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ORIGINAL ARTICLE

Principles of Need and the Aggregation Thesis

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Abstract Principles of need are constantly referred to in health care priority setting. The common denominator for any principle of need is that it will ascribe some kind of special normative weight to people being worse off. However, this common ground does not answer the question how a plausible principle of need should relate to the aggregation of benefits across individuals. Principles of need are sometimes stated as being incompatible with aggregation and sometimes characterized as accepting aggregation in much the same way as utilitarians do. In this paper we argue that if one wants to take principles of need seriously both of these positions have unreasonable implications. We then characterize and defend a principle of need consisting of sufficientarian elements as well as prioritarian which avoids these unreasonable implications.

Keywords Needs · Principles of need · Aggregation · Sufficiency · Prioritarianism · Priority setting

Introduction

Principles of need are commonly discussed and employed in health care priority setting [7, 15, 16, 21, 22, 26, 28, 35, 37, 40]. Although need principles may be interpreted in various ways, they all ascribe some special normative importance to

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being badly off [24, 25]. However, such a common ground has no clear implications for how a plausible principle of need should relate to the aggregation of benefits across individuals. How a need principle handles questions about aggregation has an important impact on the way in which it ascribes weight to the worse off, as we shall see.

The principle of cost-effectiveness also plays a major role with regard to health care priority setting. To say that resources ought to be allocated according to the principle of cost-effectiveness is, roughly, to say that the best allocation of resources is the one that maximizes (some sort of pre-defined) benefit given existing resources.[1] To set priorities solely on the basis of cost-effectiveness may result in allocations of resources which to many seem morally counterintuitive, since it allows minor benefits accruing to a large number of well off people to outweigh large benefits accruing to a smaller number of people among the worst off [see e.g. 29, 32, 34]. Such outcomes are to a large extent due to the way in which the principle of cost-effectiveness aggregates: it does not put any special weight on being worse off.

The main issue in this paper is how a plausible principle of need should handle questions about aggregation. Do need principles allow for aggregation in much the same way as the principle of cost-effectiveness does or are need principles incompatible with aggregation? As we shall argue in the following, both these positions have counterintuitive implications with regard to priority setting in health care, also from the point of departure that some sort of principle of need should determine how priority settings are made. A plausible principle of need should therefore find some middle ground between these two positions. In this paper, we construct a principle of need that escapes the criticism associated with how the principle of cost-effectiveness aggregates as well as the difficulties associated with non-aggregative principles of need. To work out a version of a need principle that is compatible with moral ideas, underpinning the notion of need is an important step towards increasing its plausibility and applicability for health care priority setting.

Preliminaries

Following Crisp [7, p. 135] we shall assume that "[a]s soon as it becomes obvious that the NHS [or any distributor] is unable to meet all the health-care needs of all the population, one must see the principle of treatment according to need as a principle concerning the just allocation of scarce resources…". Hence, in this paper we are interested in principles of need, understood as substantial normative principles about how scarce health care resources ought to be distributed rather than the conceptual structure of needs.[2] Although need principles may be interpreted in various ways, there will, irrespective of what interpretation one adheres to more specifically, be

[1] Hence, when we refer to cost-effectiveness in this paper we do not refer to cost-effective *analysis,* which is an analytic tool for providing so-called cost-effectiveness ratios, rather than a principle for resource allocation.

[2] For a discussion about the conceptual structure of needs see e.g. [12, 13, 27, 41, 44, 45].

some common ground: to give some kind of special normative weight to people who are worse off [24, 25]. The claim that need principles share a special concern for the worse off should not be confused with Absolute Priority, the implausible view that one should always give *absolute* priority to the *worst off*. The common concern for the worse off does not, however, give any explicit guidance on the matter of aggregation.

In this paper, we take the notion of aggregation to refer to a process by which one assigns a value to a whole, by assessing the parts of that whole [cf. 14, esp. ch. 2, 19, esp. ch. 2]. More specifically, we shall focus on interpersonal aggregation,[3] which is concerned with, as Hirose [18, p. 185] puts it: "…the moral trade-off between the gains and losses for different groups of individuals. According to aggregative moral principles, the gains for a group of individuals can *morally* outweigh the losses for a different group of individuals".

In a health care setting, the benefits of a given patient group may be assessed by aggregation of the benefits that accrue to each patient due to health care interventions. Different approaches to aggregation will assign different value to different distributions.

