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The Evidence Information Service as a new platform for supporting evidence-based policy: a consultation of UK parliamentarians

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The value of evidence-based policy is well established, yet major hurdles remain in connecting policymakers with the wider research community. Here we assess whether a UK Evidence Information Service (EIS) could facilitate interaction between parliamentarians and research professionals. Fifty-six UK parliamentarians were interviewed to gauge the challenges of working with evidence and the potential utility of an EIS. Grounded theory analysis identified several barriers to evidence-based policymaking, however 85% of parliamentarians supported the EIS, preferring a rapid, impartial, concise, and optionally confidential service. We conclude that an EIS integrated with existing parliamentary systems could enhance dialogue between policymakers and researchers.

keywords evidence-based policy • citizen science • parliamentarian

Introduction

The idea of evidence-based policymaking (hereafter EBP) has been well established for decades (Oliver et al, 2014), in the UK and beyond (Banks, 2009). The last Labour Government, from 1997–2010, attempted to place EBP at the heart of their modernisation programme, with the Modernising Government White Paper calling for policies that were ‘forward looking and shaped by the evidence rather than a response to short-term pressures; that tackle causes not symptoms’ (Cabinet Office, 1999, 15). Government reports in other countries such as Australia make a similar appeal to review and facilitate ‘the effective use of scientific input in policy development in the public service’ (Harris, 2013). However, other reports into EBP illustrated how ministers and civil servants still struggle to incorporate evidence into their policy decision making (Hallsworth et al, 2011; Rutter, 2012). This has resulted in calls for policymakers in the UK and internationally to place greater value on evidence and what that actually means in the context of EBP (Henderson, 2012; Pearce et al, 2014).

Different countries approach EBP in slightly different ways, using specific mechanisms and processes to ensure that policy is more evidence-based. Lenihan (2013) has examined different developed western economy approaches to EBP and identified specific elements that could be useful to the UK context. These include the use of different types of methods and evidence to inform policymaking (not just hard sciences), the need for any producer of evidence to remain independent from government with diverse funding streams, leadership and transparency, using funds wisely, effective communication and the capacity to self-evaluate. The UK can utilise the best practices identified by Lenihan (2013) to not only emphasise the importance of EBP as best practice, but also ensure that the necessary processes are in place to ensure successful transference of evidence to specific policymaking and parliamentary domains. However, in spite of many examples of EBP best practice, it has been argued that the development of EBP faces a number of challenges. These challenges are principally centred around its inherent complexities and the recognised barriers in both the supply and demand of relevant, usable evidence (for reviews see Harris, 2013; Head, 2010; Rutter, 2012). One important barrier is the accessibility and utility of existing research evidence, and effective communication between professional researchers and policymakers, with a widespread recognition that ‘... some academics find it difficult to engage effectively with the policy process despite their expertise and potential contribution’ (Rutter, 2012, 4). Similarly, Head (2010, 80) notes that:

even where reliable evidence has been documented, there is often a poor ‘fit’ between how this information has been assembled by researchers (for example, scientific reports) and the practical needs of policy and programme managers. Researchers themselves are not often adept at packaging and communicating their findings, and many prefer to remain distant from direct engagement with public debate around key issues.

Consequently, it has been argued that one crucial enabling factor for EBP is ‘substantial *mutual understanding* between the roles of policy professionals, researchers and decision makers’ (Head, 2010, 82).

Several emerging changes to the culture of academic research aim to improve communication and access to research findings, including the need to demonstrate impact of funded research (for example, on public policy) and the open science movement, which aims to make all research publicly available. However, these are only partial solutions for EBP; researchers still need to improve the communication and accessibility of their findings, while policymakers need to become more adept at accessing and using research and understanding its strengths and limitations (Head, 2010; Talbot and Talbot, 2014). There is also the major issue of understanding what constitutes expert knowledge, the provenance of that science, and how it is valued and used by policy actors and politicians once it enters the public policy mainstream (given that there are different heterogeneities of political ideologies at play within policymaking). This paper does not want to specifically dwell on the ‘co-evolutionary relationship’ between scientific knowledge and political norms; others have done this more comprehensively (for example, in the case of climate change see Jasanoff and Wynne, 1998; Hulme and Mahony, 2010; Forsyth, 2012; Beck et al, 2014; Hulme, 2013). However, we do want to acknowledge that scientific evidence is subject to malleability (and even manipulation) once it leaves the realms of the experts and

scientists, and that any mechanism that transmits scientific knowledge to policy domains like the EIS has to be structurally hardwired to withstand the politicisation of science and the scientisation of politics.

Furthermore, there arguably remains a structural gap between the wider academic community and policymakers. A 2013 analysis by the Government Office for Science (GOS) indicated that of ~180,000 academics in the UK, less than 2% work directly each year with GOS (Government Office for Science, 2013). Whilst not all academics work in policy-relevant areas, and these figures do not capture the full extent of academic engagement with policymakers across central and local government in the UK, these figures nevertheless suggest that research expertise in the UK is not being utilised to an optimal extent by policymakers.

One potential mechanism to reduce this gap would be to create a broad 'hive mind' (expert panel) of professional researchers from science, technology, engineering, maths, medicine, the social sciences and humanities who would be willing to commit their time *voluntarily* to help policymakers obtain and interpret the most recent and reliable evidence on specific issues. To that end, we recently proposed an Evidence Information Service (EIS) where researchers could undertake activities such as the provision and explanation of peer-reviewed research findings, statistical consulting, and the critical assessment of data or conclusions (Chambers, 2014). This should help academics to fulfil the role most valued by policymakers to act as 'honest brokers' (Pielke Jr, 2007) and 'provide general expert advice... and act as a guide to the state of current thinking...' (Rutter, 2012, 11).

The initial idea for the EIS was based on our experience (as academic experts) of contributing to a similar service that facilitates rapid engagement between scientists and the media. The Science Media Centre (SMC) is an independent charity with a mission

to provide, for the benefit of the public and policymakers, accurate and evidence-based information about science and engineering through the media, particularly on controversial and headline news stories when most confusion and misinformation occurs. (Science Media Centre, 2012)

The EIS idea was first presented to an audience of ~40 scientists, MPs and civil servants at a meeting to celebrate the Royal Society's MP-Scientist pairing scheme in October 2012. We subsequently undertook two years of informal consultation of parliamentarians, academic and parliamentary researchers (including staff in the House of Commons and Lords libraries and Select Committee clerks), learned societies and third-sector organisations having an interest in evidence-based policy. These informal consultations suggested enthusiasm for the EIS and the feedback helped shape the proposed service that was the subject of the present consultation.

It is important to consider how a proposed EIS might complement and add value to existing mechanisms that already facilitate access to evidence and EBP. These services include the Government Office for Science, Chief Scientific Advisers and the Lords / House of Commons Science and Technology and other Select Committees, which provide routes for politicians and civil servants to obtain information about science and evidence-related issues. Expert advisory boards are regularly established to deeply investigate specific issues, such as the landmark report on homeopathy (House of Commons Science and Technology Committee, 2010). The House of Commons and

Lords Parliamentary libraries provide a much valued research service to Members offering swift and well-received briefings on thousands of inquiries each year, with subject specialists covering specific policy areas, answering queries and drafting research briefings. It can however be difficult for them in the time available to review all the latest academic research. The Parliamentary Office of Science and Technology (POST) provides an important in-house advisory service and supplies detailed briefing notes addressing specific public policy issues. Meanwhile, the Parliamentary and Scientific Committee and numerous specialised All-Party Parliamentary Groups liaise between Parliamentarians and scientific bodies, learned societies, science-based industry and academia. In addition, a large number of other organisations provide direct research support to Parliamentarians including government advice bodies, individual academics, universities, learned societies, think tanks, consultants, charities and NGOs.

Crucially, these existing systems do not provide a fully comprehensive mechanism for obtaining and critiquing the latest and most relevant research evidence. Trained researchers, with years of experience and subject-specific expertise could be utilised more effectively in this regard. Furthermore, informal consultation of staff providing internal research support in the House of Commons and Lords libraries and Parliamentary Select Committees suggested that one unified, centralised database of willing academic experts, such as that proposed by the EIS, would facilitate their access to and use of the latest academic research evidence, and would ensure they received input from a broader base of academics. Internal research staff also identified a number of other services that academics in the EIS could potentially provide, such as peer review of briefings and submission of evidence to Select Committees. Their suggestions echo recent reviews of evidence-based policy, which call for mechanisms to facilitate dialogue between Parliament and academic researchers (for example, Head, 2010; Rutter, 2012; Harris, 2013). Such a mechanism might also be particularly useful for addressing local issues or those faced by backbench or opposition MPs (who face limited resources compared with those in Government). The EIS could therefore offer a mechanism to aid communication and mutual understanding, helping policymakers to access, understand and use evidence more readily while also helping academics to engage more effectively and become aware of policy-relevant research questions. With this mission in mind, we sought to more comprehensively examine whether a niche exists for such a rapid matchmaking service, similar in philosophy to the SMC (Chambers et al, 2014). We undertook a consultation of UK parliamentarians to gauge their experience of obtaining and interpreting research evidence, how the EIS might be constructed to overcome some challenges, and whether they would use such a service if it did exist. Our consultation involved a semi-structured interview that included some more open-ended questions to gauge experience, whose responses did not always map onto discussion of the EIS, followed by several more structured and specific questions whose responses did map directly on to characteristics of the EIS or services that it might provide. This paper reports the outcome of this consultation.

First, we describe the methods utilised including how we recruited local champions (LCs) to interview parliamentarians, issues related to consent, sampling and the success rate of interviews. We then report analyses of interviews through the use of grounded theory (GT) methods for the more open-ended questions and content analysis (CA) methods to analyse responses to the more structured questions. The results are then presented in relation to the LC interview guideline themes of Experience (GT), Practicality (CA) and Utility (CA) of parliamentarians using evidence. We conclude by

considering the strengths and limitations of the current study methods and proposed future directions for the development of an EIS.

