



# CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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## Randomised trial of the impact of HIV-TB integration quality improvement on mortality in PHC clinics in South Africa

### In this Issue

On page 1 we feature the Study, *Mortality in HIV and tuberculosis patients following implementation of integrated HIV-TB treatment: Results from an open-label cluster-randomized trial*, published in the journal *eClinicalMedicine*,

On page 2 we highlight CAPRISA's annual research update, awards and strategic planning meeting, a hybrid event held on 23-24 February.

We report on CAPRISA as GVN Centre of Excellence, and the visit of UNAIDS Country Director, Ms Eva Kiwango, on page 3. We also congratulate Prof Salim Abdool Karim on the CPHIA Lifetime Achievement in Public Health Award.

The visit of the TRIAD Study collaborators features on page 4. We also congratulate CAPRISA's Long Service award-ees.

The first randomised trial to test a scalable HIV-TB integration strategy using quality improvement (QI) methods assessed the impact of QI for HIV-TB integration on mortality in primary healthcare (PHC) clinics in South Africa.

The CAPRISA-led study showed that improvements to health systems operational processes in real-world settings remains a challenge.

The study, *Mortality in HIV and tuberculosis patients following implementation of integrated HIV-TB treatment: Results from an open-label cluster-randomized trial*, published in the Lancet journal *eClinicalMedicine*, highlighted the high level of health systems planning and organization required for delivery of complex QI supported HIV-TB integration interventions.

An open-label cluster randomized controlled study was conducted between 2016 and 2018 in 40 rural clinics in South Africa. Overall, 21 379 participants were enrolled between December 2016 and December 2018 in intervention and control arm clinics: 1329 and 841 HIV-

TB co-infected (10.2%); 10 799 and 6 611 people living with Human Immunodeficiency Virus (HIV)/ acquired immunodeficiency syndrome (AIDS) (PLWHA) only (81.4%); 1 131 and 668 patients with TB only (8.4%), respectively.

The analysis population consisted of patients newly diagnosed with (i) both TB and HIV (ii) HIV only (among patients previously treated for TB or those who never had TB before) and (iii) TB only (among patients already diagnosed with HIV or those who were never diagnosed with HIV) after QI implementation in the intervention arm, or enrolment in the control arm.

Despite the intervention, high mortality rates among HIV-TB co-infected patients were found. However, the study found the health system to be responsive to strategic implementation support, showing overall improvements in performance.

**For further reading see: Naidoo K, et al.** *eClinicalMedicine* 2022; 44:101298. doi: 10.1016/j.eclinm.2022.101298 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8850328/>

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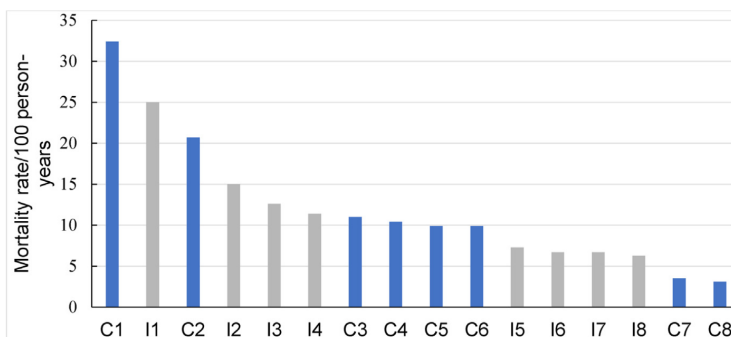
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**Figure:** Cluster-specific mortality rates in the intervention (I) and control (C) arm clinics among HIV-TB co-infected. The colours gray and blue representing clusters in the intervention and control arms, respectively.

# CAPRISA's Annual Research update Awards & Strategic Planning meeting



and ICC staff were tested for Covid and allowed into the venue with a negative test result.

Eminent guests included Dr Sandile Buthelezi, Director General of the National Department of Health, Prof Koleka Mlisana co-chair of the Ministerial Advisory Committee on Coronavirus, Prof Busisiwe Ncama, UKZN's Deputy Vice-Chancellor & Head, College of Health Sciences and Prof Mosa Moshabela, UKZN's Deputy Vice-Chancellor of Research & Innovation. Ms Winnie Byanyima, Executive Director UNAIDS, Dr Joe Phaahla Minister of Health, Ms Bongive Ntuli Chairperson of the CAPRISA Board of Control and Dr Soumya Swaminathan, Chief Scientist at the WHO could not join the meeting in person and sent recorded messages of support.