An illuminating way to understand how aggregation works is to distinguish between personal and contributive value [cf. 14, ch. 2]. The former denotes the value that accrues to the patient, while the latter denotes the value that the personal value accrue to the whole of which it is a part. Utilitarians view the personal value accruing to each person as equal to the contributive value. This is what we refer to as "unrestricted aggregation". However, this is only one way in which aggregation may be processed. For example, it makes perfect sense to say that the personal value accrues more to the whole of which it is a part, if the person to whom it accrues is worse off, i.e. the contributive value is different from the personal value. Hence, we do not take the notion of aggregation to presuppose anything about how one processes the values of the parts together. Accordingly, we take aggregation to be a broader notion than merely addition. If an aggregation is not unrestricted, but allows, for instance, the worse off to be ascribed more weight or allows for some interpersonal aggregations but not others, we will call it restricted aggregation.

In this paper, we shall make the following four assumptions. First, we assume that the currency of distribution is health understood in accordance with some broad account of health that tries to capture what is ultimately valuable or important with health, i.e. health-related quality of life [e.g. 30]. We also assume that it makes sense to talk about a level of health, represented by a number, that there is an optimal level of health,[4] and that we can compare different levels of health and make moral judgements about them. So, in the following, when we refer to benefits

[3] In contrast to intrapersonal aggregation, which is concerned with how different parts of an individual's life are combined. Moreover, we are interested in same number cases in this text. The issue of possible people may raise very different puzzles.

[4] To combine a principle of need with a conception of health that entails an optimal level implies that if there are improvements that can be made for people above the optimal level, these people cannot have need-based claims to such improvements. This may, for example, rule out entitlements to some forms of enhancements. For the idea of optimal health in the holistic theory see further Nordenfelt [30, esp. pp. 97–98].

or people being worse off, we are referring to benefits in terms of health in this holistic sense. Note also that one can be badly off in terms of current ill-health as well as a risk for future ill-health. Second, as questions about aggregation become pressing when there is a conflict of interest between groups of individuals, we assume that the discussion in this paper takes place in a health care system with a fixed budget. Third, we assume that the rightness of a distribution does not dependent on other possibly morally relevant but complicating factors, such as individuals' age, level of desert, and so on. Fourth, we assume a conception of health care need according to which need is a graded rather than binary concept [cf. 12, 22, 24], i.e. that it makes perfect sense to talk about degrees of needs.

The Need for a Need Principle to Aggregate

In this section, we shall argue that a plausible principle of need applied in a health care priority setting can neither be constructed as completely non-aggregative nor handle aggregation by maximizing benefits. In the introductory section we claimed that a distribution solely based on the principle of cost-effectiveness may result in distributions that are morally counterintuitive. For example, consider the following case which assumes a scale of health from 0 to 1 where 0 represents death and 1 represents optimal health.[5] There is a group (A) of 10,000 people being discomforted by mild hay fever (their level of health is, say, 0.99, i.e. almost optimal) and the treatment available can benefit these individuals to an optimal level of health (i.e. the benefit accruing to each individual is 0.01) for a price of $1 per treatment. There is also another group (B) of 100 people suffering from a severe form of cancer (their level of health is, say, 0.1, i.e. very low) and the treatment available for this group may benefit these individuals to an optimal level of health (i.e. the benefit accruing to each individual is 0.9) for a price of $100 per treatment. If we employ the principle of cost-effectiveness, group (A) with the mild condition will outweigh group (B) with the severe condition since this course of action provides the largest sum of net health per $ (as assumed here).

The priority to group (A) is implied by the principle of cost-effectiveness since it employs unrestricted aggregation, regardless of, for instance, how badly off those are to whom the benefits accrue. We employ this case in order to explicate the moral intuition that there is something wrong when benefits to people who are among the worst off are outweighed by benefits to people who are among the best off.[6] It seems as if a principle of need that takes the concern for the worse off seriously cannot reasonably have such implications. The working hypothesis in this paper is that a plausible principle of need should imply that no amount of discomfort associated

[5] To have 0 represent death may be controversial. We make this assumption for simplicity reasons. It seems that there may be states that are worse than death. For a discussion on so-called negative QALYs see e.g. [36].

[6] This kind of example may also be used in order to bring out the intuition (which we shall not discuss here) that small benefits to a large number of people should not outweigh large benefits to a few. Such an implication may be referred to as "welfare diffusion" [cf. 33].

with, say, mild seasonal flu or mild hay fever, could morally outweigh any amount of suffering associated with, say, a severe form of cancer.

