

**Maximising Health Benefits
Versus Egalitarianism:
An Australian Survey of Health Issues**

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ABSTRACT

Economists have often treated the objective of health services as being the maximisation of the QALYs gained, irrespective of how the gains are distributed. In a cross section of Australians such a policy of *distributive neutrality* received (a) very little support when health benefits to young people compete with health benefits to the elderly; (b) only moderate support when those who can become a little better compete with those who can become much better; (c) only moderate support when smokers compete with non smokers; (d) some support when young children compete with newborns; and (e) wide spread support when parents of dependent children compete with people without children. Overall, the views of the study population were strongly egalitarian. A policy of health benefit maximisation received very limited support when the consequence is a loss of equity and access to services for the elderly and for people with a limited potential for improving their health.

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Maximising Health Benefits Versus Egalitarianism: An Australian Survey of Health Issues

Introduction

Economists have often treated the objective of health services as being the maximization of health benefits. In cost-utility analysis (CUA) these are defined by the number of Quality Adjusted Life Years (QALYs) gained as a result of an intervention. Following from this it has been suggested that competing health care programs should be prioritized by ranking them from the lowest cost per QALY ratio to the highest and to select them from the top of the list until available resources are exhausted (Weinstein & Stason 1977; Williams 1987). To implement this procedure health care analysts have published a number of cost per QALY "league tables" in the last decade (O'Kelly & Westaby 1990; Smith 1990).

It would make sense for society to adopt the cost per QALY prioritising rule if the following two premises are valid:

- 1 QALYs are meaningful and valid cardinal estimates of patients' health benefits.
- 2 Society wishes to maximise the sum of patients' health benefits given the available health care resources.

The first of these assumptions has been discussed by a number of commentators (Carr-Hill 1989; Loomes & McKenzie 1989; Mehrez & Gafni 1989; Nord 1994a; Richardson 1994). There are numerous unresolved problems with treating health and quality of life as something that can be measured at a cardinal level as well as with aggregating health benefits over life years. However, these issues will not be addressed further in this paper.

The second assumption about the maximisation of health benefits being society's goal has two implications. First, the priority rating society wishes to assign to an intervention is inversely proportional to its cost. In other words: If interventions of type A are twice as costly as interventions of type B, then society will prefer to spend money on As rather than Bs if and only if each A provides more than twice as much benefit as each B. Secondly, a QALY gained is assigned the same value no matter who receives it. In other words: the distribution of QALYs among the population is unimportant. We shall refer to this as the assumption of distributive neutrality.

The first of these implications has rarely (if ever) been questioned in the literature. This is certainly because, at least to economists, the proposition is valid by definition, as cost refers to how valuable the resources would be in their best alternative use. Nevertheless, there is evidence that the general public tends to place less emphasis on costs than economists deem

appropriate (Hadorn 1991; Nord 1994a). We have elsewhere examined this conflict using data from an Australian survey on prioritising in health care (Nord, Richardson & Street 199?).

As noted by Olsen (1994), the assumption of distributive neutrality has implications along two different lines. The first is that the value of a QALY is assumed to be independent of the personal characteristics of the recipient. Williams (1981) acknowledged that this assumption is questionable. Wright (1986) found that people considered it more important to maintain the health of children and parents of young children than that of other age groups. Williams (1987) went on to suggest how in general the need to assign "equity weights" to QALYs could be examined empirically. Various surveys have since been conducted. The view that children and young adults - particularly those with dependent children - should have some priority over elderly people seems to have considerable public support in Wales, Sweden, Holland (Bjork & Rosen 1993; Braakenhielm & Vaard paa lika vilkaar 1990; Busschbach 1993; Charny, Lewis & Farrow 1989) and Finland (Harri Sintonen, personal communication), but less so in Norway The Norwegian Commission on Prioritising in Health Care 1987 (Nord 1993a). The Welsh and Swedish studies also showed a tendency for people to extend priority to patients with a "healthy" life style over patients with an "unhealthy" life style. Again, this runs counter to official views in Norway The Norwegian Commission on Prioritising in Health Care 1987.

