The Value of Marginal Analysis: Perceptions of Decision Makers

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List of Abbreviations

CBA	Cost Benefit Analysis
CEA	Cost Effectiveness Analysis
CG	Cancer Group
CHD	Coronary Heart Disease
CUA	Cost Utility Analysis
DOH	Department of Health
GP	General Practitioner
HA	Health Authority
LDP	Local Development Plan
NSF	National Service Frameworks
NICE	National Institute for Clinical Excellence
PBMA	Programme Budgeting and Marginal Analysis
PCT	Primary Care Trust
QALY	Quality Adjusted Life Year
SHA	Strategic Health Authority

1. Introduction

This paper presents preliminary findings on perceptions of the value of marginal analysis (or incremental changes in resource allocation at the margin) in decision-making for cancer services at the local level in the National Health Service (NHS). The focus of this paper is on system wide decisions for treatments, procedures, and services for patients with various types of cancer, rather than on clinical decisions for individual patients. This paper is based on in-depth data collection using observation of twelve priority-setting meetings, a workshop on decision-making using health economics, and twenty-seven interviews with decision makers. Fieldwork spanned a period of sixteen months (January 2003 to April 2004).

The paper is organised into the following sections. The first section provides a brief overview of the literature on this topic. The second section presents the methods employed. This is followed by a discussion of the main findings, which is divided into four parts: a reflection on the decision-making process, the use of health economics concepts and practice (prior to and after the workshop), and the barriers to the use of health economics by decision makers. The final section provides a discussion of the main findings. Key issues for further discussion are presented at the end of this paper, although any additional comments are greatly appreciated.

2. Brief overview of literature

The use of economic evaluation at a local level has been one of the salient themes in health economic conferences both in the UK and internationally during the past few years. The perceived lack of use of health economics appears to be a major concern among health economists and an unresolved issue that warrants further research. However, there have been few empirical studies on the use of health economics in local decision-making (around thirty were found in a recent systematic literature review performed by OA) and it is a relatively new research topic (studies in this area were conducted from the 1980's onwards). There has been an increasing focus on this research topic over the past five to ten years. Most, if not all, studies in the literature have suggested the limited use of economic evaluation in decision-making at the local level.[1] However, the methods used in these studies have not on the whole managed to investigate the complexities of decision-making. This study has attempted to address 'real life' decision-making, in the light of previous research,[2] and using qualitative methods based on grounded theory.[3]

3. Methods of fieldwork

The research was based in one Primary Care Trust (PCT), selected on the ability to gain access. Upon invitation, OA attended and observed twelve Cancer Group (CG) meetings during the fieldwork period. CG meetings were a formal part of the local service organisation and brought together providers and commissioners to make decisions about the funding and delivery of cancer services for their local population. Although other groups also existed for mental health and coronary heart disease (CHD), the CG was seen as a point of entry into the decision-making process for the research. General Practitioners (GPs), hospital managers, clinicians, nurses, and

palliative care representatives attended the CG meetings. The meetings were held bi-monthly and usually the same people attended, although over the period new members arrived and some left the group. Meetings were held for approximately one hour. Participants, apart from the chair of the CG, were not informed that one of the interests of OA was to evaluate the use of health economics. OA acted as an observer during the meetings and did not participate.

The chair was keen to receive some help on health economics for the CG. The chair and the authors decided to provide a health economics workshop (this had also been recommended by health economics working in the area of public health that OA had contacted for advice). Although fifteen participants of the CG were invited, in the event only ten attended, including the chair of the CG. The workshop was held for decision makers of the CG in January 2004. Participants were informed that the chair had organised the workshop and were not aware of OA's involvement.

One of the authors (JB) ran the workshop. The workshop involved a presentation on basic economic concepts, economic evaluation, and Programme Budgeting and Marginal Analysis (PBMA).[*] As far as possible the presentation included examples of how health economics concepts could be incorporated into decision-making. The list for funding, which was discussed during the previous months by the CG, was also presented and JB advised incorporating costs and benefits of the listed programmes into the decision-making process. The presentation was followed by a group discussion during which members of the group were asked to decide which of the programmes were related to the targets or guidance set nationally and which of the programmes had evidence about their effectiveness or their cost effectiveness. They were then supposed to be presented with a smaller list of fourteen non-funded programmes and asked to prioritise them, considering their budget constraint, an estimate of the incremental costs and benefits, and what the opportunity cost of each programme might be. However, the chair also came to the workshop with a revised list of priorities from the CG and in the event, the group discussed which programmes in the chair's list related to the targets or guidance set nationally, without moving on to prioritise them.

During the fieldwork, OA conducted twenty-seven face-to-face, semi-structured interviews with a range of decision makers from the PCT, Strategic Health Authority (SHA), and CG. Fifteen interviews were undertaken before the workshop and twelve after. Interviews lasted approximately one hour. Six of the eighteen different people had previously received some type of health economics training (Table 1), including training during short courses, training as part of degree studies and, in one case, taking the Aberdeen correspondence course.

[*] PBMA involves examining how resources are currently being spent before focusing on the marginal benefits and marginal costs of changes.

