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Inequalities in HIV Care: Chances Versus Outcomes

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In some other cases, however, the total view arguably has an intuitive advantage. The cases I have in mind are ones where a little sacrifice in the average can lead to an enormous gain in the total. To use an example to illustrate, suppose that outcome E has an average of 10 units and a total of 100 units whereas outcome F has an average of 9.9999999 units and a total of 1,000,000,000 units, and suppose further that E and F are all the possible outcomes there can be. In a case like this, if we chose F over E, we would sacrifice a difference of 0.0000001 in the average, a negligible difference, we may assume. However, the gain in total would be relatively enormous: We would gain a difference of 999,999,900. In a case like this, F is arguably better than E since the sacrifice in the average is negligible but the gain in total is enormous. The total view lines up well with this intuitive verdict. By comparing the totals of F and E, it delivers the verdict that F is better than E, for F clearly has a greater total. By contrast, the average view, by holding that the average ought to be maximized, delivers the verdict that E is better than F, since E has a greater average. However, this does not really line up with our intuition about which outcome is better in this case. Hence, in cases like this, it seems that the total view is more plausible than the average view.

THE LIMITATIONS OF THE ATKINSON INDEX

As I have mentioned, in their article Johannson and Norheim adopt an average view of health and life expectancy in measuring the trade-off between health maximization and equality of health. The average view of health and life expectancy, as a reminder, is the view that the av-

erage health and life expectancy of the population ought to be maximized. However, as I have argued, the average view is not the only view of health maximization. There is also the total view, the view that the overall health and life expectancy ought to be maximized. In fact, I have argued that the total view seems to be much more plausible than the average view in cases where a little sacrifice in the average can result in a much greater total. Such being the case, the Atkinson index, by focusing merely on the trade-off between the average view of health maximization and equality of health, is limited in its scope of application. It will not apply in cases where we are more concerned to maximize the total than the average. In those cases, what feeds into the trade-off between health maximization and equality of health ought to be the total instead of the average. To sum up our discussion, I think that while the authors' use of the Atkinson index to measure the trade-off between health maximization and equality of health might well be valid in cases where we are more concerned to maximize the average than the total, it is not so when our concern is to maximize the total instead. ■

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Inequalities in HIV Care: Chances Versus Outcomes

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Kjell Arne Johannsson and Ole Norheim present four stimulating dilemmas of priority setting in HIV care and prevention, skillfully abstracted from cases in Tanzania. They describe their topic as follows:

Health care priorities should be grounded on two main ethical principles: to maximize health and to reduce inequitable distributions. . . . By maximizing health we mean increasing the average health and life expectancy of the population. By inequity in health we mean here inequality in the age of death.

. . . We are interested in distributive conflicts between these two principles. (Johannsson and Norheim 2011)

Here and elsewhere in the article, Johannsson and Norheim are explicit about the focus on inequality in *outcomes*, that is, on "inequality in the age of death." However, the bulk of their analysis focuses on inequality in *expected* life years, that is, on *chances*. In this note, we argue that in three of their dilemmas, outcome-egalitarians will draw conclusions that differ dramatically from theirs.

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We believe this conclusion is important, because we take outcome-egalitarian concerns to be justified.

According to leading egalitarians, inequalities in the space of relevant¹ outcomes are unfair, so there is always reason to reduce them (Arneson 1997; Cohen 1989; Temkin 2001). While some add that the unfairness of outcome inequalities can be mitigated by giving each person equally valuable chances, they emphasize that this would not ensure complete fairness: Someone who ends up worse off than others is an object of egalitarian concern, even if he had equal prospects (Arneson 1997).

Now consider Johansson and Norheim's example 1, in which 800 urban and 200 rural people are HIV positive. One can either implement policy A, which treats all urban HIV patients with antiretrovirals (ART) but offers none to the rural patients, or policy B, which gives each patient a 50% chance of treatment and ensures that 400 urban and 100 rural people are treated. The authors assume that it is more egalitarian to give all patients an equal chance of receiving ART. They conclude that using the Atkinson social welfare function (Atkinson 1970) with a sufficiently large degree of inequality aversion would support policy B.

Policy B is indeed more egalitarian in terms of chances. However, Johansson and Norheim claim that their conclusions follow from a pluralist egalitarian view that combines a concern for improving population health with "an egalitarian principle that sees relative inequality of *outcomes* as bad in itself" (our emphasis). This claim is highly questionable. Following the allocation of treatment, one may discern three "classes" of health status:

- I. HIV-negative patients.
- II. HIV-positive patients on ART.
- III. HIV-positive patients without care.

Of course, not everyone in each class will achieve the same health outcome. In order to make claims about the ranking of health outcomes under each policy, we employ the following simplifying assumption, which is consistent with Johansson and Norheim's description: *Ceteris paribus*, a distribution with fewer people in a lower class and more in a higher class is anonymously Pareto-superior² in terms of outcomes.

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1. For example, luck egalitarians hold that unequal outcomes are unfair when they are not due to sufficiently free and informed choices on the parts of the worse off. We will assume that, in Johansson and Norheim's examples, no choice that results in HIV infection is sufficiently free and informed, so that luck egalitarians would consider all outcome inequalities unfair.
 2. That is to say, for each policy, imagine ordering all patients in a "queue" from worst to best health outcomes, with each position in the queue being occupied by precisely one patient. A first policy is anonymously Pareto-superior to a second if and only if at every position in the queue, health under the first policy is at least as good as in the second, and health is better under the first policy in at least one position.