The second implication of the assumption of distributive neutrality is that the value of each QALY is the same irrespective of how many QALYs a person receives. This has the further implication that, for equally ill patients, those who will benefit more from treatment - be this expressed either in terms of quality or quantity of life received - should have priority over those who will benefit less. This conflicts with the official view in Norway that everybody has a right to realize his or her potential for improvement, be this large or small (The Norwegian Commission on Prioritising in Health Care 1987). It also runs counter to a study by Nord (1993a) which suggested that people wish to extend equal priority to groups who are equally ill as long as care will provide both with a substantive increase in quality of life. Similarly, in the study by Olsen (1994), subjects typically thought that 10 years of benefit gained by 100 people was equivalent in social value to 20 years of benefit received by 80 people. While this might reflect time preference, it could also reflect equity preferences, i.e. "diminishing social valuation of a person's succeeding years with improved health" (Olsen pp 40). This would imply that when QALY gains are concentrated among few people, they are less valued than when they are more widely distributed.

In short, international evidence suggests that the assumption that the value assigned to a QALY is the same no matter who receives it, is too simple. The purpose of the present paper is to add to the existing body of evidence empirical data from yet another country, namely Australia.

The issue may be addressed at two different levels. One is the group budget level, i.e. the allocation of resources across services that treat different diagnostic groups. The other is the admission level, i.e. the selection of individuals for services that do not have capacity to treat everyone. While most of the QALY literature focuses on the budget level, the cost-per-QALY decision rule is also recommended at the admission level (Torrance 1987; Weinstein 1981; Williams 1987). The findings presented in this paper relate primarily to this latter level.

Data and Methods

A self administered questionnaire was constructed with the following preface:

"In our society there is not enough money to give all patients all the health care they want. There is also a shortage of donor organs for patients in need of organ transplantations. In practice, this means that some patients get treated more quickly than others. It can also mean that some patients receive certain kinds of expensive treatment while others do not. In both cases we may say that some patients are given priority over others.

On what basis should priority be given? This is the question that we are asking you to consider in this study."

The recipients of the questionnaire were faced with the following six implications of the assumption of distributive neutrality (labels in parenthesis are provided for reference purposes later):

- 1 **AGE/LIFE:** Among people with life threatening illnesses, younger patients should have some priority over older patients (since, all else equal, more QALYs will be gained).
- 2 **AGE/QoL:** For medical care that improves quality of life permanently, young people should have some priority over elderly people (since, all else equal, more QALYs will be gained).
- 3 **NEWBORN:** If a young child and a newborn infant both need the same organ transplant and there is only one organ available, the newborn infant should have priority (since, assuming equal chances of success, more QALYs will be gained).
- 4 **POTENTIAL:** Among patients who are suffering equally, some priority should be given to those who have the greatest potential for improvement (since, all else equal, more QALYs will be gained).
- 5 **PARENTS:** For the same degree of illness, people without children should have the same priority as people with children (since, all else equal, the number of QALYs gained will be the same).
- 6 **SMOKERS:** Smokers and non-smokers should have equal priority with respect to treatment for heart disease and lung cancer (assuming that the expected number of QALYs gained is the same).

The first four of these propositions are implications of the view that QALYs are equally valued by society irrespective of the number each person receives. Propositions 5 and 6 are implications of the view that the personal characteristics of the recipients are irrelevant to the value placed on QALYs by society.

Each implication was presented together with a competing view in favour of equal priority. With three issues, it was conceivable that people would want to give priority in direct contrast to QALY logic (e.g. to the elderly). With these issues a third option was introduced to allow the expression of such a preference.

In creating options that would be easy to understand, a compromise had to be made between precision and simplicity. As a consequence, competing options were not always formulated as

direct negations of each other (mutually exclusive), rather, options sought to express plausible views as clearly as permitted by the brevity of the statement.

The exact formulations of issues and views are reported below together with the results. The subjects were asked to tick the view that came closest to their own, given the assumption that the groups of people being compared in each exercise were the same except for the difference specifically mentioned. They were also asked to indicate if they found the choice very difficult, slightly difficult or not difficult at all. Information was also obtained about the personal characteristics of the respondent.

