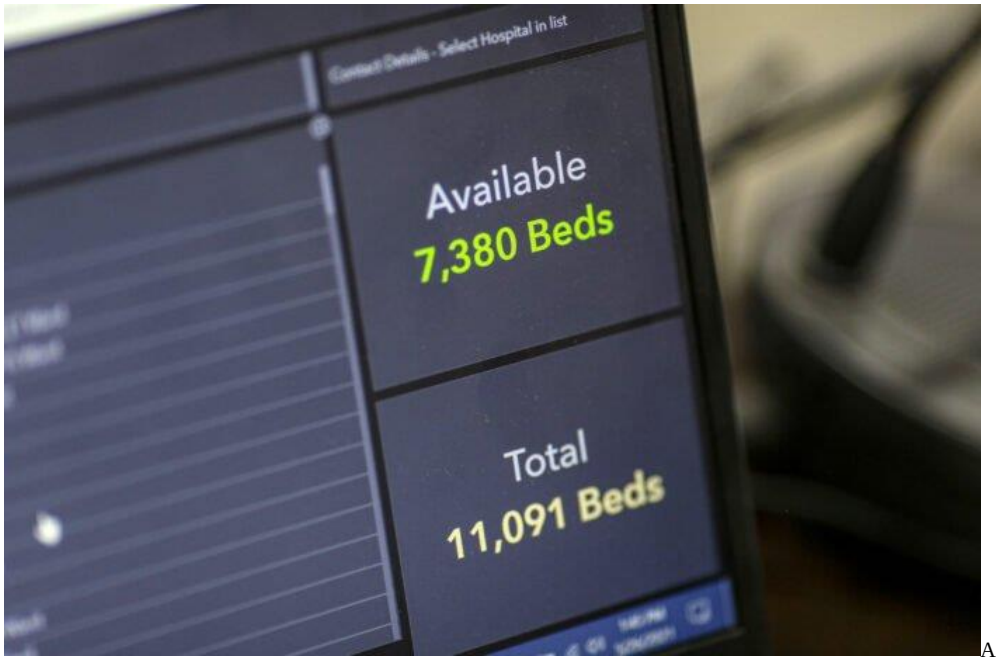
What the latest Covid-19 stats can tell us — and what they can't

Mia Malan Joan Van Dyk

18 May 2022



A computer screen displays the available beds of a hospital, in a Covid-19 'war room' set up at a Municipal Corp. of Greater Mumbai (MCGM) building in Mumbai, India, on Wednesday, May 26, 2021. (Dhiraj Singh/Bloomberg via Getty Images)

If we go by the sheer number of new, laboratory-confirmed SARS-CoV-2 infections, and use the formula the ministerial advisory committee (MAC) used in previous surges to calculate if a new Covid-19 wave had started, South Africa moved into a fifth wave on 7 May.

But not all scientists agree that we're in a fifth wave — or that it matters that much.

The MAC formula says when the seven-day moving average of new cases exceeds 30% of the peak of the previous wave, we're in a new wave.

The seven-day moving average is when you add up the seven past days of new cases, divide them by seven and repeat that calculation for each new day so you can plot all the seven-day averages on a graph. Because there would be a new seven-day average for each day, it's called a moving average.

The reason scientists use moving averages is these knock out big peaks and valleys (days with unusually high or low numbers) that could skew the bigger picture. So a seven-day moving average gives them the chance to look at averages over a period of time and get a more representative view of what is happening.

The data journalism organisation, Media Hack, has calculated that the peak of South Africa's fourth wave was on 17 December with 20 791 new infections. Thirty percent of that is 6 237 infections. South Africa tipped over that edge on Sunday, 7 May, when the seven-day moving average was 6 282 infections, which signalled the start of a new wave.

But, Media Hack reports, on a provincial level, only the Northern Cape and Western Cape had seven-day moving averages by 15 May. Although the Free State (13 May), Gauteng (11 May) and KwaZulu-Natal (6 May) had reached this mark in May, their seven-day averages dropped below 30% by 15 May.

Limpopo, Mpumalanga and Northwest have not yet entered their fifth waves.

What is driving the current surge?

The Omicron variant, which drove South Africa's fourth wave, is also driving the country's current surge in infections, but the present increase is fuelled by different forms of Omicron to that in the fourth wave. During our fourth wave a variant of Omicron known as BA.1 was the main form of the virus circulating in the country. A new form of Omicron, BA.2, then took over and caused a temporary rise in infections when schools opened.

But in mid-January yet another subvariant, BA.4, was detected in Limpopo, and at the end of February, another, BA.5, in KwaZulu-Natal. BA.4 and BA.5 have since been picked up in all provinces and in April more than half of the SARS-CoV-2 test result samples that scientists analysed were BA.4 and BA.5.

Meanwhile there is "tentative promising news" with the BA.4/BA.5-driven surge flattening out and showing signs of slowing down, researcher Ridhwaan Suliman reports, with the average proportion of Covid-19 tests coming out positive now standing at a "steady 24%".

The numbers say we're in a fifth wave, but are we?

The question now, National Institute of Communicable Diseases (NICD) scientists say, is: are the formulas we used to calculate if previous waves had started still relevant and can we trust the results?

The short answer on both accounts, according to the head of the NICD's division of public health surveillance and response, Michelle Groome is: probably not.

