

## Fair allocation of scarce COVID-19 vaccines: who should get them first?

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Countries have reacted differently to the first wave of the COVID-19 pandemic in spring 2020, which varied from a strict lock-down approach (e.g. France) to minimal or no societal changes (e.g. Sweden). This variety in management strategies has resulted in different health outcome in different countries with varying infection rates and death tolls. Currently, clinical trials are testing potential treatment strategies such as hydroxychloroquine and aciclovir, yet there is no proven treatment for those who are already infected with COVID-19 and its related complications. It is shown that prevention of COVID-19 transmission can effectively be reduced with strict hygiene measures, social distancing, self-quarantining. However, eventually, vaccines are needed to reach group immunity on population level. On the long term, it is expected that vaccines will have the strongest prevention impact on a society and that it will be the most important intervention on population level for the transition back to a normal society. The hypothesis is that those who are vaccinated built immunity<sup>1</sup> against the coronavirus and that this consequently prevents disease and death from the virus and its complications. When the dominant proportion of a population becomes immune to the virus, a group immunity is built in such a population, which acts as a protective wall for those who are vulnerable. Consequently, the  $R_0^2$  decreases below one and the virus fades out. In short, vaccination reduces the risk of transmission of COVID-19 and thus risk to become sick and die due to complications. Vaccines are currently tested, but no

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<sup>1</sup> Strictly speaking, this is currently a hypothetical idea, since we currently do not have enough biomedical evidence that immunity against the coronavirus can be build. For the sake of simplicity, I assume that this is the case.

<sup>2</sup> indicates how contagious the virus is (i.e. to how many persons one infected person transmits)

vaccine is yet clinically approved. Although vaccines are still under development, the Inclusive Vaccines Alliance including the Netherlands, Germany, Italy and France bought recently high volumes of potential vaccines, which is expected to be delivered by the end of 2020.<sup>3</sup> The expectation is that the vaccines will be delivered in phases and that in early phases the vaccines will be scarce, hence the attempt of IVA to buy the vaccines already in an early stage. A second wave is expected in the near future, while healthcare systems of countries barely rehabilitated from the first one. In a hypothetical, but realistic scenario, the COVID-19 vaccines need to be distributed in phases following a certain strategy. Somehow, this strategy needs a transparent, moral justification. Therefore, already before the vaccines are developed the following moral question needs to be addressed: *who should get the scarce COVID-19 vaccines first?*

In this essay, I will address this question first from the four-principle approach.<sup>4</sup> I will argue that from the nonmaleficence and benevolence principles, healthcare providers should get the scarce COVID-19 vaccine first, which will maximize possible benefits and minimize possible harms. Then, I will argue that the prioritization of healthcare providers is fair and just from the perspective of Daniel's theory of justice. I will argue that in fact, such a distribution is not only fair and just, but that it makes justice and fairness itself possible in a society by ensuring that healthcare institutions function properly, which consequently makes the principle of equal rights, liberties and opportunities possible.<sup>5</sup>

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<sup>3</sup> <https://www.government.nl/latest/news/2020/06/13/contract-for-possible-coronavirus-vaccine-for-europe>

<sup>4</sup> L. Beauchamp & J.F. Childress, Moral Norms. The Four Principles Approach. In: Richard Ashcroft, Angus Dawson, Heather Draper, John McMillan (eds.) Principles of Health Care Ethics second edition Wiley, Chichester 2007, p 3-10

<sup>5</sup> N. Daniels (2001). Justice, health, and healthcare. AJOB, 1(2), p 2-16.

## Allocation based on moral principles

The four principles framework is constituted by the principles of nonmaleficence, beneficence, respect for autonomy and justice. Even though these principles are not guidelines on how to make moral decisions in particular cases, and even though there are no simple rules to use them in a certain context or to resolve moral conflict, they can together function as a framework. This framework can be used to morally justify certain decisions, recommendations or policies in a specific context, which in our case is the fair distribution of scarce COVID-19 vaccines during the pandemic.