Table 1: backgrounds of informants

Role	No. Interviewed	Number who were members of CG	Number with health economics training
GPs	2	2	0
Nurse	1	1	0
Hospital managers	3	3	0
Clinician	1	1	0
PCT role	8	2	4
Palliative care	2	2	1
Strategic Health Authority	1	0	1
TOTAL	***18***	***11***	***6***

Fifteen interviews were conducted prior to the workshop. Nine of these were with CG participants and six were with senior PCT informants. CG informants were purposefully sampled based on their involvement in the CG. In the vast majority of interviews with CG participants, the objective was to explore the personal views and opinions of the decision-making process; only the chair was also specifically asked about health economics. Apart from this interview with the chair, health economics was only discussed if the informant spontaneously mentioned the topic, in which case the interviewer took the opportunity to probe into the area further. Senior informants were suggested to be important to the decision-making process by CG informants (snowball sampling). Since it was perceived that more than one interview was not possible with senior informants, because of their seniority and lack of time, information on both their views on the decision-making process and their perception of health economics was obtained.

Following the workshop, twelve interviews were conducted with those who had attended the workshop (seven), those important to the process but who had been unable to attend (eleven), and those who had been recommended through snowball sampling (one). Three of the interviews were with decision makers who had not been interviewed previously because two had recently joined the CG and another, a member of the SHA, had been mentioned as important in the decision-making process only later in the data collection. The purpose of interviews was to explore the value of the workshop (where informants had attended) and to find out the use of health economics in decision-making more generally, by them personally or by the CG. The data were analysed considering the following two main points:

1. Whether there were any differences in opinions, views, and use of health economics among informants interviewed before and after the workshop;
2. Whether there were any differences in opinions, views, and use of health economics between those who attended and those who had not attended the workshop.

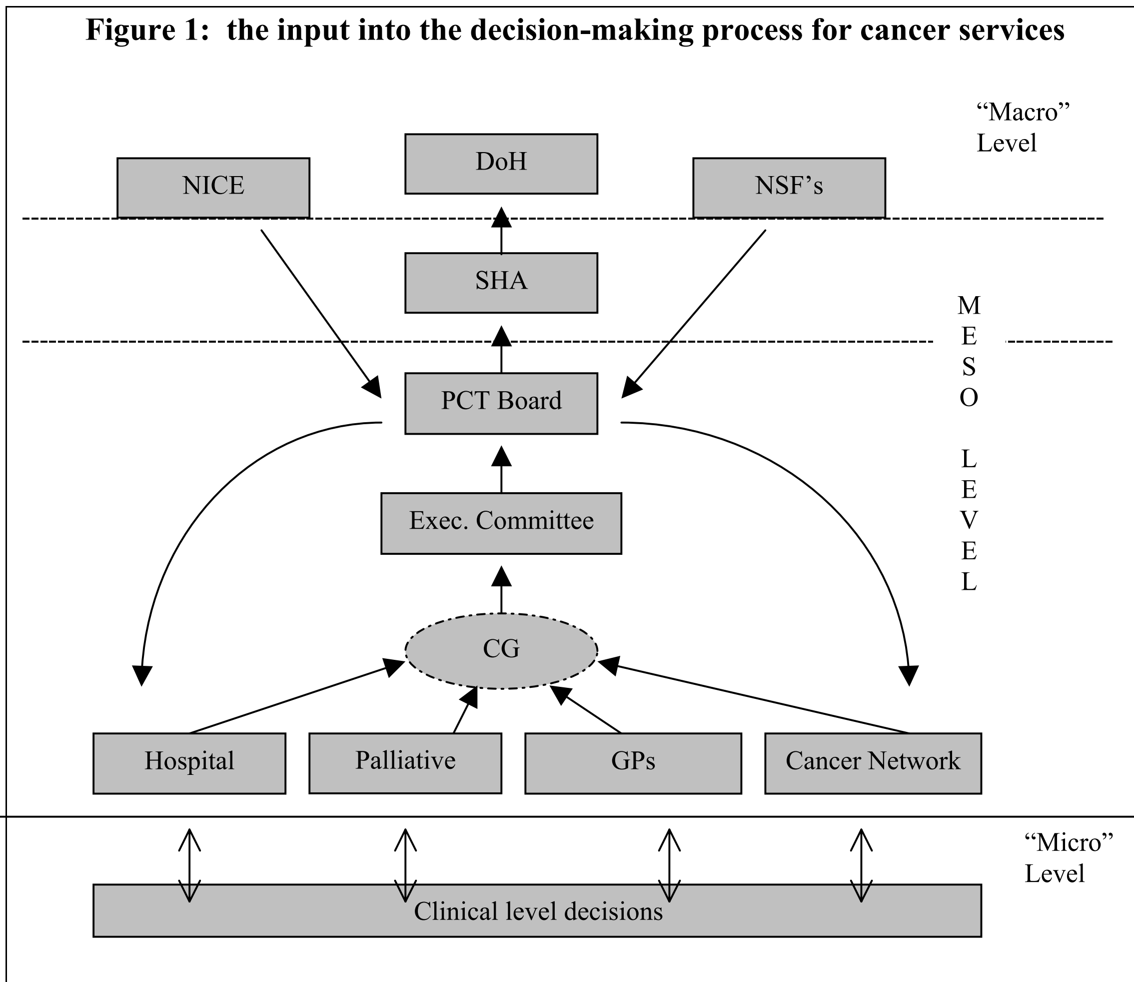
All interviews were analysed using the methods of constant comparison. In no interviews was there mention of health economic terminology by the interviewer, with the aim being to allow informants to express themselves in any way they wished.

