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Incorporation of a health economic modelling tool into public health commissioning: evidence use in a politicised context

Abstract

This paper explores how commissioners working in an English local government authority (LA) viewed a health economic decision tool for planning services in relation to diabetes. We conducted 15 interviews and 2 focus groups between July 2015 and February 2016, with commissioners (including public health managers, data analysts and council members). Two overlapping themes were identified explaining the obstacles and enablers of using such a tool in commissioning: a) evidence cultures, and b) system interdependency. The former highlighted the diverse evidence cultures present in the LA with politicians influenced by the 'soft' social care agendas affecting their local population and treating local opinion as evidence, whilst public health managers prioritised the scientific view of evidence informed by research. System interdependency further complicated the decision making process by recognising interlinking with departments and other disease groups. To achieve legitimacy within the commissioning arena health economic modelling needs to function effectively in a highly politicised environment where decisions are made not only on the basis of research evidence, but on grounds of 'soft' data, personal opinion and intelligence. In this context decisions become politicised, with multiple opinions seeking a voice. The way that such decisions are negotiated and which ones establish authority is of importance. We analyse the data using Larson's (1990) discursive field concept to show how the tool becomes an object of research push and pull likely to be used instrumentally by stakeholders to advance specific agendas, not a means of informing complex decisions. In conclusion, LA decision making is underpinned by a *transactional* business ethic which is a further potential 'pull' mechanism for the incorporation of health economic modelling in local commissioning.

Keywords: UK, commissioning, local government, health economic model, evidence informed practice, qualitative study, implementation, discursive field

Introduction

Evidence based practice (EBP) is a key plank of international health policy, initially espoused by proponents of clinical epidemiology (Sackett et al 1996; 2000; Pope 2002). Previous studies, however, point to

increasing uncertainty about how evidence might effectively integrate into routine clinical work (Grimshaw et al 2006). The move of public health to local authorities in England in 2013 has led to debate about how and under which circumstances EBP should inform decision making about health service priorities (Exworthy et al. 2006). Evidence based tools such as economic models have become one potential solution to the question of how EBP could be used for public health decision making (Gough et al, 2013; Moat et al, 2013, 2014; Welch et al, 2012). Increasingly, however, focus has shifted to an evidence informed policy (EIP) approach for decision making in recognition of the reality that evidence is only one among many influences on policy and perhaps not always the decisive one. EIP has extended its reach to the local authority commissioning arena with the expectation that it should be used to make decisions around public health services. This paper explores how EIP in the guise of a health economic modelling tool was perceived by commissioners and elected council members working in an English local government authority (LA) and explores the key barriers and drivers to its adoption. It also illustrates the complexity, contingencies and contextual influences on evidence informed policy. The findings have implications for health authorities beyond England in highlighting the barriers and enablers of health economic modelling tools to inform commissioning decisions. Although our study is based in a public funded English health system, the relevance of the findings for international privately funded or public-private funded systems is evident and likely to be of significance.

Previous research shows that the introduction or 'push' of evidence in the guise of clinical guidelines, from academia to healthcare settings has not been entirely straightforward (Katikireddi et al 2015; Klein et al. 1997). Clinical decision making is informed as much by experiential knowledge and skill as systematic research evidence (Kaltoft et al. 2013; Elwyn & Miron-Shatz 2010; Daniels and Sabin 1998; Habermas 1987). However, it seems that we have turned full circle on this debate, with restricted health budgets in the UK and globally, and a set of circumstances that move the argument for greater (not less) use of 'science' in healthcare. In England public health was located within the National Health Service, with a strong focus on using research evidence to inform commissioning for improved outcomes. In 2013, public health moved into local government, where arguably the emphasis of the commissioning process altered towards broader public health concerns and where research evidence is used alongside other forms of intelligence to guide decisions about public services and population health. This introduced a new dynamic where public health managers

and elected council officials (politicians) make decisions about the health of residents and local services. However, these types of relationships also occur in healthcare systems outside of the UK, in which decisions are negotiated between stakeholders from very different professional backgrounds, and who may hold conflicting or varied views about what counts as evidence to inform spending choices around public services.

