**Title: Why should HCWs receive priority access to vaccines in a pandemic?**

**Abstract**

***Background***

*Viral pandemics present a range of ethical challenges for policy makers, not the least among which are difficult decisions about how to allocate scarce healthcare resources. One important question is whether healthcare workers (HCWs) should receive priority access to a vaccine in the event that an effective vaccine becomes available. This question is especially relevant in the coronavirus pandemic as governments and health authorities prepare to distribute a COVID-19 vaccine.*

***Main text***

*In this article, we critically evaluate the most common ethical arguments for granting healthcare workers priority access to a vaccine. We review the existing literature on this topic, and analyse both deontological and utilitarian arguments in favour of HCW prioritisation. For argument’s sake, we focus in particular on the distribution of a COVID-19 vaccine. We also explore some practical complexities attendant on arguments in favour of HCW prioritisation.*

***Conclusions***

*We argue that – independent of the specific empirical characteristics of COVID-19 (i.e., virulence and prevalence) – there are deontological and utilitarian cases for prioritising HCWs. Indeed, the widely held view that we should prioritise HCWs represents an example of ethical convergence. Complexities arise, however, when considering who should be included in the category of HCW, and who else should receive priority in addition to HCWs.*

***Keywords:*** *COVID-19; vaccines; healthcare resource allocation; reciprocity; utilitarianism*

**Why should HCWs receive priority access to vaccines in a pandemic?**

**Introduction**

Many ethicists argue that healthcare workers (HCWs) should receive priority access to a vaccine in an influenza pandemic.[[1]](#endnote-1),[[2]](#endnote-2),[[3]](#endnote-3),[[4]](#endnote-4),[[5]](#endnote-5),[[6]](#endnote-6) Yet differing ethical justifications are offered as to *why* this is so. In this article, we identify and articulate the most common ethical arguments in favour of prioritising HCWs for access to a vaccine in a pandemic.[[7]](#footnote-1) For argument’s sake, we focus in particular on COVID-19 and a coronavirus vaccine, though we believe that the main thesis of this paper has application in other pandemic situations. We argue that – independent of the specific empirical characteristics of COVID-19 (i.e., virulence and prevalence) – there are deontological *and* utilitarian cases for prioritising HCWs. Indeed, the widely held view that we should prioritise HCWs represents an example of *ethical convergence*.[[8]](#footnote-2) Complexities arise, however, when considering who should be included in the category of HCW, and who else should receive priority in addition to HCWs.

In Section One, we discuss the impact of the coronavirus pandemic and consider what an effective COVID-19 vaccine would look like. In Section Two, we discuss the existing literature on the rationing of this particular medical resource in a pandemic. In Section Three, we canvas two ethical arguments in favour of prioritising HCWs (and add an additional ‘political’ argument). In Section Four, we outline some of the broader complexities of justifying an ethical framework for rationing vaccines that gives priority to HCWs.

1. **Background**

**1.1: The coronavirus pandemic**

The coronavirus pandemic is arguably one of the most serious public health challenges that the world has faced in the past century. There have now been over 40 million cases of COVID-19 and approximately 1.15 million deaths worldwide.[[9]](#endnote-7) While the impact of the virus has been particularly bad in countries such as the United States, Brazil and Russia, every nation has been severely affected – either by the virus itself or indirectly by the social and economic effects that it has wrought on societies. At writing (October 2020), a second wave of infections is devastating the northern hemisphere, with no end in sight. The thought that, as the virus spreads naturally in communities, herd immunity will become protective is not defensible, either ethically or scientifically. As Steven Novella points out:

…the worst possible path to take is through natural herd immunity. That is the path of maximum disease and death, with many perilous unknowns….We need to keep [flattening the curve] until we have an effective vaccine and can distribute it. That is the path to herd immunity, we just need the patience to get there.[[10]](#endnote-8)

Certain social groups and professions have been disproportionately affected by the virus. Older members of the community are known to be particularly vulnerable to severe illness if they contract COVID-19, and in many countries the majority of COVID-19-related deaths have been either in or linked to aged care homes.[[11]](#endnote-9) Social and ethnic minorities also face a higher risk of contracting COVID-19 and developing serious illness. The coronavirus pandemic has, for example, been particularly devastating for the African American community in the United States. African American individuals are over two-and-half times more likely to contract COVID-19, five times more likely to require hospitalisation, and two times more likely to die from the virus.[[12]](#endnote-10)

