

Covid-19 reinfection cases in SA: NICD can't confirm repeat infections, wants labs to keep specimens

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Adiel Ismail



(Getty Images)

- **South Africa has no documented cases of Covid-19 reinfection, says the NICD.**
- **However, it admitted that it is unable to confirm if any of the possible cases it investigated is a repeat infection.**
- **It is now asking testing laboratories to keep all SARS-C0V-2 specimens for as long as their storage space will allow.**

The National Institute For Communicable Diseases (NICD) has failed to confirm whether there are any cases of Covid-19 reinfection in South Africa.

Covid-19 reinfection occurs when a person becomes infected, recovers fully, and becomes infected again.

More than 35 possible cases of Covid-19 reinfection have been reported to the NICD in all provinces over the last three months.

"There are most likely several more being reported to other expert and research laboratories," Dr Anne von Gottberg, a clinical microbiologist who heads the Centre for Respiratory Diseases and Meningitis at the NICD, told News24. She is also an associate professor at Wits University's School of Pathology.

"Not of all cases reported to us had paired specimens available that could be sent to us," said Von Gottberg, adding that, "only with specimens can we definitely prove a reinfection or not".

She said on closer examination, many cases were thought to be prolonged shedding, meaning that a second positive test was recorded from virus particles that were already there because of the original infection.

Tracking possible cases

Von Gottberg explained that for the NICD to probe a case, it first obtains consent from the person involved and records descriptions from both episodes, before details and all the specimens from the first and second episodes are retrieved from the relevant laboratories.

In addition, new specimens may also be requested.

"These can then be tested and retested, but can also be processed with less routine tests, like whole genome sequencing, cultures from respiratory specimens or serology from blood specimens."

She said the NICD would continue to investigate all possible reinfection cases reported to the organisation.

"We also know that several academic and expert laboratories throughout the country have the capacity and expertise to investigate any new cases that may be reported to them, and they will assist going forward and also report details as soon as they have investigated it [sic]."

Western Cape actively seeking reinfection cases

Professor Hassan Mahomed, Professor Wolfgang Preiser, and Dr Jantjie Taljaard are part of a team probing repeat positives in the Western Cape's public sector.

"We are actively looking for possible cases of reinfection in the province but [there are] none that we can prove to date," said Mahomed, who is a public health medicine specialist at the Western Cape Department of Health and the Division of Health Systems and Public Health at Stellenbosch University.

"I can only emphasise the importance of clinicians and patients contributing to our research by alerting us to these cases and confirm the current status quo that all possible cases must be discussed among experts," said Taljaard, an infectious disease specialist at Tygerberg Hospital and Stellenbosch University.

Preiser, a virologist at Stellenbosch University, told News24 the principal issue around Covid-19 reinfection was making a correct diagnosis.

"To prove Covid-19 reinfection, one would have to do intricate tests on both the old and the new samples. Unfortunately, oftentimes, these samples are no longer available and the investigation stops there," said Preiser.

Von Gottberg added that testing labs were busy, had little storage space and discarded specimens at regular intervals.

A call for help from laboratories

"We are requesting testing laboratories to keep all SARS-COV-2 specimens for as long as their storage space will allow."

Genetic material from the virus must be stored for later study, said Professor Burtram Fielding, a molecular biologist from the University of the Western Cape. But he reiterated space constraints.

"For individual patient samples, this is not a problem, as it requires very little storage space in a special freezer (a couple of square cm). However, imagine the logistical nightmare to store 700 000 times two samples for the positives in SA at the moment," he told News24.

It is also thought that someone who has had a second infection will develop much milder symptoms and will not be highly infectious.

This means the immune system memory will kick in faster the second time and will clear the virus quicker, Dr Ashley Pretorius, the managing director and chief scientific officer of Aminotek, told News24.

Although the polymerase-chain-reaction test (PCR) is the gold standard test used, he said it has a detection limit and is sometimes only be sensitive to 95%.

"It also has a lot of human interaction, such as prepping the sample after collecting and then making use of certain chemistries for the actual PCR reaction all of which has an acceptable level of error."

He said antibody based tests, which were quicker and far less expensive, also posed a challenge, since they fell short of detecting very low viral load - the amount of virus in an infected person's blood.

"The current tests lack sensitivity which is the ability of the test procedure to pick up the presence of an infectious agent at a very low concentration," he said.

"Since these tests rely on antibodies, it can also lack in sensitivity for the detection of reinfection because the viral load will not be as high as the first infection."

He added that samples could first be cultured to obtain a higher concentration of the virus, but this was very costly.

Meanwhile, the NICD cautioned that it was crucial for South Africans to know that Covid-19 reinfection will most likely, "happen not infrequently", and will, "happen more often the longer the virus circulates", said Von Gottberg.

"This is also the reason we emphasise that previous infection or the presence of SARS-CoV-2 antibodies do not mean you are protected; and therefore all individuals throughout South Africa should continue to wear masks, practise physical distancing, and regular handwashing."