Cost-Effectiveness Analysis and Disability Discrimination

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Abstract

Cost-effectiveness analysis (CEA) is an analytical tool in health economics. One of the most important objections to it is that its use can lead to unjust discrimination against people with disabilities. This chapter evaluates this objection. It begins by clarifying its nature, then it examines some alleged forms of discrimination. It argues that they are either not cases of unjust discrimination or they are based on misunderstandings of CEA. However, the chapter does point out that there is one case in which the use of CEA may disadvantage people with disabilities. It goes on to consider several proposals for explaining the wrongness of discrimination, but argues that none of them accommodates this case. It concludes that the case should not be thought as a matter of unjust discrimination; rather, it should be thought of as raising an issue for justice in the allocation of health care resources.

Keywords: *cost-effectiveness analysis; health economics; discrimination; disability; justice*

1 What is Cost-Effectiveness Analysis?

Cost-effectiveness analysis (CEA) is an analytical tool in health economics. It is one of the most important gadgets in the health economist's and the health care policy maker's toolkit. It is used in health technology assessments, for making coverage decisions in health care plans and insurance packages, and for setting priorities between different resource uses. It has a central role in the health care systems of England and New Zealand. It is used for decisions about pharmaceuticals in Australia, Canada, and the Netherlands. In the United States, it is used widely by managed care organizations. More recently, international NGOs and charitable organizations have started using it in their funding decisions. With the growing costs of health care, CEA will inevitably play an increasingly important role in the future.

Cost-effectiveness analysis, however, is not without its critics. One of the most important objections to it is that its use leads to unjust discrimination against people with disabilities. This is potentially a very severe problem. It would undercut the moral basis of much of health policy. It would entail that the National Institute for Health and Care Excellence (NICE) in the UK, the Pharmaceutical Benefits Advisory Committee (PBAC) in Australia, or managed care organizations in the US engage in morally objectionable practices. Therefore, it is very important to determine whether CEA can be defended from the disability discrimination objection. This is the task of this chapter.

First, a terminological note. The word discrimination is sometimes used in a descriptive sense. A sommelier discriminates among wines, preferring the best ones. An employer discriminates among job candidates, selecting the most qualified for the job. Other things being equal, there need not be anything wrong with discrimination in this sense. But it is a different matter if an employer refuses to give a job to the most qualified candidate merely because of her race or sex. In that case, the discrimination is morally wrong.

In what follows, I will use the word in the descriptive sense. When it is the normative sense that I have in mind, I will qualify it by saying *unjust* discrimination. Sometimes people talk of wrongful or unfair discrimination, or ask what makes discrimination bad. For my purposes, these come down to the same thing, and I use "unjust" for convenience. Thus, when people say that CEA discriminates against people with disabilities, they mean it discriminates unjustly.

I also take it for granted that the disability discrimination objection applies to real-life, paradigmatic uses of cost-effectiveness analysis. It claims

that the use of CEA, *in practice*, leads to unjust discrimination against people with disabilities. For just about any institution or social policy can be used to unjustly discriminate against some group, if the people responsible for running or implementing it choose to use it that way. (Electoral systems, for instance, can be used to unjustly discriminate against some people by denying them the right or opportunity to participate in elections.) But the objection to CEA does not concern its deviant uses. It concerns how it is standardly used, and how it is intended to be used, in health policy. It is one thing to object to the use of CEA because it leads to unjust discrimination; it is another to object that the people using it act with the intention to unjustly discriminate against some group. I am unaware of anyone making the latter objection. It would not be, in any case, an objection to the use of cost-effectiveness analysis; it would be an objection to its *misuse*.

In anti-discrimination law, a distinction is commonly made between *direct* and *indirect* forms of unjust discrimination. In direct forms of unjust discrimination, the discriminator or policy or institution explicitly aims to exclude or disadvantage members of some group. The discrimination is intentional: the discriminator intends to act or design or implement institutions or policies in order to exclude or disadvantage. In indirect forms of unjust discrimination, there is no such intent. The act or policy or institution aims to be neutral, but it ends up having a disproportionate negative impact on members of some group.

It should be clear that the disability discrimination objection to CEA makes a claim about indirect unjust discrimination. It involves no claim about the intentions or mental states of health economists, health care policy makers, or the staff at NICE or PBAC, for instance. Its claim is that unjust discrimination is an inevitable, but unintended side effect of the use of cost-effectiveness analysis.

