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On the Ethics of Vaccine Nationalism: The Case for the Fair Priority for Residents Framework

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Abstract

COVID-19 vaccines are likely to be scarce for years to come. Many countries, from India to the U.K., have demonstrated vaccine nationalism. What are the ethical limits to this vaccine nationalism? Neither extreme nationalism nor extreme cosmopolitanism is ethically justifiable. Instead, we propose the fair priority for residents (FPR) framework, in which governments can

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retain COVID-19 vaccine doses for their residents only to the extent that they are needed to maintain a noncrisis level of mortality while they are implementing reasonable public health interventions. Practically, a noncrisis level of mortality is that experienced during a bad influenza season, which society considers an acceptable background risk. Governments take action to limit mortality from influenza, but there is no emergency that includes severe lockdowns. This "flu-risk standard" is a nonarbitrary and generally accepted heuristic. Mortality above the flu-risk standard justifies greater governmental interventions, including retaining vaccines for a country's own citizens over global need. The precise level of vaccination needed to meet the flu-risk standard will depend upon empirical factors related to the pandemic. This links the ethical principles to the scientific data emerging from the emergency. Thus, the FPR framework recognizes that governments should prioritize procuring vaccines for their country when doing so is necessary to reduce mortality to noncrisis flu-like levels. But after that, a government is obligated to do its part to share vaccines to reduce risks of mortality for people in other countries. We consider and reject objections to the FPR framework based on a country: (1) having developed a vaccine, (2) raising taxes to pay for vaccine research and purchase, (3) wanting to eliminate economic and social burdens, and (4) being ineffective in combating COVID-19 through public health interventions.

Keywords

fair priority; COVID-19; vaccines; nationalism; cosmopolitanism; mortality

The global supply of approved COVID-19 vaccines is likely to remain scarce for years to come. Governments are under political pressure to secure sufficient doses for domestic use. Countries have adopted many approaches to allay the fear of being left at the "back of the queue." About 190 countries, including about sixty-four high-income countries (HICs), have joined the international COVAX (COVID-19 Vaccines Global Access) facility, sponsored by the World Health Organization (WHO), the Global Alliance for Vaccines and Immunization (Gavi), and the Coalition for Epidemic Preparedness Innovations (CEPI), which purchases and distributes COVID-19 vaccines and other interventions to countries throughout the world.[1] Many governments have signed bilateral agreements with pharmaceutical companies that guarantee their countries a share of supply postapproval. And many countries have covered their bets by joining COVAX and signing bilateral deals.[2]

The number of doses secured by bilateral agreements in some cases substantially exceeds the population size of the countries in question. For example, in a bid to manage risk, Canada has signed deals with multiple companies for vaccine purchase options totaling over ten times its population.[3] Bilateral deals have enabled some HICs to have it both ways—obtaining options in case some vaccines do not succeed and securing priority to receive vaccines before having to decide when to relinquish additional doses that might become superfluous. The most serious potential consequence of such behavior is that many low- and middle-income countries (LMICs) will go with very little vaccine for months, if not years, until global vaccine production has overcome the problem of scarcity.[4] Vaccine efficacy appears to wane over the months after the dose has been received, which has prompted many HICs to provide a third shot for the general population. This threatens to further exacerbate vaccine scarcity. Another consequence is the rise of friction, resentment,

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and even antagonism between countries, or in some cases multinational alliances, when pharmaceutical firms are unable to meet the expectations of multiple parties at once. An early example occurred when U.K.-based pharmaceutical company AstraZeneca became unable to fulfill its EU contract, instead giving priority to the United Kingdom.[5] The EU threatened to stop vaccine exports to Northern Ireland, which continues to operate as part of the European single market. Ultimately, the EU rescinded its threat. However, this has deepened tensions between the U.K. and the EU. Similarly, for periods of time both India and the United States have restricted export of the COVID-19 vaccines they produce.

Governments justify their pursuit of bilateral agreements by claiming that they are securing sufficient doses to vaccinate each of their eligible residents in order to protect the health of their population. Other governments claim that they are entitled to their share early in production because they have funded COVID-19 vaccine development. These vaccines are a scarce, lifesaving resource. When governments procure large supplies of doses for domestic vaccination, this behavior raises serious moral questions. In a situation of scarcity and unequal access to COVID-19 vaccines, how many doses are countries morally permitted to secure for the purposes of vaccinating their own residents?