Choices of the kind described above do not in themselves allow inferences about the strength of the respondents' distributive neutrality. For instance, a person may choose to give priority to non smokers. This could be on moralizing grounds, but it could also be because he thinks their prognosis is better. Obviously the reasons behind different choices need to be established. To achieve this, the questionnaire encouraged the respondents to add comments.

Priorities can be set between diagnostic groups (e.g. hip replacements versus heart surgery) and within diagnostic groups (e.g. whom to select for hip replacements). The distributional rules that people want to apply at these two levels of resource allocation need not be the same. In this study, formulations encouraged the subjects to think mainly about priority setting within diagnostic groups. The issue of priority setting between diagnostic groups will be addressed in a separate study (see below).

The present study was designed to allow for the recruitment of respondents for subsequent, more detailed interviews. To facilitate data collection in this second phase, the self administered questionnaire was mainly distributed in the city of Melbourne, Australia, where the project was based. Five districts of Melbourne were selected, representing different levels of socioeconomic status. In addition, four towns across Australia were included in the data collection to test the representativeness of the main results.

TABLE 1
Sample

Area	Questionnaires		
	Delivered	Returned	Returned (%)
Footscray (Melbourne)	400	73	18
Thornbury (Melbourne)	200	70	35
Doncaster (Melbourne)	300	76	25
Malvern East (Melbourne)	300	104	35
Moorabbin (Melbourne)	400	112	28
Alice Springs (Northern Territory)	82	26	32
Caboolture (Queensland)	96	32	33
Port Hedland (Western Australia)	87	22	25
Ulverstone (Tasmania)	97	28	29
Returned unopened	38		
Returned completed with area Information missing		8	
Total	2000	551	28

For each of the Melbourne districts, the method of distribution of the questionnaires was as follows: A map was obtained that showed socioeconomic variation within the district according to 1986 census data. A route was arbitrarily drawn up that led through various sub-areas that together represented a broad range in terms of socioeconomic status. Along this route, a copy of

the questionnaire and a covering letter was dropped in every second mail box. In the four towns elsewhere in Australia, subjects were randomly selected from the telephone directory and sent the questionnaire by ordinary mail.

In a covering letter, each household was asked to select the person over 17 years whose birthday was closest to the first of January (or - in half the cases - the first of July). Respondents were offered a scratch lottery ticket as a reward.

Altogether, 2000 questionnaires were distributed. Of the 400 questionnaires sent to the four towns elsewhere in Australia, 38 were returned due to an incorrect address. Table 1, column 2 shows the number of questionnaires delivered (posted and not returned unopened). Column 3 shows the number of responses - 551 altogether, yielding an overall response rate of 28 per cent.

60 % of those who responded said they were willing to participate in a follow up study. Interviews with those in Melbourne were conducted 2-3 months later. At the start of these interviews, two or three of the questions in the self administered questionnaire were reiterated. In such retests, the percentages of responses being the same as in the first questionnaire were as follows: Issue 1: 69%; issue 2:74%; issue 3:82%; issue 4: 59 %; issue 5:76%; issue 6:82%.

Data analysis was carried out with SPSS. Bivariate analysis and logistic regression was used to determine the influence of personal characteristics on preferences between options. The technique yields estimates of odds ratios after controlling for confounding factors. For instance, it says how frequently men choose a particular option compared to women, after standardising for age, education, health, smoking habits and any other variable included in the regression model. The logistic regression did not add much to the bivariate analysis and only brief reference is made to it in the following.

Results

Descriptive statistics of the 551 people who returned the questionnaire are presented in table 2. 57% of the respondents were female. The mean age of respondents was 46. 87% of respondents spoke English as their first language, 49% had received tertiary (university or college) education, 43% were in full-time employment, and 18% were retired. 34% had received hospital treatment in the previous two years, 8% said they had a major long term health problem, and 24% said they had a slight long term health problem. 51% of respondents were privately insured and 16% were smokers.

