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Health state valuation techniques: a qualitative investigation of visual analogue scale, time trade off and person trade off

Suzanne Robinson

Health Economics Facility
Health Services Management Centre
Park House
40 Edgbaston Park Road
Birmingham B15 2RT

Tel: 0121 414 3011
Fax: 0121 414 7051
Email: s.m.robinson@bham.ac.uk

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Introduction

A number of different techniques can be used to elicit health state preferences for use in constructing QALYs. This paper will focus on three health state valuation techniques, visual analogue scale (VAS), person trade off (PTO) and time trade off (TTO). There is ongoing debate in the literature around which technique is the most appropriate to assess health-related quality of life, with various commentators advocating different techniques (see Brazier *et al*. 1999). The choice of technique is important especially as different techniques often yield different results (Drummond, 1989).

A review conducted by Brazier *et al.* (1999) on the use of health status measures in economic evaluation concluded that there is little difference in the reliability of the TTO, and VAS, with little evidence relating to the PTO technique. However, when considering theoretical validity the study concluded that only choice based methods such as TTO and PTO should be used. The PTO differs from the TTO and VAS in so far as it adopts a societal perspective. That is it asks respondents to make a choice which involves others rather than themselves. As an advocator of the PTO Nord (1999) claims that the method captures concerns that are relevant to social decision-making, such as considerations of severity of illness, whilst measures such as the TTO are measures of efficiency which do not take into account such considerations.

Commentators put forward many factors that may influence health state values, including; the framing of the questions, format of the session, complexity of the tasks and additional information 'baggage' brought by respondents (see Brazier *et al.* 1999). The main research to date has concentrated on the quantitative aspects of health state measurement focusing on issues of reliability and aspects of validity. There is very little research that has been undertaken to examine the cognitive process which respondents undertake in order to reach their valuations, and the meaning which respondents place on their values. There is also little known about respondents feelings on their participation in health state valuation exercises. Qualitative research techniques which have been used in other disciplines such as psychology and sociology to investigate preferences and decision making (Ryan *et al.* 2001), is one route by which these issues can be explored.

This study reports an empirical interview-based qualitative investigation of three health state techniques: visual analogue scale (VAS), the time trade off (TTO) and the person trade off (PTO). Study participants were involved in health state valuation exercises in a panel setting, and were subsequently invited to take part in semi-structured interviews. The interview schedule consisted of 4 components:

- How did respondents complete the tasks?
- Specific difficulties encountered in completing questions relating to each of the techniques
- The importance and effect of discussion and deliberation on the respondents valuations
- Respondents feelings on the use of their valuations by others in a decision making context

Methods

This research was conducted as an adjunct to the European Disability Weights project and so used methods developed as part of the project (EDW). The EDW project involved researchers (public health, epidemiology and health economics) from seven countries (England, France, the Netherlands, Spain and Sweden). One objective of the study was to construct a common set of European disability weights for use in estimating DALYs. The empirical work, debates and discussion that occurred during the development of methods used in the project are reported elsewhere.[1]

The valuation work was conducted using panel sessions all of which followed a standardised protocol, which was used in all participating countries. Sessions were guided by a trained facilitator and the process was designed to enhance discussion and deliberation. One of the strengths of the study reported here is that it was conducted alongside a larger study and so was able to build upon the work undertaken as part of that project. For example the health state scenarios and descriptions used here had previously been tested on both medical and lay participants. However, the use of materials from another study also imposes restrictions. This paper takes a qualitative approach using

[1] Disability weights for diseases in Europe Biomed II BMH 98-3253

semi-structured interviews to investigate the English disability weights that were derived as part of the EDW project.

Valuation process

Format for valuation sessions

Valuation was conducted in panel (group) sessions. Panel composition consisted of panels made up of health care professionals and panels of non-health care professionals. Panels were to contain a maximum of 15 and a minimum of 6 people.

Sample

Non-health care professionals were either academics or administrative staff recruited from the University of Birmingham, via e-mail databases, personal contact and poster advertisements posted around the University campus. Medical participants were recruited from primary care trusts located in the Midlands and North of England.