This problem differs from the problem of determining a fair international distribution of vaccines, which could be implemented by COVAX or other multilateral mechanisms. Elsewhere, we have defended a model for a fair international distribution of the vaccine.[6] Here, we focus specifically on national governments' obligations. The question in this article is about the extent to which national governments can permissibly prioritize domestic vaccination, in light of their responsibilities to their own citizens, even when their doing so deviates from the criterion of fair international distribution. And, when are wealthy governments ethically obligated to contribute doses to other countries?

Cosmopolitanism vs. Nationalism

Views on the ethical significance of borders lie on a spectrum. At one end, radical cosmopolitanism holds that people everywhere count equally in all moral contexts.[7] National borders are arbitrary historical artifacts without inherent moral significance.[8] Where an individual is born is wholly out of his or her control and should not affect access to lifesaving interventions,[9] such as an effective COVID-19 vaccine. The fundamental equality of all humans justifies a globally fair distribution of vaccines, and governments are not permitted to favor their own citizens if doing so deviates from this globally fair distribution.[10]

At the other extreme, radical nationalism rests on the view that a government's legitimating function is to protect and promote its own residents' well-being.[11] Radical nationalists hold that, as a result, governments are permitted—even required—to strictly prioritize their own people's interests. Thus, whenever they make agreements with pharmaceutical firms to reserve a supply of a vaccine for domestic use, even when that supply might otherwise have saved a large number of lives in other countries, governments act ethically. This view can grant that once a country achieves its domestic objective, such as arriving at herd immunity

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or vaccinating its entire population, it should share its vaccines globally. But it is not under any ethical obligation to share before that objective is realized.

In their radical forms, neither vaccine nationalism nor vaccine cosmopolitanism is ethically plausible. Radical nationalism neglects the basic moral claims of human beings beyond a country's borders. Obligating or merely permitting rich countries to achieve a full return to normalcy before distributing vaccines to countries still facing tens of thousands of deaths violates equal respect for individuals. For example, as of mid-July 2021, Peru, a country of 32.5 million people, had 2.1 million confirmed cases of COVID-19 and nearly two hundred thousand deaths. (Both cases and deaths are likely undercounted because of limited testing.) Radical nationalism holds that the government of the United Kingdom is morally permitted, indeed obliged, to privilege a return to full normalcy within the U.K. before distributing doses to Peru. However, it is wrong to ignore the suffering of others when it is in our power to help with little or no sacrifice or burden.[12] Radical nationalism implausibly neglects the responsibilities governments have to assist people abroad when doing so requires a comparatively modest cost to their own residents.

Radical cosmopolitanism, for its part, overlooks a government's special obligations to its own residents. National governments' claims to legitimacy depend, in part, on protecting their residents' fundamental interests, including their interest in health.[13] Furthermore, in the contemporary international order radical cosmopolitanism is unrealistically utopian. There is no political will to endorse, fund, and abide by a single global platform that could distribute vaccines strictly according to medical need—or some other criterion—without regard to national borders. Evidence for this claim can be seen in the existing international facility for vaccine purchase and distribution, COVAX, which has been underfunded for long periods, while bilateral deals continue to proliferate.[14]

But there is room between the two extreme positions for more modest forms of nationalism and cosmopolitanism, and it is in this space where most true debate on such issues takes place. A compromise between extreme vaccine nationalism and extreme vaccine cosmopolitanism might allow countries to prioritize the vaccination of some of their residents but then require them to donate any remaining doses to COVAX. This still leaves open the question of where to set the threshold beyond which vaccine doses must be sent abroad. On one possible and now outdated view, we should allow countries to reach herd immunity before holding them under a duty to distribute vaccines to other countries.[15] At the start of vaccine rollout, many HICs gave an indication that they would share vaccine supply with LICs once they had reached domestic vaccination targets. There is some evidence of sympathy with this position in the general populations of HICs.[16] Given the prevalence of new and increasingly transmissible variants of the virus, prospects for achieving herd immunity now seem to require vaccinating about 90 percent of the population, making that goal unrealistic in most jurisdictions. This may seem to undermine the possibility of an intermediate position and motivate a shift back toward radical nationalism: countries should be allowed to vaccinate their entire population—thereby enabling the full reopening of economic and social life—before having to distribute doses abroad. We disagree. We propose an alternative ethically justifiable and practical middle

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ground position, which is not undermined by the fact that herd immunity is no longer a viable policy aim: the fair priority for residents (FPR) framework.

