COVID-19 Vaccines and the Case for a New Global Health Diplomacy

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1. Introduction

COVID-19 is the first time in recent medical history where an effective vaccine would have imminent, near universal demand. This has no doubt provided a massive impetus to risk taking in the vaccines sector. Since the availability of the virus genome in January 2020, a large number of pharma companies and academic/research institutes have actively engaged in finding collaborators, investing into R&D and/or clinical trials, with a specific emphasis on new vaccine technology platforms that emerged around the time of the SARS pandemic and were previously considered risky investments. But in a world where a real ‘return to normal’ from the COVID 19 crisis is more dependent on a vaccine than anything else, the highest stake questions are not just when a vaccine will be discovered but how and in what order it will be made available to all.

These questions are gradually assuming existential proportions for the international community given the emergence of two parallel initiatives to facilitate access to potential COVID-19 vaccines. A first initiative, offering an ambitious new blueprint for global collaboration, is the COVID-19 Vaccines Global Access (COVAX) Facility (Gavi, 2020a; 2020b). Led by the by the World Health Organisation in collaboration with Gavi, The Vaccine Alliance and the Coalition for Epidemic Preparedness Initiative (CEPI), it seeks to pool demand (to reduce uncertainty and improve predictability of demand and financing) and supply (by promoting expansion of manufacturing) to facilitate the emergence of a the global COVID-19 vaccines market (Gavi, 2020c, pp.3). It is designed to work by generating pull incentives for adequate supply through an international advance market commitment mechanism (the COVAXAMC) for future procurement of any potential COVID-19 vaccines at a set volume and a set price. Currently aiming to procure 2 billion doses by the end of 2021, the COVAXAMC is a purchase guarantee expected to act as a production incentive to manufacturers to install/procure/sub-contract production capacity of the kind needed to meet the demand for the vaccine (Gavi, 2020d).

By 24 August 2020, 172 countries, comprising 70% of the global population, were engaged in discussions to potentially engage with the COVAX Facility. Of the 172, 80 are fully self-financed, whereas the remaining 92 countries fall under the COVAXAMC. The facility is envisaged to function in three tiers. The first tier comprises the 80 fully self-financing countries that have submitted written expressions of interest to be part of the COVAX Facility, with the 92 low- and middle-income countries (LMICs) which form part of the COVAXAMC further split into 58 Gavi-eligible countries that form part of the core COVAXAMC, and 34 countries that are transitioning out of, or have already transitioned out of Gavi. The COVAXAMC works hand-in-hand with the COVAX-CEPI vaccines portfolio, that acts as a push mechanism and currently has nine candidates out of the 36 that are currently in trials worldwide as of 17 September 2020.

But at the same time, a second set of initiatives are underway. A number of countries with economic and political power have proceeded unilaterally to support vaccine development and production, and procure supplies, in two ways: either by signing purchase commitments for vaccines (a pull mechanism similar to the COVAXAMC but on a national scale) or by co-financing the R&D/clinical trials phases (a push mechanism similar to the CEPI-COVAX portfolio). The USA, which has not joined the COVAX Facility has been by far the most prolific in this regard, but other countries/regions that have engaged in such activities include the European Union, India, Russia, Indonesia, Australia and China to varying extents. The proliferation of these national approaches raises concerns regarding the rise of vaccine nationalism, and how it might impact upon global access to potential COVID-19 vaccines (Myre, 2020; Bollyky & Bown, 2020).

2. Situating Vaccine Nationalism in the Global Access to Medicines Debate

Vaccine nationalism – or more broadly, medicines nationalism – is not new. Countries have historically viewed health care as an issue of national sovereignty and security both in terms of promoting and protecting their pharmaceutical industry, and in terms of securing health care for their people. The discord, drawn on these lines, has shaped global health diplomacy with trade and intellectual property
leading companies and their deals with select countries. The aggregate demand of their domestic population as the first priority in procuring vaccines. But in addition to offering support to national firms, a few, fast-moving countries have prioritised the amounts to around 3 billion vaccinations (Oxfam, 2020) to 9 billion vaccine doses/4.5 million vaccinations at the rate of two doses per 2.2. Purchase Agreements and Equitable Access pandemic (Fisher, 2020).

scenarios where countries with little or no manufacturing capacity will suffer looms – especially from export bans of COVID-19 drugs and production, among others. Thus, although there are best case scenarios where a ‘win-win’ might materialize, the threat of worst-case depend on the specifics – such as the technology platforms of the vaccines, the distribution of production, i.e., location of bulk antigen in LMICs? And can it be used as a means of transfer of technology and related know-how to promote local production? All of this will firms in India/elsewhere could simultaneously produce it. How widespread would such production be? Will it lead to immediate access widespread and large-scale availability depends on how many firms in India/elsewhere could simultaneously produce it. How widespread would such production be? Will it lead to immediate access in LMICs? And can it be used as a means of transfer of technology and related know-how to promote local production? All of this will depend on the specifics – such as the technology platforms of the vaccines, the distribution of production, i.e., location of bulk antigen production, among others. Thus, although there are best case scenarios where a ‘win-win’ might materialize, the threat of worst-case scenarios where countries with little or no manufacturing capacity will suffer looms – especially from export bans of COVID-19 drugs and medical products of the kind that has been imposed by the USA and several other high and middle income countries since the start of the pandemic (Fisher, 2020).