Consultation exercise methods

Recruitment of Local Champions (LCs)

The consultation exercise was launched through an article in the *Guardian* on 18 March 2014 which explained the EIS initiative (Chambers et al, 2014). In this article we called for Local Champions (LCs), members of the public who were willing to interview their local parliamentary representative. We recruited LCs instead of attempting to interview parliamentarians ourselves for several reasons. First, it was the only feasible approach in terms of time and geographical demands. Second, we felt that parliamentarians might be more predisposed (for example, in their regular constituency surgeries) to discuss these issues with one of their constituents rather than with the investigators in our team. Third, we sought to adopt a ‘citizen scientist’ philosophy and include members of the public interested in this issue in our research strategy.

As LCs signed up it became apparent that some regions of the UK were more prominently represented than others, so to drive recruitment in less represented areas we distributed information about the EIS consultation, including posters that could be displayed, to 523 libraries in Scotland, 95 libraries in Northern Ireland and 234 libraries in Wales. Information about the EIS and becoming an LC was also sent to various electronic mailing lists with an interest in EBP. Potential LCs were asked to check whether their parliamentarian had already been assigned to an LC on an online spreadsheet which listed all 947 parliamentarians in the UK (from UK, Northern Irish, Scottish and Welsh parliaments / assemblies). If their parliamentarian had not been assigned to an LC then they could request an information pack containing a form letter for requesting the meeting with their parliamentarian and the guidelines and questions for the semi-structured interview (see Supplementary Materials). All of the information and guidance issued to the LCs is included in the Supplementary Materials; the research team did not provide any additional training or supervision of LCs, although we did respond to specific email enquiries raised by LCs.

The guidelines for the semi-structured interview covered three main themes relating to obtaining and interpreting research evidence: Experience, Practicalities and Utility. The Experience questions covered how the parliamentarian had previously used evidence and advice in decision making as provided by experts in science, medicine, social sciences and the humanities, and any limitations or problems they had encountered doing so. Through the Practicalities section we hoped to discover the parliamentarians’ views on several logistical aspects of the proposed EIS, for example how responses from the service should be presented. Finally, in the Utility section the parliamentarian was asked what features of the EIS would be most important to ensure that it is seen as trustworthy, reliable and useful, and whether they would use such a service. These themes and questions were chosen following informal discussion with several parliamentarians and their researchers, parliamentary scientific bodies, and professionals in science and evidence-based policy.

Consent to participate

Ethical approval for this project was obtained through the Ethics Committee at the School of Psychology, Cardiff University. Parliamentarians were informed in the initial contact email from their LC that

Anonymised responses to these interviews will be collated and published in a peer-reviewed journal. Please note that while we (the project researchers) will maintain the anonymity of the responses you provide, the constituent with whom you meet is free to make the contents of your interview publicly available, with any comments attributed to you accordingly.

Informed consent was obtained from parliamentarians prior to commencing the interview (see Supplementary Materials for full statement of consent). After the interview the parliamentarian was provided with the transcript and/or notes and prompted for any comments. Three parliamentarians subsequently requested amendments or deletions from their transcripts or notes; these deleted statements were not included in the analysis. Anonymised interview transcripts and study data may be downloaded from <http://dx.doi.org/10.6084/m9.figshare.1402263>.

Local Champions sample

A total of 130 LCs were recruited over 11 months (from 18 March 2014–16 February 2015). LCs were recruited from across the UK (for a map of the geographical distribution of recruited LCs see Supplementary Materials).

Local Champion success rate in completing interviews

Of the 130 LCs recruited, 43% (n=56) completed an interview with their parliamentarian and provided notes or audio recordings, which were subsequently transcribed (see Figure 1). The majority of LCs (66%, n=86) contacted their parliamentarian (and informed us of the outcome), whereas the remaining 34% (n=44) either did not contact their parliamentarian or did not inform us of their progress. Of the parliamentarians who were definitely contacted, 22% (n=19) declined to take part in the interview, failed to attend the scheduled appointment with their LC, or cancelled at late notice without rescheduling. Reasons for declined involvement included a lack of time, prioritising other issues (for example, casework) during surgeries, and not seeing a need for the EIS. Ten LCs received no response from their parliamentarian despite repeated attempts to contact them by phone or email. One LC completed the interview with their parliamentarian but did not provide the notes or transcript and so was not included in any further analyses (see Figure 1).

Completed interviews

We received completed interviews conducted with at least one parliamentarian in all regions of the UK except Northern Ireland (Figure 2). The greatest proportions of parliamentarians interviewed were located in Wales (n=12, 21%), the South West (n=10, 18%) and London (n=9, 16%).

Figure 1: The trajectory of LCs in contacting and interviewing their parliamentarians.

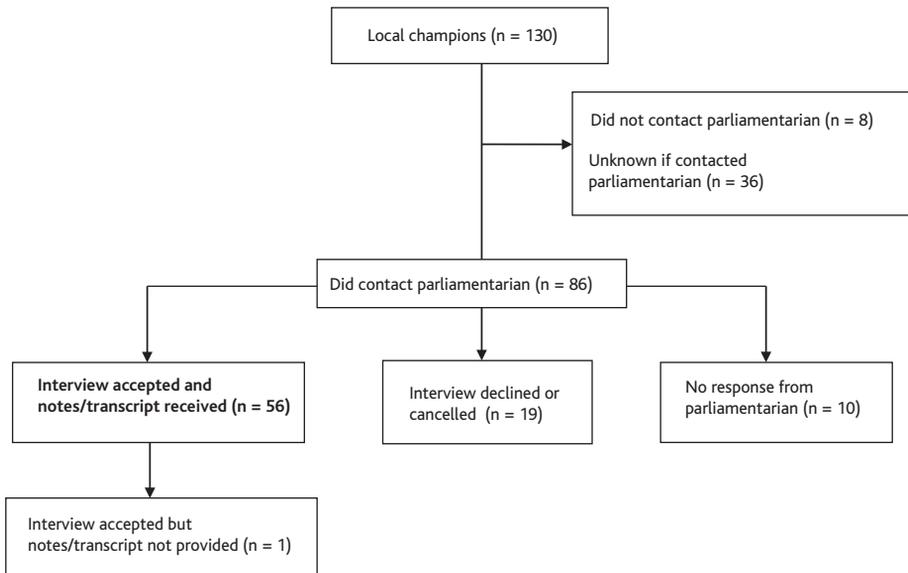
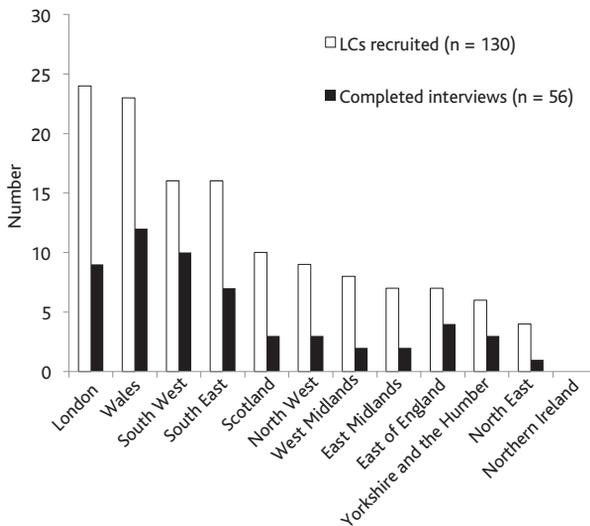
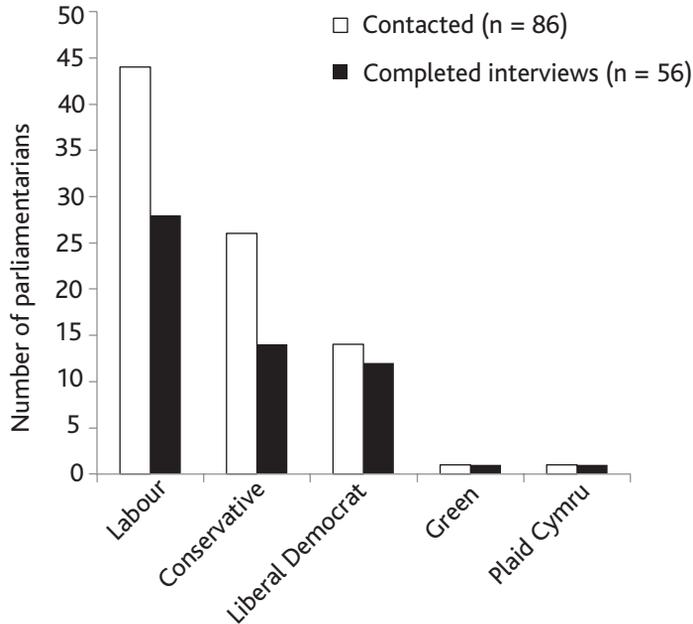


Figure 2: The regional distribution of 130 recruited LCs and 56 interviewed parliamentarians.



Our final sample of 56 interviewed parliamentarians included all major political parties, with the largest number representing the Labour party (n=28, 50%), followed by the Conservatives (n=14, 25%) and the Liberal Democrats (n=12, 21%; Figure 3). Whilst the largest number of parliamentarians contacted (of the 86 in total) were from the Labour Party, the conversion of requested into completed interviews was highest for the Liberal Democrats (86% of those definitely contacted completed an interview), followed by the Labour party (64%) and the Conservatives (54%).

Figure 3: The number of parliamentarians contacted and interviewed according to political party.



Grounded Theory analysis of completed interviews

Our overarching objective was to understand parliamentarians' experiences of using evidence and their views on the potential value of an EIS. This objective was met in two stages. We first sought to understand parliamentarians' experiences of using evidence via an open-ended interview format that explored subjective experience and was therefore suited to qualitative methods. The results of this analysis are presented below in the section *Experience*. We then investigated which features parliamentarians would find useful in the EIS. This data was derived from more structured interview questions that were amenable to quantitative content analysis. The results of this analysis are presented in the sections *Practicalities* and *Utility*.

The Critical Appraisal Skills Programme Qualitative Research Checklist (Critical Appraisal Skills Programme, 2014) was consulted to adhere to high standards of qualitative research methodology and analysis, including ethical issues of conducting qualitative research with respect to the impact of researchers on the data collection and analysis process. The research team consisted of seven white European middle-class individuals aged 22–48, including three females and four males. All were from an academic / research background.