Evidence use in local authority commissioning

Implementation models in healthcare have used the dichotomy of 'push' and 'pull' (Tetroe et al 2008) with 'push' being the dissemination of evidence into practice by evidence producers, and 'pull' being practitioners' desire to apply evidence to inform practice (Davies et al. 2008; Kerner et al. 2006). Evidence may not be used 'instrumentally' but rather in a subtle and indirect way with evolution of impact rather than outright revolution (Marks et al. 2015; Weiss 1979; Innvær et al 2002; Ward et al 2009). Recently the pendulum has swung in favour of recognizing evidence 'pull' to consider those factors which make a new innovation appealing and relevant to stakeholders as a means of increasing evidence uptake (Damschroder et al. 2009). The linear model of implementation has been replaced by a 'softer' pragmatic implementation paradigm of tacit knowledge mobilisation focused on evidence 'pull', previously described as the collectively constructed 'mindlines' of practitioners (Gabbay and Le May 2004). Evidence pull draws attention to mechanisms which cannot be easily measured (tacit knowledge) in the same way as explicit evidence push mechanisms (eg. clinical guidelines). Nevertheless, recognition of the multiple layers of implementation described by Damschroder et al. (2009) seems critical.

A number of studies have investigated evidence 'pull' in healthcare but only a few in the local authority commissioning arena. These studies allude to the *political* context of LA commissioning, sometimes standing in contrast with, what might be referred to as, the apparently more *objective* (a-political) context of the NHS commissioning landscape. For example, evidence derived from research may have a different status in a local authority than in a healthcare organisation, requiring a critical 'political science' perspective that recognises the complexity of local policy processes (Hunter et al. 2016; Clarke et al 2013; Lorenc et al 2014; Marks et al 2015). This is not to imply that commissioning within healthcare organisations is 'apolitical' and objective, only that the way evidence is negotiated may take on a different form to the local authority context. Clarke et al (2013) suggested that different status groups may approach evidence differently.

Lorenc et al. (2014) refer to the widespread existence of diverse 'evidence cultures' whereas Hunter et al (2016) propose different 'streams' in which LA policy making takes place; problem, policy and politics. These may be characterised as potential key 'enablers' for change that describe the multi-layered context of local authorities in which evidence utilisation should be understood.

Theoretical perspective

We use the example of local authority commissioning to show how the push of one intervention influenced its potential adoption by commissioners. We conclude with an analysis of push and pull in relation to Larson's (1990) discursive field concept to highlight the sociological implications of the findings, which can be related to other similar UK and international contexts. A discursive field is an arena for the interplay of power relations between different status groups, or sometimes between individuals with similar authority (*see Entwistle et al. 2005 on the concept of 'dual elites'*). The concept is helpful in explaining how different groups use evidence for their own ends, forging relationships characterised by power dynamics. In the local authority 'field' politically elected members (politicians) may hold different priorities to *technically* orientated commissioners whose agendas may be more concerned with economic goals related to resource use. This could potentially create conditions for the interplay of power relationships that define the way evidence is used to inform policy making. We view 'commissioning' processes as involving diverse groups and activities, and for the purposes of this analysis we use examples of two stakeholders to show the different ways that 'evidence' is utilised in a LA.

Methods

Study aim and design

We conducted an in depth qualitative study of the acceptability and potential adoption of a health economic modelling tool for public health commissioners working in a local government authority. The tool is a spreadsheet that uses statistical modelling to make predictions about different cost and health outcomes based on particular interventions (scenarios). A statistical model was developed by a team at the same University department as the current authors, that has not previously been used in cost-effectiveness modelling to capture correlations in multiple risk factor trajectories. The tool was used to analyse a range of diabetes prevention interventions. These analyses have had substantial impact in evaluating new diabetes

