

***Adding a Correction Factor to The Allocation of Scarce Life-Saving Resources in a Pandemic: One Step Closer to Dismantling Structural Inequities***

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ABSTRACT

COVID-19 exposed deep-rooted structural inequities. Allocation protocols developed during COVID-19 may cause furtherance of structural inequalities. In this essay, I specifically address the issue of structural inequities in the context of resource allocation during a period of crisis standard of care. In response to the increasing evidence of structural inequities during the pandemic, physicians and bioethicists Douglas White and Bernard Lo proposed incorporating a correction factor into resource allocation protocols. According to them, this would provide an advantage for disadvantaged individuals. The proposed correction factors use the Area Deprivation Index to determine eligibility. I argue that the correction factor is ethically justified and supported by Rawls's difference principle, Daniels's equality of opportunity, and Harris's double jeopardy argument. I also suggest that the proposed correction factor does not go far enough, particularly if used with other objective factors, such as SOFA scoring. At least one study shows that using SOFA scoring for resource allocation during COVID-19 has a discriminatory effect on non-Hispanic black patients. One problem with the correction factor using the ADI is that it only applies to those currently in the reflected socioeconomic status. Additionally, when only one hospital serves a largely socioeconomically disadvantaged community, all admissions will fall within the targeted category for application of the correction factor. Thus, further actions are needed to dismantle structural inequities, such as implementing load balancing or the planned sharing of resources among healthcare systems.

**Keywords:** Allocation, Correction Factor, Equality, Load Balancing, Resources, Protocol

INTRODUCTION

COVID-19 forced deep-rooted structural inequities to the surface. SARS-CoV-2 was a novel virus, but the connection between structural inequities and the disparate impact of the virus on marginalized populations

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is not. The history of pandemics reflects how much structural inequities negatively influence health equity.<sup>1</sup> The lack of preparedness and response to the structural inequities exemplify “blistering systemic failures.”<sup>2</sup> Despite warnings from prior threats from SARS and H1N1, we were unprepared for COVID-19. Antommaria and Chelen show that one-half of responding hospitals did not have an allocation protocol in place.<sup>3</sup>

When an influx of critically ill patients and limited resources required implementing a crisis standard of care, many hospitals quickly established protocols addressing the allocation of scarce resources. Most crisis standard of care (CSC) protocols reflect public health’s utilitarian focus on saving the most lives.<sup>4</sup> The utilitarian focus ignores the disproportionate impact resulting from structural inequities.

In December 2020, two physicians and bioethicists, Douglas White and Bernard Lo responded to the increasing evidence of the disproportionate impact of COVID-19 on disadvantaged communities by adding a correction factor to their CSC resource allocation protocol. The correction factor adjusts triage scores of individuals living in the most disadvantaged neighborhoods by subtracting one point from the triage score.<sup>5</sup> Patients with lower triage scores are more likely to receive life-saving care. Thus, subtracting a point provides an advantage.

The correction factor uses a composite measure of disadvantage to determine eligibility called the Area Deprivation Index (ADI).<sup>6</sup> The ADI is a geographic measure of socioeconomic disadvantage that calculates an aggregate disadvantage score on a 10-point scale. The ADI measures seventeen elements of disadvantage related to poverty, education, employment, physical environment, and infrastructure.<sup>7</sup> The correction factor compensates for structural injustices by using ADI scores of patients in the highest quartile of socioeconomic disadvantage or having an ADI score of 8 to 10 since the strongest association between ADI scores and health outcomes occur at the highest ADI levels.<sup>8</sup>

#### I. Ethical Justifications

Various theories of justice support applying the correction factor in the allocation of scarce resources. Rawls’s difference principle provides an ethical justification for the correction factor as it benefits the worse off in the event of resource allocation.<sup>9</sup> Applying the correction factor and subtracting one point from the triage score admittedly creates inequality among two otherwise like patients, but it is justified under Rawls’s theory since it gives the advantage to the least advantaged, addressing equity.

Norman Daniels’ argument for protecting fair “equality of opportunity” also supports the correction factor.<sup>10</sup> The correction factor protects the equality of opportunity for those denied access to care because of deep-rooted structural inequities exacerbated by the pandemic. Using the correction factor to provide access to life-saving resources compensates patients with diminished opportunities in other arenas like the social determinants of health.

Derek Parfit’s deontic egalitarianism supports the correction factor. Under Parfit’s view of deontic egalitarianism, justification of giving an advantage to the worse off depends on the reason for the inequality. If the unequal status results from circumstances such as a genetic condition or an accidental injury, like Daniel’s equality of opportunity, deontic egalitarianism does not support giving an advantage to the worse-off. If the unequal position results from the unjust actions of another, such as discriminatory treatment of people of color, deontic egalitarianism supports providing the advantage to address the inequity.<sup>11</sup> The disproportionate impact of resource allocation results from unjust treatment such as discrimination and structural inequity.<sup>12</sup>

John Harris's double jeopardy argument adds additional support to the correction factor in that<sup>13</sup> the socioeconomically disadvantaged or those facing racial or ethnic discrimination may have had an increased risk of contracting COVID-19 or having a severe case or death due to structural inequities. If the triage procedures do not compensate for the structural inequities and they are precluded access to critical care based only on traditional triage, they will suffer double jeopardy. The correction factor avoids this double jeopardy.

## II. Operationalizing the Correction Factor

Those opposing the correction factor might assert the infeasibility of mitigating inequities during a pandemic.<sup>14</sup> Yet one large US health system successfully applied similar criteria in allocating remdesivir<sup>15</sup> and the National Academy of Medicine endorsed disparity-mitigating criteria for allocating scarce vaccines.<sup>16</sup> Applying the correction factor is neither time nor resource intensive. It will not divert resources from the goal of treating illness and reducing morbidity. With the data available about COVID-19's disproportionate impact, not applying an available tool to lessen inequities is an abrogation of ethical duty.