The principle of nonmaleficence in medicine is crowned with the maxim *primum non nocere*; “above all, do no harm”.<sup>6</sup> In this context, a physician aims to avoid causing harm to patients through diagnostics, treatments or experimental research. Common morality tells physicians not to harm patients, not to cause pain or not to kill. However, in some cases, medical research may have some subtle risks to participating patients. Therefore, physicians and researchers performing biomedical research are obligated to submit their experimental studies to medical ethical committees, which look over these subtle and possible harms to patients using the principle of nonmaleficence. However, possible harms of diagnostics and interventions are not absolute and often are counterbalanced by possible benefits. The gamma radiation of a CT scan may cause harm to a baby, but the benefits of early diagnostics and with that, a treatment in a baby with possible hydrocephalus may outweigh the radiation harms. The principle of

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<sup>6</sup> L. Beauchamp & J.F. Childress, Moral Norms. The Four Principles Approach. In: Richard Ashcroft, Angus Dawson, Heather Draper, John McMillan (eds.) Principles of Health Care Ethics second edition Wiley, Chichester 2007, p 4

beneficence (meaning mercy, love, kindness) tells the physician to perform this CT scan, with the moral obligation to act for the benefit of the baby. Thus, the principle of beneficence may be seen as an extension of the principle of nonmaleficence.<sup>7</sup>

The rule of 'maximize possible benefits and minimize possible harms' of the principles of nonmaleficence and beneficence have a utilitarian perspective. During the pandemic healthcare providers (i.e. physicians, nurses, caregivers) are often named as frontline workers. Despite the unfortunate war rhetoric, there is some rationale behind it. Due to healthcare providers or in general healthcare institutions, COVID-19 patients, but also patients in general, receive medical treatment. During the pandemic, rates of infection and death tolls has been a direct reflection on how well healthcare systems functioned. In countries where the healthcare system malfunctioned or even collapsed, death tolls rose high and fast (e.g. Italy, United States: New York). Therefore, to maximize possible benefits and to minimize possible harms, we need a well-functioning healthcare system and the pillars of this system are constituted by healthcare providers. To maintain this system, to keep it functioning so that it can provide health services to the population and to those who are infected by COVID-19, and following the moral principles of nonmaleficence and beneficence, healthcare providers should receive the scarce COVID-19 vaccine first. Due to vaccination of healthcare providers, it can be expected that less healthcare providers will become sick, consequently less workers will call in sick and the healthcare system will maintain its capacity to care for patients. In contrast, without vaccination, healthcare providers will be infected and become sick more often, since they have the highest risk of being

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<sup>7</sup> Idem, p 5

infected (in fact, a significant portion of the infected population consisted of healthcare providers). As happened during the first wave of the COVID-19 pandemic, the healthcare institutions will lose capacity to care for other patients, eventually leading to a collapse and a rise in death tolls. It should be underlined that this prioritization is not justified, because healthcare providers have somehow more (moral) worth. I argue that they should be prioritized, because they are essential to keep the healthcare system functioning in response to the pandemic. In other words, they have more instrumental value.<sup>8</sup> In this same line of argumentation, it can be deduced that citizens constituting other institutions than the healthcare system that are essential in the pandemic response should receive prioritization after healthcare workers. These include (amongst others, non-hierarchical order): police and fire department workers, food and medicine store workers and those who work in the educational system.<sup>9</sup>

Although I have already argued who should be prioritized in receiving the scarce COVID-19 vaccine first, the question on why one should accept the vaccine in the first place at all needs also be addressed. I argue in context of the principles of respect for autonomy, nonmaleficence and beneficence that citizens have a moral obligation to participate and to contribute to the prevention of COVID-19 transmission. The principle of respect for autonomy states that the physician should respect the choices of a patient. Patients that deny statin prescriptions to prevent a second heart attack, despite strong medical advice to take the statins, should be respected by physicians. If informed well by the physician, patients are in general able to balance

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<sup>8</sup> J.E. Ezekiel, G. Persa, R. Upshur et al. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. *New Engl J Med* March 2020, p 5

<sup>9</sup> The aim of this essay is not to list those who should receive the vaccine first. The aim is to address the question who should receive the vaccine first by providing a general, moral justification based on the four principles and as we will see later, a theory of justice.