prevention interventions and identifying efficient allocation of resources between interventions. Numerous tools and epidemiological datasets are available to public health commissioners for informing decisions about health improvement (<https://www.gov.uk/guidance/phe-data-and-analysis-tools-accessed> 24/04/2017). One major example is the Public Health England's data and knowledge gateway, with resources produced by public health observatories and the Health Protection Agency. The resources include datasets and toolkits, though none include the type of statistical modelling software used here in the current study. Consequently, the decision to explore the implementation of our specific tool for use by local authority commissioners is based on the novelty of the intervention, particularly its ability to predict different health economic outcomes longitudinally. As such it is a new addition to the PHEs 'data and knowledge gateway' repository, and potentially of value to the current local authority as well as nationally and internationally. The tool was presented to commissioners using a hypothetical scenario for the management/prevention of weight programmes prior to commencement of the study. Participants were presented with two hypothetical situations and asked to provide views on how they would integrate these into their commissioning structure. The aim was to test the acceptability of the health economics modelling tool in a real life commissioning context. The tool was not designed specifically with any local authority in mind or the extent to which the local authority in this study considered the two scenarios as a priority area. In this sense the LA was a test bed for exploring attitudes to this new way of planning public health programmes. Scenario one included a weight management intervention which according to our example was not good value for money until after 10 years, and was more expensive than weight prevention (see next). Scenario two included a weight prevention intervention which was good value for money after only one year and cost less than weight management. Immediately prior to commencement of interviews and focus groups we provided all participants with an overview of the modelling tool either using a short PowerPoint presentation or a paper based summary of the intervention. The participants did not have a working knowledge of the tool, though they understood its general purpose and function. The tool was designed to be used flexibly so that different scenarios (beyond weight management) could be adjusted to suit local services and priorities. Qualitative exploratory methods were employed to identify the barriers and enablers of the real world practice of local authority decision making. In depth exploratory methods were used to explore experiences and perceptions, particularly towards topic areas that are new to the participants and where little prior research exists. We conducted 15 interviews and two focus groups between July 2015 and February 2016. The interview and

focus groups data were integrated as part of one dataset and analysed thematically, based on a variation of grounded theory, namely the constant comparative methodology (Mays and Pope 1995). Focus groups were used to test the earlier insights from the interviews and consolidated the emergent thematic framework. All of the focus group participants had also been interviewed previously. A semi structured guide was used, and updated as new insights emerged. The participants were identified by a member of our research team who also held a part time position within the LA, and used her knowledge of current commissioning staff who we could approach. In addition, 10 formal observations of contracts and finance, officer group, and Health and Wellbeing Board meetings were conducted to explore the context of decision-making across the local authority. Notes were made of the content of the discussions and interactions within meetings. However, as the observed meetings could only report a 'snapshot' of how commissioning decisions are made, and not specifically on how the economic decision tool was used during the meetings, we did not include these data in the paper.

Study setting, participants and analysis

The study was conducted within the public health department of one local authority in England. All participants who took part in the study were employed by the Council and the majority (13) were part of the public health department. The remaining 2 participants were part of the wider local government infrastructure but were responsible for public health commissioning decisions. Participants were identified by a research link based at the council who had knowledge of all public health managers currently employed in Public Health. From the 16 participants who were invited to an interview 15 agreed to participate. University of Sheffield ethics approval and local governance clearance was obtained. We report two major themes below.

Results

1. Evidence cultures

Political evidence context

Public health managers claimed that during their daily role they would have to translate the evidence from the tool to councillors. The tool was perceived to be consistent with achieving cost savings and value for money. A language all too familiar to public health employees but one that perhaps was viewed slightly

differently by the politically elected council membership who wanted to consider its acceptability to the electorate. Issues of value for money were only one consideration among many that commissioners routinely considered, affecting the acceptability of health economic modelling as a credible evidence based decision making aid.

In local authority there is a big political element to any decision making process. And there are a number of times where you take something and if we take this example, this intervention works but it's not going to be popular. Then there is that political angle that you are going to need to wrestle with. Which is why if it's one of the tools in the tool-box for decision making, great. But it's not going to be the thing that ultimately makes that decision. Interview-73 manager

One barrier to adopting the tool was the perception that health economic modelling did not on its own represent an appropriate way of arriving at acceptable decisions. The quotation perhaps suggests that the commissioner held the view that the aim of the tool was to make a decision on its own rather than in relation to a range of evidence.