TABLE 2
Descriptive Data

	Definition	Questionnaire respondents	Interview subjects
Number		551	119
Gender	%female	57	60
Age	Mean (SD) years	46 (\pm 17)	46 (\pm 16)
Educational level	% with tertiary qualifications	49	63
Main occupation	% in the paid work	53	46
Language	% English speaking	87	92
Smoker	%	16	12
Health status			
Hospitalised within past two years (%)		34	39
Longer term problem - major (%)		8	6
Longer term problem - slight (%)		24	28
Private insured	%	51	63

Table 3 shows the distribution of choices on the six different issues as well as the distributions of respondents by how difficult they found the various choices. Table 4 summarises differences in views between various subgroups by showing the percentage in each group that preferred the equal priority option.

TABLE 3
The Distribution of Benefits: Summary of Results

Issue	Option	% choosing each option
Age/Life	Favour young	17.6
	Against very old	40.5
	Equal priority	41.9
Age/QoL	Favour young	21.5
	Favour old	2.9
	Equal priority	75.6
Newborn	Favour young child	44.2
	Favour newborn	1.2
	Equal priority	54.7
Potential	Favour most helped	52.8
	Equal priority	47.2
Children	Favour parents	33.4
	Equal priority	66.6
Smokers	Favour non-smokers	59.5
	Equal priority	40.5

The following we provide details about option formulations and comment on the results. Differences between subgroups are mentioned only when the significance level is below 0.05. A more general discussion follows in the subsequent section.

Age

The first question addressed life saving treatments. The questionnaire presented the following options:

- 1 Among people with life threatening illnesses, younger patients should have some priority over older patients.
- 2 People should have the same priority with respect to life saving treatment, unless they are very old.
- 3 People should have the same priority with respect to life saving treatment, no matter what their age is.

41.9% of respondents chose option 3 (equal priority), i.e. they were not prepared to discriminate on the basis of age, compared to 17.6% who gave some priority to younger patients (option 1). 40.5% chose not to discriminate, unless the patients were very old (option 2). 41.5% of respondents did not find it difficult to reach their decision, compared to 22.5% who found it a very difficult choice. However, those choosing to discriminate expressed greater difficulty making their choice than did those opting for equal priority (table 3).

These findings suggest that the contention that discrimination should be in direct proportion to age, as implied by the assumptions of health benefit maximization and distributive neutrality in the QALY procedure, is not widely supported by the Australian community.

Interestingly, those older than 65 were more prepared to discriminate, with only 31.8% opting for equal priority irrespective of age compared to 45.2% of those under 65 who chose this option (table 4, $p=0.038$). When controlling for other factors in the logistic regression, those over 65 were less likely to opt for equal priority than those under 65, confirming the results of the bivariate analysis.

The second question addressed permanent improvements in quality of life secured by treatment. The options were as follows:

- 1 For medical care that improves quality of life permanently, young people should have some priority over elderly people.
- 2 For medical care that improves quality of life permanently, elderly people should have some priority over young people.

People should have the same priority with respect to medical care that improves quality of life permanently, no matter what their age is.

As with life saving treatments, the pursuit of health benefit maximisation based on distributive neutrality received weak support. Only 21.5% favoured giving priority to the young (option 1) while 75.6% selected the equal priority view (option 3). Most of the latter group said they made the choice without difficulty (table 3).

We had initially expected more support of favouring the young in the life saving context (question 1) than in the quality of life improvement context (question 2). In fact, the difference is small and in the opposite direction to our expectation. This could be due to the difference between the second options in the two questions. However, consistent with our hypothesis, more difficulty of choice was reported among respondents favouring the young with respect to life saving treatments than among respondents favouring the young when quality of life improving treatments was considered (table 3).

After excluding those who selected the second option, no differences were found between groups of respondents when bivariate analysis and logistic regression were performed.

The third question was as follows:

Consider a situation in which a young child and a newborn infant both need the same organ transplant. There is only one organ available. Which of the following do you agree with?

- 1 The young child should have the organ.
- 2 The newborn infant should have the organ.
- 3 No preference.

Of all issues considered, it was with this that people found it hardest to reach a decision, with 52% saying that their choice had been very difficult to make.

The respondents were asked to consider "all else equal". This was meant to include equality in the chance of a successful operation. Given this assumption, the view that the newborn infant should have the organ would fit best with the health benefit maximisation ideology of QALYs. However, only 1.2% of the respondents chose this view. 54.7% indicated that there should be no preference between the two requiring the organ, and many of these explicitly commented that the decision should be made on a first come, first serve basis. 44.2% said that the young child should be favoured. Prima facie, these results would seem to contradict the assumptions of health benefit maximisation and distributive neutrality.

