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CIRCULATION**

**AN EMPIRICAL INVESTIGATION INTO THE USE OF  
ECONOMIC ANALYSES BY THE NATIONAL INSTITUTE OF  
CLINICAL EXCELLENCE APPRAISALS COMMITTEE**

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## **INTRODUCTION**

The central problem addressed by the discipline of health economics is ‘resource scarcity’. Therefore, the work of economists in the field of health care is largely aimed at supporting policy-makers facing decisions necessitated by resource scarcity. However, a growing body of research across the world has begun to uncover the extent of, and reasons for, the disjuncture between recommendations from health economics studies and policy decisions and outcomes (for example, Drummond et al 1997, McDonald 2002). This paper presents findings from one part of a larger investigation into the impact of health economics on UK policy decisions, both national and local. The focus here is on one of our case studies: the National Institute of Clinical Excellence (NICE) Appraisals Committee.

Previous studies have looked at the use of health economics by national policy makers in Australia (Ross, 1995) and Europe (Abbühl 2000, Van Rijkom & Rutten 2000). In each case the authors report that the influence of economic evaluations on decisions is moderate and that study respondents displayed a lack of awareness of the discipline of health economics. The main barriers cited by these studies relate to the perceived incongruity of economic evaluation with the actual decision-making environment. For example, it was felt that economic evaluations were rarely delivered within the required time frame, and that they typically identified savings that cannot in reality be realised. Other barriers reported include concerns about bias from authors of evaluations and a lack of training in the discipline amongst decision-makers. Empirical work addressing this broad issue has also been undertaken in the UK, other European countries and North America. The results of this further work are summarised in Tables 1 and 2 and broadly support the findings reported above. In the study reported in this paper the research team sought to address the extent to which these barriers applied in a UK setting to NICE.

NICE is a Special Health Authority in the National Health Service of England and Wales. It was set up in 1999 and currently has four functions. These are:

- € to appraise new and existing health technologies;
- € to develop and disseminate clinical guidelines;

- € to appraise interventional procedures used for diagnosis or treatment, and
- € to identify ways of improving the quality of care (confidential enquiries).

The first of these functions - producing guidance on new and established medicines and treatments – is performed via the Institute’s appraisals process. The key decision-making element of this process is carried out by the Appraisals Committee which consists of experts appointed by NICE. For each technology appraised, NICE receives an independent assessment of evidence, which includes an economic evaluation. The committee also takes submissions from interested parties ranging from the sponsor of the technology to patient representative and expert bodies (NICE web-site, November 2003).

The committee meets to discuss the evidence and listen to further testimony from clinical and patient representatives before producing a provisional determination (the Appraisal Consultation Document, ACD) as to the technology’s clinical and cost-effectiveness. This is made publicly available and forms the basis of the committee’s final appraisal determination (FAD). At its most definitive, this guidance will either recommend the routine usage of the technology in all appropriate clinical situations, or will recommend the technology not be adopted by the NHS. Alternatively, guidance will recommend restricted use, for example, in certain patient categories only or as part of ongoing research.

This paper reports an early analysis of some of the qualitative data collected as part of the NICE case study. The data reported here are from interviews with committee members. Additional data have been collected through documentary analysis and observations of committee meetings but these are not reported in this paper. The themes explored in the paper are: the importance of economic evaluation to the decision-making process, interviewee reflections on Quality Adjusted Life Years (QALYs), levels of understanding of health economics within the committee, and suggested strategies for increasing its usage. Findings emerging from interviews with health economists on the committee are presented separately from those deriving from other interviews. Data from interviews with health economists are presented

separately as these represent the opinions of a group with specific expertise in relation to the primary subject material of the study.

