



In this Issue

To commemorate World TB Day on 24th March, we feature a viewpoint from scientists published in *Lancet HIV* calling for improved outcomes for TB and HIV care.

On page 2 we report on the point-of-care study presented as a late breaker at CROI and the visit to the CAPRISA eThekweni Research clinic by officials of the Bill and Melinda Gates Foundation and the HVTN.

CAPRISA's participation on International Women's Day in a Microsoft project to empower girl learners with IT skills is highlighted on page 3. We also congratulate the first African post-doc in PANGEA-HIV and report on the Advanced Clinical Care workshop to strengthen health systems.

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CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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Scientists call for high level knowledge integration in the treatment of drug resistant TB-HIV

To take advantage of improved outcomes for TB and HIV care with new treatments, high level knowledge integration needs to occur.

Recently a group led by CAPRISA researchers, Drs Nesri Padayatchi, Deputy Director at CAPRISA and Max O'Donnell, Assistant Professor Division of Pulmonary, Allergy, and Critical Care Medicine, & Department of Epidemiology Columbia University Medical Center, described in an article published in *Lancet HIV* the unintended consequences due to lack of knowledge integration in the treatment of drug-resistant TB-HIV.

In their viewpoint article, they discuss the potentially important of Bedaquiline, a potent new therapy for drug-resistant tuberculosis, results in improved survival including in HIV patients with multidrug and extensively drug-resistant tuberculosis.

In line with WHO recommendations, in South Africa and other low-income and middle-income settings, antiretroviral therapy is switched from generic fixed-dose combination efavirenz-containing regimens to twice-daily nevirapine with separate companion pills. This change is necessary because of interactions between efavirenz and bedaquiline.

Early data suggest a signal for low antiretroviral therapy adherence after

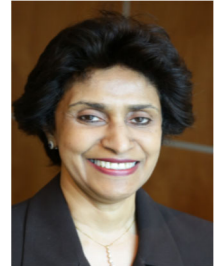


Photo: (L) - Dr Max O'Donnell Assistant Professor Division of Pulmonary, Allergy, and Critical Care Medicine, & Department of Epidemiology Columbia University Medical Center and, (R) Dr Nesri Padayatchi, Deputy Director CAPRISA and Honorary Associate Professor in the School of Nursing and Public Health at the University of KwaZulu-Natal.

this antiretroviral therapy switch.

Mortality and other tuberculosis-specific benefits noted with bedaquiline treatment in multidrug and extensively drug-resistant tuberculosis HIV might be compromised by HIV viral failure, and emergent antiretroviral resistance.

Programmatic responses, such as adherence support and dual pharmacovigilance, are promoted as part of the therapeutic intervention. The authors argue that antiretroviral therapy initiation with fixed-dose combinations without bedaquiline drug interactions should be strongly considered.

For further reading see:

O'Donnell M, et al. *Lancet HIV* 2019; 6(3):e201-e204. <https://www.ncbi.nlm.nih.gov/pubmed/term=30846058>



Point-of-care viral load testing improves HIV treatment outcomes and retention in care



Photo: (L-R) Dr Paul Drain (University of Washington), Dr Nigel Garrett (CAPRISA) and Jienchi Dorward (Oxford University & CAPRISA)

The results of the first randomised controlled trial to test the impact of rapid, point-of-care viral load testing was presented as a late breaker presentation at the [Conference on Retroviruses and Opportunistic Infections \(CROI 2019\)](#) in Seattle.

Results showed a 14% improvement in virological suppression and retention in care as the point-of-care viral load test results were available on the same day –

a significant improvement in turnaround times compared to standard laboratory testing.

The STREAM study ([Simplifying HIV TREATment and Monitoring](#)), which was led by Dr Nigel Garrett, Head of Vaccine and Pathogenesis Research at CAPRISA and Dr Paul Drain of the University of Washington, was an open-label, two arm randomized controlled trial conducted at the CAPRISA eThekweni Research clinic and the adjacent Prince Cyril Zulu clinic in Durban, South Africa.

“Delays with obtaining laboratory test results in resource-limited settings present challenges for monitoring antiretroviral therapy (ART),” said Dr Drain. “We assessed whether point-of-care viral load testing with task-shifting to enrolled nurses changed treatment and care outcomes for HIV positive patients on ART.” Patients were recruited to the study six months after starting ART.

