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HVP COVID REPORT

The Broken System of Vaccine Distribution

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At last week's United Nations (UN) General Assembly meeting, many world leaders praised the rapid development of COVID-19 vaccines and the triumphs of science but criticized the inequitable distribution of these vaccines on a global scale. UN Secretary-General António Guterres was widely quoted for his remark on this topic: "We passed the science test. But we are getting an F in ethics."

HVP Editor Kristen Jill Abboud recently spoke about the distribution of COVID vaccines in South Africa with Salim Abdool Karim, a clinical infectious disease epidemiologist who heads the Centre for the AIDS Program of Research in South Africa (CAPRISA) and is a Professor of Global Health at Columbia University in New York City. Karim also serves on the Lancet COVID-19 Commission and is the former chair of the South African Ministerial Advisory Committee on COVID-19. We discussed the early setbacks in the rollout of vaccines in South Africa and the lessons this pandemic offers for future global vaccine distribution.

An edited version of our conversation appears below.

How did the initial rollout of COVID vaccines progress in South Africa?

South Africa has had quite a few serious setbacks in its vaccine program. Initially, South Africa was trying to secure vaccine doses in order to fast track rollout but was not able to get any doses. We just couldn't get them. We started having discussions with pharmaceutical companies, including Pfizer, in September before they even knew the results from their clinical trials, but we couldn't put advance market commitments in place because we didn't have the money to do so.

So eventually what happened was that under a lot of pressure the government of South Africa decided to jump the queue and secured 1.5 million doses from the Serum Institute of India by using political influence. Those were doses that were initially meant for COVAX, but the government was able to negotiate and get those doses directly into the country. However, the day after those doses arrived, results of the AstraZeneca trial showed that the vaccine doesn't work against the Beta variant. Therefore, we couldn't use this vaccine and the country had to pivot. I was there the day that this announcement was made and that same day the Minister asked us to come up with an alternative. The alternative was that perhaps we could talk to Johnson & Johnson (J&J) because they conducted a trial in South Africa, and we had enrolled a very large number of participants. J&J agreed to provide South Africa with half a million doses on the basis that it would be part of an implementation study because the vaccine wasn't licensed yet, and they weren't ready yet to submit all the documentation for an Emergency Use Authorization (EUA). Those doses from J&J allowed South Africa to start the initial rollout on the 16th of February 2021. The initial rollout was very slow because we had to wait for doses to arrive each week. Then, on the 28th of March we signed a big agreement with J&J for 31 million doses. And on the 6th of April we signed another agreement with Pfizer for 20 million additional doses. By that time we had secured enough doses, the question was: When would we actually get them? That's where the problems started.

Oh no! What was the delay at that point?

The first problem was that we had to put the rollout of the J&J vaccine on hold when the FDA [U.S. Food and Drug Administration] put a hold on the vaccine based on some cases of abnormal blood clotting. In the midst of rolling out that vaccine, we had to stop. That was very damaging to the effort. Eventually we restarted. And then when we started rolling out the Pfizer vaccine too, we were finally able to gain momentum.

But one of the things that was quite difficult was that even though we signed our agreement with J&J in March, we couldn't get any doses. We couldn't get doses for months. The reason was that the doses were being manufactured at the plant in Baltimore, Maryland, called [Emergent BioSolutions](#), which had a problem with their manufacturing process. It later turned out that a manufacturing plant in Port Elizabeth, South Africa, was doing fill and finish and had produced millions of doses of

the J&J vaccine, but [they had sent all of it to Europe](#) and didn't provide any to South Africa.

We were thwarted at so many points along the way.

And even with all that, South Africa is still probably in a better position than many other African countries.

Absolutely.

Did the country consider using vaccines developed in China or Russia?

The South African government had decided—with the advice of scientists from the vaccine advisory group that I used to sit on—that they would not use any vaccine that was not approved by our regulator. So even though we were being offered donations from China, and other places, we could not accept them. Our issue was we didn't have the data and our regulator needed to see the data to issue an EUA, so we couldn't accept donations. We had to wait for the companies that were willing to submit to our regulator, which were AstraZeneca, Johnson & Johnson, and Pfizer. We couldn't get Moderna—they told us right at the beginning that they had no interest in the South African market, and their vaccine was about three to four times the price of the Pfizer vaccine so even if they did offer us doses, they were just too expensive.

