Triage and justice in an unjust pandemic: ethical allocation of scarce medical resources in the setting of racial and socioeconomic disparities

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ABSTRACT

Shortages of life-saving medical resources caused by COVID-19 have prompted hospitals, healthcare systems, and governmentsto develop crisis standards of care, including 'triage protocols' to potentially ration medical supplies during the public health emergency. At the same time, the pandemic has highlighted and exacerbated racial, ethnic, and socioeconomic health disparities that together constitute a form of structural racism. These disparities pose a critical ethical challenge in developing fair triage systems that will maximize lives saved without perpetuating systemic inequities. Here we review alternatives to 'utilitarian' triage, including first-come first-served, egalitarian, and prioritarian systems of allocating scarce medical resources. We assess the comparative advantages and disadvantages of these allocation schemes. Ultimately, we argue that while triage protocols should not exacerbate disparities, they are not an adequate mechanism for redressing systemic health inequities. Entrenched health disparities must be addressed through broader social change.

The Coronavirus Disease-2019 (COVID-19) pandemic has starkly illustrated the limitations of global healthcare systems, prompting governments and hospitals to develop crisis standards of care, including 'triage protocols' to ration scarce life-saving medical resourcesshould the need arise. Potentially rationed resources include but are not limited to ventilators, Intensive Care Unit (ICU) beds, critical care clinicians, blood products, COVID-19 testing, medications, and vaccines. The pandemic has simultaneously highlighted severe racial, ethnic, and socioeconomic health disparities around the world that have been centuries inthe making and that together constitute a form of structural racism.[1–3] A growing global body of evidence has demonstrated that the novel coronavirus disproportionately infects and kills racial and ethnic minorities as well as people of lower socioeconomic status.[4–6] Familiar social determinants of health cause worse pre-infection baseline health and higher risk of infection and fatality for these vulnerable groups than for more privileged individuals. This unjust starting point poses important ethical quandaries in developing a fair triage system to distribute scarce life-saving medical resources in a way that will maximize lives saved without perpetuating systemic disparities. Ultimately, we argue that while triage protocols should not exacerbate disparities, they are not an adequate mechanism for redressing racial, ethnic, and socioeconomic health inequities. Entrenched health disparities must be addressed through broader systemic change.

During a pandemic viral respiratory infection like COVID-19, the need for critical care resources such asventilators, ICU beds, blood products, dialysis or ICU staff could outstrip supply by as much as a 2:1 or even 4:1 ratio.[7] We all hope that this worst-case scenario will never come to pass, but in this time of uncertainty, hospitals and governments must prepare triage protocols to allocate resources, should need outstrip supply. Protocols should be transparent, consistent, and fair, developed with broad input from clinicians, ethicists, patients and community stakeholders.

Most triage protocols are 'utilitarian' in that they seek to maximise lives saved during a public health emergency by allocating life-saving resources to those most likely to benefit. For example, the Yale New Haven Health System triage protocol we developed directs critical care resources preferentially to those who: (1) require critical care support to survive, and (2) are most likely to survive to hospital discharge and for 1 year following discharge.[8] This overarching goal is consistent with the 2017 *Maryland Framework for the Allocation of Scarce Life-Sustaining Resources* on which our protocol is based, and with many government and institutional triage protocols developed for the COVID-19 pandemic.[9 10] All of these deprioritise patients who are more acutely sick (often as assessed by the Sequential Organ Failure Assessment) or who have survival-limiting comorbidities rendering them less likely to benefit (to survive) as a result of receiving critical care resources.

The risks of becoming acutely sick and having survival-limiting comorbidities—the characteristics that utilitarian triage protocols use to deprioritise and exclude people from receiving critical care resources—are largely driven by social determinants of health. Racial and ethnic minorities and people of lower socioeconomic status are more likely to work in service sector jobs that cannot be conducted remotely, more likely to depend on public transportation, more likely exposed to high levels of pollution, less likely to have access to affordable nutritious food, less likely to access preventive healthcare and more likely to encounter implicit bias when they do access the healthcare system.[11 12] These factors increase the likelihood of contracting COVID-19, developing survival-limiting comorbidities and becoming acutely sick. Accordingly, they increase the likelihood that marginalised populations will be subjected to triage processes and deprioritised in utilitarian triage protocols.

If critical care needs exceed resources and healthcare systems implement utilitarian triage protocols, marginalised populations may be disproportionately denied critical care support. This repugnant consequence should motivate us to consider alternatives to utilitarian allocation of scarce life-saving resources during the COVID-19 pandemic.

