Understanding Harris' understanding of CEA: is cost effective resource allocation undone?

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Harris is a longstanding critic of CEA and the QALY. In this paper we attempt to summarise and evaluate both Harris' criticisms of CEA and the alternative processes he commends to health care decision makers. In contrast to CEA, Harris' asserts that individuals have a right to lifesaving treatment that cannot be denied by a decision maker on the basis of their ability to benefit. We conclude that, whilst Harris' work has challenged the proponents of CEA and QALYs to be explicit about the method's discriminatory characteristics, his arguments are largely based upon the flawed premise that lives can be saved, rather than death postponed; and that opportunity cost can be avoided by attempting to secure the same chance of treatment for every person desiring it. We further show that even if just, his suggested allocation (lottery) principle is unlikely to be in the interests of those who are worst off.

1. Introduction

For the last 20 years and more, John Harris has been the single most vocal critic of the use of cost-effectiveness analysis (CEA) in health care resource allocation and quality-adjusted life-years (QALYs) in particular. As austerity bites and the attraction of methods that claim to support fair and transparent resource allocation inevitably increases, it is timely to consider Harris' arguments whilst the opportunity remains to identify alternative methods for informing health policy.

This paper summarises and evaluates both Harris' criticisms of CEA and the alternative processes he commends to health care decision makers. Section 2 considers Harris' definition of a life saved; then Section 3 addresses the justice of Harris' claims behind the veil of ignorance. Section 4 addresses Harris' proposals for the role of costs, before Section 5 examines the alternative resource allocation procedures that he advocates. The paper concludes by summarising the key themes in Harris' rejections of CEA and asking whether their use by resource allocation bodies such as NICE can be defended.

2. What is a life saved?

CEA assumes that the aim of health policy is to maximise population health. In its most common formulation, CEA measures health using QALYs in order to capture the impact of both life persevering and life enhancing treatments.[1] Here, techniques are used to measure health-related quality of life on a scale

where zero represents a state deemed (by a respondent) as bad as being dead and one represents a state deemed as equivalent to being in full health.[2] If being dead and being in full health can be said to be equally important for all individuals, then the QALY, in theory at least, can measure health in a way that is comparable between individuals. Further, since QALYs can be formed for any conceivable health treatment, they allow the health benefits from all treatments to be compared.

In contrast to this, when critiquing the QALY Harris normally posits situations where there is an imminent risk of death to at least one party, with those at risk identified as being in need of health care resources and those not at risk identified as being in lesser (or no) need. In essence, health is simplified and patients are simply alive or dead an unspecified point in time following treatment or non-treatment (depending on the choices made). Ultimately though, everyone dies and once dead their life is no longer saved, even if this could have been said at one time; it is perhaps more meaningful to talk of delaying death.

However, this raises the question of how long a pulse must be maintained to count as having saved a life, with Harris deeming even a few hours important to allow an individual to potentially "settle their affairs".[3] Many lives can be extended beyond a few hours and justice may require that we make a distinction. If so, Cubbon's critique applies: if we use lives saved as the measure of benefit one "should strive to save the life of a baby who only can

live another hour of acute suffering just as much as one who will have a happy and fruitful existence of three score years and ten".[4] In addition to this argument, it is also worth noting that were a health care system to measure its success by those lives it has saved, then the baby who will live for 70 years will represent a success to that system for longer. Thus, even a health system that would focus on saving lives in the short run might still prioritise treating those with greater life expectancies.