The impact of COVID-19 on HCWs is well-documented. Frontline HCWs are significantly more likely to contract the virus on account of their close-proximity to, and/or their contact with, coronavirus patients. Once infected, they are likely to spread it to their colleagues. The risk of contracting coronavirus is compounded where HCWs have inadequate access to personal protective equipment. A recent *Lancet Public Health* study conducted using US and UK data found that “front-line health-care workers had at least a threefold increased risk of reporting a positive COVID-19 test and predicted COVID-19 infection, compared with the general community, even after accounting for other risk factors”.[[13]](#endnote-11) Unsurprisingly, the study also found that “reuse of PPE or inadequate PPE were… associated with a subsequent increased risk of COVID-19”.11

**1.2: A potential vaccine**

Clinical trials for a COVID-19 vaccine are a source of hope for countries seeking a definitive exit strategy from the coronavirus pandemic. It is not yet certain that an effective vaccine will be produced, though the sheer number of clinical trials being conducted for COVID-19 vaccines gives one confidence that a successful vaccine candidate will be identified. Vaccines are of varied effectiveness, and – even presuming that a successful vaccine is produced – we do not know whether this vaccine will be effective for almost all recipients or for only a certain subset of the population. We should be careful about conflating vaccine *efficacy*, or disease reduction in a carefully controlled study group, with vaccine *effectiveness*, or disease reduction in a given population. Even a highly successful early stage clinical trial does not mean that a vaccine will be effective when rolled out among a larger number of participants. Apart from accidents – such as the polio “cutter incident” involving a production error in which active virus doses were delivered – it can be impossible to predict outcomes in the real world especially when apparently successful trials license ineffective and harmful vaccines, as occurred with measles in the early 1960s when some children developed atypical disease.[[14]](#endnote-12)

That being said, some vaccines are rolled out even with relatively low levels of efficacy, and the impact of these vaccines is still significant. Some influenza vaccines, for example, have an effectiveness of less than 50%, and yet influenza vaccines are still widely used and help to limit the impact of influenza in a particular flu season.[[15]](#endnote-13)

For argument’s sake, we will presume that an effective COVID-19 vaccine will be developed in the near future. With this in mind, we will consider how a vaccine ought to be distributed, and whether, in particular, HCWs ought to be prioritised.

1. **HCWs and pandemic rationing: a literature review**

In this section, we review the existing literature on HCWs and the rationing of vaccines in a pandemic. We argue that there is a broad consensus that at least some HCWs should receive priority access to a vaccine during a pandemic. This consensus takes two forms -- a consensus of scholarly opinion, and a convergence of rival ethical approaches. First, there is a broad scholarly consensus that frontline HCWs should receive priority access to a vaccine.1,2,3,4,5,6 Indeed, a recent critical-interpretative review of the literature by Williams and Dawson found that “the most commonly justified group given priority [in an influenza pandemic] was HCWs”.[[16]](#endnote-14) Theorists who have written specifically about rationing during COVID-19 pandemic have arrived at the same conclusion.[[17]](#endnote-15),[[18]](#endnote-16)

What we also see in the literature is convergence between competing ethical approaches to pandemic rationing (what we might call *ethical convergence*). Very different normative approaches (both deontological and utilitarian) give rise to the same policy conclusion, namely, that HCWs should be prioritised. In addition, a ‘deliberative democracy’ approach, that is, an approach based on community attitudes, converges with utilitarian and deontological rationing frameworks on the question of HCW prioritisation. Empirical data on community attitudes to healthcare resource prioritisation suggests that the public would support the prioritisation of HCWs.15,[[19]](#endnote-17)

There is, admittedly, disagreement in the literature about who counts as a HCW.14 Authors offer different parameters for the nature and size of this group based on professional status and proximity to pandemic-affected patients. Some authors give particular priority to those healthcare professionals who are directly involved in the distribution of COVID-19 vaccine.[[20]](#endnote-18) Others focus on HCWs who will assist in the pandemic response in any way.3 Indeed some of the arguments in favour of prioritising HCWs presuppose that they will be instrumental in supporting society’s response to the pandemic (frontline responders), whereas others apply to HCWs as such -- independent of their role in the pandemic response. There is another reason why our definition of a HCW is relevant to our judgements about healthcare prioritisation. If we offer a broad definition of the term HCW, then it seems that based on parity and logical consistency we should also prioritise the providers of other essential services – for example, people involved in transport, supply, law and order and so on.

1. **Deontological and utilitarian arguments in favour of prioritising HCWs**

In this section, we take a closer look at common ethical arguments in favour of prioritising HCWs. We have divided these arguments into two categories: deontological and utilitarian arguments.

Deontological-style justifications for HCW prioritisation

A first form of argument is deontological (with a contractual dimension). We have an obligation, as a matter of justice, to return good for good. A society should compensate HCWs for the sacrifices they make and the risks that they accept in providing protection and care for the community in the face of a pandemic. On this view, people ought not reap the benefits of social cooperation without contributing a fair share to producing those benefits. The contractualist dimension of this obligation is that HCWs are *owed* special treatment because of the contribution they make to the common good in healing the sick.

