

COVID-19 and vaccines

The novel coronavirus SARS-CoV-2 is commonly known as Corona Virus Disease 2019 (COVID-19) and has impacted every economic and social sector across the globe. Based on the death toll, the resulting COVID-19 outbreak will likely become the largest pandemic of the 21st century. The first case of this viral infection was reported in South Africa on 5 March 2020. Since then, many people have been infected by the virus and thousands have died of complications relating to COVID-19.

In December 2019, hospitals in the central city of Wuhan in China reported a cluster of pneumonia cases resulting from an unknown cause, attracting global attention. This led to the discovery of a new variant of coronavirus in January 2020 which was named 'severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). SARS-CoV-2 is part of a group of viruses in a format similar to the crown (Corona). Some of the coronaviruses which have been responsible for previous epidemics include severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS).

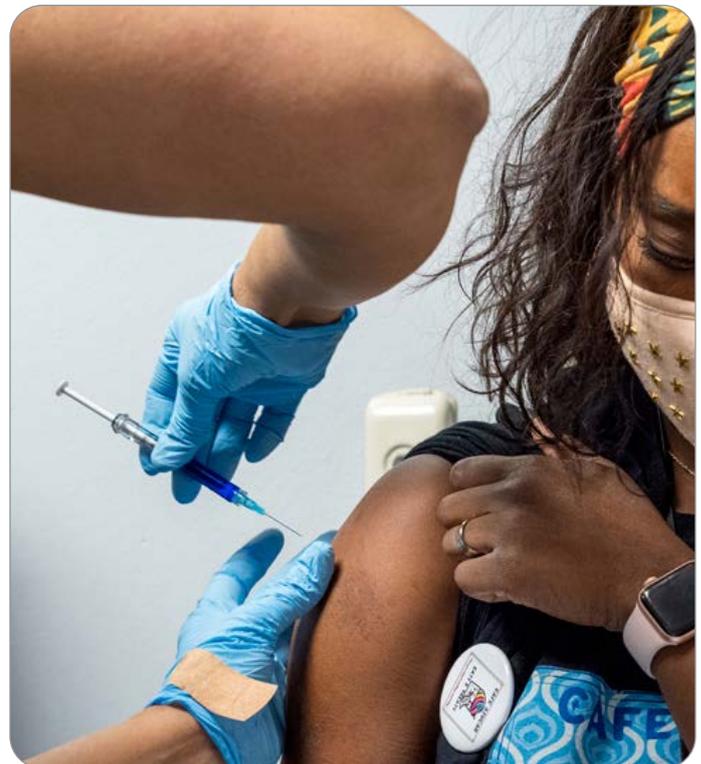
In less than three months, the SARS-CoV-2 had spread throughout the world and was declared a global pandemic by the World Health Organization (WHO) on 11 March 2020. The novel coronavirus SARS-CoV-2 is commonly known as Corona Virus Disease 2019 (COVID-19) and has impacted every economic and social sector across the globe. Based on the death toll, the resulting COVID-19 outbreak will likely become the largest pandemic of the 21st century.

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How is the virus spread?

COVID-19 is spread in three main ways:

- Breathing in droplets while in close contact with an infected person who exhales, coughs or sneezes droplets that contain the virus. COVID-19 spreads easily when people are in close proximity to one oth-



A nurse administering the COVID-19 vaccine.

er. Studies to date suggest that the virus that causes COVID-19 is mainly transmitted through contact with respiratory droplets rather than through the air.

- A person can be infected when aerosols or droplets containing the virus get into their eyes, nose, or mouth.
- As the aerosols or droplets can land on objects and surfaces around the infected person and contaminate those surfaces, individuals who touch contaminated surfaces can also be infected if they touch their eyes, mouth or nose.

What are the symptoms of COVID-19?

Individuals who have been infected by COVID-19 may present with mild, moderate or severe illness. Symptoms may appear 2-14 days after exposure to the virus and include:

- Fever or chills
- Cough
- Shortness of breath or difficulty breathing
- Fatigue
- Muscle or body aches
- Headache
- New loss of taste or smell
- Sore throat
- Congestion or runny nose
- Nausea or vomiting
- Diarrhoea

Some people become infected but do not develop any symptoms and do not feel unwell. Almost eight out of ten people recover from the disease without medical treatment, however, one out of every six people who get COVID-19 may become seriously ill and develop difficulty breathing. People with fever, cough and difficulty in breathing should seek medical attention.

