

Reassessing the VaxTax

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ABSTRACT

To counter the imbalance in vaccine distribution during the COVID-19 pandemic, Albertsen and more recently Germani *et al* have suggested a new system of taxation coined as 'VaxTax' that would force higher-income countries to fund the access of low-income and middle-income countries (LMICs) to new vaccines in times of pandemic. I will argue that this idea faces numerous challenges of ethical, sociopolitical and economical nature that may hinder any effort to solve the numerous health challenges that LMICs face. I argue that while it is an interesting idea, it is neither sufficient nor will it ever be easily implemented because of socioeconomic or practical reasons.

INTRODUCTION

In order to fund vaccination programmes of low-income and middle-income countries (LMICs), Albertsen¹ and, on this proposal, Germani *et al*² have proposed to establish a taxation system that would allow for better distribution of vaccines worldwide. Germani suggests that this tax would only intervenes after countries ordered past a certain threshold. For each time that the total coverage of the threshold has been reached, the tax would go up, forcing high-income countries (HICs) to either pay or avoid vaccine hoarding. For example, if the threshold is set at 60% of the population, then every further purchase will be submitted to taxation. As the orders keep being made, the taxation rate may increase as well. For example, if the US ordered twice the doses necessary for 60% coverage, the taxation would increase from 15% to 30%. This would mean tremendous burden for countries that bought more than a few times the number of doses that would be enough for their whole population as have done several HICs. The funds collected would be then used to fund the purchase of vaccines for LMICs. Albertsen and Germani *et al* suggest that the funds would be then managed by international organisations such as the WHO, through its cooperative project COVAX (COVID-19 Vaccines Global Access), GAVI (Gavi, the Vaccine Alliance) or the European Union.

Why a vaccine taxation system makes sense

The idea of vaccine taxation makes sense for several reasons. First, justice is a binding principle in the ethics of healthcare. If we consider that healthcare is a right rather than a privilege, it becomes evident that solutions must be provided to make vaccines available, especially during pandemics. As of today, LMICs suffer from alarmingly lower rates of vaccination against COVID-19,³ whereas HICs have bought enough doses to vaccinate their population multiple times. In this context of inequality, ideas must be provided to avoid such problems in the

future. The 'VaxTax' is, in this perspective, a promising prospect for better distribution of necessary resources. As Germani *et al* have remarked, this system has the advantage of not creating a disincentive for the producers of vaccines, ensuring that they keep manufacturing their products thanks to the incentive of profits. It also has the advantage of being just and fair to a part of the world that is systematically disenfranchised when it comes to healthcare. Considering Germani *et al*'s suggestion, another of this system's advantages is to dissuade richer countries from preordering excessive amounts of vaccines. It can serve as a reminder for richer countries that resources are limited and should be put to the best use possible, that is, focusing national vaccination to a certain vulnerable population instead of ordering doses to classes of population that may less need it while insuring access to vulnerable people from LMICs (who are arguably the world's most vulnerable populations, and therefore, the population that needs it the most). This tendency, coined 'vaccine nationalism', is permitted by a 'first come first served' principle of standard markets. The 'VaxTax' could be an interesting policy to adopt against this kind of practice. Finally, this kind of aid may prove necessary as vaccines as well as logistics have seen their prices go up as new products and new challenges arise.⁴⁻⁶ Nonetheless, these advantages are indeed interesting, especially considering that such a policy may seem easy to implement. However, it might face difficulties around its applicability.

From which point?

The first difficulty we are going to deal with is the one of threshold setting. This threshold is the point beyond which the tax comes into effect. The main problem with Germani *et al*'s proposal (Albertsen's has other problems but not this one), that can be addressed to the 'VaxTax' as a more general framework is that there is no objective threshold that exists in nature that we can use to establish said threshold. On the contrary, this threshold must first be acknowledged as being somewhat arbitrary, as even though there are several parameters that can be derived from the reality of the situation, the fact that we choose one measurable parameter over another can be subject to controversy. Germani *et al* are conscious that such a threshold can be arbitrary. They propose that it is fixated on the rate of herd immunity. But a problem that is for example visible during the COVID-19 pandemic is that the herd immunity rate has changed over the pandemic and that even then, reaching herd immunity may not be feasible.^{7,8} Furthermore, let's imagine that a new virus threatens us with a pandemic. Let's also assume that this virus has an important propensity to mutate but already has a vaccine that works



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against it. Let's then add that a system of taxation was introduced after worldwide agreements. What would happen if, for example, after a country bought enough vaccines for 90% of their population, the virus became less contaminating? Would they be more heavily taxed as the herd immunity rate lowered? Would the treasury of said country receive a sort of reimbursement if, for example, the rate required to reach herd immunity were to be raised, making the excess orders 'less excessive'? It would become even more problematic if an emergent variant with a different 'herd immunity rate' appears like Omicron for SARS-CoV-2 while another less infectious variant is still active. Then, which rate should the tax depend on? These examples aim to show that the applicability of such a programme would be very complicated if not unfeasible if we based the threshold on the required vaccine-induced herd immunity in a highly mutating pathogen.