What could have been done differently to make this process more efficient?

The bottom line is that the system for distributing vaccines is seriously broken. Actually, you can't even call it a system because there is no system in it. If you plot out when vaccines became available to which countries and under what conditions, you see that the countries that were able to vaccinate first were basically the five countries that make vaccines: the U.S., the U.K., Germany, China, and Russia, plus India. India gets thrown in because they had Serum Institute making the AstraZeneca vaccine called Covishield. Some countries, including China and Russia, were vaccinating the earliest because they didn't wait for approvals. Other countries, including the U.S., invested billions of dollars of taxpayer money into vaccine development, so they were also the first to benefit in late 2020.

The next group to access vaccines were the countries that secured advance market commitments. They paid up front. These countries included Israel, Denmark, and Australia, among others. Those countries bought a huge number of doses because they weren't sure which vaccines were going to succeed. They were the next in line. Israel was a clear example of that because they struck a deal with Pfizer to send them vaccines very quickly so that Israel could do implementation research for the

company.

The next set of countries got vaccines on political grounds. Those were countries that secured vaccines from China or Russia based purely on political favor. These countries include the United Arab Emirates, Turkey, Egypt, Morocco, Chile, among others. They were getting vaccines in February of 2021.

The next group of countries received vaccines through bilateral purchasing. South Africa is one of those. Then the countries that were last in line were those that were totally dependent on COVAX. Mali was the first country to receive those doses in late March/early April.

This was the sequence of distribution and, as you can see, the countries that relied on the only mechanism that exists for global equity in vaccine distribution were the countries that got the vaccines last.

What needs to be done to fix this?

At the heart of it, this should make it very clear that market forces and political influence shouldn't be the basis on which you get vaccines. Some countries got vaccines so much earlier than others purely on the basis of political favors—nothing else. That needs to change. Somewhere along the way, the UN has to step in and say that this system is broken and their needs to be a new way. Pandemic vaccines will have to operate under some new rules.

Countries that pay to make their own vaccines will want the vaccines first and they're not going to wait. I don't think you can fidget with that. But once those countries have received their doses, the remainder must go to COVAX or some equivalent. COVAX has been singularly unimpressive in distributing vaccines because it has been undermined at every turn. The same companies that are supplying COVAX are also supplying the individual countries as well and they are prioritizing individual deals and pushing COVAX to the back of the queue. As a result, COVAX just has no supply. All that must change. As long as individual countries and individual companies are doing whatever they wish, there is no plan. Donations are not a solution to this problem. They only go to friends or as a quid pro quo. The countries that need the doses most have nothing to offer in return. There has to be a redistribution of vaccines.

We also need to think about the next pandemic and build vaccine manufacturing capacity now.

By Kristen Jill Abboud

Maternal-Fetal Newborn Immunity Conference



The banner features the eSymposia logo in green and white. The main title 'Maternal-Fetal Newborn Immunity' is in white. Below it, the dates and times are listed: 'October 28-29, 2021 | 10:00AM EDT | 2:00PM UTC*'. A small note says '*Program is in development and subject to change'. Underneath, the scientific organizers are listed: 'Tobias R. Kollmann, Sing Sing Way, Sabra L. Klein and Arnaud Marchant'. There are four circular headshots of the organizers. The background is dark blue with a glowing network of nodes and lines on the right side.

eSymposia
Maternal-Fetal Newborn Immunity
October 28-29, 2021 | 10:00AM EDT | 2:00PM UTC*
*Program is in development and subject to change

SCIENTIFIC ORGANIZERS:
Tobias R. Kollmann, Sing Sing Way, Sabra L. Klein and Arnaud Marchant

Do not miss the opportunity to register for the upcoming interdisciplinary Keystone Conference on maternal-fetal-newborn immunity. The conference, organized by Tobias Kollmann, Sing Sing Way, Sabra L Klein, and Arnaud Marchant will feature presentations from numerous leaders in the field and will take place on October 28th and 29th. More information can be found [here](#).

Must Read

Researchers continue to debate the deployment of booster doses for COVID-19 vaccines while much of the world remains completely unvaccinated. Other research is focused on identifying the correlates of protection for COVID vaccines.

