

The COVID-19 Vaccines: Securing Trust with Health workers and First Responders'

Finally, the COVID-19 vaccines are here. The next stage is securing trust in the vaccines with scientific integrity and transparency amongst health care workers.

First, the numbers and basics: COVID-19 is affecting 219 countries with over 100 million cases globally, over 2 million deaths and slightly above 81 million recoveries. In Uganda, about 40,000 cases and 328 deaths due to COVID-19 have been recorded by the Ministry of health (WHO). Concerning vaccines in general, approximately 6 million deaths are saved through vaccine administration per year and the COVID-19 vaccines, approved by the world health bodies is equally safe. Vaccines are not drugs, but agents that work by stimulating a person's immune system to produce immunity to a specific disease, and protecting the person from that disease. Vaccines train and prepare the body's natural defences to recognize and fight off the viruses and bacteria they target. If the body is exposed to those disease-causing germs later, the body is immediately ready to destroy them, preventing illness. Vaccines are usually administered through needle injections, but can also be administered by mouth or sprayed into the nose.

Vaccines only work if people take them.

Health experts have said that ending the COVID-19 pandemic relies heavily on the vast majority of people getting vaccinated to safely reach herd immunity and limit the ability of the coronavirus to spread.

As the developed world grapples with challenges of distributing the COVID-19 vaccine and ensuring safe delivery to the last mile – human arms, we, researchers based in sub-Saharan Africa, similarly to what is happening in many parts of the world, are contending with vaccine hesitancy at many levels including public health, political and citizenry levels. Our work as public health researchers and physicians is already work cut out in trying to get public influencers, health workers and patients to take a COVID-19 vaccine. My focus will be on health workers and first responders to COVID-19. Why would this calibre of public service men and women hesitate to take vaccines donning the WHO Emergency List? What is our proposed remedy to vaccine hesitancy?



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The long and short of COVID-19 vaccines:

In April 2020, Pfizer and BioNTech in the United Kingdom collaborated to embark on vaccine development. The duo tested the vaccine on 40,000 people who freely consented to participate, with active monitoring for side effects. The WHO tested the vaccine candidate as well, and listed it as a safe vaccine for all people regardless of race, gender, color, and age. However, the WHO noted that the challenge with this vaccine was the required temperature for its transportation on long haul flights – ultra-cold chain condition below -80°C. Upon arrival in destination countries, the vaccine can be stored at 2 to 8 °C for only five days before administration. On the other hand, the COVID-19 Vaccine developed by AstraZeneca and Oxford University, United Kingdom, can be stored in a refrigerator throughout (2-8 Degrees Celsius).

In consultation with the WHO, Ministry of Health and THE COVID-19 Vaccine Global Access (COVAX), Government of Uganda is procuring the AstraZeneca vaccine. COVAX is the only global initiative that is working with governments and manufacturers to ensure COVID-19 vaccines are available worldwide; its aim is to accelerate the development and manufacture of COVID-19 vaccines, and to guarantee fair and equitable access for every country in the world. At full throttle, COVAX aims to have 2 billion doses fairly distributed worldwide by the end of 2021. Half of these doses will be distributed to resource limited settings. COVAX also provides an extra layer of scrutiny and validation, and guides priority groups for COVID-19 vaccination. The Framework identifies three groups of people as highest risk who should get priority access to COVID-19 vaccines: frontline health and social care workers; people over the age of 65; and people under 65 who have underlying health conditions. Frontline health and social care workers are not just at risk of being infected but also pose a higher risk of transmitting the virus hence the urgency to vaccinate them first. Upon this background, let me address emerging concerns that have come to our attention reading COVID-19 vaccination.

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Q: Why did it take such a short time to develop COVID-19 vaccines? They must be experimental drugs!

A: The biggest misconception is the work on the vaccine started when the pandemic began.

For example, although the COVID-19 vaccines are the first mRNA vaccines to complete all clinical trial stages and be licensed for use in humans, the technology has been around for a while. During the last two decades, such vaccines have been investigated extensively for infectious disease prevention, and for cancer prophylaxis and therapy. Human trials of cancer vaccines using the same mRNA technology have been taking place since at least 2011.

Conventional vaccines - including the whole of the childhood immunisation programme - use live viruses that have been attenuated (weakened or altered so as not to cause illness) or inactivated or killed organisms or viruses. However, these are slow to develop. The mRNA technology can be developed and deployed extremely rapidly compared to conventional vaccines.

Q: Why vaccinate us as health workers first?

A: There are a couple of important reasons why health care workers should be vaccinated first.

First, healthcare personnel are at risk of exposure.