How will egalitarians rank A and B with regard to outcomes? Policy A places fewer people in III and more in II than policy B does. Policy A is therefore anonymously Pareto-superior to B. Now, sensible outcome-egalitarians wish to promote health as well as reduce outcome inequality, and they standardly endorse anonymous Pareto (Tungodden 2003). As far as outcomes are concerned, such egalitarians will therefore favor A. Indeed, the Atkinson function respects anonymous Pareto. It follows that, on the Atkinson function applied to outcomes, policy A will be preferred to B for every level of inequality aversion.

Now consider example 2. In the baseline scenario, 10% of a population of 100,000 are or will become HIV positive. One must choose between prevention (policy A), which reduces HIV prevalence by 1,000 but leaves all HIV cases untreated, and limited treatment (policy B), which provides only "the first 132 identified HIV patients in the clinics" with ART. Johansson and Norheim argue that policy B is favored by an Atkinson function with a sufficiently high degree of inequality aversion, because under that policy, "each currently sick HIV patient will gain 7.6 life years from ART, on average ... [which] would reduce inequality in the age of death."

For this arithmetic to work, "currently sick HIV patients" must refer to only the first 132 identified HIV patients. The authors do not clarify whether this group comprises (i) patients *already* identified as HIV positive, or instead (ii) the first patients that *will be* identified *after* priority setting. Either way, policy B is far less chance-egalitarian than they claim. If (i), then only those already identified as sick have a chance of gaining years. All other currently sick patients will have *no* chance of treatment, meaning B makes very little overall contribution to equalizing the prospects of those currently infected and those not currently infected. If (ii), then B gives each currently HIV-positive patient some chance of receiving ART (all they need to do is to show up in the clinic first), but that chance makes only a very small contribution to this group's life expectancy (nothing like 7.6 years). Policy B is thus only marginally better than A, from a chance-egalitarian perspective.

In terms of outcomes, policy A is far better than B. Under policy A, 91,000 individuals will reach class I identified earlier (HIV negative), and 9,000 will be in class III (HIV positive without care). Under policy B, 90,000 individuals will be in I, 132 in II (HIV positive on ART), and 9,868 in III. In terms of outcomes, by hypothesis, policy A is therefore anonymously Pareto-superior to B, so that the Atkinson function will again prefer A to B for every level of inequality aversion.

In sum, policy B is marginally better in terms of equalizing chances for those with the worst prospects, while A is far superior in terms of health outcomes. It seems to us that, on balance, egalitarians who care about both chances and outcomes have overwhelming reason to opt for prevention rather than treatment in these circumstances.

Finally, consider example 4, in which 100 HIV patients have an opportunistic infection. Fifty patients can be successfully treated with one pill; 50 can be successfully treated

with, and only with, two pills. The decision maker has 50 pills, and must choose among:

Policy A, which treats all and only the 50 “one-pill” patients.
Policy B, which gives each of the 100 HIV patients roughly a 33% chance of treatment, and treats 33 patients.

Policy C, which gives all “one-pill” patients roughly a 50% chance of treatment and all “two-pill” patients roughly a 25% chance of treatment, and treats 38 patients.

In terms of chances, policy B is the most egalitarian, followed by C and then A. Johansson and Norheim conclude that for a sufficiently high degree of inequality aversion, the Atkinson function will rank B over C over A. This is again incorrect if one focuses on health outcomes. In this example, only two “classes” can be discerned: patients with an opportunistic infection who receive treatment for it, and ones who do not. Consequently, in terms of outcomes, policy A, which treats the most patients, is anonymously Pareto-superior to C, and C is superior to B, which treats the fewest. An Atkinson function on health outcomes will therefore rank policy A over C over B for any degree of inequality aversion.

In sum, rather than presenting a conflict between egalitarian and health-maximizing concerns, cases 1, 2, and 4 are better seen as presenting a conflict between, on the one hand, a concern for equal *chances*, which favors policy B in each case, and, on the other hand, both a concern for better

health and an egalitarian concern for equal *outcomes*, which, sensibly combined, favor policy A. If, as we believe, the latter concerns are valid, then policy A is far more attractive in these cases than Johansson and Norheim argue.³

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3. We thank Michael Otsuka for comments.

Creating Moral Conflict Through an Inequality Sensitive Summary Measure

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While we commend authors Kjell Arne Johansson and Ole Norheim for using the Atkinson index as a way to analyze health maximization and equality of health with respect to antiretroviral treatment (ART) and HIV prevention in low-income countries, the goal of resolving policy dilemmas and unjust approaches to resource allocation is unattainable without looking at concepts of health and disease, social determinants of health, and sociocultural and political values and patterns of populations. As the authors describe, the Atkinson index is only concerned about trade-offs between health maximization and difference in health outcomes between groups. Realistically, when creating and implementing rationing policies there are multiple distributive principles and sociocultural and political perspectives that inhibit reasonable value trade-offs. Even when looking at the two

chosen principles of health maximization and equality, populations and their subgroups can interpret these principles in very different ways depending on what is understood by health, disease, and equality, and which benefits to maximize. This is not to say that we do not need an economic approach for setting health care priorities, but that this particular approach (i.e., Atkinson index) may not be useful for every situation or population given the complexity of the practical challenges faced by individuals and communities. “African societies will place different weights on the values inherent in goals such as equity and efficiency, and decisions about rationing will be made at multiple levels of the health care system” (Rosen et al. 2005, 1103).

The benefit of the Atkinson index, if achievable, is its neutrality between distributive principles, but, as described

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