Scenarios presented

The study used 15 scenarios that detailed the disease and disease stage. An example of a disease-specific scenario (disease card) used is given in Box 1. The scenarios comprised of the disease label and a generic description of health. This description is clearly based on the EuroQol EQ-5D instrument but is different in that it additionally includes a cognitive component. As shown in Box 1, the 'disease label' used in this study was not just the title or name of the disease to be valued, but the label also contained a sentence describing the health state in greater detail.

Methods of health state valuation

The facilitator began the session by stating the objectives of the EDW project, and explaining the concept of burden of disease (BOD) that was to be used in this study. Participants were asked to consider the burden of disease in terms of individual's loss of functioning or well-being and to disregard economic consequences, the effects of disease on family and carers for all methods.

As a warm up exercise participants were asked to rank order the 15 health states. They were then asked to value the various health states using three valuation approaches: VAS, PTO and TTO.

- *VAS method*

  The VAS required individuals to value 15 health states on a scale ranging from 0 (worst imaginable health state) to 100 (best imaginable health state).
- *PTO method*

  The PTO method attempts to estimate the social or societal value of different health states. Patrick *et al* (1973) who referred to it as the equivalence of numbers procedure originally developed this approach and it has been developed further by Nord (2000), who refers to the approach as person trade-off (PTO). The EDW Group developed the version used in this study (referred to as PTO3), with advice from of Erik Nord (for further details see Nord, 2000). See box 3 for an example of the PTO 3 question.

The PTO method employed in the EDW study had two stages. In stage one, a single comparison was made between a programme to prevent fatal disease and a programme to prevent quadriplegia. In stage two, a series of 8 comparisons were made, each involving a programme to prevent quadriplegia and a programme to prevent one of the further 8 diseases. Several assumptions were made explicit in the panel sessions.

- Prevention means the reduction of occurrence in 2-4 years time
- Programmes are of the same costs and otherwise equal (age, sex, socio-economic status of groups)
- There are people of various ages in both programmes

TTO method

The TTO method focuses on the individual's own values of different health states. The participant is asked to choose between two alternatives: years in full health or years in the health state being valued. The participant is given the opportunity to trade-off years of healthy life to move from the health state described to 'full health'. The TTO method

used in this study considered a fixed duration of 10 years. Participants were asked to value 9 health states using the TTO method.

Panel sessions followed a standardised protocol, which was used in all participating countries. A trained facilitator guided sessions and the process was designed to enhance discussion and deliberation. Following discussion within the group participants had the opportunity to change their responses if they so wished.

Interview process

Sample

Letters were sent to all people taking part in the second pilot panel and two lay panel sessions of the Birmingham groups' part of the EDW study, inviting them to take part in a semi-structured interview. Non-responders were then contacted by telephone. All interviews were taped and conducted by the same individual. Transcription of tapes was undertaken independently by an individual who had no involvement with either the EDW project or the qualitative study.

Interview schedule

The interview schedule was developed in consultation with an experienced qualitative researcher, questions and themes which had emerged from the literature and discussions recorded during the health state valuation group sessions, were explored during the sessions. The interview guide was flexible with interviews varying between respondents.

The interview began with open questions, followed by more focused questions.

Stage 1. The interviewer explained the interview process and stressed that the interview was separate from the EDW project.

Stage 2. VAS method was reviewed using props from the session.

Respondents are then asked to explain the process they used to reach their VAS scores.

Questions explored

Aspects of the stimuli (disease card) focused on by respondent.

How respondents used the numbers on the VAS?
What do the numbers mean?
Could respondents disregard future prognosis, economic aspects and effects on carers relating answers only to the health state described?

Stage 3. PTO method was reviewed using props from the session. Respondents were then asked to review the PTO method and explain the process they used to reach their valuations.

Questions explored
Aspects of the stimuli focused on by respondent
Framing of the question and the use of quadriplegia as an anchor state
Hypothetical scenarios and assumptions used, how did respondents respond to the societal perspective?