However, this counterintuitive implication of the principle of cost-effectiveness should not lead us to conclude that any plausible principle for health care prioritization should be *entirely* non-aggregative; indeed, there are good reasons for applying principles that allow for aggregation. First, non-aggregative principles may have equally counterintuitive outcomes. Consider a case, famously discussed by Taurek [38], with six patients (1–6) who will all die within a week without a lifesaving drug and who may benefit to the same degree from this drug.[7] As it happens, (1) requires all of the drug in order to survive and each of (2–6) requires only one-fifth of the drug. As there is only one supply of the drug available we have to decide whether to treat (1) and let (2–6) die or to treat (2–6) and let (1) die.

Taurek argues that since it is neither better *for someone* nor better *relative to anyone's ends* to save (2–6) rather than (1) we are not morally obliged to do so. He also rejects the possibility that it would be "...just a worse thing in itself..." if five rather than one died on the grounds that such ideas do not make any sense [38, p. 304]. Taurek suggests that we should decide this question by flipping a coin and thereby give everyone an equal chance to survive.

However, in order to argue that a plausible principle of need aimed to guide health care priority setting should imply saving (2–6) rather than (1) there is no need to appeal to the kind of impersonal standpoints that Taurek finds implausible. Even if Taurek was right and that saving the many over the few is not better or worse from any particular individual's perspective such claims may still be better or worse from the point of view of the goal(s) of health care.

We believe that a principle of need should imply that (2–6) ought to be saved rather than (1) as a plausible need principle should ascribe at least some weight to how much need satisfaction is involved in a given allocation. The most promising way to construct a principle of need that accounts for the feature of need satisfaction is to appeal to aggregation.[8]

A further strong reason for constructing a principle of need that aggregates is concerned with the relation between needs and costs. First of all, the extent to which an individual needs an intervention seems to be independent of cost. This assumption is derived from the conceptual intuition about needs: the cost of a treatment simply seems irrelevant for judging to what degree one needs treatment. However, this *conceptual* feature of needs does not necessarily imply that the *principle* of need should be independent of costs. It seems quite uncontroversial to say that priorities cannot reasonably be set without considering costs, since as soon

[7] Assume also that these patients are alike in all other relevant respects.

[8] However, not necessarily all sorts of aggregation. For instance, one may accept principles that allow for interpersonal comparison but not continuity that would bar utilitarian principles but allow solutions to the different-number cases in favour of saving the many over the few; that would mean allowing aggregation but not unrestricted aggregation [see 19, esp. 19–41; 147–154]. We do not deny this; in fact our own solution favours aggregation but bars unrestricted aggregation. Moreover, writers like Kamm and Scanlon have claimed that they can provide an approach that justifies saving the many over the few without appealing to aggregation. This is often referred to as the Kamm–Scanlon argument. Space permits us from fully discuss this view here. It is contested, however, whether they in fact are appealing to aggregation [cf. 17].

as there is a cost there is an opportunity cost. That is, whenever we allocate a given resource to some patient or patient group we could have spent this resource elsewhere (e.g. on other needy patients). We should therefore consider what *could have been done* for the resources spent in a given scenario. But it is difficult to see how this consideration could be plausibly taken into account if one is not allowed to aggregate benefits at all. Therefore, any plausible version of the need principle should leave room for some kind of aggregation.

Note that this is to say something stronger than to suggest that considerations of cost should be accounted for by *some other* principle of prioritization (e.g. a principle of cost-effectiveness) that could be weighed against a principle of need totally ignoring costs. If one is interested in prioritizing in health care based on needs, one should care about to what extent patients' needs actually get satisfied if health care resources are spent differently. This is, again, to care about alternative costs and, by implication, aggregation. However, a need principle that implies the counterintuitive outcomes that may result from the principle of cost-effectiveness does not seem to satisfy the desideratum of being recognized as a need principle, since it does not give enough weight to the worse off. Therefore, we need to find a middle way in between unrestricted aggregation and non-aggregative approaches.

Accordingly, we shall leave open whether the best operationalization of our argument is to (a) employ the proposed principle of need alongside other principles like cost effectiveness, or (b) incorporate costs into the principle of need. Hence, our argument is compatible both with the view that a principle of need should be constructed as a part of a pluralistic theory in which other principles account for costs and with the view that a principle of need is best constructed as handling costs on its own.