Grounded Theory (GT) methodology (Corbin and Strauss, 2008) was used to examine the parliamentarians' experiences of using evidence within their roles. This form of exploratory analysis seeks to draw concepts from the empirical data rather than fitting the data in preconceived patterns. As such, the empirical data undergoes certain processes or procedures in order to produce a theory about a specific phenomenon, rather than testing an existing theory. An 'abbreviated' version of GT analysis (Willig, 2001) was used as the recruitment of LCs to conduct the interviews meant that the

data gathering and analysis occurred sequentially at the conclusion of all interviews rather than concurrently.

Ten transcribed interviews were used to construct a model of parliamentarians' experiences of using evidence. These cases were chosen from the full sample of 56 as they were amongst the fullest and most varied accounts. Analysis of the first ten interviews began by extracting the smallest level of information, meaning units, from the interviews (see Supplementary Materials for details and examples of meaning units; and archived data at <http://dx.doi.org/10.6084/m9.figshare.1402263> for the complete set). The verbatim meaning units were then abstracted into more general descriptive meaning units, for example: fewer resources / difficulty accessing information / available information is often biased / the influence of lobbying / difficult to evaluate what is objective scientific advice. This level of abstraction began the process of reducing the amount of data by grouping similar themes together. A final level of abstraction grouped themes together into categories and sub-categories through the process of comparison of variations, including similarities, differences and dimensions that emerged from the data (Corbin and Strauss, 2008), for example: resources / accessibility of evidence / bias in evidence. This final stage produced the model including 12 categories describing the parliamentarians' experiences of using evidence.

Saturation of the data

The initial interview data was collected to achieve maximum representative coverage of the UK, rather than being collected to the point of saturation of content. Saturation of the model during the analysis was conducted by comparing the data from an additional ten transcribed interviews to assess whether any new concepts arose outside of those derived from the initial coding of the model. Theoretical saturation of a GT model is reached once no new properties, dimensions or relationships emerge from the data (Corbin and Strauss, 2008). Only one additional sub-category arose from the additional ten transcripts, which was added to the model. As only one additional sub-category arose the model was considered to have reached saturation.

Results

Experience: a model of parliamentarians' experiences of using evidence

The final model consisted of 13 categories, 9 of which had sub-categories. Figure 4 shows a diagrammatic representation of the different categories produced by the analysis. The 13 categories fell into three broad areas and an overview of the findings follows. The first broad area, the **influence of previous experience**, showed how prior influences interacted with the parliamentarians' use of evidence. The second broad area described the parliamentarians' **current influences**, including their sense of **responsibility to be informed** on various topics and the **types of issue** they were required to address. Other current influences were **available sources of evidence**, the **resources** they had to gather evidence, how easy they found it **accessing evidence**, and the opposing concepts of **factors that override evidence** versus **championing evidence over other influences**. The third and final broad area concerned how parliamentarians used evidence, which considered both the pitfalls

and tactics used to navigate them. The first category within this area, **understanding scientific information**, addressed the difficulties of understanding technical and specialised information. The changing nature and contradictory findings of scientific exploration were encapsulated by the category **disputes and change in evidence**. Further, **bias in evidence** was also recognised. A tactic that some parliamentarians employed to deal with these difficulties was **scepticism**, to minimise vulnerability to invalid information. Further, the **process of dealing with evidence** outlined the parliamentarians' strategies for gathering what they believed to be robust and useful scientific information.

Each of the categories and sub-categories is described in detail and illustrated with quotes from the parliamentarians' transcripts below. In Figure 4 and the narrative of the model below, categories appear in **bold** with their sub-categories in *italics* joined with solid lines below. Links between the categories and sub-categories are shown with dotted lines and arrows.

Influence of previous experience

The way many of the parliamentarians approached the use of evidence in their role often related to their previous experiences, which were often inter-related. The specific areas included three sub-categories: *employment experience*, *personal interests and roles in parliament*.

The sub-category *employment / study experience* often related to how an MP's previous work experiences or topics they had studied at degree level impacted upon their use of evidence:

In my role as a member of parliament, obviously I had a life before that, in the world of business and technology.

In turn, the parliamentarian's previous *employment / study experience* could be related to and generate interests in particular areas in the *personal interests* sub-category:

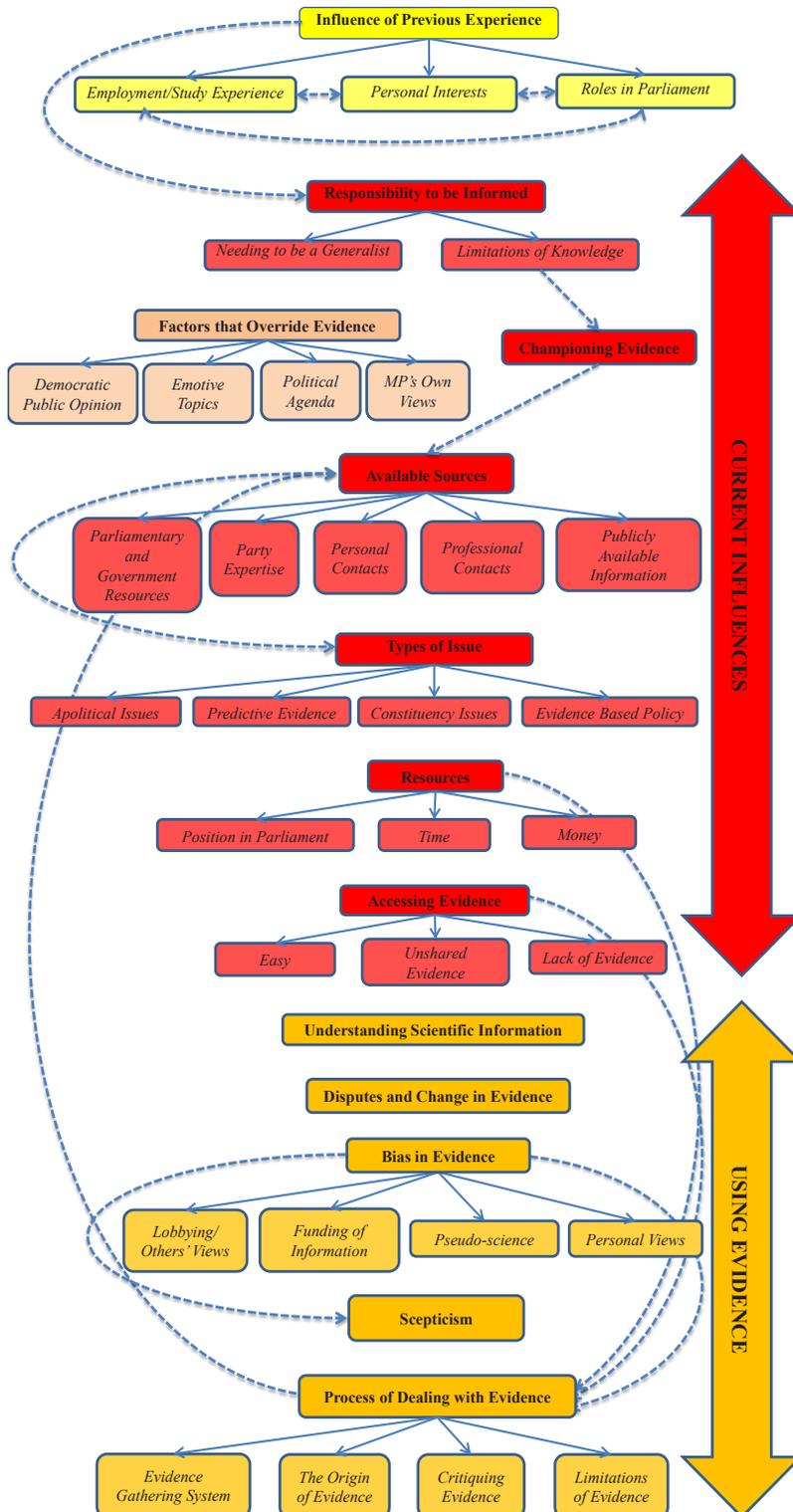
So I come from a background of policy research, so I kind of have an interest in that and some views about that.

The sub-category *roles in parliament* appeared to be the most temporally recent influence and outlined the different purposes and levels of evidence access some parliamentarians had experienced:

Well I've been fortunate in having a lot of access to the best available evidence in different fields through my role as minister and even now as a shadow minister I can still access good information.

... because we all wear lots of different hats, so if you're just a backbench MP then you'll be a generalist, in most cases, but if you are the party spokesman on x then you'll get to know a subject area.

Figure 4: The complete model of parliamentarians' experience working with evidence, as obtained using Grounded Theory analysis



Thus, several of the parliamentarians spoke about how their previous experience impacted upon the use of evidence in their current roles. It also influenced the next category, **responsibility to be informed**.

Responsibility to be informed

Many of the parliamentarians spoke about the responsibility they felt about being informed on issues that were raised in their work:

I think the biggest challenge for any member of parliament is that you've got a dual role, one is you actually do have a political role, as well as a responsibility to be fully informed on a subject.

This responsibility seemed to be particularly relevant when pursuing issues raised by constituents:

I would describe that as trying to get background information to understand what the person's raising and you know how important it seems to me and how worth pursuing is an issue.

Some of the parliamentarians reported that they needed to know a large variety of information, depicted by the sub-category *needing to be a generalist*:

Most of what we do I have to learn to be a generalist, so if people come with complex problems our job is really just to refer them on to a decent level of somebody who can intervene.

However, several of the parliamentarians recognised their own limits in the amount and technical detail they could hold themselves in the sub-category *limitations of knowledge*:

I don't think as a politician we can necessarily be better statisticians or know more about the most effective method of trialling something than a scientist. Obviously we need to listen to and take evidence from them.

As one parliamentarian stated, 'you don't know what you don't know', highlighting that sometimes there were areas of relevant research or information that they did not know about that they should have utilised. Therefore, the data suggests that the parliamentarians reported a twofold responsibility to be informed, in one respect they needed to be generalists and know a little about a lot of different things, yet they also needed to be able to identify the limits of their own knowledge, which is when they needed to consult with an expert.

