Measurement issues concerning health inequalities

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SUMMARY

Most evaluation of health care, whether from a clinical or from an economic viewpoint, and whether from an individual or population perspective, is concerned with effectiveness (i.e. with the maximisation of health gains, somehow defined and somehow aggregated) for the relevant community. An economic viewpoint will also take costs into account, where these (in principle at least) are measured in such a way as to reflect health gains foregone by the relevant community (if the perspective is the narrow one of seeking allocative efficiency within a health budget), or in such a way as to reflect welfare losses more generally (if a broader perspective is adopted). Thus a cost-effective activity is one in which the health (or welfare) gains to the relevant community exceed the health (or welfare) losses. In either case distributional issues are not considered explicitly, and it is implicitly assumed either that they are not important or that they will be taken into account elsewhere. The principal purpose of those advocating a greater role for health-related quality-of-life (henceforth HRQOL) measurement has therefore been to ensure that in this efficiency calculus the value people attach to extra years of life is balanced by the value they also attach to the reduction of pain and disability and to increasing their capacity to lead normal lives unaided.

But most publicly funded (or publicly subsidised) health care activities also profess the objective of reducing inequalities in health within the relevant community, and this is typically measured by comparing life expectancy at birth between different subgroups in society. The particular subgroups that are of policy interest will differ from context to context. In many countries differences by social class have been the most prominent, but differences between the sexes, between urban and rural populations, between smokers and nonsmokers, between ethnic groups, and between birth cohorts have all been highlighted on occasion. So the question arises as to what kind of HRQOL measure is needed for this purpose if we are to get away from reliance exclusively on survival and mortality statistics.

First of all one might ask whether it is worth the extra effort, since surely the people with the poorest life expectancy will also be the people with the poorest HRQOL during their short lives. In such circumstances the only error we shall be making is in underestimating the extent of the health inequalities, but we shall still be targeting the right subgroups in society for any remedial measures that might be put into effect. Unfortunately

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the initial presumption should not be accepted without empirical testing. In the UK it appears that the differences in life expectancy at birth between the upper and lower social classes are of approximately the same magnitude as the differences between the sexes. But when life expectancy is converted into quality-adjusted life expectancy, the difference by social class gets much larger, but the difference between males and females gets slightly smaller. This is because, on average, the surviving older women experience poorer HRQOL than the surviving older men. So even at this crude level of discussion the HRQOL measurement effort needs to be made. The case for making the effort is even stronger if the magnitude of the remedial effort is to be related systematically to the magnitude of the health inequality between the subgroups, for this is very likely to change when HRQOL is taken into account.

At a simple mechanical level the measurement of quality adjusted life expectancy is a fairly straightforward matter. Instead of counting mortality risks year by year by recording “1” for each member of a cohort who is expected still to be alive and “0” for each member who is expected to be dead, we need to adjust the number “1” according to the HRQOL of the survivor. It stays at 1 for the perfectly healthy, but falls below 1 for everyone else. The very crudest of such measures (“Health expectancy”) sets a threshold of healthiness below which people count as 0 despite the fact that they are still alive. Frequently this is based on some self-reported “restriction of activity due to long-standing illness or disability” and it picks up a large number of older people, whose “healthy life expectancy” is shorter than their life expectancy. A little more sophisticated is “disability-free life expectancy” which allows for some grading of disabilities, but which still falls short of full-scale HRQOL measurement. In the measurement of the global burden of disease the DALY concept is used, which uses a seven-point scale (generated by expert opinion) to rate the impact of every disease on the HRQOL of those living with the disease, and then uses the distribution of diseases within a population as the key descriptive statistic from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which some standard generic self-report HRQOL measure (such as the Euro-Qol EQ5D) is used to collect descriptive data about key HRQOL characteristics from which inequalities can be estimated. I prefer the population survey approach in which the valuation issue has also to confront that same problem. One coping mechanism for the worse-off is for them to lower their expectations about what life has to offer, and “to be thankful for small mercies”. This leads the worse off to value any given HRQOL health state higher than a better-off person would (thus they not only under-report, but what they do report they “over-value”). Unlike the under-reporting bias, the valuation bias can be counteracted if the community values every health state in the same way no matter who is experiencing it. This requires a single set of community va-
values to be used even though these may not reflect the values of any particular individual within the society. Personally I feel quite at ease using for this purpose the median value assigned to each health state by a representative sample of the relevant population, but other choices are possible. But the valuations (however elicited) must use as anchor points “dead = 0” and “healthy = 1” otherwise integration with the life expectancy data will not work. This does not preclude some states being valued at less than zero (indicating that such states are worse than being dead), which, if terminal, indicates that it would be better (from a societal viewpoint) for that person to die sooner rather than later. If these worse-than-dead states are not terminal, then such a judgement depends on what might be expected to happen subsequently.

The measurement of quality adjusted life expectancy and its use in measuring health inequalities assumes that it is inequalities in people’s whole lifetime experience of health that is of policy interest, and not just their health state at any particular point in time. As with simple life expectancy, this requires some sort of prediction about people’s future experience of health, and the simplest such assumption is that it will be the same as that of people like them who are simply older. In a more complicated model, just as mortality statistics can be adjusted to reflect trends in mortality, so, in principle, can HRQOL statistics. But in practice HRQOL data has been collected for such a short time span that there is a lack of reliable trend data from which to extrapolate. And the under-reporting problem may return to haunt us here, because if the whole community is getting better off (though with inequalities persisting or even getting worse) we may get more health problems reported by all subgroups, and hence witness the appearance of “immiserising growth”!

One final consideration. It should not be assumed that all inequalities are socially abhorrent, and still less that they are all equally abhorrent. So there is another research agenda here (which together with colleagues is being pursued in an associated research programme on health variations in the UK) designed to discover which inequalities the general public regard as the most ethically obnoxious.