If we use this model that the data going into it is of sufficient quality? And the model is accurate because if you got an elected member sat here and you said this is what we think it's going to do.

How do I know that? And that's the question somebody will have to answer. Interview-73 manager

This suggests that commissioners were judging the tool against unrealistic parameters, an unintended consequence of the tool itself. They expressed mistrust in the tool's ability to be applied in the local government arena and for it to produce the types of solutions that they considered important in their commissioning work.

Competing evidence

Participants described the modelling tool as potentially useful for commissioning diabetes and obesity services, but only as one evidence resource in a tool box in 'competition' with other types of evidence.

...we are in a situation where it (tool) has to battle with lots of other different types of evidence, some of which may, we might describe as being academic evidence, you know the stuff that is coming in from NICE or the, but all of it has sort of a voice and a mix in the process and the tricky thing is, how do you synthesise all this, all of it in order to transparently show what has driven the decision?

Interview-71 manager

This view of evidence was defined less by scientific measures of validity and more by its local application.

Public health, what they bring is a, I call it a kind of education scholarly kind of approach to things... whereas 'social care' sometimes are not so evidence-based-led. It's a bit 'well I thought that' or, it's a bit more fly by the seat of pants in social care. Interview-75 manager

Evidence had to be interpreted in the context of local population and demographic health need to acquire meaning for those charged with its use.

I just wonder sort of how robust they are, because you'd be looking, because you could manipulate data couldn't you, to you know, if you sort of said 'oh you know there's a weight prevention programme, you reckon that I then by not gaining weight that they'll save x amount of pounds on health and, you know, be x amount of pounds more productive' or whatever. You're sort of putting arbitrary numbers on there aren't you, so I just wondered about the robustness of your sort of cost analysis? Focus Group-manager 2

This perhaps indicates a lack of familiarity with the tool, or indeed a desire to show why the tool cannot address the full complexity of commissioning. Negotiation with the council membership was the norm, and required the interpretation of evidence, which again is perhaps why commissioners expressed doubt that the tool would be seen as acceptable to councillors.

Because sometimes right at a local level, we don't have the data. We don't have that data at that local level. We only have it at a national level or at just a borough level, and not a community level as

well. Focus Group 1-manager 3

The findings demonstrate the competing value systems attached to evidence by individuals working in the local authority. The point made here is that since there is a lack of data about local services and populations (compared to large national datasets) to use in the tool, the evidence produced will be irrelevant to planning local services, an idea previously referred to as trading *relevance for quality* (McGill et al 2015). The key barrier to the adoption of the tool was the trade off between research evidence and local 'know how'.

'Clean' and 'dirty' decision making

Commissioners juxtaposed the apparently straightforward and certain process of producing research evidence against the messy real world context of commissioning. The certain world of research was viewed as detached from the local authority commissioning landscape, rendering research tools less useful to solve complex problems facing local government.

And in the end you've got people in Housing who want to know what kind of housing they want to build on this plot of land, so they've done a very good piece of academic work but it won't help with that dirty, you know, decision making of how many houses and what type you put on that piece of wasteland in [town], you know. Interview-69 manager

Research evidence is shoehorned into the existing commissioning framework, rather than used to shape it. The key drivers were local priorities. All of this was viewed as a messy, non-linear and 'dirty' process.

Quite often where I have worked in local authorities is in a corporate data performance team. And a lot of, in fact all local authority that I have worked for, have asked for data almost at the last part of the commissioning data cycle, to kind of support their assertions based on their experience, which is almost the wrong way round. And so anything that helps to bring that further forward in that kind of process is great. Interview-74 manager

The view of evidence as justifying pre-existing decisions was striking. The emphasis was on how evidence

could be used for a political purpose (eg. to back up plans that have already been made). It is important to note that local government introduces an additional type and layer of politics which is present through having elected politicians. This perhaps brings with it a greater need for translating research evidence with, and for, the political elite, and engaging in deliberation of what the evidence means and how it can affect policy.

