



# CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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## The South African COVID-19 Response: Progress and challenges

### In this Issue

Our feature story this month focuses on Prof Salim Abdool Karim's article titled, *The South African COVID-19 Response: Progress and Challenges* published in the NEJM this month.

On page 2 we congratulate Prof Quarraisha Abdool Karim on receiving the prestigious Christophe Merieux award and report on the Covid-19 outbreak at St Augustine hospital by two CAPRISA honorary scientists.

Staff at the CAPRISA eThekweni Research site welcomed the shipment of professional protective equipment and congratulate the six CAPRISA colleagues who successfully completed their degrees.

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Prof Salim Abdool Karim provides a detailed account of *The South African COVID-19 Response: Progress and Challenges*, in his article published in the *New England Journal of Medicine* on 29th May.

The first person with confirmed Covid-19 in South Africa was a traveller who had returned from Italy and was diagnosed on March 5, 2020. When 402 cases had been identified after 18 days, the government announced a national lockdown, which was implemented 4 days later when the epidemic had a doubling time of 2 days and there were 1170 identified cases (Figure).

During 35 days of strict lockdown, the doubling time slowed to 15 days, and there was a total of 5647 cases (with 103 deaths) by April 30. Since May 1, when the process of easing the lockdown started, the epidemic's doubling time has hastened somewhat to 12 days.

On 27 May, South Africa had a cumulative total of 25,937 cases, of which 11,934 were still active cases, from 634,996 tests. There have been 552 deaths. About 1 in 50 patients confirmed with COVID-19 have died; a case-fatality rate of 2.1%.

South Africa's national Covid-19 response has comprised eight overlapping stages (Figure).

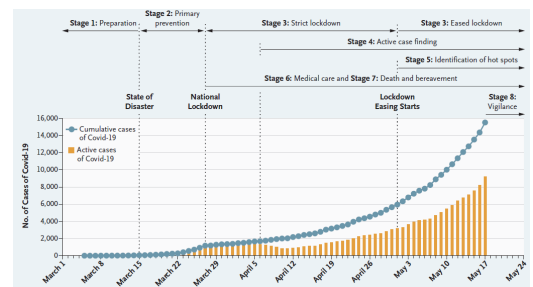
The first stage was focused on preparing for Covid-19, including establishing testing capacity. Stage 2 started when there were 51 cases, 10 days after the first South African patient was diagnosed. The government declared a national state of disaster, banning international travel, closing schools, restricting gatherings, and promoting social distanc-

ing and hand hygiene. A high-level advisory committee with 51 clinicians, virologists, epidemiologists, mathematical modelers, public health practitioners, and other experts was established to provide evidence-based advice to the Minister of Health.

Stage 3 consisted of the national lockdown, which is now being eased slowly. While it slowed viral spread, the lockdown has caused substantial economic hardship, especially among poor and vulnerable people, with both government financial support and community charitable efforts underway to ameliorate this problem. The contraction of the economy during this period is concerning as it could have important long-term consequences. Restrictions on movement and concerns about the risk of contracting Covid-19 in health care facilities has brought major reductions in the use of health services, thereby compromising continuity of care for people with HIV, tuberculosis (TB), and chronic noncommunicable diseases.....

To read more see:

Abdool Karim SS. *The South African response to the pandemic.* *N Engl J Med.* 2020 May. doi: [10.1056/NEJMc2014960](https://doi.org/10.1056/NEJMc2014960). <https://www.nejm.org/doi/10.1056/NEJMc2014960>



The New England Journal of Medicine ©2020

Figure: number of cumulative and active cases of Covid-19 and the stages of South Africa's response.



## Infectious Diseases epidemiologist awarded the pre-eminent Christophe Mérieux Prize

Professor Quarraisha Abdool Karim, Associate Scientific Director of CAPRISA, has been awarded the 2020 prestigious Christophe Mérieux Prize, endowed with 500 000 Euros, presented by the *Fondation Christophe et Rodolphe Mérieux-Institut de France*, for her work on the prevention and treatment of HIV in women. The Foundation made the announcement on 27th May, 2020. The Deputy President of South Africa, Mr David Mabuza congratulated Abdool Karim and said her achievements 'signifies that our country has once again, demonstrated its capabilities to provide solutions to global challenges'.



Foundation. She added that "past recipients of this fairly recently established award are giants in their field and it is a privilege to follow in their footsteps."

