



ANNUAL REPORT 2023

Celebrating 25 years of excellence

A large-scale celebration event, likely a 25th anniversary. The scene is filled with a thick shower of red, white, and gold confetti falling from above. In the center, a group of performers in bright pink outfits are dancing on a stage. Behind them is a large white backdrop featuring a prominent yellow circle with the number '25' in the center, flanked by stylized orange and grey arrow-like shapes. The entire event is framed by a red semi-circular arch at the top, which has a yellow sunburst pattern along its inner edge. In the foreground, the backs of several audience members are visible as they watch the performance and take photos with their smartphones.

Celebrating 25 years of excellence



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A photograph of Dr. Jerry Gule, a Black man with glasses, wearing a dark suit, standing on a stage and pointing his right index finger. The background is dark with red stage lighting. A large, semi-transparent number '01' is overlaid on the left side of the image.

*As we look to the future,
we invite you to join
Aurum on this journey.
Your continued support
and collaboration are
crucial to our success.*

01 Message from the Board Chairperson

Dr Jerry Gule

Dear Friends

In celebrating our 25th anniversary this year, the Aurum Institute embraces this momentous occasion with deep gratitude and renewed determination. Over the past quarter-century, we have steadfastly pursued our mission to enhance the health and well-being of individuals and communities grappling with HIV, tuberculosis, and, most recently, the formidable challenges of COVID-19. Our unwavering commitment has laid the foundation for a 100-year legacy in Global Health.

During this transformative year, the Aurum Institute has surged forward, making notable strides across Africa and beyond. I am delighted to share with you some of our key accomplishments

Through Research and Innovation to Evidence for Policy

Breakthrough Treatment Strategies: Our exceptional researchers have made significant contributions to the development of innovative treatment strategies for HIV, TB and COVID-19. Their pioneering work includes conducting numerous clinical trials for new antiretroviral drugs, vaccines, and novel drug combinations.

Transforming Health Delivery

Beyond research, our commitment to health delivery has transformed millions of lives. We have worked in clinics and health centres in underserved areas, ensuring that quality healthcare is accessible to those who need it most. Our community outreach programs have educated and empowered individuals, promoting healthier lifestyles and preventive care. We have also trained a new generation of healthcare professionals, equipping them with the skills and knowledge to continue our mission.

Celebrating Our Staff

One of our greatest achievements has been the development of a professional, highly competent, transformed, and inclusive staff of thought leaders. Aurum thrives because of the diverse talents and perspectives that our team brings to the table. We have fostered an environment where everyone, regardless of background, can contribute meaningfully and grow professionally. This inclusive approach has not only enriched our work culture but also enhanced our ability to address the complex health challenges facing our communities with innovative and effective solutions.

Overcoming Challenges

The journey has not been without challenges. Uncertain funding flows, disappointments in very promising scientific innovations to prevent HIV and TB, limited resources to fund the systems needed for growth and accountability, and a major global pandemic are just a few of the obstacles we have faced. However, the resilience and determination of our staff have enabled us to overcome these hurdles. We have forged strong partnerships with governments, international organisations, and the private sector, leveraging resources and expertise to amplify our impact.

Celebrating Our Successes

As we celebrate this milestone and look back on incredible achievements in research and health program delivery, it is important to acknowledge the collective efforts that have brought us here. Our dedicated staff and partners across the globe have worked tirelessly to advance our mission. Their passion and commitment have been the driving force behind our success. We also extend our sincere gratitude to our funders and supporters, whose generosity and foresight has made our work possible.

Looking Ahead

While we take pride in our achievements, we recognise that the work is far from complete. The health challenges facing Africa are growing and evolving, and we must continue to innovate and adapt if we want to remain relevant and sustainable. Our future endeavours will focus on expanding the scope of work to tackle new threats to global health, especially the impacts of climate change and forced migration. We will also prioritise the empowerment of local communities, ensuring that they are active participants in their health and well-being.

A Call to Action

As we look to the future, we invite you to join Aurum on this journey. Your continued support and collaboration are crucial to our success. Together, we can build on the foundation we have laid and create a healthier, more equitable future for all.

In conclusion, I am deeply honoured to follow in the footsteps of previous chairpersons to lead this amazing organisation and to witness the impact we have made over the past 25 years. We have incredible leaders in our Board and Executive Management team and together we can achieve more. Let us celebrate each other, our achievements, reflect on our journey, and renew our commitment to improving the lives of future generations. Here's to the next 25 years of excellence in generating evidence for policy and putting policy into practice in global health!

Warmest greetings



Dr Jerry Gule
Chairperson

02

Celebrating excellence: reflections of a 25-year journey

Prof Gavin Churchyard

Excellence is not a skill, it's an attitude. Ralph Marston

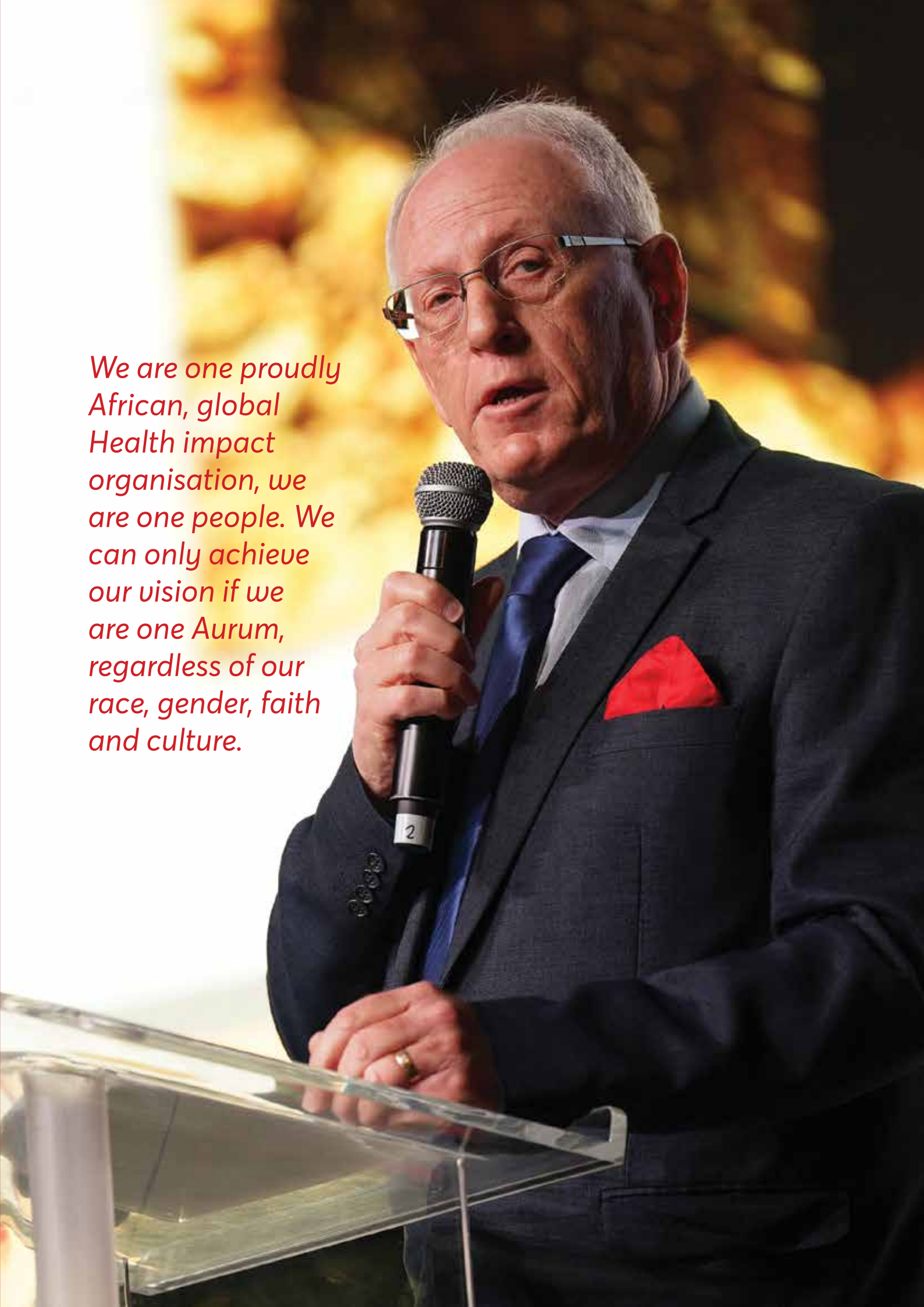
Excellence is one of Aurum's founding core values, along with respect, integrity, teamwork and innovation. It is through the pursuit of excellence over the past 25 years that Aurum has emerged as a proudly South African based global impact organisation that aims to create a healthier world for future generations. Excellence is the result of high intention, sincere effort, intelligent direction, skilful execution, and the vision to see obstacles as opportunities (Anonymous). Aurum has achieved its success by systematically applying the principles of excellence over the past 25 years.

Ownership

"The sun does not forget a village just because it is small". African proverb

Aurum has a bold inspirational vision to create a healthier world for future generations. For us to achieve that vision, it is essential that all Aurum staff own the vision and make a unique contribution to the vision. A clear vision, like the sun's rays that banish darkness, should be shared down to the lowest level of an organisation. At an Executive team roadshow earlier this year, a member of the Aurum POP Inn team, Mr Happy Phaleng, captured the essence of this principle by saying to me, "Aurum is not my Aurum, but Aurum is our Aurum". The ownership of Aurum's vision by all levels of staff has always inspired me to lead the organisation to achieve greater global health impact.

We are one proudly African, global Health impact organisation, we are one people. We can only achieve our vision if we are one Aurum, regardless of our race, gender, faith and culture.



Purpose

"The heart of human excellence often begins to beat when you discover a pursuit that ... gives you a sense of purpose." - Terry Orlick

Aurum has a clear mission: to generate evidence for policy, and to translate policy into practice to positively impact the health of communities globally. It is our clear sense of purpose that has motivated staff to overcome adversity. During the COVID19 pandemic, the Aurum staff displayed tremendous courage and self-sacrifice to ensure that we continued to serve those in need and to conduct the essential research that led to the development of an effective vaccine for COVID-19. And this all took place whilst forging onwards towards success in our PEPFAR programs. Despite the personal risks to continuing to work during COVID-19 in a locked down country, our staff were driven by a sense of purpose to make a difference in the lives of others.

Culture

"Excellence is not a singular act; it's a habit. You are what you repeatedly do." Aristotle

At Aurum we created a high-performance culture by embedding the value of excellence into our values, which are clearly branded and communicated as our "Don't lose sight, live Ri2TE" campaign. To ensure we maintain a culture of excellence we have developed a score card aligned to our strategy which is cascaded down to all levels of the organisation.

Clinical trials demand adherence to the most exacting standards of excellence. Through gritty hard work and

putting in place clear policies and standard operating practices, and then monitoring progress in operational performance, our clinical trial sites can now boast of consistently meeting the quality expectations of our funders and regulatory bodies.

Resilience

A tree with strong roots laughs at storms. African proverb. Another African proverb captures the essence of resilience, that is "Success in life largely depends on how well you manage your failures". Aurum as a grant funded organisation confronts failure almost daily. We derive our revenue through grant funded projects which requires us to constantly submit grants that are adjudicated through a competitive process. It is always painful when our bids are not successful, which is happening more commonly now that we are competing against other international non-governmental organisations. We nevertheless pick ourselves up, make sure we learn from our failures, and try again. In doing so, we have gone on to win major global grants such as the IMPAACT4TB grant funded by Unitaid (www.impact4TB.org).

Teamwork

"We can achieve anything if we work together", Siya Kolisi (Springbok captain).

Aurum can only achieve its goals through teamwork, including with our partners. The Thibela TB study, which evaluated the impact of isoniazid preventive treatment among 80,000 gold miners in South Africa, faced what seemed like an impossible challenge towards the end of the study, as the amount of funding in Rands dramatically reduced due to forex fluctuations. It was only due to the team working together to find innovative solutions and hard work that we were able to successfully complete the study.

