

# What are the challenges to distribute COVID-19 vaccines globally in an equitable manner? Which solutions should we debate?

## Challenges and problems

Providing effective and safe vaccines against COVID-19 to all of the world's countries independent from their financial income status is not solely a question of life-saving solidarity and for the good of humanity. Instead, it is also the only reasonable choice! Since infecting more and more persons offers the new coronavirus increasing opportunities to mutate and change its genetic code. This process leads to a higher probability of new mutations, against which vaccinations might be less effective. These mutants would be able to spread all over the world and infect people already being vaccinated against SARS-CoV-2. Especially the more infectious mutations of this virus recently detected in the United Kingdom and South Africa show us that we cannot allow to take this risk lightly.

As a consequence, approaches by single nation states or continental regions to vaccinate their own populations do not suffice to defeat the pandemic and thus might not represent a sustainable strategy given the considerable risk of recurrent waves of infections by less susceptible variants of the virus. While it is positive and necessary that the countries within the European Union pursue a common vaccination strategy, this course of action should be applied for the entire world community. Therefore, several initiatives exist aiming at a global solution through ensuring vaccines against the novel coronavirus are distributed equitably and fairly around the globe.

The most prominent one is called COVAX facility, which is co-led by the World Health Organization (WHO) as well as the two public-private-partnerships GAVI and CEPI. COVAX is one out of four pillars of the so-called Access to COVID-19 Tools Accelerator (ACT-A) – an initiative created by the international community in order to develop, produce, deliver and apply vaccines, diagnostic tools and therapeutics against COVID-19 as well as strengthen healthcare systems in their fight against the pandemic.

COVAX's main target is to acquire and deliver 2 billion vaccination doses until the end of 2021 in order to immunize the most vulnerable individuals in addition to frontline workers in health and social care settings in all of the world's nations, which would amount to vaccinating approximately 20% of the countries' populations. This includes at least 1.3 billion doses for 92 lower income economies through the COVAX Advanced Market Commitment (AMC) by the end of this year. Whereas COVAX claims to have secured enough doses to achieve this task in the course of 2021, multiple obstacles jeopardize the successful accomplishment.

First, it is far from certain that the 2 billion doses will actually be delivered to COVAX in 2021. While COVAX has signed contracts with private companies to receive several hundred million doses of the AstraZeneca/Oxford and Johnson&Johnson vaccines, more than half of its intended 2 billion doses are supposed to be delivered by Sanofi/GSK or other vaccine manufacturers, whose vaccines are still under development. However, while the official approval by the WHO of the AstraZeneca/Oxford vaccine as well as the one produced by Johnson&Johnson are estimated to occur in the first quarter of 2021, the timely development and permission of the remaining vaccines in COVAX's portfolio is questionable.

Furthermore, the recent news that the pharmaceutical company Merck is abandoning their efforts to develop its own vaccine candidate against SARS-CoV-2 because data shows that the vaccine does not trigger an adequate immune response, unfortunately proves that the successful development of vaccines against COVID-19 cannot be taken for granted before official regulatory approval.

Second, COVAX suffers from a global market in terms of vaccines against COVID-19 that is composed of very high demand and insufficient supply. This situation is exacerbated by many bilateral deals with manufactures made by high-income countries like the USA, UK, Canada and the European Union. According to WHO's director-general rich countries already administered 79 million doses of COVID-19 vaccines until mid-January, while low-income countries received virtually none. This circumstance leads to the phenomenon that on the one side some economically affluent nations have reserved enough vaccine doses to immunize their populations multiple times over and on the other side many economically poor countries run the risk of missing out on vaccines for years to come. In order to solve this dilemma, WHO urges nation states to stop signing bilateral deals and rely on COVAX to receive their shares of vaccine doses. Yet, the current development runs contrary to that because countries like Brazil and India as well as the African Union have recently signed direct deals with vaccine manufacturers for fear of missing out on vaccines in the near future.