2.2. Purchase Agreements and Equitable Access

Projects on what can be produced and made available by the end of 2021 currently range between 5.9 billion vaccine doses that amounts to around 3 billion vaccinations (Oxfam, 2020) to 9 billion vaccine doses/4.5 million vaccinations at the rate of two doses per vaccine (Agarwal et al, 2020). But in addition to offering support to national firms, a few, fast-moving countries have prioritised the aggregate demand of their domestic population as the first priority in procuring vaccines.

Table 1 below summarises the individual COVID-19 vaccine deals that have been concluded separately with a number of frontrunner companies in order of economic size and strategic relevance of the country/region in question. The table summarises information on 7 leading companies and their deals with select countries. The UK government alone has announced its intention to secure supplies from
12 companies, having concluded deals for 310 million doses of vaccines from five companies (Torjesen, 2020; table 1). The US government has similarly concluded several deals with all frontrunner companies for 700 million doses, with an option to secure 1.6 billion additional doses from the same companies. Such national activism stands in stark contrast with the support being given to the COVAX Facility, where the COVAX-AMC has up until now raised 600 USD, and requires additional funding of USD 1.4 billion to reach its target of 2 billion USD to secure 2 billion doses by the end of 2021.

**Table 1: Some Major National, Regional and COVID-19 Vaccine Deals**

<table>
<thead>
<tr>
<th>Company</th>
<th>Vaccine type</th>
<th>USA</th>
<th>UK</th>
<th>EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>AstraZeneca</td>
<td>Non-replicating viral vector</td>
<td>300</td>
<td>100</td>
<td>300 [+100]</td>
</tr>
<tr>
<td>BioNTech/Pfizer</td>
<td>mRNA</td>
<td>100 [+500]</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>GSK/Sanofi Pasteur</td>
<td>Protein adjuvant</td>
<td>100 [+500]</td>
<td>60</td>
<td>300</td>
</tr>
<tr>
<td>Novavax</td>
<td>Protein adjuvant</td>
<td>100</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Valneva</td>
<td>Inactivated</td>
<td>60 [+40]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderna</td>
<td>mRNA</td>
<td>100 [+400]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>mRNA</td>
<td>100 [+200]</td>
<td>200 [+200]</td>
<td></td>
</tr>
</tbody>
</table>

Source: Compiled by author.
Note: numbers in parenthesis denote options reserved.

The skewed distribution between what has been secured by individual countries, amounting to over half of projected capacity according to Oxfam (2020), and what is currently available as funding to the COVAX Facility highlights to a large extent, the lack of political will to rally behind a common, international solution, as opposed to the availability of funding per se. It also raises questions about equitable access, which in this case is not about having eventual access to a vaccine but should be interpreted as *early and equal access*. Putting aside priority health care workers, two individuals with similar health situations should be able to access the vaccine at around the same time globally. This rests not just on (affordable) pricing, but also on the (fair) sequence of availability, which would be imminently undermined if national purchase deals went ahead in parallel with the COVAX Facility.

### 2.3. Impacts on sequencing innovation

New vaccine platforms, such as new DNA or mRNA platforms are highly flexible for antigen manipulation and can lead to speedy outcomes once the sequence has been identified, just as vaccines based on viral vectors can induce strong immunological responses (Thanh le et al, 2020). In contrast, conventional vaccine platforms, such as those that were used to treat smallpox have certain limitations that make them less amenable to vaccine production in a pandemic, such as requiring large quantities of virus that need to be grown under biosafety level 2 conditions for a whole-inactivated vaccine and extensive safety testing in the case of live-attenuated viruses (van Riel and de Witt, 2020, pp. 810). The speed of innovation, combined with the potential of boosting immunity responses, as promised by new vaccine platforms explains (a) the bias toward new technology programs in several national programs supporting companies; (b) the frontrunner status of several vaccines that have reached phase II/III of clinical trials. Fast candidates might not necessarily be the best candidates, just as the conventional vaccines, currently in preclinical/phase 1/phase 2 stages might not be worse options. But supporting some early favourites, for whatever reasons, and not others, can shape the innovation environment for COVID 19 vaccines in ways that have large consequences for how alternatives develop over the next few years (Callaway, 2020).