Ethics approval for this research was also obtained in January 2003.

4. Decision-making context and process

Although a detailed account of the decision-making process is beyond the scope of this paper, it is possible to provide a brief overview, since this will aid interpretation of informants' views about the use of health economics in later sections. The formal decision-making process for cancer services operated on three distinct levels, which are termed here for purposes of analysis as the "macro level", the "meso level", and the "micro level". The "layers" within the meso level were; the SHA, PCT (comprising of the PCT board and executive committee), CG, and decision-making bodies feeding into the CG (Figure 1).

Figure 1: the input into the decision-making process for cancer services



At the "top" of the decision making process was the Department of Health (DOH), where all policies were formally set. Apart from the DOH, guidance from the National Institute for Clinical Excellence (NICE) and the National Service Frameworks (NSF's) also affected the PCTs. The role of the SHA was to monitor the PCTs rather than involvement in actual decision-making. The executive committee was an advisory group to the PCT, comprising of a range of health professionals and lay people. The PCT board, also comprising of health professionals and lay people, was the highest decision-making body in the PCT. Decisions made by the board of the PCT fed down into the other groups below it. Although the PCT board were responsible for ratifying system wide decisions, it was difficult to establish how, when and by whom decisions were made. Decision-making appeared to be a fluid process

rather than a specific end stage. Even when decisions were supposedly made, often the decision was later reversed or the context for the requirement for funding changed.

There were several difficulties in the decision-making process that hindered decision makers in implementing decisions and working in harmony. These were related to Government targets, lack of financial resources, change or uncertainty in the decision-making process, the influence of historical factors, emotive factors, and difficult relationships and mistrust between some decision makers.

5. Use of health economic concepts and practice (prior to workshop)

This section considers the use of health economic concepts and practices using data from before the workshop was undertaken in January 2004. This is drawn from twelve months data collection involving fifteen interviews and observation of eight CG meetings.

5.1 Concepts

During these interviews there was some, unprompted, use of concepts that are familiar from health economics, including, for example, scarcity, opportunity cost, efficiency and various types of economic evaluation. In general senior informants from the PCT were more likely to use these concepts than informants who attended the CG meetings.

Almost all informants appeared to be familiar with the concept of scarcity, although only the chair of the CG meeting specifically used this term. Beyond this, however, use of health economics concepts appeared to be limited. A small proportion of informants raised the concept of opportunity cost. GPs expressed concern about the opportunity costs associated with NICE guidance on "NICE drugs". This notion of opportunity cost was linked to issues such as the extra nurses or clinical staff required to administer drugs and also the volume of patients who would be eligible to receive the drugs thus reducing the opportunity to treat others.

Thinking in terms of costs and benefits appeared to be more commonplace among senior PCT informants and GPs, who perhaps had a more "global perspective" encompassing health economics thinking. The chair of the PCT and chief executive both referred to increasing community services and withdrawing hospital services, which would save money for the NHS and provide the same level of care. GPs also considered the costs and benefits of drug prescribing. In contrast, other informants found it difficult to think in terms of trading between costs and benefits, being reluctant to assign monetary values to need and feeling a duty to provide procedures or interventions irrespective of cost. This latter group tended to include informants who routinely operated at the clinical level within secondary care, rather than with a population perspective.

Only senior PCT informants (the chair of the PCT, the chief executive, and the finance manager) discussed technical efficiency. They were keen for cost effectiveness criteria (cheaper options that provided the same quality of patient care)

to be used in the decisions made at the local level. For instance, they felt that it would be cheaper to provide hospital services within one location rather than in many.

The terminology of economic evaluation was seldom used spontaneously during these interviews, with only two informants using terms such as Cost Effectiveness Analysis (CEA) and Cost Benefit Analysis (CBA).

5.2 Practice

All examples of the use of health economics were indirect in the sense that there was no *direct* application of published health economics evidence to decisions. However, there was use of health economics thinking (hence *indirectly*) in the *formal* decision-making at the population level (the PCT level) and for a population of patient's perspective (within the hospital and palliative care groups). Health economics was not being used at the SHA level.

It is worth noting one general point, before considering the practical use of health economics at the different organisational levels. Interestingly, there appeared to be some confusion around the notion of when health economics could be used, with a view among some informants that health economics could not be used because of a lack of financial resources. Indeed, it was suggested by one informant that, in other financial climates, where there was more money available, health economics might be used more.

