Cost Effectiveness Analysis and Fairness [1]

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ABSTRACT

This article considers some different views of fairness and whether they conflict with the use of a version of Cost Effectiveness Analysis (CEA) that calls for maximizing health benefits per dollar spent. Among the concerns addressed are whether this version of CEA ignores the concerns of the worst off and inappropriately aggregates small benefits to many people. I critically examine the views of Daniel Hausman and Peter Singer who defend this version of CEA and Eric Nord among others who criticize it. I come to focus in particular on the use of CEA in allocating scarce resources to the disabled.

Cost Effectiveness Analysis (CEA) in medical care tries to maximize health benefits produced per dollar spent. Its use is recommended when society cannot afford every form of health care and must chose what to provide. Yet it is often taken as a truism that there can be deep conflicts between maximizing benefits and distributing fairly, in general. For example, the philosopher Robert Nozick imagined a "Utility Monster" [where utility is (roughly) experiential well being] such that for any resource up for distribution, one always produces more additional benefit at less cost if one gives the resource to the Monster rather than to others even though he is already

1. 1.This paper is a response to Daniel Hausman's "How Can We Ration Health Care Fairly and Humanely" as originally presented at "Bioethical Reflections: A Conference in Honor of Dan Brock," at Harvard Medical School Nov 22. 2014. All references to Hausman are to that paper. Hausman focused on Brock's discussions of the problems of fair chances, priority to the worse off, aggregation, and discrimination raised in several of his articles, including "Ethical Issues in the Use of Cost-Effectiveness Analysis for the Prioritization of Health Care." Hence, the order in which I discuss some issues in this paper follows the order in which Hausman chose to discuss Brock's work.

much better off than they. This would result in one person getting all the additional benefits while all others get none. This seems unfair.

CEA cannot result in this most extreme form of unfairness because of limits that result from how it calculates benefits. Each additional year of very healthy life is given a value of 1; no one can get more than 1 per year. Still, it is possible that only those who are already very healthy can achieve many additional years at a value of 1 at low cost if they are saved from an otherwise fatal bacteria. Maximizing health benefits per cost would imply helping them rather than people who are not as healthy and can achieve only fewer additional years at a value of less than 1 and at higher cost if they are saved from the same threat. This too seems unfair.

Why does it seem unfair to help only the Utility Monster and the healthy people? Fairness is about how one person is treated relative to another. This is by contrast with a notion such as justice which need not be comparative; that is, we could decide what justice requires that we give a person in virtue of his conduct independently of considering what anyone else is owed. Hence, we could treat someone justly in giving him what he is owed and thereby increase unfairness because we treat him justly while not treating anyone else justly. [For example, we might punish some who deserve this even if we cannot punish all who do. This case also shows that fairness is only one moral dimension on which we can evaluate how we treat people or states of affairs we produce; it is possible that we should sometimes override fairness to be just (or to achieve some other moral value).]

According to what measure shall we compare people to see if each is being treated fairly relative to others? Suppose we think that all that fairness requires in allocating benefits is that a certain amount of benefit be given the same value regardless of the person who will be benefited; no extra value should be assigned to a certain amount of benefit in person A rather than in person B. We could call this the Simple Standard. According to this standard, Nozick's Utility Monster and our CEA Bacteria case need not involve unfairness, for we could give the same value to a certain amount of benefit in the lives of everyone but it happens that more benefits can be produced in the Utility Monster and in the already healthy. These examples suggest that there may be more to fairness than the Simple Standard.

Indeed, there are different views about what fairness requires and deciding which is right is no easy matter. In this article, I will call attention to some different views of what fairness requires and consider whether, according to these views, fairness problems arise in the medical context as a result of using a version of CEA that

always emphasizes maximizing health benefits per dollar spent. Without pretending to settle the matter, I will raise some issues to consider. However, it is important to realize that even if there are problems with this version of CEA, this does not imply that it is never consistent with fairness to use some form of cost effectiveness evaluation. For example, it seems fair and right to treat one hundred people equally well with a cheap drug rather than an expensive one, other things equal. It would also be fair and right to use a drug with which we can save two hundred people rather than an equally costly one with which we can save only one hundred of these people.