On the other hand, according to the written comments that were given on this issue, a considerable number who expressed no preference would give priority to the one with the better expected outcome. This accords with health benefit maximisation. Moreover, the most common reason for opting for the young child was that the respondents assumed that the young child had a better chance of a successful operation. As noted above, it was not intended that the subjects make this assumption. But since it was in fact made, their preference for the young child must be seen as reflecting a benefit maximising attitude rather than as a rejection of it.

Other comments suggest that the young child was considered to be 'more of a person' (27), with a greater capacity to experience pain and grief if denied life saving care. Also, being older, the loss of the young child was thought to be more acutely felt by parents and others than that of the newborn infant who has not had the opportunity to touch as many lives. Hence, the grief caused by the loss of a young child would be greater. But explanations of these two kinds were notably fewer than those referring to chances of success.

TABLE 4
Disaggregation of Results by Population Subgroups

	Percent selecting 'equal priority'					
	Age/Life %	Age/QoL %	Newborn (%)	Potential %	Children %	Smokers %
Female	41.9	77.8	57.1	52.9	70.3	44.5
Male	43.3	73.9	53.7	**41.8	62.3	36.4
Under 65	45.2	75.8	56.7	46.8	70.7	43.1
Over 65	*31.8	76.6	*45.7	53.3	**54.4	*32.1
Tertiary education	38.7	77.1	61.1	43.0	63.9	37.4
Other education	46.0	74.9	**47.3	*52.7	70.5	44.4
Non-smoker	40.6	75.1	53.8	49.6	66.2	35.5
Smoker	52.3	81.6	59.3	40.7	70.9	**69.0
Insured	35.1	74.3	52.6	44.8	68.6	33.8
Not insured	**50.4	77.9	56.7	51.3	64.5	**47.9
Major health problem	38.6	75.0	36.4	55.6	61.4	46.5
Slight health problem	38.3	78.2	48.1	49.6	61.8	35.6
No health problem	44.3	75.5	**59.0	46.3	69.0	41.9
Treated past 2 years	36.4	73.8	44.6	52.2	59.7	39.3
Not treated	45.7	77.6	59.4	45.7	*70.5	41.7
Paid work	39.7	77.2	56.3	41.1	72.4	41.4
Other occupation	46.0	74.8	52.9	**56.0	**60.6	40.9
Melbourne	41.3	75.2	54.8	48.3	65.3	42.8
Other Australia	45.4	79.2	52.4	48.1	72.4	33.0

* Significant p <0.05
** Significant p <0.01

There were differences in the choice of options depending on the characteristics of the respondents (table 4) but multivariate analysis revealed that only education had a significant partial effect on choice (table 5). Those without tertiary education opted less for equal priority than those with (odds ratio 0.56, p=0.004).

On balance we feel that the results from this question reveal fairly strong concerns for maximising benefits. Nevertheless, comments about the young child being more of a person suggest that the assumption of distributive neutrality may be rejected by quite a few subjects.

Potential for Improvement

The fourth question addressed the implication of health benefit maximisation and distributive neutrality that those who will be helped most by a given treatment should have priority over those for whom the benefit will be less. The options were presented as follows:

- 1 Among patients who are suffering equally, some priority should be given to those who will be helped most from treatment.
- 2 Among patients who are suffering equally, those who can become a little better should have the same priority as those who can become much better.

There was an even balance between those giving some priority to patients who will be helped most (52.8%) and those favouring equality (47.2%). There was a slight tendency for the former to find their choice more difficult to make (table 3). Table 4 shows that men were more discriminatory than women and those in paid (full-time or part-time) work more discriminatory

than respondents not so employed. Both of these tendencies were confirmed in the multivariate analysis.