Speakers highlighted the notable research contributions made by CAPRISA in HIV, TB and Covid-19 research and the importance of innovation, evolving knowledge and impact on policies and human health. CAPRISA's notable scientific contributions has left a remarkable footprint in the field of HIV, TB and Covid-19 said Minister Phaahla. Ms Byanyima reflected on 'CAPRISA's amazing history' and Prof Salim Abdool Karim's role as chair of the scientific committee of the 13<sup>th</sup> International AIDS conference, Breaking the Silence, at which over 5000 scientists signed the historic Durban Declaration affirming that HIV caused AIDS. She said Abdool Karim established CAPRISA two years later "with a specific vision and mission to address the inequities laid bare at this conference".

The strategic planning meeting covered 4 sessions: HIV / COVID Vaccines and Pathogenesis; HIV / TB and COVID Treatment; Epidemiology and HIV Prevention, including bnAbs; and Mucosal Immunology with 20 presentations on new ideas. These included: FEEL: Fc Effector Evolution in (antibody) Lineages (*Dr Simone Richardson*); IMPACT: Immunopathogenesis of CNS TB (*Dr Aida Sivro*); AVERT: Artificial Intelligence-based HIV Prevention for Generation Z population: Unravelling Heterogeneity & Improving Prediction of HIV Vulnerability (*Mr Marothi Letsoalo*); and the Study of vaginal microbiota in BV treated patients (*Dr Gugulethu Mzobe*).

CAPRISA staff paid tribute to Prof Abdool Karim for his leadership and the ability to serve during a time of crisis is indeed 'a rare attribute,' said Prof Kogie Naidoo. "Our Director, Prof Abdool Karim, fondly known as Slim, rose to this challenge, at great personal sacrifice – providing guidance and inspiration to South Africans whilst raising South Africa's standing and stature in medical science, globally," she said. "Well-known for his past stand on access to ARVs, he has consistently lambasted the failure of the world's rich countries to appreciate the importance of "mutual interdependence" and "global solidarity" – principles he firmly believes in. Abdool Karim presented 24 long service awards to staff for their loyalty and commitment.



(L-R): CAPRISA Scientists: Front row: Dr Aida Sivro; Second Row: Dr Sharana Mahomed & Dr Lenine Liebenberg; Third Row: Profs Nesri Padayatchi & Kogie Naidoo Far top left: Dr Nonhlanhla Yende Zuma, Head of Statistics & Data Management was the Director of Ceremonies at the research update



(L-R): Candle lighting ceremony: Dr Sandile Buthelezi, Director General National Department of Health; Ms Glaudina Loots, Director Health Innovation DSI; Ms Gethwana Mahlase, Director COMOSAT; Prof Busisiwe Ncama, Deputy Vice-Chancellor & Head University of KwaZulu-Natal College of Health Sciences and Prof Quarraisha Abdool Karim, CAPRISA Associate Scientific Director



(L-R): Prof Kogie Naidoo presents a special award to Prof Salim Abdool Karim on behalf of CAPRISA staff for his significant contributions during the Covid-19 pandemic.



## Global Virus Network announces CAPRISA as a GVN Centre of Excellence

On 8<sup>th</sup> February the Global Virus Network (GVN) announced the addition of CAPRISA as the GVN's newest Center of Excellence.

CAPRISA joins 68 GVN Centers of Excellence and 10 Affiliates in 36 countries comprising foremost experts in every class of virus to leverage their individual expertise and coalesce global teams of specialists on the scientific challenges, issues and problems posed by pandemic viruses. said the GVN.

"We are so pleased to finally officially add CAPRISA's extensive expertise to the GVN," said Dr Christian Bréchet President of the GVN. "CAPRISA is a world leader in HIV and SARS-CoV-2 research, positioned in an integral region to pandemics and virus surveillance, and led by a renowned clinical



infectious diseases epidemiologist widely recognized for scientific and leadership contributions in AIDS and COVID-19."

"We envision a mutually beneficial association with the GVN", explained Prof Salim Abdool Karim, "including collaborations

on researcher exchange programs, training of basic scientists in laboratory techniques at GVN supported laboratories and provisions of field experience in the conduct of clinical trials at CAPRISA, among other opportunities." The GVN works collaboratively to train the next generation, advance knowledge about how to identify and diagnose pandemic viruses, mitigate and control how such viruses spread as well as develop drugs, vaccines and treatment.