A final distinction needs to be introduced to clarify the nature of the disability discrimination objection. Some resource allocation choices in health care take place at the level of policy. Within the health care budget, decision makers have to choose which treatments, pharmaceuticals, or health programs to fund, how to allocate human resources, plan health care capacities, and so on. In short, these choices concern the allocation and delivery of all the goods and services provided in a health care system. (To save words, I will refer to all these goods and services as interventions.) These are *macroallocation* choices.

Other resource allocation choices take place at the clinical level. These are *microallocation* choices. They concern how particular hospitals or teams of physicians use the resources available to them: which patients they pri-

oritize for organ transplants, whom they admit to the ICU, how they triage in an emergency, and so on. These choices concern the care of particular patients. They are made by hospital administrators, doctors and nurses, not policy makers or health economists.

The distinction between macroallocation and microallocation is important because choices are made differently on these two levels. Cost-effectiveness analysis is a case in point. It is relevant only to macroallocation. It deals with the ranking of interventions, and not with the treatment of particular patients. CEA is not part of microallocation choices. This does not mean that costs and benefits—and their balance—are never relevant in clinical decisions. But doctors are not expected to make cost-effectiveness calculations at the bedside.[1]

Consequently, the moral demands for microallocation and macroallocation choices are likely to be different. But discussions of the disability discrimination objection often proceed by considering typical philosophers' problems of deciding whom to save from certain death. (You are in a lifeboat and have to decide whether you row the boat toward this person or that person when you can only reach one of them.) Such examples from microallocation, however, have little to do with cost-effectiveness analysis. At best, they might trigger irrelevant moral intuitions. At worst, they might lead to false conclusions. Hence it is worrisome that many philosophers take them to be representative of the problem.[2]

In order to evaluate the disability discrimination objection, I need to first describe how CEA is normally used in health policy. Here is a typical example.

Suppose there is a health problem and there is an intervention i to prevent or treat it. The intervention could be a medicinal drug to treat a condition, a surgery to repair injury, a screening program to reduce the incidence of a disease, and so on. For intervention i, a *cost-effectiveness ratio* can be calculated by the formula:

$$\frac{cost\ of\ i}{expected\ benefits\ of\ i}.$$

The costs of an intervention are expressed in monetary terms. The benefits can be expressed in just about any health outcome measure—number

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[1] In this volume, Dominic Wilkinson and Julian Savulescu survey the ethical issues in microallocation choices regarding ECMO treatment for newborns. See Chapter XX.

[2] The list of authors whose discussions are susceptible to this worry include Beckstead and Ord (2013), Brock (2009), Harris (1987), John *et al.* (2017), Kamm (2013, 2015), McKie *et al.* (1998), Nord (1999), and myself (Bognar 2011).

of cases averted, number of lives saved, the average number of years added to patients' lives, and so on. Normally, however, expected benefits are represented by some measure that combines the improvement in health-related quality of life with the duration of the improvement. One example is *quality-adjusted life years*, or QALYs.[3]

Before we go on, there is another point of clarification that needs to be added. Sometimes the objection to CEA is in fact an objection to what are considered inappropriate judgments of the quality of life of people with disabilities. It is well-known that people with and without a disability may evaluate the quality of life with that disability differently. People with no familiarity with the disability, for instance, may think that living with it is worse than people who have experience of it.

However, I set this objection aside. I'm going to assume that we have come to an agreement on the appropriate quality of life judgments (or QALY values) associated with a disability, whether they should be based on the judgments of those who have experience of the disability, or on survey results of the general public, or on the evaluations of experts. If the disability discrimination objection was just an issue of inappropriate quality of life judgments, there would be no further difficulty once the appropriate judgments are used. But the objection goes deeper than that.[4]

With these clarifications in mind, return now to the cost-effectiveness formula above. The smaller the cost-effectiveness ratio of an intervention, the more cost-effective it is. For instance, suppose intervention *A* costs $2 million and it saves 100 people. Its cost-effectiveness ratio is $20,000 per life saved. Another intervention, *B*, costs $1 million but it saves only 99 people. Its cost-effectiveness ratio is $10,101.01 per life saved. Thus, intervention *B* is more cost-effective even though it has a worse outcome— one fewer life saved.

In practice, decision makers do not directly maximize expected ben-

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[3]QALYs are calculated by evaluating health states on a scale from 0 and 1, where 1 is full health and 0 is a health state that is at least as bad as death, and then multiplying these values with the time patients spend in those health states, expressed in numbers of years for convenience. For instance, if a patient after an intervention is expected to be in a health state with the value of 0.9 for one year and then in a health state with the value of 0.7 for 3 years, then the expected health benefit due to this intervention is 3 QALYs. For details, see Bognar and Hirose (2014).

