Allocating scarce life-saving resources: the proper role of age

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ABSTRACT
The COVID-19 pandemic has forced clinicians, policymakers and the public to wrestle with stark choices about who should receive potentially life-saving interventions such as ventilators, ICU beds and dialysis machines if demand overwhelms capacity. Many allocation schemes face the question of whether to consider age. We offer two underdiscussed arguments for prioritising younger patients in allocation policies, which are grounded in prudence and fairness rather than purely in maximising benefits: prioritising one's younger self for lifesaving treatments is prudent from an individual perspective, and prioritising younger patients works to narrow health disparities by giving priority to patients at risk of dying earlier in life, who are more likely to be subject to systemic disadvantage. We then identify some confusions in recent arguments against considering age.

The COVID-19 pandemic has presented clinicians, officials, and the public with stark choices about who should receive potentially life-saving interventions such as ventilators, intensive care unit (ICU) beds and dialysis machines if demand overwhelms capacity. Widely cited policies have incorporated factors such as likelihood of recovery from the acute illness, prognosis from underlying disease, and age.[1 2] Concerns about allocation schemes disadvantaging various groups of patients, including racial and ethnic minorities, older patients, and people with disabilities and chronic illnesses, have prompted controversy, debate and legal complaints.[3 4] As new COVID-19 variants increase pressure on limited critical care resources, these choices are likely to continue.

Many approaches to allocating scarce medical resources among different individuals in need face the question of whether to consider age.[i] For critical care treatments, schemes that emphasise saving the most lives focus on the incremental improvement in survival prospects with, as compared with without, treatment. In contrast, schemes that emphasise saving the most life years prioritise younger individuals, all else equal, since on average younger people have more years left to live.Conversely, for vaccines, older people might be prioritised, because risk of death if infected generally increases with age. But there is another way to approach age, one that does not hinge on the choice of metric. A prudent person, asked to select an allocation scheme from behind a veil of ignorance, would undoubtedly choose to incorporate age into that scheme.

Consider the following time-bending thought experiment. Your 25-year-old self and your 80-year-old self simultaneously have a life-threatening respiratory infection. Both selves will die unless they receive support from a mechanical ventilator. With support from a ventilator, however, both selves have equal and substantial likelihoods of recovering from the acute illness. However, only one ventilator is available. To which self do you allocate the machine?

The answer to this question is clear: you would allocate the ventilator to your earlier self. This is not because you value your earlier self more, nor even necessarily because your earlier self has more life-years ahead. Rather, it is logically entailed by the fact that, if you do not allocate the ventilator to your earlier self, your later self will never come to be. The existence of your later self depends on your deciding to allocate the ventilator to your earlier self.

This line of reasoning finds kinship in Norman Daniels's argument for the prudential lifespan account. In discussing how prudent planners would allocate healthcare resources across the lifespan, Daniels writes,

> …if I know how old I am and think about things only from the perspective of what I consider important at that point in my life, then I risk biasing the design of my insurance package…. To compensate for this bias, I should pretend that I do not know how old I am and will have to live through all the trade-offs I impose at each stage of my life.[5]

The prudential lifespan account is appealing because it reframes allocation decisions in intrapersonal rather than interpersonal terms. Daniels's approach has influenced policy decisions about whether to consider age when allocating scarce resources between patients. For example, the US Organ Procurement and Transplantation Network identifies it in support of prioritising children with end-stage renal disease for kidney transplantation.[6]

Despite its intrapersonal framing, the prudential lifespan account is typically applied to questions about societal priorities for healthcare that are inherently interpersonal—for instance, how to allocate resources between conditions that tend to occur earlier vs later in life. In these contexts, reserving some resources for old age can appear a reasonable gamble, one that accepts some risk of a shortened life in order to have a chance at a longer or happier one. But hypotheticals like the case above make allocating a life-saving resource such as

[i]We understand "age" here simply as the number of years a patient has already lived, that is, their chronological age. For a discussion of different conceptions of age, see Lippert-Rasmussen and Petersen 2020.[18]

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a ventilator to one's older self untenable: there will be no future self to benefit from the saved resources.

