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Pandemic justice: fairness, social inequality and COVID-19 healthcare priority-setting

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ABSTRACT

A comprehensive understanding of the ethics of the COVID-19 pandemic priorities must be sensitive to the influence of social inequality. We distinguish between ex-ante and ex-post relevance of social inequality for COVID-19 disadvantage. Ex-ante relevance refers to the distribution of risks of exposure. Ex-post relevance refers to the effect of inequality on how patients respond to infection. In the case of COVID-19, both ex-ante and ex-post effects suggest a distribution which is sensitive to the prevalence social inequality. On this basis, we provide a generic fairness argument for the claim that welfare states ought to favour a healthcare priority scheme that gives particular weight to protecting the socially disadvantaged.

INTRODUCTION

The number of confirmed deaths with COVID-19 has surpassed 6 million. The pandemic has brought several important ethical considerations to the fore—many of which pertain to the distribution of goods and burdens in or between societies. These questions are thus questions of distributive justice. In Italy, one of the countries hit hardest by the pandemic in the early spring of 2020,¹ questions of how to prioritise scarce healthcare resources, such as ventilators, among patients in desperate need became hotly debated, not least whether age should be a rationing criterion.^{2–4} These questions were subsequently grappled with across many more countries.^{5–9} How we are to fairly and efficiently distribute vaccines nationally and globally is also a distributive question.^{10–17} Another distributive question is whether lockdowns and the unequal effects which follow from them are justified.^{18–19} However, the ethical debate largely overlooked the role of social inequality in COVID-19-related healthcare priorities and health policies. The tendency of public figures to underplay the role of social inequality during the pandemic is encapsulated in the words of the UK's then Senior Cabinet Minister, Michael Gove: 'the virus does not discriminate'.²⁰

Perhaps this hesitation to discuss the role of social inequality could be explained by the fundamental norm underlying Western welfare-state healthcare systems: to offer treatment freely and equally for all. To provide equal treatment regardless of social status should protect the vulnerable, and does so when claims to help or vaccinate the productive first are not heeded. On the other hand, the pervasiveness and importance of social inequality for these discussions make it somewhat surprising that the ethical debate was so silent on this issue. After all, social inequality permeates the circumstances

in which the health risks and social threats of the pandemic arise. Thus, any comprehensive understanding of the ethics of the COVID-19 pandemic priorities must be sensitive to the influence of social inequality. In this paper, we offer a philosophical exploration of the importance of social inequality for COVID-19 priority-setting.

In the analysis, we distinguish between ex-ante and ex-post relevance of social inequality for COVID-19 disadvantages. Ex-ante refers to how the risks of exposure are distributed unequally. Ex-post, on the other hand, refers to how social inequality affects individual response to infection, for example, whether infection leads to severe illness and need for intensive care. Although making this distinction is not necessary for our argument, an account of both the ex-ante and ex-post inequalities wrought and exacerbated by the pandemic serves to display the stark and entrenched nature of these inequalities, lending support to the idea that they must be addressed in the allocation of healthcare resources. It is important to keep both ex-ante and ex-post inequalities in mind, because they need not always follow the social gradient (eg, exposure to mononucleosis is not to a significant degree determined by social background, but the need of care as a result might be). These factors can even pull in different directions (ie, when those most likely to be hospitalised have the least risk of exposure). Whereas such situations add complexity to a case, understanding that ex-ante and ex-post inequalities follow a similar pattern for COVID-19, strengthens the empirical foundation of our argument.¹

Throughout our analysis, we employ a generic, or inclusive, understanding of distributive justice. We contend simply the current distribution of socioeconomic positions and goods in society is unjust. This seems to be the verdict reached by the most prominent theories of distributive justice, irrespective of whether one approaches these distributions from a luck egalitarian perspective, where justice is about eradicating unequal brute luck,²² or a prioritarian perspective which dictates priority to the worse off.²³ While these theories differ in interesting and relevant ways when applied to some health inequalities, this article emphasises that their recommendations are fairly similar in the COVID-19 context, especially since these recommendations seem at odds with current practices.