[4]It is also worth pointing out that the use of quality of life judgments does not imply that people with disabilities have less moral worth or dignity. Cost-effectiveness analysis is concerned with the health-related quality of people's lives. It does not deny that all people have equal worth or dignity. It is important to distinguish between the quality of people's lives and their worth or dignity. CEA makes no claims about the latter.

efits subject to costs when setting health care priorites. Rather, they set a *cost-effectiveness threshold*, below which an intervention is considered cost-effective and above which it is not. Any intervention whose cost-effectiveness ratio is under the threshold is considered to have a favorable cost-effectiveness ratio and to offer "good value for money." It then becomes part of a health care plan or insurance package, or it is subsidized or provided free of charge to patients in a health care system. In contrast, any intervention whose cost-effectiveness ratio is over the threshold is not considered good value for money. Either it is not provided in a health care system or patients have to pay for it out-of-pocket.

For instance, if the cost-effectiveness threshold is set at $15,000 per life saved, then intervention *B* has a favorable cost-effectiveness ratio, but intervention *A* does not. Thus, while *B* might be provided by an insurer or the government, *A* might not.

It is important to recognize that cost-effectiveness analysis does not imply any particular cost-effectiveness threshold. Setting a threshold is a choice for policy makers. In reality, the threshold is usually more like a range, and it is often variable and implicit.[5] For instance, NICE uses a threshold between £20,000 and £30,000 per QALY. In Australia, PBAC does not endorse any explicit cost-effectiveness threshold, but researchers have estimated a threshold range roughly between A$45,000–75,000.[6] And the World Health Organization (WHO) once suggested a cost-effectiveness threshold of 1 to 3 times GDP per capita.[7] This would imply thresholds from approximately $400 to $400,000 per unit of health benefit around the world.

Note that these numbers are *incremental cost-effectiveness ratios* (ICER). They represent the difference between the cost-effectiveness of an intervention compared to some alternative (perhaps an intervention that is already provided). To return to my example above: compared to intervention *B* that costs $1 million and saves 99 people, intervention *A* costs $2 million and saves 100 people. That *A* has a cost-effectiveness ratio of $20,000 per life saved and *B* has one around $10,101 per life saved isn't ultimately rel-

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[5]It is also important to remember that cost-effectiveness considerations are never the only criteria in priority setting. Thus, interventions with unfavorable cost-effectiveness ratios can and do get provided even in health care systems that use CEA extensively.

[6]More precisely, one study found that from drugs whose cost-effectiveness ratio was below A$45,000 per QALY, around half were recommended by PBAC; from those whose ratio was between A$45,000–75,000 per QALY, around a third was recommended; and from those whose cost-effectiveness ratio was over A$75,000 per QALY, only about 16% were recommended. See Mauskopf *et al.* (2013); see also Clement *et al.* (2009).

[7]See, for instance, Woods *et al.* (2016).

evant. What is important is that *A* provides an additional benefit of saving one life at a cost of \$1 million. Its incremental cost-effectiveness ratio is \$1 million per life saved. Compared to the alternative, this isn't particularly impressive.

2   How does CEA Discriminate against People with Disabilities?

It has been argued that there are several ways in which the use of cost-effectiveness analysis for setting priorities in health care can lead to discrimination against people with disabilities. In this section, I examine the list that Dan Brock (2009) provides. Surprisingly, it turns out that none of the forms of discrimination on his list apply to cost-effectiveness analysis as it is used in practice. At the end of the section, I add a new item to the list—one that Brock ignores, even though in my view it is the only form of discrimination against people with disabilities that apply to CEA.

One item on Brock's list involves cases when a disability is not preexisting but the result of an intervention. Suppose two people are involved in an accident, and they need different treatments as a result. One of the treatments restores full health, while the other leaves people disabled. If the second treatment is not provided or receives low priority due to its poor effectiveness, patients in need of it end up being disadvantaged.

While this is possible, it is plainly not a case of discrimination against people with disabilities. At the time of the accident, no victim has a disability. The disability is the result of treatment. Thus, a patient who needs the treatment in question cannot be discriminated against *as a person with disabilities*. Normally, to discriminate against someone on some ground—their race, sex, or religious affiliation—the person must already have the characteristic that is the ground of the discrimination. It must be preexisting. Therefore, while the patient may have a complaint, it can't be that she is discriminated against as a person with disability.