In more severe cases, the disease can lead to pneumonia, kidney failure and even death. Older people, and those with underlying medical problems like high blood pressure, heart problems, and diabetes mellitus are more likely to develop serious illness. The cardiovascular (heart and blood vessels) system is also often affected by COVID-19 resulting in complications such as blood clots, injury to the heart muscle, irregular heart beats, and heart failure, to name a few.

Testing for COVID-19

Testing for COVID-19 should be considered in anyone with symptoms of an acute respiratory tract infection (upper or lower), with or without symptoms such as fever, fatigue and body aches. In mild disease, testing directs the need for self-isolation, and identification of new cases through contact tracing, and testing of contacts. Currently, a reverse real-time polymerase chain reaction (rRT-PCR) test is the 'gold standard' for the diagnosis of COVID-19. Antigen testing may be performed where rRT-PCR testing is not available or in instances where there is a delay in getting the rRT-PCR test results.

How to prevent and reduce the spread?

At the community level, the most important measures to reduce infection spread rely on case detection, iso-

lation, and contact tracing of positive cases, followed by quarantine of those exposed. To prevent the spread of the COVID-19, authorities such as the World Health Organization (WHO), the National Department of Health (NDoH), and the National Institute for Communicable Diseases (NICD) recommend the following measures:

- Wearing a mask over the nose and mouth in public spaces
- Covering the mouth when coughing with a tissue or bent elbow
- Keeping a safe distance of at least one meter from others
- Washing hands frequently with soap and water for 20 seconds or sanitising with a sanitiser containing 70% alcohol
- Avoiding close contact with anyone who is sick or has symptoms
- Having small outdoor gatherings in well ventilated areas if permitted

COVID-19 may persist on surfaces for some time ranging from hours to days. To minimise the risk of transmission from contaminated surfaces, it is important to use disinfectants and detergents to kill the virus. Several disinfectants are available on the market and can be used to clean surfaces that may be contaminated by the virus.

Treatment

There is currently no specific medical intervention known against COVID-19 and preventive vaccination is therefore highly recommended. Treatment of the disease depends on the severity and the presenting symptoms.

Vaccination

The COVID-19 pandemic has shown that even the most advanced health care systems cannot sustain a massive influx of severely ill patients in their facilities. A vaccine for COVID-19 is perhaps the best hope for ending the pandemic. The development of COVID-19 vaccines has indeed generated a renewed sense of hope for many who have been devastated by the loss of lives and livelihoods from the disease. However, as the acquisition and roll-out of COVID-19 vaccines gain momentum, emerging vaccine hesitancy is a concern.

In general, vaccines contain weakened or inactive parts of a particular organism or germ to trigger an immune response within the body. This weakened version does not cause the disease in the person being vaccinated but rather prompts the immune system to respond to that particular organism that is being introduced in the body.

The vaccines train the immune system to recognise the organism or germ that causes the disease so that when the virus reappears in future, the immune system will remember how to respond and quickly destroy the germ. Vaccination is a safe and simple way to strengthen the immune system and to build resistance against disease-causing germs such as COVID-19. Vaccines are administered at different intervals based on the manufacturer's recommendations and some require multiple doses administered weeks or months apart. Once a vaccine has been administered, the person develops some level of immunity or protection against the virus, and is in turn able to protect those around them as vaccines prevent diseases and save lives.

What is covered under PMB level of care?

The Minister of Health approved a submission from the Council for Medical Schemes (CMS) for the inclusion of COVID-19 as a Prescribed Minimum Benefit (PMB) condition. As such, on 7 May 2020, the Minister of Health in terms of section 67 of the Medical Schemes Act, 1998 (Act No. 131 of 1998), published an amendment to the Medical Schemes Act Regulations in Notice 515 in Government Gazette 43295.

The amendment required the inclusion of COVID-19 as a PMB condition in the Diagnosis and Treatment Pair (DTP) of the "Respiratory System". The treatment component for COVID-19 includes screening, clinically appropriate diagnostic tests, medication, medical management including hospitalisation and treatment of complications, and rehabilitation. On 24 December 2020, the Minister of Health approved the inclusion of COVID-19 vaccine under the treatment component for COVID-19.

All medical schemes are required by law to pay for the diagnosis, treatment and care costs for COVID-19 as a PMB irrespective of the plan type or option. Detail about what constitutes PMB level of care for COVID-19 can be obtained from the [PMB definition guideline](#).