More importantly, although speed of discovery is critical in a pandemic such as this one, given the devastating social and economic impacts, two other factors are equally important in designing push mechanisms for vaccines. First, there are always trade-offs between vaccine candidates, and given the low levels of information on which kinds of immune responses (antibodies versus second-line defences) best guard against the virus, choices that prioritise some over other approaches seem immature (Walls et al, 2020; Zimmer,
Vaccines using new technology platforms are not just more expensive; they tend to require high thermostability (making it dependent on new storage and transport infrastructure for administration in several LMICs). There might also be other characteristics that make some kinds of vaccines better suited for some groups and better positioned for delivery in developing countries when compared to others, bringing up the question of how best to support a diverse pipeline of candidates on a global scale. Second, preserving a diverse choice of vaccine candidates that not just caters for the demand today, but provides a wider basis for R&D and expands production capacity in new regions worldwide is equally important since collectively, the future might entail living with a new day-to-day reality where such illnesses are widely prevalent (GAVI, 2020e; Scudellari, 2020). From that perspective, the global community needs to finance push efforts that have complementarities with the expansion of innovation and production capacity in different regions of the world.

3. The Need for a New Global Health Diplomacy?

In sum, if a vaccine were to be discovered today, there remains a high probability that many countries will continue allocating scarce vaccines in a ‘first-come-first-serve’ manner that does not maximise the health impact of such a vaccine from a global welfare perspective but rather, monetizes the reduction of morbidity and mortality in favour of those who can pay for it. This is the opposite of what we need. As early as 2001, the World Health Organisation’s Commission on Macroeconomics and Health stressed the direct link between health and economic development, calling for aligning health innovation policies with health priorities in a way that promotes the well-being of all (WHO, 2001; Morel et al, 2005). These links between health and economic development have grown exponentially over the past two decades. To address them effectively, and to recover economically and humanely from the pandemic, we need a mechanism that maximises the health impact of all interventions by allocating the vaccine to those who need it most pre-determined ‘needs-based’ criteria set to enhance global public welfare. At the same time, we need to address the other drivers of health inequities: the concentration of technology and know-how, the concentration of production capacity and a continued exclusionary health rhetoric that leaves behind more people than ever.

There are undeniable links between innovation choices, production capacity and access as highlighted in section 2, but no one country currently has the incentives to recognise and address these inter-dependencies from the perspective of global welfare, just as no one country has the full financial incentives to fund it alone (Yamey et al, 2020). Especially given that the goal of global access can be perceived as being against national interests in the short-term, the goals of ensuring the development of a competitive market in the mid-term, or the longer-term, and the achievement of a vaccines distribution scenario that assures maximum global welfare, both remain global public goods. Such outcomes will be systematically under-provided by market forces alone, even though their non-provision will result in significant international externality effects (Maskus and Reichman, 2005, pp.284).

The COVAX Facility, from this perspective, is a mechanism aiming to move all actors ahead toward mutual cooperative outcomes, and to facilitate the access part of this wider puzzle. For it to be successful and achieve its true potential, a new global diplomacy is needed that moves away from viewing access a split between the high-income countries, middle-income and low-income countries, at least in the context of pandemics. Supporting the COVAX Facility as the main option to distribute vaccines, and not an insurance policy, can help structure a new multilateralism that recognises the interconnections between healthcare and economic recovery on a global scale. An expansion of the cooperation in the form of building and facilitating regional production facilities, actively promoting the transfer of technology and know-how to a wider pool of manufacturers (e.g. through a COVID 19 Technology Access Pool), and expanding the CEPI-COVAX portfolio with widely agreed objectives on how to shape vaccines innovation in a post-pandemic world should also form part of this wider agenda.

Citations

1. Tahnh Le et al (2020), in an early assessment of candidates in April 2020, note that over 70% of the initiatives are private sector led, with the rest in academic/research institutions and non-profit organisations.

2. Pull incentives provide an idea of market size and demand thus promoting a mechanism for distribution upfront and also provide incentives for firms to invest in increasing production during the development phase itself (OECD, 2020).


4. GAVI’s Board Document 31 July 2020 provides an expanded list of 92 countries. Of these, 58 countries are fully GAVI eligible as of 2020, for the remaining LMICs that are part of the COVAX Facility, GAVI will reserve a portion of the supplies and it is expected that
these countries self-finance the price of the vaccines to different levels according to their status, or use other innovative financing instruments to cover their expenses (GAVI, 2020b).


6. Recently, an open letter was drafted from 400 scientists to the US government in this regard (Kaplan, 2020).

7. Table depicts large deals although Australia, Indonesia, India and other countries also have made similar deals, see OXFAM (2020).

8. The UK also committed GBP 250 million (Euros 278 million) to CEPI to support equitable and affordable access to new coronavirus vaccines and treatments around the world (Torjesen, 2020).

9. In addition to the already secured 600 million USD, the EU has pledged an additional 400 million Euros (USD 476 million) to the COVAX facility on 31 August 2020.

10. A public good is non-excludable (i.e., people cannot be excluded from using it effectively) and non-rival (i.e., the use by one does not reduce its availability to another). This signifies a lack of incentives amongst private sector actors to invest in its creation/ upkeep, given that they cannot fully internalize its benefits.

References