Some expressed concerns about the possibility of manipulating modelling data to support a certain argument. Although 'persuasion' was a key activity of commissioners during contracts meetings or in discussion with elected members, they recognised the slippery path from using data as a way to present an argument to overstating its importance. This illustrates the 'dirty' decision making concept used and the potential barrier to the adoption of the tool.

The thing with data, whatever type it exists, you can make it tell the story that you want if you're not careful. I'm not saying it here, but experience with commissioners is that they're quite clever at getting things to say what they want to say. So you can set up a consultation to ask exactly what you want it to say. Interview-74 manager

The following focus group exchange highlights the need to relate research evidence to knowledge about local priorities.

Councillor: Insights as well, you know local residents' insights, what are people's thought, needs, desires as well.

Manager 1: See I think for me, I think it would be dangerous to just sort of say 'oh look, this intervention compared to this intervention, you'll start making money back after a year, blah blah blah, let's just go with that' without sort of considering the wider picture. Focus Group 1

The above examples perhaps imply defensiveness against the over use of research evidence for commissioning, where the expectation is that no single type of evidence has superiority. A parallel can be made with evidence based practice in healthcare, where evidence based guidelines have been the subject of criticism.

2. System interdependency

Implementation requires a consideration of not only the diverse evidence cultures in which knowledge operates but also the whole system in its totality, and the interdependence of the different parts of the system. Integration of the tool within the commissioning cycle was noted as being important, particularly its timeliness.

If it came at the right time in your recommissioning strategy or something like that, then it would be really, really powerful. But I think it would have to be part of something else because I think like all sort of model data you need to apply common sense at the end of it don't you. So I think it needs to be embedded in something broader. Interview 69-manager

This again implies defensiveness by commissioners towards using a tool without reference to other evidence to guide decisions, reinforcing the complex and interdependent nature of commissioning work.

But actually comparing the two (scenarios) can be quite detrimental when you are looking at the funding because we have already discussed the need for both but actually if you're then looking at oh we need to save some money let's just put all our eggs in that basket then actually you are going to end up potentially causing less funding or resource or anything to the latter that's still definitely needed because a lot of people are past prevention they need that management, so I think that could potentially be a negative... Interview 80-manager

The point here is that any actionable tool has to consider the complexity of the decision making process across the different ways that services are delivered. Thus, for instance it is important to view 'prevention' and 'health management' as interdependent rather than as separate approaches to health service delivery. The perception that the health economic tool treated these separately was perceived as a limitation to its adoption.

Capacity of the tool to reinforce whole system thinking

Commissioners claimed that the tool had the potential to prompt broader thinking about system interdependency; particularly how different services complemented each other and should not be viewed in isolation.

What do we know that works? What have we done that's worked well in the past? It's a relatively new problem. We have tried things and have they worked or have they not worked? Have they had the impact we thought? Was there other impacts that we didn't realise? And that's the kind of evidence and the kind of thing as a business local authority that spends three hundred million pounds, you'd expect it to do on a fairly regular basis. It's something that I think local authorities get into the habit of doing. [Yeah] So tools like this we can start to feed in, drip feed in to improve that cycle, I think is really welcome. Interview 73-manager

They also stressed that the tool could reinforce or 'prompt' the need to consider the routine use of evidence in commissioning decisions, highlighting the push dynamic of the tool.

...everything does overlap so much, like when you said about mental health, everything we do touches on mental health for instance in some way and I think it does all interlink and I think thinking about the wider system and that's where some of your pros and cons come from because I think if you have got all of these complexities and you're trying just to focus on one particular remit you're trying to focus on the other services. Focus Group-manager 2

These examples illustrate the ability of the tool to stimulate wider systems thinking and the recognition that different services are often closely interlinked. It could also raise awareness of unintended consequences of policy decisions and the tension between cost savings and ethical investment practice.

