

**The use of results from Economic Evaluation in NHS Decision Making**

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**Abstract**

In the UK, the use of the results from economic evaluation in decision-making has been assessed by relatively few studies, mainly using surveys. Although these have provided some useful information, they have tended to reflect what decision makers feel they ought to say rather than what they actually do. This paper presents a proposal for future work in this area to begin early 2003. The research will combine qualitative and quantitative methods. Qualitative methods are needed to understand the complex nature of the decision making process where views and opinions are often divergent. The use of these different methods in combination (methods triangulation) will strengthen the research findings. The study aims to explore, qualitatively, the views and current use of economic evaluation among decision makers and the impact of presenting them with economic evaluation information at the Primary Care Trust (PCT) level in several areas. Participant observation will be used at PCT meetings. Information will be gathered through observation of the discussions and through presenting new economic evidence on cases being considered. This will enable a reflection on the decision making process in a natural setting. Quantitative data will be extracted on the importance of efficiency in relation to other factors such as cost and equity. This will be achieved through a revealed preference approach using the techniques of conjoint analysis.

## **Introduction**

This paper presents ideas for the design of a study to assess the use of results from economic evaluation in decision-making in the NHS in England. The ideas put forward will form the basis of a PhD thesis. This research incorporates the recent changes in the NHS such as earmarked funding for National Service Frameworks (NSFs), the creation of the National Institute of Clinical Excellence (NICE), and the structural changes in the NHS, such as the creation of Strategic Health Authorities (SHAs), into an understanding of the decision-making process. By looking at the networks of relationships and activities between players at the local level it is hoped to shed light on the complex nature of the decision making process. Ultimately, the interest is to find how the results of economic evaluation studies are currently used in this process and how they can be feasibly adapted into the process for the future.

The paper is structured as follows. The first section gives a brief outline of the studies which have been conducted to assess the use of economics in decision-making. These studies have been drawn from an initial literature review using Medline (since 1993), conference proceedings and a search of grey literature on this subject. The second section provides a brief description of the recent organisational changes that have taken place in the NHS. The decision-making process, which is currently taking shape, reflects these changes. The third section examines the proposed empirical work, both qualitative and quantitative, to be conducted in this area. It justifies the choice of these methods and gives details of the way the study will be conducted. The final section provides a brief conclusion and presents a list of points for discussion on which we would like to obtain views and comments.

## **Background**

Economics is concerned with choices about the allocation of scarce resources between competing health care programs. In health care policy making, economics suggests that alternative strategies should be evaluated to assist policy decisions. In theory, economic evaluations should be useful for those persons who are responsible for decision-making in

the health care system. Although the number of economic evaluations in health care has risen rapidly over the past twenty to thirty years, it is only relatively recently that there has been growing concern about the usefulness of health economic information for decision makers. To address this concern, several studies have been conducted to look into the use of economic evaluation in decision-making in the UK, other countries in Europe, Australia, and the US. The exact definition of 'use' of economic evaluations in decision-making has not been explicitly stated in the studies. But it can be inferred that they are referring to 'direct use' (specific use of the research results) or 'selective use' (to legitimate and sustain positions), rather than 'enlightening' (to understand).<sup>1</sup>

The majority of these studies have found the use of economic evaluation in decision making to be limited or modest. A major European study in this field found that a third of decision makers currently use (amongst other forms of information) the results of economic studies to some extent to base decisions upon.<sup>2</sup> Approximately 780 decision makers (equivalent to 75% of those surveyed) said that economic considerations should influence decision making to some extent.<sup>2</sup> The main barriers identified in studies appear to be difficulties in transferring budgets (between primary and secondary care in the NHS for instance)<sup>2-5</sup>, lack of credibility of economic evaluations (particularly industry funded ones) or mistrust of jargon<sup>2-5</sup>, difficulties in understanding the practical relevance of the results of economic evaluations<sup>2</sup>, and difficulties in interpretation of the economic evaluations.<sup>2;3;5</sup> It is interesting to note that the majority of barriers relate to the quality and comprehension of economic evaluations rather than the context or setting in which they apply.