¹[1]This does not imply that everything which is a risk factor for the latter is for the former. For an overview, see²¹



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EX-ANTE AND EX-POST INEQUALITIES

This section details how socioeconomic inequalities leave people unequally situated to protect themselves both ex-ante, from infection and ex-post, from severe illness and need of intensive care. The generic fairness argument that we unfold in the next section, draw support from both sides of this distinction.

Ex-ante

It is widely acknowledged that persistent social inequalities in health exist, and that these ensure the health risks of disease are unequally distributed.^{24–26} This contributes to the unequal distribution of COVID-19 risk, of which pre-existing diseases and comorbidities are important risk factors. Clinical factors such as diabetes, chronic kidney disease, high body mass index and immunosuppression, many of which are unevenly distributed along a social gradient, have all been found to increase the risk of COVID-19 infection.²¹ More broadly, a review of risk of infection concluded that the risk of COVID-19 infection is higher ‘among groups already affected by health disparities across age, race, ethnicity, language, income and living conditions.’²¹

Risk of exposure to disease also varies widely with socioeconomic position. Consider first the connection between employment and risk. People are exposed to differential risks when performing their jobs. One crucial question is whether the job can be performed in the safety and comfort of your home, or if instead you are required to be physically present. While lecturing or attending Zoom meetings from home can be burdensome, it does not involve high risk of exposure to COVID-19. The risk of contracting the virus is much higher for those employed in low-wage jobs, for instance in the transport or hospitality industries. Of course, those employed in the healthcare sector are also at far greater risk of exposure compared with at-home workers.

One’s living situation also significantly affects exposure. Whether or not a person has stable housing is the first major inequality. The homeless are, in general, much more exposed to a wide range of hazards. The same is true of COVID-19. Shelters for the homeless are not mentioned for social distancing, and with the closing of libraries and public swimming pools, the usual places of rest, shelter and hygiene are out of reach. To this, we may add that many homeless people find some safety by being among other homeless people. The requirement of social distancing is then very hard to follow.

Important inequalities also persist among those who have homes. Consider the difference between those who live in an apartment in large-story buildings, and those who live in a house with a garden. There are two senses in which these differences matter for inequality of exposure. First, it matters because the population density is much higher for those who live in story buildings. They have higher risk exposure, as they meet their fellow residents at the shared staircase, by the elevator or in the shared laundry. These differences matter in terms of how (un)equally people are situated to avoid exposure. The difference also matter in situation, where one member of the household needs to self-isolate. Here the number of rooms and restrooms makes a huge difference for whether exposure is avoidable. The socioeconomic differences affect risk of exposure in other ways. Consider, whether you have a garden or need to frequent public parks to get fresh air, or whether you have a car allowing you to drive to the countryside and avoid public transportation.

Ex-post

Social inequalities not only affect risk of exposure, but also how people respond to infection, whether people develop severe illness and need for intensive care as a result of infection. We

know that comorbidities are formed on a backdrop of social inequality, and that they in turn influence the distribution of the pandemic’s effects among the population. The development of severe illness as a result of COVID-19 infection is largely dependent on preexisting conditions.^{18 27–29} Conditions such as diabetes, asthma, chronic obstructive pulmonary disease, liver disease, heart disease and obesity all exacerbate individual reactions to infection, and they are all highly socially graded.

Based on this, Bambra *et al* conclude that the COVID-19 pandemic occurs as a syndemic, that is, ‘when risk factors or comorbidities are intertwined, interactive and cumulative—adversely exacerbating the disease burden and additively increasing its negative effects’.¹⁸ Thus, many of the same social background factors which determine the difference in risk of exposure also determine the severity of a patient’s reaction to an infection, and the risk of mortality incurred as a result. From this, we must conclude that the effect of social inequality on pandemic health deficiency seems inevitably one-sided for both ex-ante and ex-post effects.

Before we move on to the fairness argument, we should mention that we have set aside two points, which could potentially lend further support to our conclusion. One is that socially disadvantaged groups in many countries have less access to high-quality healthcare.³⁰ The other is that social inequalities also have consequences for the broader and more long-term social and economic effects of the pandemic, such as decreasing growth and rising unemployment. While these points would strengthen our argument, we set them aside here, because these are institutional factors that vary substantially across nations, and we want our argument to focus on effects that have wider applicability.