Fair Priority for Residents Framework

FPR is a novel framework defining the moral limits on the amount of vaccine that governments can retain for their residents. It imposes a standard for sharing vaccine doses that is more demanding than allowing for a full reopening of social and economic life. It also provides a concrete and actionable standard for governments to act upon and for individuals to use in evaluating the moral conduct of those governments.

We are not the first to suggest such a middle position between nationalism and cosmopolitanism, but previous explications have not translated those conceptual considerations into an actionable framework. For instance, Ferguson and Caplan, in defending some limited role for national priority, explicitly decline to offer a solution to conflicts between national and international duties.[17] Similarly, Lie and Miller propose that COVAX, by requiring that countries donate vaccine doses to a global pool, can adequately balance competing duties between vaccinating a country's residents and saving the lives of citizens throughout the world.[18] But this obscures the extent to which donating to a global pool of vaccines undermines the ability of countries to prioritize some domestic supply. Jecker, Wightman, and Diekema elaborate an idealized global allocation scheme in light of limitations on nationalism.[19] But they fail to directly specify how much individual countries are ethically permitted to deviate from such a scheme in favor of their own residents. The FPR proposal provides a concrete and actionable standard for governments to adopt based on empirical data and for individuals to use in evaluating the moral conduct of governments in vaccine allocation.

The FPR framework proposes that governments are permitted to retain COVID-19 vaccine doses for their residents, but only insofar as they are needed to maintain a noncrisis level of mortality, while continuing to maintain reasonable public health restrictions aimed at reducing infection. A non-crisis level of mortality is one that obtains during familiar public health threats, which are typically not deemed sufficient to justify declaring a public health emergency. It includes both direct and indirect deaths from COVID-19, such as excess deaths resulting from reduced access to healthcare.[20] A practical way of translating this standard is that it constitutes the level of mortality that is experienced during a worse-than-average, but not terrible, year of influenza. While governments take action to limit mortality from influenza through vaccination campaigns and other public health measures, there is no emergency that requires actions such as mandating vaccines, restricting economic activity, closing schools, mandating face masks, limiting travel, closing borders, and the like. We call this the "flu-risk standard." FPR allows governments to take measures to return to a pre-pandemic mortality rate that society normally considers an acceptable background risk —the mortality burden present during a severe flu season.

Influenza is an appropriate comparison because, like COVID-19, it is a respiratory virus in which the affected population tends to be older patients and those with comorbidities. In the United States, 2017–2018 was a particularly harsh flu season with about sixty thousand total

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deaths, or 165 deaths a day, a death rate of 0.2 people per thousand, which constitutes 2 percent of all deaths that year.[21] This mortality rate can be viewed as a kind of normal or background risk. As noted, in such conditions governments take measures to limit infections and deaths, but do not take extraordinary measures either to limit social interaction, travel, and transmission or to mandate vaccination so that enough residents are immunized to attain herd immunity.

The point of this comparison is not to suggest that the existing measures to combat harsh influenza seasons are necessarily adequate. Indeed, perhaps countries should be doing more to prevent influenza transmission and mortality. Rather, it is that the flu-risk standard provides a nonarbitrary and generally accepted heuristic for understanding the comparative magnitude of public health threats. Excess mortality above this normal range represents a degree of harm that warrants greater interventions in social, economic, and educational activities than would normally be acceptable, such as those listed above; and significant financial investment in treatments, diagnostics, vaccines, and other public health measures. Just as a substantially greater degree of harm warrants deviation from routine public health strategies, that same degree of harm also warrants privileging one's own citizens over global need. However, when one country's excess mortality comes into line with the flu-risk standard while those of other countries surpass it, national obligations are not sufficiently weighty to justify declining to share vaccines abroad and save lives.