1. Some think that when we cannot help everyone, fairness requires that people get a chance for medical care in proportion to their need for it, regardless of outcome in terms of CEA. For example, imagine that we can produce more cures per dollar if we treat six people with one fatal disease rather than only five people with another fatal disease. In this case the route to maximizing health benefits involves giving a life saving benefit to more rather than fewer equally needy people, by contrast with Nozick's Utility Monster. Hence, this case raises the question of whether it is unfair to save a greater number of people rather than give each group a chance to be saved in proportion to the need of each multiplied by the number of people in the group. Some think that fairness does not demand giving chances in proportion to need in the group but itself requires counting numbers of people, balancing one person of similar need (and, perhaps, expected outcome) against another and allowing the greater number to get the resource. On this view fairness does not require giving some chance to be helped to fewer people, when all suffer from equally serious problems.

Nevertheless, even on this view of fairness it may be right to give equal chances to be saved to two groups if they each contain the same number of people of equally sick people when we only have enough resources to treat one type of fatal disease. But proponents of CEA should see no reason to give equal chances if outcome per dollar would be the same. It is only if we take seriously the personal perspectives of each person, and so recognize that each person is not indifferent to whether he or someone else survives, that we see why fairness could sometimes require giving equal chances to different people even when their need and outcome are the same. (If we take seriously the perspectives of different people, we might even think it is wrong to deprive one person of his 50% chance to be treated merely because we would get a slightly better outcome if another person were treated.)

We have been focusing on cases in which each person needs a cure for a fatal

disease. However, if the original view of fairness that we considered (requiring chances in proportion to the strength of people's need) were true, someone who has a weak need for a scarce resource should get a small chance to get it. But does fairness really require giving a small chance to someone who needs the resource to cure his sore throat so that if against great odds he wins, someone else who needs the resource to save his life dies? Would we be overriding fairness in order to achieve a better outcome if we did not give the person with a sore throat a chance? I suspect not for in other cases achieving a better outcome would not lead us to override what fairness really requires. For example, suppose a doctor and a janitor both equally need a scarce life-saving medicine. If the doctor survives, he can save someone else's life from another illness, the janitor cannot. Although we could achieve a better outcome if we save the doctor (two people saved rather than one), this need not be sufficient reason to deny equal chances to the doctor and janitor in need of the scarce medicine. If we would not override fairness in this case to achieve the better outcome, this suggests that if we deny the person with the sore throat a proportional chance, we are doing so because we do not think fairness requires his having a chance, not because we are overriding fairness for the sake of a better outcome.

Hence, I have argued that while CEA does not necessarily contravene fairness in not giving chances to individuals in proportion to their need, it may fail to recognize an appropriate role for giving equal chances when need and outcome would be the same.

2. a. Another possible fairness concern about CEA is that it is indifferent to whether an equally cost effective benefit, such as relief from a certain amount of pain, goes to someone moderately ill or to someone severely ill. Some think fairness requires that the severely ill should be preferred. Indeed, it might be thought that fairness requires providing even a somewhat smaller benefit to those who are severely ill rather than a larger benefit to those who are moderately ill, holding cost constant. A "prioritarian" view of what fairness requires implies, roughly, that it is reasonable that the claim to benefits of those who are worse off should be weighed more heavily than those who are better off because it is right to give priority to improving the condition of a worse off person before improving someone who is already better off than

he is.[2] This view of fairness implies, contrary to the Simple Standard, that a given benefit in one person should sometimes have greater value than the same benefit in another person. (However, giving priority to the worse off is not the same as always caring for the worse off regardless of benefit that can be achieved.)

b. A third fairness concern about CEA is that providing minor, inexpensive health improvements (such as teeth fillings) in many people may be more cost effective than providing bigger, more expensive improvements (such as treating appendicitis) in a few, but fairness may require giving greater weight to the latter. This issue arises because CEA permits summing small benefits to each of many people to produce a large aggregate benefit that is then weighed against a smaller aggregate benefit composed of summing bigger benefits to a few people. The question is when it is fair to aggregate and weigh smaller benefits to some people against bigger benefits to others to decide how to allocate scarce resources.[3] This question about aggregation is sometimes related to the issue of not giving priority to the worse off, when the small benefits would go to many people already better off and the bigger benefits would to go to a few people more severely ill.

c. Let us consider these second and third concerns about the fairness of CEA in greater detail. With regard to the second, some think that willingness to help the severely ill even when this produces fewer benefits per dollar need not depend on a prioritarian conception of fairness. Rather it can reflect compassion for those in dire straits. Dan Hausman argues for this. On his view CEA is the reasonable, rational, and not unfair way to decide how to allocate medical resources but we sometimes override it because of compassion for the severely ill. On this view, compassion can conflict with reason (even if it does not always), and it is this compassion (rather than a reasonable view of fairness), that can lead us to help the severely ill when doing so conflicts with CEA.