THE GENERIC FAIRNESS ARGUMENT

The above-mentioned effects of the COVID-19 pandemic all have implications for social justice, and, as we shall argue shortly, on an ecumenical account of fairness, they all support the conclusion that welfare-states have a special responsibility to protect the socially disadvantaged. We have already established in previous sections that the health risks engendered by the pandemic fall especially on the socially disadvantaged. This section unfolds the normative side of the argument.

By building on an ecumenical account of fairness, we mean to reach out to people of different moral dispositions. We do not want to commit our argument to any particular distributive principle in order to make the argument compelling to egalitarians and prioritarists alike. Two central lines of thought should be noticed, however. First, as is today widely accepted, lending much from the literature on luck-egalitarianism and its applicability to healthcare,^{31–33} that it is a central concern of justice to secure an equal distribution of healthcare resources. This does not necessarily imply that everyone should have the same outcome, but that healthcare resources are allocated to secure equality in the space of resources and opportunities, thus neutralising the effects of luck. As such, the egalitarian strand of theory speaks to a generic consideration of fairness, in the sense that it objects to inequalities that stem from unchosen differences. Hence, insofar as the distributive consequences of the Covid-19 pandemic are an instance of (bad) luck, egalitarianism would demand their rectification. Moreover, in the case that the health-related costs of the pandemic increased inequalities in health—that is, making the already badly off even worse off—this would be especially unjust from an egalitarian perspective.

Second, it is also widely accepted that justice involves a special obligation to assist the badly off. In addition to the

above-mentioned egalitarian line of thought, many furthermore accept the claim, nested in distributive prioritarianism, that there is more intrinsic moral worth in helping people the worst their situation, independent of how well others are doing.²³ Whereas egalitarianism is relatively evaluative—it evaluates the stakes of individual claims based on their relative stance compared with others—prioritarians are concerned with absolute levels of well-being. What matters is how badly off people are, not how badly off they are compared with others. Thus, while distinct from egalitarianism theoretically, the implications of the view for the pandemic's distributive consequences are similar. We have strong moral reasons to protect the socially worse off from the effects of the pandemic.³⁴

Thus, we arrive at the generic fairness argument for health-related pandemic justice.

P1—empirical: The health risks involved in the pandemic, both in terms of exposure and risk of severity and mortality, and resulting need of intensive care, fall especially hard upon the socially disadvantaged.

P2—normative: It is especially unjust when pandemic suffering falls upon the already worse off, because:

a. it makes things worse for people who are already comparatively badly off.

b. suffering has more negative moral value, the worse off people are.

Conclusion: Thus, pandemic effects are especially unjust.

The subpremises a. and b. are theoretically compatible, and many people intuitively accept both. However, given that they can be both conjunctively or disjunctively connected, even people who only accept one of them—for example, strict egalitarians or strict prioritarians—should find the conclusion compelling. Thus, it seems that the fairness argument is both ecumenical and quite strong.

Of course, this invites considerations of potential internal conflict. The generic fairness argument cannot guide us, for example, in choosing between a distribution benefiting the worst off at the cost of increased inequality and another distribution less beneficial to the worst off but which secures a more equal outcome. On such issues, the fairness argument needs further elaboration and egalitarians and prioritarians will disagree on that. We can imagine pluralist compromises such as inspired by Rawls' difference principle³⁵—for example, that we should distribute equally unless an unequal distribution is beneficial for the worst off—but as it stands, the fairness argument makes no such commitment. Like Cass Sunstein's incomplete theorised agreements,³⁶ its strength lies in the broad appeal of its conclusion despite being arrived at from different theoretical foundations.