Another problem is the kind of population we use to establish this threshold. Because pandemics require rapid vaccine development and distribution, we may not want to include children because their safety profile differs from the usual population used in clinical trials. Even if children should be counted in order to calculate the number of doses needed to reach herd immunity, it could also pose problems of compliance if parents refuse these vaccines for their children, as show the data for children vaccination against COVID-19. This becomes a problem when trying to calculate the threshold from which the taxation system triggers, because not counting children would make the taxation threshold too early without reaching effectively herd immunity, but counting them would make it so that the taxation system never triggers because they may not be vaccinated enough.

Finally, herd immunity, depending on the pathogen, may need to be maintained by repeated vaccinations, which would necessitate boosting the population to keep the rates needed for herd immunity. This means that boosting should be considered in the setting of the threshold, but the problem here is that boosting requires buying a lot more doses. In some way, boosting, if necessary, defeats the principle of the 'VaxTax' by introducing a necessity to buy several times the number of doses necessary at the start, thus enabling hoarding and/or making it necessary to buy more doses, potentially setting the threshold higher.

What could be done would be to correlate the tax threshold with the proportion of people that would be considered at risk. This way, the supplementary burden on the national health budget would be assumed as soon as the rate of 'at-risk' people would be established. But this other idea poses a problem of agreement on what being 'at-risk' means. For example, at what rate of lethality or morbidity would we consider someone to be 'at-risk'? Would be it be, for example, having one in a thousand chances of dying from the illness? or one in three thousand? Such a threshold would also be partially arbitrary, though fair deliberation may provide a threshold most can agree on. Furthermore, the clinical outcomes can also evolve, as we have seen during the COVID-19 pandemic, which would make the threshold vary. This problem of variability seems to be persistent with the idea of the 'VaxTax'. To apply such a system would necessitate a more stable criteria that is quantifiable. It is also evident that using a flat percentage without indexing it to real life criteria would be absurd because every pathogen affects people differently according to age, comorbidities... Thus, we can understand that the main criteria for setting the threshold imply numerous problems that can hinder applicability with pathogens that evolve somewhat rapidly. On the other hand, if we were faced with a more stable kind of pathogen, it would still warrant democratic discussion if we

wanted to apply such a tax, but it would undoubtedly be way more feasible.

These arguments are not, per se, simply criticisms of a VaxTax in general, but simply a reminder that it is a complex idea that could take different routes if adopted; none of them being without problem. Having such wide array of possibilities, although imperfect, would allow for better international discussions as it allows more freedom for international actors for their negotiations.

Albertsen's proposal, on the other hand, suggests that the tax be directly applied to the vaccine manufacturers.¹ His proposal does not meet the threshold setting problem as it is no longer relevant considering that now the companies themselves are directly taxed. This proposal is also problematic for reasons we will explore further.

The market problem

It was insisted on that the fact that this kind of system is compatible and perhaps can only work in a global market where profit and capitalistic interests drive the decision-making processes around healthcare. The problem that the 'VaxTax' is meant to solve is that markets allow inequalities, hoarding and reward swiftness of action. The 'VaxTax' does not solve this problem entirely. Systems that do not try to reform more deeply the pharmaceutical market validate if not reinforce traditional market dynamics that do not allow a universal access to medications or vaccines. This is indeed concerning that a system that is meant to correct inequalities reinforces profit-driven styles of decision making instead of creating a fair system where the initial distribution of goods would be fair enough that such a system would not be required. It is perhaps an interesting idea for an emergency in nowadays' world, but it should not be exclusively relied on without considering the benefits that would follow a more profound reform of the pharmaceutical industry. Reforms in the system of patenting (like Brazil, India or Egypt have partially done), capping medication and vaccine prices to ensure better affordability, taxing dividends of pharmaceutical companies for supplementary funding would make more sense in the long term to alleviate the numerous inequalities facing LMICs.⁹ Paradoxically, the 'VaxTax' could make the application of more powerful measures more difficult by creating an imperfect system where the global market economy acquires a new legitimacy by becoming less problematic, which could divest efforts towards more radical solutions that could get rid of said inequalities more efficiently. Also, its implementation may lead to less attention for still existing challenges posed by the global market for healthcare, making more efficient efforts less likely.