## **METHODS**

Approval for this research was granted by the West Midlands Multi-Centre Research Ethics Committee. Consent for the research to be undertaken was given by the NICE Executive Board, and all those invited for interview were given an information sheet and consent form. Interviews were only conducted after consent forms had been signed. At the outset of the project the research team conducted interviews with senior members of the NICE Appraisals Team and carried out a group discussion with members of its technical support team. The main purpose of these interviews was to provide the team with a sound and detailed understanding of the technology appraisal process and the specific roles and responsibilities of each of the parties involved. This process helped inform the selection of the 7 prospective technology appraisals included within the case study. Topics were selected in order to:

- € cover appraisals carried out by both branches of the committee;
- € encompass a range of technology ‘types’ (i.e. not exclusively drugs);
- € encompass appraisals involving a varying number of comparators, and
- € include appraisals with varying quantity and complexity of health economic analyses.

All documentation prepared for the committee for these appraisals was reviewed by a research team which consisted of health economics and qualitative research expertise. The team then observed committee meetings relating to the selected topics. Semi-structured interviews were conducted with committee members involved in each of the technologies appraised. In addition, a small number of non-technology specific interviews were conducted with committee members who were willing to be interviewed but had not hitherto been selected. In total, thirty interviews were undertaken. All interviewees were committee members at the time of the commencement of the case study. Health economists form the largest group within the interview sample. The number of interviews by committee membership category (as employed by NICE) is shown in Table 3.

For the purposes of this paper we have divided interviewees into two groups: health economists and non-economists. Interview transcripts were read and coded separately by members of the research team. Themes and categories were then refined and reduced following discussion. Finally, these were synthesised and written up as findings.

Interviewees were asked to reflect both on specific appraisal topics, as well as on the appraisals process in general. They were asked both about their *individual* experiences of, and approach to, health economics, and their perceptions of the workings of the committee *as a whole*. Responses reported here will reflect each of these different emphases. The research team deliberately did not specify definitions of terms such as *economic evaluation* or *cost-effectiveness* in order to allow the meaning, either explicitly or implicitly adopted by respondents, to emerge from interview.

We were interested in exploring the weight placed on the economic evaluation information provided, when thinking about whether to recommend a new technology. Interviewees were, therefore, asked to explain the considerations that most influenced them, and how much ‘importance’ they attached to the economic evaluation, as well as how, if at all, this differed in their perception, from the weight attached to it by other members of the committee. We also sought to explore the extent to which committee members felt it was their role to understand and critically interpret the economic evaluation information made available to them. We asked them whether they felt they and others on the committee *understood* the health economics, and the part played by them in identifying its strengths and weaknesses. NICE encourages consultees, where possible, to submit economic analyses that include an estimate of the incremental cost per QALY of the technology under consideration. We asked interviewees to reflect on QALYs and their value to the decision making process, and to identify areas where they thought the use of economic evaluation might be improved. Quotations are used here as examples – rather than exhaustive lists of interview responses, in order to illustrate significant trends in findings.

## RESEARCH FINDINGS

### **The importance of economic evaluation to decision making**

Every interviewee stated that they attached significant importance to the economic evaluation information presented to the committee. Those who made a distinction specified that they valued the economic evaluations carried out by review teams more highly than submissions from parties with a perceived interest in the outcome of the appraisal. Interviewees all acknowledged the reality of scarce resources within health care, and that this was the context within which the committee's decisions were made. In this respect, there was a consensus amongst interviewees that cost-effectiveness was an important criterion in appraisal of new technologies. Despite this consensus there appeared to be variation in the extent to which the economic evaluation was seen as one of the *primary* considerations and, therefore, the degree of 'importance' attached to it. Some saw it as the paramount consideration – in the main these were people in academic positions. However, the greater majority cited evidence of clinical effect as being their primary consideration. These references to the twin measures of clinical and cost-effectiveness reflect the explicitly stated criteria of the NICE Appraisals process.