Pioneer

"The best way to predict the future is to invent it" Alan Kay. Aurum has sought to instil a pioneering spirit into our staff to create something new that will transform global health policy and practice. We refer to this approach as identifying blue ocean opportunities, where there are no other competitors in your ocean, as opposed to red oceans in which the ocean is red with competitors blood trying to outdo one another in terms of price or quality. The IMPAACT4TB project is an example of a blue ocean



opportunity, which generated evidence for policy for a short course TB preventive treatment regimen using an antibiotic called rifapentine; reduced the price of rifapentine by 86% and catalysed the scale up of the rifapentine based short course TB preventive treatment in more than 70 countries globally.

Partnerships

"One who walks with the wise and successful shall be wise and successful." African proverb

Aurum's success over the past 25 years would not be possible without partnerships, both local and global. Through our partnerships we have learned a great deal that we have applied to ensure sustained growth. Our number of partnerships are too numerous to mention each individually in this report, but each partner we work with espouses the same commitment to excellence that we value. I am immensely grateful to these partners who have had a profound impact on Aurum's growth. In walking with the wise from universities around the world we have developed an organisation with 9 professors, 19 PhDs, 60 Masters, 38 doctors and 9 CAs on staff, whilst 20 people are currently studying towards their PhD.

Diversity

"Excellence is the best deterrent to racism or sexism". Oprah Winfrey

Embracing diversity, equity, inclusivity and belonging is a business imperative for the sustainable growth of the organisation. Aurum has sought to embrace diversity and inclusivity from the beginning. We established the Lechabile project in Welkom to provide sexual health services to women at high risk of HIV and sexually transmitted infections in the late 1990's. Aurum employed nurses, peer educators and councillors to provide support to the women we served, which included transgender women. Back then what we were able to offer was very limited compared to the comprehensive services we now can offer through POP INN.

As part of our Strategic plan: 2022-2027, we included DEIB as a strategic pillar, which we launched in 2023. This program has generated a lot of excitement. Our DEIB champions are working tirelessly to create a culture of diversity. Our DEIB journey can only be successful if we all participate.

Nelson Mandela once said, "We are one country, we are one people". We are one proudly African, global Health impact organisation, we are one people. We can only achieve our vision if we are one Aurum, regardless of our race, gender, faith and culture. Nelson Mandela also said, that "One of the most difficult things is not to change society but to change yourself". For the DEIB programme to be successful, it is not others that need to change, it is we ourselves that need to change. I therefore encourage all members of the staff to enthusiastically embrace the DEIB programme.

Focus

Tomorrow belongs to those people who prepare for it today. African proverb

In an ever-changing world, if Aurum is to succeed in achieving its 100-year vision of being a relevant, impactful organisation we need to heed the words of Azim Premji who said "Excellence is a great starting point for any new organisation but also an unending journey. "We have achieved the first 25 years of our 100 year journey by remaining steadfastly focused on our vision and mission and the pursuit of excellence in everything we do. Achieving the next 25 years will be accomplished through the same single-minded focus.

Conclusion

My sincere thanks go to the board, executive team and entire Aurum team for all the support they have given me over the past 25 years. None of what we have achieved would have been possible without you. At the end of 2024 I hand over to reigns to the incoming Group CEO to lead the organisation. In the immortal words of Nelson Mandela, "It is in your hands to create a better world for all who live in it." Let us embrace Madiba's call and continue to forge a path towards creating a healthier world for future generations.



We have achieved the first 25 years of our 100 year journey by remaining steadfastly focused on our vision and mission and the pursuit of excellence in everything we do.

Beginnings

03



Celebrating 25 Years of Making a Difference:



with Prof Gavin Churchyard

As Aurum celebrates its 25th anniversary, Prof Gavin Churchyard founder and Chief Executive Officer of the Institute is excited about the future. "We have a 100-year vision, and we want to get there not by accident, we want to get there by design," he says.





“What excites me most is the possibility that we will impact today's and future generations' health.”

Humble Beginnings to Global Impact

The Aurum Institute had humble beginnings. It started as a research unit within a gold mining company and has grown into a global organisation dedicated to improving the health of individuals and communities. Prof Churchyard's journey with Aurum began when he was head of the department of medicine at a hospital in the gold mining industry. Despite his training and experience, he was unprepared for the severity of the tuberculosis (TB) epidemic he encountered.

“I thought I knew everything there was to know about TB because, after all, I trained at Baragwanath Hospital, and we saw lots of TB, but little did I know how little I knew. Despite us doing everything by the book, the TB epidemic got worse and worse and worse,” he recalls. To understand the problem and find solutions, Prof Churchyard established an independent research unit to conduct epidemiological studies, which became known as Aurum Health Research.

As the research evolved, the gold mining company saw an opportunity to invest in understanding the emerging epidemics of TB, HIV, and occupational lung disease. They provided funding for the initial three years of epidemiological work, leading to important discoveries about the interaction between HIV and TB. This, in turn, helped Aurum secure funding for larger studies and interventions to control TB in the mines.

Overcoming Challenges

The journey was not without its challenges. Initially, there were tensions between the researchers and the mining company, which was concerned about the potential impact of the research on their operations. There were also limitations on where Aurum could work, as they were initially funded to work only with the company that employed Prof Churchyard. However, as their work expanded to include HIV testing and treatment, other mining companies began to seek Aurum's input.

This happened, because, during the early 2000's, South Africa had one of the highest HIV prevalence rates globally, particularly affecting 15 to 49-year-olds. The prevalence rate of 24.5% meant that nearly a quarter of the population in this age group was HIV-positive. This had profound social, economic, and health consequences for the country. The epidemic was rapidly spreading, and the number of people living with HIV was increasing significantly each year. The South African government's response to the epidemic came under severe criticism, particularly the delays in providing antiretroviral treatment (ARVs).



The First to Implement ARVs

Consequently, Aurum became the first group to implement ARVs at programme level following the watershed International AIDS Conference held in Durban in 2000, where activists put pressure on companies such as Coca-Cola and Anglo-American to provide ARVs. “We took a bold step and contributed greatly to catalysing the start and scale-up of the national programme,” recalls Prof Churchyard.

Despite these struggles, Prof Churchyard remained determined to make a difference. “If we wanted to make a difference in people’s lives, we had to persevere, and my nickname became “Bulldog” because bulldogs often don’t let go. Once they’ve got hold of something, they hold on.”

The Will to Succeed

“What encouraged me to proceed was my desire and my vision to help people,” he says. “I felt it was the right thing to do. The opposition we encountered and our own personal struggles, were small compared to the struggles of people living with HIV and who desperately needed our services.”

Looking back, Prof Churchyard is proud of what Aurum has accomplished during its 25 years. “Without the Aurum team taking ownership of the vision and mission and achieving the success we have, we wouldn’t be here today,” he says.



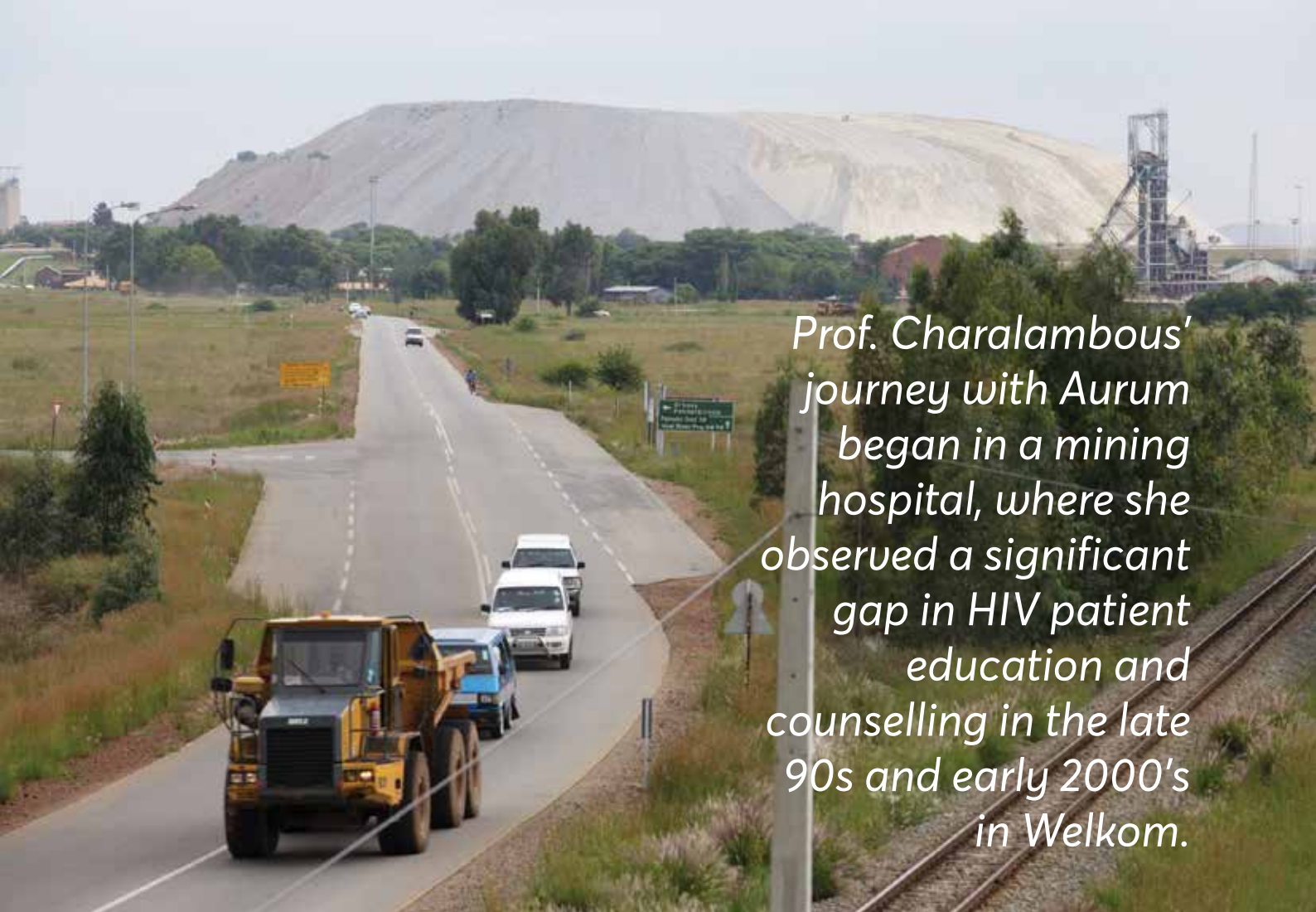
Without the Aurum team taking ownership of the vision and mission and achieving the success we have, we wouldn’t be here today.



First steps towards a healthier future with

*Prof Salome Charalambous,
Group Chief Scientific Officer*

Aurum has long been at the forefront of healthcare solutions since 1998, particularly in the fight against HIV and TB. Leading this fight is Prof Salome Charalambous, the Group Chief Scientific Officer at Aurum. Her journey and dedication from inception have significantly shaped the organisation's impact on global health.



Prof. Charalambous' journey with Aurum began in a mining hospital, where she observed a significant gap in HIV patient education and counselling in the late 90s and early 2000's in Welkom.

Finding Passion

Prof. Charalambous' journey with Aurum began in a mining hospital, where she observed a significant gap in HIV patient education and counselling in the late nineties and early 2000s in Welkom. "When I was a young doctor at 25, working in the mining hospital, there were a lot of HIV patients who for years, had 'HIV positive' documented in their files, without being properly informed. I remember coming home one day and telling my husband I wanted to sort this out." This drive to address the shortcomings in patient care led her to Prof Gavin Churchyard, Aurum CEO, and the offer of a project manager role at Aurum.

Her first task was to establish an HIV clinic, providing counselling and preventive treatment in an environment where treatment options were scarce. "One of the big challenges was working towards providing treatment to people with HIV. We knew that in richer countries, people with HIV were getting treatment, but in our environment, they were not. We focused on preventive therapy and counselling, ensuring that people knew their status and how to protect their loved ones," she says.

Challenges and Successes

The early days were marked by relentless campaigning and collaboration with stakeholders like Anglo-American to initiate antiretroviral treatment (ART). "In November 2002, we started the first antiretroviral treatment in mine workers at the Anglo Gold Hospital," she reminisces. This milestone was a testament to their hard work and persistence, despite facing scrutiny and challenges along the way. Reflecting on the emotional toll, Prof. Charalambous admits there were tough experiences with many questioning the necessity of extensive testing and the costs involved. "There were many tearful moments dealing with the pressure, but I stayed resilient."