Corporate agenda

A key factor that influenced how decisions are made, and the use of evidence in these decisions was the corporate agenda. This refers to the priorities and purpose of an organisation, driving the activities of employees. It includes the overarching goals which staff work towards, and in relation to commissioning

these are key priorities such as reducing inequalities, tackling social determinants of health and wellbeing in the local population. Cost factors were only one element of the corporate agenda.

Yeah, and one of the things we always have to do as a council office is when we, when we have to, we write reports for elected members, we have to link it to the corporate priorities. So one of those is always economy, so therefore we will state how this benefits certain key priorities. So if one's the economy, how does this service, commissioning this service, how will that improve the economy, and that's what, quite easy stuff to link into. Interview-81 manager

If the tool could not show relevance to the corporate agenda such as the economy, then its utility would be limited in the eyes of commissioners, particularly their ability to argue their case to the councillors.

Commissioners also claimed that modelling tools would only help if they recognised the impact on the boundary between local authority and healthcare.

I've seen some tools that have the breakdown of healthcare cost, economy benefits, or adult social care benefits, so at least you can go that's your CCG (primary care commissioners), that's your local authority, therefore... Because what you sometimes find is that the local authorities, Public Health is based in the local authority, we pay for these services, but it is the CCG who are benefitting.

Interview-81 manager

This suggests that the tool needs to recognise the broader economic gains and show which elements of public services stand to benefit from investments.

I wonder if there's a danger of, if you are sort of comparing two different interventions purely on a cost basis, sort of return on investment basis, then you might actually, like I wouldn't want to use that in isolation. I'd want to use that, you know, in conjunction with evidence base and you know, sort of local knowledge. Focus Group-manager 2

The argument here is that the model is too far detached from issues affecting local problems stretching

beyond immediate cost concerns.

Integrated service provision

In order to be perceived as useful the tool had to show application across a range of services and populations.

If it's a tool that can be modified and deliver outcomes for different groups of people, because you mentioned diabetes, you mentioned obesity, it's what other groups that it could link to successfully for us to use the outcomes of the use of that tool. So specifically around things like stroke or other issues, if it lends itself to delivering information outcomes around other groups then that would support our commissioning process. Interview-78 manager

The interdependency of public health services was highlighted in relation to the potential 'knock on' effects in different parts of the 'system', and the unintended benefits were viewed as important.

I haven't identified it as a particularly burning issue in any quarter, but, and I think that the ethos of, the public service ethos and the partnership ethos is such that if you have a tool that does identify some savings, even if it's for another part of the system, that is still seen as a good thing and a good weight in the decisional balance of whether we do. Interview-85 manager

With its ability to project savings for other services, not only the index condition, it could be viewed as a useful resource to aid commissioners. All of this, however, reflects system complexity and the need for the tool to function seamlessly within it. Its application to understanding the 'knock on' effects in more than one service sector or condition was deemed important to aid decisions.

Pragmatism of the model: achieving a good 'fit' in the wider structure

The pragmatism of a new intervention was thought to be important in the ability of potential users to adopt and utilise it within their organisational infrastructure. If it could readily fit into existing structures then its adoption would be much smoother for those charged with its use, hence it would enable more effective

research 'pull'.

What sometimes people often forget in local authorities, they always leave off or leave out the operational delivery of this side of the world. They came up with this 'oh yes, yes, have you actually thought about the practicalities of doing it, delivery of it? And what your specification actually means to whoever might be delivering it, whether it's a supply market, whether it's a whatever, because often people don't take that into account. Interview 75-manager

Demonstrating the cost-effectiveness of a service may be a sufficient goal for academics, it may however, fall short of addressing questions about service implementation. Consequently, a tool needs to show awareness of these "research pull" considerations.

Discussion

Although our study offers an exploration of how health economic modelling fits into a complex political structure of a local authority, the findings are limited to this particular context and do not claim to represent the views of all commissioners in the UK. The study has international relevance since it shows how similar interventions can be applied in overseas local government organisations. The themes are likely to apply to these contexts, particularly in relation to the challenges of translating complex evidence to those less familiar with their technical function.

