

## South Africa's drop in Covid-19 cases adds to questions about waves of infections

**Gabriele Steinhauser | The Wall Street Journal | 15 March 2021**

EARLIER this year, doctors and epidemiologists in South Africa's economic capital were bracing for the worst. A new coronavirus strain was surging across the country, thousands of holidaymakers were due to return from Covid-19 hot spots, and one in three coronavirus tests was coming back positive. Then something unexpected happened: Covid-19 cases started dropping. Since mid-January, confirmed Covid-19 infections in South Africa have fallen from a record of nearly 22 000 a day to around 1 000, without a large-scale vaccination campaign or stringent lockdown. Fewer than 5 percent of Covid-19 tests are finding traces of the virus, a sign that health agencies are missing fewer cases.

The government has lifted most of its remaining virus restrictions. The cause of this steep decline in cases remains somewhat of a mystery. As in other countries that have at some point experienced surprising drops in Covid-19 cases - such as India, Pakistan and some parts of Brazil - epidemiologists and virologists are piecing together different explanations for why the outbreak in South Africa isn't following patterns set elsewhere. Those range from important population groups reaching sufficient levels of immunity to slow down transmission, to people sticking more closely to social-distancing rules, such as wearing masks and voluntarily reducing contacts, when deaths were mounting before the decline.

During the troughs, meanwhile, life in some places can feel almost normal again. Filling the gaps in the world's understanding of the virus could have important implications for public health decisions. Those include how to calibrate government interventions such as lockdowns, where best to target vaccines, and when a country or region has reached herd immunity - or if that is even possible, given the emergence of new coronavirus strains. One complicating factor in South Africa, as in some other countries, is that researchers don't know the true toll of the virus on the population. Because of limited testing capacities and asymptomatic infections, there is no definitive data on how many people have recovered from Covid-19 and may now be immune.

Virologists are continuing to study the coronavirus variant, known as B. 1.351, that powered the latest wave of infections here. The strain appears to make some existing vaccines less effective and, in some cases, has reinfected people who had recovered from a previous bout of Covid-19.

### **Drop in infections didn't follow lockdown**

In contrast to the slump in cases much of Europe experienced last summer, the current drop in infections in South Africa didn't follow a strict government-imposed lockdown. At the turn of the year, which overlaps with the Southern Hemisphere's main summer vacation, the government closed popular beaches, tightened the nightly curfew and banned large social gatherings and the sale of alcohol. A national mask mandate has been in place since April 2020. Indoor dining at limited capacity, however, was permitted throughout and many families came together for Christmas and New Year's. Most restrictions came only after tens of thousands of South Africans working in economic centres like Johannesburg had already travelled to see family in provinces where Covid-19 case numbers were double the records set in July, during the first wave.

Workers' return home in early January, often piled into shared minibus taxis that are a common means of public transport in South Africa, created perfect conditions for the virus to spread. The simplest explanation for the sudden mid-January drop in cases is that sections of the population had reached a level of immunity that made it harder for the virus to jump between different groups,

according to Jinal Bhiman, a principal medical scientist at the National Institute for Communicable Diseases.

Only about 1.5-million South Africans, around 2.5 percent of the population, have tested positive for Covid-19. But it is clear that the actual level of infection has been much higher.

### **Scientists are focusing on networks**

Since cases first started surging in May, the country has recorded more than 145 000 excess deaths, of which 85 percent to 95 percent are likely due to Covid-19, according to the South African Medical Research Centre.

That means that about one in 500 people in South Africa - where the median age is a decade below the US - has died of the disease over the past 10 months. South African researchers, after testing the blood of 4 858 donors for antibodies in January, estimated that in the two hardest-hit provinces more than half of people between the ages of 15 and 69 had already had Covid-19. But it is unlikely that immunity levels are equally high in other parts of the country. Experts also have warned that blood donors aren't representative of the overall population, as shown by the recent resurgence of infections in the Brazilian city of Manaus, where an antibody study of donated blood last year found similar results. In the absence of national herd-immunity, scientists are focusing on the role of certain networks, or individuals with many social or work contacts, in driving and eventually slowing down localised outbreaks.

Researchers around the world are also studying the impact of voluntary changes in behaviour, which can anticipate and strengthen government-imposed restrictions. Saad Omer, director of the Yale Institute for Global Health, said when the rates go modify their behaviour. Just as a small increase in social contacts can drive an exponential rise in infections, curtailing gatherings when infections are already declining can further hasten the fall. Omer said small changes can have massive consequences. Perhaps the most difficult question to answer is what is going to happen next. Will cases go up again, perhaps powered by yet another coronavirus strain, as happened about two months after South Africa ended its first wave of infections in September? Juliet Pulliam, who directs South Africa's Centre of Excellence in Epidemiological Modelling and Analysis, says there is no way to know. She said it is not possible to predict with certainty when, or even whether, there will be a third wave in South Africa.