

# It is the lifetime that matters: public preferences over maximising health and reducing inequalities in health

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## ABSTRACT

Scarce healthcare resources can be allocated in many ways. The National Institute for Health and Clinical Excellence in the UK focuses on the size of the benefit relative to costs, yet we know that there is support among clinicians and the general public for reducing inequalities in health. This paper shows how the UK general public trade-off these sometimes competing objectives, and the data we gather allow us to show the weight given to different population groups, for example, 1 extra year of life in full health to someone who would otherwise die at the age of 60 years is worth more than twice as much as an additional year of life to someone who would otherwise die at the age of 70 years. Such data can help inform the rationing decisions faced by all healthcare systems around the world.

## INTRODUCTION

The resources devoted to healthcare are scarce in any healthcare system. In the UK, resource allocation decisions are informed by the resource cost associated with generating one extra unit of health measured in terms of quality-adjusted life years (QALYs). QALYs combine quality of life and length of life into a single value. Quality of life is expressed on a scale between 0 (for dead) and 1 (for full health), which is then multiplied by the duration. Therefore, one QALY is equivalent to 1 year of life in full health, or 2 years in a health state that is halfway between full health and being dead. In evaluating new technologies, the default position taken by the National Institute for Health and Clinical Excellence (NICE) is that all QALYs are valued equally, which means maximising health in terms of the number of QALYs gained.<sup>1</sup> NICE acknowledges that there are circumstances under which some QALYs may be valued more highly than others,<sup>2</sup> but it is not always entirely clear what these circumstances are or how much extra weight should be given to them. It is also known that clinical experts and lay public may have different views.<sup>3</sup> To provide further input into discussions about how to allocate scarce healthcare resources, we have sought to obtain 'equity weights' for health from samples of the general public. The full details of the research project are available elsewhere.<sup>4</sup> The aim of this brief report is to disseminate the main findings of our project to a wider audience.

## METHODS

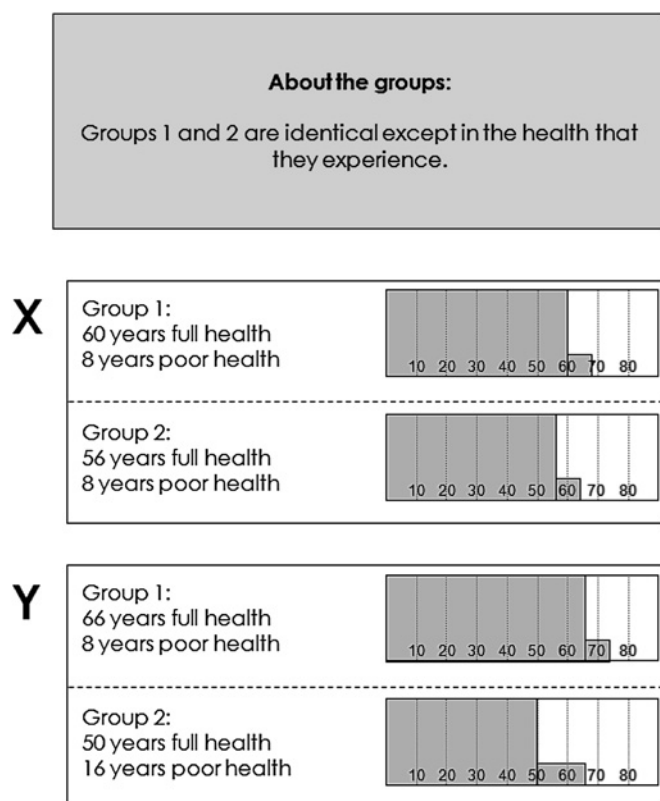
A sample of 600 members of the UK general population was recruited by knocking on doors on

randomly selected residential streets in eight areas of England and interviewing them in their own homes. The age, gender and socio-economic status distribution in our sample was similar to that of the 2001 Census. The main preference elicitation task consisted of a series of questions, where respondents were asked to choose between two scenarios, both involving two population sub-groups. Given the focus of the study, each preference question was of the same basic form: one scenario involved greater overall health, and the other a more equal distribution of health. Preferences were parameterised according to the degree of inequality aversion (the willingness to trade-off overall health for a more equal distribution). For example, the first scenario (X) represents relatively low average health across the two groups with some inequality between them, whereas the second (Y) represents higher average health across the two groups but with a much larger inequality between them. The respondent is asked: 'Which scenario would you prefer NICE to bring about?'. The three response options available are: 'I prefer scenario X', 'I don't mind if it's X or Y', and 'I prefer scenario Y'. Figure 1 gives an example of the visual aid presented.