- The [U.S. Food and Drug Administration authorized](#) booster doses of the Pfizer/BioNTech COVID-19 vaccine for individuals who are over age 65, at high risk of developing severe COVID-19, or at high risk of SARS-CoV-2 exposure.
- The [U.S. Centers for Disease Control and Prevention subsequently endorsed](#) these recommendations and also recommended a booster dose of this vaccine for those in high-risk occupational and institutional settings.
- The debate over COVID-19 boosters, both in the U.S. and globally, and the evidence supporting their use was discussed in [this editorial](#) in *The Lancet*.
- [Results from a study in Israel](#), published in *The New England Journal of Medicine*, indicate that individuals over 60 who were given a booster shot of the Pfizer/BioNTech mRNA vaccine had an 11-fold lower risk of being infected with COVID-19 and a 20-fold decrease in their risk of developing severe illness than those who did not receive a booster dose.

- According to [this article](#) in *Immunity*, a strong priming of memory B-cell responses occurs in both SARS-CoV-2-infected and mRNA-vaccinated individuals. However, neutralization potency against SARS-CoV-2 variants was stronger in infected individuals than those vaccinated, suggesting boosting may offer advantages.
- The efficacy of Moderna's mRNA-based COVID-19 vaccine was found to be 93.2% for prevention of illness and 98.2% for prevention of severe disease at the close of the blinded Phase III efficacy trial, according to [this article](#) published in *The New England Journal of Medicine*.
- In this [correspondence piece](#) published in *Nature Medicine*, the authors describe the ongoing effort to define the correlates of protection for COVID-19 vaccines.
- According to [this preprint article](#), both binding and neutralizing antibodies are likely correlates of protection for the Oxford/AstraZeneca COVID-19 vaccine.

Global COVID Lab Meeting

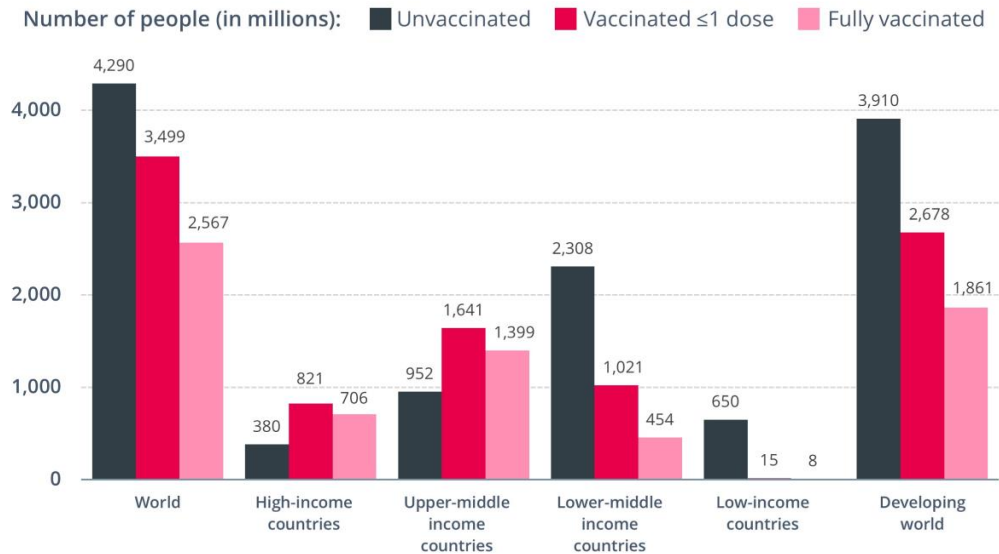


Join us for the next Global COVID Lab Meeting on October 7th at 10:00 am EDT with Dr. David Furman, Director of the Stanford 1000 Immunomes Project and Chief of the Center for AI and Data Science of Aging at the Buck Institute for Research on Aging. Dr. Furman will speak about "Systems Biology of the Aging Immune System". [Register for the webinar here.](#)

COVID-19 in Numbers

World Vaccination Status

September 27, 2021



Please note: The classifications above are based on World Bank income classifications for each country. The Developing World includes upper-middle income countries, lower-middle income countries, and low-income countries. Source: The graphic is based on the latest available data from [Our World in Data](#) and is compiled by [Pandem-ic](#).

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