The FPR framework assumes the implementation of reasonable public health measures such as the wearing of masks in public or the installation of HEPA air filtration systems in public buildings, schools, and housing for the elderly. We do not offer a comprehensive standard for evaluating which public health measures are reasonable here. But measures like these are effective at limiting the harms imposed by the pandemic and are affordable to implement (at least for the wealthy countries that are holding the bulk of vaccine doses). They also do not impose significant costs or restrictions on individuals' social, economic, and educational activities. When public health interventions are effective, affordable, and impose low costs on individuals, they will typically be paradigm instances of reasonable public health restrictions. In some cases, the restrictions are not reasonable. When national, regional, and local authorities fail to coordinate with one another, restrictions are likely to be ineffective and thus unreasonable. In any case, these measures, such as the closing of educational institutions, are not needed in many highly vaccinated countries with vaccination levels considerably below herd immunity and even below 50 percent of the population. Moreover, controversial public health measures such as border closings are likely to become far less necessary once enough of a population is vaccinated to reduce mortality to the flu-like level. Once that is the case, discussions of what counts as a reasonable public health measure for dealing with COVID could revert to similar and familiar debates that occur about how to deal with the flu.

The FPR framework may appear overly focused on mortality to the exclusion of the serious but nonfatal harms that result from the pandemic, such as the nonfatal effects of infection or the loss of social, economic, and educational opportunities due to public health restrictions. But the framework's special attention to mortality is justifiable.[22] This is partly because of the unique seriousness of death. Unlike most other harms, death is irreversible and

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does not permit the compensation of victims.[23] There are also practical reasons for a mortality-focused standard. While the measurement of mortality is not without difficulties and complications, mortality is significantly easier to assess than other harms, especially when such assessments are necessary in the midst of a crisis.

Despite its special focus on mortality, however, the FPR framework does not ignore other harms resulting from the pandemic. Reducing excess direct and indirect mortality to the level allowed under the flu-risk standard would have two other important effects on nonfatal harms. First, it would allow countries' healthcare systems to function at near normal levels. This would not only reduce levels of indirect mortality under the pandemic[24] but also allow citizens to enjoy the benefits of ordinary healthcare access. Second, reducing excess mortality to the flu-risk standard would allow a safe resumption of close-to-normal social and economic activity, such as primary and secondary schooling, retail shopping, travel, indoor restaurant dining, and the like. Indeed, countries that have successfully reduced COVID-19 cases and mortality have been able to resume near normal social and economic activities while continuing to require reasonable public health restrictions.[25]

Yet the FPR framework's use of the flu-risk standard to define non-crisis levels of mortality may also seem misguided. Why place so much weight on countries' past standards for what counts as a non-crisis level of mortality? Drawing on countries' own standards allows the FPR framework to avoid controversy about precisely how emergency levels of mortality should be defined. In particular, it makes it difficult for countries with access to vaccines to object on the grounds that they have been treated unfairly. It is also practically important. There is the need for a principle that can be implemented ethically. Such a principle must fulfill at least three criteria in order to be action guiding and therefore effective. The principle must be: (1) understandable by average citizens, (2) justifiable to those very citizens who are expected to honor it, and (3) actionable in the context of a pandemic with limited and imperfect data. The flu-risk standard satisfies these three criteria. Conversely, more complex and ill-defined standards threaten to compromise them. For example, consider an alternative view where the acceptable mortality rate is whatever rate would obtain if governments fully discharged their public health obligations during every flu season, under circumstances where governments were not hampered by an unjust lack of resources. Determining the acceptable mortality rate would then require first agreeing on at least three morally controversial and epistemically demanding questions: (1) Which public health measures are governments normally morally obligated to take? (2) Counterfactually, how many flu deaths could have been mitigated if morally mandatory public health measures had been taken? (3) What is the extent to which flu deaths are attributable to an *unjust* lack of resources? In the context of a pandemic, it is highly impractical to rely on such complex calculations because decisions need to be made quickly and often without full information, and in all likelihood the debate will hinder what is most ethically needed: for rich countries to limit their vaccine nationalism and send doses abroad.