PCT level

At the PCT level of decision-making, health economics was being used in a very broad sense. There was no mention of the need to review evidence on health economics in any formal documents produced by the PCT. There was some mention of using cost effective procedures, but this was in general and there were no specific procedures recommended. According to the chair of the PCT, the executive committee **first** considered the clinical effectiveness of a programme or intervention and **then** the costs or outcomes associated with pursuing it. They would be responsible for reviewing the health proposals of the entire health care community, in terms of their costs and benefits, although they did not formally require health economics evidence in their decision-making process. Health economics evidence was only considered if a member decided to bring it to the executive committee. The most likely person to be requested to bring health economics evidence or to be consulted about health economics was the chair of the CG. One senior member of the PCT felt that health economics evidence might be used in situations where the PCT objected to Government requirements (*e.g.* mammography screening) and wanted to find evidence to support its refusal to comply with the Governments requirements.

CG meeting level

Examination of health economics evidence at the CG meetings was not part of the formal process. The chair said that the priority list for funding that was prepared by the CG had not been done on a "rational basis" in terms of weighing different options. There was only one specific example where health economics evidence was

considered and this was initiated through the chair of the CG, rather than from other members. In this case, evidence of the costs and benefits of a high cost treatment (brachytherapy) for prostate cancer was brought to the CG group by an invited speaker. The invited speaker was a member of the cancer network and had some knowledge of health economics. On a few other occasions, the chair of the CG referred to the cost effectiveness of cervical and breast cancer screening, but this was in passing and his comments did not form the basis of any specific argument relating to a particular decision.

On the few occasions when health economics was either formally brought to the group or advanced in passing, members did not respond to, challenge, question, or approve the evidence. Indeed, they did not appear interested in discussing any evidence related to health economics, although some were keen to discuss the effectiveness of brachytherapy. Moreover, most participants in the CG meetings did not apply basic health economics principles. For instance, they did not always act as if resources were scarce, even when sitting on a population decision-making group. Often programmes were advanced in the form of a "wish list" and there were an ever-increasing number of investment opportunities being brought to the CG, despite the acknowledgement that financial resources were extremely limited. There was never any consideration of disinvestments that might have to be made. The decisions that were "made" at meetings appeared at times to be determined by whoever "shouted loudest".

Although the chair of CG and the palliative care director seemed to have more of a desire to use health economics, this view, expressed during interview, was not necessarily acted upon during CG meetings, where emotive, political, and personal factors came into play. In general though, there was a clear distinction between PCT members who were concerned about the financial state and tried to bring into the discussion the financial costs of programmes, and the secondary care CG informants who were more concerned with advocating the needs of their patients and the relative advantages of treatment and who tended not to concern themselves with the financial limitations. Again, it appeared that hospital clinicians found it difficult to divorce themselves from the clinical level even when sitting on the population decision-making group. Clinicians frequently mentioned individual patients when the topic of discussion was population decisions.

"Lower" level decision-making

Among the decision-making bodies that fed into the CG, such as the hospital, palliative care, and so on (see Figure 1 for reference), health economics was being used to a limited extent. The director of palliative care felt that at the palliative care meetings, health economics was not being used because the evidence base for much of their work was very difficult to obtain. Palliative care considered a "needs assessment" to some extent, but it was not a full assessment of the costs and benefits. At the hospital level, business cases were used for any new developments that were being put forward by clinicians or managers and all the decision-making bodies (such as the finance department and the hospital management group) within the hospital would review them. Business cases included a requirement to include the benefits of the proposed change (which could include improving efficiency, impacting on activity, achieving better quality, initiating cost saving, and meeting targets) and

details of full cost implications and impact on other services within the hospital were also presented as a list for consideration. However, the business case was not a formal checklist and not a formal economic analysis. Evidence such as NICE guidance and other DOH guidance was used as part of the justification for the project under consideration.

6. Post workshop

This section considers the use of health economics concepts and practice following the workshop in January 2004. It is based on findings from data collection including observation of the workshop, interviews with twelve decision makers, and observation of four CG meetings subsequent to the workshop. In the interviews, discussion of health economics was prompted and so there was more discussion of economic concepts. Again, however, the interviewer did not refer to specific terminology.

6.1 Concepts

The workshop appeared to have had some success in improving understanding of health economics among these informants, with one third of informants feeling that the presentation had increased their awareness:

> *…There were a lot of things that I never appreciated before, about how decisions could be made, about setting priorities, so the whole economics part of it…*
> *(Hospital Manager 2)*

> *…Perhaps it did raise my awareness a bit more about the frameworks within which you can prioritise…*
> *(Nurse)*

There was some difference in use of concepts among those who attended the workshop and those who did not. Those who attended the workshop now appeared to have a greater awareness that health economics was not just related to money (referring to "value for money" as a term for efficiency). Those who had not attended the workshop, on the other hand, still felt that health economics was related to money:

> *…I don't think (health economics) is to do with anything else (but money) quite frankly…*
> *(GP2)*

Generally those who did not attend the workshop but were already familiar with health economics' concepts showed a greater understanding of these concepts than those who were previously unfamiliar with the concepts but attended the workshop. There was still very limited discussion of opportunity cost in interviews among informants who attended the workshop and only one informant referred to QALYs. It is appears, therefore, that the workshop had only a marginal affect in changing decision makers' use of concepts (particularly in appreciating that economics is not entirely related to money).