Harris' treatment also raises a second question: how imminently must a life be in jeopardy for it to be deemed "saved"? Whilst his examples deal with imminent death, death is not typically instantaneous in the event that treatment is not received. Here, either Harris' position deals only with a tiny number of "rule of rescue" cases, and so has nothing to say in the vast majority of places where QALYs are used, or it can be generalised. Assuming the latter, we consider what this generalisation may involve. As we consider longer intervals for the risk of death, then it becomes increasingly difficult to justify a position that groups would have equal claims on treatments that "save" their lives a la Harris. Clearly, extending the life of a person who may die five years from now and one who would die tomorrow may be different in terms of justice but each is a "life saved" if no distinction is made between them. However, if a fixed time limit is placed on when jeopardy must occur, there are inevitably uncomfortable distinctions of what does and does not constitute life saving. More importantly, *any* limit on when jeopardy occurs means that Harris places lexically greater priority on *some* life preserving

treatments defined as life saving than on both life enhancing and other life preserving treatments not defined as life saving – and absolute limits on which life preserving treatments "count" appear arbitrary.

Harris has claimed that "[only] when all demands on resources for life saving have been met should life enhancements be undertaken" and that "life saving procedures are usually to be preferred to life enhancing procedures, precisely because of the magnitude of the benefit".[5,6] Elsewhere, Harris acknowledges a relationship between life enhancing treatments and the protection of life; e.g. through screening, prevention and "first line" treatments of disease.[7] He recognises the complexity of the choices to be made and that decision makers considering these issues would need to consider issues such as pain, distress and mobility; thus he accepts the moral legitimacy of considering life enhancing aspects of health care. However, he rejects the QALY, in part because it incorporates life expectancy. As we explain above, this rejection of life expectancy flows from the fact that he only considers outcomes at a single point in time (e.g. life saved/life not saved) without fully exploring issues of timing. Once these timing issues are considered, then any objection to the use of duration is significantly weakened.

3. Justice, efficiency and Harris

Rawls proposed that justice could be discovered if people could be divorced from their own self-interest.[8] To do this, he suggested a "veil of ignorance" as a hypothetical device that would prevent those looking from within from seeing any aspect at all of their own society, or whether or not they are rich or poor within that society. Within such a veil he proposed firstly that society should be organised so that each individual has access to the most extensive scheme of liberties that allows the same liberties to be available to all. Given this, he suggested that primary goods – 'those things which a rational man wants whatever else he wants' – would then be allocated such that inequalities only ever arise if they work to the greatest benefit of the least-advantaged in society.

Using 'Rawlsian' reasoning, Harris suggests that QALY maximisation would not be selected from within a veil of ignorance because it would represent too large a risk should they be old/unhealthy once the veil is lifted. [7,9-10] However, this application of Rawls' veil to health is problematic since Rawls himself excluded health from consideration, alongside other important quantities such as vigour, intelligence, and imagination. That is, Rawls did not consider health to be something that could be directly distributed in the way that wealth can be within the veil of ignorance. Hence, Rawls ignored mechanisms that would explicitly redistribute resources to have this effect. Thus, that Rawls' veil would not reproduce QALY maximisation is unsurprising as its first principles implicitly preclude it reaching this conclusion. As the

specifics of Rawls' veil were painstakingly built up based on first principles, including health and other 'natural primary goods' may fundamentally affect the final veil; it not possible to uncritically "apply" Rawls to a health setting.

Other types of veils can be applied to health and lead to different conclusions, with Harsanyi using a veil concept to argue for the maximisation of utility.[11,12] In his veil, all people within a defined and visible society are asked to choose how to decide when unable to perceive their own role and so also the personal impact of each option faced on them. In a lengthy exchange, Harris debated Singer and others, who advocated the use of a utilitarian veil in preference to Harris' neo-Rawlsian version.[13-18] Within this debate, a series of examples are used with both sides more or less entrenched.

It is perhaps unsurprising that these veils produce different recommendations. Singer's utilitarian veil seeks a distributive principle whilst Harris' aimed for a just answer. As veils of ignorance aiming to answer different questions will naturally produce different results, both results may be equally appropriate but still have conflicting conclusions. This extends to the conflict in the information used: even if some information is not considered relevant for justice, it might still be considered relevant for efficiency purposes. Harris' argument that resource allocation decisions should avoid certain types of information requires not only that his formulation of a just solution is correct

but also that no other criterion is necessary in decision making, since any additional criteria may require this information.