Stage 4. TTO method was reviewed using props from the session. Respondents were then asked to review the TTO method and explain the process they used to reach their valuations.

Questions explored
Framing of the question and its effect on the valuation
Context and perspective of question
Could respondents disregard future prognosis etc?
Did respondents trade and why?

Stage 5. Close-ended questions were used to ask respondents the level of difficulty they associated with each technique, the answers ranged from easy – extremely difficult. Respondents were also asked to explain their answers.

Stage 6. This stage of the interview explored the effects of group discussion and the process of deliberation. Respondents were asked to discuss their feelings on the panel process. The interviewer also tried to explore whether the group session had any influence on the valuation given.

Stage 7. Respondents were asked how they felt about their valuations and their views on the use of these valuations by others in a decision-making context?

Data analysis

All interviews were taped. After transcription, the data from the interviews were explored using thematic categories and sub-categories. The thematic categories included those emerging from open coding of the interview data together with those derived from the core topics covered in the interviews. For the purpose of this paper the full themes are not presented. It is also recognised that further themes may develop when data from all the interviews is explored.

Results

A total of 20 interviews were undertaken including 7 academic participants and 13 administrative participants. To date 5 transcripts have been analysed and reported, thus the results reported in this paper are only provisional.

The initial section of the results report issues relating to aspects that are relevant to all 3 techniques such as issues around the framing and context of the questions. This is followed by results relating to issues that are specific to each technique For example, how respondents place health states onto the VAS and why respondents are willing to trade off life years in the TTO exercise. The final section reports respondents views on the use of health state valuations in a decision making context.

Table 1 highlights some of the initial responses following the interviewers recap of the PTO and TTO methods. Table 2 details the level of difficulty respondents associated with each task.

Framing and context issues relating to the valuation techniques

Some respondents found the framing of the PTO question made the task difficult to understand and it took respondents time to grasp what was expected of them. Some respondents suggested that it was the use of Quadriplegia as the anchor state that made the task problematic.

" I struggled with the wording of the question, it took me ages to get it into my head what was being asked. But I think in the end, I kind of worked it through. Quadriplegia does play a big part. I just want to treat people with quadriplegia."

Most respondents suggested they had some difficulty understanding the PTO question and what they were being asked to do. Respondents seemed to adopt various strategies to answer the questions. For example, one respondent refers to using their own knowledge of prevalence and statistics as a way to answer the PTO questions.

"I tried to think, although I haven't got a knowledge of prevalence of diseases and statistics, but that's what I tried to think about. I just think, well how many people, sort of would have this disease, so how many lives are we saving? It probably wasn't that accurate, because I didn't have that information to hand, and I don't know, But your own sort of analysis, you might have some knowledge, media knowledge coming in there, or what you've read in the paper."

Respondents also had a problem with the hypothetical context of the question and the abstract nature of the exercise.

"I think there was just a lot going on in that, and again it goes back, it's very difficult to kind of do this as an abstract exercise, without other things crowding in. Because of course the identity of these people is going to be important, and where they are, and all those other things. So, just kind of actively trying to see this as a sort of abstract, could be anywhere, could be anytime, I just found it really, really difficult, and that I found quite frustrating…. it's out of context, so you have no sense of the consequences of your actions. And so, because it's not a real situation, it is quite difficult to think, well, are these the only factors that would influence me. Of course they're not."

One respondent suggested that the amount and variation of information presented to respondents made the task difficult.

"I think there were just so many kind of other, you know, with a hundred people, they're going to die within between two and four years, so you've already got some variation. You know, is it two or is it four, or somewhere in between. Then you've got, you don't know who these people are, well is that significant or isn't it? So you're kind of thinking about that. The assumptions brought something else in for you then as well, because they brought more things to think about rather than taking things out. And trying to work out, well what is it that you need to keep in your head here. Because if, if all of these things are equally important, then every time you make a judgement you have to go back and think about all of these things"

Only one respondent reported difficulties with the framing of the TTO question. This respondent paid particular reference to the term 'indifferent' which was used in the TTO question.