Some other forms of discrimination may occur in the case of life-saving interventions. As Brock explains, "since disabilities reduce an individual's health-related quality of life, life-saving interventions for a disabled patient [. . .] will produce fewer QALYs than with an otherwise similar non-disabled patient." Additionally, "when health interventions are life saving the QALYs produced will depend on the life expectancies of the patients who receive them" (2009: 30). In both of these cases, the problem is supposed to arise from the way QALYs are constructed; as I explained, they combine the health-related quality of life associated with a health outcome with the duration of that outcome. Hence if a life-saving intervention

would extend the life of patients with and without a disability by the same amount of time, the health benefits would be smaller for people with disabilities on account of their lower resulting health-related quality of life. Similarly, when people with disabilities have lower life expectancies because of their condition, they would be at a disadvantage in priority setting compared to those with normal life expectancies. This would be true on any measure that combines the value of health outcomes with the duration of those outcomes. Thus, these forms of discrimination do not apply only to QALYs, but more broadly.[8]

Now it's true that other things being equal it is a worse outcome if life-saving interventions can restore some patients to less than full health or prolong their lives only for a limited amount of time. But this in itself does not lead to discrimination against anyone. To claim otherwise is to misunderstand how cost-effectiveness analysis works in practice. When health technology assessment agencies consider the cost-effectiveness of an intervention, they do not proceed by calculating different cost-effectiveness ratios for different patient groups. They work with averages. When they consider the effectiveness of a new cancer drug, for example, they understand that it will extend the lives of some patients by many years, but it will make little difference to others. They calculate the benefits by what a typical patient can expect on average. Hence they do not separate out cancer patients with disabilities from the general patient population. Their job is not to rank patients; it is to evaluate the average expected benefits of interventions. If the drug prolongs life by five years on average, and its cost-effectiveness ratio is below the threshold, it is provided to every patient regardless of their disability status. No patient is turned away at the point of care. As I already emphasized above, cost-effectiveness calculations are applied at the macro level for all patients who can potentially benefit from an intervention, and not for particular subgroups. Cost-effectiveness analysis has no role in microallocation.[9]

As a consequence, for paradigmatic uses of CEA, these forms of discrimination do not apply. They simply do not arise in practice. Of course,

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[8] I am assuming here that the costs of the intervention are the same for people with disabilities and for those without them.

[9] In an earlier discussion (Bognar 2010), I called the separation of patients into different groups "partitioning." As I pointed out, it presupposes the intention to discriminate by patients' capacity to benefit. To my knowledge, no governmental health technology assessment agency, like NICE or PBAC, engages in partitioning. If they did, it would be a *prima facie* case of unjust discrimination. It would then be a further question whether the discrimination may be justified all things considered because of the presence of other relevant moral considerations.

there might be a case for health care analysts to consider, for instance, the cost-effectiveness of a cancer drug separately for early and late stages of a type of cancer. But this case applies to patients in different stages of the same condition, rather than patients with disabilities and patients without. In practice, cost-effectiveness analysis does not imply lower priority for life-saving interventions for people with disabilities just because they have lower health-related quality of life or worse life expectancy. So Brock's worries about these forms of discrimination are misplaced.

Similar considerations apply to other putative forms of discrimination on Brock's list. For instance: "when health interventions protect or improve health-related quality of life, a pre-existing disability in effect often acts as a co-morbidity that makes treatment less effective" (2009: 30). This may happen, as before, either because patients with disabilities cannot be returned to full health or because they have worse life expectancies than others. In either case, their treatment results in worse health outcomes. But just as before, there is an assumption in the background that different cost-effectiveness ratios are calculated for health interventions for different groups. This is not how CEA is normally done.

The remaining two items on Brock's list suffer from the same problem. He says, "persons with severe disabilities may usually, though certainly not always, be less productive of economic benefits as a result of their disabilities" (2009: 31). But non-health benefits, and people's contribution to economic welfare, are not part of the benefit calculations of standard CEA, and in any case this problem does not arise if, as I have argued, no separate cost-effectiveness calculations are carried out for people with disabilities. Finally, Brock worries that "the presence of a disability, or a more severe disability, can often make a treatment more complex or extended, and so more expensive" (2009: 30). Once again, while this may be true, it does not lead to discrimination, as CEA does not differentiate between patients.

Now as I have already noted, one might object that cost-effectiveness analysis *could* be used to differentiate between different patient groups by their capacity to benefit. There are two things to note in response. First, of course CEA *could* be used in all sorts of discriminatory ways. It could be used, for instance, to discriminate against the poor: after all, people in worse socioeconomic conditions tend to have lower life expectancies, more comorbidities, and lower quality of life. Yet no one objects to CEA on the grounds that it discriminates against the poor; it is understood that CEA is not intended, and normally is not, used in these ways.