The optimal course of action is to maintain sufficient resources to provide quality care to everyone who needs it, and particularly to marginalised populations. Thankfully, most healthcare systems in Europe and North America appear to be achieving this goal during the first waves of the COVID-19 pandemic. We do not know whether there will be future waves, and if so whether they will be more severe. The 1918 influenza pandemic had a relatively mild vernal first wave followed by a far more deadly autumnal second wave, giving us reason to prepare for more severe future waves of COVID-19.

To avert the need to ration medical resources in future waves, governments and healthcare systems should coordinate increased supply of ventilators, ICU facilities and personal protective equipment, and accelerate research on antiviral medications, vaccines, ventilator multiplexors and other technologies. Governments can facilitate and lead these efforts through use of crisis response legislation such as the Defense Production Act in the USA and the Civil Contingencies Act in the UK. Resources should be preemptively directed to and stockpiled in marginalised communities because we have evidence that these communities will be particularly hard hit in potential future waves. Early COVID-19 testing, social distancing and—when necessary—lockdowns coupled with financial support should be used to detect and control future waves before rationing becomes necessary.

If need nonetheless outstrips supply of life-sustaining resources, alternatives to utilitarian triage should be considered. One such alternative is to distribute resources on a first-come, first-served (FCFS) basis. While on its face, such a system would appear to address problems associated with a utilitarian model, it introduces its own ethical failings, many of which are driven by the same social determinants of health. An FCFS system privileges those who are quicker to access medical resources—often those with the greatest power, knowledge and social connections.[13] Members of racial and ethnic minorities and individuals of lower socioeconomic status face barriers to accessing care, including lower levels of healthcare literacy, documented bias in the clinical setting and distrust of the healthcare system due to decades of discrimination and mistreatment.[11] Because vulnerable populations are less likely to be first in line, they are disproportionately likely to be denied critical care resources in an FCFS system. FCFS allocation systems, unlike utilitarian protocols, may also cause preventable deaths, by failing to prioritise individuals who are likely to benefit (survive) if they receive medical resources but who access healthcare later.

Another alternative to traditional utilitarian triage is truly egalitarian triage that uses a random process, such as a lottery, to allocate scarce medical resources. Egalitarian protocols reduce the disproportionate withholding of life-sustaining resources from vulnerable populations by ignoring factors associated with race, ethnicity or socioeconomic status. However, marginalised populations are still more likely to have medical resources withheld by an egalitarian triage protocol, because they are more likely to be sick and more likely to enter the lottery than other populations. Furthermore, egalitarian protocols are blind to patients' need or likelihood of benefiting from medical resources, and therefore may fail to maximise the number of lives saved with limited resources.

A final alternative to utilitarian triage is prioritarian triage that intentionally prioritises the worst-off. This might mean allocating scarce resources to the sickest patients first, or alternatively allocating resources first to minorities or people of lower socioeconomic status. In theory, such a system could reduce or even eliminate the disproportionate disadvantages faced by members of marginalised populations undergoing triage. However, prioritarian models redress health inequalities *only* for the few individuals subjected to the triage protocol—they do nothing for the majority of people suffering from health disparities throughout society. Further, prioritarian triage systems, like FCFS and egalitarian systems, may cause preventable deaths. To the extent that they are prioritarian, triage protocols do not allocate resources according to medical need or likelihood of benefit, meaning that scarce resources are more likely to be used in ways that provide no benefit to anyone. Prioritarian protocols also require governments or healthcare systems who implement triage protocols to make ethically and epistemologically complex decisions about who counts as a member of a marginalised population. This is an inadequate and potentially damaging response to the societal inequalities that COVID-19 has highlighted.

Ultimately, we should view the reprieve granted by the passing of the first wave of COVID-19 as a critical opportunity for governments and healthcare systems to expand life-saving resources and avert the need for triage protocols to be implemented. If triage protocols must be operationalised, we should understand that they generally are not adequate or effective means for redressing broad societal inequities or addressing structural racism, but can achieve the narrower goal of saving the most lives possible. The stark racial, ethnic and socioeconomic health inequities highlighted by the COVID-19 pandemic should serve as a call to pursue fairer and more equitable social policies on a broader scale. In the short term, these might include the distribution of personal protective equipment, stockpiling of critical medical resources in marginalised communities, targeted COVID-19 testing, stringent social distancing and lockdowns coupled with financial support. Longer term interventions might include universal healthcare, redistributive tax policy, housing support, recruitment of marginalised populations into the medical workforce and other broad public policy mechanisms.

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