The interpretation of these data in terms of support for health benefit maximization and distributive neutrality is not clear. We would however point out some elements in the formulations that were used. Option 1 uses the expression "some priority", which in itself is an expression of weak preference. On the other hand, option 2 compared those who can become only "a little better" with those who can become "much better". This description of a quite large difference in outcome did not make option 2 an obvious choice. Nonetheless, 47% chose option 2. Altogether, we feel that the observed distribution does not suggest a very strong support in the Australian public for the assumptions of health benefit maximisation and distributive neutrality.

Effects on Dependents

The QALY procedure has been criticised for failing to include the benefits of treatment to anyone other than the patients themselves. In particular it has been argued that the positive effects on people who are dependent on the patients should be incorporated in the assessment of health programs.

The issue was addressed in the fifth question. Respondents were offered the following choices:

- 1 Parents with dependent children should have some priority over other adults.
- 2 For the same illness, people without children should have the same priority as people with children.

Only 33.4% were prepared to discriminate (option 1), the remainder giving equal priority to adults with dependents and those without. Respondents in the latter group also reported having made their choices with greater ease than the former group (table 3). There is in other words strong support for the assumption of distributive neutrality on this particular issue.

Life Style

The final question explored attitudes to illnesses related to life style. It used cigarette smoking as an example and read as follows:

Many people enjoy cigarette smoking. But cigarette smoking is also a cause of heart disease and lung cancer. Which of the following do you agree with?

- 1 If there is not enough money to treat everybody with heart disease or lung cancer, non-smokers should have some priority over smokers.
- 2 Smokers should have the same priority with respect to treatment for heart disease and lung cancer as everybody else.

59.5% of the respondents believed that some priority should be exercised in favour of non-smokers, the remainder opting not to discriminate.

These results would lend some support to health benefit maximisation and distributive neutrality if people who preferred option 1 did so because they thought outcomes tend to be better in non-smokers than in smokers. However, while some respondents did refer to this aspect in their comments, the great majority blamed smokers for self inflicted conditions. These explanations reflect a moralising attitude and hence a departure from distributive neutrality.

As might be expected, smokers were more likely to give equal priority to smokers and non-smokers, with 69% opting for equality compared to only 35.5% of respondents who were non-smokers ($p= 0.001$). Even so, it is interesting that 31% of smokers were prepared to vote (in effect) against their own interests. The elderly and those with private insurance were more likely to favour treatment for non-smokers (table 4).

Respondents found this the easiest of the six issues on which to reach a decision, with 63.1% saying that their choice had not been difficult to make.

Discussion

Economists have often treated the objective of health services as being the maximization of the QALYs gained, irrespective of how the gains are distributed. The recommendation is based on the assumption that QALYs are equally valued by society no matter who gets them. We have called this the assumption of distributive neutrality. The present study was designed to test the strength of the commitment of the Australian population to the simple QALY maximizing rule. It asks the question whether the assumption of distributive neutrality is a correct reflection of ethical

values in Australia. Our chief conclusion is that QALY maximization receives very limited support when the consequence of the maximizing strategy is a perceived loss of equity.

The study used a self administered questionnaire where respondents were asked to choose between conflicting views on six different issues. The results in Table 3 do not suggest that respondents generally found decision making to be very difficult. The concordance between test and retest results at the individual level varies from good to moderate, depending on the issue and the number of options. The respondents in the retest were self selected and may have been more reliable than the initial group as a whole. No systematic differences were observed between the distributions of the test and the retest. Overall, we feel that the distribution of responses in our sample is reliable.

Response rates were low but not exceptionally low for a postal survey of this form. The results in Table 4 indicate little variation in the pattern of response by age, sex, socio-economic status or previous health history. Even when statistically significant differences occurred in the percentage of respondents selecting an option (notably the more egalitarian responses of women and those under 65), the differences were not of such a magnitude to suggest that a different group of respondents would have altered the main conclusions. There was little variation in the pattern of answers by the geographic location of respondents.

In all surveys respondents are sensitive to the framing of questions. This was particularly true in the present study where questions were not straightforward: rather, subjects were asked to select between alternative points of view in the light of summarised but persuasive arguments. While the possibility of framing effects cannot be eliminated, considerable effort was exerted to ensure the neutrality of expression and presentation. Questionnaires were subject to repeated pilot testing and qualitative analysis. The objective of this was to ensure that those interviewed in the pilot study clearly understood the meaning of the statements and would not be likely to give them an unintended interpretation.