Despite the challenges, she had moments that resonated with her commitment to public health. She recalls the impact of witnessing first-hand the transformative power of community health initiatives. One memory that stands out is of a young mother, whose access to comprehensive HIV care and support not only improved her health but also ensured her child's well-being. "In those moments, I saw the real difference we were making—not just in numbers or

reports, but in the lives of real people. It's those stories that keep me motivated every day."

The success of this project was massive. It not only became the largest ART programme in the world but also laid the foundation for South Africa's broader ART rollout and secured significant funding through the PEPFAR programme. "It was a huge springboard for Aurum. We enrolled 2 000 people onto this treatment programme, and eventually, our PEPFAR programme expanded to look after more than 10 000 people," she notes.

From Small Town to Big City

Another significant expansion during the same period was the opening of major sites in Klerksdorp and Edenvale. "For me, it was important to step out of the small town of Welkom, where we began and into Johannesburg, close to the airport with access to other countries. It was like confirming the relevance of Aurum globally," she explains. Aurum was also rebranded from Aurum Health Research to The Aurum Institute, reflecting a broader scope beyond research to include health programmes. "We established our competencies, developing clinical trials, epidemiology, and public health skills, which helped us grow," she says.

Influencing Global Health Policies

Prof. Charalambous's research has significantly influenced global health policies. One notable example is the implementation of LAM (Lipoarabinomannan) testing for TB in patients with HIV. Met with scepticism at the beginning, LAM testing eventually proved beneficial,

leading to changes in treatment protocols. "Initially, we thought there was no benefit, but over time, we saw that using this test could identify TB in the most frail and likely to pass away," Prof Charalambous explains. This and other findings have been crucial in shaping health policies and interventions.

Looking ahead, Prof Charalambous focuses on addressing emerging health challenges. "One of the biggest things is the use of a shorter regimen for TB," she says. "I'm working with the government to pilot a four-month regimen, hoping it will be as effective as the six-month one." She also envisions applying lessons learned from fighting HIV, COVID, and TB to other diseases like cancer, aiming for better management and treatment in South Africa.

People are what Matters

Her joy lies in the development of people within Aurum. "The biggest accomplishment for me is seeing people in Aurum doing their PhDs and growing in their careers, it's about the impact they will make in the future, long after I'm gone," she says.

Under her leadership, Aurum continues to drive healthcare solutions, moved by a commitment to creating a healthier world for future generations. In Prof. Charalambous' own words, "What drives me is developing people and seeing their skills grow, knowing that they will lead the research and make an impact in the years to come." As Aurum moves forward, it carries with it the lessons of the past and the promise of a healthier future.



From Evidence to Action:

*How the Thibela Study Transformed Policy
into Practice*





In 2004, tuberculosis (TB) was a major health concern in South Africa, particularly within the gold mining industry. Despite implementing the best TB control strategies, TB incidence in the mining industry remained high, three to six times higher than in the general population. Gold miners, who made up 32% of all miners, were the most affected. An alternative approach to controlling TB had to be explored.

Breaking Through

The breakthrough came in July 2004 at the 15th International AIDS Conference in Bangkok when former South African President Nelson Mandela joined the Bill and Melinda Gates Foundation and announced a 45 million USD grant to conduct three large-scale community studies over seven years in South Africa and Zambia. As part of this grant, The Aurum Institute received 14 million USD over five years to conduct a study within the South African gold mining sector, leading to the creation of the Thibela TB study.

The Consortium to Respond Effectively to the AIDS and TB Epidemic (CREATE) led by the Johns Hopkins University School of Medicine's Centre for Tuberculosis

Research, designed the programme. CREATE's partners in the study included The Aurum Institute, London School of Hygiene and Tropical Medicine, the Municipal Health Secretariat (Brazil), and the University of Stellenbosch.

In announcing the three studies, Richard E. Chaisson, Professor of Medicine at Johns Hopkins University and Principal Investigator of CREATE, stated, "CREATE's community-level studies will assess bold new approaches for driving down skyrocketing rates of TB in areas with severe HIV epidemics."

Elevating Aurum onto the Global Stage

The Thibela TB study took Aurum from an organisation in a single gold mining company to a global organisation. The study was conducted in collaboration with three South African gold mining companies: AngloGold Ashanti, Gold Fields, and Harmony, and the national departments of Health, Labour, and Minerals and Energy.

The study aimed to determine whether community-wide isoniazid preventative therapy (IPT), administered to an entire at-risk community, was more effective than the standard TB control measures. About 80 000 people participated in the trial, with a median age of 40 years and 95% being men. Eleven percent reported having had TB previously, and the majority lived in hostels.

The key results from the study showed that IPT radically reduced TB incidences by 66% in individuals, but the effect did not last. Community-wide IPT had no population-level effect on TB incidence or prevalence. However, it suggested that long-term or lifelong IPT might be an appropriate strategy for preventing TB in at-risk individuals.

Thibela Timeline: 1998-2014



Establishment of Aurum to respond to the HIV and TB pandemics in the Southern African gold mining industry.



Thibela TB study receives an inaugural award from the Good Clinical Practice Journal for the most innovative patient recruitment strategy.



The results of the Thibela TB Study are published in the New England Journal of Medicine.

1998

2004

2007

2011

2014



President Nelson Mandela and Bill and Melinda Gates Foundation announce the award of a 45 million USD grant to conduct three, large-scale community studies over seven years in South Africa and Zambia.



Thibela TB Study ended, having provided Isoniazid preventive therapy to over 30 000 gold miners and enrolled 80 000 participants.

The impact of the Thibela study had far-reaching consequences and the findings contributed to the development of global policy in several areas, including policies on TB screening and IPT.

Looking Towards a Bright Future

In the words of Prof Churchyard, founder, and CEO of The Aurum Institute: "It was a large and expansive project, but it put Aurum on the global map. It was a translational event that informed policy and practice, both locally and globally. It also drove the uptake of TB preventive treatment in SA and impacted the world".

“

It was a large and expansive project, but it put Aurum on the global map.



Aurum's Journey to Global Leadership in TB and HIV Prevention with

Prof. Violet Chihota
Chief Specialist Scientist

*Prof. Violet Chihota is enthusiastic about mentorship.
She leads by example and inspires the next generation of
researchers and healthcare professionals.*

She recalls a memorable moment in her career at Aurum, highlighting the profound impact of our work. “A severely ill patient was brought to a clinic. Thanks to the diligent efforts of Dr Yasmin, a PhD student working with Aurum, the patient received the necessary tests and treatment, leading to a full recovery.” Reflecting on this, Prof. Chihota says, “Seeing this patient a few months later, much better and recovered, reminded me of the profound impact our work has on individuals’ lives.”

Taking the First Steps

Prof. Chihota joined Aurum in December 2005, a month she described as “a very weird month to start a new job.” While most people in healthcare take leave in December, Prof. Violet was just getting started with her work at Aurum and adjusting to her new environment. For her, this was not difficult, as her TB research journey had begun during her master’s degree, where she developed a TB diagnostic test. Prof Chihota specifically targeted Aurum for its focus on TB and public health, saying, “I was looking for an organisation working on TB specifically, and Aurum was the perfect fit.”

She initially worked as a project manager on the Thibela Study, a groundbreaking trial, that focused on reducing the burden of TB in the mining sector, a population with a high TB and HIV burden. The Thibela Study was one of the largest trials of its kind and provided crucial insights into TB prevention and treatment.

Reflecting on the significance of the Thibela Study, Prof. Chihota shares, “We needed a lot more combination strategies to combat the TB problem. It was not just about screening and putting people on treatment; it was about ensuring high uptake and completion of treatment, along with better diagnostic tests and treatment regimens.” Although the approach did not reduce TB incidence or mortality, it highlighted the importance of effective implementation and the need for improved strategies, which has informed subsequent research and policy.

Reaching Milestones

She reveals that a significant Aurum milestone was the recognition and subsequent funding from diverse sources following the Thibela Study. This enabled Aurum to undertake complex trials and expand its footprint in global health research. “After the Thibela Study, we started getting a lot of funding from diverse funders. We implemented large, complex trials successfully and established ourselves as experts in the field,” she says.



As Aurum looks to the future, Prof. Chihota envisions us playing a larger role in global health, particularly in the African region. She emphasises the importance of collaboration and understanding local contexts to make a significant impact. “We have made a lot of difference in people’s lives, and we need to continue expanding our reach and influence in the region,” she states.

Advancing the Fight Against TB and HIV

Prof Chihota’s dedication and the collective efforts of the Aurum team over the past 25 years have significantly advanced the fight against TB and HIV. As we celebrate this milestone, we honour the commitment to innovation and excellence that defined Aurum’s journey, and we look forward to continuing our mission to improve health outcomes for communities worldwide.

Prof Chihota’s words and dedication encapsulate the spirit of Aurum at 25: “We have made a lot of difference in people’s lives. Just knowing that humbles me completely. I don’t worry about anything else, but just that.”



I was looking for an organisation working on TB specifically, and Aurum was the perfect fit.

Our People

04

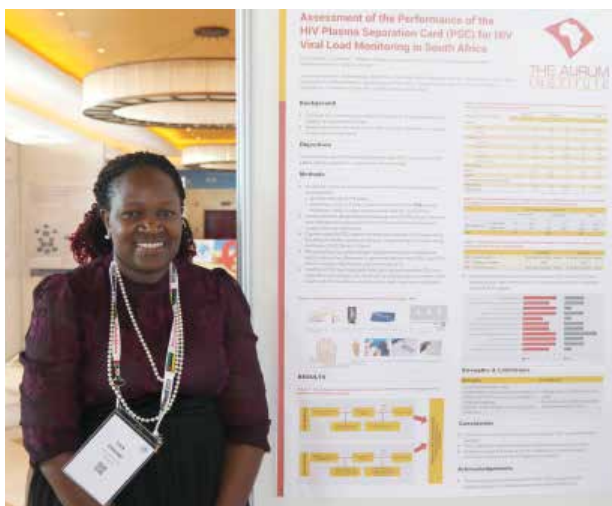


Halala Dr Lucy Chimoyi Halala!

In 2023, Dr Lucy Chimoyi achieved what many can only dream of. She presented her research at multiple prestigious conferences, including the 11th South African AIDS conference, the INTEREST conference in Maputo, and the International AIDS Society (IAS) conference in Brisbane. She was appointed as an International Visiting Fellow for 2024 at the Center for Interdisciplinary Research on AIDS (CIRA), Yale University to support collaborative HIV research in an international setting.

And, as if that wasn't enough, she also graduated with a PhD from Wits University, focusing on understanding the geospatial relationships and patterns of HIV response in South Africa with a thesis titled; "Modelling space and time patterns of HIV interventions on HIV burden in a high priority district in South Africa".

But Dr Chimoyi's journey was not without its challenges. She learned that success is not just about hard work, but also about working smart and leveraging her skills and knowledge with strategic thinking. And, crucially, she discovered the importance of having good mentors to guide and support her along the way. "Having good mentors as I navigate my career has been beneficial," she says.



Now, as a successful researcher and mentor herself, Dr Chimoyi is passionate about helping others achieve their goals. She takes great pride in mentoring emerging researchers and watching them grow and succeed. "Witnessing their growth and success as they write their first scientific manuscripts or abstracts for publication is a proud moment for me," she says.

Dr Chimoyi is also a strong advocate for women's empowerment. She encourages women to embrace their individuality and pursue their passions, no matter what obstacles they may face. "As women, we often find ourselves wearing multiple hats and fulfilling various roles in society," she says. "However, it is crucial to remember that before being someone's daughter, partner, or mother, we are individuals with unique goals and aspirations."

Dr Lucy Chimoyi's story is a powerful reminder that success is not achieved in isolation. It is through collaboration, knowledge sharing, and the support of mentors that we can truly make a difference. Her commitment to science, mentoring others, and engaging with the community is an inspiration to us all. We celebrate her achievements and look forward to the positive impact she will continue to make in her field and beyond.



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Expanding Aurum's Horizons and Elevating Women

Karin Turner: Group Global Growth Officer

Introducing change in an organisation is never easy. Fortunately for the Aurum Institute, Ms. Karin Turner thrives on change and is the ideal leader for an organisation that has historically been South African-based but is now expanding its reach across Africa and beyond.