## CAPRISA's Director awarded the CPHIA 2021 Lifetime Achievement in Public Health Award

In recognition of his contribution to science, research and development in Africa, Professor Salim Abdool Karim, Director, CAPRISA, was awarded CPHIA 2021 Lifetime Achievement in Public Health Award at the closing ceremony of the first international Conference on Public Health in Africa (CPHIA) hosted by the African Union and the Africa Centres for Diseases Control (CDC) in December 2021.

The award was shared with Professor Jean-Jacques Muyembe-Tamfum, General Director, National Institute of Biomedical Research and Professor of Medical Virology at the University of Kinshasa.



## CAPRISA welcomes UNAIDS Country Director



Ms Eva Kiwango, UNAIDS Country Director for South Africa and Dr Pride Chigwedere, Senior Policy and Strategy Advisor at UNAIDS visited CAPRISA, on 21st February. CAPRISA's Associate Scientific Director, Prof Quarraisha Abdool Karim and CAPRISA scientists provided an overview of CAPRISA's core research programmes highlighting the impact on global and national policy.

In the photo from (L-R): Dr Shakira Choonara; Dr Hilton Humphries, CAPRISA Scientist; Prof Quarraisha Abdool Karim; Ms Eva Kiwango; Dr Pride Chigwedere; & Ms Lara Lewis, CAPRISA Snr Statistician. Back row: Mr Patrick Mdletshe, CAPRISA Head of Community Programme.



## TRIAD Study collaborators provide training



**O**n 28<sup>th</sup> February TRIAD study collaborators, Dr Nyanda Ntinginya Principal Research Scientist and Centre Director at the National Institute of Medical Research (NIMR) Mbeya Medical Research Centre and advisor to Tanzania’s president on COVID, and Dr Wilber Sabiiti a Senior Research Scientist at the University of St Andrews and member of the COVID-19 Clinical Research Coalition visited CAPRISA.

Ntinginya and Sabiiti implemented a training programme for CAPRISA laboratory staff and TRIAD team members on conduct of their patented Mycobacterial Load assay (PCR based test that detects viable M.tb), which will be used to monitor DR TB treatment response.

*(L-R): Dr Bariki Mtafya, Head of Laboratory Sciences at NIMR-Mbeya Medical Research Centre; Dr Nikita Naicker, Research Associate CAPRISA; Prof Kogie Naidoo, CAPRISA Deputy Director & Head: HIV & TB Treatment Research;*

*Dr Wilber Sabiiti Snr Research Scientist; Dr Doreen Pamba, Head of Social Science & Community Engagement at NIMR-Mbeya Medical Research Centre;*

*Dr Nyanda Ntinginya Director NIMR; Ms Natasha Samsunder, Director, CAPRISA Laboratories; Dr Louansha Nandlal, Post Doc CAPRISA; and Dr Anushka Naidoo, CAPRISA Scientist.*

## Congratulations to our long service awardees!



*Photo inset: Top: Dr Sharrana Mahomed, Research Clinician & co PI CAP 256; Ms Atika Moosa Research Pharmacist; Bottom: Ms Magashree Govender Pharmacist Assistant & Ms Lara Lewis, Senior Statistician*

*In the photo: Back Row (L-R Inset): Nonzwakazi Ntombela, Study Coordinator; Nzuzo Magini, Med Technologist; (L-R standing): Claudia Shozi, Enrolled Nurse; Roburn Wells, Finance and Compliance Officer; Mlungisi Khanyile, Research Clinician; Una-thi Zondo, IT Support Specialist; Khaya Zikhali, Executive Driver and Nhlaka Memela, Data Management. Middle Row (L-R): Philile Gabela, Lab Technician; Siphosihle Khanyile, Recruiter; Renita David, Professional Nurse; Resha Boodhram, Study Coordinator; Jabu Maphanga, Quality Control Officer and Megs Naidoo, Research Clinician. Front Row (L-R): Farzana Osman, Snr. Statistician; Khosi Mdladla, Research Assistant; Nqobile Myeni, Study Coordinator; Nolindile Neil, Senior Administrator; Rani Govender, Finance Officer and Kaminee Ramsar, Quality Control Officer*