The VaxTax, mandates, the healthcare systems and acceptability

Another problem with the 'VaxTax' is that it can cause a disincentive for governments in case of a situation where vaccine mandates may be necessary. Discarding the numerous moral and sociopolitical problems they can bring, mandates have had historically a great impact on vaccination for a variety of diseases. During the COVID-19 pandemic, they have proven to be effective in some parts of the globe to incentivise populations to vaccinate.¹⁰ If we take the model that Germani *et al* have pushed forward, we can see that the idea of a threshold would not be compatible with mandates because they typically apply universally, even sometimes for people under 18 years of age, massively increasing the uptake of vaccinations among even the non-vulnerable.¹¹ They are very efficient in increasing vaccine uptake, but with the application of a taxation system, it

would hike up the expenses for vaccines of countries that would enforce mandates by a significant amount. This conundrum could lead to two alternatives: either the costs would be too excessive, deterring the application of mandates and potentially endangering the population, or the HICs would be forced to pay an excessive amount of money to decently protect their population which could generate backlash and hinder acceptability. If we follow the detailed suggestion of Germani *et al*, it would make a situation with two alternatives. The first one would be that governments might have to choose to tax themselves for excess orders of vaccines (because COVAX could only be used as a means of redistribution as they need sovereign states to consent to this new taxation scheme),² or just mandate without taxing, as both at the same time might lead to excessive self taxation, which would be both undesirable and almost impossible as governments would most likely refuse.

In this case, either the threshold of taxation would have to be so high (to have both a taxation system and mandates) that the amount paid would not let LMICs have a reliable access to the vaccines because the yield would be too low, or the burden on the richer countries would be unbearable for the rest of the healthcare system because the taxes would be too consequential (if the threshold was still low). To address this kind of problem, we would need a system that is both flexible and reactive to not put too many people in danger by disincentivising governments to mandate vaccines if necessary, making the taxation system either unfair or outright useless. This is even more problematic considering that the HICs are not necessarily the healthiest because of obesity and ageing nor have optimally functioning healthcare systems because of lack of equipment or lack of cost-effectiveness (specifically in the USA) even before the pandemic.^{12–14} Furthermore, even if average spendings in healthcare have gone up for several decades in HICs, data adjusting for inflation actually shows that healthcare workers have in fact lost income over several years in the UK, demonstrating that resources allocated in HICs did not necessarily augment sufficiently.^{15–17} This fact could imply that HICs may not agree to such a system because the healthcare budgets are not opulent enough to accommodate supplementary spendings that would not serve their interests.

To apply such a supplementary financial burden on HICs could prove problematic for two reasons that could affect acceptability. The first reason is that there are other solutions that we have discussed that allow for better outcomes without actually creating costs for HICs. Excluding the ease of application, it is arguably fairer to establish better solutions that do not engender costs than establishing less efficient measures (we will discuss this point further) that create costs for populations.

The second reason why a 'VaxTax' would not be a good idea is that the process of choosing the precise quantity of vaccines is usually only made by the representatives of world powers without direct democratic consultation. This means that the VaxTax would be applied if hoarding happened, regardless of the fact that populations agree or not to buy several times the number of vaccines necessary for the coverage of every citizen as it happened during the COVID-19 pandemic. This fact becomes even more problematic if we take into account the fact that this buying process is not only non-democratic, but it has also shown itself to lack transparency.¹⁸ This becomes even more problematic considering the political context of the West (ie, where most of the taxation would happen) is becoming more and more distrustful of institutions, making efforts towards establishing such a tax more difficult.¹⁹ Having entire populations taxed without their consent because of lack of democratic

consultation is not an acceptable prospect, although likely if the VaxTax became adopted.

Finally, transnational tax projects are usually difficult to implement as they require total consensus and cannot be done without everyone's accord, whereas other measures such as those we will describe further that could be taken on a national basis are easier to implement and do not require as much international coordination or problems pertaining to state sovereignty over its own budget.²⁰ This criticism is relevant for both proposals, because if the manufacturers themselves are the ones compelled or ordered to pay the tax, this could mean a higher price of vaccines to compensate for the losses to benefits that the tax would generate. This could mean higher prices for every country, which would in turn punish the poorer countries where a small increase in price could make a significant difference. This would in effect harm the LMICs that the VaxTax wants to help. Unless special legislation is adopted to counter this potentiality, Albertsen's proposal is problematic in that regard, because this problem makes unacceptable, at least for LMICs.