Initially tasked with launching IMPAACT4TB, a global initiative funded by Unitaid and led by Aurum, aimed at introducing affordable, accessible, and patient-friendly TB treatments, her responsibilities have evolved to include establishing new offices and expanding Aurum's presence throughout Africa.

Fast forward to 2023, now as Chief Growth Officer at The Aurum Institute, Karin Turner has been instrumental in driving the organisation's global expansion and promoting women in leadership. Ms. Turner has played a pivotal role in steering the organisation's global expansion and advancing women into leadership roles. Drawn to Aurum's reputation for delivering impactful scientific programmes, she joined after serving in various capacities with the US government and other organisations.

She considers her biggest achievement at Aurum to be turning the company into a global organisation and promoting localisation. "I am deeply passionate about witnessing Aurum's transition to a model where discussions are spearheaded by local experts who possess an intimate understanding of the country, its people, and the delivery area. This shift, away from foreign leadership, is a true game-changer," she adds.

Ms. Turner is as passionate about localisation as she is about mentoring and creating opportunities for women, emphasising the need for more women in global health leadership roles. She believes, "Women need to be in leadership positions no matter where you are. Even in America, it's crucial that women leaders, who are seen as credible, support other women. It's a grave injustice when women don't help each other. When [US Supreme Court Justice] Ruth Bader Ginsburg was asked how many Supreme Court judges should be women, she said all of them. She'd always face backlash, but she would point out that the positions have been predominantly held by white men. Why can't they all be women?"

Looking ahead, Ms. Turner sees global expansion as a key priority for Aurum. She believes that the company needs to remain agile, flexible, and focused on innovation. She also emphasises the importance of investing in people and promoting ideas from team members.

Karin Turner's work at Aurum is a testament to the power of leadership, mentorship, and a commitment to change. As the company continues to grow and expand, her contributions will undoubtedly shape its future.



I am deeply passionate about witnessing Aurum's transition to a model where discussions are spearheaded by local experts who possess an intimate understanding of the country, its people, and the delivery area.





Aurum's Oldest Team Member – Each One, Teach One

Ken Clarke

Ken Clarke, currently an Independent Contractor at Aurum's Clinical Research Centre in Klerksdorp, epitomises the "one teach one" philosophy through his dedication to advancing medical technology and research, which aligns with Aurum's mission and vision.

Beginning his career as a learner technologist with the NHLS in 1963, Clarke retired after 42 years of service as a Medical Technologist in various Management roles only to find a new opportunity with Aurum Institute.

Reflecting on his journey, he recalls, "I started as a learner technologist with the NHLS 1963, and after 42 years of service, I retired. Little did I know, Aurum would offer me another opportunity to contribute."

During his tenure, Clarke played a pivotal role in the establishment and growth of a functional laboratory compliant with international standards in Klerksdorp, sharing his wealth of knowledge and skills with his colleagues. "Upon retirement, Aurum invited me to help establish a laboratory," he explains gratefully. "I am thankful for their trust and support, especially at the age of 65." His experience highlights Aurum's inclusive approach, leveraging expertise for innovation and advancement, and his commitment to passing on his expertise to the next generation of scientist and technologists at Aurum.

Together with his colleagues, Clarke witnessed the transformation of Aurum's laboratory from an initial disaster into a national centre of excellence. "Working alongside Lindiwe Nhlangulela, Head of Department, I contributed to transform a vision into reality," he recalls proudly. "Our laboratory became a cornerstone of excellence, not just for Aurum but nationally." His mentorship and collaborative efforts have been crucial in developing a skilled and knowledgeable team, ensuring the continuous improvement and success of the laboratory.

In addition to mentoring the next generation of thought leaders, Clarke highlights Aurum's significant impact on public health, particularly in the fight against TB and HIV. "Aurum's research and clinics, like the Klerksdorp site, play a critical role in our region," he notes. "They exemplify Aurum's mission to create a healthier world for future generations through research and community engagement."

Looking to Aurum's future as it celebrated 25 years, Clarke remains optimistic about its continued leadership in research and healthcare. His advice to aspiring scientists reflects his own journey: "Commitment and passion are essential for finding fulfilment in this field." Ken Clarke's career highlights Aurum's core values of collaboration, innovation, and respect, setting a standard for excellence in global health research and inspiring generations both within Aurum and beyond. His legacy of knowledge transfer and mentorship continues to shape the future of Aurum and the broader scientific community.



Transforming a Small Town Lab into a Global Success

Lindiwe Nhlangulela



How do you take a small research laboratory in the small town of Klerksdorp and turn it into a globally recognised, award-winning facility?

Ask Lindiwe Nhlangulela, Aurum's Head of Department for Laboratories. Almost 20 years ago, in 2006, she stumbled upon an advertisement for a laboratory technologist at Aurum.

"I didn't even know Aurum or what they did. All I knew was that I was interested in working in a research laboratory," she recalls. Lindiwe, a medical technologist, has a passion for laboratory work. "I am at home in the lab; this is my passion," she proudly declares.

Growth at Aurum

The manager of the laboratory had resigned and at the time they were undergoing an audit. From this experience, Lindiwe learned the essentials of Good Clinical Practice for a laboratory. Her interest led to further training in Brazil. Upon her return, she worked hard to ensure that her small Klerksdorp laboratory met international standards. Lindiwe and her team's dedication paid off, and in 2011, the Klerksdorp site was awarded the Most Responsive Laboratory.

Lindiwe's passion for laboratory work stems from knowing that her work directly impacts patients' survival. She handles samples with the utmost care, understanding that clinical trial results depend on this. Her dedication and leadership skills were recognised in 2013 when she was promoted to Head of Department.

Experience Leading to Recognition

Since then, Lindiwe has helped other Aurum clinical research sites set up their own laboratories. She has extensive experience with clinical trial research laboratories in HIV and TB and is proud to work in a peri-urban setting that is uniquely positioned to address questions posed in research trials. She credits her success to the exposure, training, and support from Aurum management. "I am where I am right now because of what Aurum has given me to become a leader."



I am where I am right now because of what Aurum has given me to become a leader.



Breaking barriers

Derrick Moyo



Aurum is an institution that breaks barriers. Although they know I was in prison, they have given me a platform to contribute positively through my experience and expertise.

These heartfelt words come from Derrick Moyo, a dedicated Aurum Institute team leader who focuses on recruitment and retention.

A Journey of Personal Redemption

Derrick's life journey was one of uncertainty and unforeseen paths, but one where resilience, transformation, and personal redemption triumphed. It's a story about the powerful impact of breaking barriers by believing in an individual's potential and second chances.

Born in Alexandra, South Africa, and raised in Zimbabwe, Derrick's quest for his father led him back to South Africa at 16. However, his quest was met with disappointment. Despite his efforts, he couldn't locate his father and instead found a role model in a criminal, his uncle.

Derrick was drawn into a life of crime, despite his uncle's warnings to either return to Zimbabwe or finish his studies in South Africa. It started with fraud and escalated to housebreaking and robbery. "Everything that he did, I wanted to do too," Derrick recalls.

His first arrest at age 20 was terrifying, marking the beginning of a cycle of imprisonment. The turning point came during his longest stint in prison - nine years. "The responsibility of my children weighed on me," Derrick explains. The passing of his grandmother and uncle during this time intensified his guilt and urgency to change his life.



Breaking through Barriers

Determined to break through his circumstances, and focus on life after prison, Derrick became a peer educator on HIV, organised awareness campaigns, and took a stand on issues like medication shortages. His involvement with organisations like Sonke Gender Justice and Section 27 opened doors to further advocacy work and eventually led him to the Aurum Institute.

With Aurum's support, Derrick broke yet another barrier and started his career as a lay counsellor. We have seen him grow into a team leader and we have seen him use his life experience to position himself as an expert in engaging with and supporting ex-inmates. He uses his unique understanding of their circumstances and turns that into much-needed guidance, which in turn helps them break through their barriers.

A True Inspiration

"If I can work with an ex-inmate and achieve one year without them committing a crime, it means everything to me. Everybody needs somebody. You simply need one person who believes in you, and your life can change," Derrick says.

His message is clear: with support, understanding, and a chance to prove oneself, anyone can transform their life, break through barriers, and become an inspiration to others.

A young scientist comes of age

Dr Pholo Maenetje

Dr Pholo Maenetje, a Senior Scientist at The Aurum Institute has spent the last decade immersed in research aimed at tackling two of the most devastating epidemics in Africa: HIV and tuberculosis (TB).

His journey from young science enthusiast to scientist is a testament to the power of passion, dedication, and mentorship. And it showcases not only his personal growth but also his contributions to the field.

The Road to Aurum

From an early age, Dr Maenetje's passion for science was evident. But it's his work at The Aurum Institute where he pursues his dedication to understanding and finding solutions for the impact of HIV and TB that is the driving force behind his passion.

"What attracted me to Aurum was the focus on HIV and TB and the idea that I can make a positive impact," he explains. Over the past decade, Dr Maenetje has participated in and led research endeavours to understand these diseases' epidemiology and immunology. His efforts have contributed to the development of future vaccines and prevention tools.

Dr Maenetje's most significant achievement was securing his first major grant with The Aurum Institute, where he researched the immune correlates associated with protection against TB among individuals resistant to TB infection. He has been a co-chief investigator in a multi-centre, multi-country study focusing on best practices for engaging adolescent girls and young women in HIV prevention research of which he notes that: "This study is important as it paves the way for future involvement of adolescents in clinical research."

As Dr Maenetje reflects on his journey, he acknowledges the opportunities provided by The Aurum Institute. "I joined as a project manager and Aurum gave me a platform to contribute beyond my initial role and develop into a senior scientist," he says.



Scientist and Mentor

As part of paying it forward, he is now a dedicated mentor to the next generation of African scientists. Dr Maenetje serves as a co-lead on the MATRIX project. The project looks at developing early and mid-level scientists to produce HIV prevention products. "It's rewarding to contribute to the development of future African scientists who will play a pivotal role in creating new HIV interventions," he says.

The Future Looks Bright

Looking ahead, he is optimistic about the future. "Our CEO has developed a 100-year plan, and we're only a quarter of the way through," he says. "We still have 75 more years to make a mark globally in mitigating the diseases impacting us as Africans." He is particularly excited about innovations in TB treatment and HIV vaccine design. "Shortened TB treatment regimens have been impactful, improving adherence and recovery times," he explains. "In HIV vaccine research, we're exploring germline targeting, which could significantly shorten the time needed to develop broadly neutralising antibodies."

Dr Pholo Maenetje's decade-long journey at The Aurum Institute exemplifies the growth and achievements of a young scientist coming of age. His contributions to HIV and TB research, his commitment to mentoring future scientists, and his vision for the future underscore the importance of perseverance and passion in the pursuit of scientific excellence.

As he continues to lead and inspire, his work will contribute to significant advancements in health sciences, benefitting Africa and the world at large.



What attracted me to Aurum was the focus on HIV and TB and the idea that I can make a positive impact.

The Journey of Nana Kofi Quakyi:

Driving Public Health Innovation and Impact in Ghana



When Nana Kofi Quakyi was a student, he never imagined The Aurum Institute would become his professional home. In 2021, a chance introduction to Dr Regina Osih, former Chief Global Health Officer at Aurum, led to his involvement in a landscape assessment in Ghana. Impressed by Aurum's influence on global policy and pandemic mitigation, Nana decided to join the team. "Meeting Dr Osih and understanding Aurum's vision made it clear that this was the right place for me to drive impactful change," he says.

From Consultant to Acting Country Director

Nana's journey into his current role as the Acting Country Director for Aurum Ghana is rooted in his academic commitment and passion for public health. Initially planning to attend medical school in the USA with an undergraduate degree in Neuroscience and Behaviour, coupled with medical studies, a conversation with a philosophy professor at Columbia University shifted his focus to public policy.

He enrolled in Emory University's Health Policy and Management Division, setting him on a path back to Ghana. "Public health became a natural extension of my interest in policy and governance, and I saw it as a way to make a tangible impact on people's lives."

His work in risk communication during the COVID-19 pandemic brought Aurum to his attention. Impressed by its contributions, particularly the Johnson & Johnson vaccine rollout, he joined Aurum as a consultant, later transitioning to Programme Manager.