Relatedly, the flu-risk standard may seem inappropriate when applied to countries with a higher rate of flu morbidity, especially poorer countries with meager health resources. In the case of poorer countries, a lack of resources and infrastructure, rather than judgments about what is acceptable, will often explain levels of flu-related mortality. This makes the

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flu-risk standard less plausible as a way of defining nonemergency levels of mortality for these countries. If these countries were purchasing large quantities of vaccine for domestic consumption, then we would need a different way of operationalizing the non-crisis level of mortality referenced in the FPR. But the kind of vaccine nationalism that the FPR framework constrains is mainly practiced by higher-income countries that can afford to purchase vaccines in relatively large quantities. Using the flu-risk standard to define limits of partiality in this case is therefore appropriate and reflective of these countries' values.

Overall, the FPR framework relies on the idea that national governments have a special duty to reduce COVID-19–related mortality to pre-crisis, or influenza-like, mortality levels. Beyond that point, their duty to assist people in other countries threatened by COVID-19 outweighs any duty they have to further reduce mortality in their country from other causes.

The Fair Priority for Residents Framework and Limits on national Priority

Is the FPR framework ethical? The framework is meant to provide practical guidance that fulfills widely accepted ethical principles. It relies on two key ideas: the idea that national governments have a special interest in controlling excess mortality within their own populations and the idea that nonresidents whose lives are threatened have strong claims against foreign national governments for their share of lifesaving vaccines. These ideas have appeal for a broad range of views that exist between extreme nationalism and extreme cosmopolitanism.

Prioritizing domestic mortality reduction can reflect a special concern for residents, which may arise from their reciprocal social cooperation in political or economic life; their common subjection to state-imposed coercion;[26] or their sharing of a set of common values, culture, and historical references that make special concern for their interests morally appropriate.[27] In short, many different views that license national partiality can accommodate the special concern for residents exhibited by the FPR framework.

Perhaps less obviously, FPR is also compatible with rejecting any morally distinct relationship among compatriots. In the world we live in, one without a global government or global administrative institutions, people's fundamental interests are best protected by well-functioning national governments with special responsibilities for the lives of individuals who occupy the territory they administer.[28] This fact allows people who find cosmopolitanism appealing because they are skeptical of morally distinct relationships among compatriots to nonetheless sanction countries' permissions to prioritize domestic mortality alleviation as a means of satisfying general moral obligations.

While the FPR framework grants permission to a government to procure vaccines for its country, it forbids governments from prioritizing residents unless doing so is necessary to reduce mortality to non-crisis flu-like levels. This is true even when they could enjoy considerable social and economic benefits from the relaxation of public health measures made possible at higher vaccination rates. Whatever we think of the moral significance of social cooperation or ties of shared culture, it is difficult to see how a community's shared interest in returning to life without reasonable public health restrictions can override the

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interests of foreigners in survival. Once normal mortality rates are reached with reasonable public health measures—the flu-risk standard—the moral importance of saving foreigners' lives is much greater than the less fundamental interests of a country's residents. Under these conditions, national priority and vaccine nationalism can no longer be justified. This is why the FPR framework constrains governments' permissions to the reduction of mortality.

Vaccination may be the most desirable and effective device for reducing the spread of COVID-19, but it is not the only way to reduce mortality during the pandemic. Countries that are able to reduce mortality by other reasonable means do not need as many doses of vaccines as others to bring excess mortality in line with the flu-risk standard. As therapeutic drugs improve and become readily available in some countries, and healthcare workers gain experience in treating patients with COVID-19, the mortality rate may decrease. If fewer COVID patients need to be placed in intensive care, ICU units can be used for patients who might otherwise die of another illness such as heart disease, sepsis, or stroke. Some countries have done a good job of containing, and in some cases eliminating, the transmission of COVID-19 within their community with reasonable measures. Countries in this category may then give vaccine priority to their residents only if those measures no longer succeed at reducing excess mortality, as we are seeing in some countries such as Vietnam.

It is natural to inquire about the level of vaccination that, in a given country, would meet the flu-risk standard of the FPR framework. That is an empirical question that depends on many variables including the effectiveness of the vaccines used, the number of doses given to people, the vaccination rates in different age groups in the population, the transmissibility and case fatality rate of the variants in circulation, the interaction with populations in other countries, and other factors.