Second, recall that the disability discrimination objection does not say that the use of CEA in priority setting is morally problematic because it

could *possibly* be used in ways that lead to discrimination against people with disabilities. The objection says that it is morally problematic because its use *actually* leads to discrimination against people with disabilities. As I have already argued, these are very different objections. The former calls for vigilance and moral scrutiny of priority setting decisions; the latter entails that priority setting in health care needs radical reform.

There is another alleged form of discrimination that should be set aside, for it is rooted in a different kind of misunderstanding of cost-effectiveness analysis. It is sometimes pointed out that CEA is *aggregative*: permitting the combination or summation of individual benefits, and therefore favoring those interventions that benefit a greater number of people. This is how, it is claimed, giving painkillers to a large number of patients with headaches can end up having greater priority than life-saving interventions, like appendectomies, that are needed by only a few people. And insofar as people with disabilities are a minority in society, their health care needs become less urgent than even the less important health care needs of the general population.[10]

A quick look back at the cost-effectiveness formula that I described in the previous section should suffice to reveal the fallacy in this argument. Cost-effectiveness ratios are insensitive to numbers. It does not matter whether an intervention benefits one person or one million. If you multiply both the numerator and the denominator by a million, you get the same result. Other things being equal, no patient is disadvantaged by CEA just because she has a condition that is relatively rare in the population. In cost-effectiveness analysis, the numbers do not count. This is another illustration of the fact that cost-effectiveness is only one factor to be considered in macroallocation: how many people in the population need an intervention should also be taken into account.[11]

Does this mean that standard CEA never disadvantages people with disabilities? No. There is another possibility that is absent from Brock's list. Consider an intervention j for the management or rehabilitation of a particular disability, k. Because of the nature of k, j may be expensive, complex, or extended; its outcome may be highly uncertain; or its expected

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[10]For this kind of objection, see, for instance, Kamm (2015).

[11]In addition, it is possible that costs vary in a nonlinear fashion with the number of people who can benefit from an intervention. This is another factor policy makers should consider. Moreover, the numbers may make a difference in research priority setting: since the development of new interventions can be very costly, a condition from which many people suffer may get more attention from researchers—especially if the expected financial returns are greater due to its greater prevalence.

benefits, in terms of improving health-related quality of life or extending life, may be modest. Because of one or more of these factors, suppose that the cost-effectiveness ratio of intervention j is over the cost-effectiveness threshold.

Suppose also that j is the *only* intervention available for disability k.[12] As a result, j, the only intervention available for the management or rehabilitation of disability k, is not provided in the health care system or it is not part of available health insurance packages. Thus, no intervention is available for this disability.

People with this disability are put in a disadvantageous situation. The health care system does not offer any intervention for the management or rehabilitation of their disabling condition. They are not disadvantaged, however, with respect to any other intervention. All the other interventions that are available to others are available to them too. But they do suffer a disadvantage that others do not. They suffer it because CEA is used to set priorities, and the balance of the costs and expected benefits of the intervention they need is unfavorable. Moreover, in this case CEA is used the way it was intended. People with the disability are not singled out for unequal treatment. It's just how the costs and benefits work out. Therefore, there is one kind of case where the disability discrimination objection applies. In this case, the use of cost-effectiveness analysis does lead to discrimination against people with disability.[13]

Is this form of discrimination unjust? One way to approach this question is to consider some general accounts of unjust discrimination. Is disability discrimination the kind of discrimination to which they apply?

3   What Makes Discrimination Unjust?

According to the disability discrimination objection, the use of CEA in health care priority setting leads to unjust discrimination against people with disabilities. This discrimination is not unlike the kind that we are concerned with in anti-discrimination law. It is no different from unjust discrimination on grounds of race or sex in employment or housing, for instance.

I have argued, however, that most cases of the alleged discrimination do not apply to standard cost-effectiveness analysis. The only case

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[12]Or that the cost-effectiveness ratios of all available interventions for k are also over the threshold. For the sake of simplicity, I will suppose there is only one intervention.

[13]A mixed case is also possible: intervention j might be needed not only by people with disability k, but also by some people without k. In this case, a group of people, including some with disability k and some without, are equally disadvantaged.

in which the disability discrimination objection applies is when the cost-effectiveness ratio of an (only) intervention j for the management or rehabilitation of a disability k is over the cost-effectiveness threshold, and for this reason j is not provided or subsidized in a health care system or insurance package. For conciseness, let us call this the *threshold case*. Is the threshold case a form of unjust discrimination?

One way to approach this question is to consider different accounts of the philosophical foundations of anti-discrimination law. These are theories that answer the question: what makes discrimination unjust when it is unjust? In this section, I look at some recently proposed accounts. What can they say about the threshold case?

