



CAPRISA

CENTRE FOR THE AIDS PROGRAMME OF RESEARCH IN SOUTH AFRICA

Newsletter

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High HIV seroconversion rates in adolescent girls and young women in KwaZulu-Natal South Africa

In this Issue

On page 1 we feature the CAPRISA population-based cohort study that measured the associations between socio-demographic and behavioural variables and HIV seroconversion.

On page 2 we report on Prof Salim Abdool Karim's keynote address at the Trilateral symposium of WHO, WIPO & WTO; and his appointment as Special Advisor on pandemics to the Director-General of the WHO.

The review, "Leveraging the HIV response to strengthen pandemic preparedness" features on page 3. We report on Prof Bongani Mayosi's extraordinary legacy & Annual Bongani Mayosi Memorial lecture.

On page 4 we congratulate Drs Sharana Mahomed and Jienchi Dorward on being awarded PhDs, and welcome the first cohort of graduates in the CAPRISA Clinical Trials Program.

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Understanding HIV risk in young women in Africa is essential. In "HIV incidence and associated risk factors in adolescent girls and young women in South Africa: A population-based cohort study", HIV seroconversion was measured in a cohort of adolescent girls and young women (AGYW) aged 15-24 years in peri-urban KwaZulu-Natal, South Africa.

CAPRISA statistician, Lara Lewis, applied Cox regression analysis and a proximate determinants framework, the study measured the associations between socio-demographic and behavioural variables and HIV seroconversion.

The study highlighted the endemic high levels of HIV seroconversion among AGYW living in this region with an HIV incidence of 3.92 per 100 person-years (py). Among 15-19-year-olds, absence of family support (adjusted hazards ratio (aHR): 3.82 (95% CI: 1.89-7.72)), having

a medically circumcised partner (aHR: 0.5 (CI 0.27-0.94)) or an HIV-positive partner not on antiretroviral therapy (ART) (aHR: 6.21 (CI 2.56-15.06)) were associated with HIV seroconversion.

Among 20-24-year-olds, failure to complete secondary school (aHR: 1.89 (CI: 1.11-3.21)), inconsistent condom use (aHR: 3.01 (CI:1.14-7.96)) and reporting having partner(s) who were HIV-positive and not on ART (aHR: 7.75 (CI:3.06-19.66)) were associated with HIV seroconversion.

In conclusion, HIV seroconversion was significantly associated with the absence of family support and incomplete schooling, while partner-level prevention interventions such as condom use, medical male circumcision, and ART associated HIV viral suppression played an important role in reducing HIV risk, justifying the need to intensify the use of combination HIV prevention programs.

For more reading see here: *Lewis L, et al. PLoS One 2022 December; 17(12): e0279289. doi: 10.1371/journal.pone.0279289 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9770356/>*

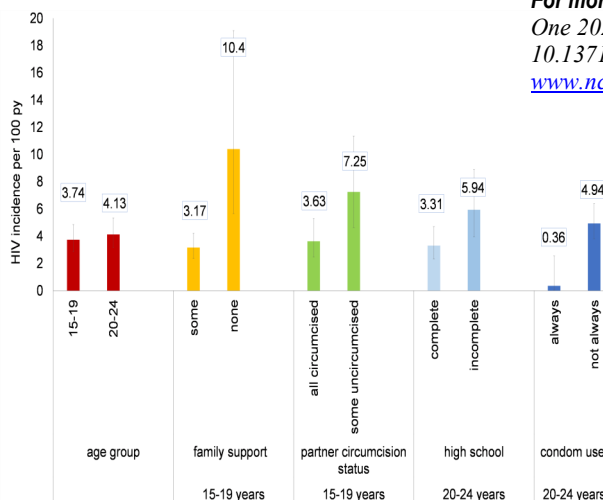


Figure: HIV incidence (per 100 person-years) by socio-demographic and behavioural risk factors among adolescent girls and young women enrolled in the HIPSS cohort



Keynote address at the trilateral WIPO, WHO & WTO symposium

Professor Salim Abdool Karim, Director of CAPRISA delivered the keynote address at the World Health Organization (WHO), World Intellectual Property Organization (WIPO) and the World Trade Organization (WTO) Joint Technical Symposium held in Geneva on 16 December 2022.

The trilateral symposium was opened by WIPO Director General Daren Tang, WHO Director-General Tedros Adhanom Ghebreyesus and WTO Director-General Ngozi Okonjo-Iweala. The DGs raised the need to leverage lessons learned during the first three years of the COVID-19 pandemic and to build on and expand the cooperation that has emerged from this health crisis. “Despite all the gains we have made in the past three years, severe global inequities still hamper the response,” said Director-General Tedros.

In his presentation titled: “Covid-19: Preparing for the next pandemic wave”, Abdool Karim highlighted notable Covid-19 scientific developments and discoveries made as many of the world’s researchers pivoted to Covid-19. Vaccines, diagnostics and treatments became available in record time but their accessibility was grossly inequitable as a result principally of IP protection by corporates. Lack of access to vaccines and treatments was a major impediment in mitigating the pandemic and saving lives.

A key lesson from HIV for Covid-19, Abdool Karim said was the importance of mutual interdependence & shared responsibility. “An IP solution was found to share the benefits of ARVs. Markets were segmented and voluntary licences offered to generic manufacturers - Truvada costs \$33 a pill in the USA but 33 cents in South Africa,” he said. “We need to learn these lessons to do better in preparing for the next pandemic.”



Photo top: (L-R) second from the left Tedros Adhanom Ghebreyesus WHO DG, WIPO DG Daren Tang, WTO DG Ngozi Okonjo-Iweala.

Photo bottom: Prof Salim Abdool Karim in discussion following his keynote address at the WHO, WIPO & WTO trilateral symposium held in Geneva

CAPRISA’s Director is appointed Special Advisor on pandemics to the Director-General of the WHO

Professor Salim Abdool Karim has been appointed Special Adviser to the Director-General of the World Health Organization (WHO). In this role as Special Advisor to Director-General Tedros Ghebreyesus, Abdool Karim will provide advice on pandemic preparedness and on high-priority scientific issues and advances in science and technology that could directly impact global health. He will provide support to the WHO Hub for Pandemic and Epidemic Intelligence in Berlin. The “Berlin Hub” is a major new initiative of the WHO, with funding support of the German government, to build the capacity to use surveillance and research data to better understand pandemics and how they may arise, spread and be controlled. It is a far-sighted initiative, which is led by Dr Chikwe Ihekweazu, that provides a key element of global pandemic preparedness. Abdool Karim is also a member of the WHO Science Council.

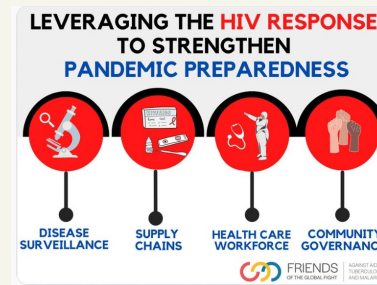


Leveraging the HIV response to strengthen health systems and pandemic preparedness

The review, “Leveraging the HIV response to strengthen pandemic preparedness” published in the journal *PLoS Global Public Health*, examines how HIV-related resources and principles can support communities and countries in being better prepared for emerging disease threats, with a specific focus on evidence from the COVID-19 pandemic. Key interviews in six countries (Kenya, Rwanda, Sierra Leone, South Africa, Thailand, Vietnam) conducted in February and March 2021, explored the role of HIV programs and providers in early national COVID-19 programming and health systems more generally.

The review draws on current literature and explores the multi-faceted intersection between the HIV response and the central elements of pandemic preparedness in areas including surveillance; supply chain; primary care; health care workforce; community engagement; biomedical research; universal access without discrimination; political leadership; governance; and financing. Key to building sustainable pandemic preparedness response and

health system resilience is investing in inclusive scientific research and community engagement programmes, achieved in HIV. The role of civil society was central in building and sustaining political commitment during the HIV pandemic. Lessons can be learned in galvanising global solidarity, inclusiveness and shared responsibilities in future pandemic responses. The article calls for the strategic leveraging of existing, extensive global HIV response and programmes in developing a global pandemic preparedness response and strengthening health systems while advancing global health equity.



For more reading see: Collins C, Isbell MT, Abdool Karim Q, Sohn AH, Beyrer C, Maleche A. Leveraging the HIV response to strengthen pandemic preparedness. *PLoS Global Public Health* 2023 January; 3(1): e0001511. <https://doi.org/10.1371/journal.pgph.0001511>

Celebrating the life of Prof Bongani Mayosi – The annual Bongani Mayosi Memorial Lecture

The Annual Bongani Mayosi Memorial Lecture co-hosted by the University of Cape Town (UCT) and the Bongani Mayosi Foundation sets out to celebrate African Scholarship and Mayosi’s ideals of equality, social justice, transformation, and excellence in the pursuit of knowledge. Professor Salim Abdool Karim delivered the lecture in Cape Town held on 28 January paying tribute to Mayosi’s phenomenal legacy in cardiology and his major research contributions in cardiomyopathy, rheumatic heart disease and tuberculous pericarditis.

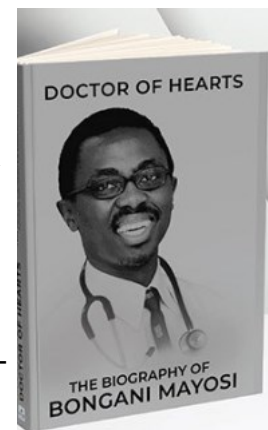
The lecture followed the launch of Mayosi’s *biography 'Doctor of Hearts'* at Exclusive Books, in Cape Town. In his foreword, Abdool Karim traces Mayosi’s journey from an impressionable first year medical student, to an accomplished academic and appointment as head of



Internal Medicine at UCT. “The first time I met Mayosi was 30 years earlier, in 1984. I was involved as a senior medical student in the orientation programme for the new first-year group and he made an impression on me almost immediately as a bright and curious new medical student. It was another 15 years before I saw him again when I served on the panel that interviewed him for his Oxford Nuffield Fellowship...”

wrote Abdool Karim.

“Bongani Mayosi was a selfless leader, devoted teacher/mentor, brilliant medical scientist and caring cardiologist who put his trainees’ and patients’ needs first, while caring little for prestige and high office,” said Abdool Karim. “Mayosi was and will remain a giant in South African science, with over 382 peer-reviewed articles that had garnered over 40,000 citations. His h-index exceeds 70, placing him not just among South Africa’s top black researchers, but among all South Africa’s top scientists of all time.”

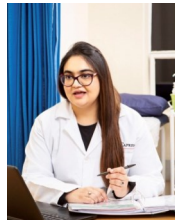




Drs Sharana Mahomed & Jienchi Dorward earn PhDs!

We congratulate CAPRISA’s Dr Sharana Mahomed, Research Clinician and principal investigator and Dr Jienchi Dorward, Honorary Associate Scientist who have recently completed their PhDs.

Dr Mahomed’s PhD, entitled “*Assessing the safety and pharmacokinetics of the broadly neutralising monoclonal antibodies VRC07-523LS, PGT121 and CAP256V2LS in young women in Africa*” was supervised by Prof Salim Abdool Karim. “The impact supervisors and mentors have on their students far exceeds pure academia,” said Mahomed. “I have learnt so much in this time and I am grateful to have had the best guidance, mentorship and support from my supervisor and my CAPRISA family.”



Dr Jienchi Dorward’s DPhil, entitled “*Point-of-care testing, new antiretroviral regimens and community-based treatment to enhance primary care HIV services in South Africa*” was supervised by Prof Chris Butler, Prof Gail Hayward and Prof Sarah-Tonkin-Crine at the Nuffield Department of Primary Care Health Sciences, at the University of Oxford, and Prof Nigel Garrett at CAPRISA. “I owe a big thank you to the CAPRISA team,” said Dorward. “It was a great pleasure to continue to collaborate with colleagues at CAPRISA throughout my DPhil, and I look forward to continuing to work together as part of my post-doctoral plans”.



Novovax NVX-COV2373 triggers neutralization of Omicron sub-lineages

Dr Jinal Bhiman and colleagues at the NICD published a study in *Scientific Reports* showing that SARS-CoV-2 Omicron (B.1.1.529) Variant of Concern (VOC) and its sub-lineage BA.45 are neutralized following two or three doses of NVX-CoV2373. After two doses, Omicron sub-lineages BA.1 and BA.4/BA.5 were resistant to neutralization by 72% (21/29) and 59% (17/29) of samples respectively. However, after a third dose of NVX-CoV2373, high titers against Omicron BA.1 (GMT: 1,197) and BA.4/BA.5 (GMT: 582) were observed, with responses similar in magnitude to those triggered by three doses of an mRNA vaccine. These data are of particular relevance as BA.4/BA.5 is dominating in multiple locations, and highlight the potential utility of the NVX-CoV2373 vaccine as a booster in resource-limited environments.

Link: <https://www.nature.com/articles/s41598-023-27698-x>

Clinical Trials Capacity Building program for graduates



The CAPRISA Clinical Trials Capacity Building program for graduates was launched on 16 January when the first cohort commenced their internship.

The 12-month program provides graduates with training opportunities in conducting clinical and medical research in HIV/AIDS, TB and COVID-19.

This program gives young scientists an opportunity to work alongside senior researchers to get first-hand experience in methods and conduct of clinical trials.

Photo: Seated (L-R) Kay Pillay, Fulufhelo Netshitangani, Kandrelle Naidoo & Samukelisiwe Mncube

Standing (L-R) Sma Mzobe, CAPRISA Training Coordinator, Kynesha Moopanar, Emihle Ntsiyane, Lindiwe Radebe, Sanele Mahaye, Sipehelele Gabokhutle, Nozipho Mazibuko, Tessa Stallard, Nomfundo Mbatha & Tashnika Gajoo

Affiliate Member of the African Academy of Sciences



Dr. Thandeka Moyo-Gwete, Senior Medical Scientist at NICD was recently selected as an Affiliate Member of the African Academy of Sciences (AAS). The purpose of the AAS Affiliates Scheme is to support the professional growth of young and early-to-mid-career scientists in their efforts to develop into outstanding research leaders in their respective fields. Hearty congratulations to Dr Moyo-Gwete.



A selection of scientific papers published in 2022

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