Towards a Principle of Need that Aggregates

In the following, we shall outline and defend a principle of need, constructed by prioritarian as well as sufficientarian elements, that does allow for what we have referred to as restricted aggregation. Accordingly, in the following when we refer to the worse off we are not referring to the telic egalitarian comparative claim that A being worse off than B has negative moral value in itself. The priority view as well as sufficiency principles are concerned with people's absolute levels rather than how they compare to others. Therefore, in the following, when we refer to A being worse off we are referring to A being worse off than A could have been.

Some Preliminaries on Sufficiency and Priority

It has been suggested that a principle of need is best understood as a priority or a sufficiency principle, or some combination of the two [8, 24, 25, 32]. In this section we shall sketch the basis for these distributive principles.

The priority view may be understood as constituted by two theses, one saying that it matters more to benefit people the worse off they are and one saying that the value of well-being (or whatever currency one is distributing, in this case health)

ought to be maximized [2, 8, 32. See also 9].[9] Accordingly, prioritarianism implies that the moral importance of a benefit diminishes as the absolute level of health increases. Note that the priority view in itself does not say anything about how to weigh these two components. However, whatever weight one attaches to each component, the priority view may still imply that small benefits to a large group being discomforted by some mild condition outweigh benefits to a smaller group suffering from a severe condition.[10] Hence, the priority view does not give enough weight to being worse off. As with a utilitarian approach, this problem arises from the way in which the priority view aggregates. Since the working hypothesis for this paper is that a plausible principle of need should avoid that the best off benefit at the expense of the worst off, we shall move on to a sufficiency principle.

Sufficiency principles say that what matters morally is that people have enough. Enough is determined by a sufficiency threshold that denotes a minimally acceptable level of benefit. Sufficiency principles, like the priority view, may be understood in terms of two theses: the positive thesis, according to which we ought to lift people who are below the threshold above it, and the negative thesis, according to which there are no moral reasons (or weaker moral reasons) for benefitting the people above the threshold any further [cf. 3, 4, 6, 10, 11, 23].

Some Challenges for Sufficiency Principles

Although a sufficiency principle would solve the problem with unrestrained aggregation, it carries some serious problems of its own. One problem is that a sufficiency principle by itself does not plausibly answer the question about how to prioritize among people below the threshold. Frankfurt [11], one of the first (if not the first) to outline a sufficiency principle, suggests that the principle may respond to the scarcity of resources in the following way: "…to distribute the available resources in such a way that *as many people as possible have enough* or, in other words, to maximize the incidence of sufficiency" [our italics. 11, p. 31]. However, to strive for minimization of insufficiency may often give preference to people just below the threshold (since these people will often be easier to lift above it) rather than the worse off [cf. 4, 6, 20]. It follows from this interpretation that we should be indifferent to how badly off people are below the threshold, so it seems as if there will not be much left of the initial intuitive appeal of need principles.

This suggests that to yield a more plausible answer to the question about how we ought to prioritize among the people below the threshold, sufficiency principles should be combined with some other distributive principle. Roger Crisp [8] has sketched such a version where prioritarianism is employed below the threshold and utilitarianism above the threshold [see also 5]. People below the threshold have *absolute* priority over people above the threshold (if benefits are not trivial). It follows that any amount of benefits accruing to the people below the threshold is better than any amount of benefits accruing to the people above the threshold.

[9] For a recent discussion on the priority view see the special issue in *Utilitas*, 24, 3 (2012). To understand the priority view in this way is to exclude Absolute Priority discussed and rejected by [5, 8].

[10] This point is also made by Crisp [8, p. 754].

Crisp's account allows for aggregation within the two separate spheres but not between them. As Crisp's sufficiency principle gives absolute priority to people below the threshold and no priority to those above, the plausibility of his theory seems, to a large extent, dependent on exactly where the threshold is placed.[11] In the following we shall further discuss the challenges raised by the priority view and sufficiency principles understood as principles of need.

Double Threshold Priority

In this section we shall construct a principle of need that has the resources to handle the challenges presented above. We will refer to this view as Double Threshold Priority (DTP). It contains a priority element as well as elements of sufficiency.