Several additional points can be made concerning this special contribution. First, healing the sick is morally meritorious, and – to offer two plausible analogues – just as we should reward those students who study hard, and just as we should properly remunerate rescue workers who place themselves in harm’s way, so too should we reward professionals who provide care for the sick. Second, HCWs have spent a lot of time and resources preparing themselves for their specialised role – they have studied hard, and made sacrifices. And third, these sacrifices do not aim purely at a personal benefit, but rather, they aim at doing something of significant social value. According to this argument, frontline HCWs are owed a reciprocal benefit in light of the sacrifices that they make in pursuing and fulfilling their professional role.

Another justification for the reciprocal duty to prioritise HCWs is the increased risk of infection taken on as part of their work. As Verweij writes:

If there is an increased risk to health care workers, then reciprocity supports giving priority access to protection and treatment in such a way that their risk will be similar to that of other citizens. (p.165)3

A critic might object to this argument by pointing out that it is part of the job for HCWs to take these sorts of risks (‘this is what they signed up for’). But that fails to distinguish the risks inherent in the profession that arise in the normal course of one’s occupation, compared with risks that fall outside this normal course. Plausibly healthcare work in a pandemic of the magnitude and severity of COVID-19 is not something that HCWs could be reasonably expected to foresee when they joined their respective professions. Admittedly, this is a matter of degree, but nevertheless, the history of pandemics comparable to COVID-19 reveals a justificatory infrequency: since the 1918 influenza pandemic there have been only four pandemics of comparable magnitude, including the H2N2 strain of Flu (1957), the H3N2 strain of Flu (1968), the H1N1 strain (2009), and the HIV/AIDs virus from the early 1980s. A HCW versed in this history might justifiably estimate its occurrence to be a once-in-a-career event.

A critic might also object that there is a problem with reciprocity arguments insofar as we seek to set a principled limit on their scope. As McGuire, Ausilio and Davis *et al* write:

If HCWs ought to be prioritized, why not these other groups as well? If not these, then why HCWs? A question is raised as to whether the reciprocity owed is due to risk taken or life-saving services rendered. In the latter case, first responders and bedside HCWs would arguably have higher priority than cashiers, but this is controversial. (p.18)16

The question, in other words, is whether we have an obligation based on reciprocity to prioritise essential service workers in general, and not just HCWs. We do not provide a detailed answer to this question due to the limited scope of this article. Suffice to say that other essential service workers should also be prioritised if empirical evidence suggests that they face a similar risk of contracting the virus. Justice requires that we treat like cases alike, and we would argue that the arguments already raised might well apply to essential service workers if the conditions we cited for HCWs also obtain. Alternatively, one might argue that there is something special about the healing professions that makes them worthy of priority. Yet it seems to us that arguments in favour of prioritising healthcare professionals can be extended to essential service professions generally.

Utilitarian-style justifications for HCW prioritisation

Utilitarian arguments are based on the idea that our actions ought to aim at the maximization of utility.[[21]](#footnote-3) Utility has been variously defined by philosophers as happiness, pleasure, well-being and preference satisfaction. In healthcare contexts, however, ethicists typically define utility in terms of concrete health and social outcomes. These include indices such as patient survival and quality of life, as well as the broader economic and social impacts of the provision of prophylaxis or treatment for population groups. Within this context, then, it might be argued on utilitarian grounds that we should give priority to HCWs because doing so will lead to less harm (or greater benefits) than would otherwise be generated on any other salient course of action. This general claim gets expression in a range of specific practical considerations that relate to the pandemic context.

First, there is the question of *efficiency* in stopping the spread of a virus, given that it is frontline HCWs who need to be available to care for the sick and thus minimise morbidity and mortality. Prioritising HCWs will allow us to maximise aggregate population health, particularly in a pandemic.14 Related to this, those HCWs who are directly responsible for rolling out the vaccine themselves should be among the first to receive a vaccine.

Second, since HCWs can infect patients, their own loved ones, and members of the community should they contract COVID-19, we should prioritise their access to a vaccine based on both their higher risk of infection as well as the higher likelihood that they will become ‘super-spreaders’.

