



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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Study shows high proportion of Omicron infections are asymptomatic

In this Issue

On page 1 the study, *High Asymptomatic Carriage with the Omicron Variant in South Africa*, published in the journal *Clinical Infectious Diseases*, describes the initial findings.

On Page 2, we congratulate Prof Salim Abdool Karim on his Fellowship from the International Science Council (ISC); and report on the commentary published by the NICD's Dr Thandeka Moyo & Prof Penny Moore in *SAJS*.

On page 3 we feature Drs Desh Archary and Lenine Liebenberg on their appointment as honorary Associate Professors at UKZN; and report on the visit by officials from the German Development Agency (GIZ).

We report on the visit to CAPRISA Research sites by Gilead Sciences; and we feature the roll out of a new staff initiative, the CAPRISA Wellness Programme and we also report on the CAPRISA Cares fund a voluntary initiative of staff that recently supported flood victims in KZN through the Gift of the Givers.

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Initial findings of the *Ubuntu* trial highlighted the high proportion of Omicron infections that were asymptomatic. The study, "**High Asymptomatic Carriage with the Omicron Variant in South Africa**", was published in the journal *Clinical Infectious Diseases*.

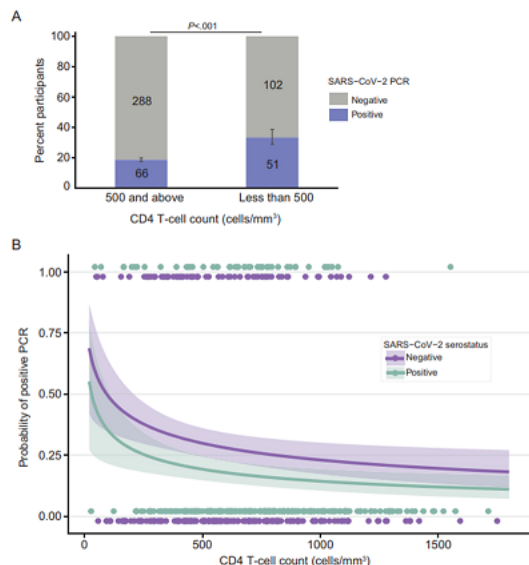
CAPRISA is contributing to the COVPN 3008 study, a multicenter Phase 3 clinical trial in sub-Saharan Africa, which is testing the efficacy of the Moderna vaccine among persons with and without HIV. The trial is also investigating the impact of persistent viral replication among immunocompromised populations, in terms of viral evolution of further variants of concern, explained lead author and Head of Pathogenesis and Vaccines, Dr Nigel Garrett.

The study results showed a 23% asymptomatic SARS-CoV-2 Omicron carriage rate in January 2022. Baseline nasal swab data were available for

719/1172 (61.3%) enrolled participants and 162 (23%) had asymptomatic SARS-CoV-2 infection by RT-PCR. SARS-CoV-2 infection was more frequent among SARS-CoV-2 seronegative (95/317) compared to seropositive (67/402) participants, regardless of baseline HIV status (30% vs 17%, $p < 0.001$).

SARS-CoV-2 infection was detected among 51/153 (33%) persons with HIV (PWH) with a CD4 count < 500 cells/mm³ versus 66/354 (19%) of PWH with CD4 counts ≥ 500 cells/mm³ ($p < 0.001$) (Figure 1), an association seen in both SARS-CoV-2 seropositive and seronegative PWH.

Importantly, many of these asymptomatic carriers had high nasal viral titers, as indicated by the relatively low RT-PCR cycle threshold values. The high prevalence of cryptic carriage of Omicron helped explain its rapid and widespread dissemination globally.



For further reading see:

Garrett N, et al. *Clinical Infectious Diseases* 2022. doi: 10.1093/cid/ciac237. <https://pubmed.ncbi.nlm.nih.gov/35353885/>

Figure 1: A, Percent of PWH positive for SARS-CoV-2 PCR (blue) among those with CD4 + T-cell counts ≥ 500 and < 500 cells/mm³.

B, Probability of PCR positivity by CD4 + T-cell count among PWH. Dots display observed data in baseline seronegative (purple) and seropositive (green) asymptomatic study participants



The International Science Council bestows its highest honour on Professor Salim Abdool Karim

Professor Salim Abdool Karim was one of 66 Foundation Fellows admitted to the International Science Council (ISC) on 9th June at a ceremony held in Paris. The Fellowship is the highest honour that can be conferred on an individual by the ISC ‘recognized for their outstanding contributions to promoting science as a global public good’.



who have made remarkable contributions to furthering understanding of and engagement with science. As scientific experts they uphold the ISC’s vision of science as a ‘global public good of knowledge that is shared openly and freely to all who wish to scrutinize it and to use it to further understanding’.