However the studies, which have been conducted to assess the use of economic evaluations, do have methodological limitations. The methods used have included interviews, focus groups, and questionnaires but the actual decision making process in most was not investigated in depth. Surveys are problematic because respondents' answers may not reflect what they actually do in practice.<sup>5;3</sup> In addition, the use of surveys means that the questions are already set and it is difficult to establish the opinions or beliefs of decision makers. Hypothetical scenarios have also been used<sup>4</sup> but these fail to reflect real decision-making and participants' responses do not matter in the same way as for real decision-

making. The scenarios presented may differ from the problems faced by real decision makers.

Recent academic research has identified a need to use participant observation, rather than surveys or hypothetical scenarios, to understand the complex nature of the decision making process.<sup>6,7</sup> The decision-making process is complex because there are many people involved and it is difficult to understand how decisions are made. The technique of participant observation involves the researcher becoming involved in the activities taking place while also observing them<sup>8</sup>. In the first major study of its kind in this area, McDonald assessed the extent to which health economics input influenced decisions in relation to Coronary Heart Disease (CHD) within a Primary Care Group (PCG) at one Health Authority (HA) using participant observation and documentary techniques.<sup>6</sup> This involved three case studies (statin guidance, heart failure diagnosis equipment, and a hospital clinic) of decisions arrived at by a CHD Group containing expertise from both primary and secondary care. Reactive decision-making in the context of multiple objectives, which is in contrast to the health economics approach, was highlighted through this work. McDonald found that the decision making process diverges from an accepted health economics approach to 'rationality', which is defined as purposive behaviour in selecting a course of action to achieve specified ends. The type of barriers McDonald identified was in relation to the complex and multi-dimensional decision-making process, rather than on factors related to the studies themselves, as found in previous research. This is probably because of the different method she used to conduct her research which involved observing the process of decision making.

Ongoing research using participant observation at the Health Services Management Centre (HSMC) in Birmingham<sup>7</sup> focuses on 'policy level' use of economic analyses at the national and local level. This will involve a national case study of the NICE Appraisal Committee and local research (using interviews, documentary evidence, and case studies) of the Berkshire Priorities Forum, the Medicines Management Committee and others yet to be identified. The aim is to develop strategies to improve the impact of economic evaluation.

The research began in Autumn 2002 and will be completed in 2003. The NHS Research Methodology Programme is funding this work.

The research described here will aim to take into account of the wider context for decision-making, which is supported by the literature on this subject. A paper which investigates why economic approaches to priority setting have only had limited impacts in practise, with a focus on limits to rationality (or economics) argues that if economic approaches are to have a wider impact, health economists need to adopt a wider research agenda.<sup>9</sup> Robinson suggests, “local HAs need to balance the pressures emanating from central government (such as national and regional targets, *brackets mine*), local providers (hospitals and doctors) and public opinion; as well as consider the technical evidence on clinical and cost-effectiveness” (page 19). As well as balancing pressures, as Robinson rightly points out, it is necessary to co-ordinate efforts between other institutions within the area (*e.g.* other PCTs). To solve national and regional priorities it is necessary to work together. This is not a pressure, it is a more of a useful relationship which helps the decision making process filter through, backwards and forwards, to all the relevant channels. Kernick (2002) sums up the situation nicely by saying that the healthcare decision making field is a complex adaptive system characterized by “hierarchies of interacting systems where change in any one element can alter the context for all other elements. The interactions between system elements are characterised by iterative positive and negative feedback loops operating at all levels” (page 785).

### **Context for decision-making in the NHS**

There are two recent developments in the NHS that have altered the decision-making climate. Firstly, there is an emphasis towards a primary care led health care system. The “White Paper”<sup>10</sup> outlined new “National Service Frameworks” (NSFs), which are models of service development for local areas to deliver. They help to ensure consistent access to services and quality of care across the country. Frameworks have been published for CHD, older people and mental health. Frameworks for cancer, children, diabetes and long-term conditions are expected soon. The “White Paper” established other arrangements, such as a new Commission for Health Improvement to support and oversee the quality of clinical

services at local level and to tackle shortcomings. Health Authorities were given stronger powers to improve the health of their residents and oversee the effectiveness of the NHS locally. Teams of local GPs and community nurses were set to work together in new Primary Care Groups (PCGs) for the local community. NHS Trusts, the bodies that provide patient services in hospitals and in the community, were to agree long-term service agreements with PCGs. These service agreements are generally organised around a particular care group (such as children) or disease area (such as heart disease) linked to the new NSFs. However, several changes have since the publication of the White Paper has occurred. Notably, HAs have been replaced by Strategic HAs which are new larger HAs designed to strategically develop the local health services within their areas. They also manage the performance of Primary Care Trusts (PCTs), previously PCGs, and NHS Trusts in their areas.