One problem with this view is that it can seem fair and reasonable to give priority to treating those who are only moderately ill rather than those slightly ill even though compassion is not triggered for the former in the way it is for those in dire

2. There is a noncomparative view about giving priority to the worse off according to which the moral value of giving a benefit to someone varies with how well off in absolute terms that person is—the worse off, the greater the value. This view does not require comparing how well off someone is relative to others. I am focusing on the comparative prioritarian view in taking it to be an interpretation of fairness which is a comparitive value.

3. It is not unfair to aggregate and weigh small benefits to a few against the same small benefits to many others, other things equal. But I am concerned with aggregating and weighing smaller benefits against bigger ones.

straits. Similarly, we do not now feel greater compassion for twenty year olds who we know will die in thirty years at age 50 than for twenty year olds who we know will die at age 65. Yet we might still think it is morally right to invest in research that will buy five more good years for those who would die at 50 rather than in research that will buy 7 more good years for those who will die at 65, even if this conflicts with CEA. Presumably, this is because it seems reasonable to help people who would be worse off when they die, in having had shorter lives, than to help people who would be better off, in having had longer lives, even if they are not helped. This reflects a prioritarian conception of fairness.

Here is another problem with the view that it is compassion rather than a conception of fairness based on reason that sometimes conflicts with CEA. We often override compassion to do what is morally reasonable. For example, we may feel greater compassion for an incurably blind person who will also have to deal with a second problem if his arthritis is not treated than for a sighted person who will become (only) nearly blind if he is not treated. In this case, holding other factors constant, the blind arthritic will be the worst off person if he is not treated. Yet it seems morally acceptable and reasonable to cure the more severe condition of near blindness rather than the less disabling condition of arthritis, when we cannot do both. Suppose it is morally right to resist the call of compassion in this case. Then perhaps in other cases when we do *not* give up on helping the worst off person though helping him conflicts with CEA, it is because giving up would be contrary to reason and fairness rather than to compassion. This would imply that sometimes CEA is not the reasonable and fair approach.

Further support for the view that CEA does not necessarily coincide with what is reasonable and fair comes from considering the third concern mentioned above, whether it is always fair to aggregate small health benefits to many people and weigh the aggregate against the smaller aggregate of bigger benefits to fewer people, when the benefits to each group cost the same. Suppose that each of many people has a mild headache and is otherwise already much better off health wise than someone whom we can save from appendicitis. Suppose that none of the many people is a compassionate person and each would give up no more than the money for an aspirin that could cure his headache in order to help a dying person. But there are so many of these people with mild headaches that the aggregated harm of many headaches that would occur if each sacrificed the money for an aspirin is greater than the harm prevented in using the money to save the person with appendicitis. Though none of

the people is rescuing the one person because of compassion for him, presumably they would not change their individual aiding behavior on the grounds that the aggregated loss to all of them is so enormous by comparison to one person's loss of life. No one has to be compassionate in order to realize that it would be a bizarre mistake of reason to treat the very large aggregate of small losses to each of the many people as if it had the same moral significance as a very large loss to a single person that was suffered to prevent a smaller loss to another person.

Some suggest that the fair way to decide what to do in such cases, when the small harm (such as a headache) is occurring to each of many separate persons, is to compare, in a pair wise fashion, how much harm would be suffered and avoided by a severely ill person depending on whether he is helped with how much harm would be suffered and avoided by each of the the many depending on whether they are helped. Fairness is comparative but it requires comparing how we treat individual persons, one person at a time. Suppose that no one of the many will suffer anywhere near as great a loss as the single person would. Then if our view of fairness combines pairwise comparison with priority to the worse off, curing a headache in each of many people would never take precedence over curing even one much worse off person. A conception of fairness that involves these two components—pairwise comparison and prioritarianism—would justify the third concern with CEA.