The findings highlight two influences affecting likely adoption of the modelling tool, a) diverse 'evidence cultures', and b) system interdependency evident at various levels in the LA. These influenced the evidence push and pull to different degrees across the local authority. Although the accounts of our participants point to the 'pull' factors they also offer insights about how the evidence push of the modelling tool might be adapted to directly fit into everyday commissioning. Commissioners described the presence of various 'evidence cultures' in the LA where the use of evidence was described as politicised. Different types of knowledge paradigms sat in competition for 'pre-eminence', presenting particular challenges to the commissioners who distinguished the 'clean' elements of research informed commissioning practice with the 'dirty' processes integral to real life commissioning, which involved mixing and adapting knowledge to

address a specific problem. In the LA setting evidence had to be ‘transformed’ into the correct form in order for it to be meaningful for use in the council, though our commissioners were largely unprepared to translate the tool in such a way, and would require greater familiarisation. The flexible use of the modelling tool was a key determinant of adoption, as was the flexible utilisation of the tool’s outputs for effective application to local populations and presentation of the findings to the council. In relation to the second theme, ‘System interdependency’, the modelling tool had to fit into the micro, meso and macro systems in place at the local authority, described by Hunter et al (2016) as the ‘problem’, ‘policy’ and ‘political’ streams. The way that policy was negotiated revealed the common pull factors that would make the tool potentially acceptable to the users. These included the interdependency of the different commissioning agendas and public health departments of the council. The key barriers to the adoption of the tool were as follows.

The corporate agenda was deemed central to any decision about services or funding, where reducing health and social inequalities as well as the economy superceded all other priorities. Thus, any new decision making instrument had to demonstrate its relevance to these considerations. Health economic modelling was also perceived to stimulate wider systems thinking, so that policy makers became aware of the interlocking components of the wider commissioning structure and were acutely informed of the 'knock on' effects of service redesign or financial decisions. The inability of the tool to answer complex questions about how new services should be redesigned or which agencies, departments or sectors in the broader public health/NHS commissioning structure would benefit the most from certain investments, was perceived as a limitation. Such questions in the end could only be addressed by individual policy makers with knowledge of the 'whole system'. The research 'push-pull' dynamic can be viewed as an ongoing iterative relationship with commissioners utilising the health economic modelling 'technology' as a way of building on their existing understanding and 'know how' of the commissioning problem, rather than replacing it with a 'superior' knowledge management toolkit.

Together the findings support the notion of contested evidence which questions the stability of science and the tendency for it to be critiqued within institutions, leading to its politicisation. One way that evidence is contested is through ‘discursive’ practice (Larson 1990) where a plurality of discourses coexist in relation to a particular area of professional work (eg. commissioning). However, these are unlikely to be treated as

having equal authority. In our study we observed an evidence-based discourse of public health versus politically driven concerns of elected local politicians (Larson 1990). Entwistle et al (2005) have reported the existence of 'dual elites' in local government. When such a discursive field is present, power relations are played out and different forms of evidence compete for pre-eminence, and rigid knowledge hierarchies diminish. At the 'core' of any discursive field people are distinguished by their relation to the *dominant* discourse(s). In the public health commissioning context evidence-based practice is one such discourse. The confinement of discourses to a particular 'discursive field' (eg. EBP) is a *depoliticising* strategy, excluding others, for example, politicians from membership (Sanders and Harrison 2008). However, Larson (1990) suggests that as the field becomes larger, and more discourses are accepted (eg. discourses of *EBP, local health needs, economy*) the debate becomes more politicised as decisions, arguments and evidence are challenged.