the benefits of preventing a second heart attack with the possible harms in terms of statin side effects and the effort of taking daily medicine. However, in case of the prevention of COVID-19, and this is the fundamental difference, the choice of not taking the vaccine does not only affect the individual itself, but has in particular a significant impact on others: it increases the risk of harm to others (infection, ICU admission, death, especially of elderly and those with known comorbidity) and decreases the risk of what else could be a benefit to others.<sup>10</sup> Therefore, in light of the principles of nonmaleficence and beneficence, there is a moral obligation to prevent the transmission of the virus and consequently to significantly decrease the risk of possible harms of the virus. The question on how far our moral obligations should reach was hypnotically raised by Verwij in 2007 in a scenario that reflects today's reality:

Now, if we assume that there is a moral requirement to prevent disease and not infect others, this supports the idea that persons who feel ill should not visit nursing homes or other places where there are at-risk persons. Or, one step further, given that one may be infected but not have developed symptoms, there are moral reasons not to visit such a place altogether, during the flu season. Or, even further, the requirement supports mandatory vaccination against the flu for everyone, as this will strongly reduce the risk of transmission of influenza, and hence contribute to protection of elderly persons and immuno-compromised patients. Again, what level of precaution can be considered obligatory? What level of protection do we owe to persons for whom influenza infection involves a serious threat to their health?<sup>11</sup>

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<sup>10</sup> Verwij M (2007). Preventing disease. In Principles of Health Care ethics, p 561

<sup>11</sup> Ibid

Today, during the COVID-19 pandemic, the restrictions that are hypothetically described above are the reality in our society. Visiting nursing homes with high risk persons are prohibited, people self-quarantined their selves for months and worked from home instead of office in spring 2020. Vaccines are not yet available, but the expectation is that they will be developed by the end of this year. Requirement of mandatory vaccination is not yet heavily debated, but I expect that this will be the case when the vaccines are in the end-stage of development (winter 2020). Mandatory vaccination can be justified if and only if the experts estimate the benefit to be substantial in the reducing the risk of COVID-19 transmission (which is currently the case) and iff the harms of vaccines are proven to be limited, i.e. that the vaccines are safe, such that the side effects are comparable with other known vaccines (i.e. low incident and mild side effects). Under these circumstances, we do owe this level of protection to those who are vulnerable, especially with a virus that seems to be more lethal than the influenza virus as hypothesize by Verwij. Regarding vaccine deniers, it can be morally justified to overrule the principle of respect for autonomy with the principles of nonmaleficence and beneficence, by implementing mandatory vaccination to protect the health of other citizens.

The principle of justice is one of the four moral principles and is concerned with distributive justice, amongst others. There is no single version of the principle of justice, but it commonly states that “like cases should be treated alike, or, to use the language of equality, equals ought to be treated equally and unequals unequally.”<sup>12</sup> The challenge of this formal principle of justice is that it does not explicate how to act in specific circumstances in the real world. One of theories

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<sup>12</sup> L. Beauchamp & J.F. Childress, Moral Norms. The Four Principles Approach. In: Richard Ashcroft, Angus Dawson, Heather Draper, John McMillan (eds.) Principles of Health Care Ethics second edition Wiley, Chichester 2007, p 6

regarding to the principle of justice is that of Daniel's theory of justice, which is an extension of Rawls theory of justice. In the next section, I will support my view that healthcare providers should be prioritized to receive the COVID-19 vaccine first. I will argue that such a distribution is not only morally justified from the principles of nonmaleficence and beneficence from a utilitarian perspective, but that such a distribution is also fair and just from a egalitarian perspective in a theory of justice.

### **Prioritizing healthcare providers; is it just and is it fair?**

The priority for healthcare providers to receive the COVID-19 vaccine can, as I will argue, also be supported by Daniel's theory of justice. Next to the utilitarian perspective to maximize benefit (i.e. save the most lives, generate largest amount of happiness), the distribution of vaccines first to healthcare providers is also just and fair from Daniels theory of justice, an egalitarian perspective. The allocation of scarce COVID-19 first to healthcare providers stabilizes the healthcare institution and healthcare system. This consequently preserves our health status as fully functioning citizens, participating in political, social and economic spheres of life and provides protection of equal rights, liberties and opportunities. The principle of equal opportunities for all citizens in this sense, lies in the core of Daniel's theory of justice, which is an extension of John Rawls theory of justice to health and the healthcare system. It should be stated that equal opportunities differ across countries based national factors such as economic strength, technological development, the stability of the society and the political apparatus. The importance here is that citizens with developed talents and motivation can get a fair share of the opportunities that are available in that particular country were they not ill or disabled.