By contrast, Peter Singer, a philosopher who supports CEA, believes it is morally correct to aggregate smaller individual benefits to better off people and weigh the aggregate against a bigger individual benefit to a worse off person. For example, in a *New York Times Magazine* article on rationing (Singer 2009), he considered how to compare the health benefit achieved in saving one person's life with curing a serious condition such as quadriplegia that does not threaten another person's life. He tells us to consider the trade-off each person would reasonably make in his own life between length of life and quality of life. Suppose every person (already disabled or not) would be indifferent between living ten years as a quadriplegic and living five years nondisabled. This seems to indicate that people take living as a quadriplegic to be half as good as living nondisabled.[4] Singer thinks that such data would show that using our resources to cure two quadriplegics is just as good as saving someone else's life when all three people would have the same life expectancy if helped (for example, ten

4. I say "seems" because it is possible that as the absolute number of years unparalyzed decreases (even if the ratio of unparalyzed to paralyzed years in the choice does not fall below ½), people would no longer be indifferent.

years). His reasoning seems to be that if someone would give up five out of ten years of his own life rather than be quadriplegic, that would justify curing one person's quadriplegia rather than saving someone else's life for five years, and the combined benefit of curing two people with quadriplegia would justify not saving the life of another person who would live for ten years.

Several things seem problematic about this reasoning. First, in the tradeoff between quality and quantity that a person might make in his own life, it is that person who benefits from the tradeoff. When we make tradeoffs between different people, the people who get the improved quality of life are not the same people who suffer the loss of more years of life. Trade offs between people may raise different moral issues than the trade off within one life. This is related to the point made earlier that fairness considerations arise when we take seriously that different people are not indifferent to whether benefits and losses fall in someone else's life or their own. Second, the conclusion that curing two quadriplegics who would live for 10 years anyway is equal to saving for ten years of life someone else who would otherwise die depends on aggregating the benefit to *two* people to weigh against the loss to the single person. We can see how problematic this is by considering the following example: Suppose that the trade-off test within one person's life showed that a small disability (e.g. a permanently damaged ankle) made life only 95% as good as a nondisabled life. This implies that a person would rather live 9 ½ years without the small disability than ten years with it. On Singer's view, this implies that we should cure one person's small disability rather than save someone else so that he can live for an additional ½ year. It also implies that we should cure the small disability in twenty-one people rather than save someone so that he can live for an additional ten years. This sort of problematic reasoning may have led to the rationing plan in Oregon many years ago in which resources were to be allocated to cap many people's teeth rather than save a few people's lives (for further discussion see Kamm 2007, chapter 2).

The concern with always aggregating small benefits can also be independent of concern to give priority to treating those more severely ill. For suppose all patients have the same disability. We have a choice of making very small improvements to the disability in each of a great many patients or providing a complete cure to one patient. It would not be morally unreasonable (and might not be unfair) to do the latter, for we then make a significant difference in this person's life rather than a barely perceptible

difference to each of many others. This is so even though aggregating the many barely perceptible differences creates an enormous total difference.[5]

3. Notice that in many of the cases we have considered, if a particular person is not helped, he will *certainly* suffer a great loss and be worse off than others who would certainly avoid only small losses and already be better off than he. But we may also consider the role of risk in deciding what is fair. We know that it can be reasonable for each individual to take a small risk of a great loss such as losing many years of life by dying if this is the price of achieving a high probability of lesser benefits. For example, someone might run a small risk of dying from an aspirin in order to get a high probability of relief from a nonlethal headache. If everyone in a community does this, in a large enough population it is certain that someone will die from an aspirin though each person had only a very small chance of dying. It seems morally permissible to allow individuals to expose themselves to such a small risk of the large loss of life for the sake of a small benefit. This is so even if we know that someone will die because he took the risk and because when he is dying there will be nothing we can do to save him. However, this need not mean that when it is still possible to save this person whose risk of dying has gone from small to certain, or when there are certain people who were always known to be at great risk of dying, fairness does not require aiding them if we can rather than protecting many people from each having a headache (One place in which I discuss this issue is Kamm 2008).

