

# A vaccine tax: ensuring a more equitable global vaccine distribution

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## ABSTRACT

While COVID-19 vaccines provide light at the end of the tunnel in a difficult time, they also bring forth the complex ethical issue of global vaccine distribution. The current unequal global distribution of vaccines is unjust towards the vulnerable living in low-income countries. A vaccine tax should be introduced to remedy this. Under such a scheme, a small fraction of the money spent by a country on vaccines for its own population would go into a fund, such as COVAX, dedicated to buying vaccines and distributing them to the world's poorest. A vaccine tax would provide a much-needed injection of funds to remedy the unequal distribution of vaccines. The tax allows for a distribution that, to a lesser degree, reflects the ability to pay and is superior to a donation-based model because it minimises the opportunity for free-riding.

## INTRODUCTION

The total death toll from the COVID-19 pandemic has surpassed 4 million people. Therefore, vaccines provide a glimmer of hope in difficult times. However, vaccines also bring complex ethical issues to the fore. Some issues pertain to the relationship between state and society, such as how society should react when some refuse to take the vaccine.<sup>1–5</sup> Other issues are distributive, such as the order in which the population should be offered a vaccine.<sup>6–11</sup> All these discussions are important and interesting in their own right. But a different distributive question has presented itself: the global distribution of vaccines.<sup>1</sup> In recent months, the majority of COVID-19 related deaths have occurred in low- and middle-income countries. This reflects the unequal global distribution of vaccines. In January 2021, WHO Director Tedros Adhanom Ghebreyesus declared that the unequal distribution of vaccines placed the world on the 'brink of a catastrophic moral failure'.<sup>12</sup> Seven months later not much has changed. As of August 2021, 28.6% of the world's population has received at least one dose of vaccine. The comparable number in low-income countries is 1.1%.<sup>13</sup> <sup>ii</sup> Thus, while rich countries are currently vaccinating children down to the age of 12, vulnerable elderly remain unvaccinated across the globe.

This global inequality has spurred a debate over what a fair global distribution of vaccines would look like.<sup>17–19</sup> This article shares the sentiment in this debate (ie, that the current distribution is morally problematic). But if things are to

change, we also need to ask a different question: How should we raise funds to finance vaccines for low-income countries? This article proposes that we may do so by implementing a vaccine tax to supplement and boost current efforts to ensure a more equitable global distribution of vaccines. This proposal ensures that when a country buys vaccines for its own population, funds are also allocated for vaccines for low-income countries. The vaccine seller is tasked with ensuring that a fraction of the money received is reserved for this purpose.

## CURRENT PRACTICES: VACCINES AS AID AND COMMODITIES

WHO has launched an initiative called COVAX to ensure a more equitable distribution of vaccines. COVAX relies on monetary donations but also receives donations of excess vaccines. Thus, the funds available for acquiring vaccines (and sometimes the vaccines as such) come from countries that are willing to contribute. By February 2021, COVAX had secured another 1 billion vaccines to redistribute to low-income countries.<sup>20</sup> Ghana was the first country in the world to receive vaccines through this scheme,<sup>21</sup> and a distribution plan has been announced.<sup>22</sup>

Consequently, the current unequal distribution of vaccines is based on market requirements and assisted, donation-based acquisitions through COVAX. The main disadvantage of the market distribution of vaccines is that it distributes vaccines in accordance with the ability to pay and—if this ability is present—the willingness to do so. This means that vaccines go to the wealthiest countries, leaving the poorest in a vulnerable situation. The problematic nature of this distribution is exacerbated by the fact that low-income countries may be worse off in terms of their general capacity for dealing with the pandemic, whether in terms of adequate testing or intensive care unit capacity.

Leaving the disadvantaged, poor, and at-risk in a vulnerable situation during a global pandemic is unjust. At least, this seems to be the verdict reached by the most prominent theories on distributive justice. Regardless of whether we believe distributive justice entails eradicating unequal, bad brute luck,<sup>23,24</sup> <sup>25</sup> giving priority to the worse off,<sup>26</sup> or lifting people above a certain threshold,<sup>27</sup> <sup>28</sup> the current market-based distribution of vaccines must be deemed unjust<sup>iii</sup>. Fairness does not exhaust the relevant concerns here. Mutations may alter every

<sup>i</sup>For an important earlier discussion of such international issues in relation to vaccines, see.<sup>16</sup>

<sup>ii</sup>This pattern has been noticeable since the first vaccine pre-orders were announced.<sup>14</sup> <sup>15</sup>

<sup>iii</sup>For further discussions of justice and markets see.<sup>29</sup>



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society's ability to deal with the virus and even threaten the efficacy of vaccines. This means that every country has a self-interest in ensuring that other countries do not become home to new mutations. Thus, even from a non-egalitarian and consequentialist perspective, a more equal distribution of vaccines may be better if it brings us closer to a situation without large unvaccinated populations.