Over the past 30 years her pioneering research as an infectious diseases epidemiologist has focused on understanding the evolving HIV epidemic in Africa and its prevention among adolescent girls and young women who continue to bear a disproportionately high burden of HIV infection. She described the epidemiological "cycle of HIV transmission" in South Africa, where young women largely contract HIV from men who are

"With this award, also comes an opportunity to continue advancing the research being done at CAPRISA on expanding HIV prevention options for young women," said Abdool Karim. "It is a great honour for me and the CAPRISA research team, to be recognized by the Christophe Merieux

8-10 years and older. She and the CAPRISA Team continue to pursue novel approaches to prevent HIV infection in women including broadly neutralizing antibodies and antiretroviral-based annual implants.

## Study that traces the spread of COVID-19 in a South African hospital holds valuable lessons on infection control



CAPRISA honorary scientist and honorary research associate at the KwaZulu-Natal Research and Innovation Sequencing Platform (KRISP), Prof Tulio de Oliveira (*top in the photo*) and Dr Richard Lessells (*bottom in the photo*), and Prof Yunus Moosa at the University of KwaZulu-Natal have published a detailed reconstruction of how the SARS-CoV-2 virus spread from ward to ward and between patients, doctors, and nurses, based on floor maps of the hospital, analyses of staff and patient movements, and viral genomes.



Their 37-page analysis is the most extensive study of any hospital outbreak of Covid-19 so far writes science writer, Linda Nordling. It suggests all of the cas-

es originated from a single introduction, and that patients rarely infected other patients. Instead, the virus was mostly carried around the hospital by staff and on the surfaces of medical equipment.

The report "holds valuable lessons in how health care institutions need to function in the Covid era," says Professor Salim Abdool Karim, Chair of the South African Ministry of Health Advisory Committee on COVID-19.

Linda Nordling compiled this report published in *Sciencemag* on 25th May, which can be accessed here: <https://www.sciencemag.org/news/2020/05/study-tells-remarkable-story-about-covid-19-s-deadly-rampage-through-south-african>



## CAPRISA Research sites equipped to deal with COVID-19

The CAPRISA eThekweni Clinical Research Site staff were delighted to receive a shipment of Personal Protective Equipment in May. The shipment procured by the HIV Vaccine Trial Network will support the ongoing HIV vaccine effort during the Covid-19 pandemic.



HIV Pathogenesis and Vaccine Research, were the first to try on gowns, masks and goggles. Dr Garrett said that these supplies were urgently needed to protect staff and participants during the pandemic, and to ensure the safe conduct of essential vaccine trial visits.

CAPRISA's Professional Nurse Diane Chetty (left in the photo) and Dr Nigel Garrett, Head of

## Surgery in the time of COVID-19

CAPRISA Clinical Research Placement, Ashiq Pramchand's, publication titled, *Surgery in the time of Covid-19*, was published in the Harvard Medical Student Review on 30<sup>th</sup> April. Pramchand, a fifth-year medical student at the University of KwaZulu-Natal's Nelson Mandela Medical School is mentored by CAPRISA Scientist Dr Lenine Liebenberg, who motivated him to submit the article to the HMSR Student Voices Covid-19 issue.



The article has been published on Facebook @HMSReview, Instagram @hmsreview, and the website at [hmsreview.org](https://www.hmsreview.org). His article can be accessed at this link: : <https://www.hmsreview.org/covid/surgery-covid-19> Liebenberg said she was 'proud of Pramchand for pursuing his interest in science writing, and getting his work published in an international student forum'.

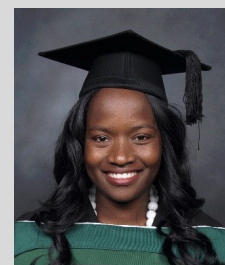
## Congratulations to our graduates!

CAPRISA congratulates six colleagues - three staff members and three fellows who successfully completed their degrees and graduated at virtual graduation ceremonies. In accordance with the national lock down measures in South Africa, the University of KwaZulu-Natal held a virtual graduation ceremony on Friday 29<sup>th</sup> May at which degrees were officially conferred.

Dana Ragoonanan, an international self-funded Fellow, supervised by Dr Desh Archary and Parveen Sobia, graduated virtually at the Smith Col-

lege, in New York. Fellows were funded by the DSI-NRF Centre of Excellence (CoE) in HIV Prevention. Esther Talakgale, who was a Fellow at CAPRISA and funded by the CoE grant graduated at the Sefako Makgatho Health Sciences University.

