

What vaccine delays have cost SA in lives

Due to constant delays in the country’s vaccination roll-out, don’t expect immunity until 4 June at the earliest for the first high-risk patients

Chris Bateman

The most ambitious vaccination roll-out ever undertaken in South Africa begins on Monday, 17 May, in the face of an imminent but indeterminate Covid-19 third wave – with just 1% of the entire target population currently vaccinated.

At the current job rate of about 12 000 patient-facing healthcare workers per day, the trailblazing Sisonke study will overlap with Monday’s vital phase two rollout launch to the 5.5-million vulnerable people over 60 years old by a week.

This comes after nearly two months of controversial delays, which top epidemiologists, infectious disease authorities and researchers agree were overly cautious, giving the virus an avoidable, costly foothold.

Professor Francois Venter, a veteran of the protracted medico-political battle for antiretroviral HIV drugs, says without the two month delay to the Covid-19 vaccine rollout, including initial vaccine procurement, we could have had 500 000 high-risk people protected already.

“If only 5% got Covid and 10% of those died (both very conservative), we would have saved 2500 people.”

Early pauses the worst

Controversial vaccination delays included initial procurement, insufficient variant data with low efficacy (the initial AstraZeneca vaccine batch), and eight extremely rare vaccine-related blood clotting deaths globally (the Johnson & Johnson vaccine).

There were no reported adverse incidents among the 290 000 South African healthcare workers vaccinated by 13 April, when the roll-out



Highest risk: More than 400 000 healthcare workers have been vaccinated in South Africa so far as the country readies to roll out vaccines to those over 60 years old from Monday. Photo: Sharon Seretlo/Gallo Images

was halted. The Sisonke roll-out resumed on 28 April.

Professor Alex Welte of the South African Centre for Epidemiological Modelling and Analysis at Stellenbosch University said an early vaccination pause was considerably

more impactful. “Hitting the pause button at an early stage of a vaccination programme can have larger-than-naïvely-expected consequences in the long run. It is probably better to continue vaccinating while concerns are rapidly investigated.

“It is better to defer decisions to pause, until and only if there is a specific course correction that has been decided. In other words, the decision to pause should be deferred until you decide there really is a problem.”

He emphasised that “the infection wave itself is created by preparedness or the lack thereof. By pausing early, one risks missing out on a significant boost in early immunity, which can substantially impact the unfolding of an imminent outbreak. It’s like dishing out umbrellas to just a few instead of focusing on stopping the rain.”

Cost in lives

While the national department of health puts the current coronavirus death tally at about 55 000 since the first case was identified in KwaZulu-Natal in March last year, the SA Medical Research Council (MRC) calculates Covid-19 fatalities at three times as many, having compared excess natural deaths since the pandemic began with historical all-cause mortality.

The council estimates that the near-overwhelming of the country’s

health services during the previous two surges (June 2020 and early January 2021) accounts for 5% to 15% of the estimated 150 000 Covid-related deaths.

South Africa’s vaccination programme lags behind those of its neighbours and the other Brics countries (Brazil, Russia, India, China and South Africa), although the quality of some of their vaccines is questioned. Some 40 million people, or 67% of South Africa’s estimated 58-million population, need to be inoculated to reach collective herd immunity.

By 11 May, 83% (414 372) of 500 000 high priority patient-facing healthcare workers had been vaccinated in the twice-paused Sisonke vaccination study, representing 45% of all healthcare workers.

Elderly highly vulnerable

One of the biggest concerns experts noted is the higher-risk environment during the 14 to 21 days before immunity kicks in and the consequences for vaccine-eligible people over 60. According to Dr Guni Goolab, from Business for South Africa, even with vaccination sites expanded from 95 (Sisonke) to 1200 – initially boosting the vaccination rate to 80 000 people per day, from Monday, immunity for the earliest registered recipients will only kick in from about 4 June.