From responses to questions with different combinations of levels and timings of quality of life and length of life, we were able to estimate the key parameters of a general social welfare function that is widely used by economists when analysing degrees of inequality.<sup>5</sup> In its simplest form, with two equally sized population sub-groups, the function is increasing in the lifetime health of the groups and decreasing in the inequality that exists between them. The degree of aversion to inequality—the willingness to give up overall health for a more equal distribution—can be applied to stylised population groups, defined according to lifetime health, to show the degree to which it might change how additional QALYs are valued when the social preferences of the general public are accounted for.

We have chosen five health profiles, as shown in the first column of table 1, to reflect four policy-relevant health prospects. For simplicity, we assume that less than full health (0.5 on the 0–1 scale) always comes in the final years of life but equity weights could be estimated for any combinations of quality and length of life. Again, for illustrative purposes, we have chosen two levels of benefit: one QALY and ten QALYs. The profiles are deliberately abstract so that they can be applied to any number of conditions and treatments, for example, each group could represent individuals diagnosed with different types of cancer, say, and

## Brief report



**Figure 1** Example visual aid.

existing and new treatments could provide one or ten additional years of life.

## RESULTS

The figures in table 1 show how members of the general public value one and ten QALY gains made up of 100% health, where the reference is a one QALY gain to a group of people who will live for 70 years in full health. In keeping with the general QALY framework, length of life and quality of life are both important factors in determining the social value of different health profiles. For example, treating those who would die at 60 years gets about two and a half times as much weight as treating those who would die at 70 years in the one QALY case, and treating those who would die at 60 years after having been in 0.5 health for 10 years get about 1.5 times weight as treating those who would die at 60 years having experienced no ill health previously.

**Table 1** Relative values of health gains to four stylised groups

Health profiles of different groups	Relative values for different health gains	
	1 year in full health	10 years in full health
70 years in full health plus 10 years in 0.5 health	0.60	4.37
70 years in full health	1.00	7.15
60 years in full health	2.49	17.32
50 years in full health plus 10 years in 0.5 health	3.67	25.24
50 years in full health	7.11	48.71

Source: Project Report.<sup>4</sup>

Members of the general public prefer more benefits to less, but each additional unit of benefit is valued less highly (eg, ten QALYs to somebody who will live for 70 years in full health is worth about seven times as much as one QALY). This makes intuitive sense because the more benefit a group receives, the better off they become: and the better off they become, the less the general public are concerned about their welfare.

## DISCUSSION

We have been able to provide some indicative estimates of the trade-off that members of the UK general population would like to see made between health maximisation and reducing inequalities in health. In this paper, we have shown how these trade-offs affect the social value of QALY gains to population groups that differ according to their lifetime prospects for quality and length of life. For example, we have shown that the general public value 1 year in full health for a 50-year-old who is otherwise about to die as about the same as 10 years in full health for a 70-year-old who is otherwise about to die.

There are, of course, methodological issues and limitations with studies of this kind. The responses to the questions will be influenced by the way they are presented and framed, and by the different profiles of health used. Future research should consider the degree to which preferences are sensitive to such factors. In particular, it would be interesting to see whether different results are obtained when the differences in *gains in health* are made salient<sup>6</sup> (which they were not here) and how the perspective adopted in the questions (we used 'from the viewpoint of the NHS') affects responses.<sup>7</sup> It would also be interesting to use similar methods in different countries to see whether there is any international consensus on the degree of inequality aversion in health.

These kinds of trade-offs are the direct result of the general public's concerns for a 'fair innings' in overall health terms along the lines of that put forward by Williams.<sup>8</sup> There has been considerable normative debate about the merits of this type of argument but, in addition to the results from our own study, it does have support from the respondents to previous studies.<sup>9</sup> Such data cannot resolve the normative debate but they do lend public support to policies that seek to reduce inequalities in lifetime health—but that also take into account the health benefit that is being sacrificed to reduce those inequalities.

There are, of course, many unresolved issues raised by the methods and results presented here but they surely serve as a further input into the debate about how best to allocate scarce healthcare resources. In the very least, the results lend support to NICE giving additional weight to interventions that improve the quality and/or length of life of those whose health prospects are relatively low and would generally be supportive of measures designed to tackle the social determinants of health.<sup>10</sup>

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