*Well, it seems to me to be the clincher really. If it's too high, then it's not going to get funded. ... It does seem to be the bottom line, really.*

*That's what NICE is about. At the end of the day, it's not there to tell whether something is effective or not, it's there to assess whether it's cost-effective in the current day's circumstances. In fact if something is dramatically clinically effective, there's not usually a problem, because it's usually cost-effective.*

*I would say probably the clinical evidence as a starter. It's very difficult because a lot of the appraisals I've been involved in to date have had virtually none. So it's kind of hard but that's top of my list.*

*I always focus on the clinical effectiveness side of it first, because that is more my area of expertise.*

*The degree to which the economic evidence holds sway depends upon a number of factors. The first, of course, is the quality of the clinical evidence, because I'm aware of the fact that, if you haven't got good quality clinical evidence, then your economic modelling is going to be equally poor. ... the cost per QALY per se does not determine whether or not there is a 'yes' or 'no' guidance.... And I think therefore clinical need, patient preference, the input from the professionals, do hold sway.*

*I think for certain technologies if the clinical evidence is very good then I don't think it matters that much unless it's a wildly expensive technique. I would think that you'd place less emphasis on the cost-effectiveness. And my view would be that if something has an important place and an established place in the diagnosis and it's not that expensive, you give lesser weighting to the economic analysis.*

Some interviewees appeared to attribute less importance to the economic evaluation than they did to data on clinical effect and other factors, such as the epidemiology of the disease and expert testimony as to best practice. The reasons for this prioritising of considerations varied. In some cases, the extent to which economic evaluation impacted upon an interviewee's thinking was influenced by perceived limits in their capacity to fully understand it, and a subsequent focus on areas of individual expertise. A more common feature of interview responses, however, was the effect of adopting an *ordinal* approach to processing the totality of information on a technology.

*Clearly it's important we start off with clinical effectiveness and that the clinical effectiveness of any technology is established. In a sense, that's getting to first base. Having established the clinical effectiveness, we then have to look at cost-effectiveness.*

*If it doesn't get through the clinical effectiveness hurdle then I'm not interested in the economics. I'm quite comfortable with making hard nosed decisions that if the evidence is there that it doesn't really work the NHS shouldn't use it*

We can see from these responses that for many committee members the importance of economic evaluation is at least partly related to and determined by other factors such as the successful demonstration of clinical effect. In these cases it is difficult to assess the importance attached to cost-effectiveness data as it was seen as one aspect of a step-by-step process of appraisal.

'Importance' was attributed differently by committee members. In some cases it was understood as representing the extent to which economic evaluation could be seen as driving the committee's final decision. At other times interviewees appeared to conflate 'importance' with the extent to which the economic evaluation became a focus for discussion and/or disagreement. For example, interviewees suggested that the economics was most important when it seemed that a *clinically effective*

technology was not *cost-effective*, or only when the technology was very expensive. One interviewee presented a counter to this perception:

*There have been appraisals where the technology has been very cheap and effective and the economics hasn't been discussed much. That doesn't mean that the economic evaluation wasn't central. It just means that it was so 'barn door' that it hardly needed discussion and therefore the discussion focussed on other things.*

On the whole the health economists were upbeat when asked to consider whether the economic analysis is used and influences the committee deliberation. They were unanimously of the view that the economic analysis is a valued and important contribution to the information base drawn upon to inform the adoption decision.

*I do think that the economic analysis is very important ... but the reason why it's important is not simply because all we talk about is cost per QALY or the only thing we look at is the economic model, it's the fact that it provides us with a framework to identify what we should be concerned about and where we should be pushing the argument in terms of, for example, interpretation of the clinical evidence or moving from a clinical end point to a utility.*

*People have come to accept that the economic evaluation is more crucial than they thought. I think a lot of them came along two years ago with the idea that you determine whether something was effective or not by clinical trial methodology and maybe you had to listen to the economist say something. ... my feeling, caricaturing, would be that they've moved to saying 'God this is all complicated, for God's sake tell us what the ICER is!' because they've actually realised that it is a crucial issue.*

In terms of whether the importance attached to the economic analysis has changed over time, those who had been on the committee for a number of years shared a different opinion. Their view was that the economic analysis has always played an important role, although there is a suggestion that the committee may have become more challenging of those conducting the analyses.

