# Ensuring Equitable Supply and Access to Critical Vaccines During Pandemics:

## The Lessons of COVAX

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There is an enormous sense of relief that the world has already suffered the most acute stage of the COVID-19 pandemic—with its heartbreaking death toll, devastating illness, and crushing social and economic fallout. The job of hardening the world's defences against future disease outbreaks, however, has only begun. Indeed, COVID-19 is still with us and will continue to smoulder for years to come, assuming it does not flare up again. Moreover, the prospect of future, and potentially more menacing, global infectious disease outbreaks remains in the horizon—made more likely by factors like climate change, unabated encroachment on the habitats of wild animals that carry dangerous pathogens, population growth, and urbanisation.

Now is the time to take stock of the many lessons of COVID-19 and, more importantly, to act on them. The emotional, physical, economic and social scars that millions suffered are still fresh enough to feed the political will as leaders need to make big, tough choices about investments in future

pandemic preparedness and response. If they fail to do so, the global community will once again pay dearly—in lives lost and damaged and in profound economic and social shocks.

The overarching and perhaps most obvious lesson of the pandemic was that most countries, and the world collectively, were unprepared to defend themselves against SARS-CoV-2, the virus that causes COVID-19.[1] Nearly all countries—even those whose health systems were presumed to be strong—struggled not just to arrest the spread and blunt the devastating impacts of the virus but also to continue delivering other vital health services.[2]

This was no surprise to the many global health experts who had long warned about the world's vulnerability to a crisis of such magnitude. Yet, even those experts could not have fully anticipated exactly the ways COVID-19 ultimately exploited the gaps in health security systems globally. If there is anything meaningful that emerged from the pandemic, it is the knowledge of where and how health systems struggled, where they performed well, and what must be done to prepare for future pandemics.

This author speaks from experience as managing director of the Office of the COVAX Facility from the fall of 2020 through mid-2022. The Access to COVID-19 Tools Accelerator (or ACT-A) was a global collaboration focused on accelerating the development, production, and access to vaccines. COVAX, the vaccines pillar of ACT-A, had the remit of facilitating access to potential COVID-19 vaccines to the most vulnerable everywhere, regardless of their income;[3] to date, it has delivered nearly 2 billion doses of COVID-19 vaccines to 146 countries across the world.[4] It is a collaborative work of the Coalition for Epidemic Preparedness Innovations (CEPI), the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and Gavi, the Vaccine Alliance which co-managed COVAX.

COVAX accomplished a great deal, and according to estimates from Imperial College London, the impact of COVID-19 vaccinations on COVAX AMC participants included the prevention of an estimated 2.7 million deaths worldwide.[5] It could have made even greater impact had certain conditions been met even before it was launched in 2020. To that end, one must heed three categories of lessons that emerged while dealing with the pandemic

puzzle—the procurement, distribution, and administration of COVID-19 vaccines across countries.

**First, the world must be willing to take risks and make contingent financing available to ramp up rapidly as health crises emerge.** Before the COVID-19 pandemic broke out, there was nothing in the world like COVAX. It began without any funding and with virtually no personnel. Unlike sovereign governments with sizeable spending power, global health organisations and other international development agencies could not take on the risk of paying billions of dollars in purchase orders for vaccines.[6]

It thus took COVAX several months to raise sufficient funds to secure early-purchase agreements with vaccine makers. Meanwhile, vaccine manufacturers gave priority to bilateral customers—typically, well-resourced sovereign governments—even months before it was clear which, if any of the vaccine candidates would earn regulatory approval.[7] That, in turn, left relatively few doses available early on for COVAX to procure. More importantly, some countries imposed export bans on vaccines or vaccine ingredients manufactured on their shores to ensure they would have enough supply for their citizens.[8]

It is understandable that countries will do everything they can to place the health needs of their citizens first in a crisis such as COVID-19. This dynamic will not change. The question, therefore, is how the world can navigate this geopolitical reality.