The American twentieth century political philosopher John Rawls proposed a theory of justice. In short, this theory describes justice is in terms of fairness which expresses itself in institutional form through the principle of equal basic rights, liberties and opportunities such as the equal right to hold public office or equal access to jobs.<sup>13</sup> The equality of opportunity principle in Rawls' theory argues that "citizens with the same talents and willingness to use them have the same educational and economic opportunities regardless of whether they were born rich or poor."<sup>14</sup> However, this theory only draws attention to potential artificial factors that may threaten equal opportunities. There are also natural factors, i.e. sickness or disability, that may strike a person's life during a whole lifespan, consequently leading to unequal opportunities. Therefore, for Daniels, Rawls' theory does not represent the real world accurately, because it assumes its social contractors to be fully functional over a whole life span, immune for diseases or disabilities:

By subsuming the protection of normal functioning under (a suitably adjusted version of) his principle assuring fair equality of opportunity, I showed how to drop that idealization and apply this theory to the real world.<sup>15</sup>

Rawls' theory of justice does not appropriately take this reality into consideration. In other words, Rawls theory of justice undervalues the impact of disease and disability on the social contractors; those who are diseased or disabled have less opportunities to participate in different spheres of

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<sup>13</sup> Wenar, Leif, "John Rawls", The Stanford Encyclopedia of Philosophy (Spring 2017 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2017/entries/rawls/>>.

<sup>14</sup> Ibid

<sup>15</sup> N. Daniels (2001). Justice, health, and healthcare. AJOB, 1(2), p 3

society (e.g. someone with multiple sclerosis might have less chances than a healthy person, to obtain a certain job).

The central moral importance, for purposes of justice, of preventing and treating disease and disability with effective healthcare services (construed broadly to include public health and environmental measures, as well as personal medical services) derives from the way in which protecting normal functioning contributes to protecting opportunity. Specifically, by keeping people close to normal functioning, healthcare preserves for people the ability to participate in the political, social, and economic life of their society. It sustains them as fully participating citizens—normal collaborators and competitors—in all spheres of social life.<sup>16</sup>

Daniels extension of Rawls theory of justice embraces this reality and regards health and healthcare an important, or even necessary condition that makes Rawlsian equal basic rights, liberties and opportunities possible. Therefore, maintaining effective healthcare services by prioritizing its healthcare workers for COVID-19 vaccination to prevent disease is not only just and fair from this egalitarian perspective, it constitutes justice and fairness in Daniel's theory of justice. Indeed, the pillars of healthcare institutions are healthcare providers including physicians, nurses and caregivers and when they would fall off in a second wave of the COVID-19 pandemic, these institutions would collapse (e.g. Italy) and consequently, the principle of equal opportunities for all citizens would be threatened. It could be argued that the distribution of vaccines not on citizen level, but country level, could cause inequalities in Europe. The Alliance mentioned earlier bought high volumes of potential vaccines, whereas financially less strong Southern European countries may have difficulties buying these vaccines. It falls outside the

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<sup>16</sup> Ibid.

scope of this essay to discuss this point here, but from Daniels' theory of justice perspective, it could be argued that this Allianz has acted unjustly and unfair, since it might create unequal opportunities among countries (e.g. Greek healthcare system could collapse due to lack of vaccines, which in turn would create societal, economic and political disturbances).

It is not that Rawls' theory of justice completely ignores the importance of health and healthcare on establishing a society with equal rights and liberties. Next to the direct effect of healthcare workers on the stability of health institutions and the healthcare system, there are several social determinants of health. As Daniel argues:

by establishing equal liberties, robustly equal opportunity, a fair distribution of resources, and support for our self-respect —the basics of Rawlsian justice—we would go a long way toward eliminating the most important injustices in health outcomes.<sup>17</sup>

As the first wave of COVID-19 pandemic in spring 2020 already has shown, the pandemic can also increase inequalities in societies due to an increase in unemployment in certain branches and due to a decrease in access to educational systems specifically for families of lower socio-economic layers of a society. Experts fear that if the impact of the pandemic maintains for a longer time, these inequalities may grow larger. Therefore, any further transmission of the virus and the continuation of the pandemic should be prevented with effective hygiene measures, social distancing and when available, COVID-19 vaccines by prioritizing healthcare workers and consequently by stabilizing the healthcare system and ensuring a society with equal rights, equal liberties and equal opportunities the longer term.