Healthcare personnel continue to be on the front line of the nations' fight against the pandemic. By providing critical care to those who are or might be infected with the virus that causes COVID-19, healthcare personnel have a high risk of being exposed to and getting sick with COVID-19. Additionally, as other people, they may have underlying health conditions that can contribute to their risk of acquiring COVID-19 and experiencing severe outcomes.

Secondly, vaccinating healthcare personnel protects healthcare capacity.

When healthcare personnel get sick with COVID-19, they are not able to work, even when asymptomatic they need to self-isolate, and cannot provide key services for patients or clients. Given the evidence from other countries of ongoing COVID-19 infections among healthcare personnel, early vaccine access is critical to ensuring the health and safety of this essential workforce.

It is not clear if the vaccine will have a direct effect on the spread of the virus to their contacts, including hospitalized patients and other healthcare personnel. If a reduction in spreading is proved, this will represent an additional reason

Q: Why label vaccines as 'not for use in Europe, Australia, USA, Spain'?

A: We are not sure at this point how vaccines will be labelled. In the past some medicines which were donated or sold to African countries at reduced price were labelled with "not for sell or use outside of Africa". This is to avoid medications meant for Africa being found on sell on the black market outside of Africa.

There is no COVID-19 vaccine developed or distributed for specific regions, say for Africa, United Kingdom or USA among the front-runner vaccines.

Q: Why not stick to our prevention strategies and wait to see what happens?

A: All current prevention measures have consequences on the economy. Lock downs, curfews, limits on attendance result somewhere in a loss of revenue. Even the pillars of prevention like physical distances and wearing masks result in fatigue in following prevention strategies. The general idea is to vaccinate at least those at high risk of negative outcomes.

Additionally, this being a pandemic, there is need for a global strategy. Some countries or some places at some point may even restrict entry to people who are not vaccinated or non-immune. In some African countries this is not a new concept, for example yellow fever vaccination is required to enter Uganda.

Q: Why vaccinate, if COVID-19 is not as virulent in Uganda as elsewhere?

A: In my opinion it is important to understand if the pandemic really behaves differently here or it is simply due to factors like the young age of the population.

Underestimation of cases (due to under testing either because of testing capacity or asymptomatic, mild-symptomatic individual don't report for testing) may also play a role. However, by extrapolating the European data, there should have been many more sick and dead cases in Africa than there actually are. There are speculations that the African population may have some protection due to high infection-rate or immune-modulation due high exposure to viral or other infections.

That said, we still have subjects that can be at high risk of severe Covid-19 and death due to age and comorbidities and we lack infrastructures and specialized personnel to deal with severe cases, especially if the numbers increase. In these groups, if the infection is severe, we may face excess mortality compared to other settings.

Let us also not forget that we are starting to understand now that a lot of patients face long term consequences, some mild, but some rather incapacitating involving several organs. These patients will require long-term support from the health system that has to deal with them. The best way to prevent these long-term complications is to prevent COVID-19, and one way of doing that is vaccination.

Q: There are many COVID-19 conspiracy theories that are not yet addressed at national level

A: People react very strongly to any kind of new risk, or perceived risk from something they have no experience with. It is reasonable to wonder about the vaccine or seek more information from reliable sources before deciding to get vaccinated. Safety trials of the top vaccine candidates did not find major adverse effects; larger trials for safety and efficacy are now underway. Nine pharmaceutical companies developing vaccines have pledged not release one unless it has been shown to be safe and effective.

However, the public should be aware that anti-vaccine groups are using social media misinformation campaigns to disrupt plans to roll out COVID-19 vaccines.

It is important that health care workers understand the science behind the Covid-19 vaccines and distance themselves from the myths.

There are already several official sites with a list of myths versus science and there are a couple I advise the reader to visit

<https://www.hopkinsmedicine.org/health/conditions-and-diseases/coronavirus/covid-19-vaccines-myth-versus-fact>

Q: They are not working on South Africa; how much less effective do you think they will be in poorer countries.

A: I don't think the effectiveness is related to poverty (provided that the vaccines can be stored accordingly to the manufacturer). So far what we know is that some vaccines may be less effective in preventing the infection with certain variants and for certain age brackets. They may still be effective in preventing severe illness in reducing the number of people who need to be admitted to hospital for treatment.

For further inquiries about the COVID-19 vaccines and vaccination in Uganda, please contact, Ministry of Health, Uganda on **0800 100 066** or our call center ATIC: **0800200055**

The World health Organisation COVID-19 Dashboard <https://covid19.who.int/region/afro/country/ug>

The World health Organisation COVID-19 Vaccines situation report <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines>

Disclaimer: The opinions and views of the author do not necessarily reflect the position of the Infectious Diseases Institute. The writer has no professional relationship with the COVAX and the vaccine pharmaceuticals