

# The science and economics of COVID-19 vaccines

August 31 2020, by Crispin C. Maslog

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Countries are now racing to produce a vaccine against COVID-19. Credit: Vesna Harni from Pixabay

A mad race to produce a vaccine against COVID-19 has begun with the world's superpowers leading the pack. At stake are millions of lives and

billions of dollars.

Among the frontrunners is the US with its futuristic-sounding Operation Warp Speed. Europe and China also have their own leading [candidate vaccines](#). As the race heats up, cheering and waiting on the sidelines for the crumbs are the less developed Asian, African and South American countries, where most of the clinical trials for the vaccines will be or are being conducted already.

Normally, it takes at least four years to develop a [vaccine](#) before it is marketed. But in the COVID-19 age, health experts are optimistically predicting a vaccine in one year or less. There is a sense of urgency and we hope for an early breakthrough.

Meanwhile, at the head of the line waiting for the vaccine, expected to be ready by the end of the year, are the populations of the Western countries. They are, of course, the priority for their governments which funded the research in the first place.

## **Developing world as trial labs**

Poor Asian countries and the rest of the developing world, unfortunately, have to wait at the end of the line. That is why some of them have agreed to be guinea pigs for the [vaccine trials](#) in the hope that they will be given preference when the vaccines are rolled out for use. Beggars cannot be choosers.

Mid-August President Rodrigo Duterte committed the Philippines to participate in the phase 3 trials of Russia's Sputnik V vaccine. Joining the Philippines in the clinical trials are Saudi Arabia and the UAE. However, the Philippine President's rash acceptance of the Russian offer of clinical trials in the country might be a catastrophic mistake because the Russian project is suspect.

Indonesia has started a late-stage human trial of a Chinese-made COVID-19 vaccine that will involve as many as 1,620 patients. No less than the Indonesian President Joko Widodo launched the trial at a ceremony in Bandung, West Java, in mid-August.

The Indonesian decision to be a clinical trial partner with China might be a better bet because China is a leader in the race to produce a vaccine.

The vaccine candidate produced by Sinovac Biotech is among the few in the world to enter phase 3 clinical trials, or large-scale testing on humans—the last step before regulatory approval. CoronaVac, is undergoing a late-stage trial in Brazil and Sinovac expects to test it in Bangladesh also.

Asia is the favorite destination of drug manufacturers for clinical trials for several reasons. Among them are medical expertise in specific therapeutic areas, availability of vast patient pools, excellent laboratories and infrastructure, comparable quality and lower costs. Another factor is comparable incidence and prevalence of Western diseases.

There is likewise worldwide data acceptability. Data from clinical [trials](#) in Asia are routinely accepted by the regulatory agencies—US Food and Drug Administration (USFDA) and European Medicines Agency (EMA). Also, the costs in Asia for procedures, diagnostic tests and visits are generally 30-40 percent lower than in the US and Europe.

## **Science must trump politics**

As the race heats up, a word of caution is in order. Scientists must not sacrifice scientific integrity for politics but should follow the strict protocols for scientific research and production. Governments must put science over politics in the race to the vaccine.

Safety and effectiveness are crucial to vaccine development. A blunder in the [clinical trials](#) caused by rushing procedures, for example, could lead to deaths that will set back research and development by many years.

As it is, there is already "vaccine hesitancy" among the public everywhere, especially among the uninformed. Polls show that US citizens have become less confident about the safety of vaccines.

Polling by the opinion and data company YouGov in May found 55 percent of US adults saying that they would get a COVID-19 vaccine. By the end of July, that figure had dropped to 41 percent—well below the 60—70 percent experts think will be needed to achieve "herd immunity."

There is also substantial skepticism against vaccines in other countries, according to a recent study by the Wellcome Trust. In France, less than half of people believe vaccines are safe. In Ukraine—the most skeptical country in the world—the figure is just 29 percent. Let us not feed this vaccine hesitancy with instances of failure.

## **Who gets the vaccines first?**

As the superpowers rush to the finish line, the rhetorical question arises: who gets the vaccines first? Rhetorical because, unless an international body intervenes, we know the poor will get it last. Some Asian and African countries have negotiated agreements, but not most of Asia and Africa. And even for those who negotiated for agreements, there are no guarantees, and whether the amount of doses that will be obtained will be enough to cover majority of the population.

Unless governments subsidize the vaccines partially or fully they will be unaffordable for the poor. Early reports say the Chinese vaccines will

cost US\$145 per shot in the open market, while those from Oxford, UK, will only cost US\$4-10 because they will be subsidized. Some countries plan to provide free vaccinations, and even pay people to be vaccinated to ensure herd immunity, about 70-90 percent of the population.

There is hope on the horizon via COVAX, a consortium of 172 economies now being organized and "working with vaccine manufacturers to provide countries worldwide equitable access to safe and effective vaccines, once they are licensed and approved. It is the only global initiative that is working with governments and manufacturers to ensure that COVID-19 vaccines are available worldwide to both higher-income and lower-income countries," say the organizers in a news release.

Richard Hatchett, CEO of the Coalition for Epidemic Preparedness Innovations, one of the organizers of COVAX, says: "In the scramble for a vaccine, countries can... come together to participate in an initiative which is built on enlightened self-interest and also equity, leaving no country behind."

This is a welcome development and we hope it succeeds. May the best developed vaccines and humanity win. No shortcuts, please.

**More information:** Asia: Preferred Destination for Clinical Trials. [frost-apac.com/BDS/whitepaper/Asia-Pacific%20Clinical%20Trials%20-%20White%20Paper%20-%20Frost%20&%20Sullivan.pdf](https://www.frost-apac.com/BDS/whitepaper/Asia-Pacific%20Clinical%20Trials%20-%20White%20Paper%20-%20Frost%20&%20Sullivan.pdf)

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