Reconciling Equity in the Discussion Draft of the Preliminary Framework for Equitable Allocation of COVID-19 Vaccine (2020)

Nicholas G. Evans
University of Massachusetts Lowell

Danielle M. Wenner
Carnegie Mellon University

J. Paul Kelleher
University of Wisconsin-Madison

The current "Discussion Draft of the Preliminary Framework for Equitable Allocation of COVID-19 Vaccine (2020)" (hereafter, "the framework") completed by a committee of the National Academies of Sciences, Engineering, and Medicine (NASEM) states that the framework is informed by the "moral imperative" of "mitigating health inequities" (pp. 37-38). This principle is listed alongside "maximization of benefits" and other principles in what the committee states is an "unranked" list (p. 35). We take this to mean that no principle is to receive absolute priority over any other foundational principle.

The committee also explicitly recognizes that the "proposed framework must not only be equitable but also be *perceived* as equitable" (p. 33, emphasis in original). In particular, the allocation principles that govern access to any vaccine must be seen as equitable by those groups that are disproportionately affected by the pandemic.

We are concerned that the committee's proposed allocation protocol is insufficiently responsive to the very inequities it claims are imperative to address, in large part due to its heavy emphasis on benefit maximization. We worry that this undermines the protocol's aspirations both to be substantively equitable and to be perceived as equitable.

We are also concerned that even should the committee wish to retain the priority given to benefit maximization in the current draft, the framework as currently stated will fail in this aspiration as well.

Both of our comments stress the impact that disenfranchisement from the US healthcare system has on members of socially marginalized communities.

1. Equity in the Draft Framework

The NAS committee acknowledges that COVID-19 has disproportionately harmed people and communities of color in terms of a) transmission risk of the disease; b) higher prevalence of serious nonfatal outcomes from the disease; and c) higher risk of death from the disease. The committee correctly notes that these inequities are not biologically based, but "are rooted in structural inequalities, racism, and residential segregation" (p. 37). It adds that

> …any vaccine allocation scheme designed to reduce COVID-19 must explicitly address the higher burden of COVID-19 experienced by the populations affected most heavily, given their exposure and compounding health inequalities. Mitigating those health inequities is, therefore, a moral imperative of an equitable vaccine allocation system (pp.37-38).

Yet the NAS committee substantially softens its commitment to equity when formulating the final allocation framework. After stating the committee's "risk-based criteria for operationalizing the foundational principles" (p. 45), the committee admits that these criteria do not "directly address health inequities" (p. 47). Instead, these criteria, and the phased allocation protocol they are said to support, seem predicated first and foremost on the concern to maximize benefits.

With the *de facto* primacy of benefit maximization in place, the committee then reframes equity as a "crosscutting consideration" in the phased allocation of vaccines (p.57). What they appear to mean by this is that within each phase, specific at-risk population groups within that phase should be prioritized according to the CDC's social vulnerability index (p. 57). They claim finally that their framework is now understood to "explicitly avoid perpetuating health inequities." (p. 76).

This phased strategy does not adequately mitigate health inequities in the greater population, and in failing to do so it risks perpetuating them. By broadly allocating to the general population last (Phase 4), certain communities are at at risk of beingoverrun by COVID before a vaccine becomes available for allocation under this proposal. This includes tribal reservations but may also include large communities of color that have already been hardest hit by the pandemic. Crucially, the committee's key phases are articulated in terms of groups that perform certain social roles or who have "comorbid and underlying conditions that put them at significantly higher risk" (p. 57). But there are a vast number of individuals whose environments, job prospects, and bodies have been shaped by social injustice and institutionalized racism, and many of these individuals may not currently serve in the prioritized social roles emphasized or may lack diagnoses of comorbid and underlying conditions. After all, a central dimension of health inequity is the degree to which members of socially marginalized groups have been historically disenfranchised from access to affordable health care services. We believe that if mitigating inequities is a moral imperative, many members of these socially marginalized groups who would currently fall into Phase 4 should be placed in higher phases, perhaps even Phase 1.