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<sup>17</sup> Idem, p 6

Finally, I want to spend a few words on why I refrained from arguing in favor or against the prioritization of the scarce COVID-19 vaccination to a specific age subgroup in a population. From both the utilitarian and egalitarian perspectives as mentioned earlier in this essay, age is not the most relevant factor when to decide who should receive the scarce COVID-19 vaccine first. Utilitarian maximization of possible benefits and minimization of possible harms, as well as fair and just allocation from an egalitarian perspective (i.e. Daniel's theory of justice which focuses on healthcare and its impact on the equality of opportunities) depends not necessarily on age, but more on the impact of individual on the pandemic response itself. In other words, elderly who participate in one of the essential institutions such as in a hospital, nursing home or in a police department should receive the COVID-19 vaccination first. On the other hand, adolescents who does not participate in the pandemic response should not receive the vaccine with priority. Daniel's argues that pure rationing by age is permissible in conditions of scarcity because "fairness between age groups in designing a healthcare system is appropriately modeled by the idea of prudent allocation over a life span."<sup>18</sup> Others have argued that age rationing is permissible based on "fair innings" view (elderly should make room for youngsters who have had less opportunities). I should acknowledge that although I argue in favor of pandemic-response-participation rationing, instead of age rationing, it may be expected that the former will also indirectly have age implications, if one assumes that elderly are less likely than younger persons to actively participate in the essential institutions for the pandemic response.

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<sup>18</sup> Idem, p 5

## Conclusion

In this essay, I have argued that healthcare providers should receive the COVID-19 vaccine first. I have morally justified this prioritization from both utilitarian moral principles approach and an egalitarian theory of justice.

Based on the moral principles of nonmaleficence and beneficence, prioritizing healthcare providers will maximize possible benefits and minimize possible harms. It will maintain the function of healthcare institutions, which I deem to be the most important system in the pandemic response. Members of other institutions that also critically contribute to the pandemic response should also be prioritized in the distribution of the scarce vaccines. I have also briefly argued why citizens have a moral obligation to receive the COVID-19 vaccine in the first place at all. Citizens have the moral obligation to receive the vaccine with the aim to prevent further transmission and thus to minimize possible harms and maximize possible benefits from the principles of nonmaleficence and beneficence.

I have further argued that the prioritization of healthcare providers is just and fair from the perspective of Daniels theory of justice, which is an extension of Rawls' theory of justice. Healthcare providers and the healthcare institution maintains the health of the citizens. This is an essential condition in Daniels theory of justice that makes equal basic rights, liberties and opportunities possible. Therefore, I have argued that prioritization of healthcare providers in the distribution of corona vaccines is not only just and fair, but I have argued that it makes justice and fairness itself possible by maintaining healthcare institutions and consequently the principle of equal rights, liberties and opportunities.

Finally, I have argued against age-based distribution of scarce COVID-19 vaccines. From both the utilitarian and egalitarian perspectives mentioned in this essay, not age, but the degree of participation in essential institutions in the pandemic response should be the most relevant factor to morally justify who should receive scarce COVID-19 vaccine first.

## **Bibliography**

L. Beauchamp & J.F. Childress, Moral Norms. The Four Principles Approach. In: Richard Ashcroft, Angus Dawson, Heather Draper, John McMillan (eds.) Principles of Health Care Ethics second edition Wiley, Chichester 2007, p 3-10

N. Daniels (2001). Justice, health, and healthcare. AJOB, 1(2), p 2-16

J.E. Ezekiel, G. Persa, R. Upshur et al. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. New Engl J Med March 2020, p 1-7

Verwij M (2007). Preventing disease. In Principles of Health Care ethics, p 557-562

Wenar, Leif, "John Rawls", The Stanford Encyclopedia of Philosophy (Spring 2017 Edition), Edward N. Zalta (ed.), URL = <<https://plato.stanford.edu/archives/spr2017/entries/rawls/>>.