The study investigated if rapid viral load testing is an effective and cost-efficient strategy for management of chronic HIV infection in the majority of patients. In the intervention arm, patients received point-of-care testing with the Xpert HIV-1 viral load assay and same-day counselling. If they were virologically suppressed and clinically stable, their care was transferred from a professional nurse to an enrolled nurse. “The beauty of this study was that the intervention was simple to understand for patients and providers”, Dr Garrett said. “The results showed an improvement in viral load suppression and retention, led to earlier ART switches for patients failing therapy, and allowed rapid referral into differentiated, community-based care pathways.”

Officials from BMGF and HVTN gain insight into CAPRISA’s vaccine research

CAPRISA hosted officials from the Bill and Melinda Gates Foundation (BMGF) and the HIV Trials Network (HVTN) at the CAPRISA eThekweni Research clinic on 12 March. Dr Lut van Damme, Dr Andri Kofmehl and Ms Nicole Sauerwein from the BMGF, and Dr Michelle Nebergall from the HVTN, had a tour of the newly refurbished clinical trial clinic. The tour and discussions were led by CAPRISA’s Professor Nesri Padayatchi (Deputy Director), Dr Nigel Garrett (Head of Vaccine and Pathogenesis Research) and Dr Nivashnee Naicker (HVTN Principal Investigator). The delegation gained insight into the HIV vaccine trial activities at the research clinic, exchanged ideas about efficacy trial conduct in South Africa and interacted with a trial participant who shared her experience.



L-R: Mpume Khoza, Nigel Garrett, Lut van Damme, Bongzi Zuma, Kieara Ramtahal, Ivy Kaunda, Andri Kofmehl, Michelle Nebergall, Nicole Sauerwein, Lashistha Parthab, and Nivashnee Naicker



DigiGirlz - Inspiring young girls to understand the power of digital platforms!



On International Women's Day, UNAIDS Special Ambassador for Adolescents and HIV and CAPRISA Associate Scientific Director, Professor Quarraisha Abdool Karim, delivered one of the opening talks at Microsoft's MakeWhatsNext Campaign launch of the DigiGirlz initiative. DigiGirlz is designed to inspire young girls to 'understand the impact of the digital platforms and equip them with leadership skills in the digital space'. The event facilitated by Go Digital SA Foundation was in partnership with Microsoft Foundation, CA-

PRISA and the eThekweni Metro.

About 150 young, 14-18 year old, high school students from four schools in KwaZulu-Natal attended a three-day workshop at the University of KwaZulu-Natal Howard College campus where they got a sense of what greater engagement and involvement of women in science, technology, engineering and math (STEM) can accomplish. The interactive workshop included sessions on coding and designing an App, the skills required in future workplaces and how innovation and digital technologies are transforming this space. The workshop is the start of continued investments in these promising young women's training in coding.

"The girls displayed immense enthusiasm to learn and understand new knowledge in the complex digital technology sphere that was indeed impressive and inspiring," said Professor Abdool Karim. "We must create opportunities such as DigiGirlz to harness the untapped talent that lies in young girls, particularly those who have had very little exposure to science and technology."

Congratulations to the first African post-doctoral fellow in PANGEA-HIV

We congratulate Dr Batsirai Mabvakure (*in the photo*) of the HIV Virology Section of the National Institute for Communicable Diseases (NICD) on the award of his PhD. Mabvakure's thesis, entitled "Co-evolution of antibody lineages and HIV epitopes" was supervised by Professor Penny Moore, Dr Cathrine Scheepers and Professor Lynn Morris. Batsirai has published two first author papers in the *Journal of Virology* as part of this work. Mabvakure will take up a post-doctoral position with Professor Kate Grabowski at John Hopkins University



School of Medicine, and the John Hopkins Bloomberg School of Public Health in the Infectious Diseases Dynamics Group next month where he will continue to work in HIV research and investigating the role of migration and mobility in the transmission of HIV in sub-Saharan Africa. He will be the first African post-doctoral fellow in PANGEA-HIV.

Building capacity in TB-HIV care through health systems strengthening

CAPRISA's Advanced Clinical Care (ACC) programme's project, making viral load monitoring routine and managing patients with unsuppressed viral load, was rolled out to TB/HIV Care staff in ART facilities in the Chris Hanani district- in the Eastern Cape during a 2-day health-systems strengthening workshop, hosted by CAPRISA recently.