So far, the straightforward interpretation of the fairness argument is as an instantiation of a telic, or patterned, moral principle. But this need not be the case; that is, the generic fairness argument is ecumenical also at a more foundational level, inviting in also procedural or contractualist considerations. On a contractualist account, we could say that it would be prudent for every individual person on the basis of lack of knowledge about socioeconomic status as well as health conditions related to COVID-19 to prefer access to intensive care as a result of the pandemic should one be socially disadvantaged than if one was socially privileged. Of course, this account of contractualist prudence assumes access to the empirical knowledge (such as in premise 1) about the health risks related to the pandemic, and thus depends on the thickness of the chosen veil of ignorance. However, the account of prudence does not presuppose

knowledge of one's health or social background, it merely draws on knowledge about empirical facts and probabilistic foresight. When this is assumed, a prudential account³⁷ would support the generic fairness argument because it provides strong impartial reasons to prioritise giving healthcare to the socially disadvantaged.

The argument implies that not only is the health-related suffering caused by the pandemic morally problematic and unjust in the obvious sense that it requires state funded healthcare to prevent or as far as possible rectify this suffering; it also implies that the pandemic's health-related effects are unjust in the sense of being unfairly distributed. If this is correct, we have arrived at an overlapping consensus around the conclusion that we have fairness-based reasons to take special obligation in protecting and treating the socially disadvantaged against these health-related effects.

What are the practical implications of the generic fairness argument? Imagine there are two patients equally in desperate need of intensive care because of COVID-19, but we only have resources for one. Say that the two are equal in all relevant respects except for their social background. Now, it seems that the generic argument implies that it would be more just to give the treatment to the socially disadvantaged. As a practical priority-setting guideline, this might be too radical. Reasons against include both that it runs counter to the ideal of equal access to healthcare (so central in welfare state health systems), and that it will often lead to less cost-effective prioritisations. In response, our argument does not imply that we should completely dismiss cost-effectiveness and equal access to healthcare as components in a just priority scheme. Rather, what we suggest is that these components should be taken into consideration in a way that is sensitive to how background social inequality affects the distribution of health risks, both ex-ante and ex-post. Without committing to any particular distributive theory, the generic fairness argument explains why this sensitivity is important.

EXISTING COVID-19 ALLOCATION SCHEMES

The above discussion suggests that our distribution of healthcare resources in the face of the pandemic should be sensitive to social inequality. Disappointingly, however, when we evaluate current prominent proposals for distributing scarce resources, such as those suggested by Emanuel *et al* and those proposed by White and Lo, the initial impression is that social inequalities matter very little, if at all.^{38 39} Emanuel *et al* give a key role to utility and maximising benefits. Their framework identifies six core values: 'maximising benefits, treating equally, promoting and rewarding instrumental value, and giving priority to the worst off'.³⁸ From these, they argue that a number of recommendations follow: 'maximise benefits; prioritise health workers; do not allocate on a first-come, first-served basis; be responsive to evidence; recognise research participation; and apply the same principles to all COVID-19 and non-COVID-19 patients'.³⁸ The idea of the worst-off is, importantly for our purpose here, connected to age rather than socioeconomic conditions. They elaborate that maximising benefits will (often) mean giving priority to the worst off, because 'young, severely ill patients will often comprise many of those who are sick but could recover with treatment', therefore, their approach gives priority 'to those who are worst off in the sense of being at risk of dying young and not having a full life'.³⁸ However, due to the nature of pandemic rationing, the role of prognosis is also truncated: Emanuel *et al* write that 'Limited time and information in a COVID-19 pandemic make it justifiable to give priority to maximising the number of patients that

survive treatment with a reasonable life expectancy and to regard maximising improvements in length of life as a subordinate aim. The latter becomes relevant only in comparing patients whose likelihood of survival is similar'.³⁸ So, while there is a role for the broad idea that we should prioritise the worse off, this is mainly understood as capturing the young—and as a further reason for favouring the recommendations from benefit maximisation.