One might object that the FPR framework's opposition to vaccine nationalism is too revisionist. After all, many people believe that governments are entitled, and even obligated, to be partial toward their own members. This argument both is empirically misplaced and misconstrues the scope of the FPR framework. Furthermore, our critique is directed at the special case of partiality with respect to vaccine distribution in a global emergency. FPR does allow for *some* partiality. The analysis does imply that justifiable national partiality has to be consistent with the requirements of background global justice. But this general requirement is open to interpretation and, as stated, need not excessively restrict national partiality. Whether it ought to or not is a matter we pass over here.

Objections to the Fair Priority for Residents Model

FPR is controversial, especially in a political climate where extreme forms of vaccine nationalism seem to be widely endorsed and adopted by governments of countries regardless of income, from India to the U.K. We consider four objections.

Vaccine Nationalism and Vaccine Research and Development

High-income countries, such as the United States, Germany, and the U.K., and some middle-income countries, such as India, Brazil, and South Africa, could claim they should

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be allowed to vaccinate their entire population. They might argue that over many years and decades, they funded much of the basic science and research into mRNA and viral vectors that was instrumental in developing effective vaccines so quickly, developed the clinical research networks utilized to test the effectiveness of the vaccines, and/or created extensive manufacturing capacity for mass COVID-19 vaccine production.[29] Without years of investment, they could argue, there would not be an effective vaccine capable of being produced in large quantities, and that development would have taken many more years. Thus, these countries could argue that it would be unfair to ask them to incur the costs of public health restrictions for the sake of saving distant strangers.

However, these countries already reap appropriate benefits of their research investments. In addition to receiving the economic benefits that their pharmaceutical companies will get, they are at the head of the queue to receive their share of vaccines before distributing it to other countries. Additionally, the FPR framework allows countries that have experienced excessive levels of mortality, such as the United States and U.K., to be given priority in terms of timing: they can go to the head of the line and be first to obtain their permitted share of vaccines. However, once they have vaccinated enough of their residents to reduce mortality to non-crisis, flu-like levels, they are under an obligation to share surplus doses. Since timing is fundamental to handling the crisis, they could be prioritized in one way while still being restricted on *how many* residents they can ethically vaccinate before being required to share vaccine doses.

Furthermore, research and development in medicine is much more collaborative than this view assumes.[30] From the start of this pandemic, for example, scientists in both affluent and developing countries have shared crucial data, such as viral genome sequences and samples, especially of rapidly evolving variants, animal-testing results, and other relevant findings. Much of the skilled labor that academic centers and pharmaceutical companies employ in R & D comes from many countries. Materials used in vaccine development are also globally sourced. Chile, for example, provides the compound from the soapbark tree used in multiple COVID-19 vaccine candidates.[31] In addition, the testing of the effectiveness of vaccines, especially on emerging variants, occurs in many countries throughout the world. Overall, vaccine production parallels many other technologically advanced products in that no single country can actually develop, clinically evaluate, and effectively manufacture a vaccine wholly on its own.

Nevertheless, some countries have done much more than others to contribute to the development, testing, and manufacture of a vaccine. Even so, this is no basis for giving excessive priority to their residents just because these countries are disproportionately able to support vaccine research due to their wealth. Wealth should not determine whether a country has access to lifesaving resources. After all, it is unethical to allocate scarce livers for transplantation based on a patient's ability to pay or donate to liver disease research programs. Indeed, many people believe that the ability to pay should not determine access to lifesaving medical care of any sort. Recent public outrage surrounding the priority of COVID-19 vaccination given to donors of hospitals attests to the basic view that wealth should not be linked to receiving lifesaving resources.[32]

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Vaccine Nationalism and Taxes

A high-income country's government can accumulate an effective supply of COVID-19 vaccine because taxes have been paid by its residents and other people working within its borders. Moreover, governments may well have cut other important services in order to reallocate financial resources to vaccine purchases. Someone could object that in giving vaccine priority to its taxpayers, a government is not exercising partiality but merely providing a service that residents have paid for both through taxes and through incurring the opportunity costs of vaccine purchases. After all, in other cases, a country's taxpayers can expect that their government will use tax dollars to secure the best possible supply of resources, such as food, rather than send them overseas. Why can they not expect the same for the supply of COVID-19 vaccines when tax dollars have been collected?