Larson (1990 p45) further notes that 'professionals and experts, whenever they are challenged, individually or collectively, retrench behind their discursive fields and retreat towards the protected core'; in the context of our study, this perhaps implies defensiveness by public health commissioners vis a vis their politically elected counterparts in the council in the face of a wider range of claims. The discursive field surrounding public health commissioning can be seen in Larson's (1990) terms as a rhetorical battlefield in which the pull and push of evidence highlights the complexity of factors impinging on the modelling tool. The tension between push and pull of the tool highlights the competition between the core goals of academic research and local authority policy making. There is, however, a further implication of our analysis. As the different discourses compete in the local authority (scientific versus non scientific evidence), the possibility of more generalised 'conflict' correspondingly increases (Larson 1990 p39). The opening-up of this specific discursive field surrounding commissioning leads directly to our final broader points.

Our study has broader implications for the use of actionable tools and interventions to aid decision making in public health organisations. Interventions need to be co-produced between their designers and the potential end users so that they are fit for purpose. The findings suggest that such an approach would more comfortably address the real life considerations of commissioners. The international implementation science and theoretical literature has emphasised the importance of context and situated practice (Lave and Wenger

1991; Innvaer et al 2002; Damschroder et al 2009) for accelerating the adoption of new evidence. The ability to recognise the diverse evidence cultures and contexts of large public institutions is paramount for designing new interventions that integrate the appropriate knowledge paradigms relevant to practice. The example of the health economic modelling tool alludes to the need for treating evidence as knowledge that consists of different types of information, not only research evidence. All of this has a direct bearing on policy making practice, with the important role played by evidence based tools which need to be treated not in isolation of other decision aids but as part of a wider assemblage of decision-making 'kits' that when taken together will lead to robust policy making. There are also questions about when is a tool fit for purpose. Here we advocate greater investment in the co-production and 'sense-making' process to encourage better synergy between process, outcomes and acceptability (Weick 1995). The findings suggest that the tool could be fit for purpose but requires further research and development to maximise its applicability to other groups, namely politicians. The cost and time implications of co-production are likely to be significant, but should not curtail efforts to foster greater engagement between commissioners with a view to promote the translation of evidence to inform policy. One potential way forward is to exploit the 'transactional' ethic of commissioning, involving a business relationship where participants strive to improve service provision, with a common goal uniting the commissioning process. In hierarchical institutions such as the LA a transactional decision making model is central to supporting the translation of evidence (hence it is in the best interests of local government to better understand all evidence that can feed into commissioning). Consequently, there is a strong imperative for commissioning to engage in a transaction around priorities, which can act as a further 'pull' mechanism for integrating different types of evidence in the process, such as the economic modelling tool in our example.

Conclusions

A three way dynamic was present between research, public health and the broader structure of the local authority that included the elected politicians. The interviews and focus groups identified the presence of what might be coined an 'epistemological alliance' between the first two, but a division with the latter (council members) who viewed evidence somewhat differently. This divide represented a potential barrier to the adoption of the economic modelling tool, wherein council members espoused a pragmatic (in contrast to a research driven) logic for evidence based decision making informed by local needs. A divide that could be

bridged through effective translation of evidence to the politicians, whose priorities included pragmatic public and social care considerations affecting the local population. The presence of what might be described as a transactional business ethic in the LA could further facilitate the likelihood of consensus between politicians and commissioning managers, where research evidence plays an increasingly prominent part in decisions. Evidence does not speak for itself and requires translation, and where its framing by public health staff to council members will have critical importance to commissioning outcomes. The health economic modelling tool has potential to inform such translation by offering a focus on cost savings linked to the public health spending priorities of the LA. The tool appeared to have technical *coherence* (for public health) as an evidence based resource to guide decisions but lacked *pragmatic* coherence since it was perceived to be detached from the practical priorities and therefore local relevance (Sanders et al 2011). The tool, however, does offer a basis for opening up constructive discussion from both sides (public health and academics on the one hand and elected council on the other) or collective action for improved dialogue with public health managers, whilst supporting elected members to talk about economic issues of value for money in a more aligned way with their colleagues in public health. Promoting discussion between public health and the council membership in this way to appreciate one another's logic for public health commissioning opens up possibilities for future integration of health economic modelling in local government (Kaltoft et al. 2013).

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