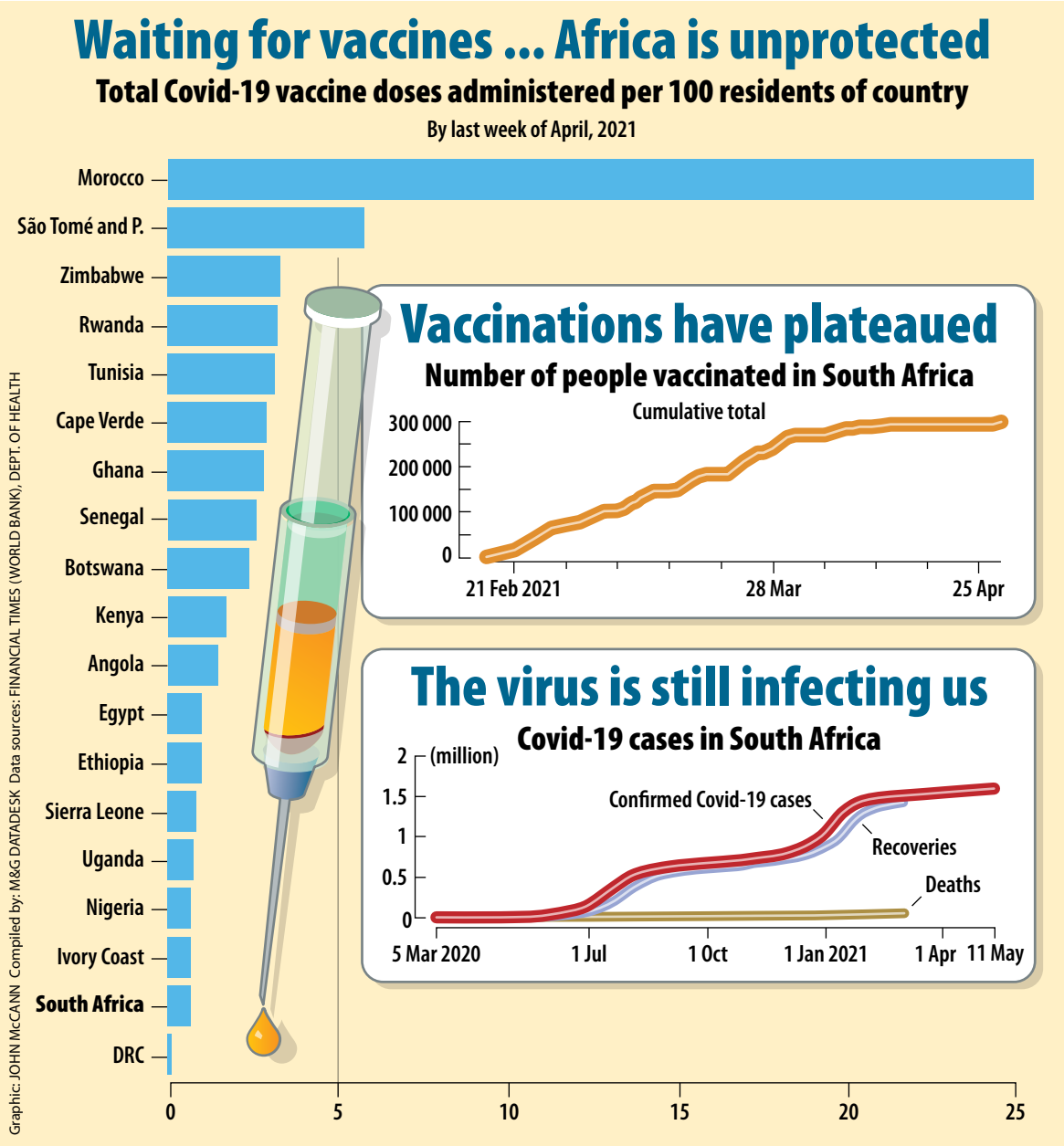
Professor Lynn Morris, the dep-

uty vice-chancellor for research and innovation at the University of Witwatersrand, said any further delays in the vaccine rollout with a looming third wave as winter approaches could be devastating.

“We lost precious time. The roll-out needs to be speeded up urgently using all available means (public and private) and creative approaches such as drive-throughs. For now, we will need to continue to rely on behaviour change to limit virus spread.”

However, ministerial advisory committee co-chairperson Professor Barry Schoub, believes that even if the country’s vaccine rollout had been up to par with most European countries, there is no way we could have reached a level to avoid the third wave. “One only has to look at those self-same European countries to see how severe their current epidemics are despite 20% and more vaccine coverage.”

He concedes that neighbouring and other African countries are well ahead of South Africa in vaccine roll-out but adds, “you must remember that they’ve settled for vaccines that have not yet received stringent regulatory approval from reputable international regulatory authorities. I do think that the strict standards set by Sahpra for licensure of vaccines are correct for the public health of the country.”