One utilitarian argument asserts that we will save fewer lives if the prioritized patients are more likely to die despite interventions. Yet society bears responsibility for the social policies that created the disparities. Thus, there is an obligation to mitigate those societal problems, even when doing so might save fewer lives.<sup>17</sup>

Some clinicians argue that they should have discretion in determining triage scores. This objection to the correction factor in formulating triage procedures reflects the conflict between clinical and public health ethics. Implementing a CSC protocol shifts decision-making from the clinician to a triage committee and from an individual focus to a community focus. Allowing clinicians to determine triage protocols would increase the risk of decisions based on bias and subjectivity.

Another open question is whether the correction factor will achieve the intended goal. Nancy Kass suggests that without evidence to support the effectiveness, we cannot ethically implement the policy.<sup>18</sup> Thus, applying the Kass analysis, diverting a scarce resource to someone less likely to survive should require proof that doing so systematically would resolve or improve structural inequity. There is limited empirical evidence, but we may proceed with caution based on the presumptive data and the hypothesis that a triage allocation that uses a correction factor could help. Computer-based modeling or "tabletop" exercises applying the framework to actual patients but not enacting the protocols could assess the possible effects of the protocols.<sup>19</sup>

Perhaps the most robust rebuttal in response to the opposition of applying a correction factor is in an argument proffered by Douglas White *that no reasonable triage framework maximizes health outcomes if it creates significant inequalities*.<sup>20</sup> White's argument emphasizes the importance of addressing inequity.

## III. A More Robust Version of the Correction Factor

The burdens associated with any public health intervention typically fall into three categories:<sup>21</sup> privacy and confidentiality, risk to liberty and self-determination, and justice. Most burdens associated with allocating scarce resources fall under the justice category.

I not only disagree with the arguments against using a correction factor, but I also argue that the correction factor does not go far enough. First, using the ADI neglects consideration of people of color disproportionately affected by COVID-19 no longer living in a neighborhood with the highest ADI scores.

Based on new research, Sequential Organ Failure Assessment (SOFA) scores are also potentially discriminatory and not ideal for addressing structural inequity, racism, or ethnic discrimination in the triage setting, although they are applied to triage.<sup>22</sup> Second, public hospitals in socioeconomically depressed communities and rural locations may serve a population in which nearly the entire community will have ADI scores that qualify for application of the correction factor.

IV. Relying on ADI cannot protect all people disadvantaged due to their race or ethnicity

The ADI uses seventeen measures of socioeconomic disadvantage. Some racial inequality in healthcare is unrelated to socioeconomic status and can be missed by ADI. Racial inequality in healthcare may be directly related to implicit and explicit bias and past and current discrimination. But the correction factor will not help the Black patient not currently residing in a highly disadvantaged neighborhood or experiencing other vestiges of racism in the form of socioeconomic disadvantage. A correction factor that uses more information than ADI could make up for some of the weaknesses of SOFA as well.

V. When all patients have high ADI Scores

What happens when triaging occurs in hospitals serving populations where almost all patients have ADI scores of 8 to 10? To illustrate, I will use the example of Belle Glade, Florida, in western Palm Beach County.<sup>23</sup> The overwhelming majority of the neighborhoods served by the one public hospital, Lakeside Medical Center, is at a level 10 state decile, with a few neighborhoods at 8 and 9 state decile.<sup>24</sup> During a surge in that hospital, the correction factor will apply to every patient. The hospital must then resort to other considerations, such as random allocation. This potential dilemma suggests the need to consider further steps, such as load balancing, to lessen the inequities.

VI. Load Balancing

Load balancing is a plan in which hospitals report daily census and available beds. Patients are diverted or transferred to hospitals with open beds when one hospital is at maximum capacity. Although identified as a method to avoid the need for triaging, I suggest load balancing is also equity balancing, especially when the overwhelmed hospital is in a high ADI area.

Failures in load balancing exacerbate the harm to disadvantaged populations. Disadvantaged individuals are more likely to seek treatment in hospitals with limited ability to increase capacity or care for many critically ill patients. During surges in COVID-19, hospitals in poor neighborhoods were overrun by admissions and lacked resources to treat, while nearby private hospitals had available beds and resources.<sup>25</sup>

The Arizona Department of Health Services developed an effective load-balancing system to coordinate the statewide transfer of patients from overloaded hospitals to other hospitals.<sup>26</sup> The system dramatically improved access to care for people of color and rural populations.<sup>27</sup>

One of the state's foremost responsibilities is safeguarding the health and well-being of people threatened when health systems fail to cooperate. Voluntary load balancing is preferable, but if the healthcare systems are unwilling to cooperate and if voluntary efforts are ineffective, state governments should intervene and require private hospitals to take part in load balancing. When needed, public health officials should issue emergency orders to require hospitals to participate in load-balancing efforts, including accepting patient transfers that are not part of their covered population.

## CONCLUSION

Rawls's difference principle, Daniels's equality of opportunity, Parfit's deontic egalitarianism, and Harris's double jeopardy argument all justify and may even compel using the correction factor. COVID-19 turned academic and hypothetical discussions and debates about allocating scarce resources and making untenable choices of who lives and who dies to real-life responsibilities. Once hospitals move to a crisis standard of care, they may need to allocate scarce resources, so having systems in place that can compensate for past inequities and improve fairness in access to care is the ethical imperative. Dismantling structural inequities and reassessing allocation protocols should incorporate the correction factor as a new foundational framework and then build on it using load balancing and exercising caution if applying SOFA. It is an ethical responsibility to use these tools to dismantle the pervasive structural inequities when allocating scarce resources.

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