The Fellows came from across the world from a range of all sectors of disciplines and will ‘through their scientific leadership and work promote science in the public domain and support the ISC’s mission to act as the global voice for science’.

“We want to clearly recognize those scientists who have contributed and continue to contribute to the global voice for science,” said ISC

The Fellows include eminent scientists, engineers and thought-leaders from the science-policy sphere

President Peter Gluckman, “science needs champions, not just those who receive high-profile scientific prizes, but those who champion science in society and in policy-making, whether early or late in their career”. To view the list of Fellows read the announcement here: <https://council.science/about-us/fellows/>

Leveraging on past investment in understanding the immunology of COVID-19 – the South African experience

Dr. Thandeka Moyo (left in the photo) and Prof. Penny Moore (right in the photo) at the NICD published a commentary entitled: “Leveraging on past investment in understanding the immunology of COVID-19 – the South African experience” in the South African Journal of Science.



The COVID-19 pandemic, and in particular the emergence of viral variants, resulted in an enormous global public health crisis. South African scientists, with a long history of studying viral evolution and antibody responses, were well positioned to pivot their research to focus on SARS-CoV-2. Using the expertise and infrastructure developed over decades for HIV vaccine research, South Africa took a leadership role in studying the antibody response elicited by SARS-CoV-2 infection and vaccination. In the commentary, Moyo and Moore describe key scientific outcomes of those studies and the drivers of a successful national response. For further reading see: <https://sajs.co.za/article/view/13171>

CAPRISA CRP selected to attend World Health Assembly



Mr Mohamed Hoosen Suleman (left in the photo), a 4th year medical student at the University of KwaZulu-Natal was selected as one of three medical students globally for the Youth Changemaker Scholarship to attend both the Pre-World Health Assembly (PreWHA) and the World Health Assembly (WHA) from 17 to 29 May held in Geneva. Suleman, who is on the CAPRISA Clinical Research Placement programme (CRP) is mentored by Prof Quarraisha Abdool Karim,

CAPRISA’s Associate Scientific Director. At the Assembly, Suleman had an opportunity to meet with WHO Director General Dr Tedros Ghebreyesus at the ‘Walk the Talk’ event and South Africa’s Minister of Health, Dr Joe Phaahla at the Palais Des Nations. The CRP is a research placement programme for medical students to develop skills and expertise in a research environment. The 2022 orientation for medical students who want to become CRPs was held on 10th June.



Senior Scientists Drs Desh Archary & Lenine Liebenberg appointed honorary Associate Professors

CAPRISA senior scientists, Desh Archary (PhD) and Lenine Liebenberg (PhD) have been appointed Honorary Associate Professors in the School of Laboratory Medicine and Medical Sciences, College of Health Sciences, at the University of KwaZulu-Natal.

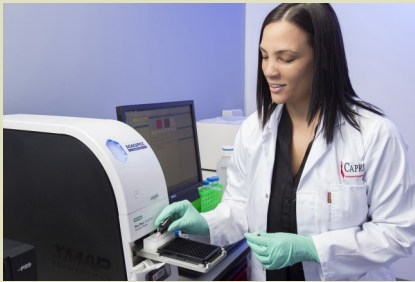


Professor Archary's core research areas are in understanding the immunology in HIV disease and pathogenesis, mucosal immunology for HIV prevention - and more specifically the role of mucosal HIV-1 specific binding antibodies and biomarkers of risk of HIV-1 acquisition during pre-exposure prophylaxis (PrEP).

Archary's expertise and interest in humoral immunology equipped her to pivot to SARS-CoV-2 immunology and virology research with Prof Alex Sigal at the Africa Health Research Institute (AHRI). Archary has co-authored two high impact papers in *Nature* and *CID* on antibody responses of SARS-CoV-2 in individuals during natural infection,

re-infections, and during post-vaccination with either Pfizer BioNTech or the J&J vaccines.

Archary has mentored and trained 13 honours, Masters and PhD students. As the recipient of an EDCTP Senior Fellowship grant awarded for capacity development and training of future scientists in southern and sub-Saharan Africa, Archary is currently training a cohort of Masters, PhDs and Post doc students to conduct research from data generation and analyses to writing scientific papers.



Professor Liebenberg has combined academic training in medical virology, microbiology, genetics, and immunology that direct the scope of her research on genital immune activation and inflammation, their various causes and the consequences to the risk of HIV/STI acquisition and transmission. Her research has collectively improved the understanding of genital immune and microbial environments that promote infection by HIV/STIs and has proposed various strategies to improve genital health to limit this risk.