DTP prioritizes health care on the basis of how badly off patients are and how much they can benefit from treatment. To be plausible, a distribution according to DTP should therefore be preceded by some diagnostic measures. Thus, it is one thing to ask whether a patient has a claim on a treatment but quite another to ask if a patient has a right to be examined if he or she surmises a health problem. For simplicity reasons we shall therefore assume that DTP is a principle for distributing treatments rather than diagnostic measures among patients.[12] This does not, however, commit us to the view, held by some people [e.g. 22], that the problem of priority setting is primarily a problem about what health care interventions that should be funded. We believe that this is one approach to the problem of priority setting rather than the problem of priority setting. DTP approaches the problem of priority setting as a principle about the strength of people's need-based claims to interventions. Hence, DTP prioritizes among patients rather than interventions [cf. 25, esp. pp. 90–91].

Consider next the scale of health from 0 to 1 mentioned above, where 0 represents death and 1 represents optimal health. The first step is to apply the priority view all the way from 0 to 1. It matters more to benefit a person the worse off that person is. Now, with the priority view in place we may add two thresholds: one at, say, 0.2 and one at, say, 0.8.[13]

In DTP, the purpose of the thresholds is not to give *absolute* priority to people below the lower threshold (as in Crisp's view) but to adjust the way in which benefits may be aggregated between different levels of health. DTP employs thresholds in order to create a deontological constraint on how tradeoffs are made.

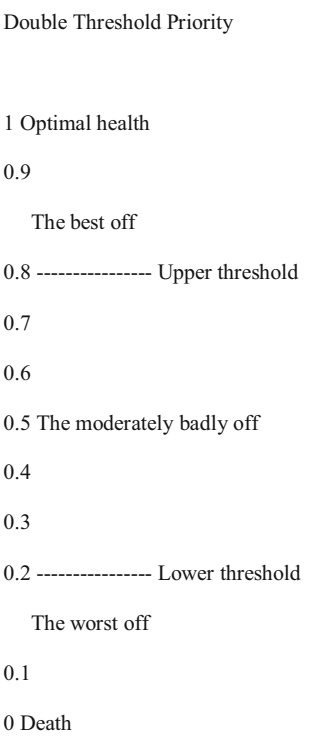
More specifically, DTP roughly categorizes patients within a health care system in three groups with regard to how badly off they are (in terms of current ill-health and/or a risk for future ill-health). One group is the people below the lower threshold. This group is suffering from very severe conditions. We may refer to this group as "the worst off". The second group is the people between the thresholds.

[11] For discussions about the arbitrariness of positioning the threshold see [1, 3, 4, 20, esp. pp. 127–134].

[12] The focus on treatments also allow us to exclude research and development of new treatments from the following discussion.

[13] Employment of multi-level versions of sufficiency principles has been done by others [see e.g. 3, 4, 23]. The thresholds in DTP are, however, specifically employed in order to handle questions about aggregation.

These people are suffering from moderately severe conditions. We may refer to this group as "the moderately badly off". The third group is the people above the upper threshold. We may call this group "the best off". See the figure below:



As DTP starts from a prioritarian principle, it allows for tradeoffs within the different groups. The normative work that the thresholds are supposed to do, is to prohibit certain tradeoffs. At the core of the counterintuitive distributions that may be the result of a utilitarian calculus (and arguably the priority view) is that these principles allow for tradeoffs between the worst off and the best off. A plausible principle of need should account for this intuition and consequently ban distributions where benefits accruing to the best off can morally outweigh benefits accruing to the worst off. The prioritarian approach can reduce the degree to which this intuition is violated, but only to a certain degree. In contrast to the priority view DTP avoids outcomes where the best off benefit at the expense of the worst off. DTP handles aggregation in the following way. Tradeoffs may be made between the worst off and the moderately badly off. Accordingly, all else being equal,[14] benefits accruing to a few of the worst off may be outweighed by benefits accruing to a larger number of the moderately badly off and vice versa. Likewise, tradeoffs are allowed between the moderately badly off and the best off. Moreover, benefits

[14] This will be assumed from now on.

accruing to the worst off may outweigh benefits to the best off. But benefits accruing to the worst off may not be outweighed by benefits accruing to the best off.[15] DTP prohibits this kind of tradeoff, and accordingly prescribes absolute priority to the worst off over the best off.

Note, however, the difference between how DTP ascribes absolute priority to the worst off over the best off and how, for instance, Absolute Priority gives absolute priority to the worst off. If there is one person at health level 0.1 who cannot benefit much from treatment and there is a large group at health level 0.11 where everyone could be substantially benefited, Absolute Priority ascribes that the former individual should outweigh the latter group.