None of the informants specifically referred to the terms technical or allocative efficiency. However, half of the CG informants, generally those who did not attend

the workshop, discussed these concepts unprompted during interview after the workshop. They tended to be PCT senior informants or in managerial positions. For instance:

> *…Economics is a way of looking at the costs of things, the benefits of things, and the impact on the whole population in terms of, "Is money being well spent, could we do things better, are there other ways of doing things that are more economic?" I am not just talking about money, but we are talking about resources and everything really.*
> *(Palliative care)*

The use of technical or allocative efficiency arguments during interviews varied between informants, according to their professional role.

Other terminology, such as PBMA, Quality Adjusted Life Years (QALYs), CBA, CUA, CEA, were not discussed in interview, apart from by the palliative care manager who said that she did not really understand these terms.

6.2 Practice

Although there was more use of health economics terminology and concepts in interviews after the workshop, there was no difference in practice as a result of the workshop and also no difference in practice between those who attended the workshop and those who did not. There was also no change in the use of health economics practice as a result of the workshop during CG meetings. It should be noted, however, that the time-scale for observing influence during the CG meetings has been relatively short.

During the workshop, economics concepts influenced the debate about priorities. Decision makers went through some of the priority list and agreed whether items on the list were related to the targets or not. However, the other issues, of considering the evidence available and costs, were not covered during the discussion. Following the workshop, the chair independently revised the priority list and included one additional priority on the list. He also grouped the priorities into categories according to whether or not they were related to pursuing a targets and whether there was funding allocated to pursue them. The chair of the CG suggested that the revised priorities list would be used as a "script" by the hospital and to this extent the workshop can be seen as having had some success:

> *The frameworks that we put up, that we put our aspirations against, is very definitely in use. I've just actually polished it up…and the (hospital) has asked a few questions about it and I've clarified them and sent it to them. The (hospital) itself will use that framework as its script if you like from which to read the commissioners intentions…*
> *(Chair of CG)*

In terms of the actual decisions that resulted however, there appeared to be hardly any effect because although the chair of the CG said during the discussion that he aimed to include the benefits of the priorities, this was not done in the revised list. Health economics evidence had not been collected and reviewed informally or formally. Part of the reason for this could be because the workshop occurred at a stage when most of the current funding decisions were already determined and there was little option over other spending patterns.

For the majority of CG informants, health economics was not a feature of their clinical decision-making. The main way that health economics was used at the clinical level was in cost effective drug prescribing, in primary care and palliative care.

> *…To some extent you're balancing cost against quality of life…If somebody was younger you may give them a more expensive drug with a better side effect profile. If they were older, they may be more tolerant, they may be on other medication, so you are less concerned with side effects…*
> *(GP1)*

> *…Every single patient I see I make a decision and I don't necessarily give them the best treatment that might be because it happens to be the most expensive…*
> *(GP2)*

In general, however, cost effective drug prescribing was described in terms of generic prescribing and the assumption that the quality of different alternatives was identical:

> *…Generic prescribing is all about providing baked beans rather than Heinz baked beans, even though those baked beans may have been made in Bulgaria or something, it's all about finding an equivalent cheaper product and it's a very big thing in general practice…*
> *(GP2)*

It could be that this latter view of cost effectiveness contributes to the notion, also expressed by this informant, that economics is just about money and, indeed, other ways of using health economics in primary care were described as not prescribing expensive drugs unnecessarily, and starting patients on the "cheap and cheerful" drugs (GP2).

Given these views, it is perhaps surprising that the chair of the PCT felt that hospital clinicians and GPs were reluctant to incorporate health economics into their clinical decision-making:

> *Encouraging the clinicians to say "well actually, we do some of these things that are a bit of a waste of time", or if they (are) facing their total budget, and they have choice about what they do, they're probably going to better about deciding that they will stop doing something that's really not very effective or is actually very costly if they know that this is stopping doing something that they really want to do, because they think it is very clinically effective and the balance of the clinicians has got to be supported by expertise and evidence and management capacity to support all these groups.*
> *(Chair of PCT)*

In practice, most of the informants felt that it would be difficult to apply the principles presented at the workshop in practice and it would be unlikely to change actual behaviour:

> *The theory was interesting but at this point I cannot see how this can be put into practice…*
> *(Hospital manager 2)*