Overcoming Challenges

One of his biggest challenges was transitioning from consultant to manager. He drew on his experience from leading the health policy team for Hillary Clinton's 2016

campaign. By valuing the insights of all his team members, from project coordinators to drivers, he could formulate effective strategies. "Leadership is about listening and learning from those around you. Every team member's perspective is invaluable," he emphasises.

"Our forecasting efforts were crucial in helping Ghana navigate the post-pandemic landscape effectively," he says. This work informed national strategies and guidelines, ensuring a smooth transition. Aurum also played a crucial role in updating guidelines to introduce antiviral treatments and received commendations for its tri-directional screening strategy for COVID-19, TB, and HIV from the Ghana Health Service. Aurum conducted the only COVID-19 self-testing study in Ghana during the pandemic, proving the feasibility and acceptability of self-testing, influencing national policy. "These initiatives showcased our commitment to innovative solutions and community engagement," says Nana.



Public health became a natural extension of my interest in policy and governance, and I saw it as a way to make a tangible impact on people's lives.



Building on Success

Aurum Ghana has addressed pressing health issues with strategic initiatives. Recognising the challenges in TB case finding, they have developed proposals to upscale community-based screening and integrate TB screening with other health needs. In the private sector, they have trained staff to enhance TB screening across pharmacies and private facilities, achieving significant success in case detection. With the health threat of antimicrobial resistance (AMR), Aurum has supported Ghana in developing a sustainable surveillance strategy. This includes tracking antimicrobial usage and consumption, contributing to a comprehensive understanding of the AMR landscape. "Addressing AMR requires a coordinated and sustained effort, and we are committed to leading this charge," Nana emphasises.

"Our goal is to be at the forefront of addressing emerging health challenges and leveraging technology for better health outcomes," Nana explains. His vision extends beyond immediate goals, as he looks toward expansion of digital health, non-communicable diseases, and mental health - areas with significant unmet needs. By securing a sustainable funding pipeline and fostering partnerships within and beyond Aurum, he aims to ensure the organisation's continued impact on Ghana's health landscape.

"Knowing that our efforts are making a difference keeps me going, even when the challenges seem insurmountable. Our work is far from over, but I am confident that we are on the right path to achieving significant and lasting health improvements for the people of Ghana," he says.



Our goal is to be at the forefront of addressing emerging health challenges and leveraging technology for better health outcomes.



Booked and Busy: When Pressure Sparks Innovation and Collaboration

Dr Elzier Mangunyane



Reservado e Ocupado! At Aurum, we have a playful title for someone with many presentations at a single conference, whether they are oral presentations or posters. That title, "Booked and Busy!" was awarded to Dr. Elzier Mangunyane at the 2023 Union World Conference on Lung Health in Paris.

Dr. Elzier Mangunyane's journey with Fundação Aurum began on November 1, 2021, during a critical period in global health. Her experience in managing COVID-19 projects brought invaluable expertise to Aurum's COVID-19 response efforts in Mozambique. Reflecting on her early days, Dr. Mangunyane shared, "I had to adapt this conceptual framework for the Mozambique context. What a challenge, but it was an incredible opportunity to innovate and make a significant impact."



As a Programme Manager, Dr. Mangunyane led a dedicated team comprising a Project Coordinator, M&E Officer, Research Nurse, and Clinical Officer. Together, they navigated the complexities of Mozambique's health system, which required multi-sectoral coordination. This was particularly challenging because, as Dr. Mangunyane noted, "All sectors from the Ministry of Health were doing something related to COVID-19, but it was difficult to find someone solely responsible for our specific needs."

Dr. Mangunyane's work at Fundação Aurum extended beyond COVID-19, addressing tuberculosis (TB) as well. Her team implemented a community-level test-and-refer strategy for both COVID-19 and TB, a groundbreaking approach in Mozambique. "We designed the test-and-refer strategy using a bidirectional methodology, testing for COVID-19 and screening for tuberculosis simultaneously," she explained. This innovative strategy was crucial in addressing the decline in TB diagnosis and notification during the pandemic.



I had to adapt this conceptual framework for the Mozambique context.



Under her leadership, Fundação Aurum in Mozambique achieved remarkable milestones, including presenting multiple research abstracts at conferences like the INTEREST Conference, Union Conference, CPHIA, and the Digital Health Summit. Dr. Mangunyane proudly shared, “Abstracts from this project were accepted at the Union Conference 2022, 2023, and now the Digital Health Summit 2024. These platforms allow us to showcase our work and its impact on a global stage.”

Fundação Aurum and Dr. Mangunyane’s success is deeply rooted in strong partnerships and collaborations with key stakeholders, including Mozambique’s Ministry of Health, the National Institutes of Health, and international NGOs like Jhpiego. These partnerships have been instrumental in implementing impactful health programmes. Reflecting on these relationships, she said, “The relationships have been very good. We supported the COVID-19 response

with USAID and PEPFAR, contributing significantly to the national effort.”

Beyond her professional achievements, Dr. Mangunyane is seen as a next-generation thought leader within Aurum and the broader global health community. When asked about her advice to aspiring leaders, she emphasised the importance of hard work, continuous learning, and networking. “You need to be a hard worker and committed to your plans. Study a lot and stay updated. Networking is crucial as it provides opportunities to learn from others and bring new insights into your work,” she advised.

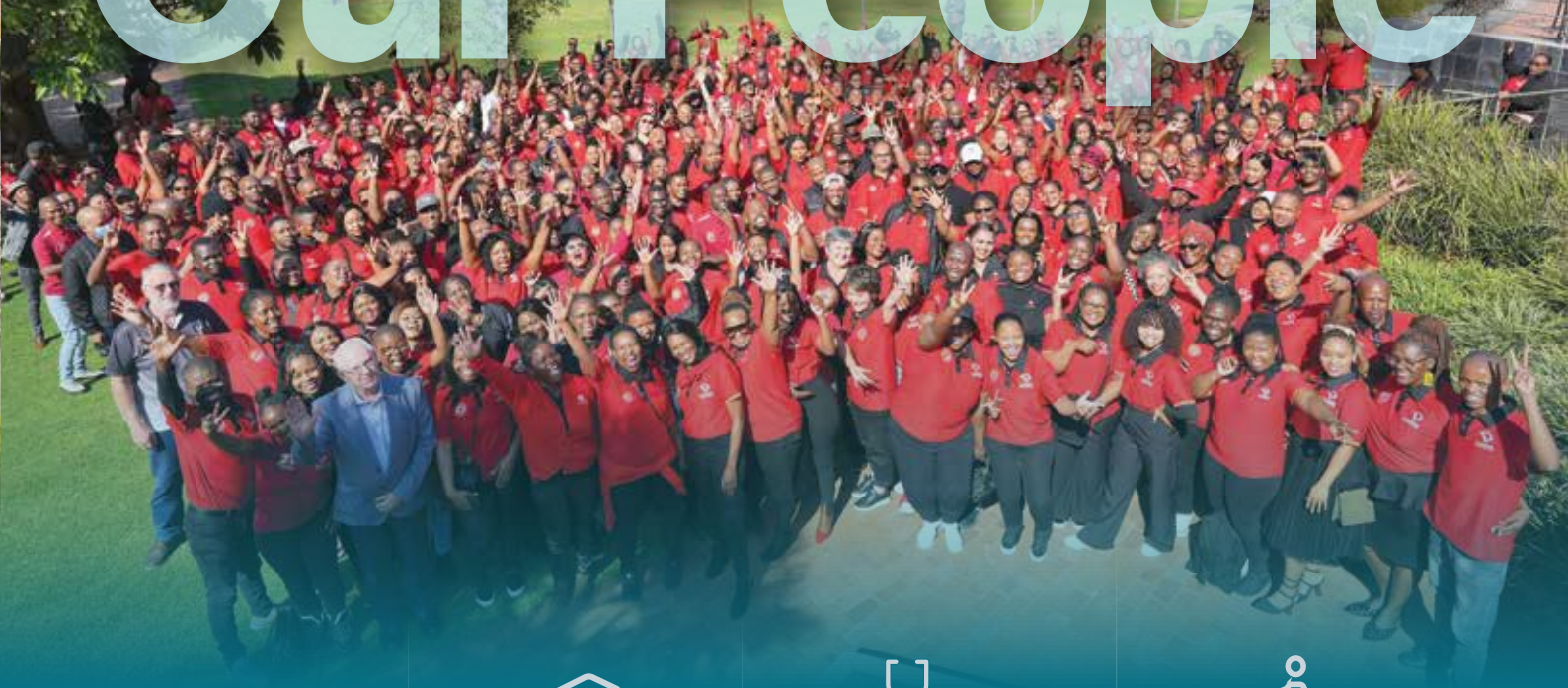
Looking to the future, Dr. Mangunyane aspires to pursue a PhD and continue her contributions to global health. “In the next five years, I want to do a PhD and continue making a difference in health programmes,” she shared with a determined smile.



In the next five years, I want to do a PhD and continue making a difference in health programmes.



Our People



9

Professors in the Organisation



37

Medical Doctors



60%

Women in Senior and Professional Level Leadership Positions



19

PhD Students



27

PhD and Doctoral Qualifications



71

Professional Nurses



1 960

Number Active Staff



58

Master's Degrees



1

Health Economists



78%

Staff between the age of 18 and 40 years



18

Pharmacists



16

Master's Degrees Students



9

Chartered Accountants



1 152

Youth successfully hosted during the course of 2023



Level 1

Achieved B-BBEE Accreditation





Partnerships

05



The power of Partnerships

Dr John Blandford, CDC Country Director



In the context of our 25th anniversary celebration, it is clear: Aurum owes its success to robust partnerships and collaborations. In the global health arena, partnerships are indispensable, enabling the pooling of resources, fostering innovation, and facilitating knowledge exchange. These alliances form the bedrock of our achievements, propelling us forward in our vision of creating a healthier world for future generations.

As an African Health Impact Organisation advancing health science and innovation and a partner of choice in Africa, we deliver exceptional care and pioneering solutions to empower communities through strategic collaborations with governments, private sectors, and civil societies. Among our key partners, we find the Centers



for Disease Control and Prevention (CDC), a cornerstone in our collaborative journey. Together, we have forged a legacy of impactful projects, both monumental and nuanced, shaping the landscape of healthcare in Africa.

The Strength of Partnerships

Our longstanding partnership with CDC is highlighted by a diverse portfolio of initiatives spanning critical periods and various projects. From enhancing workplace interventions in South Africa's SMEs to bolstering healthcare systems across multiple administrative regions, each project underscores our shared commitment to sustainable health solutions, addressing immediate health challenges while laying the groundwork for enduring community resilience.

Over the past two decades, this collaboration with CDC has been instrumental in driving advancements in HIV and tuberculosis (TB) response across South Africa. Dr. John Blandford, CDC Country Director for South Africa, reflects on Aurum's partnership with CDC, stating, "I'm delighted that CDC and PEPFAR have collaborated with the Aurum Institute since our initial agreement in 2004. As Aurum marks its 25th anniversary, this partnership highlights our commitment to combating HIV and TB, extending outreach to diverse populations including those in mines and key demographics."



I'm delighted that CDC and PEPFAR have collaborated with the Aurum Institute since our initial agreement in 2004.

“

Every day, we learn from our partners like Aurum, sharing insights and innovations to strengthen health systems not only in South Africa but globally.

Central to this partnership is the shared vision of translating cutting-edge science into impactful public health strategies. Dr. Blandford emphasises, “CDC partners with local institutions like Aurum because they possess unparalleled knowledge of the communities they serve. This local expertise is crucial in designing and delivering tailored prevention, care, and treatment services.” This

approach not only enhances programme effectiveness, but also creates sustainable health solutions that resonate deeply within South Africa’s public health framework.

Pioneering Efforts of Aurum

A testament to innovation driving impact, Dr Blandford highlights Aurum’s pioneering efforts with technologies like the Pele Box, which revolutionised medication access during crises like the COVID-19 pandemic. “Aurum’s commitment to innovation, seen in initiatives like ePREP, underscores their role in shaping the future of HIV prevention and treatment,” he states. Such innovations are pivotal in achieving ambitious global health goals, ensuring sustained progress towards epidemic control by 2030.