Championing evidence

A *limitation of knowledge* was often the reason why parliamentarians sought to **champion evidence**. There were also some occasions where parliamentarians stated that they chose to follow the evidence over other sources of pressure:

I think I can point to myself as someone who puts evidence ahead of tribalism as well because sometimes that's... on that occasion, for example, as with many other occasions, I've backed what I consider to be the balance of scientific opinion on the issue and ignored the policy of my own party.

The above incidence is interesting in comparison to other parliamentarians stating that their primary driving force were the views of their party as outlined in the related category **factors that override evidence** stated below.

Factors that override evidence

Contrary to using evidence to guide practice, there were times when some parliamentarians stated that other factors were more important including the sub-categories of: *democratic public opinion*, *emotive topics*, *political agenda* and the parliamentarian's *own views*. This category has been coloured differently in the **current influences** section as it describes a different pathway to decision making outside of the evidence. What may be the most influential factor over scientific evidence is *democratic public opinion* whereby the parliamentarian represents their constituents:

... in a democracy you can take account of all the scientific advice you like and you can still come to a different decision if you are being representative.

In particular, *emotive topics* and the *political agenda* appeared to influence whether evidence was used:

It's got to do with the climate in which the political discourse takes place and the fact that sometimes you cannot achieve the kind of calm and rational environment in which evidence has any place to play at all, unfortunately.

Finally, the parliamentarian's own views can influence their use of evidence:

I believe very strongly in manmade climate change, but some scientists don't.

In addition, a parliamentarian stated that they needed to use their own judgement when using evidence, that the evidence alone was not sufficient to drive decisions. This category highlighted how the role of parliamentarians was sometimes incompatible with acting on the basis of the available evidence.

Available sources

When taking the path of **championing evidence** all of the parliamentarians talked about the variety of **available sources** of evidence, which included the following sub-categories: *parliamentary and government resources*, *party expertise*, *personal contacts*, *professional contacts* and *publicly available information*.

The *parliamentary and government resources* sub-category included resources such as: research staff, government departments that produce evidence, civil servants, government appointed experts / committees, the House of Commons library and

Parliamentary Office of Science and Technology. A popular source of evidence appeared to be the House of Commons library:

... one of the things that is very useful is the House of Commons library. They have written into their DNA a commitment to evidence based neutrality. So there's no political side ... So... you ask them a question and they have a huge number of desk experts on virtually every subject you could think of... you'll get anything from a very short summary briefing if that's what you asked for to a sort of full appended report, real detail.

Therefore, information was provided when requested, which was not weighted to any particular political stance. Apolitical evidence appeared important to some parliamentarians.

There was also *party expertise*:

We do have quite a lot of expertise in the party... as an MP most of the time you're voting the same way as your party colleagues.

So, very often, say defence comes up, I don't know one end of a tank from another... I trust that [redacted] knows one end of a tank from another, my colleague, I respect him, I respect his [redacted] values and principles and I take a punt that [what] he says is broadly what I would think.

Then there were more informal sources of evidence that some parliamentarians used, such as *people known personally*:

Sometimes I have asked my [redacted] who is a physicist.

Professional contacts might involve individual experts and companies involved in research, including universities, independent organisations and scientific societies. Some parliamentarians spoke about university staff conducting research on their behalf. In addition, some parliamentarians reported that they had specifically sought out contacts with specific experts:

I had met him on many occasions individually. I invited him down to the constituency to do an arranged public event where he spoke, at which I spoke as well and I kept in close communication with him.

But if you are the party spokesman on x then you'll get to know a subject area, you'll get to know people.

Or parliamentarians may turn to *publicly available information*:

I can't promise you that Wikipedia wouldn't feature at some point in the process, you know, these days, as a starting point.

Therefore, the data suggests that there were many sources of information or evidence available either through existing parliamentary or government resources, utilising existing personal contacts, through seeking out relevant professional contacts or through publicly available information.

Types of issue

There were many different issues that the parliamentarians cited as requiring evidence, including the sub-categories: *apolitical issues*, *predictive evidence*, *constituency issues* and *evidence based policy*.

Apolitical issues tended to relate to areas where decisions needed to be made, or opinions formed outside of the party manifesto:

... often those sorts of issues are not party line issues so in those sorts of cases I probably would try and find, I would want to find factual evidence. What does this mean? What does it actually involve?

These issues often had an ethical element to them, rather than a political one:

It tends to be conscience-type issues, so say something like euthanasia, another one. You know, people say in the Netherlands where euthanasia is more easily accessible the number of – there's evidence that some vulnerable people die earlier than would otherwise be the case.

Again, issues that were related to their constituency may fall outside the party manifesto and require evidence:

... maybe examples of something that a constituent will raise with me, and I'll think, well actually, I don't really know anything about that or I don't understand that.

Likewise, evidence attempting to predict the future may be required for issues outside of party opinions in the *predictive evidence* sub-category:

Is it a good idea to buy Tamiflu and spend millions, that's being a very wide debate at the moment, what's the scientific advice?

The main area the parliamentarians talked about requiring evidence for was in relation to *evidence based policymaking* and *challenging*:

I use the expression 'evidence-based policymaking' on a regular basis, so one assumes my intention or what I suppose I'm trying to convey is that it's evidence-based policymaking is better than doing it on hunch or prejudice.

... you probably tend to rely on the filter of the civil service, really for the evidence that would be presented to you in relation to taking policy decisions as a government minister... if you are looking at evidence in your frontbench

role in opposition it's very different because you don't have the civil service at your disposal so you actually have to rely on lobby groups, interest groups, charities, NGOs, universities... and is a much more informal thing.

It appeared that the source of evidence could differ according to whether the parliamentarian's role was in making policy or challenging it as the resources and sources for these different aspects of policy construction differed:

... if you were seeking to challenge whether or not they are following the right policies which is obviously the job of the opposition, is to scrutinise and hold to account the government. So an independent source of academically backed evidence you know would be useful and particularly where you don't have very many resources as the opposition in comparison to the government.

The above quotes relate to both the different roles of parliamentarians in power and in opposition and also reveal a link with the category of **available sources** as they are interrelated.

Resources

Resources appeared to play a large role in the quality and availability of evidence to the parliamentarians. This category was expressed through the interrelated sub-categories of *position in parliament*, *time* and *money*.

When a party is in government it receives additional resources such as civil servants and government advisors, compared to the opposition parties. Further, the House of Lords was reported to have even more resources, particularly time and funding, which parliamentarians reportedly felt short of:

As I say, it's often a question of time and often, I mean, I think this is why you see in the House of Lords that quite often they have more informed debate and their scrutiny of legislation is often to a higher standard, because I think they have more time and they have more expertise at hand to draw on. I think MPs are often restricted primarily by time, but... you know, if I had a huge staff and I could constantly say to people, go and find somebody who can answer this for me, it would be fine. That's not realistic.

Thus, limited resources, particularly in relation to time and money, meant that parliamentarians may not be able to access the amount of evidence they would like, especially when in the smaller, lesser-resourced opposition parties.

Accessing evidence

When asked how they had found accessing evidence the parliamentarians stated that it was either *easy* or more difficult due to *unshared evidence* of a *lack of evidence*:

Normally you can access the evidence that you need. Sometimes there are commercial or intellectual property decisions or sometimes government reasons why you can't get hold of it.

Much information held on [redacted] is confidential information held by large [redacted] organisations, [redacted] companies. Others are held with a degree of confidentiality by academic institutions. And there's a reluctance to share that information either because of intellectual property or because of commercial advantage.

Therefore, industrial and academic restrictions on data meant that some parliamentarians were not able to gain the evidence they would have liked. Sometimes parliamentarians reported not being able to access any relevant evidence because it did not exist in the sub-category *lack of evidence*:

... police officers apparently were telling us, we need to have this power, social workers, in the end were saying we need to have this power as well. I can make a speech saying that, but where's the evidence to back it up?

Therefore, the parliamentarian quoted above was required to act on a topic according to feedback from relevant professionals as there was insufficient research evidence to draw upon.

Understanding scientific information

This category describes how some parliamentarians recognised the limits of their ability to understand and utilise specialist scientific evidence:

There is a skill in scientists communicating effectively with policymakers. We're two different fields and even though there's some overlap, there is – sometimes you will have it's not overly technical because policymakers like technical stuff – but it needs to be explained in a way that makes sense to policymakers who may not have studied this to PhD level.

Generally I would probably consider myself a reasonably bright individual but scientific papers can be... quite challenging.

This category describes how some parliamentarians respected the level of specialist knowledge that some areas of research require, and believe that it is the responsibility of the scientists / researchers to make that information accessible and usable for policy development.

Disputes and change in evidence

Some parliamentarians stated that evidence could be difficult to deal with, especially when it was from the social sciences:

Most of that is in social science, really, where it's sometimes less clear, I think. Will that result in less knife crime or more, we don't know.

Further, as research develops, the evidence may change, which was made even more difficult when there was a difference of opinion between scientists:

I suppose even in science you can get more than one opinion between two scientists.

This category suggests that parliamentarians, wishing to gather facts to back political arguments, can feel vulnerable to the differences in scientific opinion and changes that occur through developing scientific discoveries.

Bias in evidence

The category **bias in evidence** related to parliamentarians' recognition that some of the evidence they came across had bias, including the sub-categories of: *lobbying / others' views*, *funding of information*, *pseudo-science* and *personal views*.

Many of the parliamentarians spoke about lobbying and the potential for bias in the sub-category *lobbying / others' views*:

And obviously there's no end of lobbyists that would want to give you advice but you might not want to take that at face value because they are coming from a particular place.

Some also recognised the bias inherent in research funded to provide a particular point of view in the sub-category *funding of information*:

But if the advice was given and researched to the contrary, which was the clinical trials of the pharmaceutical industry itself suppressed the results, then, you know, how is a minister meant to know?... the issue here is about when you are getting advice it's transparent enough for you to be able to know who paid for it and whether it's actually objective advice or whether it isn't.