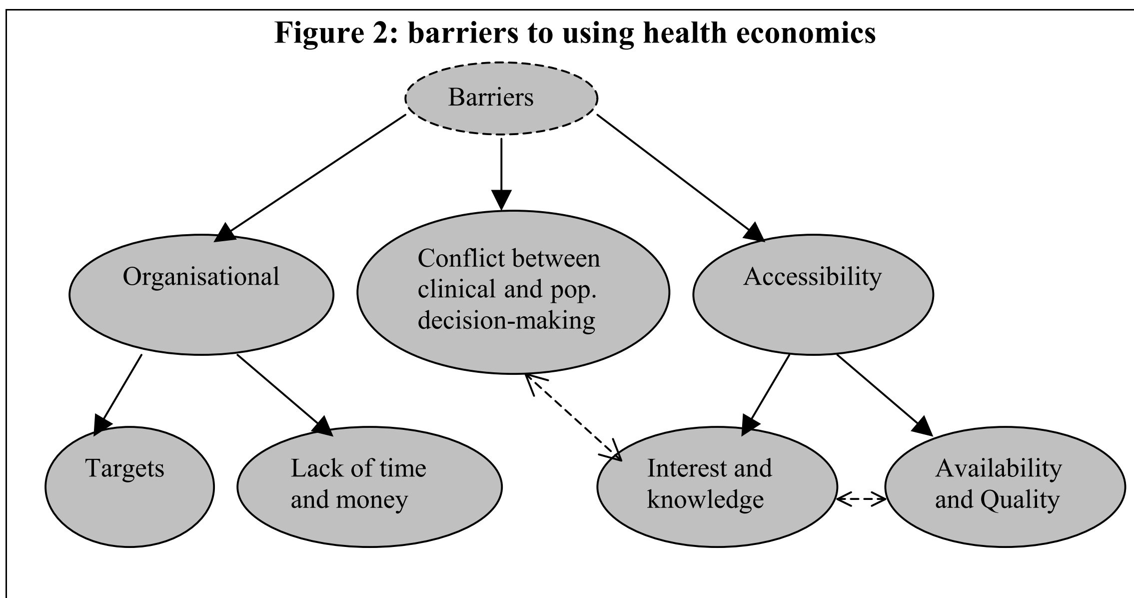
> *I like to think that personally I have got more of a kind of desire to drive things on a cost and benefit approach already, but that my enthusiasm for that is strengthened by events like that and I think to myself once again that this is the right way to do it, and then fall back into the quicksand of reality. But what actual practical difference will it make? Probably to me not all that much…*
> *(Chair of CG)*

The reasons for this are discussed in the next section.

7. Barriers to using health economics

This section discusses the barriers or obstacles to using health economics in decision-making. There appear to be three general barriers: organisational; conflict between clinical and population decision-making; and accessibility of health economics evidence (Figure 2). Informants were specifically questioned about the barriers to using health economics in interviews following the workshop.

Figure 2: barriers to using health economics



7.1 Organisational barriers

Organisational barriers include the targets for delivering waiting list times, uncertainty in the decision-making process, and lack of time. These affected the decision-making environment.

Targets

Certain wait time targets for local decision makers to follow existed for patients suspected of having cancer. These were to ensure all suspected cancers were seen from urgent referral from primary care to secondary care within fourteen days and treated within thirty-one days of decision to treat. Targets also existed for specific screening procedures. Other targets related to areas outside cancer care, such as the maximum wait in Accident and Emergency not exceeding four hours, but the main concern for these informants were the cancer targets.

Two thirds of informants felt that the targets dictated health care priorities and restricted the use of health economics in decision-making. There was a perception that Government policy had ignored health economics rationale in setting the targets:

> *…If (politicians and civil servants) understood health economics better we wouldn't be driving some of these targets.*
> *(Palliative care)*

It was also highlighted that pursuing the targets was not necessarily an area where local decision makers wanted to use their money.

> *…You think you're going along and something comes along that completely scuppers the plans that you had, usually new Government targets that mean you've got no money left for anything at all…So the new targets for cervical cancer screening for instance, economically they are completely a waste of money, but they are going to drain all the plans that we would have had for two years time, but that's life in the NHS… They haven't been properly thought through so the economic implications, at a local level, are simply horrendous compared to everything else that's happening.*
> *(Palliative care)*

On the other hand, one informant (director of planning at the PCT) had a very different view of the extent to which Government policy restricted the use of health economics. He felt that most decision makers did not view the targets, as they should correctly be seen, as an end product that could be reached in different ways. For instance, according to him, there were two possible ways of attaining the target related to the maximum wait in Accident and Emergency not exceeding four hours. One was to employ additional staff and the other was to invest time and money into changing habits and behaviours. He felt that in most cases the first option, of employing additional staff, was chosen, because of the myopic nature of decision-making.

Lack of time and money

Lack of time in decision-making was raised by over half of informants, including clinical staff responsible for seeing patients and managerial staff who had limited face-to-face contact with patients. There were two effects of a lack of time on the use of health economics. Firstly, there could be a limited effect of activities such as the workshop, either because there was not enough time to apply the principles of the workshop (chair of PCT and nurse) or because the right people were not able to attend in the first place because of a lack of time (GP1 and GP2). GPs found it particularly hard to attend any meeting during surgery time because of the needs of patients (GP1). Secondly, it was suggested that there was insufficient time to collect health economics evidence. The time needed to retrieve information from cost effectiveness studies was felt to be lacking by one third of informants. Decisions had sometimes to be made at short notice whereas health economics was "slow":

> *There isn't sufficient stability in the system to allow custom and practice to alter to include deeply rational approaches like health economics…The health economic approach isn't perfect. It's slow, it's suited to stable, long term fixed processes, and it*

doesn't react, it doesn't respond well to when things are changing, but for those things that are stable and long term then I think definitely it should be.
(Chair of CG)

Three informants from a variety of areas viewed the lack of financial resources for the health community as a barrier to using health economics because of the focus on cost containment.

