: A breakdown of interviewees' by professional position

Interviewees' primary professional position (many individuals also had experience of working in other sectors)	*Total number of interviewees (2011-2013)*
Academic researchers	20
Individuals working in policy settings (largely civil servants)	15
Researchers working in independent/private research organisation (including think tanks)	1
Public sector researchers / policy advisors	3
Journalists or media communications staff	1
Politicians (including ministers)	4
Research funders	4
Public health 'knowledge brokers'	3
Senior staff in third sector / campaigning organisations	16
Total	**54**

The interviews were semi-structured and took place in two batches (the first 54 were undertaken in 2011-2012; the second batch, which is ongoing, commenced in 2013 and will be completed by Summer 2014). All interviews to date have been conducted by KS. The majority have taken place in a private room where, for the duration of the interview, only the interviewee and KS were present. A themed interview schedule was employed which focused questions around the role of research, advocacy and 'evidence tools' in public health policy debates in the UK. The interviews varied in length, lasting between 45-150 minutes (most were around 60-80 minutes). The research was conducted in line with University of Edinburgh's ethical guidelines. All interviews were digitally recorded and transcribed verbatim. The transcripts are currently being thematically coded via the qualitative data analysis programme, *NVivo10*, using a coding framework that is being developed iteratively, via analysis and re-analysis of the transcripts.

Findings so far:

(i) Diversity and similarities within 'evidence tools'

The accreditation and/or promotion of impact assessment and systematic reviews within health contexts by influential organisations such as the Cochrane Collaboration and the World Health Organisation suggests that there is a consensus (if not uniformity) on the particular process and benefits offered by these tools. However it is clear that none of the 'evidence tools' we considered are singular or even coherent tools (this is perhaps particularly true for impact assessments, which

vary enormously in scope and approach - see Boaz et al, 2006; Harris-Roxas & Harris 2011, and Kemm et al, 2004). However, whilst cost-benefit analyses, systematic reviews, economic models and various kinds of impact assessments are all distinct, they do seem to share the following common features: (i) they synthesise (and simplify) various different kinds of data / information; (ii) they have all been promoted as means of helping achieve transparency and evidence-informed decision-making; and (iii) they all embody (and potentially obscure) a series of assumptions (many of which are normative).

(ii) Advice on improving the use of 'evidence tools' within policy and decision making processes

Much of the existing literature on 'evidence tools' is concerned with helping researchers improve their use, effectiveness and/or 'impact'. Of the 20 relevant studies we identified, 11 concerned HIAs and 6 concerned systematic reviews (all of which were undertaken by the same team of researchers working in a Canadian context). We identified only one relevant study concerning modelling and one concerning economic analysis. The final study considered a range of different tools and systems intended to increase the use of evidence in policymaking. Some of the key recommendations emerging from this literature are summarised in Table 2, below.

Table 2: Key 'enablers' and 'barriers' to the use of 'evidence tools' identified in our literature review

Type of 'evidence tool'	Enablers of use in policymaking	Barriers to use in policymaking
Health Impact Assessments	• Resources and strategic posts to support IAs • Legislative requirements for IAs • Appropriate timing • Quantification of impacts • Clarity around guidance, methods and terms of reference • Good cross-sector relationships • Involving the right people in the IA (including key decision-makers and people from outside policy process)	• Insufficient skills/resources • Poor links between 'health' and other sectors • Narrow understandings of 'health' • Lack of one standard method • The difficulty in developing IAs that are independent enough to be credible with sufficient policy 'buy in' • Policymakers' resistance (e.g. IAs may be seen as bureaucratic, time-consuming and/or unnecessary)
Scenario/economic modelling	• Models that include policy relevant info (e.g. cost-effectiveness)	• A belief models are not fit for purpose • Lack of awareness of relevant models
Systematic reviews	• Results being made available in appropriate (tailored) formats • Sufficient evidence, time and resources to warrant an SR • A research-aware organisational culture • A desire for critical appraisal support	• Perception SRs do not provide clear policy guidance • Lack of time • Insufficient skills/resources • Insufficient evidence to warrant commissioning an SR • Existing SRs not answering relevant Qs

(iii) Policy actors' perspectives on 'evidence tools'
The potential to learn about policymakers' perspectives on these 'evidence tools' by reviewing the existing literature is reduced by two related tendencies. The first is the frequency with which studies report authors' evaluations of their own outputs, or processes in which they were closely involved (e.g. reporting policymakers' perceptions of systematic reviews or HIAs that the authors themselves produced). In addition to the potential for bias (which may be unintentional) in interpreting and reporting findings on the part of the authors, it is important to also consider that policy actors may have enhanced positive experiences and/or down-played negative ones to avoid offence. Secondly, a series of articles on each tool seeks to understand their 'impact' in order to improve it. This leads to the kinds of practical suggestions that are summarised in Table 2 but squeezes out prior questions concerning the fundamental worth of these tools within the broader policymaking process (i.e. existing studies seem to begin by asking *'how can I make this evidence tool more useful for and/or used by policymakers?'* and generally do not ask, *'how are these evidence tools perceived and encountered by policy actors in their day to day work / the broader policymaking process?'*).