Further, the committee's application of their own criteria to specific population groups itself perpetuates health inequities insofar as the phases assigned to specific population groups inconsistently reflect the criteria scores assigned. For example, people in homeless shelters or group homes are placed in phase 2, despite three "high" risk scores and one "low" risk score, while older adults in congregate or overcrowded settings are placed in phase 1b with two "high" risk scores and two "low" risk scores. Similarly, incarcerated and detained people are grouped in phase 2 with risk score distributions (one "high", two "medium", and 1 "low") that

are identical to those of people with significant comorbid conditions who are grouped in phase 1b. Given the strong correlation between structural inequalities and racism with incarceration and housing insecurity, the population group assignments listed in Draft Table 2 are inconsistent with a commitment to either mitigate or avoid perpetuating inequities.

2. Maximizing Benefits in the Draft Framework

In some contexts, the goal of maximizing benefits is broadly consistent with the goal of promoting equity. This may actually be one of those contexts. However, the framework as currently written is unlikely to promote equity in its pursuit of benefit maximization. Specifically, the allocation criteria do not explicitly account for the risk of severe morbidity and mortality that might arise from a lack of access to healthcare. African Americans are roughly twice as likely to lack health insurance as non-Hispanic white Americans, and there is evidence that un- or under-insured individuals are more likely to delay seeking care until they have already developed a severe disease. Not only are marginalized communities more likely to become sick and die from COVID-19, but they are less likely to be empowered to capitalize on the social benefits that Phase 1 vaccinations are purported to provide to the community.

A maximizing strategy for allocation would seek, among other things, to prevent severe cases of disease including hospitalization. Yet at least some of the committee's Phase 1 groups are (given current estimates) at lower risk of hospitalization than are other groups. While healthcare workers have become seriously ill and have died from COVID-19, they are less likely to die from COVID during non-crisis periods when healthcare worker and PPE supplies are adequate. Moreover, reducing hospital loads by vaccinating at-risk individuals most likely to present with serious disease would reduce risks to other patients, reduce the stress and risk on hospital staff, and reduce resource consumption. A maximizing strategy would likely seek to reduce the number of serious cases of COVID-19, while maintaining existing risk mitigation practices in hospitals and other care settings.

In this sense, even a primary commitment to benefit-maximization may well conflict with the committee's current vaccine allocation framework.

3. Proposed Changes

The framework could be revised to both better promote equity and maximize benefits in three complementary ways. First, markers of inequity could be explicitly added as allocation criteria. For example, a criterion for "risk of experiencing significant economic harm from infection" would capture those who are un- or under-insured, as well as those who are likely to be harmed the most by long-term infections, missed work, or lengthy hospital stays.

Second, the specific population groups could be expanded to reflect populations that are most likely to be harmed by structural inequalities, racism, and residential segregation. This may include identifying specific geographic populations or other markers of vulnerability as those who are most directly harmed by structural inequalities, racism, and residential segregation. These groups could be listed for priority in vaccine allocation rather than leaving social vulnerability as a "cross-cutting" designation. Such an approach recognizes that fairness does not demand equal treatment, nor even merely the mitigation of ongoing unequal treatment, but rectification for existing and past harmful treatment.

Finally, the allocation criteria should be applied consistently so as to prevent the bias associated with certain population groups (such as incarcerated or unhoused persons) from undermining both the equity-promoting potential of the framework as well as the public's perception of the framework's equity. For example, the ordering of population groups could be explicitly based on the number of criteria on which specific groups are considered "high risk," to ensure that the risk-based criteria are applied consistently between populations. Or, if the sheer *number* of "high risk" designations is deemed less important than the *nature* of specific criteria that receive "high", "moderate", or "low" risk designations, then the committee should explain why (for example) a moderate risk of infecting others is not enough to place incarcerated people in the same phase as people with co-morbid conditions, who are listed as having a low risk of infecting others (pp. 52-53). Questions such as this also raise the possibility that the criterion of "societal impact" is not as neatly separable from the criterion of "risk of transmitting to infection others" as the draft framework suggests.

Protecting those who are most vulnerable to both the health and economic impacts of COVID serves both the goals of mitigating background inequities as well as maximizing the benefits of any vaccine proven safe and effective. However, as currently enumerated, the framework falls short of these goals.