…If you were having this conversation with the PCTs, I am absolutely sure that they (would say) "blow to the economic evaluation, the only thing that matters is do we have the money to pay for it".
(Hospital manager 1)

A particular aspect of this problem perceived by one informant was the need to fit in with the short-term orientation of the NHS, even if a service was shown to be "cost neutral" over time.

7.2 Conflict between clinical and population decision-making

One of the main questions of this paper is whether decision makers are rationing care or making decisions for individuals and communities about which treatments or services they should have or forgo. The previous section discussed the barriers to the use of health economics as a result of organisation factors, which were generally outside the decision makers control and they tended to object to. They were seen as negative effects on the decision-making process and affected their use of health economics in a negative way. Under these circumstances, it might be thought that without these organisational barriers, the use of health economics would be greater. However, this section provides a different light on the use of health economics in decision-making. It suggests that there are intrinsic problems with health economics and its use in decision-making due to a misalignment of what decision makers want to do at a clinical and local population level and what health economics prescribes at the population level. Some informants had a reluctance to make rationing decisions or deny care. This was based on two premises; the difficulties, they felt, with rationing, and the fact that they did not want to ration care.

Rationing cancer care was difficult for some decision makers because it was hard to be objective and doctors might be affected emotionally:

…Giving up is often quite difficult, so it's often easier to them to say, "Lets keep going, lets keep working on this cancer", than to have the difficult conversation about, "where do we go from here, what's in your best interest?"
(Nurse)

… It's all very well to take yourself away from the one to one consultation…the patient wants you to do something, you have it in your power to do…
(Consultant clinician)

…It's very difficult to deny a single patient that drug because it's expensive…
(GP2)

Decision makers also had individual patient responsibilities from which they appeared to be unable to divorce themselves when making population level decisions. Some decision makers (hospital clinicians in general) found rationing difficult because they did not feel that it was appropriate to base decisions on monetary costs or they felt that clinical effectiveness was the primary consideration (nurse). In contrast, some decision makers (GP1, GP2 and some senior PCT managers) felt that although it was difficult to make rationing decisions, it was necessary to balance cost against quality of life.

Two informants (a nurse and consultant clinician) felt that they did not want to be responsible for rationing treatment between individuals. They felt that the PCT commissioners should be responsible for difficult decisions that essentially involved someone's life. In these situations, it is not that decision makers did not *want* to use health economics, but rather they wanted to be sure that if they rationed care, the responsibility for dealing with any public or individual resistance would not rest with them.

The emotive effect on doctors treating cancer patients gave the patients power to influence decisions on their own treatments or services.

> *... If you're talking about health economics, what is the point of wasting all those resources on those poor patients that are going to die anyway? Well the answer is if you put it to the patients and say, "do you want this treatment, which might give you a chance of survival for several weeks, might give you", then a lot of patients would say "yes" and they won't even listen to a lot of the side effects.*
> *(Consultant clinician)*

There was a strong incentive for rationing to be dictated by individual choice, even where clinicians might disagree.

Other informants who did not have an individual perspective suggested that rationing care was necessary because it appeared to be the most logical course of action. However, they felt that in some instances rationality was hindered by the problems with the media creating adverse publicity and powerful lobby groups.

7.3 Accessibility of Health Economics

The accessibility of health economics refers to the level of ease for decision makers to obtain, interpret, and use health economics information. This was found to be a particular barrier among some informants, in relation to interest and knowledge of health economics, and availability and quality of evidence.

Interest and knowledge

Interest in health economics was affected by decision makers' lack of rationing desire, lack of time, and money (see relationship in Figure 2). One third of informants expressed an interest in using health economics. All were either from the PCT, palliative care, or GPs. None of those who expressed interest were from secondary care.

The main problem, according to over one third of informants, was the lack of expertise in health economics at the local level in the NHS:

> *…In terms of what is the most cost effective for the whole population…that's actually very difficult to sort out and expertise isn't there, you'd have to be an epidemiologist to even sort of grapple with that, and I am not saying that we should driven by that sort of approach, but it should be part of the factors that you're looking at.*
> *(Palliative care)*

Interestingly, this informant felt that what was required to interpret cost-effectiveness studies was not a health economist but an epidemiologist.

It appeared that knowledge of basic health economic principles was restricted to a limited number of decision makers.

> *…The concepts that came out, that were elaborated, were not new to me. But they were very clearly new to others round the table, I thought. At first I thought they were going to dismiss a lot of it and say, "This is common sense, we know all of this", but I think several of them hadn't realised that there was a systematic and almost learned approach…*
> *(Chair of CG)*

It is interesting to note that even the palliative care manager, who was one of those who had received some health economics training, did not clearly understand QALYs.