DTP gives absolute priority to the worst off in a different way. By employing two thresholds, it creates a clear and significant distance between the worst off and the best off where the former have absolute priority over the latter. Note that this view does not imply that benefits accruing to the best off are irrelevant in any sense but that the best off ought not to benefit at the expense of the worst off. Accordingly, it follows that DTP implies that benefits accrue to the best off only when there are no unmet needs among the worst off that can be met.

Questions Raised by Double Threshold Priority

The Moral Arbitrariness of the Location of the Thresholds

As we have seen, a standard objection to sufficiency principles is that it seems difficult to set the threshold level non-arbitrarily. It is rarely noticed, however, that the same criticism may be directed towards the priority view. In its standard formulation, the priority view says that it matters more to benefit people the worse off they are. Irrespective of the problems we have raised (and that have been raised elsewhere) regarding the priority view, its plausibility will to a large extent depend on exactly how much more it matters to benefit people the worse off they are. And if x times more, why x times more and not y times more or z times more? It may seem obvious that it matters more to benefit a patient with severe cancer than a patient with a seasonal cold but how much more is less obvious. Likewise, with regard to DTP, it seems obvious that severe cancer is below the lower threshold and the seasonal cold is above it. But it is less obvious exactly where the threshold should be set. However, if one believes that the priority view may be specified in this respect (whatever methodology one finds appropriate for such specification), it seems no less reasonable to allow for thresholds, even if set roughly (perhaps some vagueness should be allowed).[16]

Moreover, it seems that the constraint that DTP establishes on certain kinds of aggregation is achieved quite non-arbitrarily and clearly. Although it may be vague, uncertain, and to some extent arbitrary exactly where to set the threshold between

[15] Following Crisp here, we assume that these benefits are non-trivial.

[16] In Official Norwegian Reports [31] it is also differentiated between three groups of severity. The purpose of these groups is different however. While we provide a deontic constrain of how tradeoffs are allowed between groups the Norwegian report suggests that we should allow for different cost per QALY (quality adjusted life years) within each group.

being worst off and moderately badly off, and between being moderately badly off and best off, the distance between being worst off and best off is significant and clear.

Even though DTP does not ascribe absolute priority to people below the lower threshold as standard sufficiency principles do there may still be cases where quite small differences play a decisive role for priority setting.[17] For example, if there is an individual A just below the lower threshold and an individual B just above this threshold standard sufficiency ascribes absolute priority to A. In contrast, in such a case, DTP may imply that B outweigh A. Now, suppose next that there is also a group C just above the upper threshold. In a choice between A, B and C DTP implies that since there are still needs that are unmet among the worst off the first choice is between A and B. Suppose next that DTP implies that A should be treated and suppose further that A was the last person among the worst off. Since there are now no unmet needs among the worst off tradeoffs between the moderately badly off and the best off are allowed. In such a case DTP may imply that C outweighs B. In this case, one might argue that it is arbitrary that DTP implies that A has absolute priority over C but B does not.

First, note that this case would only arise in very specific circumstances as DTP prescribes that everyone (including A) among the worst off should be treated before treating C can be an option. Hence, this scenario is only possible when A is the last one among the worst off.

Second, if one is concerned about letting small differences play a decisive role in determining decisions for priority setting we should again compare DTP to other views. For example, the priority view may have similar implications. Suppose we have ascribed a certain moral weight to benefits accruing to the worse off and suppose again the choice between A, B and C. A may be just badly enough to outweigh the benefits accruing to the individuals in C but B may be just below the margin to do so. Once again, DTP is not in a worse place than the priority view stated by itself.

The Arbitrariness of the Number of Thresholds

One may ask what determines the number of thresholds. For one thing, there seems to be some intuitive appeal in the idea that there is something very different between the very severe conditions and the mild ones and that this difference is worth taking seriously from a moral point of view.[18] DTP can account for this difference because of its multiple thresholds.

Secondly, DTP employs two thresholds in order to avoid certain outcomes that cannot plausibly be implied by a principle of need, without prohibiting aggregation altogether. One may ask if this normative work could be done by a single upper threshold. It seems as if a possible outcome of DTP is that the best off remain untreated as there may always be something that could be done for the worst off. If

[17] Thanks to an anonymous reviewer for pressing us to discuss this kind of case.