The standard operating procedures and tools of this project developed in part-

nership with the eThekweni district management, PEP-FAR partners and academics, are endorsed as the best practice model in HIV/TB care by the South African national department of health and neighbouring African countries.

The workshop was facilitated by Drs Kogie Naidoo, Head of HIV and TB Treatment and Rochelle Adams, ACC program Manager at CAPRISA. The full report can be accessed at www.caprisa.org





Scientific papers published in 2019

8* **Garrett N**, Mitchev N, **Osman F**, **Naidoo J**, **Dorward J**, Singh R, Ngobese H, Rompalo A, Mlisana K, **Mindel A**. Diagnostic accuracy of the Xpert CT/NG and OSOM Trichomonas Rapid assays for point-of-care STI testing among young women in South Africa: a cross-sectional study. *BMJ Open* 2019; 9(2):e026888. doi:10.1136/bmjopen-2018-026888

9 **Chimukangara B**, **Kharsany AB**, Lessells RJ, **Naidoo K**, Rhee SY, Manasa J, Gräf T, **Lewis L**, Cawood C, Khanyile D, Diallo K, Ayalew KA, Shafer R, Hunt G, Pillay D, **Abdool Karim SS**, **de Oliveira T**. Moderate-to-High Levels of Pretreatment HIV Drug Resistance in KwaZulu-Natal Province, South Africa. *AIDS Research and Human Retroviruses*. 2019; 35(2):129-138.

10 **Dorward J**, Hamers RL. Dolutegravir in sub-Saharan Africa: context is crucial. *Lancet HIV* 2019;6(2):e72-e73.

11 **Yende-Zuma N**, Mwambi H, Vansteelandt S. Adjusting the Effect of Integrating Antiretroviral Therapy and Tuberculosis Treatment on Mortality for Noncompliance: A Time-varying Instrumental Variables Analysis. *Epidemiology* 2019; 30(2):197-203.

12 Tomita A, Vandormael A, Bärnighausen T, Phillips A, Pillay D, De Oliveira T, **Tanser F**. Sociobehavioral and community predictors of unsuppressed HIV viral load: multilevel results from a hyperendemic rural South African population. *AIDS* 2019 ; 33(3):559-569.

13 Dzomba A, Tomita A, Vandormael A, Govender K, **Tanser F**. Effect of ART scale-up and female migration intensity on risk of HIV acquisition: results from a population-based cohort in KwaZulu-Natal, South Africa. *BMC Public Health* 2019 Feb 14;19(1):196. doi: 10.1186/s12889-019-6494-x.

14 Chetwin E, Manhanzva MT, Abrahams AG, Froissart R, Gamielidien H, Jaspan H, Jaumdally SZ, Barnabas SL, Dabee S, Happel AU, Bowers D, Davids L, Passmore JS, **Masson L**. Antimicrobial and inflammatory properties of South African clinical Lactobacillus isolates and vaginal probiotics. *Scientific reports* 2019; 9 (1):1917. doi: 10.1038/s41598-018-38253-4.

15 **O'Donnell MR**, **Padayatchi N**, **Daftary A**, Orrell C, Dooley KE, Rivet Amico K, Friedland G. Antiretroviral switching and bedaquiline treatment of drug-resistant tuberculosis HIV co-infection. *Lancet HIV* 2019 ; 6 (3):e201-e204.

*continuation from previous newsletter

CAPRISA ISPOTU Award for Innovation



Photo (L-R): Agnes Mkhize, Salim Abdool Karim, Reshika Singh and Siya Nzama.

We congratulate three colleagues at the CAPRISA headquarters: Agnes Mkhize Senior Administrator, Reshika Singh Grants and Contracts Officer, and Siya Nzama Procurement Officer who were presented with CAPRISA ISpotU Awards in recognition for showing innovation in their work that resulted in substantial cost savings. The presentations were made by CAPRISA's Director, Professor Salim Abdool Karim.


 CAPRISA hosts a DST-NRF Centre of Excellence in HIV Prevention
 
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 CAPRISA is the UNAIDS Collaborating Centre for HIV Research and Policy
 
 CAPRISA hosts a MRC HIV-TB Pathogenesis and Treatment Research Unit
 
 CAPRISA hosts a DoH-MRC Special Initiative for HIV Prevention Technology

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 NATIONAL HEALTH LABORATORY SERVICE
 
 UNIVERSITY OF CAPE TOWN
 