Beyond its prudential virtues, prioritising people earlier in their lives has an additional advantage: it counteracts underlying disparities that have been extensively documented during the COVID-19 pandemic. In the USA, early deaths from COVID-19 have been far more frequent among members of racial and ethnic minority groups. Approximately one-third of deaths among minority patients have occurred before age 65, vs 13% for white patients.[7] These disparities intensify for the earliest deaths: 78% of US COVID-19 decedents younger than 21 were minorities.[8] Because Black lives in the USA have been ended earlier by COVID-19, Black Americans—despite being much less numerous—have lost more years of life prior to 65 than white Americans; Hispanic Americans have borne a similarly outsized burden of lost years of life.[9 10] Disparities in COVID-19 deaths in the UK similarly appear to intensify at younger ages.[11] While these striking disparities are not attributable to scarce resource allocation policies, some such policies could inadvertently exacerbate them even while aiming to save lives.[12] And these disparities are not limited to ethnicity or to the COVID-19 pandemic: economically and socially disadvantaged people face higher overall risks of death earlier in life,[13 14] which means that people who survive to older age are less likely to have experienced disadvantage earlier on.

Recent arguments against considering age in allocation decisions for prudential or fairness reasons are unpersuasive. Archard, who chairs the Nuffield Council on Bioethics, has recently claimed that using age in COVID-19 allocation, other than as a proxy for prospect of benefit, necessarily involves 'unwarranted animus or prejudice' against older people.[15] He offers no support for this assertion. Allocating a ventilator to our 25-year-old selves does not involve animus or prejudice, but merely a prudent desire to ensure the existence of our 80-year-old selves. And the social choice to prioritise 25 years old over 80 years old where both face comparable risk does not enact animus or prejudice; rather, it reflects efforts to avoid exacerbating the effects of life-shortening disadvantage.

More unsettlingly, Archard asserts that allocation decisions should recognise that some 'deserve to carry on' more than others, and that '[it] is hard not to think that it matters what kind of life has been led and might still be led.'[15] Even if Archard were correct, incorporating such factors would not preclude considering age, but rather would support a multiprinciple system. And, more importantly, there are compelling reasons—endorsed in prominent frameworks for COVID-19 resource allocation[1 2]—to exclude judgments about deservingness and about whether some patients have led, or will lead, better lives than others. Unlike comparing how many years two people have lived, judgments of past deservingness or of how some have led their lives invite subjectivity and bias, as happened with the Seattle 'God Committees' used to allocate scarce dialysis machines.[16] And even if judgments of desert could avoid bias, it is doubtful that rewarding meritorious conduct with scarce, lifesaving resources is a proper aim of society or of medicine.

Archard also suggests that 'Luck and circumstances have a big role in how long we live, and it is not clear that we can speak of the length of a life as a good that can, and should be, distributed.'[15] But social and economic factors already play a great part in determining how long each of us has the opportunity to live. The question is not whether social institutions distribute years of life, but how to do so fairly. Prioritising people earlier in their lives who face high risk from COVID-19 can help counteract the effects of unjust, life-shortening social inequalities. A priority for younger patients will include more people who are subject to health disparities that reduce their odds of living a long life and expose them to higher risk of early death from COVID-19 and other conditions.

Last, Archard insists, paralleling others,[17] that age-based allocation 'publicly expresses the view that older people are of lesser worth or importance.'[15] This confuses each person's equal worth with their frequently unequal claim to scarce resources. Other social programmes, like assistance for first-time homebuyers or first-generation college students, prioritise those who have not yet received a valuable good and recognise that limited resources should go to those who have had fewer. They do not send the message that current homeowners or legacy students are 'of lesser worth,' but rather that their advantages affect their claims to limited resources. The same is true for age-based allocation in a pandemic that prioritises those who have lived through fewer years of life. Archard's suggestion is particularly strange considering the UK's embrace of age-based vaccine prioritisation—which does not express the view that younger people are of lesser worth, but simply the view that they, by and large, face lower risk if infected.