"The wording of the question is quite difficult. Yes, yes. "I'm indifferent between ten years with severe vision disorder and ten years with full health", well what does indifferent mean? Again, once you get it, it's a kind of mechanical thing, but I actually found it quite difficult to understand what was being asked."

The numbers

One respondent continually referred to the numbers as a barrier that obstructed her engagement in the exercise. This observation was evident for all 3 methods.

"I don't work with numbers it is not the kind of thing I am comfortable with, I mean, yes it means thinking about the differences, if your not used to numbers, you don't necessarily think that there is a difference, there is a four point difference between diseases. I think the numbers did have an impact, because if people aren't comfortable with the it does have an influence on how they do the exercise and the kind of results they get."

For the PTO exercise respondents seemed to have problems with the use of large numbers.

" *I did find it difficult, because the numbers, I think the numbers, and I can't sort of visualise, I'm trying to think of the example you gave and I still, I just could not comprehend."*

More than one respondent referred to how they used visual images to inform their response to the PTO questions. It was also suggested that trying to conceptualise large quantities of people with a disease was difficult.

" I mean 100 people with a mild condition and 1 person for quad you would probably go for quad. But if 1000 people in a mild condition starts to get quite sizeable. I mean that was like thinking about half a school or something. I did think like how big is a school, or how big is Villa Park or Wembley stadium or something like that. I tried to visualise the whole of Villa Park with a disease. Once you get to Wembley stadium it gets a bit arbitrary."

Individual vs societal perspective

The PTO differs from the other two methods in so far has it takes a societal rather than an individual perspective. Most respondents commented on the difficulty of thinking and making decisions for others rather than themselves. A common statement throughout the interviews was the reference to 'playing the numbers game' this is evident in the statement below.

"Thinking about others is difficult, but then, I knew it wasn't for long, so one valuation and it is not real. It is just like playing a number crunching game."

"It was really difficult, yes, I did imagine a hundred people in their wheelchairs, and then an infinite number of people with, I don't know, low pain and stuff, and it's really difficult to distance yourself from it and to take conscience away from making those kind of decisions. Call it ethics, only just kind of choosing one over the other, and then thinking oh hang on, it's hard not to bring the human aspect of life into it."

It was suggested that the context of the TTO question and the fact that respondents were being asked to think about themselves rather than others made the exercise easier.

"Yes, again, I think it's because I could more relate it as a personal decision rather than thinking of others."

"It was easier to focus on what it would be like for an individual than it would for 50,000 or something,"

Future prognosis, economic aspects and effects on family and carers

For all 3 methods respondents are asked to disregard future prognosis, economic aspects and effects on family and carers. Respondents seemed to have problems disregarding all these factors when completing the VAS. Some respondents suggested that ignoring such factors was impossible and that they should be included.

" because you are asked to I try to, but I can't honestly say that I was successful I still thought about my family and how it would effect them. And I suppose more importantly, I kind of think it's a kind of silly thing to do really. Because it is an important element."

In the PTO there were mixed responses some found respondents found it difficult to ignore effects on family and carers while other respondents found this relatively easy. One respondent, who had found this aspect of the VAS exercise difficult stated that 'this was the easy bit of the PTO exercise.' Respondents suggested that the introduction of more 'difficult choices' seemed to make ignoring such factors as future prognosis easier.

"Yes, that bit was the easy bit, kind of forgetting all that bit, but the difficult bit was like trying to balance them up really. Basically the difficulty was down to the choices you had to make."

In the TTO exercise respondents suggested that it was easier to disregard the factors mentioned above. One suggestion was the fact that the TTO focused on themselves rather than others and that they perhaps understood this task better.

" Possibly the numbers, or maybe, I don't know whether I just understood it a bit better than I did the other one. It is easier to think about me."