On one view, discrimination is unjust, when it is unjust, because it violates people's right to equal *deliberative freedoms*. This account is proposed by Sophia Moreau (2010). Deliberative freedoms are "freedoms to deliberate about and decide how to live in a way that is insulated from pressures stemming from extraneous traits" (2010: 147). You lack deliberative freedoms when you have to take your race or sex into account in your choices about where to live or work, for instance. Your sex or skin color should not count as an additional cost in such decisions. They should not be used by others to deny opportunities from you. The purpose of anti-discrimination law is to protect deliberative freedoms and to provide them to everyone equally.

On this account, everyone is entitled to a set of deliberative freedoms, and everyone should have these freedoms equally. Unjust discrimination may occur when these freedoms are violated. The violation does not have to be intentional: it can be an unintended side effect. An institution, for instance, can lead to the violation of deliberative freedoms if it disproportionately disadvantages some group that possesses a relevant trait—for instance, being the member of a particular race or living with a disability. However, not all violations of deliberative freedoms are cases of unjust discrimination. In certain social contexts, other values may take precedence over deliberative freedoms. Thus, while anti-discrimination law applies in employment or housing, it does not apply in the personal sphere. In addition, deliberative freedoms must sometimes be weighed against other interests. In some cases, other interests are more important than their protection.

What can be said about the threshold case on this account? Is it a form of unjust discrimination if patients with a disability are not provided with the only intervention for the management or rehabilitation of their condition due to its unfavorable cost-effectiveness ratio?

On the one hand, health care may be considered a social context in which anti-discrimination law should apply. If people cannot deliberate about how to live without taking their health or disability status into account as a cost, then their deliberative freedoms are violated. Ill-health and disability are extraneous traits that can have this effect. The provision of health care services should not disproportionally disadvantage people with disabilities this way. For example, if people with preexisting conditions are denied health insurance, then they are forced to take their condition into account as a cost.

On the other hand, health care provision is also a context in which different people's interests must be balanced. Priority setting aims to do just that by directing resources to their most beneficial uses. If no priorities are set between different interventions, more people's deliberative freedoms will be violated. Protecting deliberative freedoms must be balanced with other interests, including effectiveness and the opportunity costs of different resources uses. In this way, cost-effectiveness analysis can be considered a method for carrying out the balancing that's necessary for minimizing the loss of deliberative freedoms. Therefore, there is no unjust discrimination when it is used to set health care priorities. The threshold case is not accommodated by the deliberative freedoms account.

Another proposal is that discrimination is unjust, when it is unjust, because and only because it undermines equality of opportunity. This has been suggested by Shlomi Segall (2012). It is important to note that this account provides only a *necessary*, rather than a sufficient condition for the injustice of discrimination. All instances of unjust discrimination involve a violation of equality of opportunity, but not all violations of equality of opportunity are cases of unjust discrimination. For instance, they must also involve unequal treatment for no justifiable reason.

In the absence of a fully developed theory of equality of opportunity, it is to difficult to determine whether specific cases of unequal treatment count as unjust discrimination on this view. Furthermore, since inequality of opportunity is only a necessary condition, this view must be augmented by other features of unequal treatment to provide a sufficient criterion for judging when unequal treatment is an instance of unjust discrimination. Nevertheless, it might be argued that the threshold case does violate equality of opportunity: the health needs of people with a disability are not met by the health care system, restricting their opportunities in comparison to

others.[14]

But this is not sufficient in itself. In the threshold case, there is a good reason for the unequal treatment: health care priorities must be set in a way that meets the greatest number of health care needs, given their costs. Therefore, even if the threshold case leads to less equality of opportunity, the unequal treatment is all things considered justified. This view does not provide a reason to consider the threshold case an instance of unjust discrimination.

The last account I discuss grounds the injustice of discrimination in the fact that it harms its victims. Such a harm-based account is put forward by Kasper Lippert-Rasmussen. Here is the definition of unjust discrimination that he provides:

> *X* discriminates against *Y* in dimension *W* iff:
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>   (i) *X* treats *Y* differently from *Z* in dimension *W*;
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> (ii) the differential treatment is disadvantageous to *Y*;
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> (iii) the differential treatment is suitably explained by *Y*'s and *Z*'s being (members of) different, socially salient groups.[15]

Does this formula describe the threshold case? At first glance, it might seem so. For *X* does not have to be a person or group of people. It can be an institution or practice or social structure. Thus, you might say that *X* stands for the health care system or the way priorities are set within the health care system; it can treat people with some disability, *Y*, differently than others without the disability, *Z*, in the dimension of health care service provision, *W*, in a way that is disadvantageous to *Y*'s. When an (only) intervention for the management or rehabilitation of a particular disability is not provided to people with that disability, and the resources are used to provide other, cost-effective interventions to others, than people with the disability are treated differently, and they are treated in a way that is disadvantageous to them.

