

Prioritizing the Non-Infected Population for COVID-19 Vaccination: an Ethical Perspective

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Ethical considerations play a key role in the proposed frameworks for COVID-19 vaccine allocation. Based on a set of ethical principles, these frameworks make recommendations on those who should be prioritized for vaccination. WHO Strategic Advisory Group of Experts of Immunization (SAGE)¹, the National Academy of Medicine (NAM)², and the Johns Hopkins Center for Health Security (JHCHS)³ have issued frameworks for allocation and prioritization of COVID-19 vaccination. None of these frameworks have made any recommendations as to the prioritization of those who have not yet been infected with SARS-CoV-2 (non-infected group) over those who have been infected previously (infected group). Does this imply that giving priority to the non-infected group is not justified from the ethical perspective of these frameworks? In the following, we review the ethical foundations of these frameworks and show that prioritization of the non-infected group is not only consistent with, but also implied by, these ethical foundations.

Maximizing Benefits

The utilitarian principle of “maximizing benefits” (MB) is one of the basic ethical principles common to all the three above-mentioned frameworks. NAM’s framework is explicitly committed to this principle and WHO SAGE and JHCHS’s frameworks also endorse it under the rubric of “human well-being.” The MB principle requires vaccine allocation policies to reduce the incidence of morbidity and mortality and to prevent the spread of infection as much as possible. Naturally, this leads to the promotion of human socioeconomic well-being. So, if non-infected people are more vulnerable to getting the infection or to developing more severe forms

of the disease than recovered patients, then the MB principle will dictate that they should be given priority for vaccination over recovered patients.

In fact, a recent study has shown that natural immunity to SARS-CoV-2 infection lasts 6 months after recovery from COVID-19.⁴ Furthermore, another study has observed that “memory B cell responses do not decay after 6.2 months, but instead continue to evolve” and this “is strongly suggestive that individuals who are infected with SARS-CoV-2 could mount a rapid and effective response to the virus upon re-exposure.”⁵ Such evidence suggests that vaccinating recovered patients along with non-infected people evidently violates the BM principle, because the same supply of vaccine, if allocated solely to the non-infected, can decrease morbidity and mortality much more effectively at the population level. These considerations show that giving priority to the non-infected is an ethically justified decision based on the MB principle.

Promoting equity

Another fundamental principle common to all the three aforementioned frameworks is the principle of "promoting equity" (PE). According to the PE principle, vaccine allocation policies should ensure that factors such as gender, race, religion, and various forms of economic and social disadvantage do not affect priority decisions and that “all persons have equal opportunity to be vaccinated.” These frameworks also express their commitment to promoting equity through reducing health disparities and mitigating health inequities. Does giving priority to those who have not yet been infected violate the PE principle and create a new form of disparity?

We should note that prioritization of the non-infected group has nothing to do with irrelevant factors such as race, gender, religion, etc. and is simply based on a single biomedical criterion: it does not matter which population group you belong to, what matters is whether you have been previously infected by the virus. However, there may be concerns. Socioeconomically disadvantaged populations have had higher COVID-19 prevalence and faced more negative effects during the pandemic. Therefore, prioritization of non-infected people will result in excluding a large proportion of disadvantaged populations who have been previously infected from earlier phases of vaccination. This may initially seem to create a new health disparity.

To address this concern, we should note that there are ethical considerations—distinct from but tightly related to the PE principle—which advise us to take into account the vulnerabilities and risks faced by different population groups. For instance, JHCHS’s framework suggests that “people who are at high or highest risk of death or serious COVID-19 disease would have a claim to disadvantaged status” and therefore should be given priority for vaccination. As we have seen, recent evidence shows that recovered COVID-19 patients are immune from re-infection for up to 6 months (and even more) and hence they actually have less need for the vaccine. So we should be cautious that our efforts to mitigate the long-established health inequities caused by social and economic marginalization of disadvantaged groups do not result in prioritization of those who are not the “worst off” from the biomedical perspective.

Reciprocity

One argument for prioritizing health and other essential workers in resource and vaccine allocation is based on the premise that we should reciprocate accordingly individuals and groups whose activities have benefited others during the pandemic. WHO SAGE and JHCHS's frameworks for vaccine allocation include a "principle of reciprocity" (PR) which can be defined as "rewarding people for their past contributions." It can be argued that prioritization of those who have not yet been infected is ethically justified based on PR.

Many people, regardless of their occupational status, are able to take long-time preventive measures against infection and block further transmission of the virus by strictly following health protocols. They fulfill their social responsibilities more appropriately and deserve to be rewarded. Of course, we do not claim that every single person who has been infected has not been following the health protocols nor that all those who have not yet been infected strictly follow the protocols for the prevention of COVID-19. In making our point, we do not compare *individuals*, we compare *populations* and it is an obvious fact that the non-infected group ranks higher than the infected group in taking protective behavior against COVID-19. In designating groups to be rewarded by receiving priority for vaccination (based on their past contributions), we should not simply consider pre-established categories of "occupational groups"; the COVID-19 pandemic itself has divided the population in two new primary groups: "the infected group" and "the non-infected group." It seems plausible to claim that governments and immunization policies should reciprocate those who have not been infected and transmitted the virus to others by giving them some priority for vaccination.

Implementation

So far, we have shown that prioritizing those who have not yet been infected is consistent with, and results from, the ethical principles set forth in the various frameworks for COVID-19 vaccine allocation and prioritization. But the important *practical* question is how we should implement this prioritization. The proposed frameworks published so far by many organizations like WHO, CDC, etc. have prioritized different groups, such as health care and essential workers, the elderly and people with comorbidities. Should all those who have not yet been infected get vaccinated first across all groups and then the remaining population (i.e. recovered patients) get vaccinated in the same order? Or should we apply this criterion at the *intra-group* level and divide each priority group into two sections, "infected" and "non-infected" and then prioritize the latter over the former? Deciding either alternative goes beyond purely ethical considerations and requires more general, further evidence-based scrutiny.

Another practical question is how to distinguish infected from non-infected cases. There are several methods to make the required distinction. It could be done through an "honor system" or more strict methods using previous laboratory data or even by running new tests to find out if the subject has immunity to COVID-19. Although the last method has the advantage of being more

accurate in determining natural immunity but the laboratory turnaround time and costs associated with it will make it less practical compared to using previous laboratory data or honor-based questionnaire methods.

References

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