Newly arrived mutations are ‘variants of concern’

Enunice Stoltz

South Africa is preparing for a possible third wave of Covid-19 with less than half a million healthcare workers vaccinated so far. Adding to this, the efficacy of the vaccines the country is about to distribute is also threatened after two additional variants were detected in the country

The “variants of concern”, as defined by the World Health Organisation, include the B.1.351 variant, first detected in South Africa, the B.1.1.7, first detected in the UK and the B.1.617.2 detected in India.

The B.1.351 lineage, also known as the 501.Y.V2 variant remains the dominant virus and is responsible for 95% of the infections in the country.

Professor of vaccinology at the University of the Witwatersrand, Shabir Madhi said the variant first detected in the UK is about 60% more transmissible, 40% more virulent – which means that the person develops more severe disease – and more resistant to the immune responses. However, this variant “isn’t affecting the antibody responses that much and remains somewhat sensitive to the antibody that’s used by the vaccine.”



New strains: While the Covid-19 variants first detected in India and the UK have made their way to South Africa, the number of cases has been relatively low. Photo: Guillem Sartorio/AFP

The B.1.617 variant, first detected in India, shares the same mutation found in the South African variant. But its mutation – the B.1.617.2 detected in South Africa – is possibly 20% more transmissible and relatively resistant against the antibody that is induced by the vaccine.

“That is why we are concerned about it,” says Madhi.

Professor Burtram Fielding, a virologist at the University of the Western Cape, explains that though the variants – first detected in the UK or in India – are the dominant variants of the virus in those countries, this does not necessarily mean they would become the dominant variants in South Africa.

“These viruses tend to mutate to

give them a selective advantage in a particular host in a particular population in a particular country,” says Fielding.

Fielding says the variants are different because of their mutations. “All of the variants of concern have arisen due to mutations in the spike protein. So the spike protein is the viral protein that interacts with the protein on the human cell to facilitate entry into the human cell. When we give these vaccines, the vaccines stimulate the immune system to produce antibodies. These antibodies specifically bind to the spike protein. And if there’s something bound to the spike protein, it means that the spike protein cannot bind to the human cell protein and means it cannot get into the human cell.”

“So, the interaction between these antibodies and the spike protein is very specific. Small changes in the spike protein make that interaction nonspecific and in some cases, then the antibody cannot specifically bind to the spike protein which then makes it ineffective,” Fielding explains.

Meanwhile Dr Richard Lessells, an infectious diseases specialist at the KwaZulu-Natal Research Innovation

Below zero storage presents challenges to rural areas

With 330 000 Pfizer doses now landing weekly at OR Tambo International Airport and consignments nearly doubling to 630 000 per week by the end of June, proper cold chain management will prove crucial.

The Pfizer vaccine can be stored at -70°C for up to six months, after which it can be stored at -20°C for a further 14 days.

Vials can be transferred to a refrigerator for an extra five days of storage only.

According to the *Mail & Guardian’s* sources in the Covid-19 vaccine cold chain management programme, most provincial hospitals and depots have adequate cold

chain storage capacity, but most district clinics do not. This means that skilful logistics management will be required for supply management between hospitals, depots and vaccination clinics, especially in rural areas, where clinics have refrigeration capacity of just 2°C to 8°C.

One source said childhood polio vaccine campaign cold storage protocols were strengthened for the expanded programme on immunization three years ago, resulting in most district hospitals now having -20°C refrigeration capacity.

This explains why the Pfizer vaccines are scheduled to arrive at

provincial vaccination and distribution sites every fortnight.

Dr Stavros Nicolaou, the leader of Business for South Africa’s health stream, said once batches of newly arrived Pfizer vaccines pass the three to nine day quality assurance testing process, they’re transported to the BioVac depot in Midrand for national distribution. The first batch of 330 000 doses arrived at Midrand on 11 May and was stored at -70°C.

“If we work smartly and efficiently, the first supplies should start arriving at the district vaccination sites by Monday, 17 May. The entire process is a lot more complex for the (single-dose)

Johnson and Johnson (J&J) vaccinations,” he said.

Pfizer’s strict cold storage requirements mean that if a vaccine batch arrives at a district clinic on a Thursday or Friday, the weekend will consume two of the precious maximum five days of ordinary fridge storage, resulting in wastage.

Nicolaou said that by Wednesday, 12 May, about 180 vaccination sites had been accredited and curated for handling the phase two rollout.

The current vaccination accredited sites represent 6% of the 3 000 sites envisaged nationally – staffed by appropriately trained healthcare staff.