Where policymakers' perspectives are discernible in the existing literature (and bearing in mind the caveats above), there is some clear indication that they have found the tools to be of value. However, and particularly for HIA, this value more often relates to enjoyment or perceived helpfulness of the process, than the input of new evidence, and particularly of new academic evidence. It may be that taking part in a consultative, reflective process (as part of an HIA) or even simply finding the time to sit down and read a report of either an SR or an HIA is a pleasurable process, in which policymakers find rare space for contemplation. As policymakers in one HIA in New Zealand said, the process did not introduce new evidence, but simply allowed space for 'under-considered' evidence (Harris-Roxas et al 2011). In the field of SR, Canadian studies have consistently demonstrated that the predictors of a review's impact lay more in organisational characteristics of the policy organisation (particularly in the extent to which the organisation was perceived to value research) than in any characteristics of either the individual policymaker or the review itself (Dobbins et al 2001a; Dobbins et al 2001b). Although, Dobbins et al (2001a; 2001b) also highlight the importance of providing the results of systematic reviews in a range of accessible and appropriately tailored formats.

All this suggests that the potential impact of 'evidence tools' may be located rather more in the demand-side context (e.g. of time and resource pressures), than in the efforts researchers have put into their supply of evidence (see, for example, Orton et al 2001). It therefore seems important to explore how a range of policy actors perceive, and think about, various kinds of 'evidence tools' in the context of their day to day policy orientated work (i.e. to what extent they value such tools, which is likely to shape the demand size context). So far, our interviews suggest that policy actors' interest in 'evidence tools' is growing and that this is partly because of the sense of credibility and sense of transparency that such tools can provide. As the following interviewee (who had recently left the Department of Health but who remained active in public health research and policy debates) described, impact

assessments offer an opportunity for civil servants and ministers to share some of the information that has been considered with external actors:

> Former civil servant: *"I think impact assessments, although they're boring and geeky… are… increasingly key, and it's increasingly key that they're published, which they by and large are, which is fantastic. […] They're out there, they're all public, on website, they're not hidden away, but there are very few people out in the media in particular who know what they mean and have scrutinised them properly…"*

However, as this interviewee also pointed out, it is unclear precisely who is scrutinizing the impact assessments that policymakers produce and publish. We asked interviewees about precisely this issue, focusing especially on interviewees based in campaigning organisations who we felt may be most likely to scrutinize (and potentially challenge) impact assessments. To date, none of our interviewees have suggested they dedicate much time to scrutinizing policy impact assessments. This largely seemed to be because most interviewees in campaigning roles seemed to assume that impact assessments were undertaken by policymakers only after policy decisions had already been made:

> Policy campaigner in a large health NGO: *"Sometimes you just get a really basic impact assessment that they've done something just to kind of tick the box and say they've done an impact assessment but it will just be a speculative model rather than really robust analysis of the financial impact of whatever policy. That's why I get annoyed with them. I think a lot of it is just, the government kind of makes its own definition of impact."*

Our interviewees with civil servants largely reinforced this assumption:

> Former civil servant (Department of Health, England): *"Often, [the] policy direction and policy choices are often in minds, and then you do the impact assessment, and then you end up getting the results… not always the result you want, but there is a tendency for that."*

> Civil servant (Wales): *"The problem, often, with impact assessments is they are post-hoc rationalisations. If […] the Secretary of State announced this [policy] about six months ago… you don't tend to get a situation where you in effect start with a blank piece of paper and say, "Well this is the policy problem and there are a number of options and let's pilot something, and on the basis of the pilot we'll do a partial impact assessment, we'll consult and then a full impact assessment". It just doesn't seem to work that way…"*

Similar claims were made about systematic reviews that are commissioned by policy actors. For example:

> *Academic with policy links (Wales): "I know that Public Health Wales will commission systematic reviews to support their own work around certain*

> *agendas, very much instrumental really; they want a systematic review on the evidence for something they're doing anyway…"*

In other words, 'evidence tools' were commonly described by policy actors in ways which suggested they often represented the symbolic use of evidence within policymaking processes (i.e. research that is referred on the basis that it supports policy decisions that have already been made – see Weiss, 1979). This reflects Boswell's (2008, p.471) assertion that policy organizations often *'value knowledge as a source of legitimation, or as a way of substantiating their policy preferences'*. The kind of legitimation that interviewees suggested 'evidence tools' provided was summarised by the following academic:

> Academic with policy and political experience: *"In government, it's not that they present the evidence neutrally, but they're aware that they can get hit if they're using the evidence in a particularly bad way, and so it's very nice to have the crutch of the systematic review to say, 'we're not just cherry picking the evidence'. […] The impact assessments and the cost benefit analyses and ex ante policy evaluations, I mean they get very widely used, because they're the numbers the policymakers want. So like this minimum pricing [for alcohol] thing, I don't think the Scottish government or the UK government would be talking about minimum pricing without [modelling by researchers at Sheffield University], because they can say, 'we want to do this because it will save this many thousand lives', and that is gold dust for policymakers - that's the number they all want. So for that reason they're incredibly, incredibly important."*

In other words, 'evidence tools' can be important means of supporting policy decisions because they appear to be objective and credible (or at least *more* objective and credible than single studies may be). In addition, the interviewee suggests that 'evidence tools' employing quantitative data and providing clear and simple 'answers' to policy questions represent 'gold dust' to policymakers, who are often desperate for some sense of certainty within complex (and often contested) debates. This reflects Alex Stevens (2011) observation, made whilst he was seconded to a UK government department, that tools which appear to help 'control' uncertainty within decision-making are highly valued by civil servants for their ability to strengthen policy narratives. In Stevens' (2011, p.243) case, he describes being taught by his civil service colleagues to construct graphs as 'instruments of persuasion by choosing data carefully and by restricting the number of cases and categories' depicted. As Stevens (2011) notes, this approach is in tension with academic calls for the socially constructed (and selective) nature of research and statistics to be openly acknowledged (see, for example, Latour and Woolgar, 1986).

Yet, at the same time, it was clear that many interviewees accepted that 'evidence tools' inevitably involve making a range of prior decisions. This includes decisions about the kinds of evidence that is going to be considered and also the kinds of impacts that are of concern (and, implicitly, those that are not). These decisions are often normative (e.g. is health equity or population level health improvement the

key policy concern?) but they may also be a (potentially less intentional) reflection of the location of policy actors. For example, most interviewees who had knowledge or experience of using impact assessments reflected that civil servants working in non-health departments tended to view 'health impacts' as relevant only to policies emanating from departments/directorates of health. Hence, it was claimed that civil servants would often automatically ignore health impacts, or consider only a very narrow range of biomedical factors (in sharp contrast to the broad-ranging approach to health advocated in most Health Impact Assessment tools). Several interviewees gave examples of non-health policies for which Health Impact Assessments had not undertaken, even though it seemed clear to them that they were highly likely to have health impacts, and it was suggested this occurred because civil servants working in non-health settings appeared to be unaware (or unconcerned by) health impacts. Similarly, several interviewees provided examples of efforts by policymakers to undertake an 'integrated' form of impact assessment (in which a variety of impacts were considered, including health), noting that health was often obscured, or sidelined, by the priority afforded to other kinds of impacts:

> Academic, policy advisor and HIA practitioner: *"Health, and particularly the health determinants stuff becomes invisible [in many IAs]. It's making the health determinants stuff visible that's the difficulty really and it's so easy for it to disappear…"*

Even within health contexts, it was clear there was disagreement about the kinds of impacts that ought to be attended to. A recurrent theme in both the literature we reviewed and in our interviewees is the tendency for Health Impact Assessments to be critiqued for not sufficiently prioritising health equity (see, for example, Parry and Scully, 2003). The following former civil servant suggested this had been an ongoing debate within the Department of Health in England:

> Former civil servant: *"I was lobbying for equity to be in impact assessments […] so the impact assessment I saw as the major tool in government and also in the department. […] [I wanted to] ensure that inequalities and health inequalities [were] in the Department's impact assessments, and [that] inequalities was in health impact assessments [but] I wasn't very successful in the end at doing that, for various reasons."*

Most of the individuals we interviewed seemed conscious of the potential for 'evidence tools' to obscure prior decisions and value judgements. It could be argued that, so long as actors are aware of these assumptions and values, they are not necessarily problematic. However, several interviewees expressed concern that 'evidence tools', particularly those which seek to quantify all information and provide clear policy 'answers', do sometimes function to obscure assumptions and values within policy debates:

> Academic and policy advisor: *"Cost benefit analyses conceal too much. […] As soon as you add up everything into a single number you are concealing far more than you are actually illuminating. And it's when you just get numbers*

that are completely meaningless. I've been involved with them. I think at one stage I estimated the social cost of [blank – health issue] I believe is however many hundred billion dollars, but what does that number mean? […] [T]here's so many value judgements involved and it just becomes black magic."