*From right to left: Nasrin Amala, Chief Finance Officer (MBA); Buyisile Chibi, Research Associate (PhD); Miranda Naidoo, Staff, Master of Social Science (Research Psychology); Kimesha Pillay, Fellow Master of Medical Science (MMed Sci); Dana Ragoonanan, Bachelor of Arts in Biology, Minor in Chemistry; and Esther Talakgale, Fellow, Master of Science (Statistics).*





## Scientific papers published in 2020

- 18\* Chapman R, van Diepen M, Galant S, Kruse E, Margolin E, Ximba P, Hermanus T, **Moore P**, Douglass N, Williamson AL, Rybicki E. Immunogenicity of HIV-1 Vaccines Expressing Chimeric Envelope Glycoproteins on the Surface of Pr55 Gag Virus-Like Particles. *Vaccines* 2020; 8(1):e54. doi: 10.3390/vaccines8010054.
- 19 Vanleeuw L, Atkins S, Zembe-Mkabile W, **Loveday M**. Provider perspectives of the introduction and implementation of care for drug-resistant tuberculosis patients in district-level facilities in South Africa: a qualitative study. *BMJ Open* 2020; 10(2):e032591. doi: 10.1136/bmjopen-2019-032591.
- 20 Bekker L-G, Tatoud R, Dabis F, Feinberg M, Kaleebu P, Marovich M, Ndung'u T, Russell N, Johnson J, Luba M, Fauci AS, **Morris L**, Pantaleo G, Buchbinder S, Gray G, Vekemans J, Kim JH, Levy Y, Corey L, Shattock R, Makanga M, Williamson C, Dieffenbach C, Goodenow MM, Shao Y, Staprans S, Warren M, Johnston MI. The complex challenges of HIV vaccine development require renewed and expanded global commitment. *Lancet* 2020; 395(10221):384-388.
- 21 Peebles K, van der Straten A, Palanee-Phillips T, Reddy K, Hillier SL, Hendrix CW, **Harkoo I**, Mirembe BG, Jeenaarain N, Baeten JM, Brown ER. Anal intercourse, HIV-1 risk, and efficacy in a trial of a dapivirine-containing vaginal ring for HIV-1 prevention. *JAIDS* 2020; 83(3):197-201.
- 22 **Chibi B**, Torres NF, Mashamba-Thompson TP. Prescription drug diversion, misuse, and abuse among people living with HIV: a scoping review protocol. *Systematic Reviews* 2020; 9(1):29. doi: 10.1186/s13643-020-1273-4.
- 23 Laher F, Moodie Z, Cohen KW, Grunenberg N, Bekker LG, Allen M4, Frahm N, Yates NL, Morris L, Malahleha M, **Mngadi K**, Daniels B, Innes C, Saunders K, Grant S, Yu C, Gilbert PB, Phogat S, DiazGranados CA, Koutsoukos M, Van Der Meeren O, Bentley C, Mkhize NN, Pensiero MN, Mehra VL, Kublin JG, Corey L, Montefiori DC, Gray GE, McElrath MJ, Tomaras GD. Safety and immune responses after a 12-month booster in healthy HIV-uninfected adults in HVTN 100 in South Africa: A randomized double-blind placebo-controlled trial of ALVAC-HIV (vCP2438) and bivalent subtype C gp120/MF59 vaccines. *PLoS Medicine* 2020; 24;17(2):e1003038.
- 24 **Abdool Karim Q**, Havlir D, Phanuphak N. Putting women in the centre of the global HIV response is key to achieving epidemic control! *Journal of the International AIDS Society* 2020; 23(3):e25473.
- 25 Kim HY, Dobra A, **Tanser F**. Migration and first-year maternal mortality among HIV-positive postpartum women: A population-based longitudinal study in rural South Africa. *PLoS Medicine* 2020 ; 17(3):e1003085. doi: 10.1371/journal.pmed.1003085.
- 26 **Abdool Karim SS**. The South African response to the pandemic. *New England Journal of Medicine* 2020; doi: 10.1056/NEJMc2014960.

\*continuation from previous newsletter



CAPRISA hosts a DST-NRF Centre of Excellence in HIV Prevention



**UNAIDS**  
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