Some parliamentarians reported that they realised that evidence they were given was not correct, as depicted by the sub-category *pseudo-science*:

...your constituents can lobby you, businesses can lobby, charities, unions can lobby you and say look – on a particular issue – have you considered this point of view? And here's the evidence for it, or here's whatever. And then we can choose to meet with them and sort of dig deeper into what their particular insight happens to be, or their point of view. Well that tends to unravel.

Finally, some of the parliamentarians acknowledged their own opinion as a source of bias in the sub-category *personal views*:

I care about the environment so, you know, I'm going to read a WWF submission in a different way to the way I respond, but there's still a bit of you thinking am I getting the whole truth?

This category describes how much of the information given to parliamentarians is biased and not to be trusted. It appears that the parliamentarians may then have to develop skills in recognising invalid information, which relates to the next subcategory: **scepticism** about evidence.

Scepticism

Considering the amount of bias the parliamentarians reported, several stated that they had developed scepticism about evidence as a tactic to deal with incoming information:

But also be aware that members of parliament and peers, we're a very cynical bunch and if there's a third party organisation saying that this is the current state of science that our first instinct is to say we don't believe you.

You do get a lot of stuff from people on both sides of the argument and you learn to be quite sceptical about almost everything you get sent. You know? So, from anyone who appears to be a protagonist. The challenge of course is that nobody's really independent.

It appears quite cynical that these parliamentarians believe that any information sent to them has an agenda, yet this stance appears to come from experience and is a consequence of their role.

Process of dealing with evidence

Due to the limitations of resources, accessing evidence and issues of bias, the parliamentarians spoke about tactics they employed in order to use evidence in their work in the sub-categories: *evidence gathering system*, *the origin of evidence*, *critiquing evidence* and *limitations of evidence*.

Several parliamentarians mentioned *having an evidence gathering system*. This process may begin with an initial search for information:

As a starting point I would probably ask my researcher to find out the basics for me and indeed the House of Commons library again.

Then, they may gather further information through avenues such as asking specific experts, gathering evidence from government information departments or gathering constituents' views and then putting the information together, in essence leading them back to the **available sources** category:

... and recently I did quite an extensive survey of constituents around the whole issue of welfare, you know, should it be cut, should it be increased, what could you cut and in [what] order... I have then been looking at what the implications of that would be, what would it cost if you were to cut this particular benefit, what would it release?

One parliamentarian spoke about taking the necessary time to gather strong enough evidence:

We go into such depth because we give things time and we consider them properly.

Where the evidence came from was important for some parliamentarians, expressed in the sub-category *the origin of evidence*. This may relate to going to the original sources from evidence summaries or gaining information from reputable and/or independent sources:

So you're making sure that, particularly in science, that actually the quality and integrity of our top academics are absolutely robust and beyond reproach and that everything is published and peer reviewed at the best that we could possibly know on the subject.

Then, once the evidence is gathered, some parliamentarians spoke about *critiquing evidence*, recognising that biases in evidence needed to be understood and taken into account:

So I'm listening to all this stuff and then fortunately, someone who has produced a very cogent and comprehensive demolition of this work also happened to turn up in the audience and proceed to just take it apart limb by limb... and you start seeing the holes in the work, that actually he hadn't cross-checked it against other potential causes.

Some parliamentarians had faith in the quality of the evidence they were given and had gathered, while a few recognised the *limitations of evidence*:

Of course you never get everything right all the time that would be foolish to think you could do that.

Therefore, many of the parliamentarians spoke about the processes they used to enable them to use evidence to try and reduce bias.

There was a sense of vulnerability from some of the parliamentarians about the quality of the evidence that they took forward to support their political arguments. They often had to rely on information from others, as they did not have the time or expertise themselves to research every issue. This often left a sense of the uncomfortable interface between the developing and imprecise nature of scientific study and the need to present political arguments seeking to demonstrate a truth.

The GT analysis identified several barriers to EBP, including the limited resources particularly for members of the opposition, the lack of available, reliable and transparent evidence, difficulties in accessing and understanding scientific information, dealing with conflicts and changes in evidence-based views, and coping with various forms of research bias. In addition, parliamentarians identified several factors that override evidence, including the public democratic opinion, highly emotive topics, the current political agenda or party line, and their own personal views. Several of these barriers to EBP, particularly those related to resources, accessibility and understanding or

critiquing of evidence, might be improved by facilitating communication between parliamentarians and researchers. Our next step was to gather feedback about our specific proposal for the EIS as one mechanism to facilitate interaction. This section of the interview used more structured questions, therefore these responses were analysed using content analysis.

Content analysis results

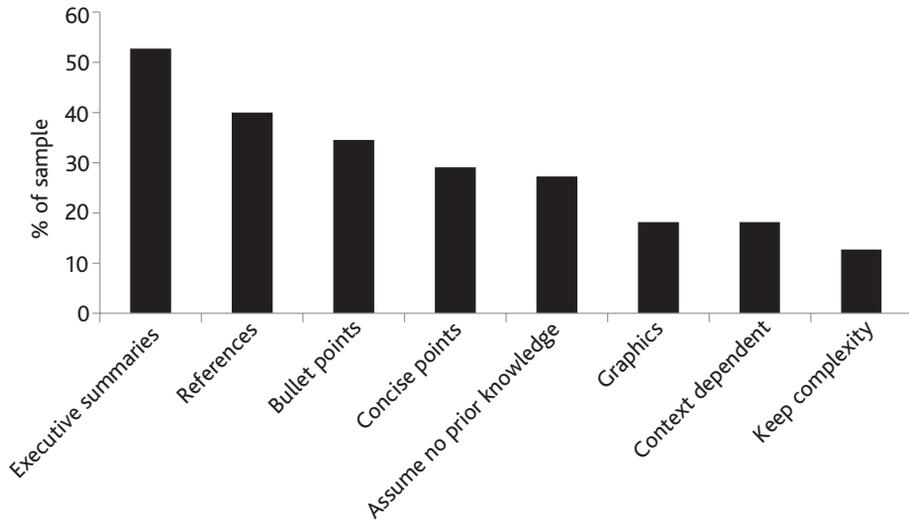
The content analysis was conducted by authors NL, JC, SM and AK on the questions within the *Practicalities* and *Reliability / Utility* themes of the semi-structured interview. These authors considered four transcripts, identifying the range of answers to each question to develop a coding scheme. Author SM then coded the remaining 52 interviews into the developed coding scheme, whilst being aware of any new data points to add to the coding scheme. The answers to these questions did not require interpretation, so researcher bias would be expected to be minimal.

Due to the semi-structured nature of the interviews, variability in interviewers (LCs) and interview length and scope, not all interviews included responses to all of the questions. Therefore the responses to each question are reported below as a percentage of the subset of parliamentarians who responded to that question (with the total number responding presented as “n=X”). Note that for nearly all questions the responses do not sum to 100% as some parliamentarians endorsed more than one response. Furthermore, only those responses endorsed by at least 10% of the total sample (n=56) are included here. See <http://dx.doi.org/10.6084/m9.figshare.1402263> for details of additional responses that are not presented below, either due to infrequent endorsement (< 10% of sample) or falling outside the remit of the questions. Finally, in addition to the analysis presented here, a sub-sample analysis of only the transcribed interviews (n=32) was undertaken to confirm the validity of findings using only the most complete and accurate interview records. The results from the transcribed sub-sample were very similar to those presented here from the larger sample so are not discussed further but are provided in the Supplementary Materials (Supplementary Table 1).

Practicalities

In the theme of *Practicalities* parliamentarians were asked ‘when the EIS responds to queries, **how should that information be presented?**’ (Figure 5). The most popular responses (n = 55) were ‘executive summaries’ (53%), which encompassed ‘one-page’ responses, wanting links to ‘further reading’ or information presented in ‘waves of depth’, followed by wanting ‘references’ to support evidence (40%). Many parliamentarians also preferred information presented in a way that ‘assumes no prior knowledge’ (which included ‘jargon free’) and which is in ‘bullet points’ or ‘concise’ (which included ‘easy to digest’).

Figure 5: Parliamentarians' responses to how they would prefer information to be presented within a proposed EIS (n=55).



In terms of the **preferred interface** for responding to queries (n=24), the most common response was by telephone (58%), followed by email (42%), and web-interface (33%). Parliamentarians were asked **how quickly they would like responses** to their queries (Figure 6). Most (61%) preferred very rapid responses ('within hours', which included the responses 'immediately' or even 'yesterday'):

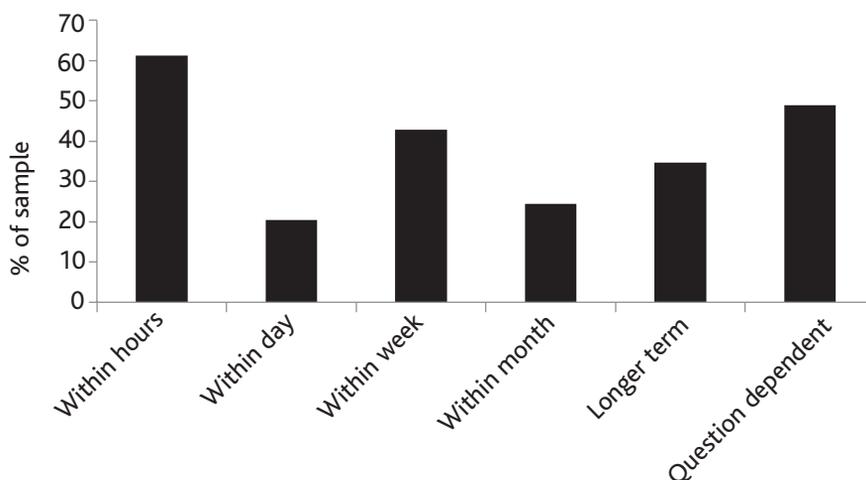
My experience in parliament is things come up like sudden storms very quickly and you have to respond very, very quickly to them.

However, many parliamentarians (49%) also commented that response time was dependent on the context and there were instances where a longer time-frame was acceptable:

Well that depends... Whether you need it for a debate tomorrow or whether it is to respond to a constituent's letter which, you know, in which case it could easily wait a month because you have a conveyor belt of things you are working through... So it would entirely depend on the circumstances.