The second important development was the creation of NICE to give a strong lead on clinical and cost-effectiveness through new guidelines applicable to all parts of the health service.

### **Proposed empirical work**

#### Qualitative study

Qualitative methods have a long history of use in the social sciences. They are valuable in accessing areas not amenable to quantitative research, such as opinions and beliefs, and can be a precursor to the development of good quantitative techniques.<sup>11</sup> Qualitative methodology is in some ways contrary to the neo-classical positivist approach to economics, which comprises theories deduced from axioms and assumptions about behaviour with the intention of providing prediction and explanation. A recent article in the Economist, professing the fruits of fieldwork rather than desk based research claims that economists perhaps do not live up to the tag of being worldly philosophers and suggests that visiting, for example, a pin factory (as in the Adam Smith case) might provide insights that official statistics cannot.<sup>12</sup>

In this research, since the decision-making process is complex and non-linear, qualitative methods using participant observation will be adopted in order to enable the views and beliefs of decision makers to emerge and to be studied in detail. The results will be supported through methods triangulation, which is the use of three or more different research methods in combination principally for a check of validity.<sup>11</sup> In this study the methods that will be used are: participant observation, in-depth interviews, and documented evidence. Triangulation will facilitate the understanding of the complex decision-making process, in a way in which surveys and hypothetical scenarios fail to capture. No prior research hypothesis is assumed for this work, thus, for instance, a test of economic evaluation being the most or least important factor is not being pursued.

The focus of the research will be on decision making in the southwest of England on priority setting for cancer. The southwest region was chosen because PCTs here have established a decision-making mechanism through regular meetings, which we were given permission to observe. Cancer meetings were chosen as the subject of study because saving lives from cancer is one of the government's main targets and it is a primary interest of the PCT under study. The decision makers (usually about 15 in total) attending these meetings are from PCTs, NHS Trusts, SHAs, voluntary organisations, and other local interested organisations. In general, these routine meetings (at PCT and hospital locations) are held to make decisions about how best to implement national strategies (such as the NSFs) and also to make choices within the NHS that are not covered by the national strategies. The meetings tend to focus on the government guidelines or priorities, which include the Health Improvement Modernisation Programme (HIMP) 2002-2006, which each PCT must produce, and the Service and Financial Frameworks (SaFF) for 2003/04 which all organisations must work within.

Members of the meetings will be observed in order to gain insight into the use of economic evaluation and economics in decision-making and to observe the different interactions between players. Initially, meetings will be observed in a lay capacity. The researcher will then act in the role of a health economist in subsequent meetings offering health economics advice as appropriate. Economic information will be presented on cases that decision



makers are currently considering, obtained where possible from published sources. The information will be presented at a convenient point during the meetings - before, during or at the end, although there are benefits and disadvantages of each. For instance, if the health economics information is imparted at the beginning of the meeting it will be difficult or impossible to find out how the decision making process would have been without this information. If information is imparted at the end, although the decision making process would have been fully observed, the effect of the information could be minimal because decisions might have already been made. We would welcome discussion on this point.

Apart from the observational work, participants will be interviewed in-depth, and purposively selected to be on the basis of their comments during the meetings with the aim of obtaining the range of views about the use and perception of economic evaluation. Informants will be interviewed at the time that the researcher is acting in an anonymous capacity (i.e. non-health economist role). They will then be interviewed at a later point once the researcher is acting in the role of a health economist. One challenge here is to weigh up the potential advantages (already established rapport) with the disadvantages (informants concealing their views about economics) of the economics researcher conducting these interviews. The interviews will be semi-structured, with a list of points to be covered written down on a sheet of paper and the format of the interview will be generally guided by the interviewee.