However, the fact that respondents found it relatively easy to ignore the above factors is contradictory to responses made when discussing the VAS, when respondents claim they had great difficulties ignoring these aspects (see above).

A possible explanation which seem evident from responses to the TTO exercise was the fact that discussion around this aspect of the exercise had been aired earlier in the session, and respondents were more accepting of what they were being asked to do. Another explanation offered by one respondent was that she was tired after four and half hours valuing health states so she just did what was asked.

" I think I did just disregard that yes, it had been a long day and I knew what you wanted."

Important aspects of the disease description

In the group sessions respondents were asked to value disease states which had a disease label (including the disease name and a description of the disease state) and a generic functional health status EQ-6D. The interview attempted to establish what aspects of the disease card respondents had focused on in the session. The data from the interviews suggest that respondents focused on various aspects of the disease cards and that respondents tended to focus on the generic health state when undertaking the VAS and TTO exercises and the disease label when doing PTO exercise.

The statement below refers to the VAS and how this respondent focused on different aspects of the stimuli depending on the level of analysis needed. For example, if the disease could easily be ranked to best or worst then they used the disease label if there were a group of diseases clustered around a point on the scale then they focused more on the functional health status.

" I used all of it (disease card). But I think it was, when it came down to, there was sort of different degrees. I mean for those where, as I say, it felt self-evident that they were bad or the worst, you tended to focus on the statement. But then when you were actually, some of the ones where you weren't certain where to put them, it was much more about the functional, you know, what does it actually mean in practice? How many dots are there."

When discussing the VAS one respondent suggested she compared everything to her worst imaginable health state (quadriplegia).

" I intermingled information on the card, because as I say, the one that probably did keep leaping out at me, was spinal cord, I just don't think I could cope with being a paraplegic or whatever, and having to be confined to bed and have everything done for me, so that was always my focus, and that probably might have clouded me looking at anything else, because that was the worst and I just compared everything to that."

When discussing the PTO method respondents tended to refer to the disease label as their main focus.

" I think I was probably focussing more on the disease label in this, rather than the breakdown here (points to functional health status)."I think maybe, perhaps, quadriplegia, because it is quite horrible, having to sort of think, that all these people are supposed to die, I probably disassociate from it a bit. And that's why I think I stuck just to the disease labels."

One respondent refers to the disease label and how this adds to the complexity of the PTO question. For example the same respondents suggested that the disease label personalised the people and increased the difficulty respondents face when taking the unfamiliar role of decision maker in the health context.

"Having the disease names made it more difficult in a way, because they've got like, kind of similar in terms of, I don't know, unable to perform the usual activities, but I was trying to get rid of the stigma of quadriplegia as like one of the worst things you could have, and then severe depression, and then my conscience plays into me as well, because like I am thinking, ok, so how about all these people with severe depression, oh well, all those people with quadriplegia, it's awful. Sorry."

Functional health status

During the interviews all respondents stated that some dimensions were more important than others. They all mentioned anxiety and depression as being influential in their valuation of the disease states. Cognitive functioning was also mentioned by all but one respondent.

" I would be able to cope better with physical problems than with mental ones. So, I was looking at anxiety and depression and cognitive functioning. So, the physical side not so much of a problem I tended to look at the mental stuff."

When discussing the VAS and TTO exercises some respondents referred to the dots which were used on the generic descriptor to describe the level of severity of each

attribute (no dot equals no pain, one dot equals some/ moderate problems and two dots equals extreme problems).

" I used the dots a lot. Because a lot of them were similar anyway. Like the coronary heart disease one and the depression. Initially you think, oh coronary heart disease, and then I used the dots a lot to kind of rank them… I mean I had a quick read through the description but I really focussed everything on the dots and how it was affecting them."

Undertaking the VAS exercise

When respondents were asked to explain how they placed the 15 diseases onto the VAS, all respondents mentioned ranking or placing cards in a sort of order before placing onto the scale.

"I just went through the cards, reading what was on there and deciding what living in that state would be like, I mean something like breast cancer and then I put them in a sort of order that I imagined would maximal health and then went through and put down scores."