*The role of economic analysis in providing that framework has been there ... for a very long time. That happened quite quickly. I think the experience of beta interferon was very important. I think that really clarified the role of making sure you had a good economic model.*

*I think it was regarded as being important from day one but I don't think it has become any more important, nor do I think it has become particularly less. I think the committee has become a bit more sophisticated in understanding the limitations of economic analysis and in being confident about challenging a particular cost per QALY if its been derived by assumptions which they regard as not being sensible.*



The issue of how the economic analysis was used in the context of the discussion was highlighted by a number of the health economists. Most expressed the view that the analysis was central, and helped in the identification of important clinical uncertainties and gave a focus for the discussion on broader clinical matters.

*I think it does provide that core framework for the discussion. That doesn't mean that the clinical evidence isn't important but ... the particular arguments about the clinical evidence are informed by the framework that the economic analysis has provided us. So the economic analysis provides us with the framework that says, 'look this really matters, ... the view on this particular clinical parameter really, really matters.'*

Comment was made on the ordinal approach to considering the evidence, with the clinical effectiveness data reviewed first, before the cost-effectiveness analysis was considered. Some strong opinions were expressed on whether this was broadly a sensible strategy or whether this simply reflected a confusion. The ordinal approach implies that nothing can be deemed 'cost effective' unless there is evidence of an improvement in effectiveness. However, an intervention that brought about large cost savings and was associated with a small reduction in effectiveness may have an incremental cost effectiveness ratio below the relevant threshold (whatever that might be!).

### **Interviewee reflections on QALYs**

Almost all interviewees supported the use of QALYs and considered these to be a valuable measure of a technology's effectiveness. QALY estimates were seen as essential to several core responsibilities of the committee:

- ∄ Making recommendations at a population/health system level
- ∄ Making comparisons between different technologies designed to address varying health issues
- ∄ 'Benchmarking' for future decisions

Despite this, the majority of interviewees also felt that in many cases QALY estimates were less than satisfactory. The primary reason cited for this was the weakness or shortage of data that fed into the QALY calculation. The most commonly referred to

gaps were in the quality and quantity of data relating to *quality of life*. Interviewees also pointed to shortages in information on the clinical effect of an intervention from QALY gains were predicted or extrapolated. A related complaint concerned the use in QALY calculations of data with questionable relevancy.

Despite concerns about their flaws, they were, however, acknowledged as being the best means of delivering recommendations as to the cost-effectiveness of treatments.

*If you're making decisions for the health system as a whole I don't actually understand how you can do better than QALYs. But I think there's a lot of unsatisfactory things about it and a lot of, if you like, ethical and moral dilemmas there. But I struggle to see a better system.*

*Basically we're about making comparative assessments within context of the NHS and it's much easier to do that if you have a fixed reference frame and (QALYS) give us a fixed reference frame so that we can compare. ... Now there's a lot of problems with them, we all understand that but without that it becomes very difficult to do anything meaningful in terms of decision making or advising decision makers.*

*Well it seems to me that it is a necessary part of the assessment but often is not sufficient. I mean certainly if you don't do cost per QALY then you're really not in the business of comparing your technologies with anything else, or really evaluating it at the fourth hurdle level, which NICE is all about. ... But it somehow is not enough. And the question is how you get from this necessary evaluation - cost per QALY - to a sufficient evaluation that makes everybody feel as if actually they've got the technology properly in focus.*

*I think you can't generalise with QALYs across the board because if you're calculating your QALY from say a Markov model or any form of model, inherently that's going to be less accurate than if you've got a validated quality of life tool that you're using as part of an RCT. So I don't think you can generalise and you have to look at each specific case and see how good the data is.*

A strong message that came through from many of the interviews with health economists was the acceptance of the need for a single generic measure of outcome, such as the QALY, in order to work effectively as a committee and in order to fulfil its function.