On the other hand, market distribution is not without its merits. It provides potential vaccine producers with the knowledge that vaccines will be bought at a market price. This creates an incentive to develop and produce vaccines. This is important because, while there are crucial concerns about the distribution of vaccines, we must also ensure an adequate number of available vaccines. While current production levels are lower than we would prefer, we must ensure that they are not lowered even further by initiatives to ensure an equal distribution of vaccines.

One potential solution to the problem would be to hope that those countries that are currently issuing foreign aid would channel some of those funds into vaccines for low-income countries. However, there are two problems with this.

The first problem is the diversion problem. On the assumption that increasing foreign aid will not be widely on the agenda during the pandemic, using foreign aid to provide vaccines would effectively reduce the amount of assistance given for non-vaccine purposes. During a global pandemic, we cannot expect the hardships of many of those living in low- and middle-income countries to be greater than before. Diverting funds from poverty relief is therefore problematic in itself.

The second problem is distributive unfairness and free-riding. If we assume that those who would donate vaccines are the same countries already giving most in foreign aid, they would also lift this burden. This means that those who currently give little aid would be doing less than their fair share. The donation-based system seems unfair in this regard, as it allows for free-riding from non-contributors. Having reviewed the current distributional problems and advantages in terms of incentives and the shortfalls of an aid-based distribution, we can now turn to an alternative.

## THE VACCINE TAX

Could a vaccine tax mitigate these deficiencies in the current model? This paper argues for an affirmative answer to this question. The purpose is not to present the exact institutional arrangement to allow such a tax to flourish. Instead, the paper presents the core ideas behind a vaccine tax, suggests several avenues for its implementation, and highlights some of its advantages. The simple idea behind the vaccine tax scheme is that for every vaccine bought, a fraction of the price paid for the vaccine is set aside to create a fairer vaccine distribution.<sup>iv</sup> Under the vaccine tax scheme, the selling firm is responsible for transferring the money raised in this way to COVAX.<sup>v</sup> The vaccine tax

should be understood as an amendment to the existing COVAX institution rather than an alternative. The proposal could thus be seen as an additional source of revenue for COVAX (in either its current shape, or in some adjusted form).

Would the burden of the tax fall on vaccine producers? This is an unlikely outcome. We may expect the demand for vaccines to be quite inelastic in terms of how increased prices affect demand. This means that while the sellers are responsible for paying the tax and thus, at least initially, represents a dent in their profits, this is not a very likely outcome. The companies hold a strong bargaining position in terms of making the buyers cover this expense. This is in one way desirable because it ensures that every country that buys vaccines will also contribute to a more equitable global distribution of vaccines. And this contribution will be proportional to how much they spend on vaccines for their own population.<sup>vi</sup>

The vaccine tax has several advantages. The primary advantage is that it contributes to a more equal global distribution of vaccines. This means that those living in low-income countries are to a lesser extent left to fend for themselves under the vaccine tax proposal than is currently the case. Naturally, the claim is not that their situation would then be fair but more modestly that the resulting distribution would be less unfair.

The discussion of the aid-based solution highlighted the potential unfairness of an unequal distribution of the burden of ensuring a more equal vaccine distribution. Under a vaccine tax scheme, countries contribute to a more equal global vaccine distribution in proportion to how much they spend protecting their own population.

The vaccine tax does not provide any disincentive to the producers of vaccines as they are ensured the expected price for their products. The incentives to develop and produce vaccines thus remain similar. Note further that the vaccine tax does not create any direct disincentive for countries that wish to buy vaccines. Their willingness to buy vaccines would stay unchanged, though they would get slightly fewer vaccines if they spent the same amount of money. However, if demand is inelastic, they would increase spending to ensure they get the same amount of vaccines. The vaccine tax effectively connects the contribution to a more equitable distribution of vaccines globally to each country's willingness and ability to protect its own citizens by acquiring vaccines. If effectively implemented, the tax would neither dissuade companies from producing vaccines nor countries from buying them.

The vaccine tax scheme as outlined here leaves open several issues of specification. Some of these choices relate to the size of the tax. What fraction is fair? The logic behind the vaccine tax is that those small contributions from many countries could pave the way for a substantial number of vaccines being bought. If this fraction was set at 1%, 10 vaccines would be redistributed to low-income countries for every 1000 vaccines purchased. There are good arguments for increasing the fraction to be paid, but attention should be given to the thought that too high a fraction might (rightly or wrongly) be considered unfair by the buyers.

Another issue to contend with is whether the tax should be a flat tax or progressive. Assuming that the above is correct and that the donation through COVAX will largely be paid by the buyers, this leaves the worry that some countries may significantly have to reduce their purchases. This would be an unwelcome consequence, given what has already been argued. For this reason, the fairest version of the vaccine tax may be a progressive one, where the

<sup>iv</sup>The tax could also be based on the number of vaccines obtained (ie, for every  $x$  doses bought,  $x/n$  doses are set aside for COVAX). The advantage of calculating the tax like this is that COVAX benefits from any favourable price obtained by the buying country—but presumably COVAX would also be able to negotiate good prices. The advantage of connecting the tax to the price paid is that it avoids discussions about the number of vaccine doses in a shipment; a calculation that is made harder by some healthcare systems' ability to extract more doses than intended by the producing company.

<sup>v</sup>I use COVAX as the example here, because it seems the most straightforward solution and because it is beyond the scope of the article to go into the discussion of how an ideal fund dedicated to making the global distribution of vaccines more equal would look like.

<sup>vi</sup>I am grateful to an anonymous reviewer for asking me to discuss these matters.

fraction allocated for COVAX is higher for high-income countries than for middle-income countries. It could also be considered fair to exempt low-income countries from the tax.

### IMPLEMENTATION: GETTING NATIONS AND PRODUCERS ON BOARD

If the argument presented above is correct, it shows that a vaccine tax placed on producers but predominantly paid by vaccine buying countries would be an attractive idea for procuring funds to alleviate the current unequal distribution of vaccines. Despite this, such a tax does not exist. Is this because it is unviable, or, perhaps, because countries are as unlikely to accept the tax as they are to donate money in the first place? In this section, I will suggest various avenues for how a vaccine tax could be implemented now or in the future. While there are no quick fixes among the proposed routes, they are all avenues that could and should be explored.<sup>vii</sup>

The most straightforward way of implementing the vaccine tax would be to persuade the producers to implement it.<sup>viii</sup> While there are many reasons for concern, with the fact that vaccines are produced and sold by very few companies, it may be advantageous in terms of implementing the vaccine tax. How could the companies be persuaded or incentivised to introduce such a tax? The first thing to consider would be to implement a principle that COVAX only buys vaccines from companies which comply with the vaccine tax. Thus, taking on the responsibility of ensuring that a share of the sum received for vaccines ends up in COVAX would be rewarded with the promise of future vaccine orders from COVAX. As this first step is only effective if some companies join the scheme, it is unlikely to be sufficient on its own. Another avenue would be to alter patent legislation. Then it could be a requirement for patent applications that the company adheres to the rules of the vaccine tax for all of its vaccines. Another possibility would be to condition public funding for vaccine research on participation in the vaccine tax. Those unwilling to do so would be denied public funding for vaccine research, which would provide another strong incentive to sign up for producers, especially given the negligent costs associated with implementing the tax.

A final possible avenue would be for international actors, such as the European Union (EU), to push for the implementation of a vaccine tax. The EU already has several conditions that any vaccine-selling company must fulfil to sell to the EU. Ensuring that any vaccine sale, whether to a member state or a non-member state, is subject to the vaccine tax could at least in principle be another such condition. The EU could also play a more direct role in implementing the tax. Inspired by recent efforts regarding the financial trade tax, it could introduce a counterparty principle which means that any vaccine that is bought from or sold to a member country is subject to the vaccine tax (ie, obliged to ensure that a contribution is made to COVAX). In the end, it might be the case that a perfectly implemented vaccine tax requires international agreements or changes in current tax legislation. Until this can be achieved, the briefly outlined piecemeal introduction may be what we have for now, but it would still constitute a massive improvement.