In addition to her significant academic achievements and professional standing, the appointment also recognises Liebenberg's active involvement in developing early-career researchers at UKZN. She currently supervises 2 Honours and 2 Masters students and has graduated 14 students since her appointment at CAPRISA. She extends her scholarship by hosting weekly seminars at UKZN that promote awareness and improve skills in aspects of professional development for early-career researchers. Liebenberg is a rated scientist by the National Research Foundation and an Affiliate Member of the African Academy of Sciences.

Exploratory visit by the German agency - GIZ



The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) visited CAPRISA on 2nd June. GIZ officials were on an exploratory visit to gain insight into CAPRISA's scientific research. Abdool Karim engaged in discussions on current and future research to address health challenges on the African continent. Discussions centred around potential areas of collaboration between CAPRISA and GIZ aimed at strengthening research. *Photo (L-R) Ms Kirstin Walker, Head of Roll Out Component (SAVax); Mr Themba Hlongwana, Senior Technical Advisor (SAVax); Prof Salim Abdool Karim, CAPRISA Director and Dr Claudia Aguirre, Head of Project, Vaccines for Africa: Roll out & Production in SA (SAVax).*



CAPRISA hosts delegation from Gilead Sciences

CAPRISA hosted a delegation from Gilead Sciences on Thursday 23rd and Friday 24th June. Dr Alex Kintu, Director Clinical Development at Gilead Sciences, led the delegation on their visit to the CAPRISA Vulindlela Research site on 23rd June. The delegation held discussions with Professor Quarraisha Abdool Karim, CAPRISA Associate Scientific Director, Dr Disebo Potloane, Site Director and research staff. Guests also had an opportunity to visit the historic Mandela Capture Site in Howick.

On 24th June Gilead officials visited the CAPRISA eThekweni Research site (ECRS) and uMlazi Research Clinic. Dr Leila Mansoor, Senior Scientist and Dr Ishana Harkoo, Research Clinician engaged with Gilead officials at ECRS. Site Director Professor Daya Moodley led the discussions at the uMlazi Research site with Dr Moupali Das, Exec Director HIV Clinical Research, Gilead Sciences; Mr Daniel Masjuan, Snr Clinical Trial Manager, Gilead; and Dr Jenna Yager, Postdoc Fellow at the University of Colorado.

The delegation gained insight into CAPRISA’s key HIV prevention and TB-HIV research and studies currently underway at the sites.



Photo Front row (L-R): Mr Callin Chetty, Study Coordinator; Ms Helen Hingle, Operations Manager; Dr Disebo Potloane, Vulindlela Site Director; Ms Maryam Matean, Research Portfolio Manager at the University of British Columbia; Dr Alex Kintu, Director Clinical Development at Gilead Sciences; Professor Quarraisha Abdool Karim, CAPRISA Associate Scientific Director and, Dr Mishka Valjee, Research Clinician Back row (L-R): Dr Carlo Hojilla, Associate Director Clinical Development, Gilead Sciences; Dr Claudia Jansen van Vuuren, Research Clinician; Ms Sindisiwe Mazibuko, Research Assistant

Caring for our communities and staff...

In May this year, Human Resources launched the CAPRISA Wellness programme – an initiative to provide staff with a range of resources for optimal physical and mental health.

The aim was to provide a programme and platform “to encourage employees to lead a healthier lifestyle and provide solutions to ensure mental health and wellbeing - a holistic approach focusing on physical, emotional, financial and social wellbeing,” explained Ms Marietjie Geldenhuys, CAPRISA’s Head of HR.

The interactive app helps staff manage their wellness, mental health and connects them with an expert instantly for a live, online consultation. The programme offers among others 24-hour counselling, access to podcasts, articles fitness training, dieticians and legal advice.

The CAPRISA Cares fund donated R15 000.00 to the South African aid agency, Gift of Givers during

the devastating floods in KwaZulu-Natal to assist affected and desperate communities.

The Fund, an initiative of staff at CAPRISA was established to support community projects and programmes.

Funds are raised through contributions from staff and have supported worthy initiatives like the Denis Hurley Centre, Isiaiah54 Children’s Sanctuary, Cancer Association of South Africa, and the ThinaSonke Creche in Mafakatini, Vulindlela.