However, appealing to a country having raised taxes to purchase a large vaccine supply is not more ethical than arguing a country deserves more vaccine because it is wealthy. To reiterate, wealth does not justify exclusive possession of a lifesaving medical resource for individuals or countries. At a national level, the capacity to raise taxes is largely dependent on a country's wealth, the nature of its economy, and whether it possesses institutions that can monitor transactions in ways that facilitate taxation of incomes and consumption. The fact that poorer countries have not set aside tax revenues for deals with pharmaceutical firms may likely be a reflection that such wealth is not available, rather than reflecting differences in expenditure priorities. Poverty does not mean a country should not have COVID-19 vaccine.

Vaccine Nationalism and Reducing Social and Economic Burdens

Countries that have suppressed the virus and minimized deaths through severe restrictions and lockdowns, such as Australia and South Korea, might object that applying the FPR framework for vaccine allocation disregards their sacrifice. They have endured substantial social and economic deprivations to reduce deaths directly and indirectly related to COVID-19. The flu-risk standard does not take those deprivations into account. It is unethical to ignore the real costs these countries have incurred to curtail the pandemic and only focus on COVID-19 related mortality.

In response, the FPR framework does not say that countries that have been subject to severe restrictions must continue incurring huge social and other costs. The framework requires only that all countries impose reasonable public health measures. It permits countries currently upholding severe restrictions to vaccinate enough people in order to fall back on reasonable public health measures without incurring excessive levels of mortality. Reasonable measures do not include sustained lockdowns, limiting nearly all international travel, and closing schools with adverse consequences for those working in low-income jobs and students' educational attainment. As argued, reasonable public health measures include those such as wearing masks in public spaces, maintaining social distance, and installing appropriate ventilation and air filtration systems. If flu-like mortality levels can be maintained with these measures in place, it is implausible to argue that these measures are so onerous as to exempt us from our obligation to save lives in other countries by sending vaccine doses.

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In addition, the experience of many countries now suggests a close link between COVID-19 cases, mortality, and economic activity.[33] Once COVID-19 cases and mortality are well controlled, normal or near normal social and economic activities can return. And many countries have controlled COVID-19 with reasonable public health measures that have allowed at least some major cities to largely avoid lockdowns or severe social and economic deprivations. For instance, from November 2020 to June 24, 2021, Australia had just three deaths due to COVID-19,[34] and no day on which active cases reached five hundred, in a population of about twenty-five million. While there was a lockdown in Melbourne, other areas of Australia, such as Perth, did not need a lockdown and had low infection rates. Consequently, the economic recession caused (mainly) by COVID-19 in 2020 ended in the fourth quarter of the year.[35] This recovery is of course precarious, particularly as there remains a possibility of infection rates rising again due to the spread of infectious variants. Infections have grown in the largest cities of Melbourne and Sydney, in part because Australia has been unusually slow relative to other HICs in distributing vaccines to its residents. Other "snap lockdowns," as were reintroduced in the spring of 2021 in Canada and France, go beyond reasonable public health measures. The point remains that economies are capable of recovering more readily so long as nonexcessive mortality continues. Using vaccines to forego reasonable public health measures, and not to prevent deaths, is not compatible with the FPR framework. At most, the FPR framework permits a degree of vaccination that allows restrictions to be loosened to reasonable levels without incurring excess mortality as a result. Countries that are close to being "COVID-free" are therefore permitted to obtain some amount of vaccine. Finally, it bears recalling that the social and economic burdens of LMICs under COVID-19 have been significant, with the World Bank projecting a huge increase in levels of extreme poverty.[36]

Vaccine Nationalism and Efficiency

Governments have responded to COVID-19 with varying levels of competence and success. This is partly due to luck, such as having borders that are easy to close to foreign travel, or a relatively low-density population in which the spread of infections might be slower. Nevertheless, some countries, such as the United States, U.K., and Brazil, have had poor outcomes in part because of institutional and political mismanagement. A government that is able to buy vaccine doses might thus argue that it has a right not to give doses to governments with a worse track record of managing the spread of infection. Why should Canada refrain from procuring vaccine so that Brazil, facing a bad outbreak because of government incompetence, can have more?[37]