[18] Consider also Crisp's theory outlined above. Crisp uses mild hay fever as an example of a condition above the threshold and severe schizophrenia as an example of a condition below it.

this is the case, why not settle with an upper threshold and employ absolute priority to people below it? We could simply accept that the best off often remain untreated and that the priority view holds below. Let us call this view Upper Threshold Priority (UTP). Note that UTP would not be more favorable than DTP to the worst off but worse than DTP for the best off. UTP implies that the best off should be treated if and only if there is nothing more that can be done for the worst off and the moderately badly off. However, DTP leaves room for a tradeoff between the best off and the moderately badly off, given that there is nothing more that can be done in order to further fulfil the needs among the worst off.

Although we have focused on the moral importance that principles of need ascribe to benefitting the worst off in this paper, a principle of need should do more than that. A well-constructed principle of need should also have the resources to handle normative questions that concern the moderately badly off and the best off.

Thirdly, even though DTP avoids outcomes where the best off outweigh the worst off, it may still prescribe outcomes with a similar formal structure. For example, there may be some group at 0.79 that outweighs people at 0.1. One may take this as a reason to add a third, or perhaps a fourth, threshold. This would decrease the distance between the worst off and people that may outweigh the worst off. Even though there is no problem (in principle) with additional thresholds, such a reduction in distance between thresholds would undermine a substantial normative claim that DTP, constructed with two thresholds, accounts for. The advantage of employing two thresholds, and no more, is that it accounts for the moral importance of the difference between health states among the best off and the worst off. As one increases the number of thresholds one decreases the extent to which DTP plausibly accounts for the moral importance of this difference.

A Temptation for a Comparative Approach

One may argue that the underlying intuitive appeal of DTP is not the absolute position of the thresholds but the *difference* between the worst off and the best off. It may be that DTP appeals to an egalitarian intuition according to which tradeoffs between people who are sufficiently far away *in relation to* each other should be avoided. Voorhoeve [43] sketches a view that he refers to as Aggregate Relevant Claims (ARC) and that is similar to DTP in several respects. Much like we do in this paper, Voorhoeve aims to construct a distributive principle that accounts for the view that it seems right to aggregate some claims but wrong to aggregate others. However, while ARC is similar to DTP in several ways, it also differs in a number of important respects. In the following we shall consider a number of points made by Voorhoeve [43].

First, Voorhoeve's primary aim is to construct a principle that can account for the view that while it seems right to aggregate some claims it seems wrong to aggregate others. The project undertaken in this paper is to construct the best version of a need principle with a primary focus on aggregation. ARC and DTP may have similar implications regarding how to allocate health care resources. However, the moral basis for *why* a given resource allocation ought to be done is different. ARC aggregates claims whose strength is dependent on (a) the increase in well-being, and

(b) the level of well-being from which this increase takes place [43]. Need-based claims are also dependent on (a) and (b) but the interpretation of (b) is different: need-based claims are best understood as non-comparative as they are based on people's absolute levels and have an independent standing of the relation to other people's needs [15, 16]. Therefore, while need principles may be plausibly specified in terms of a concern for the worse off (the priority view) as well as sufficiency principles, the idea that need is about the strength of claims *in relation to* the strongest competing claim seems counterintuitive. Accordingly, ARC is not a plausible specification of a principle of need.

Second, while ARC bans tradeoffs on the basis of (a) *as well as* (b), DTP bans tradeoffs on the basis of (b) alone. Hence, DTP effectively rules out the possibility that the best off benefit at the expense of the worst off. ARC seems open to this possibility if the size of the benefit accruing to the best off is large enough [see e.g. 43, p. 68 Fn 6]. Hence, DTP seems to say something stronger than ARC, namely that *no* amount of benefits accruing to the best off can outweigh benefits accruing to the worst off.