One way is to put in place now contingent funding that will be immediately deployable as soon as another crisis strikes. That will help global health agencies—like a future version of the COVAX Facility—mount an even more effective global response.

Such funding must be flexible and agile. It will require mechanisms to constantly update working assumptions regarding epidemiology, policy recommendations, supply, demand, R&D, manufacturing, country-level challenges, and other factors, and for making at-risk investments for multiple scenarios. This funding should also include a proportion that could be used with a high-risk appetite to secure vaccines that are at any R&D stage, even with the risk of vaccine failure.[9]

Another lesson is related to the value of an innovative financing mechanism that COVAX created, called the pandemic vaccine pool (PVP), which ensures that there will be cash on hand to make rapid procurement of vaccines available, especially to lower-income countries—even in a scenario such as the one in 2020 where it was uncertain which of the vaccine candidates would get approval. Likewise, COVAX pioneered other new innovations out of the crisis—such as indemnification and liability agreements and a 'no-fault compensation scheme' that would lower the risks for manufacturers—which were also critical to removing bottlenecks and speeding up the response-time during COVID-19. Mechanisms that allow fast response and sharing of risk during an emergency are important features of any future responses.

Moreover, multinational trade-facilitation measures must be strengthened to allow for the free flow of vaccines, manufacturing supplies, and other life-saving equipment during health emergencies. There should be in place, for example, exemptions and waivers that allow agencies involved in the global health response to ship life-saving medical countermeasures and materials to low- and middle-income countries as well as into humanitarian situations exempt from any trade barriers.[10]

**Second, it is now known that turning *vaccines* into *vaccinations* depends upon strong, reliable health systems.** That is, getting shots in people's arms requires complete end-to-end solutions at the country level, backed by investments—from early R&D; scaling-up manufacturing; securing deals; consistent policy guidance; and setting up operational, logistical, regulatory, and legal frameworks further along the value chain. This applies not just to the vaccines themselves but also ancillary supplies, such as cold chain and safe injection equipment, international freight and logistics as well as in-country delivery requirements, including personal protective equipment for healthcare workers.[11]

Many countries that lacked this infrastructure strained to get doses to the people who needed them. To be sure, the challenge was less pronounced—though still serious—in many countries where organisations like Gavi and WHO had already provided significant resources over many years to help strengthen health systems (particularly primary health care),

build cold chains that facilitated the widespread delivery of vaccines, and establish relations with all the many stakeholders who make immunisation programmes work.

At Gavi, which has supported the improvement of lower-income countries' routine immunisation programmes since 2000, the concern was that those efforts to vaccinate mostly children would flag significantly under the extra burden of delivering COVID-19 vaccines to other populations. It was unexpected, therefore, when many showed relatively little decline in routine immunisation. To be sure, their systems were pushed to the limit. Vaccinators, doctors and nurses were burned out. However, considering that while responding to the pandemic and having to deliver three times the number of vaccines compared with previous years, immunisation in Gavi-implementing countries suffered declines of only 4 percent in 2020 and 1 percent in 2021 and a near return to pre-COVID levels by the end of 2022—there was a lot more resilience than expected.[12]

Those many years of health system strengthening investments apparently paid off. But these countries will need more, especially when it comes to building out primary healthcare services, cold chain, vaccine track-and-trace, human resources and data monitoring systems[13] that reach all their citizens, especially those with the least access to healthcare.

One step in that direction, for example, is the COVID-19 vaccine Delivery Support (CDS) which was time-sensitive funding based on country's requirements across various areas, including service delivery, data and monitoring, and supply chain systems that Gavi helped put in place to deal with funding gaps for delivery and improve countries' capacity to rapidly scale up COVID-19 vaccinations. In addition to that goal, in many countries the programme has also contributed to health system strengthening, including upscaled cold chain infrastructure, digitisation of health data, improved outreach capabilities, combined COVID-19 and routine immunisation deliveries, and expanded vaccine supply chain capacity. Somalia, for example, where targeted CDS investment saw the digitisation of its health systems, strengthening of the country's cold chain capacity, and the training of health workers at the front of community engagement and support of risk communications for both COVID-19 vaccination and

routine immunisation helped increase primary COVID-19 vaccine coverage from 5 percent at the beginning of 2022 to 41 percent by the end of the year.[14] Gavi invested approximately US$1.3 billion in health systems in Gavi-implementing countries from 2021 to 2022.[15]

