



National Science and Technology Forum

S.E.T. for socio-economic growth

Message from the NSTF Executive Director

We can beat the pandemic!

By Jansie Niehaus

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It is understandable that some people should hesitate to be vaccinated against COVID-19. In the age of social media and mobile communication, when information on any topic is available at our fingertips, it is almost impossible to avoid misinformation. It is all too easy for knowledge to be contested and myths to be propagated, and when this happens, it can be very difficult to know what to believe and what to do.

And yet, in the case of COVID-19, the stakes could not be higher. South Africa's local government elections are taking place on 1 November. There are fears that the preceding political rallies could become "super-spreader" events that usher in a fourth wave of the pandemic. At the same time, there remains the risk that new, even more infectious variants of the novel coronavirus will emerge.

In view of this, it is of the utmost importance that we should all be clear about what to do when it comes to getting vaccinated. Simply claiming that we do not have enough knowledge, or mistrusting anything that comes from a scientific source, is not a good enough reason for refusing to take our place in the queue.

Arming ourselves with reliable information

The Academy of Science of South Africa (ASSAf) recently launched a booklet titled [*Essential facts about COVID-19: the disease, the responses, and an uncertain future.*](#) The booklet targets South African learners, teachers and the general public, addressing in clear and simple terms all the questions we may have had about COVID-19 but were too afraid to ask. (*Available in the ASSAf research repository online*).

In explaining how vaccines work, the booklet notes that the virus that causes COVID-19 is a new (or novel) virus for humanity. Because our immune systems are not familiar with the novel coronavirus, it can "sneak" into the body without being

detected by the body's defences. It then multiplies until it is stopped by the immune system – or until it is too late to save the person's life.

COVID-19 vaccines close this gap in advance by presenting the immune system with a readily identifiable part of the novel coronavirus. If the vaccinated person is subsequently infected with the virus, his or her immune system will be able to recognise the virus, and will therefore respond more quickly and effectively to neutralise it.

How could COVID-19 vaccines have been developed so quickly?

It should be noted that neither vaccines nor coronaviruses in general are new. The common cold is often caused by one of the coronaviruses. As for vaccines, they have been widely and successfully used for over a hundred years. Their design and manufacturing processes are well established. The industry and companies that manufacture them are large and highly efficient.

How could COVID-19 vaccines have been developed so quickly? Partly, the answer lies in the fact that coronaviruses and vaccines were already so well understood, and partly, it lies in the scale and urgency of the situation facing the world – and the corresponding scale and urgency of the world's response.

It became clear very early on that the spread of COVID-19 constituted a global emergency. The World Health Organization (WHO) declared it a pandemic, and massive funding was made available by multiple governments and the private sector.

New drug development normally takes years, but in this case, given the intense and concentrated effort across the globe, and because various institutions, companies and countries were competing with each other, COVID-19 vaccines were produced in record time.

The weight of evidence in favour of vaccines

The vaccines were made by well-qualified people in well-resourced environments. They were thoroughly tested in the course of numerous trials. Now, billions of people across the world have been vaccinated, and the vaccines have proved themselves to be safe and effective.

According to Our World in Data figures, as at 12 October 2021, 47.5% of the world's population had received at least one dose of a COVID-19 vaccine, a total of 6.54 billion doses had been administered globally, and approximately 22.45 million new doses were being administered every day.

Yet a very small number of people have died following the vaccine, whereas at least 4 842 716 people are recorded to have died from the virus, globally, as at 11 October 2021. The WHO monitors all the cases of deaths after vaccination that are reported.

Based on the data, and according to the WHO it is highly unusual for anyone to suffer adverse effects from the vaccines. Some people may experience flu-like symptoms, but these pass quickly. Any unusual side-effects, such as allergic reactions, or the Guillain-Barré syndrome – a rare disorder in which the immune system attacks the nerves – can be effectively treated.

The South African Health Products Regulatory Authority (SAHPRA) monitors the cases of Adverse Effects Following Immunisation (AEFI). They do thorough investigations of these. Investigations into 32 cases of death after vaccination have been completed to date, and 28 of these were found to be not related/linked to the vaccination. For the remaining 4 cases there was not enough information to draw conclusions. Health professionals are encouraged to report AEFIs on the app that is available for this purpose, or the COVID hotline: 0800 029 999.

The conspiracy theories involving big pharmaceutical companies, and the scare stories that the vaccines would lead to countless deaths, that computer chips would be inserted during vaccination to allow "them" to control the vaccinated masses, have been thoroughly debunked.

Ultimately the only solution?

The vaccines are safe, and the vaccines work. They are currently by far the best weapon to fight the pandemic. The vaccines may in the long run be used together with promising new treatments for COVID-19. Despite the incredible speed in producing the vaccines, and their rapid roll-out in many countries, it has still not been fast enough to bring the virus under control, or to stay ahead of the virus's mutations.

New variants, such as Delta, are able to spread faster than the original virus. New variants also seem to be resistant to the immunity people get from being ill with COVID-19. It now seems likely that just about everyone who has any regular contact with other people will sooner or later get the virus – and that, if you are infected, and do fall ill, the severity of your illness will ultimately depend on whether or not you have been vaccinated.

Sources: [Coronavirus \(COVID-19\) Vaccinations - Statistics and Research - Our World in Data](#); [Everything you need to know about vaccines — our only viable strategy for living with Covid-19](#) - L Allais, S Madhi, I Valodia, A van den Heever, M Veller and F Venter (Daily Maverick, 26 July 2021)); [Coronavirus disease \(COVID-19\): Vaccines safety \(who.int\)](#); [SAHPRA Statement on Adverse Events Following Immunisation \(AEFIs\) with COVID 19 Vaccines](#); [Adverse events following immunisation with COVID-19 vaccines \(sahpra.org.za\)](#)

The opinions expressed above are those of the Executive Director, Ms Jansie Niehaus, and do not necessarily reflect the views of the [Executive Committee](#) or [members](#) of the NSTF.