Another prominent ethical framework for rationing under COVID-19 is the Multiprinciple Allocation Framework, adopted by a number of US hospitals.³⁹ On this proposal, everyone in need is deemed eligible for critical resources. Every eligible person receives a priority score based on their likelihood of surviving with treatment and their life-expectancy after discharge. The score ranges from 1 to 8, where 1 is eligible for the highest priority. Age, or rather having gone through the fewest life phases, is then employed as a tie-breaker.³⁹

One interpretation of the above would be to say that socioeconomic positions and inequalities matter little for how scarce medical resources are allocated. However, it is not true that just because a framework does not explicitly include socioeconomic conditions among its rationing criteria, then the priority people receive is unaffected by the social circumstances. It could be the case that socioeconomic conditions affect priority-setting indirectly through their unobserved effects on the parameters that the allocation frameworks do take into account. This is seemingly something that White and Lo concede, as they have suggested that such concerns should be given more weight.⁴⁰

While socioeconomic conditions might play a role as a background factor in existing proposals for COVID-19 priority-setting, this is only indirectly so and with inadequate weight. The generic fairness argument, on the other hand, suggest that we make healthcare prioritisation much more directly and explicitly sensitive to existing social inequalities. This, we conclude, is a key lesson from the experiences of pandemic justice.

CONCLUSION

Our exploration of generic fairness considerations shows that we have strong reasons to prioritise the socially disadvantaged in pandemic priority-setting. This is surprising for at least two reasons. First, it runs counter to the commitment to equal access to healthcare which is so prevalent in welfare-state societies. Second, it seems to a large extent to conflict with cost-effective planning, which on reasonable empirical assumptions pushes in the other direction, as the socially privileged will typically live longer and thus treatment to them will likely be more cost-effective. Hence, the implications of our argument do not necessarily reach all the way into medical practice, and this might be for good reasons. Critics might object, for example, that giving special priority to certain social groups could threaten social trust and cohesion, and in turn exacerbate divisions in a time where solidarity is called for. For this and similar reasons, our argument should not be interpreted as an all-things-considered judgement on exclusive priority to the socially disadvantaged. Rather, what our exploration reveals, more modestly, is only that it is indeed more unjust when socially disadvantaged people suffer the health-related costs of pandemics than when socially privileged people do so. Consequently, deliberations on pandemic priority-setting should take social inequality into consideration.