Dr Blandford reaffirms CDC’s commitment to collaborative excellence: “Every day, we learn from our partners like Aurum, sharing insights and innovations to strengthen health systems not only in South Africa but globally.” This collaborative spirit, rooted in mutual respect and shared goals, remains a cornerstone in our journey toward achieving comprehensive health equity and resilience, worldwide.



Aurum and UNITAID: Transforming TB Prevention Together



Aurum Institute and UNITAID have achieved groundbreaking success in the global response to tuberculosis (TB) under the global IMPAACT4TB project. Mr Robert Matiru, Director of Programme Management at UNITAID, highlights the transformative impact of this collaboration.

According to Mr Matiru, Aurum's partnership with UNITAID has been pivotal in advancing TB prevention strategies, particularly with the introduction of rifapentine-based formulations.

"Our first collaboration with Aurum was transformative for the global TB response." UNITAID identified major gaps in TB prevention and designed a multifaceted approach to address these gaps, with Aurum leading a consortium that covered all necessary aspects," explains Mr Matiru. The IMPAACT4TB project was instrumental in demonstrating the efficacy of rifapentine in people

co-infected with HIV, a critical step towards its broader adoption. "Aurum ensured we had the evidence to show that rifapentine could be used safely in people living with HIV. This was a critical milestone," Matiru notes. "We needed to know how rifapentine would interact with those taking it alongside HIV treatment, and Aurum delivered that evidence."

Additionally, the partnership tackled supply-side and market challenges, enabling a scale-up of rifapentine-based treatments. UNITAID worked closely with Aurum and its partners in the consortium to address market barriers, ensuring that countries could shift from older prevention methods to more effective rifapentine-based regimens.

"So, it's not being immodest to say that this project and this collaboration was the spark that basically positioned a massive shift in the response for TB by enabling and transforming the prevention pillar that up until then, had been dramatically lacking," Mr Matiru says.

Contribution to UNITAID's Mission

The partnership has not only advanced TB prevention but also aligned with UNITAID's broader mission to innovate and invest in global health solutions. "Aurum's strong proposal and execution demonstrated the power of collaboration," Matiru states. "It was a win-win for both organisations, showcasing Aurum as a capable partner from the global South and helping us achieve our strategic goals."

One of the critical aspects of this collaboration was the focus on community engagement. Aurum's work in understanding local realities and engaging communities has been a strength. However, the challenge lies in ensuring these community-based networks and civil society groups remain sustainable beyond the investment. "We don't want these networks or these groups that we've capacitated and supported to not be in a position to continue even if they're securing funding from elsewhere," Matiru adds.

Looking Ahead

As Aurum seeks to expand its reach beyond South Africa, Mr Matiru offers valuable insights. Aurum should continue to build on its strong foundation, expanding its scope to cover broader access interventions. This includes insourcing expertise in market shaping, new product introduction, and building relationships with global funders and partners. "It needs a phased approach ... you need to have the ambition and then look for donors who would be



favourable to that. UNITAID is such a donor. We want to see that happening, and it's part of our strategy to double the number of South based implementers that we have by 2027, but also to build their capabilities and not in a patriarchal conditioning way. It's about recognising that there's potential for growth and we should enable it," he advises.

Mr Matiru also praises Aurum's management and operational excellence. "Aurum is a well-managed outfit with a strong track record. It's an organisation made up of people from Africa, with impressive statistics in terms of gender and inclusion," he says. "Their performance and responsiveness make them a dynamic and adaptable partner, which is crucial in the ever-changing landscape of global health."

Celebrating a Milestone

As Aurum celebrates its 25th anniversary, Mr Matiru congratulates the organisation on its remarkable journey. "Aurum has a lot to be proud of, and UNITAID is proud to have partnered with you on such a transformational agenda. The fact that we continue to partner with Aurum is a strong vote of confidence."

“ Aurum has a lot to be proud of, and UNITAID is proud to have partnered with you on such a transformational agenda. The fact that we continue to partner with Aurum is a strong vote of confidence. **”**

Aurum Institute A Partnership for Progress:

*Prof Kelly Dooley,
Vanderbilt University*



When Prof Kelly Dooley became director of the Division of Infectious Disease at the Vanderbilt University School of Medicine started in 2020, she was excited to be part of Vanderbilt's highly collaborative relationship with Aurum Institute.

Currently several staff at Aurum have been appointed in various adjunct positions at the prestigious university and Dr Yuri van der Heijden, Assistant Professor of Medicine in the Division of Infectious Diseases at Vanderbilt University Medical Center (VUMC), is also a Senior Researcher at Aurum.

Prof Dooley is no stranger to Aurum; she recalls her initial interaction with Aurum when she was on faculty at Johns Hopkins University working on the IMPAACT4TB project. Prof Dooley was asked to lead and design the original Dolphin study. The study found that there was no dose adjustment required, for people taking dolutegravir, meaning that 3HP could be rolled out and used among people with HIV without having to alter their HIV treatment.

This expanded into a series of Dolphin studies, providing opportunities for junior investigators to lead research in TB and children, TB and pregnant women, and more.

Prof Dooley believes that collaborations like the one between Vanderbilt and Aurum Institute are important and she envisions the partnership evolving to include basic science research, and laboratory science.

As Aurum Institute celebrates its 25th anniversary, Prof Dooley congratulates the institute on its incredible research infrastructure and impactful work that has changed clinical practice. She is in awe of Prof Gavin Churchyard's vision and perseverance in moving forward with what he thought was right and needful for people with TB and HIV. Dooley looks forward to working together with the Aurum team over the next 25 years and is excited to see what wonderful things will come of their partnership.

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*Aurum Institute and
Vanderblit together,
we are transforming TB
prevention and building
a healthier world for
future generations.*

A Journey of Collaboration and Impact

Prof Richard Chaisson, Johns Hopkins University School of Medicine



Prof Richard E. Chaisson is a Professor of Medicine at the Johns Hopkins University School of Medicine.

He holds joint appointments in epidemiology and in international health, both in the Johns Hopkins Bloomberg School of Public Health. His area of clinical expertise is infectious diseases, particularly tuberculosis and HIV.

His journey with the Aurum Institute began in the mid-1990s. Reflecting on the early days, Prof Chaisson recalls, "It began in 1996, when I was doing some work in South Africa with the National Institute for Virology, which is now the National Institute for Communicable Diseases (NICD). At that time, South Africa was grappling with an explosive HIV epidemic."

During a visit to South Africa, Chaisson collaborated with Kevin De Cock from the London School of Hygiene and Tropical Medicine, who was working on a project in Welkom. It was here that he met Prof Gavin Churchyard, sparking the beginning of a long and impactful collaboration. "We thought about different projects that we might do," he said, "and so that's how it started."

Like Aurum, Prof Chaisson's motivation stems from a desire to make a significant impact on global health. "The



biggest thing is making an impact, changing the world," he says. His early experiences during the AIDS epidemic in San Francisco shaped his career focus on managing epidemics, treating diseases, and preventing health crises.

The Thibela Study and the CREATE Consortium

One of the pivotal projects of Aurum's partnership with Johns Hopkins University, was the Thibela study. The Thibela TB study, a large-scale trial, was designed to evaluate the effectiveness of providing isoniazid preventive therapy (IPT) to reduce the incidence of tuberculosis among gold miners in South Africa. Conducted between 2006 and 2011, this study was a part of the Consortium to Respond Effectively to the AIDS/TB Epidemic (CREATE), which was funded by the Bill & Melinda Gates Foundation. CREATE aimed to develop and test innovative strategies for TB and HIV control, with a focus on high-burden settings like South Africa.

Despite the study's ambitious goals, the Thibela TB study faced challenges. Prof Chaisson explains, "Thibela obviously had a lot of impact although you know the outcome of the study was disappointing, but we learned some very important things from it."

Aurum and Johns Hopkins have collaborated throughout the years, notably with IMPAACT4TB, a global project aimed at scaling up access to TB preventive therapy for people living with HIV and household contacts of TB patients. Additionally, they have produced numerous significant studies such as the Dolphin trials, which Prof



Chaisson describes as “critically important,” because they validated the safety and efficacy of the 3HP regimen in people with HIV, preventing what could have been a major setback for TB preventive therapy.

Evolution of the Partnership

Over the years, the partnership between Johns Hopkins and the Aurum Institute has evolved significantly. “I would say that early on, Aurum relied on Johns Hopkins to get funding and to get its feet on the ground and established,” he notes. However, Aurum has since become a powerful and capable player in research, operating independently and collaborating as peers with Johns Hopkins.

The mutual benefits of this mature relationship are evident: “We’ve provided a lot of funding that has supported Aurum. Aurum has provided a lot of funding that has supported us and it’s a partnership and it’s really the best of global collaboration.”

Lessons for Effective Collaboration

Reflecting on the success of this partnership, Prof Chaisson offers valuable advice for others seeking to collaborate effectively with local led organisations. “The goal is you want to work on important things. You want to work with people you like. You want to work with people who have complementary skills and capabilities to contribute. And that’s what we’re doing.”

As the Aurum Institute celebrates its 25th anniversary, he congratulates the organisation and looks forward to its continued impact. “Congratulations to Aurum, and good luck for the next 25 years, because I think there’s a lot more work to be done that Aurum will do and a lot more impact that Aurum can have,” he says.



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Let Communities Lead: Aurum's Collaborative Approach to Global Health Equity

Communities should be taking charge in the global health response, with organisations that represent those affected leading the way..

These community-based organisations (CBOs) play a crucial role in connecting people to personalised public health services, building trust, coming up with innovative solutions, and keeping health providers accountable. The Aurum Institute believes strongly in this community-driven approach, and they're showing how powerful it can be in the response to HIV, TB and beyond.

Aurum's philosophy is grounded in the belief that collaborating with organisations that have a deep understanding of their communities is crucial for achieving lasting impact. Instead of dictating solutions, Aurum works hand-in-hand with CBOs, valuing their local knowledge and expertise. Additionally, Aurum brings its massive network and solid reputation in the health sector to the table, along with its innovative and adaptive approaches to addressing complex problems.

Aurum's approach to partnership extends beyond South Africa to other African countries where it operates or plans to operate. As Aurum evolves into a pan-African organisation, it recognises the importance of collaborating with locally led organisations that have the trust and legitimacy of their communities. Aurum believes that by working together with CBOs, it can achieve its vision of creating a healthier world for future generations.



Aurum's Impact on HIV Care and Outreach:

*Ms. Judith Mabena,
Methodist Wattville Outreach*

When the HIV epidemic was at its peak in South Africa, hospitals struggled with overcrowding as many people faced the disease and its complications. Families and volunteers often provided home care for patients. It was during this challenging time that Methodist Wattville Outreach, a community-based organisation (CBO) specialising in home-based care and HIV testing, received a call from The Aurum Institute.

"When we were approached by Aurum, they asked us if we can help them by working in the communities doing HIV testing, the DREAMS project, Voluntary Male Medical Circumcision (VMMC) and all the HIV related programmes. So, it was an exciting moment for us because we were getting extra assistance in terms of finance and other resources, so we saw ourselves growing because of the recognition we got," recalls Judith Mabena, founder and director of Methodist Wattville Outreach.



With Aurum's support, Methodist Wattville Outreach was able to expand its services and reach more people in need. They were able to provide home-based care to bedridden clients, who were often neglected and stigmatised by their communities. They were also able to implement the DREAMS project, which aims to reduce the vulnerability of adolescent girls and young women to HIV infection, and the VMMC project, a proven intervention to lower HIV transmission risks.

Reflecting on Aurum's impact, Judith Mabena recalled, "When I first encountered Aurum, our organisation operated informally from a corner of the church. With Aurum's support and their Management Development Programme (MDP), we learned how to transform into the structured entity we are today." Mabena added, "Without Aurum's continuous assistance and support, I doubt our organisation would have persevered. Their guidance has enabled us to become skilled professionals capable of fulfilling our community's needs."



When we were approached by Aurum, they asked us if we can help them by working in the communities doing HIV testing, the DREAMS project, VMMC and all the HIV related programmes.

Our Impact

06





Making health accessible through counselling, screening and psychosocial support

Aurum POP INN provides counselling, screening for HIV, STIs, and TB, PrEP, and psychosocial support services inclusive of gender-affirming health care and hormonal therapy to gay, bisexual, queer, men who have sex with men (MSM) and transgender women (TGW) across five districts in South Africa. These services impact the health of vulnerable communities while offering a safe space for individuals to be themselves.