In cases where the member's day to day benefits are depleted, schemes must continue funding for the diagnosis, treatment, and care of COVID-19 according to PMB Regulations. Where the member's option provides for the Medical Savings Account (MSA), PMBs are not supposed to be paid from the MSA as this contravenes the PMB Regulations. Schemes must pay for the cost of involuntary use of a non-DSP where the Designated Service Provider (DSP) was not available.

PMB funding also includes out-of-hospital costs relating to the diagnosis, treatment, and care of the disease. Point (2) of the Explanatory notes and definitions to Annexure A of the PMB Regulations explains that PMBs are not restricted to the setting in which the relevant care should be provided, and should not be construed as preventing the delivery of any prescribed minimum benefit on an outpatient basis or in a setting other than a hospital, where this is clinically most appropriate.

References

1. Centers for Disease Prevention and Control. 2021. COVID-19. [online]. Available from: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/how-covid-spreads.html> [Accessed 21 September 2021]
2. Ciotti, M., Ciccozzi, M., Terrinoni, A., Jiang, W., Wang, C. & Bernardini, S. 2020. The COVID-19 pandemic. *Critical Reviews in Clinical Laboratory Sciences*, 57(6): 365-388.
3. Council for Medical Schemes. 2020. CMScript 1 of 2020: COVID-19. [online]. Available from: <https://www.medicalschemes.co.za/download/2573/2020-cmscript-current/20389/cmscript-1-2020> [Accessed 21 September 2021].
4. Council for Medical Schemes. 2020. PMB definition guideline: COVID-19 v8. [online]. Available from: <https://www.medicalschemes.co.za/download/3543/covid-19-definition/24216/pmb-definition-guideline-for-covid-19-version-8-30-june-2021> [Accessed 21 September 2021].
5. Cooper, S., van Rooyen, H. & Wiysong, C.S. 2021. COVID-19 vaccine hesitancy in South Africa: How can we maximize uptake of COVID-19 vaccines? *Expert Review of Vaccines*, 20(8): 921-933.
6. Dheda, K., Jaumdally, S., Davids, M., Chang, J., Gina, P., Pooran, A., Makambwa, E., Esmail, A., Vardas, E. & Preiser, W. 2020. Diagnosis of COVID-19: Considerations, Controversies and Challenges in South Africa. *Wits Journal of Clinical Medicine*, 2(S1): 3-10.
7. Department of Health South Africa. 2021. COVID-19. [online]. Available from: <http://www.health.gov.za/covid19/about.html> [Accessed 21 September 2021].
8. Department of Health South Africa. 2021. COVID-19 Coronavirus vaccine. [online]. Available from: <https://www.gov.za/covid-19/vaccine/vaccine> [Accessed 21 September 2021].
9. Department of Health South Africa. 2021. COVID-19 frequently asked questions. [online]. Available from: <http://www.health.gov.za/covid19/faq/covid19.html> [Accessed 21 September 2021].
10. Hedding, D.W., Greve, M., Breetzke, G.D., Nel, W. & van Vuuren, B.J. 2020. COVID-19 and the academe in South Africa: Not business as usual. *South African Journal of Science*, 116(7): 1-3.
11. Khanna, R.C., Cicinelli, M.V., Gilbert, S.G., Honavar, S.G. & Murthy, G.V.S. 2020. COVID-19 pandemic: Lessons learned and future directions. *Indian Journal of Ophthalmology*, 703-710.
12. Lone, S.A. and Ahmad, A. 2020. COVID-19 pandemic - an African perspective. *Emerging Microbes & Infections*, 9(1): 1300-1308.
13. Long, B., Brady, W.J., Koyfman, A. & Gottlieb, M. 2020. Cardiovascular complications in COVID-19. *American Journal of Emergency Medicine*, 38: 1504-1507.
14. National Institute for Communicable Diseases. 2021. COVID-19. [online]. Available from: <https://www.nicd.ac.za/diseases-a-z-index/disease-index-covid-19/covid-19-prevention> [Accessed 21 September 2021].
15. Schröder, M., Bossert, A., Kersting, M., Aeffner, S., Coetzee, J., Timme, M. & Schlüter, J. 2021. COVID-19 in South Africa: Outbreak despite interventions. *Scientific Reports*, 11(4956):1-9.