> *…I don't know whether everyone understands QALYs, that was taken as a given really, but, I don't know much about quality of life indicators, I wouldn't be able to apply it, unless there was somebody there at future meetings to explain it, maybe…*
> *(Palliative care manager)*

Availability and quality of evidence

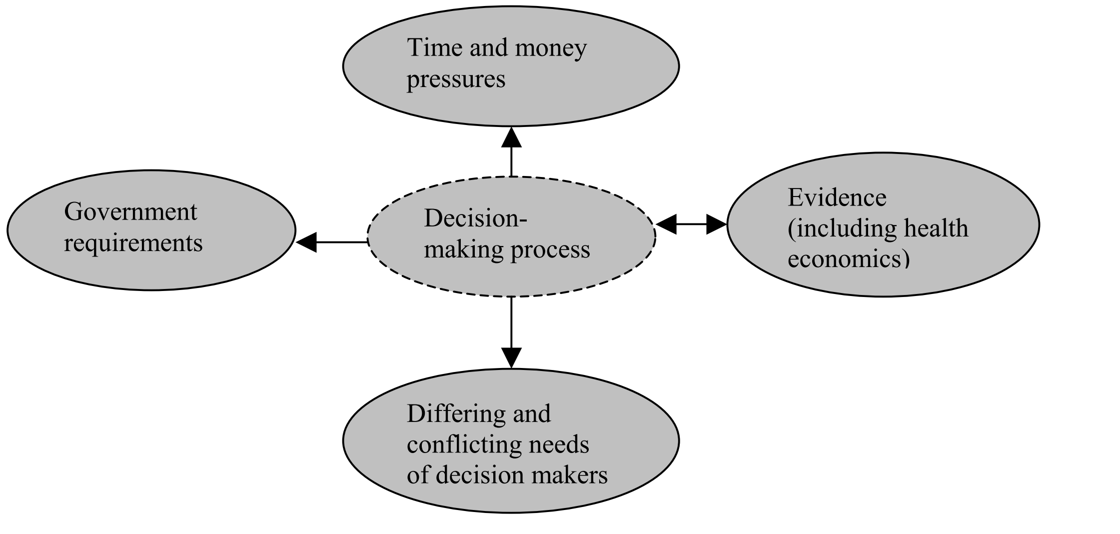
Interest and knowledge is linked with availability and quality of evidence (see relationship in Figure 2), because without the former it is unlikely that decision makers would progress onto the stage of retrieving and assessing the quality of evidence. Some informants felt that basic data from the hospital were either poor or lacking, particularly in relation to cost data. Similar to the debate about the conflict between clinical and population decision-making, it was felt that evidence that might be appropriate for the population of individuals in a particular study might not be applicable to their setting. In relation to health economics evidence, the palliative care director, who also peer-reviewed journals, felt that the use of "surrogate data and assumptions" caused him the most concern. This suggests the need for a clearer link between clinical and health economics research.

8. Discussion

This paper has shed light on the complexity of the decision-making process and how decision makers have many competing, and sometimes conflicting, objectives (Figure 3). On the one hand, they are required to follow Government targets, but they also have pressures to balance their budget and are restricted with time. Moreover,

different decision makers will have different objectives and interests depending on their professional role. Added to this, there is a continuous need to keep informed with new evidence, including costs and benefits of treatments, services, or interventions.

Figure 3: the complexity of the decision-making process



Part of the decision-making process can be compared to decision-making within a household, whereby time and money pressures and differing and conflicting needs restrict individuals. However, whereas household decision-making is based on conflicting objectives, time constraints, financial constraints, and informal (learnt evidence), health care decision-making has two additional factors: decision-making on behalf of others and also formal (unlearnt) evidence. It appears to be these additional factors in health care decision-making that decision makers have the most problem with. Using research evidence was complicated and not a normal process that people already had experience of. Moreover, the factors in the decision-making process were also seen to directly affect the use of health economics evidence– for instance time pressures rendered it difficult for decision makers to search for information or to apply evidence.

There were no formal mechanisms to incorporate health economics into the decision-making process. Health economics was generally not used in a direct sense. Generally, use of health economics was in an indirect way, whereby some decision makers at the PCT and hospital level used health economics concepts in “global” decisions or business planning. Again however, the use of health economics evidence was not a formal requirement and there were no application of economic evaluations.

It appears that one of the main problems in the decision-making process was the differing and conflicting need of decision makers. There are different decision makers with competing objectives and frameworks for decision-making and there is not, as is sometimes assumed, a typical “decision maker”. Moreover, different decision makers are likely to act differently when in different roles. This was found, for instance, for members such as the chair of the CG who was quite objective when interviewed as member of the PCT, but on the CG he was often persuaded or emotionally affected by some of the requests being advanced by other decision

makers. Future work into this area should pay particular attention to the incentives of decision makers.

Potential ways to increase the use of health economics might be to enable greater local control on policies; better availability and quality of information; education in health economics and “championing” of health economics, whereby one person is responsible for enforcing the use of health economics at the local level (the most obvious person in this study would be the chair of the CG or a senior member of the PCT). National reforms might also be beneficial, such as the inclusion of health economics training for people undertaking medical qualifications, on the one hand, and greater interest among health economists to disseminate basic knowledge through workshops and other educational interventions on the other hand.

Key Issues for Discussion by HESG Audience

- Comments on the methods used and main findings;
- The value of active attempts (such as workshops) to introduce health economics into decision-making processes;
- The practicalities of using health economics evidence in emotive areas such as cancer.

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