Third, prioritising HCWs for a vaccine has the effect of ensuring confidence in the general citizenry – including HCWs – with respect to the healthcare system. HCWs will feel more confident of their safety in working with others, and patients will feel safer in coming to hospital. This is not a negligible point, considering the mounting evidence that fewer patients have been attending hospitals in the COVID-19 pandemic due to safety concerns.[[22]](#endnote-19)

Does this argument prioritise HCWs based on their social value? Does it open the door for socially loaded judgments about other groups in society who it might be argued should receive priority access to healthcare resources? As McGuire, Ausilio and Davis *et al* write,

Prioritizing HCWs for their instrumental value in the fight against COVID-19, however, involves an assessment of their relative social value. These assessments, while problematic in themselves, are notoriously susceptible to hidden biases and prejudices that may further exacerbate existing health, racial, and social disparities. (18)16

The claim that the rationale here disguises biases in favour of HCWs as a special group need not of itself bother the utilitarian. It becomes morally problematic on utilitarian grounds only when it can be shown that such biases lead to diminishing social utility.[[23]](#footnote-4) Moreover, the utilitarian may claim that in so far as the pandemic context is concerned – a relatively rare one-off event – the issue of biases will not manifest as a wider problem outside the pandemic emergency conditions. In any case, there is no contradiction in claiming that such biases may be addressed simultaneously with the emergency response to the pandemic in which HCWs are prioritised for the vaccine. Indeed, there are existing influenza vaccine distribution plans that profess to satisfy both these desiderata (i.e., they both prioritise HCWs *and* avoid socially loaded judgements that put minorities and vulnerable populations at a disadvantage.)[[24]](#endnote-20)

1. **Scope issues and implementation**

The arguments in the previous two sections demonstrate an ethical convergencein concluding that HCWs have priority when receiving a vaccine in a pandemic. Such convergence provides decision-makers – in government or hospital administration – as well as clinical and related staff, with some reassurance about the right way forward should we reach a point with COVID-19 where emergency protocols for distribution of the vaccine are triggered. Having a robust consensus in relation to the ethical foundations for political and policy decisions on this question is important, but nonetheless leaves open several unresolved questions relating to scope and implementation.

First, we need to consider who we ought to include in the category of ‘HCWs’. Certainly, there is a very strong case for giving priority vaccine access to HCWs directly involved in the distribution of a vaccine. Similarly, we have strong reason to prioritise HCWs who are likely to be in close contact with COVID-19 patients (for example, general practitioners, and those who are working at hospitals that provide care for coronavirus patients). The more difficult question is whether all licensed healthcare professionals should receive priority access to the vaccine. If one accepts the argument that medicine has a special role in a decent society, then one may be inclined to prioritise all HCWs on this basis. If, however, we take a utilitarian approach to rationing, it would seem appropriate to consider whether HCWs in general were at a greater risk of contracting COVID-19, or whether the risk was confined to a certain subset of HCWs.

Second, we need to consider the broader implications of using arguments based on reciprocity or utility. In particular, we need to consider the implications that these arguments might have for our approach to rationing in general. Reciprocity arguments may give us reason to prioritise essential service workers in general (for example, transport workers, those involved in food supply chains, and law enforcement officials), and not just HCWs.14 Utilitarian arguments may give us reason to prioritise people or professions that we deem significant in giving effect to relief measures when other kinds of resources run short (for example, logistics professionals, politicians, public servants, and so on).

Third, one consideration that we have not yet discussed but that is relevant to the legitimacy of public policy is, namely, community engagement. In addition to the convergence of ethical theories on the justice of prioritising HCWs for vaccines, it is important that health authorities seek where possible to engage relevant community stakeholders in their decision-making processes. McGuire, Ausilio and Davis *et al*, for example, note:

...community engagement strategies can exemplify the principle of respect for persons in community and thereby engender and promote mutual trust and shared accountability between [HCWs], their patients, and communities. In the unprecedented crucible of today’s COVID-19 pandemic, these goods, principles, duties, and values will be put to the ultimate test. (21)16

 At the very least, health authorities should be transparent with the community about the reasons why they have chosen to give HCWs priority access to a vaccine.[[25]](#endnote-21) The process of community engagement is an important part of providing a robust justification for prioritising healthcare workers in a pandemic.

**Conclusion**

There is widespread agreement that HCWs should receive priority access to a vaccine during an influenza pandemic, and, indeed, such a sentiment is echoed in the literature on resource allocation in the coronavirus pandemic. Different reasons are, however, offered for this conclusion – and many of these reasons are drawn from rival ethical frameworks. In this article, we have explored the justification that is offered for HCW prioritisation, and have considered what implications competing justifications might have for real-world vaccine rationing. We have provided an overview of the *ethical convergence* between rival normative approaches on the question of HCW vaccine prioritisation. We have responded to a series of objections that could be made to the prioritisation of healthcare workers on the basis of reciprocity or utilitarian considerations. We have noted an ambiguity in the literature concerning which HCWs should be prioritised, as well as whether other essential service workers, in addition to HCWs, should receive priority. Lastly, we adverted to the importance of community consultation when developing any ethical framework for healthcare resource allocation. We recommend that health authorities keep these considerations in view as they seek to develop a just and equitable framework for COVID-19 vaccine allocation.

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