Most respondents discussed how they used the end points on the VAS. Respondents suggested that their extreme disease states (i.e. worst and best health states) were the first and easiest to place on the scale. Respondents suggested that they used these extremes to judge the other diseases against. It was also suggested that the diseases that were placed at the end of the scale were most likely to be given a 'stable' value, whereas, the diseases which were placed towards the middle of the scale may have been more subject to change.

" the one that probably did keep leaping out at me, was spinal cord, I just don't think I could cope with being a paraplegic or whatever, and having to be confined to bed and have everything done for me, so that was always my focus, and that probably might have clouded me looking at anything else, because that was the worst and I just compared everything to that."

" I felt happy with my best and worst health states and these are the least likely to change however, there were a group in the middle that may move around each time I did this yeah in the end I just went for it."

Some respondents suggested they grouped diseases,

" I did the ends first on the rankings so cold was the least bad one, … And then I think I had severe depression at the other end. There are some at each end some that are either absolutely nothing like cold or ones that are you don't particularly want to have them but they are not that bad. Then you end up with a whole batch in the middle were you actually, I mean I literally put the cards that were easy to do on one side and then ended up with about six in the middle were you need to look at them against each other because there were batches which were the same,

because there is a batch which has say 3 or 4 dots in total, which are all things you could probably cope with but do not really want."

Trading life years in TTO

All respondents said they traded some life years for certain diseases.

Interviewer " So you found yourself trading life years for some diseases and not others?

"Yes, there is a threshold in these the way you, er, there are certain conditions like the worst imaginable health state the you would give up all your life for a week or whatever rather than be in there you would rather be dead or something, that ones set. Then there is another whole batch probably anything with one dot or may be with two dots which is, unless it is on pain or cognitive functioning, were I mean realistically there is no such thing as a best imaginable health state nobody is in that so you don't live now in the best imaginable health state the state you are living in now could easily be one of these one dot things. So, that's your choice."

All respondents completed the exercise, however, when asked why they are willing to trade life years, comments from most respondents suggested they were not taking this aspect of the session very seriously. A theme that was evident from a number of interviews was that respondents traded life years because that was what they were expected to do. Respondents again referred to 'playing the game.'

" I think because you have to actually, because you were asked to do it, I think ordinarily, I probably would not. I think because you were thinking, just for ten years as well, so, and that's not that long really, and so it seemed like, its fairly short, and I think maybe that's why I was probably so willing to do that probably, just because you could because it was so unreal."

"I did, but I'm not quite sure how serious I was about it. I was a bit ambivalent about it towards the end. By that time I think I was just playing the game."

Use of valuations to inform decision making

Respondents were asked if they were happy with their final valuations and their feelings on the use of these valuations by others to inform decision making (it was explained to respondents how values would be used). One respondent said that she would not want any off her valuations to be used to inform decision-making.

"No, I don't think I would because I don't think it's a legitimate way to ask people" I think it would have to be demonstrated to me that this was a more valuable way of approaching and aggregating perspectives than another route which did allow you to take into account the things that actually influence decision making".

The other 4 respondents had different views depending on the valuation method;
All respondents felt that it would be acceptable to use the VAS scores, however, 2 respondents questioned the reliability of the valuations.

"yeah, I am happy for those to be used, although I am not to sure about the diseases in the middle of the scale I think they would change every time I did it"

"yes although like I said I am not sure if the numbers mean that much"

4 respondents said no and 1 was unsure about the use of PTO values to inform decision-making. The main reason was due to the difficulty respondents felt when they had to think about others rather than themselves. It was suggested that this made the task difficult with responses susceptible to change. The response below is from a respondent who would not like her views to be used to inform decision making.