COMPANY WELLNESS
Solutions
Making Your Workplace Better

GET SUPPORT FROM YOUR
EMPLOYEE ASSISTANCE PROGRAM

Gift of the Givers
FOUNDATION



A selection of scientific papers published in 2022

- 46 **Garrett N**, Tapley A, Andriesen J, Seocharan I, Fisher LH, Bunts L, Espy N, Wallis CL, Randhawa AK, Miner MD, Ketter N, Yacovone M, Goga A, Huang Y, Hural J, Kotze P, Bekker LG, Gray GE, Corey L; Ubuntu Study Team. High Asymptomatic Carriage with the Omicron Variant in South Africa. *Clinical Infectious Diseases* 2022. doi: 10.1093/cid/ciac237.
- 47 **Liebenberg LJP, Passmore JS, Osman F, Jewanraj J, Mtshali A**, Garcia-Lerma JG, Heneine W, Holder A, **Archary D, Ngcapu S, Sivro A, Mansoor LE, Abdool Karim Q, Abdool Karim SS, McKinnon LR**. Genital immune cell activation and tenofovir gel efficacy: a case-control study. *Clinical Infectious Diseases* 2022. doi: 10.1093/cid/ciac115.
- 48 Mulenga H, Fiore-Gartland A, Mendelsohn SC, Penn-Nicholson A, Mbandi SK, Nemes E, Borate B, Musvosvi M, Rameris M, Walzl G, **Naidoo K**, Churchyard G, Scriba TJ, Hatherill M, the CORTIS Study Team. Evaluation of a transcriptomic signature of tuberculosis risk in combination with an interferon gamma release assay: A diagnostic test accuracy study. *eClinicalMedicine* 2022; 47:101396. doi: 10.1016/j.eclim.2022.101396
- 49 Nduva GM, Otieno F, Kimani J, **McKinnon LR**, Cholette F, Sandstrom P, Graham SM, Price MA, Smith AD, Bailey RC, Hassan AS, Esbjörnsson J, Sanders EJ. Phylogeographic Assessment Reveals Geographic Sources of HIV-1 Dissemination Among Men Who Have Sex With Men in Kenya. *Frontiers in Immunology* 2022; 13:843330. doi: 10.3389/fmicb.2022.843330.
- 50 Khan K, Karim F, Cele S, Reedoy K, San JE, Lustig G, Tegally H, Rosenberg Y, Bernstein M, Jule Z, Ganga Y, Ngcobo N, Mazibuko M, Mthabela N, Mhlane Z, Mbatha N, Miya Y, Giandhari J, Ramphal Y, Naidoo T, **Sivro A, Samsunder N, Kharsany ABM, Amoako D, Bhiman JN, Manickchund N, Abdool Karim Q**, Magula N, **Abdool Karim SS**, Gray G, Hanekom W, von Gottberg A; COMMIT-KZN Team, Milo R, Gosnell BI, **Lessells RJ, Moore PL, de Oliveira T**, Moosa MS, **Sigal A**. Omicron infection enhances Delta antibody immunity in vaccinated persons. *Nature* 2022. doi: 10.1038/s41586-022-04830-x.
- 51 Takuva S, Takalani A, Seocharan I, **Yende-Zuma N**, Reddy T, Engelbrecht I, Faesen M, Khuto K, Whyte C, Bailey V, Trivella V, Peter J, Opie J, Louw V, Rowji P, Jacobson B, Groenewald P, Dorington RE, Laubscher R, Bradshaw D, Moultrie H, Fairall L, Sanne I, Gail-Bekker L, Gray G, Goga A, **Garrett N**; Sisonke study team. Safety evaluation of the single-dose Ad26.COVID.S vaccine among healthcare workers in the Sisonke study in South Africa: A phase 3b implementation trial. *PLoS Medicine*
- 52 Mendelsohn SC, Mbandi SK, Fiore-Gartland A, Penn-Nicholson A, Musvosvi M, Mulenga H, Fisher M, Hadley K, Erasmus M, Nombida O, Tameris M, Walzl G, **Naidoo K**, Churchyard G, Hatherill M, Scriba TJ. Prospective multicentre head-to-head validation of host blood transcriptomic biomarkers for pulmonary tuberculosis by real-time PCR. *Communications Medicine* 2022; 2(1):26. doi: 10.1038/s43856-022-00086-8.
- 53 Castor D, Burgess EK, **Yende-Zuma N**, Heck CJ, **Abdool Karim Q**. Age-Restriction of a Validated Risk Scoring Tool Better Predicts HIV Acquisition in South African Women: CAPRISA 004. *AIDS and Behavior* 2022. doi: 10.1007/s10461-022-03664-y
- 54 Mtimkulu-Eyde L, Denholm J, Narain A, Fatima R, Sagili KD, **Perumal R, Padayatchi N**. Mandatory COVID-19 Vaccination: Lessons from Tuberculosis and HIV. *Health and Human Rights* 2022; 24(1):85-91.



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