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REFERENCES

- Rosenbaum L. Facing Covid-19 in Italy - Ethics, Logistics, and Therapeutics on the Epidemic's Front Line. *N Engl J Med* 2020;382(20):1873–5.
- Cesari M, Proietti M. COVID-19 in Italy: ageism and decision making in a pandemic. *J Am Med Dir Assoc* 2020;21(5):576–7.
- Craxi L, Vergano M, Savulescu J, et al. Rationing in a pandemic: lessons from Italy. *Asian Bioeth Rev* 2020;12(3):325–30.
- Grasselli G, Pesenti A, Cecconi M. Critical care utilization for the COVID-19 outbreak in Lombardy, Italy: early experience and forecast during an emergency response. *JAMA* 2020;323(16):1545–6.
- Joebges S, Biller-Andorno N. Ethics guidelines on COVID-19 triage—an emerging international consensus. *Crit Care* 2020;24(1):201.
- Farrell TW, Ferrante LE, Brown T, et al. A position statement: resource allocation strategies and age-related considerations in the COVID-19 era and beyond. *J Am Geriatr Soc* 2020;68(6):1136–42.
- Fraser S, Lagacé M, Bongué B, et al. Ageism and COVID-19: what does our society's response say about us? *Age Ageing* 2020;49(5):692–5.
- Jecker NS. Too old to save? COVID-19 and age-based allocation of lifesaving medical care. *Bioethics* 2022;36(7):802–8.
- Albertsen A. Covid-19 and age discrimination: benefit maximization, fairness, and justified age-based rationing. *Med Health Care Philos* 2022:1–9.
- Burki T. Equitable distribution of COVID-19 vaccines. *Lancet Infect Dis* 2021;21(1):33–4.
- Emanuel EJ, Luna F, Schaefer GO, et al. *Enhancing the WHO's Proposed Framework for Distributing COVID-19 Vaccines Among Countries*, 2021.
- Emanuel EJ, Persad G, Kern A, et al. An ethical framework for global vaccine allocation. *Science* 2020;369(6509):1309–12.
- Giubilini A, Savulescu J, Wilkinson D. COVID-19 vaccine: vaccinate the young to protect the old? *J Law Biosci* 2020;7(1):15aa050.
- Gupta R, Morain SR. Ethical allocation of future COVID-19 vaccines. *J Med Ethics* 2021;47:137–41.
- Gur-Arie R, Jamrozik E, Kingori P. No Jab, no job? ethical issues in mandatory COVID-19 vaccination of healthcare personnel. *BMJ Glob Health* 2021;6(2):e004877.
- Hassoun N. Against vaccine nationalism. *J Med Ethics* 2021;47(11):773–4.
- Albertsen A. A vaccine tax: ensuring a more equitable global vaccine distribution. *J Med Ethics* 2022;48:658–61.
- Bambra C, Riordan R, Ford J, et al. The COVID-19 pandemic and health inequalities. *J Epidemiol Community Health* 2020;74(11):964–68.
- Zameska J. Luck Egalitarianism and COVID-19: the case for compensating children for school closures. *Stud Philos Educ* 2022:1–17.
- Sky. Coronavirus: "Virus does not discriminate" - Gove. Sky News. Available: <https://news.sky.com/video/coronavirus-virus-does-not-discriminate-gove-11964771> [Accessed 17 Mar 2021].
- Rozenfeld Y, Beam J, Maier H, et al. A model of disparities: risk factors associated with COVID-19 infection. *Int J Equity Health* 2020;19(1):126.
- Cohen GA. On the currency of egalitarian justice. *Ethics* 1989;99(4):906–44.
- Holtug N. Prioritarianism. In: Holtug N, Lippert-Rasmussen K, eds. *Egalitarianism new essays on the nature and value of equality*. Clarendon: Oxford, 2007.
- Blane D. The life course, the social gradient and health. In: Marmot MG, Wilkinson RG, eds. *Social determinants of health*. Oxford; New York: Oxford University Press, 2006.
- Marmot M. Social determinants of health inequalities. *Lancet* 2005;365(9464):1099–104.
- Marmot MG. *The health gap: the challenge of an unequal world*. London: Bloomsbury, 2015.
- Jordan RE, Adab P, Cheng KK. Covid-19: risk factors for severe disease and death. *BMJ* 2020;368:m1198.
- Wolff D, Nee S, Hickey NS, et al. Risk factors for Covid-19 severity and fatality: a structured literature review. *Infection* 2021;49(1):15–28.
- Yang J, Zheng Y, Gou X, et al. Prevalence of comorbidities and its effects in patients infected with SARS-CoV-2: a systematic review and meta-analysis. *Int J Infect Dis* 2020;94:91–5.

- 30 Todd A, Copeland A, Husband A, *et al.* Access all areas? An area-level analysis of accessibility to general practice and community pharmacy services in England by urbanity and social deprivation. *BMJ Open* 2015;5:e007328.
- 31 Albertsen A, Knight C. A framework for luck egalitarianism in health and healthcare. *J Med Ethics* 2015;41(2):165–9.
- 32 Albertsen A. Personal responsibility in health and health care: luck Egalitarianism as a plausible and flexible approach to health. *Polit Res Q* 2020;73(3):583–95.
- 33 Segall S. *Health, Luck, and Justice*. Princeton, NJ: Princeton, 2010.
- 34 Nielsen L. Pandemic prioritarianism. *J Med Ethics* 2022;48(4):236–9.
- 35 Rawls J. *A theory of justice*. Original ed. Cambridge, Mass: Belknap Press, 1971.
- 36 Sunstein CR. Incompletely theorized agreements. *Harv Law Rev* 1995;108(7):1733.
- 37 Nielsen L. Contractualist age rationing under outbreak circumstances. *Bioethics* 2021;35(3):229–36.
- 38 Emanuel EJ, Persad G, Upshur R, *et al.* Fair allocation of scarce medical resources in the time of Covid-19. *N Engl J Med* 2020;382(21):2049–55.
- 39 White DB, Lo B. A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. *JAMA* 2020;323(18):1773–4.
- 40 White DB, Lo B. Mitigating inequities and saving lives with ICU triage during the COVID-19 pandemic. *Am J Respir Crit Care Med* 2021;203(3):287–95.