On a related note, parliamentarians suggested that they would need information about evidence for a variety of reasons, with 'debates' (27% of total sample) and 'constituents' (13%) being the most common.

Figure 6: Parliamentarians' responses to how quickly they would prefer to receive information (n=49).



When parliamentarians were asked whether the EIS should be **confidential or open** (n = 51), most expressed preference for a service that was either confidential (37%) or could be confidential depending on the context (41%). Only a minority (22%) were in favour of a fully open and transparent service.

If they are open and publicly visible, it might mean that some inquiries aren't made... It's just people interact with something differently if it's all going to be published.

It depends. If it's relating to a constituent request, I would want it confidential, as a matter of course. If it relates to a committee report, I'd want it confidential until the committee has reported, but I would have no long-term concerns over confidentiality of committee-based work.

Many parliamentarians (n=32) specified reasons for preferring a confidential, or potentially confidential service. The most common of these (38%) was the concern that if questions from parliamentarians were made public this may signal plans to others:

If you are doing a lot of research you might not want people to know you are looking at something. You might be considering several things to do and you don't want it blasted all over everywhere that you've asked questions.

Parliamentarians (n=32) also expressed concern that if the service was open, identifying information about constituents might be made available (25%), or that public awareness of their lack of knowledge could cause them embarrassment (19%):

If you are asking an idiot question it is probably, it would give you more confidence if you know it is not going to be broadcast to the world that you are that thick! So I guess on some things it might be better to be able to just ask a question and just get a private answer back. You know, sort of

really basic information because you just don't understand something and you want someone to explain it more clearly.

Parliamentarians (n=45) then discussed **how many different experts** they would like to receive responses from on an issue and **how they would define an expert** for this purpose (n=42). As with the time window for responses, the majority of parliamentarians reported that the number of experts was dependent on the question or context (58%), as sometimes checking a fact with one expert would be sufficient but generally they would prefer to speak to several experts, either to gather differing points of view (49%) or to obtain some kind of consensus of views (31%). Some parliamentarians specified that one expert would be sufficient (22%), but a greater number indicated a preference for 'two or three' (29%) or 'several' (27%). (Note, 'two or three' included the responses 'more than one' and 'not too many'. 'Several' included 'as many as possible' and 'small pool'.)

If I'm looking for a straight, factual kind of summary of information, almost the equivalent of a literature search, or something like that, then I think one expert would be more than sufficient for me... If it was an issue where there is likely to be policy divide, then it would be good to at least have more than one view and be alerted to the counterarguments.

In terms of **who** parliamentarians would define as an expert (n=42), the most frequent response was 'academics' (52%), which included those with a 'Masters', 'PhD', 'academic qualification', 'Professor' and 'members of learned societies'. This was followed by an expert being 'reputable' (38%), which included 'recognised in field', 'already contributed to policymaking', 'published', 'credibility', 'not controversial' and 'work for a respected body'. Parliamentarians also felt experts should be people who are 'experienced' (31%), which included those who work in 'industry', 'do it for a living', or have 'recent experience', 'research experience' and/or 'practical experience'. Several parliamentarians felt that experts should be 'effective communicators' (24%), which included 'plugged into reality'.

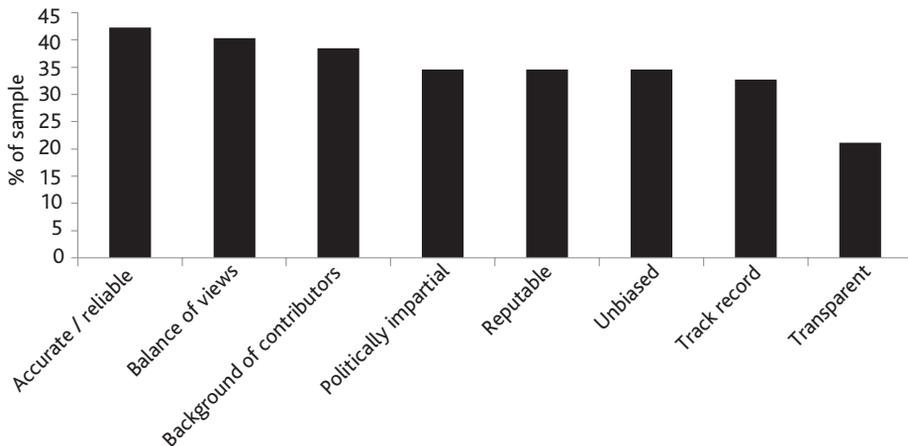
Utility

Parliamentarians felt that several **features of the EIS would be important for them to trust the information** provided (n=52) (Figure 7). The most cited features were providing accurate and reliable information (42%), which included 'peer-reviewed references' and 'published' work, and a balance of views when there are different views available (40%). Other important features were providing politically impartial and unbiased responses from contributors with reliable (which included 'clear credentials') and transparent backgrounds:

If you leave out those who take a contrary view... you can very rapidly become discredited if you leave out from your database... So I think parliamentarians do need to be able to speak to a cross-section of views.

It would have to do a lot of work to reassure people that it's objective and impartial I think that's both in terms of impartial between the political parties and impartial between competing political ideologies.

Figure 7: The features of the EIS that parliamentarians felt were most important to trust information provided (n=52).



Parliamentarians were asked about **potential barriers to uptake** of the EIS (n=39) (Figure 8) and **whether they would use it** (n=27). In terms of potential barriers, the most common was lack of 'familiarity' (44%) (which included lack of 'awareness' and 'reluctance with new service'), followed by 'timeframe of responses' (41%). Interestingly, 15 parliamentarians (27% of the whole sample) suggested at different points in their interviews that it would be useful to integrate the EIS within existing services, such as those provided by the House of Commons library:

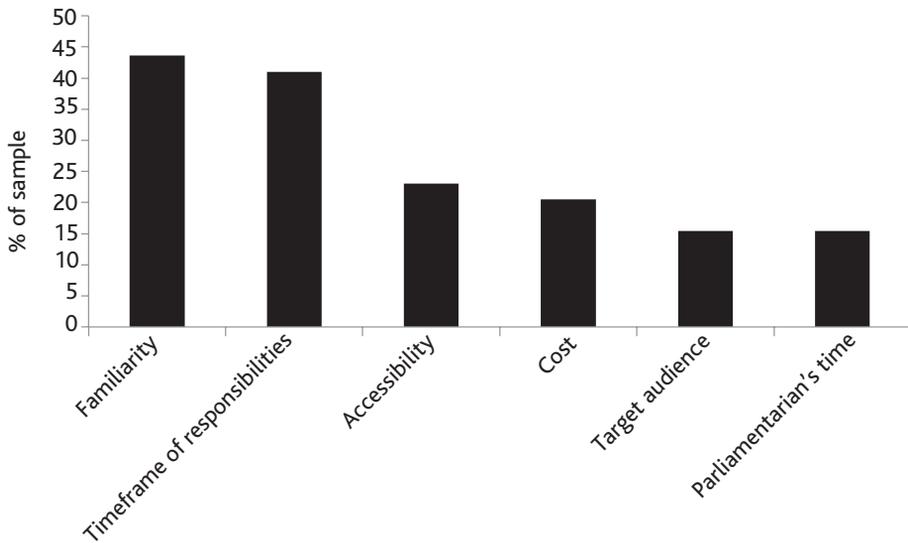
I think having it under the library would be so useful, because then it would be something that people are already doing, and that's just so much easier than adding a whole new list of services that are available to MPs and they have to try and find out where it is and where to go.

Finally, most of those asked (85%; 23 of 27) said they would use the proposed EIS, including 52% who were enthusiastic about it:

I think the proposition is excellent... I think that the more broad the research help you can offer, the better.

A smaller subset of 33% responded with a tentative 'yes', for example saying they would use the EIS if it was useful beyond existing services, was free and reliable:

I would certainly give it a go. And if I was satisfied with the effectiveness and efficiency of it and the answers were consistently trustworthy, I would carry on using it.

Figure 8: Potential barriers to uptake of the EIS (n=39).

Note: 'Target audience' refers to whether the EIS would be accessible to parliamentarians' researchers and staff as well as themselves and 'accessibility' includes 'simplicity'.

A minority of parliamentarians said they would not use the service or would be unlikely to use it (15%, 4 of 27), for reasons such as having too much information already, having sufficient existing services and resources and not seeing relevance to their work:

I probably don't see myself using this organisation very much because of the resources that I have to hand are meeting most of my needs as a parliamentarian in order to deal with the correspondence that I get.

We further examined whether parliamentarians' perceptions of the utility of the EIS varied by political party but no clear differences emerged. The numbers for this sub-analysis of the n=27 responses were small but indicated that 86% of Conservative MPs, 77% of Labour MPs and 100% of Liberal Democrat MPs said they would use the proposed EIS. We also examined whether the outcome of the 2015 UK general election, held on 7 May, altered support for the EIS among the MPs who survived re-election. Of the 24 MPs interviewed prior to the election, 22 responded that they would use the EIS (91%). Of the 17 of these MPs who were re-elected, 15 fell into the same category EIS (88%). Therefore, despite significant change in the political landscape following the election – which saw 10 of the 11 interviewed Liberal Democrat MPs losing their seats – support for the EIS remained relatively constant in our sample.

Discussion

Given recent criticism about the lack of EBP in the UK and beyond (Banks, 2009; Hallsworth et al, 2011; Rutter, 2012), the aim of this consultation was to gather UK parliamentarians' views on a proposed EIS, a rapid matchmaking and advisory service

aiming to connect policymakers with the wider network of research professionals in science, technology, engineering and maths, medicine, social sciences and the humanities. Our central finding is that the majority (85%) of parliamentarians reported, when asked, that they would use such a service, particularly if it could respond rapidly, be of limited cost and interface with existing information provision services to maximise efficiency, access and awareness.