The third condition, that the differential treatment is suitably explained by *Y*'s and *Z*'s belonging to different, socially salient groups, is not satisfied, however. For even though *Y*'s may be members of a socially salient group (namely, people with a particular disability), their treatment is *not* explained by their membership. The differential treatment is explained

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[14]Norman Daniels (2008) has argued that health has special moral importance because it protects people's opportunities.

[15]Quoted, with some clauses omitted, from Lippert-Rasmussen (2006: 168). See also Lippert-Rasmussen (2014).

by the costs and benefits of the intervention that Y's need, compared to the costs and benefits of other interventions. The disability itself plays no explanatory role. Priority setting decisions can result in treating some groups of patients differently, and the differential treatment may be disadvantageous, but this is not due to, and neither explained by, the group membership of these patients.

Where does that leave us? I have looked at three different accounts of unjust discrimination. I have found that none of them can accommodate the threshold case. On not one of them does discrimination against people with disabilities due to the use of CEA turn out to be unjust. Insofar as these accounts represent our best current thinking on unjust discrimination, the disability discrimination objection is unsuccessful.

There is, however, something else to be learned from the discussion in this section. On all of the accounts that I presented, the threshold case comes close to being an instance of unjust discrimination. It might result in the violation of the deliberative freedoms of people with disabilities. It might undermine equality of opportunity between people with disabilities and others. And it might involve disadvantageous treatment of people with disabilities. On all of these accounts, the threshold case meets a necessary condition of unjust discrimination. This, in turn, might explain why many people find the disability discrimination objection plausible. The threshold case resembles standard cases of unjust discrimination. But in each case, it falls short: it does not meet some sufficient condition of unjust discrimination. So it is natural to find the objection troubling, even if it does not succeed in the end.

4   Injustice without Discrimination?

Fine—you might say—but it nevertheless remains the case that the use of CEA can disadvantage people with disabilities, as it does in the threshold case. There is something wrong with that. Perhaps the wrongness cannot be identified by considering theories about the moral bases of anti-discrimination law. Perhaps it comes from somewhere else.

One way to proceed from here is to claim that the disability discrimination objection should be understood in a different way. The emphasis in unjust discrimination should not be on discrimination. Rather, it should be on *unjust*. Discrimination against people with disabilities due to the use of CEA is not analogous to discrimination on grounds of race or sex. It is more like the injustice suffered by people who are poor or disadvantaged. If the threshold case raises a moral problem, it is not of discrimination,

but of injustice. To understand it, you must turn to theories of distributive justice.[16]

It is obviously beyond the scope of this chapter to provide a detailed discussion. I am going to discuss, very briefly, only two basic, general principles. They are:

> *The Principle of Equality.* It is in itself bad if some people are worse off than others.

> *The Principle of Priority.* Benefiting people matters more the worse off these people are.[17]

Which of these principles is more suitable for priority setting in health care? Which of them can help with the concern raised by the threshold case?

Consider the Principle of Equality first. Very few egalitarians accept *pure* egalitarianism—the view that only the Principle of Equality matters. Most egalitarians are pluralists: they complement the principle by some other consideration. For instance, they can also claim that it is in itself better if people are better off. Nevertheless, even pluralist egalitarian views are thought to be vulnerable to the *leveling down objection*. For, if equality is in itself better, then it does not seem to matter how it is achieved. Hence a more equal distribution that is achieved by making the better off worse off without making the worse off better off makes things better in one respect—namely, that they are more equal. But since there is no one for whom the new distribution is better and there are some for whom it is worse, it is incredible that it should be better in any respect: there is nothing good about achieving greater equality by leveling down. Even if pluralist egalitarians can argue that leveling down would not be better *all things considered*, they still seem committed to the claim that it is better *in one respect*. That's all the objection needs.

In the context of health care, the leveling down objection seems especially damaging. No one holds that there would be anything good about achieving greater equality in health by making the healthier less healthy. This cannot be better in any respect. And if that wasn't enough, there is a less familiar, but no less serious problem with egalitarianism in health care. It is the *bottomless pit objection*.

Suppose there are patients who are worse off than others but can benefit to a small extent from some intervention. However, the intervention has

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[16]On this point, see also Wasserman (2013).