Third, one might argue that Voorhoeve is better placed than DTP to answer the objection from arbitrariness. He offers the following rationale for ARC. The claims that are not appropriate for aggregation are referred to as irrelevant. The relevance of a claim is dependent on whether the tradeoff would be permissible from the personal perspective of the person with the strongest claim [see 43, p. 72]. Voorhoeve argues that although the *actual* degree of permissibility will vary among individuals there will be some *ideal* degree that should be considered appropriate [43, p. 73]. This proposed rationale for ARC reflects, according to Voorhoeve, a respect for the separateness of persons. DTP does not make reference to the separateness of persons. Rather, it says that, from a third person perspective, there seems to be some degree of being badly off that should have absolute priority over mild conditions. It seems as if also adherents of ARC are pushed towards a similar explanation as they appeal to an *ideal* appropriate degree of permissibility. Hence, ARC does, in the end, justify the aptness of tradeoffs from a third person perspective, just like DTP does. Therefore, it is not the case that ARC is in a better position than DTP to handle the issue of arbitrariness.

The Moral (Ir)Relevance of Benefits Accruing to the Well Off

Frankfurt [11] provides a reason for a sufficiency principle rather than principles of equality in the following way: "We tend to be quite unmoved, after all, by inequalities between the well-to-do and the rich" [11, p. 146]. Crisp [8] argues in much the same way for his move from priority to sufficiency when he says that "…any version of the priority view must fail: when people reach a certain level, even if they are worse off than others, benefiting them does not, in itself, matter more" [8, p. 754]. In other words: even though the priority view does account for the diminishing moral importance of benefits there still seems to be some cut off point for when benefits have no, or significantly less, moral importance [see also 5].

Does this objection have any relevance for constructing a principle of need for health care priority setting? While DTP prohibits tradeoffs between the best off and

the worst off, it still employs the priority view within the groups. Hence, there may be some group among the best off at, say, 0.98 that trumps some other group among the best off at, say, 0.99. This implication seems analogous to the problem sketched by Frankfurt and Crisp. However, the objection is no reason to reject the argument put forth in this paper since we assume that there is an optimal level of health. The objection just does not seem to be relevant to principles that employ currencies of which there is an optimal level. While DTP implies that some amount of ill-health carries *less* moral weight, there is no amount of ill-health that carries *no* weight. Hence, there is nothing strange in claiming that a sore throat ought to outweigh a slightly sore throat.

Transitivity

For a principle to guide priority setting in health care it must be able to rank the goodness of all possible distributions (i.e., it must be transitive in the deontic sense).[19] One might argue that DTP cannot do that. Consider the following series of choices (a–c) in the following three cases (i–iii). In each case, there are two alternatives of which only one can be chosen.[20]

i. We can either (a) provide a minor (but not trivial) benefit to one individual among the worst off or (b) provide large benefits to a hundred thousand people among the moderately badly off. In such a case DTP implies that we ought to (b) treat the moderately badly off.
ii. We can either (b) treat the hundred thousand among the moderately badly off or (c) provide large benefits to a billion people among the best off. In this case DTP implies that we ought to (c) treat the billion people among the best off.
iii. However, DTP is not supposed to allow that the best off benefit at the expense of the worst off. Therefore, it seems as if we should choose to (a) benefit the individual among the worst off rather than (c) treat the billion people among the best off.

It may seem as if DTP cannot answer what ought to be done here. It seems as if we cannot avoid acting wrongly. This cannot be acceptable for a distributive principle. However, DTP does have implications for such cases. In case (i) it is correct that DTP implies (b) rather than (a). However, in case (ii), DTP implies (c) rather than (b) if there is nothing more that can be done in order to further fulfil the needs among the worst off. Hence, DTP only implies the tradeoff suggested in case (ii) if there are no unmet needs among the worst off that can be met. Therefore, as alternative (a) is on the table, case (iii) is never actualized. This means that the worst off have absolute priority over the best off.

[19] Obviously, there is much more to be said about the issue of transitivity but a full discussion of this notion is far beyond the scope of this paper [see e.g. 39, see also 42].

[20] Voorhoeve [43] also discusses this series of choices. However, our aim here is not to discuss Voorhoeve's answer to this objection but to show that DTP can handle these kinds of worries.

Conclusion

In this paper, we have examined how a principle of need, applied in health care priority setting, should relate to the aggregation thesis. We have argued that principles that allow for unrestricted aggregation as well as non-aggregative principles may imply counterintuitive distributions. A plausible principle of need can therefore not involve any of these approaches to aggregation. Against this background, we constructed a principle of need (consisting of sufficientarian as well as prioritarian elements) that has the resources to avoid the problems associated with unrestricted aggregation as well as non-aggregative principles. Double Threshold Priority avoids arguments from counterexamples from both sides while preserving the normative core of principles of need—the moral intuition that the concern for the worse off ought to be taken seriously.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

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