Suppose there are a few people who will certainly die unless we treat them. Should we treat them or rather use our scarce resources to stop a small risk of death to many others when it is certain that more than a few of these many will face certain death as well? This is the situation we may face when deciding whether to allocate scarce funds to combat AIDS by either treating those already ill or preventing future cases. Suppose fewer people overall will die from AIDS if the money is put into prevention than if it is put into treatment, and so prevention is most cost effective. But prevention deals with a small risk that each of many people has of dying while treatment deals with some people who will otherwise certainly die. (Notice that to make sure it is only the known probability of any given person dying whose relevance to an allocation decision we are judging, we should hold constant the time at which those already ill and those who will become ill would die. Otherwise, we may be judging the relevance to an allocation decision of sooner rather than later deaths, not greater or smaller probabilities each person has of dying.) It is true that without

5. Larry Temkin has emphasized this point.

prevention more people who once had only a small risk of getting AIDS will eventually face certain death. But at the time we must decide how to spend funds there are certain people who already have a known prognosis of certain death if they are not treated now whereas it is not the case that there are already some people in the larger group who have a known prognosis of certain death if prevention measures are not taken now. Rather there are many people each of whom has a small chance of being a person who will face certain death. So we must choose between helping those who will certainly die and those who each have a small chance of facing death.[6]

On at least one view, fairness seems to require helping those with a higher individual risk of dying as ascertained by a pair wise comparison of the risks each person faces at the time we must allocate resources. This is because if we engage in pairwise comparison, we could justify to each person with the low risk of death not helping him and helping the person who will certainly die instead. By contrast, it seems we could not justify to the person who will certainly die leaving him to help each of those who have a small chance of death. On this view, it is individuals' comparative risk at the time we must allocate, not the ultimate outcome in which more rather than fewer people will die, which should lead us to allocate the money to the less cost effective treatment policy. This is so even if fairness requires saving the greater number of people when these are all people who face certain death if not helped.

4. Another possible fairness concern with CEA is that it might involve discrimination against those who are poor or disabled as it may cost more to treat these people by contrast to the rich or nondisabled, and the health benefits achieved may also be less. Peter Singer relies on CEA when he argues that if we accept that disability can make a person's life less good health wise, and we want to maximize the health benefits we get with our resources, we should save the life of a nondisabled person rather than someone whose disability cannot be cured, other things equal. The only alternative to this, he says, is to deny that disability per se makes someone's life not as good health-wise, and then there would be no reason to allocate resources to cure or prevent disabilities which seems wrong. However, there are other alternatives, I think.

I agree that understanding the issue of disability and allocation of scarce resource should not depend on accepting the view that disabilities make little difference to the quality of life. For if we hold this view, we may see little reason to invest

6. This analysis of the case is argued for by Norman Daniels (2012) and Johann Frick (2013 and unpublished) though they may not hold time of death constant.

in curing disabilities. We should also recognize that a satisfied "mood" is not the sole measure of the goodness of one's life, independent of objective capacities. Consistent with all this one proposed response to a view like Singer's is offered by Eric Nord, Norman Daniels and Mark Kamlet in their article (2009).[7] They think it is important to distinguish two different questions. The first is: "Is a health state one we would prefer to cure?" Suppose we answer yes. A second question arises if we have this health state and it cannot be cured but life is still worth living, and we also have a life-threatening treatable condition but the medicine is scarce. The second question as stated by the authors is: "Should we defer to those who can be restored to more complete health than we can because they lack the untreatable condition?" The authors say we can reasonably answer 'yes' to the first question—we would prefer a cure to the health state—and 'no' to the second question. They do not say what explains the reasonableness of these responses. Given the way their second question is phrased, it might be thought that one simple explanation is that the person with one untreatable condition does not have a duty to defer because he does not have a moral duty to sacrifice what is very important to him (his life) to produce the outcome that would be considered best from an impartial point of view. The fact that this view, which is standardly held by those who reject consequentialism, might explain the consistency of the first and second answers suggests to me that the second question as phrased by Nord, Daniels and Kamlet is the wrong one to pose if we want to get to the heart of the issue in allocating scarce resources.

This is because it should be an impartial distributor who is allocating the resources, not a candidate for the resource and the mere fact that a candidate need not defer to another candidate does not mean that the impartial distributor must give these people the same chance of treatment. Analogously, someone need not give up his medicine that will save his leg so that someone else may use it to save his own two legs. But if the drug is publicly owned and to be distributed by an impartial agent, he should prefer to help the person who would otherwise lose two legs. So a crucial issue in dealing with Singer's CEA-inspired view is whether, if an impartial distributor says yes to the first question, this distributor should also decide to treat the person who can be restored to more complete health. In my own past work (first in Kamm 2004), I have been interested in the answer to this question (which I shall refer to as the impartial question).