Third, in an unprecedented scale large amounts of public funding have so far been invested to develop vaccines against SARS-CoV-2. In the year 2020 this sum amounted to roughly 90 billion € worldwide. Moreover, the non-governmental organization Doctors Without Borders states that "the six front running vaccine candidates have had a total of over US\$12 billion of tax payer and public money poured into them". This money was allocated to private companies in order to fund their research and development in their endeavor to produce safe and effective vaccines. Yet, no conditions were attached to the funding, which led to the consequence that private firms own the intellectual property rights to the developed vaccines and thereby reserve themselves the legal right to block other companies from producing the same vaccines as they do. This leads to an artificial scarcity of production capacities. Therefore, the so-called COVID-19 Technology Access Pool (C-TAP) was founded last year under WHO's umbrella in order to ensure scientific exchange of vaccine development results and associated intellectual property rights. However, since taking part in C-TAP is on a voluntary basis for private companies, this mechanism is hardly used and thus ineffective. Owing to this fact, several nation states led by South Africa and India advocate for the so-called TRIPS waiver within the World Trade Organization (WTO). This waiver is supposed to suspend all intellectual property rights on COVID-19 related products like vaccines, therapeutics and diagnostics for the duration of the pandemic. This would legally enable more corporations to produce COVID-19 related products and hence possesses the potential to significantly scale up the mass production of COVID-19 vaccines. However, this initiative is blocked by several industrial nation states within the WTO for fears of unsafe vaccines being produced. In this light, the pharmaceutical industry claims that voluntary direct licensing deals between companies is the best way to ensure safe and rapid production of vaccines. But the AstraZeneca/Oxford deal with the Serum Institute of India to produce millions of doses of its vaccine candidate is the exception that proves the rule: voluntary licenses are not enough to sufficiently increase mass production of COVID-19 vaccine doses to meet the exorbitant demand in order to bring the COVID-19 pandemic under control as quickly as possible.

Fourth, even though billions of U.S. dollars have been invested globally in the fight against the pandemic and trillions of U.S. dollars are being lost due to decline in economic activity, COVAX is still underfunded since high-income countries in fact provide financial contributions to this mechanism but the volumes do not suffice to reach COVAX's funding needs. What is more, the remaining three pillars of ACT-A targeting therapeutics, diagnostics and health system strengthening lack even more financial funding than COVAX does.

### Potential solutions

First of all, COVAX and the three further pillars of ACT-A must receive their full financial requirements through increased resource flows from high-income countries. While it is true and problematic that the pandemic has also hit economically better of countries hard and has subsequently led to elevated levels of new debt of public budgets, stepping up funding for the multilateral initiatives tasked with the fight against the COVID-19 pandemic cannot solely be regarded as a humanitarian urgency. Instead, this is of paramount importance in order to end this pandemic – which costs trillions of economic losses and millions of human lives - in the entire world as fast as possible. Moreover, financial funding can and should be delivered quickly and thus form a basis for COVAX's challenging responsibilities.

Second, individual countries and regional organizations like the European Union should cease signing bilateral procurement deals with private companies to receive vaccine doses and instead utilize COVAX's portfolio for this endeavor. Additionally, already reserved vaccine doses should be channeled towards COVAX for its worldwide distribution mechanism.

Third, the announcement that COVAX has recently signed an advance purchase agreement with Pfizer in order to receive 40 million vaccine doses is a positive signal and can significantly contribute to the goal of vaccinating the world's front-line workers in health and social care settings first. Now it is important that these doses are delivered quickly and the pharmaceutical company Moderna follows suit.

Fourth, private companies should be encouraged to apply for WHO's official approval more quickly since this step is a necessary pre-condition for COVAX to receive vaccine doses from the given corporations.

Fifth, once vaccines have been developed and officially approved, production capacities have to be massively expanded worldwide to rapidly produce as many vaccine doses as possible with high quality. To this end, the legal and technical conditions must be created. For this reason, the intellectual property licenses on COVID-19 vaccines should be suspended temporarily. Politicians should therefore both strengthen C-TAP and support the so-called TRIPS waiver submitted by India, South Africa and other countries within the framework of the WTO.

Sixth, in addition to ensuring that the legal necessities of intellectual property rights are in place to scale up manufacturing capacities for vaccines on a global scale, more should be done to increase the technical abilities of capable private firms and public institutions to produce COVID-19 vaccines in the required quality.

Seventh, countries lacking the necessary logistical infrastructure and healthcare systems to roll out sizable vaccination campaigns have to receive more support in order to improve their abilities to vaccinate their populations by increasing their healthcare workforce and expanding their infrastructure. While multilateral organizations like UNICEF and GAVI are already tasked with providing such support, more has to be done to assist them.