*People have slowly realised that the only real way to make these decisions is on a cost-effectiveness basis using a generic index ... some positively accept that, some negatively accept it ... they do it reluctantly mostly rather than enthusiastically.*

However, the acceptance of the need for something like a QALY in order to inform adoption decisions should not be confused with an enthusiastic acceptance of the construct.

*I think there is a significant number of people around the table who don't think about it that deeply. Some have a very sceptical view of QALYs and have little faith in them at all. ... I think if some of them did know a bit about it or thought a bit harder they might be uncomfortable, actually.*

In addition, the health economists discussed some of the technical concerns with the QALY construct.

*Our measures of health outcome don't capture everything of concern to us. That's probably what's going on here: that the traditional QALY calculation isn't capturing something's that important. So for example with motor neurone disease, there's an issue of irreversibility there.*

*The additivity assumption underlying QALYs may be really important when people are looking forward over that really quite dire prospect of health outcome that having a few weeks or a few months of better quality of life during that period might be valued much more highly than just assigning a QALY weight in the same way as you would do in any other profile.*

### **Levels of understanding of health economics**

We have seen that the extent to which the non-economist interviewees considered cost-effectiveness criteria to be of primary importance was shaped by a 'checklist' approach to processing information. In some cases, it also appeared that levels of understanding of health economics were a factor in the complex process of attaching weight to information from an economic evaluation. In order to further illustrate non-economist committee members' levels of understanding we have divided them into three groups – according to their own assessment of their capacity to interpret cost-effectiveness analyses.

The first group was made up of respondents who considered their level of understanding to be low.

*I really don't understand the economic analysis well enough to understand in detail myself how they've arrived at those conclusions necessarily. And I think that's where the committee meetings tend to be very helpful because I tend to get a much better understanding when it's being discussed in the committee and when somebody's doing the presentation up front. ... I suppose the thing that sort of worries me is I'm*

*not convinced that I'm well enough informed to be able to objectively challenge the health economists.*

*I guess in a sense I have to rely on my colleagues to be able to pick up the technicalities of that. I look at it from a different point of view so I may notice different things. I may think 'well that doesn't intuitively seem sensible' and someone can say to me 'well this is because...' and I can be convinced or unconvinced depending on what their argument is. ... Generally the way in which its presented by the lead pair on the committee, that often will crystallise it.*

The second group – the largest group within the sample of interviewees - felt they had a reasonable degree of understanding but found what they considered to be more complex aspects of the economic analyses hard to digest.

*I obviously am not an economist and I do not construct Markov models or any of the rest of it so obviously I couldn't say that I have a deep understanding of it. I would hope that I would have enough understanding to understand everything that is relevant to the discussion. And I'm certainly very willing to admit my ignorance or ask questions if I feel really I am at sea.*

*I understand most of it. Obviously there are certain technical sides of things which I do glaze over a bit. But one only survives as a professor through knowing when to safely glaze over and when not to glaze over. And I don't feel I've ever missed the point by glazing over in more difficult areas.*

*I'm not in a position to go through the model. I think you can, in my position as a clinician, you can look however at some of the assumptions in the input, and perhaps at some of the statements about the output, and see whether this makes clinical sense or not.*

Group three consisted of respondents who, although not health economists, reported no limitations in their ability to read and understand the economic evaluations provided to them in the appraisals process. This was the smallest of the three groups.