# A selection of scientific papers published in 2022

- 1 **Naidoo A, Naidoo K, Padayatchi N**, Dooley K E. Use of integrase inhibitors in HIV-associated tuberculosis in high-burden settings: implementation challenges and research gaps. *Lancet HIV* 2022; 9(2):e130-e138. doi: 10.1016/S2352-3018(21)00324-6
- 2 Liu G, Mugo NR, Brown ER, Mgodini NM, Chirenje ZM, Marrazzo JM, Winer RL, **Mansoor L**, Palanee-Phillips T, Siva SS, Naidoo L, Jeenarain N, Gaffoor Z, Nair GL, Selepe P, Nakabiito C, Mkhize B, Mirembe BG, Taljaard M, Panchia R, Baeten JM, Balkus JE, Hladik F, Celum CL, Bar-nabas RV. Prevalent HPV infection increases the risk of HIV acquisition in African women: advancing the argument for HPV immunization. *AIDS* 2022;36(2):257-265.
- 3 Happel AU, Kullin BR, Gamielien H, Jaspan HB, Varsani A, Martin D, **Passmore JA**, Froissart R. In Silico Characterisation of Putative Prophages in Lactobacillaceae Used in Probiotics for Vaginal Health. *Microorganisms* 2022;10(2):214. doi: 10.3390/microorganisms10020214
- 4 **Naidoo K, Gengiah S, Yende-Zuma N**, Mlobeli R, Ngozo J, Memela N, **Padayatchi N**, Barker P, Nunn A, **Abdool Karim SS**. Mortality in HIV and tuberculosis patients following implementation of integrated HIV-TB treatment: Results from an open-label cluster-randomized trial. *eClinicalMedicine* 2022;44:101298. doi: 10.1016/j.eclinm.2022.101298.
- 5 Heck C J, **Abdool Karim Q**. Enhancing oral PrEP uptake among adolescent girls and young women in Africa. *International AIDS Society* 2022; 25(1): e25876. doi.org/10.1002/jia2.25876
- 6 Mitchev N, Singh R, Ramsuran V, Ismail A, Allam M, Kwenda S, Mnyameni F, **Garrett N**, Swe-Han KS, Niehaus AJ, Mlisana KP. High-Resolution Melting Analysis to Detect Antimicrobial Resistance Determinants in South African Neisseria gonorrhoeae Clinical Isolates and Specimens. *International Journal of Microbiology* 2022; 9094328. doi: 10.1155/2022/9094328.
- 7 **Humphries H, Upfold M, Mahlase G, Mdladla M, Gengiah T, Abdool Karim Q**. Implants for HIV prevention in young women: Provider perceptions and lessons learned from contraceptive implant provision. *PLoS One* 2022;17(1):e0262043. doi: 10.1371/journal.pone.0262043.
- 8 **Naranbhai V**, St Denis KJ, Lam EC, Ofoman O, Garcia-Beltran WF, Mairena CB, Bhan AK, Gainor JF, Balazs AB, Iafate AJ; CANVAX team. Neutralization breadth of SARS-CoV-2 viral variants following primary series and booster SARS-CoV-2 vaccines in patients with cancer. *Cancer Cell* 2022;40(1):103–108.e2. doi: 10.1016/j.ccell.2021.12.002
- 9 **Gengiah TN, Abdool Karim Q, Harkoo I, Mansoor L, Zuma NY**, Radebe P, **Samsunder N, Baxter C**, Maharaj B, Baum MM, Moss JA, Pozzetto B, Hankins C, Abdool Karim SS. CAPRISA 018: a phase I/II clinical trial study protocol to assess the safety, acceptability, tolerability and pharmacokinetics of a sustained-release tenofovir alafenamide subdermal implant for HIV prevention in women. *BMJ Open* 2022; 12(1):e052880. doi: 10.1136/bmjopen-2021-052880.
- 10 **Ngcobo S, Molatlhegi RP, Osman F, Ngcapu S, Samsunder N, Garrett NJ, Abdool Karim SS, Abdool Karim Q, McKinnon LR, Sivro A**. Pre-infection plasma cytokines and chemokines as predictors of HIV disease progression. *Scientific Reports* 2022;2(1):2437. doi: 10.1038/s41598-022-06532-w.
- 11 Choonara S, Govender K, Mpfu D, Kapira A, **Humphries H**. Early and unintended pregnancies threaten triple dividend. *Lancet Child Adolescent Health* 2022;6(2):79-80.



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



CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit

Partner Institutions:



Board of Control: B Ntuli (Chair) • M Rajab (Deputy Chair) • Q Abdool Karim • SS Abdool Karim • AC Bawa • JH Beare • JM Frantz • LP Fried (US) • ST Harrison • TL Jones • ARDH Moosa • K Naidoo • A Nortier • HW Sherwin • LV Theron • A Puren • M Moshabela

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