Finally, we may need to consider the question outlined at the start of this section. Why would any country push for the

implementation of a vaccine tax?<sup>ix</sup> If one of the main problems with the current system is that donations are not forthcoming, that may also mean that supporters of a vaccine tax would be few and far between. But there is a crucial difference between donations and the vaccine tax, which favours the latter. When donating to COVAX a country is making an important contribution, but this has no implications for whether others will contribute (unless the efforts inspire them). If a country pushes for the introduction of a vaccine tax, doing so will minimise the ability of other countries to free-ride. In the effort to introduce a vaccine tax, no country is a lonely champion in a sea of disinterest, unfairly lifting the burden that others should have taken. Instead, the effort to introduce a vaccine tax will, if successful, have implications for other countries and ensure that they contribute towards a more equitable distribution of vaccines.

This, of course, does not mean that a vaccine tax would solve all the distributive problems posed by the current vaccine distribution. The concerns addressed here pertain to the relative distribution of vaccines between countries. It remains an urgent matter of distributive justice to ensure that more vaccines are produced. The proposed vaccine tax scheme would not address this, but merely ensure that the absolute levels do not drop by keeping incentives intact.

### IS THE VACCINE TAX ENOUGH?

Currently, vaccine producers, who own the rights to develop specific vaccines, gain large profits.<sup>x</sup> This remains true in cases where the research that paved the way for the vaccine was partly or fully publicly funded. In light of this, some might consider the vaccine tax proposal insufficiently radical. For those, the supposed advantage of ensuring that incentives are kept as they are is not an advantage but rather a manifestation of the proposal's inability to deal with the real problems of the current state of vaccine procurement and production.<sup>xi</sup> The vaccine tax leaves the expense of ensuring a more equitable global distribution of vaccines squarely with the countries that buy the vaccines. Critics might ask if we could let the vaccine producers bear a larger share of the economic burden or adjust the current patent structure in other ways than those needed to introduce the vaccine tax.

The vaccine tax is not a radical proposal. It is conceived as a piecemeal improvement of a system that is flawed in many ways. It cannot be expected to address all these flaws. For those among us who are unhappy with both how large profits are reaped by vaccine producers, and the global distribution of vaccines, there would be a need to implement a vaccine tax alongside other measures. Then the important question is whether the vaccine tax could complement various initiatives to address shortfalls beyond the global distribution of vaccines. The rest of this section shows that this is indeed the case.

Consider first the idea of compulsory licensing.<sup>32</sup> Under such measures, a government permits a local manufacturer to produce a product for domestic consumption without the patent owner's consent.<sup>xii</sup> Such a measure may increase the number of vaccines available, decrease the profit of patent owners, but would not in itself improve the availability of vaccines in low-income countries (unless the compulsory licensing was done in a

<sup>vii</sup>I am grateful to an anonymous reviewer for asking me to discuss these questions of implementation.

<sup>viii</sup>For an argument that the producers do have obligations towards the worst off, see.<sup>30</sup>

<sup>ix</sup>I am grateful to an anonymous reviewer for asking me to discuss this.

<sup>x</sup>Also large compared with other industries.<sup>31</sup>

<sup>xi</sup>I am grateful to an anonymous reviewer for asking me to discuss this.

<sup>xii</sup>I am unsure how this would square with Moderna's stand about not enforcing patents during the pandemic<sup>35</sup> For a critique of this, see.<sup>36</sup>

low-income country, but this is unlikely). If compulsory licensing was introduced in a rich country, which was previously buying many vaccines, this would mean that more vaccines were available for others—but would not in itself ensure that they reach low-income countries. The same is true for the proposal that the EU should buy patent rights,<sup>33</sup> or that intellectual property rights should be suspended to increase the number of vaccines available.<sup>34</sup> These measures may increase vaccine production and be implemented alongside a vaccine tax. But without the latter, their positive impact on the global distribution is uncertain.

Another proposal has been to penalise what some consider to be hoarding of vaccines. This issue was raised in those countries that eventually decided not to use the AstraZeneca vaccine but had bought considerable amounts. If it could be implemented, nothing in such a practice would ensure that the vaccines were allocated fairly instead of being sold off to the highest bidder.

In sum, the vaccine tax does not solve all the problems with vaccine production. But it can work alongside other proposals to solve other problems and can seemingly complement them.

## CONCLUSION

This article has put forth the idea of a vaccine tax as one response to the current inequitable global vaccine distribution. The tax is expected to be paid by vaccine-buying countries. This approach is preferable to a market-based distribution of vaccines that distributes vaccines according to the ability to pay. Likewise, this approach is also superior to a model where countries donate vaccines and money as an aid-based humanitarian effort. The vaccine tax could and should be implemented alongside measures to increase the number of vaccines available.

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