2023 Achievements



16 803

clients who tested negative for HIV were screened for PrEP



12 040

clients were eligible for PrEP initiation



11 072

clients were initiated on PrEP & ED PrEP



18 215

clients received HIV Testing Services (HTS)

“

Banele Mauimbela, an Ehlanzeni client promotes the experience: “I visited the POP INN Ehlanzeni clinic for PrEP and the experience has been amazing, thanks to the friendly staff and great services. I have been empowered. At POP INN there are always new and exciting things happening, and I’m eager to be a part of it.

Progress through outreach

Aurum POP INN had an impactful 2023, hosting and participating in various events and initiatives across South Africa. These ranged from high-level site visits to hosting foreign delegations, a leadership roadshow, several prominent exhibitions, workshops and campaigns. The aim was to provide a platform for LGBTIAQ health concerns and to encourage collaboration around efforts.

High-level site visits

In 2023, notable visits included a senate foreign delegation led by Joan Condon and Andy Olson, accompanied by John Blandford from CDC South Africa and Helen Savva and a joint site visit by CDC South Africa and CDC Zimbabwe to the Aurum POP INN Clinic in Morningside, Durban. Smuntu, a POP INN eThekweni client remarks: "POP INN eThekweni has been a safe space for me and other transgender women (TGW). I have started my transitioning on hormones, and they have been very supportive and helpful throughout this experience".

There was also the CDC's trip to the Mpumalanga KP Centre of Excellence in Nelspruit; the leadership roadshow led by Prof Gavin Churchyard to the Durban POP INN office; and a visit by the CDC Deputy Country Director to the KZN KP Centre of Excellence, where discussions focused on the challenges and successes of the centre.

Partnership collaboration

Collaborative efforts included a workshop on gender and sexuality with traditional healers; a visit from the Gauteng Health MEC to J Dumane CHC in Vosloorus, which addressed concerns about LGBTIAQ health and teen



pregnancy; and a protest against Uganda's anti-LGBTIQ+ bill.

At the National Department of Health, in partnership with a Sol Plaatje University event on National Condom and STI Week, Aurum POP INN had a pop-up stand and provided educational material on sexual health. The same was provided at the LGBTQIA+ Symposium in the uMgungundlovu district that focused on strengthening solidarity for inclusion, visibility, and representation.

The annual Youth Lekgotla featured speakers from Youth Health Africa, the Young African Leaders Initiative in Mauritius, and the POP INN site manager.

Showcasing Aurum POP INN

Aurum POP INN also showcased its work at several prominent exhibitions, including the South African AIDS Conference, the SEX EXPO 2023, the Southern African HIV Clinician Society Conference 2023, and national World AIDS Day events. Pride events played a vital role in POP INN's engagement, with participation in Durban Pride, Ekurhuleni Pride, Pretoria Pride, the Queer Spiritual Wellbeing Conference, Tembisa Pride, and Hammanskraal Pride.

Several webinars were hosted focusing on topics such as STI awareness, International Women's Day, and mental health.

New POP INNs and campaigns

New POP INN sites were launched in Ekurhuleni and eThekweni, together with a treatment literacy gameshow aimed at improving health literacy. The newly developed "Under My Umbrella," "Warm on PrEP," and "Get Your ART ON, campaigns each designed to promote health awareness and support the communities served by the clinics were a great success.

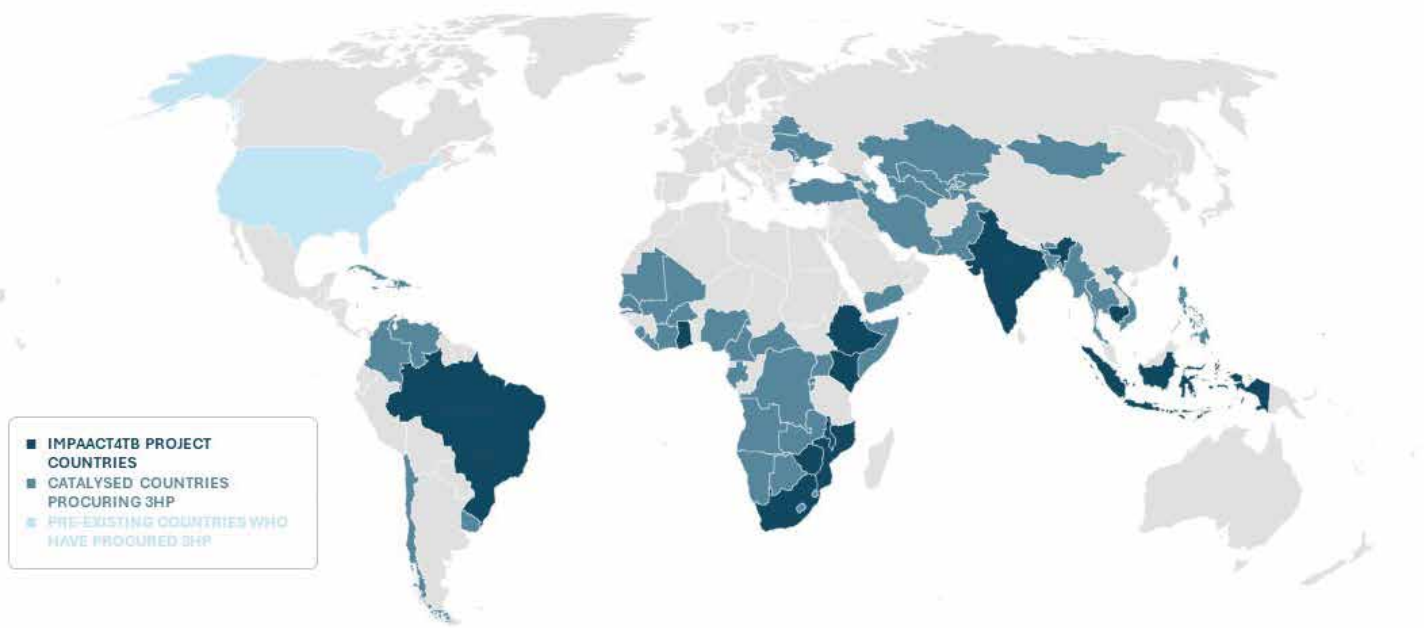
Aurum POP-INN is looking forward to growing its impact throughout South Africa and re-affirming statements from clients, such as Lulu Sikonde, from eThekweni is testimony that the project is on the right track. Lulu says: "For me getting gender-affirming healthcare is very important because now I'm starting to feel like I'm one step closer to being my true self. I feel alive. I feel happy and privileged because I am one of many other girls who want this. I now get to be myself and this was made possible through Aurum POP INN".



IMPAACT4TB 
P R E V E N T I N G T B T O E N D T B

How we used innovative finance to shape the Market for 3HP

In 2022, tuberculosis claimed 1.3 million lives, with one in four people globally infected, highlighting TB's enduring challenge to global health. Preventive treatment for TB is a crucial component of the global strategy to control the disease. The Unitaid-funded IMPAACT4TB project has been instrumental in the introduction of short-course TB preventive treatments (TPT) known as 3HP (three months of weekly isoniazid and rifapentine) and 1HP (one month of daily isoniazid and rifapentine).



In 2023, IMPAACT4TB Consortium, led by the Aurum Institute, announced plans to distribute 250,000 courses of rifapentine-based preventive treatment regimens across seven countries. These courses include the three-month 3HP regimen and the shorter 1HP regimen, administered over just 28 days. This initiative is a pivotal part of the Consortium's ongoing mission to combat TB and enhance global health outcomes.

Supported by Unitaid, the IMPAACT4TB Consortium collaborates closely with WHO to prioritise affordable and accessible TB preventive therapies (3HP and 1HP) for key populations, including HIV-positive individuals, children under 5, and household contacts. Consortium members bring extensive expertise in market shaping, supply chain management, and support for national TB programmes in high-burden countries.

"Despite commitments to end tuberculosis as a global epidemic by 2030, the disease remains the world's deadliest infectious disease, killing around 4,400 people every day," said Prof Gavin Churchyard, CEO of Aurum Institute and the principal investigator of the IMPAACT4TB project. "TB prevention is a cornerstone of any effort to eliminate TB, and we hope that these 250,000 patient courses will contribute to countries' efforts to finally make TB a disease of the past."

Over 13 million
Patient courses of
rifapentine - based TB preventive
treatments purchased
across **78 countries**.

Aurum's work and advocacy
has led to a reduction in the price
of 3HP for the FDC, decreasing
from **\$72** in 2017 to **\$9.99** in 2023.

INH
300mg



RPT
150mg



RPT
150mg



INH 300mg/
RPT 300mg FDC

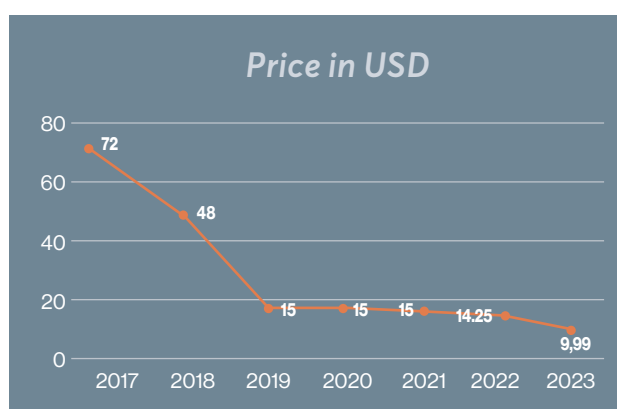


Pyridoxine
25mg



In many high-burden TB countries, these new short-course TB preventive treatment regimens are modelled to be cost-effective for both people living with HIV and household contacts of all ages, regardless of whether contact investigation is already in place.

“The high-burden countries receiving these regimens have expressed their readiness not only to identify underserved and at-risk populations and ensure they receive these newer regimens but also to invest in strengthening systems around contact tracing and learning lessons on how to improve TB preventive treatment uptake and coverage,” said Dr Philippe Duneton, Executive Director of Unitaid.



Additionally in 2023, Unitaid, The Aurum Institute, CHAI, and MedAccess announced agreements with Macleods Pharmaceutical Ltd. and Lupin Limited to significantly reduce the cost of rifapentine (RPT)-based TB prevention treatments. The price of the 3HP regimen has significantly decreased from \$72 in 2017 to \$14.25 in 2022, and further to \$9.99 in 2023 for the Fixed-Dose Combination (FDC). Additionally, 1HP is available at a cost of \$17 to \$18. The manufacturing capacity for rifapentine has seen a substantial increase from 180,000 patient courses in 2018 to over 4.5 million in 2023. The global procurement of 3HP has expanded, with over 13 million patient courses of rifapentine-based TB preventive treatments purchased across 78 countries. Overall, 138 countries now have access to purchase 3HP. Aurum, through the Consortium, played a pivotal role in ensuring affordability and accessibility of these treatments, leveraging partnerships and innovative financing to improve access and quality across 12 high-burden countries in TB and HIV prevention and treatment.

Access to TPT is especially important for people living with HIV. The probability of latent TB infection activating to TB is much higher in people living with HIV and their household



contacts. People living with HIV are also particularly vulnerable to the effects of TB. The new price agreements are part of a determined effort by partners to increase access to and improve supply security of short-course TPTs. Since 2018, Unitaid has supported the introduction and scale-up of affordable, shorter rifapentine regimens for preventive treatment through the 'Increasing Market and Public health outcomes through scaling up Affordable Access models of short-course preventive Therapy for TB' (IMPAACT4TB) programme, led by the Aurum Institute.

“Unitaid’s sharp focus on TB through comprehensive interventions such as our IMPAACT4TB project on TB prevention has improved access to key products for those at risk while realising significant savings for the health systems. Five years in, this innovation has been scaled up in over 50 countries – surpassing global targets to reach people living with HIV. We hope this price reduction and market expansion will help us reach more young children and household contacts, where prevention of TB remains unaddressed,” said Dr. Duneton.



Despite commitments to end tuberculosis as a global epidemic by 2030, the disease remains the world’s deadliest infectious disease, killing around 4,400 people every day.