In this sense, the EIS can be viewed in much the same way as clearinghouses, which act as central organisational points (physically or remotely) from which particular information can be accessed rapidly by external parties. The difference is that the EIS will be tailored to meet the needs of parliamentarians and policymakers rather than the public domain. There is a wealth of literature citing the importance of clearinghouses, especially in how social policy derives its scientific evidence and how clearinghouses can engender greater EBP practice (see Soydan et al, 2010; Cartwright and Hardy, 2012; Mullen, 2014). The EIS can be seen as representing both a physical and remote clearinghouse on all manners of scientific evidence – and here we use the word scientific broadly to include STEM subjects, social sciences and humanities and the arts.

In the following sections we discuss some of the methodological limitations associated with the consultation, its main findings with respect to the themes of experience, practicalities and utility, and the potential future directions for the proposed EIS.

Methodological issues related to the consultation

The consultation was intended as a qualitative study of parliamentarian views on the efficacy of the proposed EIS. Given the scope and size of the consultation (there are in total 947 parliamentarians throughout the UK), we planned for semi-structured interviews to be conducted by local champions (LCs) seconded in each constituency. This enabled LCs to contact their respective locally elected representatives (predominantly MPs) over the course of 11 months. This methodology involving ‘citizen scientists’ as researchers proved to be an effective strategy, achieving a higher response rate than similar internal parliamentary consultations of parliamentarians about how they access and use research evidence. Although just 130 LCs responded to our call, over half (66%, n=56) of all parliamentarians that were definitely contacted by LCs completed an interview, which compares favourably with the 11% of MPs contacted (n=29) who completed an interview for an evaluation by the Parliamentary Office of Science and Technology (POST, 2010), and it is considerably better than the 2% response rate (12 MPs) to a 7-question email survey conducted on behalf of the Parliamentary and Scientific Committee by Lord Oxburgh (Oxburgh, nd). Another advantage of conducting the interviews via LCs was that members of the public rather than policy academics were engaged in this research, raising these issues on the radar of constituents and highlighting its importance to parliamentarians. One potential limitation of our sample of 56 interviews, which also applies to the previous consultations mentioned above, is that it may be biased to include parliamentarians with an existing interest in science and EBP.

Although the high response rate allowed unprecedented access to UK parliamentarians, our sample of 56 remained modest due to the limited recruitment of LCs, particularly in Northern Ireland, Scotland and the North of England (see

Figure 2 and map S1, Supplementary materials). Nevertheless, the sample was broadly representative in that it included most UK regions and all of the major political parties. Twice as many Labour as Conservative and Liberal Democrat parliamentarians were interviewed, reflecting the greater number of Labour parliamentarians who were contacted by LCs in the first place. This may have been linked to the launch of the consultation in the *Guardian*, which may have recruited more politically left-wing or liberal LCs, who could have been more motivated to contact their elected representative if they shared similar left-of-centre political views. Interestingly, the highest response rate (conversion of requested to completed interviews) was seen for Liberal Democrats, which is consistent with the over-representation of Liberal Democrats agreeing to be interviewed in a previous consultation on a related topic (POST, 2010).

Although the use of LCs proved reasonably effective in accessing parliamentarians, it came with some costs. We had little control over the specific interview procedure, particularly the content and structure, despite providing clear guidelines. Furthermore, we did not have the resources to provide formal training or supervision of LCs. This resulted in not all interviews covering all of the questions and issues covered in the consultation. We were also cognisant that the environment in which the interviews took place was beyond our control, which could possibly influence both interviewer and interviewee (Denzin, 1970; Valentine, 2005) and that impression management and appearance of the interviewers (LCs) – both of which were beyond our control – could have been integral to the overall success of an interview (Oppenheim, 1993; Trochim, 2001). In addition, we had no way of measuring or controlling for researcher bias during the interviews given that interviews were conducted by different LCs. Notwithstanding the above methodological limitations, our consultation exercise provided novel information into suitability of an EIS. The following discusses these insights in relation to the interview guideline themes of *Experiences, Practicalities* and *Utility*.

Experiences in use of evidence

The experience of parliamentarians in relation to the use of evidence in informing their day-to-day role was analysed using a Grounded Theory (GT) approach. The GT analysis identified several strengths and weaknesses consistent with issues and themes raised in previous consultations and reviews. Principal weaknesses included the limited resources of parliamentarians, particularly of those not in government, the lack of available, reliable and transparent evidence, and difficulties in understanding scientific information, dealing with conflicts and changes in evidence-based views, and various forms of research bias. Most of these issues resonate with the findings in both the evaluations by POST (2010) and the Oxburgh report (nd). In addition, our consultation found that parliamentarians identified several factors that override the use of evidence, including public democratic opinion, highly emotive topics, the current political agenda, and their own personal views.

Our findings regarding how evidence is sometimes overridden may indicate how the use of evidence to inform policymaking can become disregarded as more pragmatic managerial modes of parliamentary governance take precedence. The proposed EIS is unlikely to address the factors that override the use of evidence; however it may help overcome challenges associated with lack of accessibility, immediacy and

clarity of research-related information. For instance, some of the existing in-house parliamentary systems as mentioned in the introduction are provided by civil servants for those in government, highlighting the important role that the civil service plays as a gatekeeper within the science-policy interface and ensuring elected representatives are given timely and relevant information, as Talbot and Talbot (2014) have indicated. Yet all parliamentarians, including those in backbench or opposition roles, require rapid access to evidence to enable effective parliamentary scrutiny and to respond to constituents and other (for example, local) issues. These parliamentarians make great use of existing parliamentary information provision services, such as those provided by the libraries, which could be complemented by providing an external and independent EIS. This point appropriately leads onto discussion of our remaining two themes, *Practicality* and *Utility* of the EIS.

Practicality and utility of the EIS

The data on the Practicality and Utility of the EIS was analysed through content analysis (CT). The questions in this section of the interview were more structured and considered what the EIS should look like and whether parliamentarians would use it. Although not all parliamentarians were asked about (or commented on) all of the issues in this section, a large number of responses were obtained for each question and some clear and consistent findings emerged from the content analysis. Parliamentarians emphasised the need for a balanced, politically impartial, and accurate service that is flexible and capable of responding to enquiries very rapidly (within hours), ideally via telephone or email. Such a service could complement those already provided by, for instance, the House of Commons and Lords libraries and lends itself very much to our proposed mechanism, which aims to be independent of any political affiliation and exceptionally rapid, with the EIS team being able to draw on a comprehensive database of academic experts. Parliamentarians also indicated that on some occasions they would only need to speak to one expert but sometimes responses from several experts would be helpful, particularly if a range of evidence and opinions exist on an issue. Many parliamentarians felt that the EIS should include academics of varying levels of seniority, however many also felt that reputation, experience and track record, both in terms of research and of working and communicating with policymakers, were important. The preferred format for the presentation of information about evidence was in clear and concise summaries, in language suitable for non-specialists, with supporting references and with further information or reading for greater depth when required. Our findings on preferred presentation format and the need to represent a divergence of views echo those of a previous consultation carried out by POST (2010). The POST evaluation also suggested that while there is not necessarily a concern with the *quantity* of information available, parliamentarians need help navigating it, analysing it and having reliable, impartial, trustworthy information – themes that repeatedly emerge in all sections of our analysis.

Many parliamentarians appreciated and supported, in principle, the idea of an open and transparent service, consistent with a move towards more open policymaking as emphasised in other consultations, reports and government blogs (Adams, 2014; Banks, 2009; POST, 2010; Rutter, 2012). Nevertheless, the majority of parliamentarians (78%) felt that this would limit the use of the EIS. Reasons for confidentiality were linked to legal or operational requirements, such as not breaching constituent privilege,

while others were more strategic or personal, such as avoiding embarrassment or media scrutiny. This preference runs counter to the views of some members of the civil service who prefer the policy process to be more open for practical issues. For example, civil servants in the Department for International Development (DfID) publicise all their information because they argue that if information was publicised in isolation, there is no overall context to international development policy. By being transparent through the synthesis of all information commissioned and collected, users can trace ‘the evolution of a programme from inception and initial objectives all the way through to outcomes’ (Adams, 2014).

Conclusion and future directions

Our empirical findings provide crucial preliminary evidence in support of an EIS. The proposed mechanism parallels suggestions arising from other consultations of how to increase parliamentary engagement with academia. For example, a recent series of UK workshops run by the parliamentary outreach service, involving 140 academics and 25 staff from the Houses of Parliament, concluded that academics are uncertain about how to engage with parliament; and both academics and parliamentarians lack the time to seek out opportunities and contacts, struggle to communicate effectively with each other and are concerned about bias (Saint, 2014). One proposed solution was to create a crowd-sourced database of interested academics with their area of interest / expertise, and another was to create an online forum allowing academics to discuss ideas and queries with Parliamentary staff. Based on the findings of the current consultation, we suggest assembling a large national panel of reputable and experienced academic experts who are willing to respond to enquiries quickly and according to specific guidelines. The EIS would develop the database and train expert contributors, prepare a profile on each expert which would include publications, experience and metrics to provide some measure of expertise, declaration of conflicts of interests, political involvement, and so on.

On the basis of these findings we recommend piloting the EIS as an external resource for existing Parliamentary information provision services, including the House of Commons and Lords libraries. It is clear from this and previous consultations that the libraries are one of the primary sources of information on evidence-based issues, with over 90% of interviewed parliamentarians regularly using them and supporting such ‘in-house’ services (POST, 2010). The benefits of piloting the EIS via existing services, perhaps with just one research section initially, would include the following: 1) Confidentiality issues would be avoided as they would fall within existing rules; 2) problems in communication and ‘translation’ would be resolved as the libraries are accustomed to feeding the requested amount of information back to parliamentarians in helpful and familiar formats; 3) library staff are used to responding to enquires within rapid timescales and facilitating direct communication between parliamentarians and experts when required. The libraries could retain control over content and make such use of any material from the EIS as they saw fit. The EIS, in conjunction with existing information services, could thus provide research professionals with a ready format for engaging with parliamentarians.

Acknowledgements

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Supplementary material

PART A. Template letter to send to your local MP/MLA/MSP/AM

Please be sure to include both the letter and the EIS proposal in your email. This includes all text between <START EMAIL> and <END EMAIL> below. The email must include the section below 'A proposal for a UK Evidence Information Service'.

