



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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Dolutegravir versus ritonavir-boosted lopinavir in second-line ART

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A new paper from CAPRISA's Strengthening Health systems through Audit and Programmatic data Evaluation (SHAPE) team, has found that dolutegravir leads to better long-term viral suppression than ritonavir-boosted lopinavir (LPV/r) when used in second-line antiretroviral therapy (ART) regimens for people with HIV with prior treatment failure of efavirenz-based ART.

The team compared 24-month treatment outcomes between LPV/r-based second-line ART as the former standard of care and two different dolutegravir-based regimens that have been rolled out since December 2019. As initial guidance had included special considerations for dolutegravir use among women, which were later dropped in light of newer evidence, the team also compared uptake of these regimens by gender. Analyses were conducted using de-identified, routinely collected data from 108 public healthcare facilities in KwaZulu-Natal. It included adults switched between December 2019 and December 2023.

Among 3649 people who switched, women were less likely than men to be switched to a

dolutegravir-based regimen (relative risk 0.92, 95% confidence interval [CI] 0.88-0.96). This difference was most pronounced at the beginning of the dolutegravir rollout and equalised over time. Among 2321 adults switched before July 2021 (allowing sufficient follow-up time for outcome assessment), in intention-to-treat analysis, the standardised risk of 24-month death or loss to follow-up was in the range of 30%-34% for all three regimens, with no significant differences. However, the standardised risk of 24-month viraemia ≥ 50 copies/mL was significantly higher with LPV/r-based ART at 50% (95% CI 45-55%) than with either dolutegravir-based regimen at 40% (95% CI 32-47%) and 39% (95% CI 39-44%), respectively. These findings support current national and World Health Organization guidelines for second-line ART, yet also highlight the need for better management of viraemia in second-line ART across regimens. - Jennifer Brown, PhD

For further reading: Brown J, Lewis L, Sookraj Y, et al. Uptake and 24-month Outcomes of Dolutegravir– Versus Lopinavir-based-Second line Antiretroviral Therapy for People with HIV in South Africa: A Retrospective Cohort Study and Emulated Target Trial. *Open Forum Infectious Diseases*. <https://doi.org/10.1093/ofid/ofaf530>

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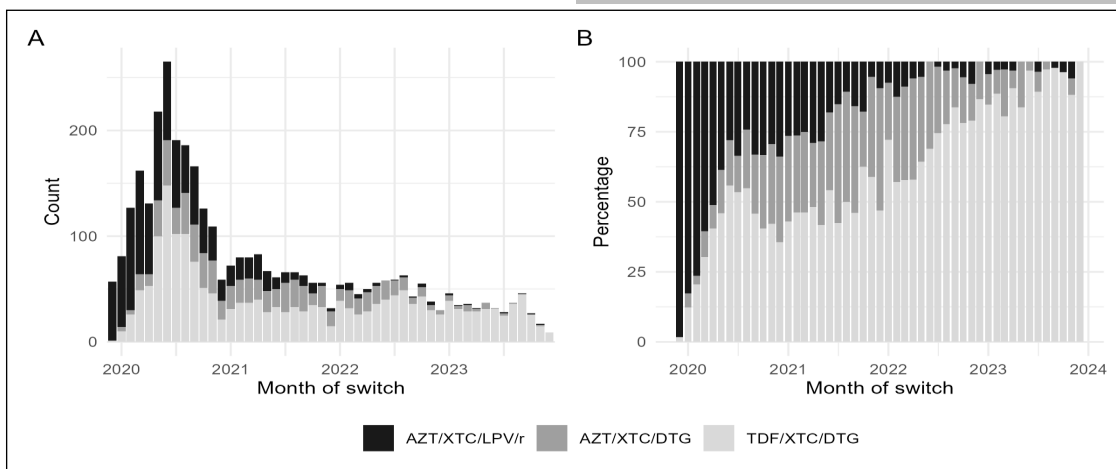


Figure: Number (A) and proportion (B) of switches from TDF/XTC/EFV to each second-line regimen by month from December 2019 through December 2023. AZT: zidovudine; DTG: dolutegravir; EFV: efavirenz; LPV/r: ritonavir-boosted lopinavir; TDF: tenofovir disoproxil fumarate; XTC: lamivudine or emtricitabine.



Scientists urged to bring communities closer in the fight against HIV



The 12th South African AIDS Conference in Johannesburg highlighted the need for stronger community leadership and inclusivity in the fight against HIV with an emphasis on closing the gaps in prevention, treatment, and care. Innovations such as digital health tools, artificial intelligence, improved diagnostics, and long-acting therapies were identified as critical to improving service

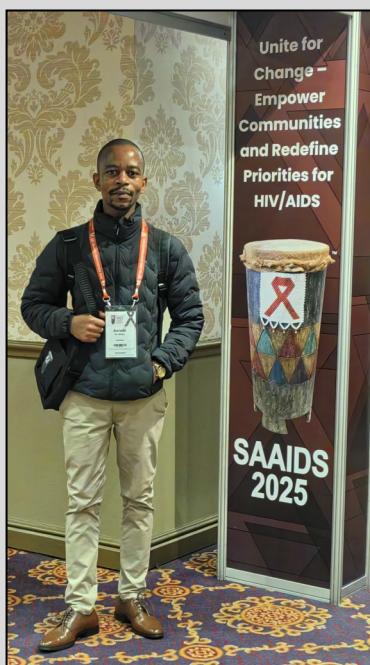
delivery and adherence. Addressing the opening, South African Deputy President and Chairperson of the South African National AIDS Council, Paul Mashatile reminded delegates of the UNAIDS 95-95-95 targets to ending the AIDS epidemic by 2030. Mashatile said “South Africa has made significant progress towards the targets, however, there is a struggle with the second 95, which is to initiate and maintain people on treatment.”

