



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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HIV-1 Epidemic Control — Insights from Test-and-Treat Trials

In this Issue

The feature story this month provides a summary of the editorial, 'HIV-1 Epidemic Control-Insights from Test-and-Treat Trials', published in the NEJM.

On Page 2, we congratulate Prof Salim Abdool Karim on his induction as a Fellow of the Royal Society in London and report on the review of the Centre of Excellence in HIV Prevention. We congratulate CAPRISA fellow Janine Jewanraj on being selected for a research training fellowship in the US.

We report on CAPRISA's participation at the 2019 IAS in Mexico City, the experiential learning of final year Pharmacy students at CAPRISA, and the highly successful annual Adult Workplace programme hosted by CAPRISA's Human Resources on page 3.

In a recent editorial published in the *New England Journal of Medicine*, Professor Salim Abdool Karim argues that the collective evidence from four test-and-treat trials suggest that this approach is not adequate by itself to meet the UN goal of ending the AIDS epidemic as a public health threat by 2030.

Although four large-scale community-based "test and treat" trials, conducted in Botswana, Kenya, South Africa, Uganda and Zambia and involving almost 240,000 individuals, have shown that it is possible to increase viral suppression at a community level, they resulted in modest or no reductions in HIV incidence (Figure).

Outcomes ranged from no impact on HIV incidence in the South African TasP trial (likely due to suboptimal linkage to care), no impact on HIV incidence in Uganda and Kenya (likely due to the minimal differences in treatment efforts between the intervention and control communities), a 31%-38% reduction in HIV incidence in Botswana, with its statistical significance depending on the statistical analysis used to a 31% reduction in the PopART trial but only in the group with the less intensive treatment intervention.

The substantial differences between the results from these community-based trials and those observed in discordant couples, and in ecological observational studies or even those derived from mathematical models may be due largely to the logistical challenges of implementing test and treat at scale. It is therefore unlikely that a test-and-treat strategy alone will result in epidemic control.

To realise the goal of ending the AIDS epidemic as a public health threat by 2030, test-and-treat strategies will need to continue and proven HIV prevention strategies such as condoms, medical male circumcision and oral pre-exposure prophylaxis will need to be rapidly scaled-up and focused on the populations and locations in greatest need. At the same time, research on new long-acting HIV prevention technologies, a vaccine and a cure will need to continue in earnest.

- Dr Cheryl Baxter, Research Associate

For further reading: Abdool Karim SS. HIV-1 Epidemic Control-Insights from Test-and-Treat Trials. *New England Journal of Medicine* 2019; 381(3):286-288. doi: 10.1056/NEJMe1907279. <https://www.ncbi.nlm.nih.gov/pubmed/31314975>

CONTACT DETAILS

CAPRISA
Doris Duke Medical
Research Institute (DDMRI)
2nd Floor
University of KwaZulu-Natal
Private Bag X7, Congella 4013
South Africa

T: +27-31-260 4555
F: +27-31-260 4566

E-mail: caprisa@caprisa.org

www.caprisa.org.za

Caprisaofficial

@CAPRISAofficial

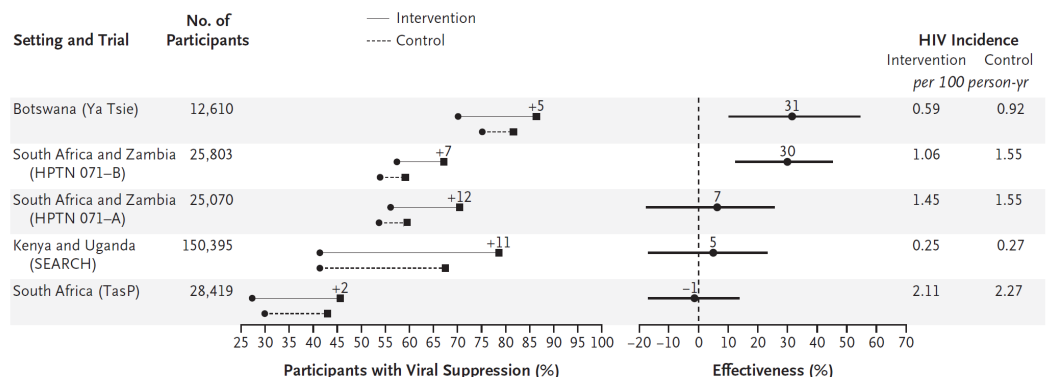


Figure: Effectiveness of Universal Test-and-Treat Strategies in Reducing the Incidence of Human Immunodeficiency Virus (HIV) Infection— Results from Community-Based Randomized, Controlled Trials.



Salim Abdool Karim inducted a Fellow of the Royal Society in London

Professor Salim Abdool Karim, Director of CAPRISA, joined some 40 leading scientists globally, who were inducted as Fellows of the prestigious Royal Society, the world's oldest science academy on Friday 11 July in London.