"Well, it's more that I'd rather the other ones were used because they were my own personal, individual kind of thoughts, but I mean those are as well, but they just because you're thinking of other people. Yes, I don't feel qualified to make those kind of decisions, or experienced enough to be honest. I mean to be honest; I don't think I could ever be really happy with those, because I can't take out the person, the personal, human aspects of it. I don't, like these you can kind of say, oh yes I can trade my own life because it's dealing with me. But dealing with other people, I can't dehumanise it and say, I'll give this much money to these people and not these, without thinking of the people involved, while these were, it's my own life, it's my own decision. That's it, the difficulty in thinking about it for someone else because you do think about the individual."

Discussion points

The work reported in this paper represents only 5 transcripts, and this analysis has been preliminary. Whilst data analysis is at an early stage, it is clear that much of the findings in this study relate to current academic debates. However, this study is still very much work in progress and to early in the analysis to begin drawing any major conclusions.

With the growing number of academic publications that present quantitative results followed by a call for 'more qualitative research', I purpose the following questions for discussion:

- What does all this mean?

- Is it possible to gain a greater understanding of people's decision making behaviour in health state valuation exercises through qualitative methods?
- What is the best way to take this work forward?
- Are Health Economists really interested in qualitative analysis?

Box 1: Example disease-specific scenario

	Vision Disorder	SVIS
Mild /moderate vision		
Severe vision disorder ←		

Patient is unable to read small newspaper print and has great difficulty or is unable to recognise faces at 4 meters distance

No problems in walking about
- Some problems with washing or dressing self
- Some problems with performing usual activities (e.g. work, study, housework, family or leisure activities)

No pain or discomfort
- Moderately anxious or depressed

No problems in cognitive functioning (e.g. memory, learning ability, concentration, comprehension)

Box 2: Example of the PTO question

Imagine that you are a decision maker. You have a choice between two programs that will reduce the incidence of disease in a few years from now.

- *Program A will prevent the occurrence of a rapidly fatal disease in 100 people in your country.*
- *Program B will prevent the occurrence of disease X (chronic state described in detail) in N people in your country.*

The programs are in all other respects equal.
Choose the value for N that would make you indifferent between the two programs. When answering, please disregard possible economic aspects and effects on family and carers.

Table 1. Respondents initial response following interviewers recap of PTO and TTO methods.

Valuation technique	**Respondents initial response after the interviewer had recapped the method**
PTO	*"Oh God I hated this"* *" It took me ages to do this, absolutely ages. And I didn't like it. I'm glad I don't have to do this for a living, I can tell you. No I found it really difficult, because especially like the first one, although I tried not to, I kept thinking how I would be. But this is like thinking of the whole population."*
TTO	*"Easier than the other one"* *" The wording of the question is quite difficult"*

Table 2. Respondent responses to the level of difficulty associated with each technique.

	Method	**Reasons given**
	VAS	
Easy	2	*"This task was relatively straight forward, because we had already undertaken the ranking exercise."* *"Easy when compared to PTO and TTO."*
Moderate	3	Having to make a choice between disease states
	PTO	
Difficult	3	Due to the decision choices *"choosing one group of people over another'*
Extremely difficult	2	Due to the wording of the question and the decision choices respondents had to undertake
	TTO	
Difficult	4	Due to the choices they were asked to undertake (i.e. trading life years)
Extremely difficult	1	Wording of the question.

References

Brazier J. Deverill M. Green C. Harper R. Booth A. A review of the use of health status measures in economic evaluation. *Health Technol Assess.* 1999;3(9).

Drummond M F. Output measurement for resource allocation decisions in health care. *Oxford Review of Economic Policy.* 1989; 5(1):59-74.

Nord E. Pinto J L. Richardson J. *et al.* Incorporating societal concerns for fairness in numerical valuations of health programs. *Health Economics* 1999; 8:25-39.

Nord E. My goodness-and yours. (http://www.eriknord.no/health/Dalyhistory.htm), 2000.

Patrick DL, Bush JW, Chen MM. Methods for measuring levels of well-being for a health status index. Health Services Research 1973;8:228-45.

Ryan M. Scott D. Reeves C. *et al.* Eliciting public preferences for health care: a systematic review of techniques. *Health Technol Assess.* 2001;5(5).