*(I understand it) pretty well, but it takes a lot of time. And that's the problem, it's the time you have to commit to read it properly. And the key thing is understanding the assessment group's model, and the assumptions they've made. And I think you need to get into quite some depth sometimes to appreciate some of the weaknesses and strengths of the approach made.*

We can see from the responses of the first group that low levels of understanding did not preclude participation in discussions in all cases. Some committee members with limited understanding still felt able to critique aspects of the information used in economic evaluations – for example relating to clinical and quality of life data. Others felt inhibited and sought to improve their knowledge. The first two groups felt

they had to rely on the committee's health economists to assess and/or explain more complex aspects of an economic evaluation, and in some cases took it 'on trust' that this was satisfactorily achieved. A key theme of responses from these interviewees was the importance of the presentation to the committee by the health economist and subsequent committee discussion to the process of understanding.

Some interviewees from the third group argued that greater awareness of, and importance attached to, economic evaluation would be a positive development. They expressed concern that the methodology of the appraisals process – which includes the application of cost-effectiveness analysis – was not fully subscribed to by all committee members, as a result, in part, of low levels of understanding.

Unsurprisingly, and in line with the views expressed by the non-economists, there was a broadly held view among health economists on the committee that the level of understanding of health economics principles and techniques varied widely among committee members. Examples of opinions that indicate reasonably good understanding of the health economics by non-economists are given below.

*Some individuals' level of understanding could be improved perhaps. But on the whole... I'm absolutely certain that the committee takes into account most of the key issues and understands it. ... I think there's an incredibly high level of understanding of health economics – of any group of non-economists that I've ever sat with, that's the highest level.*

*I think there are some members who understand it very well and have demonstrated that on occasion in the past and they've challenged what's been said or from the questions they're asking its clear that they really do know what's going on.... I could name probably half a dozen people who have a good level of understanding and that's enough to ensure that the economists wouldn't get away with saying anything stupid.*

Others, when commenting on the level of understanding by non-economists of the technical detail of some of the analyses sounded a slightly more pessimistic note.

*There's a belief, a sort of fuzzy belief that people do understand cost-effectiveness because its so important we all understand it but the actual principles and so on are not well understood.*

The economists appeared to take the view that the level of understanding of the QALY amongst the non-economists committee members was mixed.

*People pick up on QALYs very quickly ... Well the niceties of whether an EQ-5D measure using general population preferences and how that's derived ... they're probably a bit shaky on.*

*Everyone has attitudes to QALYs and think they know what they do but most couldn't tell you the difference between an interval scale and a ratio scale or about the methodological issues underlying generic indexes, all that.*

*Some of them probably take a pragmatic line and decide that they're not going to worry themselves too much about precisely how particular numbers are derived, and just take them as sort of 'given'.*

The issue was also raised, in passing, that some of the non-economists struggled with the interpretation of some of the technical aspects of the economic analyses. In this context reference was made to Bayesian decision analysis, Markov models and cost-effectiveness acceptability curves (CEACs). For example,

*I don't think anybody quite knows how to handle cost-effectiveness acceptability curves at the moment. For some people it's a technical problem of understanding what they are. For those who understand what they are, they still don't understand what they should do with it. And there's no agreed threshold or cut-off or anything, and so, often they're presented but nobody is really much the wiser.*

Highlighting limitations on the ability of some committee members to understand and interpret the economic analysis raises the question of whether this really matters. In part this depends on how the decision-making process of the committee works. If all members are expected to make a contribution to the final overall decision on whether the technology should be adopted, as appears to be the case for the committee, then it is important to explore whether there is a minimum level of understanding that is required by all.

*It seems to me that if you're in this position you jolly well ought to be pretty competent in these things that we're talking about ... I'm not prepared to defer or suggest that people should defer to experts on the model itself but they have to actually increase their capacity to understand it if they want to critique it. They just can't sort of say 'I don't understand this and therefore I'll be able to make the decision equally well'.*

However, the view was also expressed that the level of understanding achieved was probably sufficient in order to allow individuals to make a decision.