Professor Abdool Karim said that the enormity of the occasion of the Royal Society "hits you when you have to go up during the induction ceremony to sign "the book". This is the same original book that was signed back in 1660 by Sir Christopher Wren and the

others who founded the Royal Society.

This book has the signatures of many of world's great scientists such as Stephen Hawking, whose painting is on their walls, Darwin, Einstein among others." To qualify for a Royal Society Fellowship, an individual must have made a 'substantial contribution to the improvement of natural knowledge, including mathematics, engineering science and medical science'.

Photo (left): Professor Salim Abdool Karim stands in front of a poster of newly inducted scientists at the Royal Society in London.



Experts review the CoE in HIV Prevention

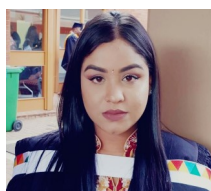
A review of the DST-NRF Centre of Excellence in HIV Prevention was conducted from 23-25 July at the CAPRISA headquarters. Representatives from the National Research Foundation (NRF), the Department of Science and Technology (DST) and five reviewers were part of the delegation that undertook the review. During the 3-day review, more than 30 stakeholders and collaborations as well as stu-

dents were interviewed about the performance of the CoE since initiation in 2015. The goal of the CoE is to understand and ameliorate the high risk of HIV in women, especially young women, in South Africa. The CoE also provides research training opportunities to medical students, clinicians, epidemiologists and immunologists for research career development and/or postgraduate qualifications.



Photo left: Seated (L-R): Nompumelelo Zungu (University of Johannesburg), Eulenda Mosese (NRF), Phindile Masimula (NRF), Rendani Ladzani (NRF), James Williams (University of Oxford), Margaret Steyn (NRF); standing (L-R): David Serwadda (Makerere University), Mpumi Zungu (HSRC), Quarraisha Abdool Karim (CAPRISA), Cheryl Baxter (CAPRISA), Pontiano Kaleebu (Uganda Virus Research Institute), Souleymane Mboup (Institut de Recherche en Santé, de Surveillance Epidemiologique et de Formations). Photo right: As part of the review, delegates visited the CAPRISA laboratories at the headquarters and the facilities at the CAPRISA eThekweni Clinic. L-R: Souleymane Mboup, Nompumelelo Zungu, Phindile Masimula, David Serwadda, James Williams, Pontiano Kaleebu, Rose Msiza (DST), Salim Abdool Karim (CAPRISA), Eulenda Mosese and Mpumi Zungu

CAPRISA Fellow selected for research training in the US



CAPRISA Fellow and PhD candidate, Janine Jewanraj is one of two successful applicants from Africa, in HIV prevention research, selected for a one-month research training fellowship at the Eastern Virginia Medical School (Norfolk, VA) in the US. Jewanraj, who is under the mentorship of Dr Lenine Liebenberg Scientist at the CAPRISA Mucosal Immunology Laboratory, aims to determine the impact of semen on the immune and microbial environments of the female genital tract in her PhD research project. The research training is offered by CONRAD and the Desmond Tutu HIV Foundation.



The global response to HIV in the spotlight at the IAS in Mexico City

“Social mobilization, activism and advocacy that characterized the early HIV response are even more critical now,” said Professor Quarraisha Abdool Karim, CAPRISA’s associate scientific director, in her presentation entitled: the global response to HIV – no room for complacency at the IAS opening session on 21st July. The biennial conference on HIV science was attended by over 5 000 delegates from over 140 countries. She warned that the continued “high maternal death rates, barriers to access to treatment for children and the transitioning of infants and children exposed to and/or born with HIV to adolescence are growing and emerging challenges that need to be addressed so as not to reverse the gains made to date.”

Abdool Karim participated as a panellist in three press conferences: the official IAS opening press conference, the AVAC panel discussion with journalists and in ‘achieving 100:100:100 + Zero HIV transmission is warranted to

#endAIDS’. She participated in the UNAIDS Steering committee to discuss the 2025 AIDS targets and co-chaired a session entitled: Challenges ahead: Applying lessons and making inroads.”

CAPRISA fellows Lindani Msimango and Refilwe Molatlhegi presented poster entitled “Acceptability of point-of-care viral load testing to facilitate differentiated HIV care: A qualitative study amongst people living with HIV and healthcare workers in South Africa” and “Recent injectable contraception correlates with reduced cervicovaginal mucosal growth factor expression in South African women”. Study co-ordinator Kalendri Naidoo’s poster presentation described participant reactions to their residual drug level results and explanations on ring adherence during a qualitative ancillary study (MTN 032).