Somewhat paradoxically, then, 'evidence tools' seem to be both valued, and challenged, on the basis of the sense of certainty they can provide in policy debates. In this context, it is worth noting that our interview data suggests 'evidence tools', whilst not commonly scrutinized by most policy actors (see above), are increasingly becoming points of contestation within policy debates. Critiques of Sheffield University researchers' modelling of the likely impacts of introducing minimum unit pricing for alcohol (Meir et al, 2010) were, for example, referred to by several interviewees:

MSP (SNP): *"I regularly clashed with my Labour colleagues on the basis that they were quoting evidence which they were using to try and discredit the University of Sheffield. At one stage I was sent a […] Centre for Economic and Business Research Report [which] was being used to suggest that the Sheffield University modelling had been discredited. Now that report, which had been used to discredit Sheffield, was paid for by the alcohol industry..."*

All this leads us to conclude that 'evidence tools' represent means of drawing policymakers' attention to particular kinds of evidence (and, implicitly, away from other kinds). As such, they might best be understood as 'research-informed advocacy tools' constructed and employed by actors working to inform the policy process. Indeed, previous research demonstrates that regulated corporations, led by tobacco industry interests, worked hard to promote a business-orientated form of impact assessment within the European Union (Smith et al, 2010a; 2010b). Whilst the following quotation, from a recent article in *Convenience Store News*, indicates that at least some business actors are extremely concerned by the growing prominence of 'Health Impact Assessments' within policy debates:

"[T]he use of health impact assessments (HIA) is gaining headway in public policy. This information-gathering tool was designed by public health activists to encourage regulatory and legislative processes to prioritize public health in a wide range of decisions. In recent months, the biased use of HIAs has been championed on larger and more influential stages. […] What is most concerning with HIAs is not the focus on public health, but the monopolization of the process by ideologically anti-business organizations driving their own agenda in the name of "science."." (Kefauver, 2013)

In suggesting that 'evidence tools' might best be understood as 'research informed advocacy tools', we do not want to dismiss their potential for ensuring that policy debates are becoming more evidence informed. Rather, we are arguing, as the following interviewee suggests, that a growing interest in these kinds of tools (and in evidence-informed policy more broadly) is prompting actors with multiple (often

competing) agendas and interests to pay more attention to the evidence associated with their policy positions and recommendations:

> Senior research and policy manager in a large health NGO: *"[T]he whole [policymaking] process [...] has become very tied up in the Better Regulation agenda which insists on impact assessments and so on. The systematic reviews and [the need to have] good, strong academic evidence [...] has become more prominent. Probably more needed too because the tobacco industry has [...] upped its game really hasn't it? [...] So we just have to make sure we've got stronger, better evidence to back up whatever it is we're asking for, because we know they've got a lot of resource to throw at trying to prevent it."*

Although some public health researchers appear to remain committed to the idea that policymaking might, some day, be largely evidence-based, the ways in which our interviewees described encountering and employing 'evidence tools' simply highlights the inevitably political and value-laden nature of decision-making in democracies (see Smith, 2013).

Preliminary conclusions: 'black magic' or 'gold dust'?

Improving public health policy on the basis of academic evidence has been described as 'a labour of Sisyphus' (Bambra et al 2011). Given the scale of the challenge, and the importance of the goal, the availability of tools or guidelines to help researchers create impact from their findings has understandably generated considerable interest. However on the basis of our review and interviews with policymakers, we argue that there is little evidence that the guidelines and tools intended to mediate health research and expertise for policymakers yield quite the panacea that many academics appear to have presumed. In a rush to 'improve' the production, dissemination and uptake of 'evidence tools', questions about how they are perceived and encountered by policy actors within broader policymaking processes appears to have been overlooked.

While policy actors often value the sense of certainty and validity these tools can offer, our interviewees (combined with previous research) suggest that these tools can be simultaneously employed by actors with contrasting policy aims. This is often because the same kind of tool can be used to generate contrasting findings (by asking different questions or focusing on different kinds of evidence). However, it may also be (as a small number of interviewees suggested) that the same result can be interpreted in contrasting ways. This is because employing 'evidence tools' requires prior decisions regarding the importance attributed to both particular kinds of impacts and variable forms of evidence.

Our goal is not to suggest that 'evidence tools' are not playing a worthwhile role within the policy process. Rather, our argument is that the uncertainty and complexity of evidence, coupled with the inevitably ethical and political business of policymaking, means that the utility of these tools lies primarily in their symbolic value as a marker of 'good' decision-making. Additional benefits may also relate to

the time and space that the processes involved in 'evidence tools' can provide policymakers with for reflection and detailed consideration. Simply put, these tools are far from a panacea to the challenges of research impact on policy, and nor do their methodologies necessarily offer unique or special advantages. Nonetheless, such tools do appear to be performing an increasingly important role within policy debates and our findings suggest that researchers seeking to improve their use/impact within policy might fruitfully focus on the extent to which these 'evidence tools' are scrutinized and monitored within policy debates.

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