*I think people are satisfied that they understand enough to make a judgement and the chairman is quite fair on that in making sure that everyone is happy.*

### **Improvements in the use of economic evaluation**

Interviewees were asked for their overall reflections on how, if at all, they would like to see the committee's use of economic evaluation improve. On the whole, non-economists complimented the economic analyses they received and were positive in their assessment of the committee's capacity to process these. Longstanding members felt like both of these dimensions had improved during the life of the committee. Interviewees did, however, point to areas of potential further improvement. A sample of these responses is included below. The most commonly cited mechanisms identified for maximising use of economic evaluation were:

- € for the committee to receive a greater level of training and/or induction into interpreting a health economics analyses; and
- € the inclusion of a summary or simplified version of the economic analysis as presented in the assessment reports.

Prescriptions as to the ideal content of the latter varied among interviewees. The overview provided by the NICE secretariat was seen as useful in this area, although a more accessible presentation of the economic analysis was seen as desirable. However, a small number of interviewees warned against *over*-simplification of complex analyses that risked jeopardising their accuracy. Another frequently cited area for improvement was in the quality of 'patient' or 'quality of life' data included in the information base. This was seen alternately as a shortcoming of the *economic analysis* carried out, and/or of the decision making process in general.

Other suggested sources of improvements were:

- š Where necessary widening the scope of appraisals so that appropriate considerations are not excluded – if necessary through discussion between the committee lead team and the assessment group.

- § Including visual aids to assist understanding among committee members.
- § Making available an explicit ‘checklist’ of considerations for every assessment, and having these varying factors weighted according to their importance in driving decisions.
- § Reducing variation in the economic modelling/analytical techniques employed by assessment groups.
- § Formally linking NICE to research bodies so that better clinical data is available to inform economic analysis and decision making.
- § A formal mechanism for ranking the confidence economists have in the data being analysed.

*I think the only thing I would say, which we are addressing anyway, is that there’s always a need for ongoing training for the committee. So I think having updates on things like the economic analysis and methods that are used is always very welcome.*

*I think there should be a sort of summary document describing in simple terms that this is a model which includes the utility of the effect of the technology, the potential for adverse effects, the sorts of issues that have gone in making up this model and the principles behind it. I mean, we’re often given sorts of health economic jargon like Markov modelling and Monte Carlo analysis, all that sort of stuff. I’m afraid none of us understand except for those who’ve bothered to learn about it.*

*Although it’s often there, it might be that a very short summary, always in the same format, with some of those things in, so every time we get the assessment, at the end we could look at some sort of sensitivity and major determinants and the variation around the cost per QALY, in exactly the same format every time.*

*I’m not sure if I wouldn’t welcome, in the papers we get in advance, a kind of summary of the model. A kind of version of, ‘here is how the model is constructed’ in very simple English on one side of a sheet of A4. ‘And here are the assumptions that are in there, and the questions that you might want to ask’.*

*I think the committee are actually quite good at handling that information and putting it into the context of all the other information that they have presented to them. That’s certainly my impression so far. But often it’s extremely difficult to do that just because of the limitations of the evaluation itself but also because the assessment team are limited by the scope... of the assessment. So it may be that widening the scope or just double-checking the scope may be a better way of looking at that. ... Now I know the scope has to be limited for a technology evaluation but often we’re quite frustrated in the meeting because we have to disregard something because it wasn’t included in the scope.*

Health economists were also asked to consider how the levels of understanding by the non-economists might be improved. An outlier view was that this was not an issue of



concern since the learning happened through the process of committee membership and experience.

*I think once they've been there 6 months to a year, probably by osmosis, they pick up some of these things.*

However, others pointed to two sets of possible changes. The first set relate to the training agenda for those who serve on the committee, both in terms of understanding of the technical aspects of modelling but also in the interpretation of results.

*There needs to be a capacity building exercise within the committee on option evaluation cost-effectiveness.*

*I think some basic education on how to interpret results would be useful.*

The second set of proposed changes concerned the presentation of economic analyses in order to aid accessibility and clarification.