CAPRISA Statistician Sanele Mbeje, presented the results of ongoing research by the SHAPE team on “Trends in advanced HIV disease, treatment interruption and viraemia in KwaZulu-Natal, South Africa. The findings revealed that advanced HIV disease and viraemia continues to pose a substantial burden, with marked variation across geographic regions. Mbeje said that these insights underscore the need for geographically targeted interventions to strengthen HIV outcomes.

Data manager Lisanthini Naidu presented a study on behalf of CAPRISA’s SHAPE team that evaluated the accuracy of data captured in TIER.Net. The data platform is used by South Africa’s HIV programme to monitor treatment outcomes for people living with HIV. TIER.Net data was compared with Synchronised National Communication in Health (SyNCH) that records decentralised antiretroviral therapy (ART) at pick-up points outside a clinic, and National Health Laboratory Service (NHLS) data which records laboratory results. The study showed that the accuracy of TIER.Net decentralised ART and viral load data was high and improved over time, however CD4 count data capturing remained sub-optimal.

- Lisanthini Naidu, Sanele Mbeje, Azandu Gazu and Thando Maseko

Photos (Left to Right): Thando Maseko, Sanele Mbeje. Top right: Lisanthini Naidu. Bottom right: Thando and Azandu Gazu with other delegates.





Lung challenge model unpacked

CAPRISA hosted Professor Anil Pooran, Senior Scientist in Immunology and Molecular Biology at the University of Cape Town Lung Institute in September. He delivered an insightful presentation on the human lung challenge model, focusing on the safety and immune responses associated with Bacille Calmette-Guérin (BCG) and Purified Protein Derivative (PPD).

The discussion showcased the potential of the lung challenge model to provide more accurate insights into vaccine performance by examining immune responses directly at the primary site of TB infection. This approach offers an important avenue for developing safer and more effective TB vaccines. The study was conducted in HIV-uninfected individuals, but the findings remain relevant to advancing prevention strategies in settings where TB and HIV frequently intersect. It demonstrated that the lung challenge model is both feasible and safe in individuals from TB-endemic settings and that it can elicit measurable immune responses. These findings provide a valuable foundation for further research to refine, replicate, and apply this model in addressing key questions in TB immunology and vaccine development. Prof. Pooran emphasised that the findings are central to strengthening scientific understanding of host immune mechanisms and to guiding the design of improved preventive strategies. His presentation also reinforced the importance of collaborative research partnerships in advancing global efforts to combat TB. While the work remains in an early stage, it has significant potential to shape future vaccine development strategies and to inform policy and practice in TB prevention.

- Letitia Shanmugam

Par excellence!

The International Maternal Paediatric Adolescent AIDS Clinical Trials (IMPAACT) Network held its annual meeting virtually in September.

At the Network Awards, CAPRISA's Umlazi Site Laboratory and Main Laboratory (Site 30300) were recognised for their excellence, selected as one of only seven site laboratories out of 35 international sites to receive this distinction. These laboratories were honoured for their exemplary performance, achieving perfect scores across all three measurement matrices; timely response to queries, PMDC shipments completed within five weeks and shipment evaluations meeting all quality standards. This remarkable level of consistency and excellence reflects a deep commitment to quality, precision and responsiveness.



Left to Right: The Main Laboratory team led by Director of Laboratories Natasha Samsunder and Nobuhle Dlamini from the Umlazi Site Laboratory





Innovation to Impact: People-centered advances in HIV

The 7th Southern African HIV Clinicians Society conference in Cape Town brought together leading experts to share critical updates and innovations in HIV, TB, and STI prevention and treatment. Key discussions focused on treatment and emerging drug resistance, particularly the rising resistance to dolutegravir in the public sector and the importance of managing drug-drug interactions.

The burden of TB remained a central concern, with sessions highlighting advances in diagnostics, the vaccine pipeline, and strategies to prevent both drug-sensitive (DS) and drug-resistant (DR) TB. Updated guidelines for HIV and TB treatment, including paediatric care and tuberculosis preventive therapy (TPT), were presented. HIV prevention took centre stage with an emphasis on long-acting therapies and differentiated service delivery models to improve access to PrEP and support choice. The conference also showcased innovations such as simpler HIV regimens, mRNA and CRISPR-based therapies, and progress toward STI vaccines. Finally, addressing poor adherence across HIV and TB care remained a key priority, with ongoing efforts to strengthen patient support and retention in care.