7. Nornan Daniels brought my attention to what was said in this article in his commentary at a panel in February 2013.

Suppose I am the impartial distributor. When I imagine a case in which someone has a paralyzed finger, I can see that this can make life not as good in a small way, other things equal, and give us a reason to fix the disability. Hence, my answer to the first question is yes. But when I consider whether to save someone's life from pneumonia when I can only save one person, the fact that one of the people I would save has a missing finger and the other has all his fingers should, I think, make no difference to whom I choose, given the important benefit that is at stake for each person and that each person desires to be the one to live. Hence, I should answer "no" to the impartial question. One explanation I have suggested for this is that a factor (such as a missing finger) could give us a reason to act in one context (curing it) while it is an irrelevant consideration in another context where the action in question (saving a life) is different. So it was an instance of what I call "contextual interaction."[8]

However, suppose a nondisabled candidate for a scarce life saving surgery will live for twenty years after it and a disabled candidate will live for only two years because his disability interferes with doing exercise after surgery. A large difference in length of life in the outcome might be a morally relevant difference between the candidates, and that might make it not be unfair to do the surgery on the nondisabled candidate, given that each will die if not helped. This is so even if we would be using an effect of the undeserved or unjustified disadvantage in the disabled as grounds for choosing to impose further disadvantage on him.

Furthermore, consider another case about which we ask the first question and the impartial question. Suppose we agree paraplegia is a deficit that we should prefer to cure. Now imagine two people with paraplegia who each need to be saved from fatal heart disease. The only difference between them is that in one of the people the scarce heart disease medicine will also cure his paraplegia. This is also a case in which one candidate has an untreatable condition (paraplegia) and a treatable one (heart disease) and another candidate lacks the untreatable condition (because his paraplegia can be cured). I suggest that it might be right for the impartial distributor of a scarce resource to choose to save the candidate whose paraplegia will also be cured rather than the other candidate. However, I think that this is not simply

8. One counterargument to this that Singer also gives is meant to show that it is reasonable to connect the answer to the first question to an answer to the impartial question. This is because, he thinks, the morally right way for an impartial allocator to decide is determined by what any person would decide reasoning about his possible future state when he is ignorant of which person he will be. I do not think this is correct and argue against it in Kamm (2013). But it is useful to see an argument, aside from maximizing good outcomes, that has been thought to connect a yes answer to the first question to a yes answer to the impartial question.

because being alive with paraplegia is worse than being alive with full mobility (other things equal) and CEA rates a treatment as more effective if a person is saved to a life of higher rather than lower quality. Rather, it has something to do with how bad paraplegia is and with our medical procedure causing the paraplegia cure. For my sense is that it's not being unfair to treat the second person whose paraplegia we can cure does not imply that in a different case it would be fair to treat the heart condition of someone who is not paralyzed independently of what we do rather than treat a permanently paralyzed person who also has the treatable heart condition.[9]

These two heart cure cases suggest that a possible problem with CEA is that it does not distinguish the first case, in which our treatment is more cost effective in one candidate because it saves a life and also *causes* the change in disability status, from the second case in which our treatment is more cost effective in one candidate only because it saves someone who is already nondisabled independent of our doing anything to cure him of disability. However, the two heart cases do not suggest that if each of two people has a paralyzed finger and a scarce life-saving drug that each needs to save his life will unparalyze the finger in only one of the people, that we should give that person the medicine. That a condition is one that we would prefer to cure does not mean that it is serious enough in itself that our being able to cure it in one person but not another should make a difference to whom we give a drug needed by each for a much more serious condition.

5. Conclusion: In this article, I have considered several views about what fairness requires and allows, in conditions of certainty and risk, and how CEA understood in its strongest form may conflict with fairness. It has not been my aim to decide which conception of fairness is correct or to decide how important fairness is relative to other moral considerations. Nor has it been my aim to deny that cost effectiveness should sometimes play a role in allocating scarce resources. However, if the value of maximizing good outcomes relative to cost is neither a preeminent value nor necessarily fair, there are bound to be moral questions about limits on the use of CEA that will need to be resolved.

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9. I consider this issue in more detail in (Kamm 2013), a revised version of (Kamm 2009)

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