*I think they should all be presented in a very standard format ... we don't want six or seven modelling groups doing everything their own way. There should be a very standard way of doing something so that it will be feasible and justifiable to expect every member of the committee to understand what's happening in the presentation. ... one standard form of presentation of all the results will be a massive improvement.*

## **Discussion**

It is clear from the case study results that health economic analyses informed the committee's decisions to a far greater degree than was the case for national policy making bodies reported in previous research. In the process NICE has addressed key barriers to the use of economic evaluation results such as the production of timely analyses and concerns regarding potential for bias amongst study authors. Other issues such as committee member's levels of expertise had not been fully resolved. There are a number of other interesting themes that emerge from the interviews with committee members. Despite significant differences in opinions expressed there are clearly areas of broad agreement with regard to the committee's use of economic evaluation and how this can be further improved.

At this stage we would like to use this paper to generate further discussion to help inform a subsequent process of analysis of findings.

Table 1: Empirical studies (excluding European survey)

<b>Author(s) / country</b>	<b>Decision level / maker</b>	<b>Results</b>
Luce & Brown (1995) US	Decision makers from hospitals, HMOs and 3 <sup>rd</sup> party payers	Impact of economic analyses limited
Ross (1995) Australia	Commonwealth and State levels	'The majority of respondents had not used economic evaluation'
Drummond et al (1997) UK	Prescribing advisers, hospital directors of pharmacy and directors of public health	9.1% considered 'economics issues' most important consideration; 48.5% considered important but secondary
Lyles et al (1997) US	Pharmacy decision makers in managed care organisations	'socio-economic assessments' have limited impact
Sloan et al (1997) US	Hospital pharmaceutical decision making	37% indicated frequent use of cost- effectiveness information
Walley et al (1997) UK	Primary care prescribing advisers	5% considered 'economics considerations' most important consideration
Duthie et al (1999) UK	General practice, hospital and health authority	Use and value of economic analyses recognised but limited practical relevance and application
McDonald (2002) UK	Regional health authority commissioners, primary care	Health economics has little impact
McDaid and Cookson (2003) EU	Not stated	Identified the need for 'developing receptor capacity within different stakeholder groups'

Table 2: European Survey 2000 (see reference: von der Schulenberg 2000)

<b>Author(s) / country</b>	<b>Decision level / maker</b>	<b>Results</b>
Sintonen (Finland)	Physicians, directors and managers of health organisations.	'use of the results of economic evaluations is quite limited.'
Antoñanzas et al (Spain)	Ministry of Health, hospital pharmacists	'little utilisation of these techniques'
Abbühl (Austria)	Government, hospital doctors and general practitioners	'a tremendous lack of awareness ...on all levels of decision making'
Hoffman & Schulenburg (Germany)	Hospital doctors, general practitioners, politicians, reps of sickness fund and industry	'At present economic evaluation does not play an important role in health policy'
Nord (Norway)	Ministry of Health, other ministries, hospital directors, county health directors	'little use of other techniques than monetary cost benefit analysis'
Pinto (Portugal)	General practitioners, specialists, regional health authority, Ministry of Health	'75% of respondents stated that they never used results of studies in decision-making'
Benamouzig & Launois (France)	Unclear	Unclear
Van Rijkom & Rutten (Netherlands)	Members of parliament, health politicians, specialist physicians, hospital pharmacists	'The influence of economic evaluations on their decisions was moderate'
Crump et al (UK)	NHS Trust medical directors & directors, general practitioners	'no concrete examples of the use of economic studies in decision-making'

Table 3: Interviewees

Category of Respondent	Number of Interviewees
Health Economists	6
Consultant Physicians	5 (including Chair)
General Practitioners	3
Patient Advocates	3
Consultant Surgeons	2
NHS Managers	2
Nurses	2
Public Health Physicians	2 (including vice-Chair)
Statisticians	2
ABPI representative	1
Clinical Pharmacist	1
Investigational Physician	1

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