This objection might be motivated by speculation that countries mismanaging the pandemic will waste vaccines or distribute them very inefficiently. However, as many countries have demonstrated, there appears to be little association between a government's ability to manage the COVID-19 pandemic and whether it effectively manages the vaccine rollout. Israel, the United States, and the U.K., for example, did poorly in controlling the pandemic at first, but have had comparatively efficient vaccination programs.[38] Furthermore, there is no relationship between an effective COVID-19 response and having the resources to make bilateral deals for COVID-19 vaccines with the pharmaceutical industry. Some poor countries have done relatively well at controlling infection rates, for example, Senegal,

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whereas some rich countries have done rather badly.[39] Finally, the FPR framework does not require that we should send vaccines to countries that are incapable of distributing and administering vaccine doses and will thus waste them. On the contrary: to do so would be unethical.[40]

The objection might alternatively be premised on the idea that a country's past poor COVID-19 management weakens its ethical entitlement to a fair share of global vaccine production. This view comes close to presupposing a questionable desert-based view of entitlements to basic resources. Moreover, citizens who are subject to ineffective regimes are victims of bad governance. To withhold the vaccine from those populations is to punish them for their government's incompetence, and to thus victimize them twice. This conflicts with any account that would allocate vaccines based on medical need and the prospects for lives saved. It also conflicts with the forward-looking view of the FPR model, which aims to distribute vaccines with the goal of minimizing future deaths.

Additionally, it may be possible to work around government incompetence instead of leaving populations without lifesaving vaccine. Indeed, in many authoritarian countries where governments have ineffectively handled the pandemic, there has been a marked increase in civil society mobilization and bottom-up organizing for crisis response, despite the personal risk to the volunteers involved. In Belarus, for example, where President Lukashenko dismissed COVID-19 as a "psychosis," a nationwide volunteer movement developed to support medical workers and schools.[41] The movement called #ByCovid19 is now working with UNICEF to streamline delivering PPE to frontline workers.[42] It seems conceivable that, at least in countries where governments have failed to take appropriate steps to manage the spread of infection, vaccines could be more effectively distributed through partnerships between international and civil society organizations.

Moreover, a country's performance is likely to change as institutions learn lessons and political leadership changes. Poor handling of the pandemic may accelerate such processes in countries that have free elections.

Institutional Implications

The FPR framework justifies limited national partiality—countries are permitted to prioritize their residents' interests in avoiding excessive COVID-19–related mortality rates, severe economic deprivations, and a collapsing healthcare system. It also constrains partiality by obligating countries to share vaccines with other countries to save more lives once the COVID-19 pandemic becomes a nonemergency with reasonable public health measures in place, akin to a bad influenza season.

One good way to implement the FPR framework would be for HICs to establish an international agreement to distribute vaccines along the lines of what we propose here for the framework. This would serve three purposes. First, consensus on the FPR framework among HICs would establish a principled norm with which to assure countries about one another's behavior, so that no country is taken advantage of by adhering to the standard. A shared standard would also make it easier for civil society, NGOs, and transnational

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activists to name and shame defecting countries and pressure them to adhere to their moral and contractual obligations. Second, it would give governments a response to their own residents' demands to prioritize a return to pre-pandemic life over sending vaccines abroad. Third, an international legal agreement in the form of a binding treaty would be less vulnerable to defection than a purely voluntary arrangement and would also give each signatory assurance that other states will also comply.

An important lesson from the COVID-19 pandemic is that the world urgently needs strong institutions in place to respond to global health emergencies in an effective, systematic, and ethical manner. Absent such institutions, high-income countries have scrambled to buy up more vaccines than they need, while low- and middle-income countries are left to rely on their limited resources or donations and charity. Not only does this fall short of what justice demands, it is also not the most effective way to end the global pandemic. An encouraging development is the emergence of COVAX, the international facility set up to enable universal access to COVID-19 vaccines. But the facility has been plagued with problems and requires improvements. Set up in the middle of a pandemic, COVAX is not a formal organization, lacks a clear governance structure, and consequently has been criticized for lacking transparency and effective accountability, undermining global trust.[43] These things, in turn, may curtail the political endorsement and financial support needed to conduct the kind of systematic approach to vaccine purchasing and distribution required to serve justice. Moving forward, governments have a collective responsibility to be proactive and establish a permanent and improved global institution empowered to deal with future emergencies. This they owe not only to their own residents but to everyone affected by the increasingly global nature of health crises in an interconnected world.

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