First, testing patterns have changed, which makes it hard to reliably compare the current testing data to the testing numbers of previous waves. The NICD's weekly testing reports show that fewer people are going for tests compared with previous waves. "People that have been vaccinated and/or had Covid-19 no longer seem to be going for Covid-19 testing when they get sick. So overall, testing rates are low," says Groome.

Rapid antigen tests, as opposed to PCR tests only, are also now used more widely. Because rapid test results don't need to be analysed in a laboratory, as in the case with PCR tests, health workers who conduct the tests often fail to report the results to the National Health Laboratory Service. So a smaller proportion of the actual test results are reported with the current surge than in previous waves, when PCR tests were mostly the only available test.

According to the epidemiologist Salim Abdool Karim, fewer people are choosing to test for Covid-19 because they may not realise they're ill. "The vast majority of infections in South Africa are either asymptomatic or mildly symptomatic."

With no new variant — each previous wave was driven by a new variant — and because cases during period between the fourth and fifth wave never returned to the low levels we saw between other waves, "we could technically even argue that South Africa is still in the fourth wave", says Groome.

The pace at which new infections, hospital admissions and deaths have been increasing during the current surge is also much slower than the rate at which they increased during the initial Omicron (BA.1) surge.

Which Covid-19 numbers are now meaningful?

Moreover, says Groome, case numbers have become less meaningful — using them to calculate a wave, even more so. “Severe outcomes like hospitalisations and deaths are better metrics to use now that we have seen the decoupling of cases and severe outcomes.”

Decoupling means that a smaller proportion of new cases now fall very ill with Covid-19 or die of the disease than in pre-Omicron waves. A *Nature* study published in April, for example, found people infected with Omicron have a two- to five-fold lower risk of dying than people infected with the Delta variant. Studies show this is because of a combination of changes in the SARS-CoV-2 virus that makes Omicron less able to spread to lungs and, most importantly, increased immunity from vaccination and previous infection.

So what we now want to keep track of is whether — and when — new infections will put strain on our health system because of hospital admissions, rather than how many new Covid-19 cases we have. “The purpose of calculating the beginning and end of previous waves with case numbers was to adjust public health measures [lockdown policies such as curfews, liquor sales bans and the closing down of schools] accordingly,” says Groome. “But increases in cases alone will no longer lead to public health interventions, so we now need to redefine what we consider to be a wave and how we act on that information.”

If Covid-19 now kills smaller proportions of infected people, why still bother with *it?*

Some people argue, what’s the point of trying to prevent new infections if everyone’s going to get infected anyway? They say, let’s let the virus spread and do little or nothing about it.

But 9 557 people in South Africa died of Covid-19 between 1 January 2022 and 15 May (almost all cases were Omicron infections) — and these are only the reported cases. The South African Medical Research Council (SAMRC) estimates that at least 85% of excess deaths in the country can also be attributed to Covid.

Excess deaths is a figure that tells researchers how many more people died in a certain period of time than what was expected.

Since the start of 2022, the SAMRC and University of Cape Town researchers tallied an extra 22 823 deaths.

The researchers estimate that 85% of excess deaths could be Covid-19-related, so the true death count for 2022 is probably more than triple the official figures of 32 380.

Compare this to other respiratory infections such as the flu. According to the NICD, flu kills between 6 000 and 11 000 people a year. Covid-19 caused 62 258 reported deaths in 2021 — more than five times higher than flu deaths (when using the upper range of flu casualties). Say flu only causes 6 000 deaths in a year, Covid-19 deaths are still 10 times more.

New Covid-19 treatments are becoming available to lower the chance of severe disease and death in infected people. But these treatments are expensive and, for now, mostly only available in high-income countries. In the absence of these Covid-19 treatments, the best ways to reduce your risk of falling very ill with Covid-19 is to either not get infected or to develop immunity from getting vaccinated, naturally infected, or both.

But dying or being admitted to hospital are not the only Covid-19-related risks — research shows Covid-19 can can cause long-term heart (cardiovascular), brain (neurological) and hormonal (endocrine) illnesses.

Scientists in the United Kingdom took scans of people's brains before and after they were infected with SARS-CoV-2 and found alarming results. People who caught the bug showed signs of brain damage in a number of regions of the brain, including sections that play a role in memory and smell. This was true even for people who had mild forms of Covid.

Says Abdool Karim: "We should be trying to prevent and/or slow the spread of infection as every person who does not get infected is saved from the risk of not only acute infection consequences but its many long-term consequences."

One of the longer-term consequences is long Covid-19.

International studies have shown that long Covid-19 could affect between 25% and 35% of people who were infected with SARS-CoV-2.

The illness has a list of over 50 debilitating symptoms such as persistent headaches, fatigue, hair loss, shortness of breath and attention disorder, that can show up months after someone has recovered from SARS-CoV-2 infection. That's the case even if that person was infected but didn't show any symptoms.

Recent studies have shown that even people who had no visible symptoms when they got infected with SARS-CoV-2, can develop long Covid-19.

Most people with long Covid-19 don't recover after they get sick initially, says Resia Pretorius, the head of Stellenbosch University's department of physiology. "Instead, their symptoms ebb and flow, but never fully disappear."

This story was produced by the Bhekisisa Centre for Health Journalism.