

The lowdown on Covid-19 test protocols

Issued by Bonitas 2 Feb 2021

As South Africa finds itself starting to move out of the second wave of a Covid-19 outbreak, over eight million Covid tests have been carried out in the public and private sector since the start of the pandemic.

The global gold standard method to diagnose Covid is the reverse transcription polymerase chain reaction (RT-PCR) test. It is currently the most accurate way to detect SARS-CoV-2, the virus that causes Covid-19.

Will your medical aid pay for the test?

According to Lee Callakoppen, principal officer of Bonitas Medical Fund, "Funding is in accordance with the Council for Medical Schemes (CMS) guidelines, all clinically appropriate and referred diagnostic testing for suspected Covid-19 cases will be funded as a Prescribed Minimum Benefit (PMB) condition."

Bonitas pays for up to three Covid-19 diagnostic tests from risk, whether the result is positive or negative. However, this is subject to the member or beneficiary being referred by a registered healthcare practitioner (doctor or nurse). This referral is dependent upon whether the member is showing symptoms, has been in contact with anyone who has Covid-19 and prior to hospitalisation.

It should be noted that laboratories will not normally accept walk-ins for testing and require a referral or request from a healthcare practitioner. This is to ensure that we don't test unnecessarily and jeopardise the availability of these tests for those who really need them.



Image credit: United Nations Covid-19 Response on Unsplash

"Despite the PCR being arguably the most accurate laboratory methods for detecting, tracking and studying the coronavirus, there are limitations in its widespread use," says Callakoppen. "These include access to the test kits; the complexity of performing them; the need for specialised staff to administer them; potential global shortages; high costs; the requirement for laboratory equipment and the delayed turnaround times. For this reason, testing should only be done when it is clinically necessary."

What about rapid antigen tests?

Immunoassay devices that detect the SARS-CoV-2 antigen within 15-30 minutes have also been promoted as a possible solution when access to PCR tests is a challenge. An antigen - detected in the blood or any other fluid - is any substance that makes the immune system produce antibodies. Viruses and bacteria are antigens. However, these tests are not as accurate as the PCR tests and have shown variable performance during evaluations, with sensitivities ranging from 0 to 94%. Test specificity has been high, but sensitivity has been erratic, which we need to bear in mind.

Why is specificity and sensitivity critical?

Sensitivity is the percentage of true positives (e.g. 90% sensitivity = 90% of people who have the target disease will test positive). Specificity is the percentage of true negatives (e.g. 90% specificity = 90% of people who do not have the target disease will test negative). These allow you to rule conditions in or out but not definitively diagnose a condition.

What does the Council for Medical Schemes (CMS) say?

The CMS currently still advocates the PCR test to diagnose Covid-19. The World Health Organisation (WHO) has also previously advised that the role of these rapid antigen tests must be evaluated and are "not currently recommended for clinical diagnosis pending more evidence on test performance and operational utility". However, the WHO has now approved the use of antigen tests (and this is the South African approach as well) as an alternative to the more expensive PCR tests. This is, however, in certain defined scenarios such as testing confirmed people in communities where infections have been detected, screening of high-risk groups and individuals and for contact tracing purposes. They have also provided conditional recommendations for the use of these tests such as screening at ports of entry, routine screening for employees at their place of work, schools, prior to certain urgent medical procedures, etc.

The challenge with these tests is that they are most accurate in patients between five and seven days after showing symptoms - therefore the timing of testing becomes critical in order to ensure accuracy of the result.

What about rapid antibody tests?

Many countries, including South Africa, are using antibody or serology tests such as the ones offered at various drivethroughs. These can detect whether someone has previously been infected and estimate how widespread the infection is but they are not recommended for diagnosis of Covid-19.

For this reason, these are not funded by Bonitas Medical Fund as the use for these tests is limited for purposes of government surveillance and research rather than diagnosing Covid-19. If individuals want to know whether they have previously had Covid-19, for their own information, this test would be able to confirm that – but it is not used to identify whether you currently have the infection.

If these tests are done too soon after the infection, they produce incorrect results as the antibodies (IgM and IgG) will not be detectable. There is also no scientific evidence that it provides any immunity to another Covid infection.

"What is clear is that laboratory testing plays a vital role in the diagnosis and the prevention of the spread of the virus," says Callakoppen. "Nevertheless, it is important to understand that the timing and correct use of the different types of tests is crucial to gain the best results. We reimburse up to three PCR or rapid antigen tests done in or out of hospital for our members and recommend that this protocol for testing remains, until further research is conducted and evidence provided."

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