It is intended that a full range of possible cases or settings are observed from this research to enable conceptual generalisations to be made, and sampling will be continued until saturation is reached. However, it is not known whether similar types of decision-making based on condition specific priority setting meetings, as found in the southwest, exist in other parts of the country. If appropriate, efforts will be made to obtain data that might modify the analysis by extending the sample to different geographical/disease area(s).

Early discussions with decision makers suggest that there is a prior agenda to meetings, although the exact details might not be available to participants until the actual meeting. It is recognized that the types of decisions at meetings might not easily fit into the paradigm of published economic evaluations, which typically include a cost-effectiveness analysis of

different forms of treatment for a specific condition. Initial discussion with decision makers suggest that one example where economic input might be needed is in the choice between replacing an old and out of date Magnetic Resonance Imager (MRI) at a local NHS hospital versus expanding an anti-cancer chemotherapy unit.<sup>13</sup> Although a published economic evaluation would be unlikely to deal with such a situation, it will be interesting to see how decision makers would resolve this issue and to see whether introducing economic thinking (calculating and weighing up the costs and benefits of the alternatives) influences the decision.

### **Quantitative study**

Quantitative work will be undertaken in order to provide quantitative estimates of the importance of economic data and thus compliment the qualitative data. By incorporating different data into the analysis, through methods triangulation, it is hoped that the results are strengthened.

A discrete choice experiment (or conjoint analysis) method will be used, which is a questionnaire method of data collection and analysis. It is a technique for establishing the relative importance of different attributes in the provision of a good or service, assuming that any service can be defined as a combination of levels of a given set of attributes.<sup>14</sup> The technique is gaining widespread use in health care and has been applied successfully in eliciting patients' and the community's preferences in the delivery of health care services.<sup>15</sup> This proposed study will use a similar approach to a unpublished study (presented at HESG in Brunel, 2002) in which discrete choice analysis was used to reveal the preferences of NICE and to consider the consistency of its decisions using data from the technical appraisal and guidance documents supporting the decisions.<sup>16</sup> A total of thirty-three decisions were used from published past guidance for which cost effectiveness data was available and these were amenable to quantitative analysis of a binary choice model. The paper consisted of 31 'yes' decisions and 6 'no' decisions.

However, in our paper because choices will not be necessarily binary we will use a non-binary model.<sup>17</sup> The aim of the experiment will be to establish decision makers' preferences between various factors, including economic evaluation, used in decision-making. The likely factors to be included in the model are<sup>16</sup>: whether economic evaluation is used or consulted in the decision making process; the cost per quality adjusted life year gained (QALY) or cost per life year gained if this is used; whether equity (where definition is to be defined but likely to be similar to Devlin and Parkin paper) is considered; the availability of NICE guidance; and political imperatives. The data will be obtained through a number of possible sources, as with the qualitative work. These are: participant observation, in-depth interviews, past documented decisions, and questionnaires.

The same sample group as for the qualitative work will be used. A minimum sample size of thirty (decisions) will be required for analysis.<sup>18</sup> This could pose a potential problem because it might not be possible to obtain a sufficient number of decisions, but this will be explored. Also, the introduction of economic data could influence the results, and this issue will be addressed in the design of the study.

## **Conclusion**

The results of this project will be used to improve the understanding of the decision-making process and the information required by decision makers. The type of problems that decision makers are faced with will be explored in depth. The aim is to try and establish the barriers to using research evidence and future ways of implementation in the current decision making climate.

Whereas previous research has examined local level (PCT) or national level (NICE) decision making, this work will lie somewhere in the middle, looking at all the different interactions which take place and the range of players involved, which tends to be quite vast and diverse. In addition, the work will take into account recent national guidance from NICE, cancer guidance, and local developments in health care, using both qualitative and quantitative techniques.



*Challenges/difficulties*

*Your views or opinions on the following topics would be very useful*

1. Use of qualitative and quantitative work in combination
2. The feasibility of the discrete choice experiment
3. Obtaining honest answers from participants interviewed

In addition, we would like to ask a few questions...

*Questions?*

1. Do decision-making meetings of this sort exist elsewhere in England? How are decisions made in other areas?
2. Is anyone aware of any literature specifically on the use of economic evaluation that we might have missed?
3. Any other problems???

**Thank you.**

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