Conference co-chairs Drs Nomathemba Chandiwana and Silingene Ngcobo said, "Despite facing challenges, healthcare professionals in South Africa continue to uphold the world's largest HIV treatment program with unparalleled commitment. -Thando Maseko



Left to Right: Head of Pharmacy, Dr Tanuja Gengiah, Deputy Director Prof. Kogie Naidoo, Scientist Dr. Anushka Naidoo and Postdoctoral Research Fellow Dr. Thando Maseko

Hear, hear! Congratulations to our graduates



CAPRISA is proud to congratulate our graduates from the University of KwaZulu-Natal's Spring Graduation ceremony.

Noluthando Mazibuko-Munonde, PhD

Research title: Longitudinal impact of PrEP use and BV treatment on vaginal microbiota in adolescent girls and young women at high risk of acquiring HIV in KwaZulu-Natal.

Wenkosi Xulu, PhD

Research title: The Relationship Between Vaginal Microbiota Composition, HPV Infection Status, and Associated Cytokine Profiles and Immune Cell Subsets.

Bongeka Maphakela, Masters

(Left) Phindile Tshabalala, Masters

Research title: Probiotic Properties of *Lactobacillus Crispatus* in the Female Genital Tract of South African Women.



A selection of scientific papers published in 2025

- 50 **Mahomed S, Osman F**, Beliveau M, Heredia-Ortiz R, Carlton K, Wang J, Mughal M, Low K, Narpala S, Lin BC, Castro M, Serebryanny L, Koup RA, **Abdool Karim Q, Abdool Karim SS**. Hyaluronidase-enhanced subcutaneous delivery of bNABs: a phase 1 randomized controlled clinical trial in HIV-uninfected women. *Nat Commun*. 2025 Sep 1;16(1):8177. doi: 10.1038/s41467-025-63051-8
- 51 **Ntuli L, Mtshali A, Mzobe G, Pillay N**, Happel AU, **Ngcapu S**. Developmental challenges in infants who are HIV-exposed uninfected. *Brain Behav Immun*. 2025 Aug 18;130:106078. doi: 10.1016/j.bbi.2025.106078
- 52 **Mahomed S, Madurai S**, Nair S, Cawood C, Eades J, Wang D, Subramanian A. Optimizing syphilis screening in South Africa: efficacy of the iStatix antibody test in point-of-care settings amid reinfection challenges. *AIDS Res Ther*. 2025 Aug 21;22(1):79. doi: 10.1186/s12981-025-00773-1
- 53 Chireshe E, Chifurira R, Batidzirai JM, Chinhamu K, **Kharsany A**. Application of a Joint Multivariate Probit Model for Mixed Outcomes of CD4 Cell Count and Tuberculosis Using a Bayesian Latent Variable Approach in KwaZulu-Natal. *Frontiers in Applied Mathematics and Statistics*. 2025 Aug 29;11:1643745. doi: 10.3389/fams.2025.1643745
- 54 Leong TD, Mpofu R, Dadan S, Cohen K, **Dawood H**, Kredt T, Parrish A, Blockman M, Gopalan PD. A systematic review and meta-analysis of noradrenaline compared to adrenaline in the management of septic shock. *Afr J Emerg Med*. 2025 Sep;15(3):100881. doi: 10.1016/j.afjem.2025.05.005
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- 56 Hamilton F, Schurz H, Yates TA, Gilchrist JJ, Möller M, **Naranbhai V**, Ghazal P, Timpson NJ; Genes & Health Research Team; International Tuberculosis Host Genetics Consortium; Parks T, Pollara G. Altered IL-6 signalling and risk of tuberculosis: a multi-ancestry mendelian randomisation study. *Lancet Microbe*. 2025 Jan;6(1):100922. doi: 10.1016/S2666-5247(24)00162-9
- 57 Sun L, Selbie D, Khan AS, **Abdool Karim SS**, Legido-Quigley H, Ogunola FT, Eamer G, Matsoso MP, Bausch DG, Fisher D. Mobilising national and regional assets and non-state actors for pandemic preparedness. *Lancet*. 2025 Apr 19;405(10487):1320-1324. doi: 10.1016/S0140-6736(25)00630-0
- 58 Khalifa A, Wallach S, Grabowski MK, Duncan DT, Nalugoda F, **Abdool Karim Q**, Mathema B. Measuring mobility in HIV research in sub-Saharan Africa: a scoping review. *J Int AIDS Soc*. 2025 Jun;28(6):e26508. doi: 10.1002/jia2.26508
- 59 Bartlett ML, **Perumal R**, Vermund SH, **Abdool Karim S**. Navigating Virology's Frontiers in Africa: Global Virus Network 2024 Durban Meeting. *Viruses*; 17 (6):819. doi: 10.3390/v17060819
- 60 Forman L, **Abdool Karim Safura**, Kolawole O. Global Health "With Justice": The Challenges and Opportunities for Human Rights in Global Health Law. *J Law Med Ethics*. 2025;53(S1):18-22. doi: 10.1017/jme.2025.1

*Continued from previous newsletter

For the complete list of publications see here: <https://www.capriza.org/Publication/1/1>



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