The editorial titled: Advances in tuberculosis control during the past decade published in The Lancet Respiratory Medicine on 23 March, highlights the need for a multi-sectoral commitment, approach and strategies to end tuberculosis as a public health threat globally.

Authors Kogie Naidoo and Rubeshan Perumal outline the significant gains made over the past decade in understanding TB transmission dynamics, point of care diagnostics and shorter, efficacious treatment strategies. This despite the severe disruptions to health systems and accessibility to TB diagnosis and treatment during the Covid-19 pandemic.

“Nevertheless, the past decade has celebrated several major scientific breakthroughs that could advance the achievement of a tuberculosis-free world.

There is optimism around several major advances in the scientific understanding of tuberculosis transmission and pathogenesis, improved diagnostic assays for M tuberculosis detection and resistance profiling, and the implementation of shorter, safer, and more effective regimens for the treatment of tuberculosis.”

The authors point out that while BCG, which was first introduced in the 1920s, remains the only licensed tuberculosis vaccine, the past decade has seen significant advances in tuberculosis vaccine development. Ten vaccine candidates are currently undergoing clinical trial evaluation and clinical trials of mRNA-based tuberculosis vaccine candidates are currently in development.

“To achieve a tuberculosis-free world, however, more progress is needed in developing an effective tuberculosis vaccine, implementing coordinated multi-faceted tuberculosis control interventions, mitigating the socio-economic drivers of tuberculosis, and sustaining high levels of political support to bring new scientific advances to the field.”


Figure: Mycobacterium tuberculosis
The government of Japan hosted Professors Salim and Quarraisha Abdool Karim, CAPRISA’s Director & Associate Scientific Director, recipients of the Fourth Hideyo Noguchi Africa Prize (Medical Research category) from 12 – 17 March to introduce the laureates to engage with a range of high-level officials and key stakeholders in Japan.

The Abdool Karims and The Carter Centre (represented by Mr Adam Weiss) received their Prizes at TICAD8 attended by leaders from Africa on 28 August last year. TICAD is co-hosted by the Government of Japan, United Nations, United Nations Development Programme (UNDP), the World Bank and African Union Commission (AUC). “May this prize inspire our youth to pursue careers in science to improve lives in Africa and globally,” said Prof Salim Abdool Karim.

The visit to Japan commemorated the Hideyo Noguchi Africa Prize with high level meetings, lecture sessions and symposiums hosted by organizations involved in Africa. The itinerary included events in Fukushima Prefecture, a courtesy call on the Governor, visits to Hideyo Noguchi Memorial Museum and the Tsuruga Castle, and engagement with high school students.

The Abdool Karims met with the Prime Minister of Japan, Mr Fumio Kishida and attended a dinner hosted by the Cabinet Office. They also met with the Emperor and Empress of Japan at the Royal Palace.

The Governor of Fukushima bestowed on both Abdool Karims the status of Goodwill Ambassadors of Fukushima. They delivered lectures at the Nippon Medical School and held discussions with President Akihiko Gemma of the school.

On 16 March the Abdool Karims joined a diverse group of experts in the Special Edition of AFRI CONVERSE, a dialogue series in the advocacy of TICAD, co-organized by Japan’s Cabinet Office, the Japan International Cooperation Agency (JICA) and the United Nations Development Programme (UNDP).

The session focussed on the evolving development contexts and priorities on the continent, examined gaps and opportunities in human capital development, as well as successful models of investments pioneered by the laureates engaging multi-sectoral partners. The aim of the dialogue was to share good practices and lessons learned by the laureates to inspire a pathway for building health resilience in Africa. “It is only when our research changes the lives of the most vulnerable for the better that we know that our research is having an impact,” said Prof Quarraisha Abdool Karim. On 28 March they met with officials of the Ministry of Health in Singapore - see photo below.

Photos: Top (L-R) Prime Minister of Japan, Mr Fumio Kishida meets with Profs Salim & Quarraisha Abdool Karim. Photo middle: The Abdool Karims are welcomed by Okinashima elementary school students at the Hideyo Noguchi Memorial Hall, Inawashiro Town. Photo bottom: Prof Vernon Lee, Senior Director (Communicable Diseases), Singapore Ministry of Health, Profs Salim & Quarraisha Abdool Karim, Dr Derrick Heng, Deputy Director of Medical Services (Public Health Group), Singapore Ministry of Health meet in Singapore.
The CAPRISA annual strategic planning meeting and long service held over two days in March at the Coastlands Musgrave hotel in Durban brought together senior scientists, collaborators, partners and fellows to present and interrogate new ideas in HIV prevention, TB treatment and Covid-19 research. The presentations structured in 5 sessions covered: Antibodies, HIV Vaccines and Pathogenesis; HIV and TB Treatment; Epidemiology and HIV Prevention, and Mucosal Immunology with 24 presentations on new ideas.

Presentations included: Immune predictors of mucosal bNAb distribution (Dr Aida Sivro); DisCoVER study: Diversity, Integrations and sequencing characteristics of viruses emerging from the reservoir (Ms Lynn Tyers); REPORT study: Resistance profiling and treatment of complex DR-TB (Dr Rubeshan Perumal); Sustainability of research care standards following trial exit to sustain HIV free maternal and child survival (Dr Zulaykha Sarally), and Reducing the impact of oncogenic HPV on HIV acquisition (Prof Lenine Liebenberg).

Prof Salim Abdool Karim said it was incredible to have young scientists present innovative ideas and participate in new knowledge generation. Abdool Karim presented 29 long service awards to staff for their loyalty and commitment at a gala dinner.
A first-in-human clinical trial to assess a live Lactobacillus insert on the vaginal microbiome

In early March, CAPRISA hosted officials from the Gates Foundation and the Vaginal Microbiome Research Consortium. In collaboration with the Bill and Melinda Gates Foundation, the CAPRISA Vulindlela Research site will be one of two global research sites – the other is Massachusetts General Hospital in the US conducting a first in human clinical trial assessing the safety, tolerability and colonisation kinetics of a vaginally administered, live biotherapeutic intervention containing multiple strains of Lactobacillus crispatus.

Preparations for the clinical trial, titled: “Vaginally Inserted Live Biotherapeutic Randomized Trial – VI-BRANT”, are underway and is expected to commence in September 2023, led by Country PI and Vulindlela Research site Director, Dr Disebo Potloane.

The officials also visited the CAPRISA headquarters and met with Senior Scientist Dr Sinaye Ngcapu, and post docs Drs Andile Mtshali, and Gugulethu Mzobe. The delegation had an opportunity to visit the main laboratory where the first in human vaginal microbiome live biotherapeutic product will be tested. “The visit to the CAPRISA clinic and laboratories provided a unique opportunity to learn more about the research being conducted in South Africa, which is critical to advancing our understanding of the vaginal microbiome and developing new therapies that can benefit women worldwide,” explained Dr Ngcapu.

Columbia University Ph.D. candidate aims to enhance public health research capacity

Mr Craig Heck (left in the photo), a PhD candidate in Epidemiology at Columbia University under the supervision of CAPRISA’s Associate Scientific Director, Professor Quarraisha Abdool Karim, is visiting CAPRISA for a three-month period from March to May 2023. During his visit, he will deliver a series of seminars on Epidemiology aimed at enhancing public health research capacity.

The first two sessions of the seminar held on 10 and 24 March covered the history of Epidemiology, epidemiological theories and concepts, classical epidemiological statistics, hypothesis testing, bias and confounding, and considerations for infectious disease outbreaks.

The seminars provide an opportunity for CAPRISA staff and researchers to enhance their knowledge and skills in Epidemiology, a crucial field for public health research. “My visit is also an excellent opportunity to learn more about ongoing research conducted at CAPRISA, a leading research institution in the field of HIV/AIDS and public health in South Africa and beyond,” said Heck.
TB expert is profiled in The Lancet Respiratory Medicine

Profile
Kogie Naidoo—when one condition leads to another

Kogie Naidoo grew up in Durban, South Africa, during some of the most intense years of apartheid. While politically things have moved on, poverty and disadvantage—which go hand in hand with tuberculosis and HIV—remain. Living in a disadvantaged community designated for people of Indian origin, under the apartheid government’s Group Areas Act, Naidoo’s parents made sure she and her three sisters knew the value of education. Today, she is deputy director of the Centre for the AIDS Programme of Research in South Africa (CAPRISA) and head of CAPRISA Treatment Research Programme, Durban, SA—leading on the programmes to tackle tuberculosis and HIV to communities just like the one she was raised in.

In the early 2000s, Naidoo introduced a nurse-initiated antiretroviral treatment programme, and her research and service provision on treating HIV-co-infected patients was initiated simultaneously, initially through the START trial and subsequently through the CAPRISA SAPIF trial. Doctors across Africa were unsure how to treat co-infected patients due to the toxicity of drugs for each disease, many preferring to wait until tuberculosis treatment was completed before starting HIV treatment. However, many patients died during this wait. Naidoo’s PhD focused on tuberculosis and for improving patient care, reducing the mortality of co-infected patients.

Professor Quarraisha Abdool Karim, Associate Scientific Director hosted the newly appointed Ambassador of Japan H.E. Mr. Shigeru USHIO on 6 March at CAPRISA’s headquarters. The Ambassador’s official visit included a tour of CAPRISA facilities and discussions with senior scientists to gain insights into core research studies and public health challenges facing South Africa.

On 22 March the newly appointed chair of the Board, of the Kenya Medical Research Institute (KEMRI), Dr Abdulahi Ali Ibrahim led a delegation from KEMRI and the Kenyan Parliament Departmental Committee team on a visit to draw on CAPRISA’s 20-year experience in HIV prevention, TB treatment and more recently Covid-19 research and leadership. Prof Nigel Garrett, head of Vaccine and Pathogenesis research hosted the delegation. The visitors engaged in discussions with senior scientists and visited the eThekwini Research Clinic.

Photo: Standing (L–R) Mr Takahiko SATO, Embassy of Japan; Senior Scientists Dr Tanuja Gengiah, Mrs Natasha Samsunder, Dr Sharana Mahomed; Mr. Tasuku NAKANISHI, Embassy of Japan, and Mr Patrick Mlletshe, Seated (L–R): Mr Maroti Letsoalo, H.E. Mr. Shigeru USHIO, Ambassador of Japan to the Republic of South Africa; Prof Quarraisha Abdool Karim; and Prof Nigel Garrett.

Photo left: Back row (L–R): Mr Edwin Bett (KEMRI); Hon. Anthony Kibagendi (Kenya Parliament); Dr Martin Bundi (KEMRI)

Middle row (L–R): CAPRISA colleagues Dr Sinaye Ngcapu, Dr Sharana Mahomed, Ms Sunita Panday, Dr Gqabelelhi Mzobe, Dr Tanuja Gengiah, Dr Andile Mshali, Dr Nonhlathla Yende-Zuma; Dr Joseph Mwangangi (KEMRI); and Mr Martin Machira (KEMRI).

Front row (L–R): Ms Smita Maharaj (CAPRISA); Hon. Dr Robert Pukose (Kenya DoH) Dr Abdulahi Ali Ibrahim, Chairperson KEMRI Board of Directors and Prof Nigel Garrett.
A selection of scientific papers published in 2023

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* continuation from previous newsletter