Decisions about allocating scarce life-saving resources are inevitably tragic. All plausible approaches involve trade-offs among competing values. Of all the factors that we might consider, however, age should be among the least controversial. Considering age to prevent early deaths is supported by an overlapping consensus of perspectives: prudent individual choice, maximisation of societal benefits, and reduction of health disparities.

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REFERENCES

1 White DB, Lo B, Lippert-Rasmussen K. A framework for rationing ventilators and critical care beds during the COVID-19 pandemic. *JAMA* 2020;323(18).
2 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.
3 Schmidt H. The way we ration ventilators is biased, New York Times, 2020. Available: https://www.nytimes.com/2020/04/15/opinion/covid-ventilator-rationing-blacks.html
4 Farrell TW, Ferrante LE, Brown T, *et al*. Ags 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.
5 Daniels N. *Just health: meeting health needs fairly*. New York: Cambridge University Press, 2008: 173.

6 Organ Procurement and Transplantation Network. Ethical principles of pediatric organ allocation. Available: https://optn.transplant.hrsa.gov/resources/ethics/ethical-principles-of-pediatric-organ-allocation/
7 Wortham JM, Lee JT, Althomsons S, *et al*. Characteristics of Persons Who Died with COVID-19 - United States, February 12-May 18, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69(28):923–9.
8 Bixler D, Miller AD, Mattison CP, *et al*. SARS-CoV-2-Associated Deaths Among Persons Aged <21 Years - United States, February 12-July 31, 2020. *MMWR Morb Mortal Wkly Rep* 2020;69(37):1324–9.
9 Bassett MT, Chen JT, Krieger N. Variation in racial/ethnic disparities in COVID-19 mortality by age in the United States: a cross-sectional study. *PLoS Med* 2020;17(10):e1003402.
10 Johnson A, Martin N. How COVID-19 Hollowed out a generation of young black men. ProPublica, 2020. Available: https://www.propublica.org/article/how-covid-19-hollowed-out-a-generation-of-young-black-men
11 UK Office for National Statistics. Updating ethnic contrasts in deaths involving the coronavirus (COVID-19), England and Wales: deaths occurring 2 March to 28 July 2020. Available: https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/articles/updatingethniccontrastsindeathsinvolvingthecoronaviruscovid19englandandwales/deathsoccurring2marchto28july2020#age-standardised-rates-of-death-involving-covid-19-by-ethnic-group
12 Schmidt H, Roberts DE, Eneanya ND. Rationing, racism and justice: advancing the debate around 'colourblind' COVID-19 ventilator allocation. *J Med Ethics* 2021. doi:10.1136/medethics-2020-106856. [Epub ahead of print: 06 Jan 2021].
13 Cutler D, Deaton A, Lleras-Muney A. The determinants of mortality. *J Eco Perspect* 2006;20(3):97–120.
14 Majer IM, Nusselder WJ, Mackenbach JP, *et al*. Mortality risk associated with disability: a population-based record linkage study. *Am J Public Health* 2011;101(12):e9–15.
15 Archard D, Caplan A. Is it wrong to prioritise younger patients with covid-19? *BMJ* 2020;369.
16 Jonsen AR. The God squad and the origins of transplantation ethics and policy. *J Law Med Ethics* 2007;35(2):238–40.
17 Bledsoe TA, Jokela JA, Deep NN, *et al*. Universal do-not-resuscitate orders, social worth, and life-years: opposing discriminatory approaches to the allocation of resources during the COVID-19 pandemic and other health system catastrophes. *Ann Intern Med* 2020;173(3):230–2.
18 Lippert-Rasmussen K, Petersen TS. Age change, official age and fairness in health. *J Med Ethics* 2020;46(9):634–5.