Evidence to Policy, Policy to Practice

HIV



15 046 871

people tested for HIV



819 900

people started on Anti-Retroviral Treatment



306 386

people started on Anti-Retroviral Treatment currently in districts managed by Aurum in 2023



The Aurum Institute has actively managed over **700 000** people on treatment in our Care and Treatment Programme.

Through our Key Populations Prevention programme we have reached **249 432** people.

TB



1 519 709

people screened for TB

177 676

new TB cases identified

International:



505 840

PLHIV started on TB Prevention (I4TB Global)

87 900

Household Contacts started on TB prevention

Aurum's work in support of short course TB Preventive Treatment (TPT) has led to a global increase in 3HP procurement from **180K** patient courses in 2018 to over **13 million** patient courses as of 2023.

Covid



40 138

COVID tests conducted since 2021



412 702

COVID vaccines administered to date (through various programmes under HSD, Innova and YHA)

Publications/ Research:



647

papers published covering various topics under TB, HIV and COVID.



65 173

participants in trials and research studies have been conducted

Youth Health Africa

4 648

unemployed youth enrolled into internships

“I was very sick, I was finished. It was God’s mercy that saved me from death.”



I was very sick, I was finished. It was God’s mercy that saved me from death. So, when I was diagnosed with HIV, I started treatment and I take it vigilantly.

Millicent Mnisi is one of the more than 800,000 people living with HIV (PLHIV) who have been initiated and retained on antiretroviral treatment (ART) by The Aurum Institute since Aurum began providing ARVs.

Second chance

The 53-year-old was diagnosed with HIV when she sought medical care after falling seriously ill. “Of course, no one thinks it will happen to them but when it did happen to me, I had to make peace with it and learn how to live with HIV. After what I went through, I felt this was my second chance at life and did not want to waste this blessing by not adhering to treatment,” said Nkosi.

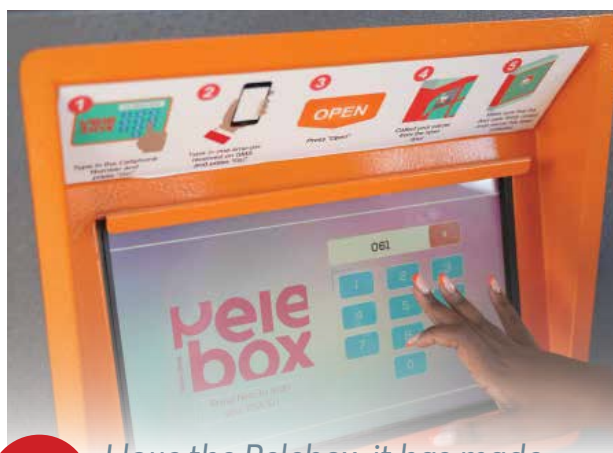
She disclosed to her children who were hit hard by the news but rallied to support her. “Everyone in the house knows that at 9pm, Mama must take my medication, they are the ones who remind me before the alarm goes off. Even when they are not home, I still hear their reminders in my head,” she added.

Mnisi was enrolled in the DABLAP Meds programme which allows her to collect treatment for four months at a time and come for clinic visits only for check-ups. Once registered on the programme, patients can collect medication at any time of the day, even after work. Under this programme, facility staff also receive pre-packed medicine parcels and ensure that they are loaded into the Pelebox smart pill locker, where patients can collect their treatment at a suitable time.

“I love the Pelebox, it has made things so convenient and takes me less than one minute. I don’t queue and take up space for sick people who need to see nurses,” she added.

Funded by the US President’s Emergency Plan for AIDS Relief (PEPFAR) through the US Centers for Disease Control and Prevention (CDC), Aurum supports the HIV and AIDS / STI / TB (HAST) programme in the Dr Kenneth Kaunda (DKK), Ngaka Modiri Molema (NMM) and the Bojanala districts in the North-West.

Mnisi said the information she obtained from Aurum nurses helped her understand HIV, and how to take care of herself. “I was treated with respect, and they were very patient with me, answering all my questions and helping me deal with the diagnosis and learn how to help others handle it. That is why I encourage others to not let the ‘what will people say’ syndrome and stigma turn you away from HIV care, at the end of the day it is your health and your life,” said Mnisi.



I love the Pelebox, it has made things so convenient and takes me less than one minute. I don’t queue and take up space for sick people who need to see nurses.

The future of Aurum

07





Aurum's Journey Towards Diversity, Equity, Inclusion and Belonging

Aurum believes in a culture that prioritises Diversity, Equity, Inclusion and Belonging (DEIB) which has a sustained, positive impact on our work environment, our people, and the delivery of our results.

We have embarked on an ongoing journey to deepen the culture of inclusion and create a sense of belonging within all areas of the Organisation. We are committed to continuing to build and maintain this culture.

Diversity, Equity, Inclusion and Belonging is one of our strategic objectives. It is inextricably intertwined with all aspects of our vision, mission, culture, and goals. It is a business imperative that is critical to the sustainability of our business.

We are working toward a future that is more diverse, equitable, and inclusive for all by valuing the unique differences that each of us make and we want to be reflective of the communities in which we live and work.

We can only achieve success if we treat everyone with respect. Each of us has a right to work in an environment without discrimination, harassment, violence, and retaliation.

Mandate Molefi Consultants, a well-respected, locally based organisation with international experience and track record, will guide us through the entire journey using their 10-step model for sustainable culture change.

Aurum's Leadership is committed to transforming our organisation's culture in a manner that will benefit all of us. As the African proverb says, "If you want to go fast, go alone, but if you want to go far, go together". Aurum has a 100-year vision, so we want to go far.

Let us all join together to ensure the success of our DEIB journey.





Harnessing Artificial Intelligence (AI) for Breakthrough in Healthcare Innovation

The increasing complexity and volume of data within the healthcare sector indicate that artificial intelligence (AI) will be more widely used in the future. AI technologies have the potential to transform many aspects of patient care, as well as administrative processes within healthcare organisations.

Several research studies suggest that AI can perform as well as or better than humans at key healthcare tasks, such as diagnosing disease. Today, algorithms are already outperforming radiologists at spotting malignant tumours and guiding researchers in constructing cohorts for costly clinical trials.





Aurum Ghana's AI journey

In 2023, Aurum Institute Ghana launched an ambitious project titled "AI-Powered Decision Support for Antibiotic Prescribing in Ghana" to address the critical issue of antimicrobial resistance (AMR). AMR is one of the foremost public health challenges of the 21st century, with Africa facing the world's highest mortality rate due to AMR, at 27.3 deaths per 100 000.

Without key interventions, millions of Africans are at risk of losing their lives to AMR-related causes by 2050. The misuse of antibiotics, high patient volumes, and limited resources often lead to inappropriate antibiotic prescribing practices, particularly in rural and peri-urban areas where adherence to Standard Treatment Guidelines (STGs) is notably low. Surveillance studies underscored the critical need for active AMR profiling and monitoring in hospital environments.

The Ghanaian project began with a clear understanding of the Grand Challenges' objectives set by the Bill & Melinda Gates Foundation. This understanding guided the development of their proposal and shaped the technical approach for deploying an LLM-based tool to improve antibiotic prescribing practices in Ghana. Initially, the objective was to develop an AI-enabled clinical decision support tool leveraging a Large Language Model (LLM) to provide interactive, personalised guidance on antibiotic prescriptions. The tool was designed to integrate with the Lightwave Health Information Management System (LHIMS), enhancing its reach and impact by providing contextually appropriate treatment recommendations based on patient-specific data.

Balancing ethics and design

To align with Ghana's medical standards, the training dataset focused exclusively on the Standard Treatment Guidelines (STG), Essential Medicines List (EML), National Health Insurance Scheme Medicines List (NHIML), and national AMR surveillance data. They transitioned from using Google AI's PaLM-2 to OpenAI's more advanced solutions, such as GPT-3.5 and GPT-4, incorporating a Retrieval-Augmented Generation (RAG) architecture to limit data hallucination and increase contextual accuracy.

Recognising the profound ethical concerns tied to the use of AI in healthcare, they adopted an "Ethics by Design" approach, guided by the African philosophy of Ubuntu, which emphasises interconnectedness and collective well-being. This ethical framework included principles of fairness, agility, precision, safety, trust and accountability, and robustness and reproducibility.

The AI-driven solution aimed to ensure equitable, context-aware, accurate, and safe antibiotic recommendations. The AI-driven clinical decision support system was developed with a focus on gender and diversity considerations. This included ensuring diverse representation within the Project Team and Expert Panel, developing patient vignettes reflecting Ghana's diverse demographics, and incorporating feedback mechanisms to adapt the system based on the needs of marginalised and underserved communities.

Diverse representation within the development team and end-users was crucial for creating an effective tool. Tailoring patient scenarios to reflect local demographics ensured relevance and effectiveness. An iterative development process, informed by real-world usage and feedback, was key to maintaining the system's equity and inclusiveness. While promising in promoting equitable antibiotic therapy access, structural challenges such as inconsistent EMR access, varying healthcare infrastructure, and resource limitations needed to be addressed to fully realise the system's potential. Harnessing artificial intelligence for healthcare innovation at Aurum Institute Ghana represented a significant step towards combating antimicrobial resistance and improving patient outcomes.

Aurum Ghana's work highlights the importance of ethical, inclusive, and contextually relevant AI applications in advancing public health.

Funders



International Collaborators



The Aurum Institute Ghana Collaborators



Fundação Aurum Collaborators



The Aurum Institute South Africa Collaborators



1HP	1 month of daily isoniazid and rifapentine
3HP	A short-course tuberculosis (TB) preventive treatment (TPT) combining two drugs, rifapentine and isoniazid
AI	Artificial Intelligence
AIDS	Acquired Immunodeficiency Syndrome
AMR	Antimicrobial Resistance
ART	Antiretroviral Therapy
ARV	Antiretroviral
BMGF	Bill and Melinda Gates Foundation
CBO	Community-based Organisations
CDC	Centers for Disease Control and Prevention
CEO	Chief Executive Officer
CHC	Community Health Centre
CHAI	Clinton Health Access Initiative
CIRA	Center for Interdisciplinary Research on AIDS
COVID 19	Coronavirus disease
CREATE	Consortium to Respond Effectively to the AIDS and TB Epidemic
DEIB	Diversity, Equity, Inclusion and Belonging
DREAMS	Determined, Resilient, Empowered, AIDS-free, Mentored and Safe
ED-PREP	Event-driven pre-exposure prophylaxis
EML	Essential Medicines List
EMR	Electronic Medical Record
FDC	Fixed-Dose Combination
HIV	Human Immunodeficiency Virus
IAS	International AIDS Society
INTEREST	International Conference on HIV Treatment, Pathogenesis, and Prevention Research
IPT	Isoniazid Preventative Therapy
IMPAACT4C19	Improving public health outcomes through enhancing accelerated access to care and treatment innovation for covid-19
IMPAACT4TB	Increasing Market and Public health outcomes through scaling up Affordable Access models of short Course preventive therapy for TB
KP	Key Population
KZN	Kwa-Zulu Natal

LAM	Lipoarabinomannan
LLM	Large Language Model
LGBTIAQ	Lesbian, Gay, Bisexual, Transgender And Queer
LHIMS	Lightwave Health Information Management System
MATRIX	A USAID Project to Advance the Research and Development of Innovative HIV Prevention Products for Women
MEC	Member of the Executive Council
MDP	Management Development Programme
M&E	Monitoring and Evaluation
MSM	Men Who Have Sex With Men
NHLS	National Health Laboratory Service
NHIML	National Health Insurance Scheme Medicines List
NICD	National Institute for Communicable Diseases
NGO	Non-governmental Organisation
NMM	Ngaka Modiri Molema
PEPFAR	US President's Emergency Plan for Aids Relief
PhD	Doctor of Philosophy
PI	Principal Investigator
PLHIV	People Living with HIV
PrEP	Pre-Exposure Prophylaxis
RAG	Retrieval-Augmented Generation
RIF	Rifapentine
STI	Sexually Transmitted Infection
STG	Standard Treatment Guidelines
TB	Tuberculosis
TGW	Transgendered Women
TPT	TB Preventative Therapy
USD	United States Dollar
USA	United States of America
USAID	U.S. Agency for International Development
VMMC	Voluntary Medical Male Circumcision
WHO	World Health Organization



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