<START EMAIL>

Subject: Meeting request from local constituent

Dear [INSERT PARLIAMENTARIAN'S NAME HERE],

I am a member of your constituency who is interested in how evidence is sourced and used in parliamentary debates and policy. As you may know, there is currently an initiative being led by researchers at Cardiff University, the University of Exeter, and University College London to develop a UK 'Evidence Information Service' (EIS) provided by researchers in academia and industry for parliamentarians. **Further information about the EIS is appended to this email.**

The developers of the EIS are coordinating a national consultation exercise to seek feedback from parliamentarians, which they will use to tailor the EIS to your needs. To fulfil this aim they are recruiting local constituents from across the country to meet with their elected representatives.

I am one such local constituent and would like to discuss with you how you currently access and use evidence in your work, what you think of the proposed scheme, and whether you have any ideas about how research specialists can usefully contribute to policy-making.

To this end I would like to make an appointment to attend your surgery for a brief (20-minute) meeting to ask a number of specific questions. If you agree to meet me I will confirm on the day your verbal consent to participate in the interview, which you are free to decline. The interview may be recorded and I will also take notes. The recording and notes will be fed back to the research team, who will supply you with a transcript of the recording (where applicable) and copy of the notes. These will then be analysed and published in an anonymised form within a peer-reviewed journal.

This research is being overseen by Dr Chris Chambers (Cardiff University; chambersc1@cardiff.ac.uk; 02920 870331), Dr Natalia Lawrence (University of Exeter), Dr Andrew Kythreotis (Cardiff University), Dr Gerard O'Grady (Cardiff University), and Dr Sven Bestmann (University College London). The project has been approved by the Ethics Committee at the School of Psychology, Cardiff University, who can be contacted directly in the event of any concerns or complaints (psychethics@cardiff.ac.uk).

Thank you in advance for your participation.

Yours sincerely,

[YOUR NAME]

A proposal for a UK Evidence Information Service

1. Summary

We are proposing to establish a **UK Evidence Information Service** (EIS), which will work with existing systems to facilitate dialogue between politicians and the wider network of professionals in science, technology, engineering, maths, medicine, and the social sciences.

The aim of the EIS will be to act as a rapid matchmaking and advisory service, connecting politicians with specialist scientists in academia and industry. The EIS will host a database of research professionals who are willing to commit their time voluntarily to help policy makers obtain and interpret the most reliable evidence on specific issues. Such activities will include the provision and explanation of peer-reviewed literature, statistical consulting, and the critical assessment of data or conclusions.

The EIS will operate in two modes. The **proactive mode** will work closely with policy partners and will draw on the expertise of Parliamentary Office of Science and Technology to produce succinct briefings that address key issues in upcoming parliamentary debates. Following consultation with experts, these briefings will synthesise, in succinct form, the state of knowledge about the issue at hand, focusing on three areas: (a) *what we know*; (b) *what we're unsure about*; and (c) *what we definitely don't know*. Following expert-led analysis of each debate, the EIS will also provide follow-up information for parliamentarians.

The **reactive mode** will provide a fast-track information service through both an online interface and via telephone. Civil servants and politicians in the UK, Northern Irish, Scottish, and Welsh representative bodies will be able to contact the EIS either via telephone or a secure online interface to raise queries. EIS staff will assign each question to an academic discipline or series of disciplines. These will then be linked to one or more panel members with expertise in that field, and crucially, within a 24-hour time frame. The reactive mode seeks to facilitate lines of communication between politicians and research professionals, and will not synthesise, summarise or edit the information provided by experts.

2. This consultation exercise

It is crucial that the EIS is developed to meet the needs of parliamentarians. We are therefore launching a national consultation to seek feedback about the proposal from as many parliamentarians as possible. You have been contacted by a member of your constituency seeking to meet with you and complete a short interview. We hope you will be willing to engage with your constituent and assist in this research project.

Anonymised responses to these interviews will be collated and published in a peer-reviewed journal. Please note that while we (the project researchers) will maintain the anonymity of the responses you provide, the constituent with whom you meet is free to make the contents of your interview publicly available, with any comments attributed to you accordingly. Your participation in this research is vital and very much appreciated.

<END EMAIL>

PART B. Guidelines for meeting with your MP/AM/MSP/MLA

Your interview should take around 20 minutes. Before commencing the interview, please obtain consent verbally from the parliamentarian by stating:

‘Before we begin, can I confirm that you read the e-mail that I sent about this meeting and that you consent to participate in this interview about how you obtain and interpret research evidence.

I will be taking notes during this meeting and these notes will be used by researchers in Cardiff University, Exeter University, and University College London.’

If you plan to record the interview, please also state:

‘Can I please confirm your consent for me record this interview.’

Please ensure that the parliamentarian provides a verbal affirmation before continuing.

Your parliamentarian may consent to the interview but might not consent to being recorded, in which case we ask that you note down your parliamentarian’s responses to each issue within the three themes of *Experience*, *Practicalities*, and *Reliability*. Even if you are recording the interview, please also take notes in case the recording fails.

After the interview, we would be grateful if you could then scan or photograph any notes and email them to our research team at eis@cardiff.ac.uk, together with any audio recordings. Other than sending the notes and recordings to us, we request that you please keep the content of the interview confidential.

Below are guidelines for completing the semi-structured questionnaire and followed by a response sheet to use in the interview.

1. *Experience*

In this section we are interested in finding out how the parliamentarian has previously used evidence and advice in decision-making, as provided by experts in science, medicine, social sciences and the humanities (e.g. economics, history). We need to know of any problems or limitations the parliamentarian has experienced with current systems in obtaining and interpreting evidence. The specific points to cover are self-explanatory and include:

a. Prior experience gaining access to scientific knowledge (including social sciences), including kinds of questions asked in the past

b. Experience of prior difficulties with access or interpretation of evidence

2. *Practicalities*

In this section we are interested in finding out the parliamentarian’s views on several logistical aspects of the EIS. Specifically:

a. EIS presentation format. When the EIS responds to queries, how should that information be presented? e.g. bullet points, visual display, references, synthesis?

b. Timeframe of responses. How promptly should they arrive?

c. Confidentiality of process. As part of the online interface, should the questions (raised by parliamentarians) and responses (by experts) be anonymous and confidential or open and publicly visible?

d. Number of experts. How many different experts would you prefer to speak to or receive responses from?

e. Definition of ‘expertise’. What credentials, background, or level of knowledge would the parliamentarian expect in an ‘expert’ appointed to the EIS panel?

3. *Reliability*

In this section we need to know what features of the service are most important to ensure that parliamentarians view it as trustworthy, reliable, and filling an unmet need.

a. Trust in responses. What features of the EIS would be most important for the parliamentarian in order to trust the information provided?

b. Obstacles and participation. What aspects of the EIS does the parliamentarian feel are the greatest barriers to uptake? What are the key challenges to be met in order to create demand for this service and ensure good participation? Would the parliamentarian use the service?

On the next page you will find the interview recording sheet. If you plan to annotate the interview by hand but do not have access to a printer, please email your postal address to eis@cardiff.ac.uk and we will send you a hard copy.

If at any stage of this process you require our assistance or advice, please don't hesitate to contact us. Before starting the interview, please state: 'Before we begin, can I confirm that you read the e-mail that I sent about this meeting and that you consent to participate in this interview about how you obtain and interpret research evidence. I will be taking notes during this meeting and these notes will be used by researchers in Cardiff University, Exeter University, and UCL.' The parliamentarian must provide verbal consent to continue.

THEMES	POINTS TO ADDRESS	WRITTEN OR TYPED COMMENTS
1. Experience	a) Prior experience gaining access to scientific knowledge (including social sciences) and other evidence, including kinds of questions asked in the past	
	b) Experience of prior difficulties with access or interpretation	

	c) Other issues raised	
2. Practicalities	a) EIS presentation format	
	b) Timeframe of responses	
	c) Confidentiality of process	
	d) Number of experts	
	e) Definition of 'expertise'	

	f) Other issues raised	
3. Reliability	a) Trust in responses	
	b) Obstacles and participation	
	c) Other issues raised	

Supplementary methods - Recruitment

LCs were recruited from across the UK. The majority of LCs resided in Wales, London and the South West / South East of the UK (See Figure S1 below and Figure 2 in main text).

Figure S1: Map of LCs (n=130) across the UK



Supplementary table 1: Results of content analysis for transcribed interviews and the full sample

Question	% of transcribed sample who responded to question	% of full sample who responded to question
1. How should information be presented?		
Executive summaries		
References	63%	53%
Bullet points	50%	40%
Concise points	41%	35%
Assume no prior knowledge	28%	29%
Graphics	31%	27%
Context dependent	16%	18%
Keep complexity	22%	18%
	19%	13%
2. Preferred interface		
Telephone	55%	58%
Email	45%	42%
Web	40%	33%
3. Timeframe of responses		
Within hours	59%	61%
Within day	24%	20%
Within week	41%	43%
Within month	34%	24%
Longer term	38%	35%
Question dependent	41%	49%
4. Confidential or Open service?		
Confidential	35%	37%
Confidential (context-dependent)	32%	41%
Open	29%	22%
5. Reasons for Confidentiality		
Signalling plans to others	47%	38%
Identifying information made available	26%	25%
Embarrassment	21%	19%
6. How many experts?		
Context-dependent	63%	58%
One	25%	22%
Two or three	33%	29%
Several	42%	27%
7. Who is an expert?		
Academic	54%	52%
Reputable	32%	38%
Experienced	25%	31%
Effective Communicator	29%	24%
8. Features important for trust		
Reliable / accurate information	43%	42%
Balance of views	43%	40%
Background of contributors	43%	38%
Politically impartial	33%	35%
Reputable	50%	35%
Unbiased	37%	35%
Track record	30%	33%
Transparent	23%	21%

The Evidence Information Service as a new platform for supporting evidence-based policy

9. Barriers to Uptake		
Lack of familiarity	39%	44%
Timeframe of responses	43%	41%
Lack of accessibility	30%	23%
Cost	30%	21%
Target audience	22%	15%
Parliamentarian's time	17%	15%
10. Would you use EIS?		
Yes – enthusiastic	50%	52%
Yes – tentative	44%	33%
No / unlikely	6%	15%