Photo (L-R): Prof Quarraisha Abdool Karim, Dr Anthony Fauci Director NIAID at the NIH and Dr Peggy Johnston, Consultant on vaccines at the IAS

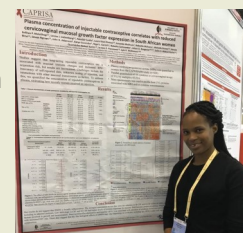


Photo (L): Refilwe Mlathegi

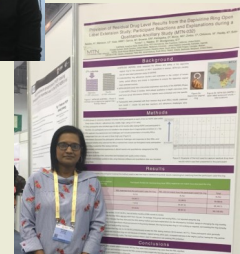


Photo (R): Study Coordinator, Kalendri Naidoo.

Experiential learning for final year Pharmacy students



Eighty- four final year pharmacy students from the University of KwaZulu-Natal gained invaluable insights into the operations and regulatory processes in pharmacy during their experiential learning at CAPRISA on 24th and 31st July. Hosted by CAPRISA’s Pharmacy department at the CAPRISA eThekweni Research clinic the students had an opportunity to learn about CAPRISA’s research and the opportunities for pharmacists to play a pivotal role in clinical trials. Dr Tana Gengiah, Head of Pharmacy said the “hands-on interactive sessions provided the platform for students to learn about the HIV and TB epidemic, understand the biological and social determinants that compound the epidemic in South Africa, particularly for young women, and to understand the latest technologies against HIV.”

Young Adults workplace programme



Twenty-eight learners (22 at the CAPRISA headquarters and 6 at Vulindela Research Clinic) participated in the annual CAPRISA Young Adults Workplace Experience programme. The aim of the programme is to give them exposure to STEM careers available in medical research and offer learners guidance with regards to their career choices. The 3-day programme provided an opportunity to be placed with mentors based on their areas of interest, being medical and support services to shadow team members and perform practical assignments in the respective disciplines.



Scientific papers published in 2019

44* Mabvakure BM, Lambson BE, Ramdayal K, Masson L, Kitchin D, Allam M, **Abdool Karim SS, Williamson C, Passmore J**, Martin DP, Scheepers C, **Moore PL**, Harkins GW, **Morris L**. Evidence for both intermittent and persistent compartmentalization of HIV-1 in the female genital tract. *Journal of Virology* 2019 ; 93(10):e00311-19. doi: 10.1128/JVI.00311-19.

45 **Daftary A**, Satyanarayana S, Jha N, Singh M, Mondal S, Vadnais C, Pai M. Can community pharmacists improve tuberculosis case finding? A mixed methods intervention study in India. *BMJ Global Health* 2019 ; 4(3):e001417. doi:10.1136/bmjgh-2019-001417.

46 Drain PK, **Dorward J**, Bender A, Lillis L, Marinucci F, Sacks J, Bershteyn A, Boyle DS, Posner JD, **Garrett N**. Point-of-care HIV viral load testing: an essential tool for a sustainable global HIV/AIDS response. *Clinical Microbiology Reviews* 2019; 32(3): e00097-18;

47 Takuva S, Nabyoma JM, **Dawood H**, Black A, Maartens G, Parrish A, Leong TD. Eligibility for co-trimoxazole prophylaxis among adult HIV-infected patients in South Africa. *South African Medical Journal* 2019; 109(4):198-199.

48 Dzomba A, Tomita A, Govender K, **Tanser F**. Effects of Migration on Risky Sexual Behavior and HIV Acquisition in South Africa: A Systematic Review and Meta-analysis, 2000-2017. *AIDS and Behavior* 2019 ; 23(6):1396-1430.

49 Tinarwo P, Zewotir T, **Yende-Zuma N, Garrett NJ**, North D. An Evaluation to Determine the Strongest CD4 Count Covariates during HIV Disease Progression in Women in South Africa Infectious Diseases and Therapy. *Infectious Diseases and Therapy* 2019 ; 8(2):269-284.

50 **Abdool Karim SS, Baxter C, Passmore JS, McKinnon LR**, Williams BL. The genital tract and rectal microbiomes: Their role in HIV susceptibility and prevention in women. *Journal of the International AIDS Society* 2019; 22(5):e25300. doi: 10.1002/jia2.25300

51 Richardson SI, **Moore PL**. The antibody response in HIV-1-infected donors. *Current Opinion in HIV and AIDS* 2019 ; 14(4):233-239.

52 Ramjee G, Sartorius B, Morris N, Wand H, Reddy T, Yssel JD, **Tanser F**. A decade of sustained geographic spread of HIV infections among women in Durban, South Africa. *BMC Infectious Diseases* 2019 ; 19(1):500. doi: 10.1186/s12879-019-4080-6.

53 **Abdool Karim SS**. HIV-1 Epidemic Control — Insights from Test-and-Treat Trials. *New England Journal of Medicine* 2019: 381;3: 286-288.

*continuation from previous newsletter



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



CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit
CAPRISA hosts a DoH-MRC Special Initiative for HIV Prevention Technology



Partner Institutions:

