Linda-Gail Bekker – CEO, Desmond Tutu Health Foundation

To save HIV initiatives, we need to integrate them into the broader global health agenda, ensuring a place at the table. If we do not, we risk HIV falling off the radar entirely

10.07.2024

Tags: South Africa, Desmond Tutu Health Foundation, HIV, Vaccines, R&D, Africa

A leading voice in the global fight against HIV, Professor Linda-Gail Bekker works across both scientific research and activism. As CEO and founder of the Desmond Tutu Health Foundation, Prof Bekker has helped change the course of the HIV/AIDS epidemic in South Africa. Her organisation has brought the latest HIV treatments and prevention - often through novel means and against a backdrop of stigma and discrimination - to the country's most vulnerable populations for 30 years. In conversation, she outlines the massive steps forward that have been made in the HIV field; the sometimes tortuous road still to travel to ensure equitable access to the latest technologies for all; and some of the most promising research projects in the pipeline - notably the plan to develop an HIV vaccine in Africa, and for Africa, over the next five years.

What is the Desmond Tutu Health Foundation?

The Desmond Tutu Health Foundation is a research-related, non-governmental, not-for-profit organisation based in Cape Town, South Africa. It is affiliated with our sister organisation, the Desmond Tutu HIV Center, which is an academic unit within the Department of Medicine, University of Cape Town. All our work is underpinned by clinical research, but we also have a strong service component, serving the hardest-hit, most HIV and TB burdened communities in the Western and Eastern Cape. We have been doing this since the mid-90s.

The mid-90s was a very different period for access, treatment options, stigma, and ideas surrounding HIV. What was the organisation's focus in those early days?

The early stage of the epidemic was really one of despair and dismay, where we followed a cohort of mostly gay white men from downtown Greenpoint. We are a pink city, and the clade B epidemic [the dominant strain of HIV during the early years of the HIV/AIDS crisis – Ed.] was prevalent at that time, with men dying here, just as they were elsewhere in the world. We did not even have access to some of the very early antiretrovirals, although we started to get our hands on some Zidovudine (AZT), one of the earliest effective antiretroviral agents through various means. This was a hugely challenging time, and we saw our young patients in the newspaper obituaries every week.

We then documented the transition epidemiologically from clade B into the clade C generalised epidemic. This sea change (in numbers now of young women, young men and children) occurred as we saw more patients coming through the door. Recognising the huge need and opportunity, we began to bring in antiretrovirals by conducting clinical trials on behalf of drug developers. This was a way to get expensive medication into the country for many people. We saved the lives of about 500 people through those early-stage antiretroviral trials. It was not easy, as there was a lot of pushback, as it was thought that we would need to gain access to these life-saving treatments for all due to the prohibitive costs.

What challenges did you face when introducing antiretrovirals through clinical trials?

We faced pushback with arguments that these drugs would never come to Africa, would never be affordable, and that it was therefore unethical to test them here. Despite this, we made a counterargument around access and equity and we persisted. Eventually, we saw the drugs come in through aid agencies such as PEPFAR, the Global Fund and much cheaper generic manufacturing. The US President's Emergency Plan for AIDS Relief (PEPFAR) campaign, launched in 2003, was aptly named, as it truly was an emergency with young people dying in droves. The 90s and the first decade of the new millennium were dreadful times, but the miracle of antiretrovirals cannot be understated; they really turned the epidemic around.

We went through various eras of antiretroviral treatment, from protease inhibitors to non-nucleoside reverse transcriptase inhibitors, and now integrase inhibitors. Today, it is literally just one pill once a day needed to keep a person virally suppressed, and now we have almost 23 million

people on this combination treatment containing the integrase inhibitor, dolutegravir.

Although treatment has become more accessible, we still face challenges in reaching the nine million-odd people worldwide who have not as yet, accessed care and treatment.

How did your organisation handle the political and social challenges of the early 2000s?

In the early 2000s, along with these access challenges, we also had to fight our AIDS-denialist government. We were on the front lines, not only taking on the virus but also the then-health minister (Manto Tshabalala-Msimang) and former president (Thabo Mbeki) and their dreadfully wrong ideology. We kept our heads down and provided services, bringing in drugs through any means necessary, joining forces with treatment activists like the Treatment Action Campaign (TAC), and taking on the government and pharmaceutical companies in the courts when needed.

During this tumultuous time, there was also incredible innovation and new antiretroviral agents were discovered frequently with better diagnostics and monitoring assays emerging as well. The area where innovation lagged was prevention, meaning that for a long time, all we had was A (abstinence), B (be faithful, i.e., monogamy), C (condomize). When ARV-based prevention started to emerge after the Global iPrEx study, we quickly shifted our focus toward it. I had also developed a big interest in HIV vaccine research, which I retain to this day. Finally, we recognised that to treat the masses of six million South Africans living with HIV we needed to move our efforts away from tertiary hospitals and into communities. We decentralised ARV medication through initiatives like the Tutu Trucks (our mobile health clinics) and built the Hannan CrusAID Treatment Center in Guguletu, Cape Town.

What have been some of the key innovations and focus areas for the organisation in recent years?

More than 30,000 people have been initiated on ART at the Treatment Center, necessitating even further decentralised care through adherence clubs and other community-based differentiated services. Training masses of healthcare workers, nurses, and doctors was essential in those early years.

I would describe mine, and the Foundation’s research and service interests – with a smile – as highly promiscuous! We delve into every aspect of HIV medicine, apart perhaps from cure research

(which is highly specialised). Our focus areas include HIV treatment, vaccines, prevention, and service delivery, with community engagement being a critical component. The HIV world learned the importance of community engagement long ago, and much of what we do involves community partnership. This includes our mobile fleet (Tutu Tester, Tutu Teen Truck, Amajita Men's trucks and Tutu Kwik Testers), reaching the community where they are.

How would you characterise the level of clinical research in your part of the world and what are the most promising clinical research projects being conducted at your institution today?

We as a continent of clinical researchers have become very proficient in conducting clinical research not only here in South Africa, but also across large parts of southern, eastern, and western Africa. At our organisation, we focus on two main pillars: innovative clinical research and health service research. The first pillar involves developing new products, technologies, and diagnostics, while the second focuses on implementing these innovations within the health system, often referred to as implementation science. We also emphasise scaling up these innovations with fidelity, affordability and in partnership with users and providers.

We are working across several areas in clinical trial research innovation. Firstly, we continue to explore new kinds of ARV-based prevention. We are heavily involved in developing long-acting injectable PrEP agents, ultra-short-acting agents like 2-1-1 event-driven PrEP, and innovative approaches such as ultrashort acting douches, films and rings. We are also working on very long-acting solutions, including a monthly pill and a six-monthly injectable agent.

Is your organisation working on any initiatives related to developing an HIV vaccine?

Absolutely. Prof Glenda Gray, the outgoing president of the South African Medical Research Council (MRC), and I together with two other terrific Ugandan researchers have just received a significant grant from USAID to create the BRILLIANT Consortium (BRinging Innovation to cLinical and Laboratory research to end HIV In Africa through New vaccine Technology). This consortium, which has also received some funding from the SA MRC, is being led predominantly by African women scientists and is a multi-disciplinary collaboration between Nigeria, Uganda, Kenya, Tanzania, Zimbabwe, Zambia, Mozambique, and South Africa. Over the next five years, we aim to discover and manufacture a viable and relevant vaccine immunogen on the continent. We are collaborating

with Afrigen to build an mRNA hub, which could lead to various developments in the future.

What other areas of research are you focusing on?

We continue to be deeply involved in TB research. My husband, Prof. Robin Wood, who co-founded the organisation with me, leads this area. He is focused on understanding TB transmission, particularly the aerobiology around it. His state-of-the-art aerobiology laboratory in one of our local townships aims to uncover breakthrough science about subclinical tuberculosis and are describing a TB asymptomatic carrier status, which could explain our generalised epidemic. We believe TB remains a critical area of study, closely linked to HIV and of course one of the greatest public health challenges of our time.

Additionally, we are expanding our work into sexually transmitted infections (STIs) and non-communicable diseases (NCDs). We recognise the need to address STIs among the young population and provide comprehensive care for the aging HIV-positive population, the first generation to grow old with the disease. This involves integrating prevention and care for NCDs and aging-related issues into our services.

Why is the development of an HIV vaccine still so important?

Here’s my opportunity to do a shout-out to manufacturers and pharma! Almost all of them have left the field, which is really disappointing, and we need them back! In terms of why we still need a vaccine, the simple answer is that we have never treated our way out of any infectious disease epidemic. Prevention always needs to be emphasized together with treatment. Because we have been able to roll out treatment, many people think that HIV has been solved, but this is not the case: to eliminate an infectious disease, history tells us, we need a vaccine.

Without a vaccine, we will always be chasing our tails trying to find and provide care for individuals who have just acquired HIV but avoided diagnosis or were not found in the system. This is particularly true of a disease like HIV which is often considered taboo, is kept undercover, and therefore lies latent for a long time. If we think we can treat our way out of it or that PrEP alone is enough to eradicate HIV, we are living in cloud cuckoo land. An affordable, effective and durable vaccine creates that possibility.

What needs to happen to bring back the players who have left the HIV vaccine research field?

Somehow, we need to convince the pharma companies who have fled the field to return. J&J was the “last man standing” and has also now left the field. Moderna has shown interest and this is very exciting. We need to bring these big companies back by highlighting the necessity of a vaccine. Initially, we went down the road of empirical research, similar to COVID. With COVID, the spike protein was an obvious immunogen, and we were lucky that the vaccines developed based on this worked effectively.

With HIV, it is more difficult. We have not found the “Holy Grail” immunogen, and HIV is an incredibly mutable virus, constantly changing and escaping our attempts to control it immunologically. The field has now shifted from an empirical approach to a deductive one, focusing on broadly neutralising antibodies. The antibody mediated prevention (AMP) studies have shown that if you have an antibody and a matching virus, even passive infusion of the relevant anti-HIV antibody can prevent HIV.

How is the current approach to HIV vaccine development different from what has gone before and what makes it exciting?

The current approach aims to coax our immune system to produce broadly neutralising antibodies quickly, using a prime and boost strategy. There is increasing evidence that we can direct the immune system in this way, which is often referred to as “shepherding” or “polishing.” While T cells are also important, the best way to abort an infection is with broadly neutralising antibodies. T cells then come in and finish the process off.

The mRNA platform makes this particularly exciting because we can iterate very quickly using this technology. You can introduce a new immunogen within six weeks, which is much faster than the years it took to build previous vaccines like adenovirus serotype 26 vector (Ad26) or Modified Vaccinia Ankara (MVA). This allows us to test and boost repeatedly, learning and improving along the way.

This process is still at the Phase I/ early discovery stage, involving a lot of lab work and blood samples, but it is hugely exciting. Once we figure out the prototype, subsequent vaccines will become easier to develop, similar to what we have seen with other infectious disease vaccines.

Some of our other interviewees have described HIV vaccine research today as having moved from competitive to collaborative. Would you agree?

There was a great deal of stakeholder collaboration during COVID, drawn primarily by the money available. The shocking amount of money thrown at that crisis acted as both honey and glue; attracting people and then binding them together. Unfortunately, such extensive resources have never been available for HIV, TB, or malaria. While HIV has received some funding, it has usually been from a single pharmaceutical company, the Bill & Melinda Gates Foundation (BMGF), or the US National Institutes of Health (NIH).

Now, it is about pooling resources. Different entities need to bring their intellectual property, clinical trial sites, manufacturing platforms, or specialised researchers together. It is not easy science, as you must derive consensus and get everyone on board. There is a lot of time spent trying to achieve agreement, but hopefully, this process will get easier with practice. I hope that the BRILLIANT Consortium can work in this manner, with each clinical trial site and participating country contributing. My dream is that one day we can export a vaccine to the global north!

AIDS has always been, and still is, a political issue. Back in the 90s you had to convince sceptical governments to invest in the field, while we are now seeing PEPFAR funding coming under threat from the far right in the US, as well as anti-homosexuality laws in countries like Uganda and Ghana. Is it a more difficult time than ever to be involved in AIDS alleviation and HIV research?

It is not necessarily more or less difficult; just different. AIDS has always been political and probably always will be, for obvious reasons. An early name for the disease was ‘4H Disease’ because it was thought to affect only heroin users, homosexuals, haemophiliacs, and Haitians! It was shockingly stigmatised. We have become much better and more inclusive, but there are still huge external threats.

The Denver Principles from 1986 emphasised the importance of inclusion, and the GIPA (Greater Involvement of People Living with HIV/AIDS) principles from 1994 advocate for “nothing about us without us.” We always try to involve people living with HIV and key populations in whatever we do. We have taught other fields of medicine this, though they have been slow to learn. These are the positive aspects, including differentiated care, which we pioneered.

However, it remains incredibly political, and the forces against us are significant. We have always been constrained by funding, but now it feels more critical than ever due to competing priorities. Issues like climate change and wars are drawing attention and resources away from HIV.

One of the arguments I feel strongly about is that we can no longer talk about HIV exceptionalism. To save HIV initiatives, we need to integrate them into the broader global health agenda, ensuring a place at the table. If we do not, we risk HIV falling off the radar entirely, especially since HIV is now primarily perceived to be a threat only in resource-poor areas.

It is crucial to think about how we can align with sexual health, reproductive health, non-communicable diseases, climate health, and one health. How do we interact and what can we bring to the table? We need to find better ways to articulate these concepts and get them into the minds of political leaders in the North, who are easily distracted and quickly move on to other issues.

The incredibly ambitious goal of ending HIV as a public health threat by 2030 is probably not going to happen, but what are some realistic wins that could be achieved in this timeframe?

There is unfinished business that is easy to sort out and we have not done it. The fact that there are 130,000 children born with HIV every year – which many are unaware of – is a damning indictment. One thing we can eliminate by 2030 is paediatric HIV, which would be an incredibly morale-boosting achievement and will mean that children are not being born positive and who will need antiretrovirals for their entire lives.

Beyond 2030, what gives you the greatest causes for concern?

A key concern is the shifting attention away from HIV, particularly in the North. It is on us to think about the narrative, how to make it compelling, and how to bring people back to the table. Additionally, we still need innovation. It is not as if we have done everything we need to do and now must just finish the job. The last mile is the hardest mile. Those nine million people who have HIV but have not been reached and would have been found if it were easy to do so. They are presumably feeling stigmatised, ignorant of their risk and driven underground by negative laws and policies. The 20 million people who are not on PrEP would already be on it if it were that straightforward. The last mile needs more resources and innovation, and this is at a time when resources are disappearing. That mismatch gives me anxiety.

Another concern is ensuring there is a generation of scientists and activists coming up after me. I and others of my generation will eventually need to pass on the baton. It is about making sure that the next generation understands how important this work is, see it as a career opportunity, and are driven to make a difference. Now that the emergency has somewhat abated, how do you still create that sense of urgency and importance?

And what keeps you optimistic?

The amazing human resources we have. These are people who have lived through the last 20, 30, 40 years and who are incredibly resourceful, from scientists to clinicians, community members, and activists. It might sound cheesy, but we really are a unique family. Attending AIDS conferences is recharging; it shows our extraordinary and unique community, where community members debate clinicians on equal footing about how things should be done. Maintaining this collaborative spirit, which will require resources, is crucial for moving forward. The next phase will be hard, but it is like a steady trudge to the top of a hill; we cannot turn back before we reach the summit. The last president Madiba Mandela said it best: go with people if you want to go far.

We need to push through and use innovation cleverly. To preserve resources, we must be smart about precision prevention, identifying who needs prevention, and determining the best ways to use our treatment. As [former Ambassador-at-Large and US Global AIDS Coordinator] Deborah Birx said, “know your epidemic, know your response.” The world is not homogeneous, so we must be smart about our actions, which requires all of us to stay at the table and ensure we leave NO ONE behind!

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