In summary, the study suggest that distributive neutrality receives:

- a) very little support when health benefits to young people compete with health benefits to the elderly;
- b) only moderate support when those who can become a little better compete with those who can become much better;
- c) only moderate support when smokers compete with non smokers;
- d) some support when young children compete with newborns, and
- e) wide support when parents of dependent children compete with adults without children.

Overall, there is a strong egalitarian tendency in the views of the study population. In particular, a policy of health benefit maximization receives very limited support when the consequence is a loss of access to services for the elderly and for people with a restricted potential for becoming better. The egalitarian view is also apparent in the majority's preference for treating parents and non-parents and newborn and young children equally. It is only when comparing smokers with non-smokers that a clear deviation from egalitarianism is observed.

These conclusions are strengthened by the results in table 3 suggesting that respondents generally had less difficulty in selecting the 'egalitarian' option than in supporting a discriminating view (again with the exception of the smoking issue).

The study questions used the phrase "have priority" in a fairly general way. The questions nevertheless encouraged the respondents to consider which individuals should be admitted to services that do not have capacity to treat everyone. It is at this admission level of decision making that the cost per QALY decision rule receives little support in the present study. We hypothesize that there is at this level a strong feeling of equal entitlement in individual patients and a strong sense of obligation in decision makers towards all patients in need of help. It is conceivable that these sentiments are less pronounced when decisions are to be made regarding the allocation of resources across broad diagnostic groups. This issue was addressed in the interviews that followed the present study, the results from which will be published later.

The egalitarian views expressed in the questions about age and the potential for improvement are striking, as the cost per QALY approach to resource allocation would assign values to health outcomes in direct proportion to (a) the improvement in health and (b) the patients' life expectancy. The desirability of such discrimination is a fundamental assumption in economic evaluation as it is currently practised in the health sector. This study suggests that in each individual, QALYs render diminishing marginal utility to society. This is in accordance with previous findings by Olsen (1994) and Nord (1993a).

The concern for achieving the best possible outcome observed in the responses on issue 3 (newborn versus young child) might be viewed as inconsistent with the egalitarianism observed with age and potential for improvement. A possible explanation is that people think resources should be used such as to help as many patients as possible, that is, people may hold views consistent with those advocated by Harris (1987) and observed by Nord (1993a; 1993b) in Norwegian surveys. If this is their overriding consideration, then they will give priority to those with a better chance of successful treatment and tend to disregard differences with respect to how much and for how long time they are helped.

Prima facie the main results appear to indicate not only a rejection of QALY maximisation but a rejection of the simple utility maximisation which is often invoked as the theoretical basis for cost utility analysis. In this, increased utility is calculated as the sum of individual, health related utility gains. The rejection of simple utility maximisation does not necessarily imply a similar rejection of the utilitarian basis of economic theory. While respondents revealed a strong preference for egalitarianism, there is clearly a benefit from the knowledge that society is 'just' and that its rules of social justice correspond with personal values. This 'distributional' source of individual utility would, ideally, be included in a simple utilitarian calculation. (An objection to this line of argument is that it may become tautological: whatever is observed may be assumed to be the result of unobserved utility.) The present study did not include questions that could discriminate between a more inclusive utilitarian theory and alternative ethical bases. Its purpose was to test the support for simple QALY maximisation.

While the present study does not show strong prima facie support for simple QALY maximisation it is important to note that the questions used here have broader implications. It is not simply CUA that is based upon the maximisation of life year and quality improvement. Cost-effective analysis also seeks these objectives and, with some qualifications, so does cost benefit analysis. More generally, medical practice seeks to maximise life and priority would normally be given, when choice is inevitable, to patients with a better prognosis. For these reasons we would be

cautious in drawing policy conclusions from the results of this exploratory study. We do not know how carefully the respondents have considered the issues raised in the questionnaire. And even if they have considered them carefully, there may be ethical arguments for not following populist policies based upon voting. The conclusion we do reach with confidence is that economists and others are not acting as value free social scientists recommending policies based upon the values and preferences of the society.

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