Moreover, it must be ensured that every country puts in place regulatory readiness, harmonisation, and policy development for pandemic preparedness. They must build access for the most vulnerable people—especially those who are chronically hard to reach—into the pandemic architecture. This should acknowledge that, despite best efforts, there will be disparities in countries' readiness levels, infrastructure, and capacity in the event of another pandemic.[16] The global community cannot shirk from the challenge of closing those gaps, as much as possible.

**Third, it is important to lower barriers to the equitable supply of vaccines—such as vaccine nationalism, hoarding, and export bans.** The very idea of the COVAX Facility emerged from a desire to prevent a replay of what took place in 2009 during the H1N1 pandemic when better-resourced countries dominated nearly all the global supply of vaccines.[17] Countries with little financial resources and without their own vaccine production capacity were left largely empty-handed.[18]

To solve that problem, COVAX sought to pool demand for COVID-19 vaccines from lower-income economies as well as from wealthier nations. With pooled demand and funding, COVAX would ideally be in a better position to make large-scale investments. It could build a diverse portfolio of what was eventually 11 vaccine-candidates across four technology platforms (10 of which received regulatory approval for use). This was the largest portfolio secured by any buyer, making more than 4 billion doses available to 191 countries that were part of COVAX.[19]

In other words, COVAX would be able to compete with better-resourced countries for what would surely be a finite supply of vaccine doses. Dose domination by relatively few countries would not follow the pattern of the H1N1 vaccine.

The experience during COVID-19 and previous pandemics cries out for increased and geographically diversified vaccine manufacturing, particularly across the African continent. Africa has an eighth of the world's population but only about 0.1 percent of the vaccine manufacturing capacity.[20] There is much work that must and *can* be done to help those regions establish this essential infrastructure, not just for emergencies but for the production of routine vaccines during non-crisis times. To help regional production take root and grow, there must be support for technology transfer as well as demand-side financing to promote a sustainable diversified manufacturing base.[21]

With this goal in mind, Gavi and the African Union Commission entered into a Memorandum of Understanding in May 2023 (with the cooperation of the Africa Center for Disease Control)[22] to work together to stimulate, among other health advances, sustainable regional vaccine manufacturing in the continent. The endeavour includes 10 commitments to increase political, financial, and technical investments in immunisation programmes.[23]

Another one of the biggest lessons was that critical to an effective global response is putting models in place that can ensure, long before the occurrence of a pandemic, that lower-income countries receive volumes of vaccine doses at the same time and in the same levels that high-income countries do to stop the spread of variants. This will require increased standards for manufacturers' transparency about their order books so that it is possible to determine—and *correct*—the supply inequities among countries. This will also require that contingent financing continues to be readily available to allow response to unexpected trends in the trajectory of the pandemic. Discussions on the use of available COVAX AMC funding is currently ongoing, with consideration on using part of the available PVP funding channelled to the procurement of new products, including variant-containing vaccine boosters, based on country requirements.

Discussions also focus on the implementation of the 2024–25 COVID-19 programme approved by the Gavi board in June 2023.[24] Equally important considerations include using these funds to prepare for other health emergencies, catching up from the effects of the pandemic, accelerating diversified manufacturing—all of which will be discussed further at the December board meeting of Gavi.

The global community is relieved to have moved past the worst of the biggest and most devastating global health crisis in more than a century. However, such sense of relief—and perhaps the understandable weariness after three years of searing crisis—must not turn into complacency or neglect. The future depends on learning from what the world lived through and to make the big, smart changes that are required.

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