[17]These formulations are quoted, with one minor change, from Parfit (1995: 4, 19). Parfit makes some further distinctions that can be set aside here.

massive costs. If equality is your aim, you will think there is a reason for providing this intervention. However, should you do so, you would have to forgo providing greater benefits to those who are better off. The Principle of Equality leads you to ignore the opportunity costs of the intervention. It leads you to ignore the costs and benefits to others.

To be sure, pluralist egalitarians can argue that they can avoid the problem with the help of some other principle that they accept. But then they have already conceded that equality matters little in health care priority setting. We might as well look for some alternative.

The Principle of Priority, I argue, is more promising. It underlies *prioritarianism*, a rival view of distributive justice. According to this view, benefiting a person matters more the worse off this person is. If you can benefit either a worse off person or a better off person, then benefiting the worse off person has greater moral importance—and the worse off she is, the greater the importance—unless the benefit to the better off person is sufficiently greater to become morally more important. But the benefit to the worse off person matters more because of her bad situation regardless of how she fares compared to others. Since, on this view, equality has no value, there is nothing good about leveling down. And since the size of the benefits matters, prioritarianism can avoid the bottomless pit problem.

How can prioritarianism help with the threshold case? Prioritarians can argue that when it comes to setting priorities, you should give different moral weights to the health benefits of different patients, depending on how badly off they are with respect to health-related quality of life. For instance, rather than maximizing QALYs, you should maximize *weighted* QALYs, where the weights are greater the worse off patients are. In the threshold case, benefits (QALYs) to people with disability k would have a greater weight.

A practical application of this prioritarian idea in cost-effectiveness analysis may either be discounting the costs of an intervention in the numerator of the cost-effectiveness ratio, or giving greater weight to the benefits of the intervention in the denominator. I think the latter is preferable. Cost-effectiveness analysis should not distort costs. But evaluating benefits is a different matter—how much moral weight we are willing to give to benefits is up to us in a way that counting the costs is not. Costs are given, but the moral evaluation of benefits is up to our consideration.

Needless to say, this discussion is too brief to be conclusive. At best, it just indicates the direction that future work for meeting the disability discrimination objection to CEA can take. And in any case, the proposal does not guarantee that threshold cases never arise. Sometimes the benefits

to the worse off are too small to outbalance greater benefits to the better off, even with their greater moral weight. Sometimes the cost-effectiveness ratio of an intervention j to people with disability k may remain over the threshold due to its massive costs, meager benefits, or both. But at least applying prioritarianism to priority setting will reduce the frequency of threshold cases.[18]

5 Conclusion

In this chapter, I have examined whether the use of standard CEA in priority setting in health care leads to unjust discrimination against people with disabilities. I began by clarifying the nature of the disability discrimination objection. Then I considered a number of cases that have been presented as instances of unjust discrimination. I found that none of them applies to the way cost-effectiveness analysis is used in practice. But I did identify one kind of case that raises the possibility of discrimination: that when the cost-effectiveness ratio of an (only) intervention j for the management or rehabilitation of a disability k is over the chosen cost-effectiveness threshold. I called it the threshold case.

I then considered three accounts of unjust discrimination. I argued that the threshold case does not count as an instance of unjust discrimination on any one of them. However, on every one of them it meets some necessary, although not sufficient, condition. This might explain why the disability discrimination objection has seemed persuasive to many people. In the end, I argued that the objection should be considered as raising a problem of justice, rather than discrimination. It should be addressed as such. I proposed that prioritarianism might be the correct response to this problem of injustice, and indicated how it might be introduced into cost-effectiveness calculations.

To be sure, some might want to insist that no clear line can be drawn between matters of injustice and matters of unjust discrimination. But this is not an objection to my analysis. There are two ways to think about the connection between injustice and unjust discrimination. Some might claim that unjust discrimination is not a distinct problem; it is part of distributive justice. If the demands of justice are satisfied, there is no unjust discrimination. The argument of this chapter does not conflict with this claim.

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[18]We have proposed to apply prioritarianism to priority setting in health care in Bognar and Hirose (2014). Recently, John *et al.* (2017) made a similar proposal. In health economics, "equity weighting" to incorporate fairness concerns has been suggested from time to time; at least some of these proposals can be interpreted as applications of prioritarianism to priority setting.

Others might contend that the problem of unjust discrimination is separate from distributive justice. It might occur even if the demands of distributive justice are met. But the argument of this chapter does not contradict this claim either. It concludes that disability discrimination due to the use of CEA is not a matter of unjust discrimination. It is a matter of distributive justice, which is separate. So, at the end of the day, I can remain agnostic on this issue.

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