In practice, resource allocation occurs in a context in which both efficiency and justice exert some pressure but neither is likely to be definitive in isolation.[19-20] Those reimbursement authorities that use QALYs to inform their decisions frequently explain departures from QALY maximisation by reference to social values and considerations of equity; for example the National Institute of Health and Clinical Excellence has identified social value judgements that it takes into account alongside the Incremental Cost Effectiveness Ratio.[21]

4. Consideration of costs in health care resource allocation

Although Harris makes relatively few statements about the role of costs in processes that utilise CEA to allocate health care resources, he highlights two particular issues; first, that the cost of a technology will influence the likelihood that an individual will receive the treatment; second that, by extension, the use of CEA discriminates against those patients whose conditions are relatively expensive to treat.[5]

The first consideration, whilst true under certain conditions, is far from the whole truth. Within the CEA framework, the impact of treatment cost on the likelihood of access is dependent upon the treatment's effectiveness. Very

high cost treatments that produce large health gains will be highly cost effective; i.e. have a lower incremental cost effectiveness ratio; and low cost treatments that have produce little or no health gain will be highly cost ineffective. Harris' second concern maintains the mistake of the first, in considering cost independent of effect. He exacerbates this by failing to understand that in a fixed budget system – the only type of system that has the type of resource allocation problem that CEA can address – the cost for one person is health gain foregone for another. In this context paying more for a given amount of health for one person compared to another person is discriminatory. Thus, providing treatment for those whose condition is relatively expensive to treat may be more discriminatory than not providing it.

Harris' consideration of the role of cost in resource allocation decisions is hampered by his failure to look at the impact of costs on the choices available to a health care system. CEA, by linking health expenditures and health gains, allows the explicit balancing of different claims on a limited health care budget. This critique is not novel but bears repetition;[22-23] particularly as we show that his preferred alternative system may disadvantage the worst off with respect to health.

5. Harris' treatment lottery

Harris considers resource allocation in the context of life-saving treatments. Over the last two decades he has considered a number of candidate rubrics

for resource allocation; with common themes being the exclusion of preferences over quality of life, of the size of health benefits, and of the probability that health benefits will occur. Whilst he has occasionally advocated maximising the number of lives saved,[5,24] the main alternative to CEA he has proposed is a lottery for treatment.

Harris proposes that a just society would give each person at risk of losing their life an equal chance of benefiting from treatment.[7,17,25] Thus a lottery is considered where there are multiple potential beneficiaries and insufficient resources to provide treatment to them all. Harris asserts potentially the most important feature of a lottery is that it "values each person at one and none at more than one."[7]

A number of commentators have disagreed with Harris' view of lotteries, with critiques echoing those in Sections 2-4 above. Potentially the most telling critique is provided by Williams, who argues that Harris' failure to properly specify his lottery allows him to avoid many important issues that would determine whether and to what degree a lottery was a moral process.[26]

> "lotteries do not spring fully formed from Heaven. They are invented by people. These people have to decide who is eligible to enter this lottery, what the prizes are, how soon and how often you can re-enter the lottery if you fail to win the first time, whether 'tickets' (especially winning tickets) can be traded or given away, and so on. It seems to me the beginning of a new discussion about discrimination, which merely takes

the place of the old one, but does not get us off that particular ethical hook."

We would add a further critique of Harris' position. If the budget for health care is fixed then unless the costs of all treatments are equal or the lottery identifies only one individual out of the patient population to benefit, an individual's chance of receiving health care is a function not just of how many tickets they have in the draw but also how much of the available budget has been consumed in treating previous lottery winners.

Suppose, for simplicity, that there are only five possible recipients for life saving treatments. The costs to treat individuals A, B, C, D and E are £100, £100, £200, £500 and £1000. Suppose that each person benefits by the same amount and there is a fixed budget of £1200. Clearly, if E is selected first then either C by itself or both A and B are affordable, with D never affordable. In these cases A and B have twice the chance of getting treatment, as both will be funded if either A or B are drawn before C. Overall, in an unjust lottery draw in which the money is spent until no more can be afforded for anyone left in the lottery, A and B are both funded 87.5% of the time, with C, D and E funded 72.5%, 60% and 40% of the time, respectively.