The VaxTax by itself is not enough

There is also a conundrum about this tax. In fact, Albersten and Germani *et al* admit that it is only a supplementary measure, and cannot by itself help LMICs reach the desired objectives they may have. The predicament is this: if we want to increase vaccine uptake and affordability for LMICs, there are two consequences that could arise from two situations where the tax is in place. The first scenario would take place if richer countries won't hoard vaccines, but also won't finance the 'VaxTax' fund for LMICs. This would make the vaccines only available at a normal price, which many LMICs may not be able to afford on a sufficient scale. The other alternative would be that HICs do hoard vaccines, giving extensive funds to the organisation collecting the 'VaxTax', but making the vaccines unavailable to LMICs because the production may not be able to match worldwide demand, thus not allowing LMICs to order doses for themselves. These two outcomes are both undesirable and are mutually exclusive opposites. A more reasonable approach would also yield a suboptimal outcome, being that higher-income countries could still somewhat hoard more vaccines than initially needed while the funding would also be insufficient for LMICs because the hoarding would not be sufficient to extensively fund immunisation for LMICs. This shows that, in either way, the VaxTax can only be a suboptimal solution as its proponent admit because neither the two opposite extremes nor a more reasonable middle ground seem to provide a definitive solution to LMICs. The only case in which a 'VaxTax' would yield sufficient results would be if HICs bought more doses than needed and that the production capacities of manufacturers were sufficient to not have a situation where only rich countries get doses. This, however, is unlikely for a new pandemic, as the pathogen involved may need a new vaccine, which requires establishing new production and supply lines. This also means that the VaxTax, while being insufficient, still creates a potential burden on public finances of richer countries, which is only justifiable if the solutions are extensively effective.

The boon of development

Recently, Holzer *et al* have argued that, in order to achieve equity, international organisations like COVAX (which is managed by both the Global Alliance for Vaccination and Immunisation and the WHO) should not just rely on charity but should rather empower LMICs by helping them create new infrastructures in order to augment their production capacities as well as their

technological knowhow for local manufacturing.²¹ This would also help these countries by rendering them less reliant on manufacturers and make vaccines and therapeutics more affordable for populations that need them. On the contrary, Germani *et al* and Albertsen are in fact aware that they are not advocating for a more developmentalist approach to donations because they champion the ‘VaxTax’ on the basis that it’s a market incentive for manufacturers. The problem with a ‘top-down donation’ in a market paradigm approach is that it requires a strong local infrastructure, as Germani *et al* rightfully point out, that is ready at the start which is not present yet: steady and viable supply lines, refrigeration.... This is precisely because these infrastructures are lacking that we need to fund them to prevent further unnecessary harm or wasting before donating vaccines. This may be a difficult task because research has shown that historically, foreign aid was correlated with lesser governmental public spending in healthcare in the recipient countries, but these aids can also be accompanied with conditions of sustained internal development without disrupting local institutions to ensure internal development.^{21–23}

This less paternalistic approach allows for multiple advantages. First, it is evidently morally more acceptable as it allows for autonomous decision making as well as allowing LMICs to act on their own conditions without depending on donors that could enforce their own conditions.²⁴ It also allows a swifter response in case of emergency because the systems of production and the supply lines would be managed internally without requiring foreign expertise or even international and diplomatic treatises. Overall, a developmentalist approach provide advantages a ‘top-down’ philanthropic approaches that a taxation framework does not allow alone. It is also more likely to work as helping development of LMICs would be less burdensome from rich countries and will not pose problems of compliance the ‘VaxTax’ may pose in said rich countries.

CONCLUSION

Despite the attractiveness and apparent efficiency of such a policy, problems pertaining to applicability, state budgets, potential low compliance as well as economics point out that the ‘VaxTax’ is in fact insufficient by itself. It is nonetheless an interesting framework for future international endeavours even if it is imperfect. When thinking about problems of fairness and justice regarding the distribution of healthcare goods, it is essential to acknowledge that the paradigm of market economics will never allow us to achieve equality. Perhaps the mere notion of a market for healthcare products is something we should strive to put an end to. Until then, the ‘VaxTax’ would nonetheless be a welcome addition, even if this demonstration has shown deep concerns about its applicability and acceptability in a democratic context.

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