Variation in cost of treatment and a fixed budget means that we cannot expect a lottery to deliver an equal opportunity of being treated to all individuals who could benefit from treatment. The only way that all five

recipients could receive the same chance of treatment in the example above is if only the first person drawn receives treatment, since the budget will always be able to afford one person's treatment but is not always able to afford the first two people drawn (where D and E are drawn first). In this case, Harris' just outcome gives all people a 20% chance of receiving treatment: an outcome which is poorer even for the person whom it is most expensive to treat. In contrast, the cost-effective outcome would provide treatment to A, B, C and D 100% of the time. Overall, cost-effectiveness outcome provides (potentially lifesaving) treatment to 4 people, the unjust lottery provides it to 3.48 people on average, and Harris' just lottery to only 1 person (see Table 1). Given the choice behind a veil of ignorance, some may prefer the lottery to the cost-effective choice but it seems unlikely that even Rawls would choose Harris' "just" equal-chance lottery as it violates his difference principle (at least within our example).

Table 1 about here

Harris also suggests a possible variant of the lottery in which all individuals must be given an equal chance of the greatest possible health available to them.[24] Here, Harris appears to extend his measure of effect for health from life-saving to "flourishing"; presumably recognising the value of improvements in quality of life as well as duration of life. However, the critiques of the lottery for life saving treatment outlined above apply equally to this proposal, so that a lottery cannot be expected to deliver an equal chance of treatment to all

without sacrificing some (and in some cases a large) chance of treatment to each person.

Harris' proposals for a just system of resource allocation, even with the limited detail he provides, can be shown not to be practical and, indeed, to be less just than some close alternatives. Whilst alternatives potentially exist to strictly-applied CEA which may be considered preferable in terms of justice, it is questionable whether his specific proposals are more just than the system he has consistently criticised and strives to replace.

6. Summary and conclusion

Harris has been a vocal critic of CEA and the QALY for over 20 years. Harris' basic position is that all health benefits are indivisible and, unless a strong argument can be made, of equal worth. In particular, Harris suggests that life saving treatments dominate life enhancing treatments in all circumstances, regardless of the QALY benefits in either case. Harris states that all individuals have a right to treatment that cannot be denied by a decision maker on the basis of their ability to benefit.

Harris has recommended slightly different methods of allocation: a lottery; that each individual is provided with the same chance of obtaining life saving treatment or the same chance of obtaining the greatest possible health benefit to them; and the maximisation of lives saved. Of these, the first

two options may lead to large numbers of avoidable deaths, which is precisely the outcome he seeks to avoid in his third method. Whilst Harris has argued previously in terms that would seem to argue against the maximisation of lives saved, this appears to be the least problematic version of his suggestions. Even here, extending one person's life for one day would be counted as a larger benefit than any quality of life improvement, regardless of how large it is and how many people benefit. Given both the costs of some last-chance therapies, and the incentives signalled to manufacturers of making it known that treatments would be paid for at any cost, the long term impact of a "life saving" NHS is unlikely to be one where much, if any, money is left to enhance, as oppose to "save", life.

Harris' critiques of the use of CEA and QALYs for resource allocation have challenged their proponents to be explicit about the methods' discriminatory characteristics and have thus contributed to an improved understanding within policy and academic communities of their strengths and weaknesses. This said, Harris' arguments against QALYs and CEA are largely based upon flawed assumptions; first that lives can be saved, rather than deaths postponed; and second that the limits imposed by the opportunity cost of providing treatment within a fixed budget can be sidestepped by trying to obtain the same chance of treatment for everyone. His arguments for abandoning CEA and QALYs do not survive the recognition of these two regrettable realities.

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