

'TIS THE SEASON TO BE JOLLY

Stay alert
against
infectious
and
foodborne
diseases
this festive
season.



MEET OUR *Editorial* TEAM



Athenkosi Mjobo
Graphic Designer

Koketso Matjane
Client Liaison &
Marketing Officer

Laura De Almeida
Publications
Officer

Vuyo Sabani
Senior Communications
Manager

Mandy Tsotetsi
Communications
Manager

Nande Mbanga
Editorial Specialist

Siyabonga Mbatha
Web Content
Specialist

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WHAT ARE PEOPLE SAYING ON **SOCIAL MEDIA**?





Prof
Adrian Puren

MESSAGE FROM THE EXECUTIVE DIRECTOR

Dear Colleagues,

Welcome to the final edition of the Pulse newsletter for this calendar year. As we draw the curtain on 2024, we wish you and your loved ones a joyous and restful festive season. In this issue, we reflect on the past quarter, sharing various stories, public health insights, and highlights of the incredible work done by the National Institute for Communicable Disease (NICD) staff. Our cover story focuses on preventing foodborne illnesses, which often increase during the festive season due to large gatherings and the preparation of big meals. We provide essential food safety tips to help you and your loved ones stay healthy and minimise risks during the holidays.

This edition also highlights the NICD's contributions to regional knowledge-sharing and capacity-building. The Regional Diagnostic Demonstration Centre (RDDC) recently hosted the Third Annual Biorisk Management Training Course for experts on the United Nations Secretary-General's mechanism for investigating the alleged use of chemical and biological weapons. This training programme underscores the NICD's role in fostering collaboration and strengthening public health systems.

The team also interviewed the NICD founding executive director, Prof. Barry Schoub, about his book, "Fighting an Invisible Enemy: The Story of the National Institute for Communicable Diseases," which was published in August 2024. Prof. Schoub's book not only narrates how the NICD has evolved but also shares critical insight into the role of public health institutes.

Finally, we proudly profile some of the outstanding achievements of the NICD staff. I want to take this opportunity to congratulate Dr Simone Richardson from the Centre for HIV and STIs, who was awarded the Meiring Naudé Medal for Pioneering Vaccine Research and Prof. Lizette Koekemoer from the Centre for Emerging Zoonotic and Parasitic Diseases for the Wits University Vice-Chancellor's Research Award.

Happy festive holidays!

Festive Season



WITH CAUTION: PREVENTING FOODBORNE ILLNESSES

By Koketso Matljane

Foodborne illnesses are more prevalent than many realise. Between January 2022 and October 2024, the National Institute for Communicable Diseases' notifiable medical conditions system recorded 506 outbreaks, 323 of which were foodborne. These outbreaks resulted in 6,248 cases of diarrhoeal disease, 591 hospitalisations, and 38 deaths. During the festive season, the risk of such illnesses escalates due to increased dining out, larger gatherings, and the preparation of big meals.

Pathogens that are commonly linked to diarrhoeal diseases, such as *Salmonella* spp. and norovirus, see a surge in South Africa during the festive season. The highly infectious norovirus spreads through person-to-person transmission. Those affected often experience abdominal cramps, diarrhoea, vomiting, and fevers. Early recognition of these symptoms is crucial for ensuring prompt and effective intervention.

To minimise the risk of foodborne illnesses, Prof. Nicola Page, Head of the Centre for Enteric Diseases, advises the public to adhere to the World Health Organization's key food safety tips:

- **Keep clean:** Wash hands before handling food and after bathroom use. Clean surfaces and utensils to prevent cross-contamination.
- **Separate raw and cooked foods:** Use separate cutting boards and utensils for raw meat and ready-to-eat items.

- **Cook thoroughly:** Ensure meat reaches an internal temperature of at least 70°C using a thermometer.
- **Maintain safe temperatures:** Do not leave food out for more than two hours; refrigerate leftovers below 5°C and keep hot food above 60°C.
- **Use safe water and ingredients:** Wash fruits and vegetables, and avoid expired food.

Prof. Page underscores that vulnerable groups, such as young children, the elderly, and individuals with weakened immune systems, are more at risk of severe foodborne illnesses. Dehydration due to diarrhoea can be particularly dangerous for these groups, making proper hydration, swift intervention, and prompt medical attention essential if symptoms worsen. She also stresses the importance of extra care in hygiene and safe food handling when preparing meals for these individuals.

In her closing message, Prof. Page encourages everyone to "enjoy the festive season with family and friends, but remember to keep everyone safe by following food safety tips. Let the conversation focus on your delicious food and warm hospitality, not the unintended spread of diarrhoeal pathogens".





The D2P conference was attended by various public health specialists from the government and NGO sectors.

NICD HOSTS SUCCESSFUL SECOND DATA TO POLICY PROGRAMME

By Vuyo Sabani

The National Institute for Communicable Diseases (NICD) recently hosted the second Data to Policy (D2P) Discussion Forum, which focused on strategies to bridge the data-policy gap in public health.

The Data to Policy programme is a collaborative initiative with the NICD, Bloomberg Philanthropies, the US Centers for Disease Control Foundation, and Vital Strategies. Established in 2015, the programme was created to address a critical need in low - and middle-income countries to build capacity to develop evidence-based policy recommendations.

The second South African D2P Discussion Forum featured presentations from six groups, each showcasing their policy briefs on various public health topics:

- Protect our future leaders: Meningococcal vaccination to prevent meningitis amongst students in South Africa.
- Reducing neonatal deaths: Shifting from policy principles to implementation in South Africa.
- Can you spare a little drop? Addressing low blood supply in South Africa.
- Silent Struggles: The bitter taste of undiagnosed diabetes among people with TB in Gauteng.
- Eliminating hepatitis C in South Africa: Improving testing and treatment coverage in public healthcare sector.
- Boost TB testing: Improving the drug-resistant TB testing algorithm in South Africa.

In his opening address, the NICD Executive Director, Prof. Adrian Puren, highlighted the importance of the D2P programme, stating: "Our nation faces many public health challenges compounded by limited resources and a pressing need for innovative, cost-effective healthcare solutions. One profound gap has been identified in the field of health economics, with many public healthcare professionals lacking the expertise needed to conduct thorough economic evaluations. The D2P training is instrumental in bridging this gap, empowering health professionals to evaluate the cost-effectiveness of various policy options."

Dr Yogan Pillay, the Director of the Clinton Health Access Initiative in South Africa, provided the keynote address and emphasised the need for implementation of the policies. The event was attended by various public health specialists from the government and NGO sector and was lauded as a success.

Dr Natalie Mayet, who oversees the D2P at the NICD, said: "The wisdom, passion, and dedication that has been shared today has been incredible. In the first cohort of policy briefs, four of the six were implemented into policy. Many of the policy briefs presented today can be advanced into policy, so let's innovate and work together to move these policies to implementation."



**Panel
commends
South Africa
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**but
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ART**

By Siyabonga Mbatha

South Africa has made significant progress in its fight against the AIDS epidemic, yet challenges remain in ensuring people living with HIV stay on treatment. This was the key message from the National Institute for Communicable Diseases (NICD) panel discussion held recently to commemorate World AIDS Day.

World AIDS Day, observed annually since 1 December 1988, is a global reminder of the ongoing battle against HIV/AIDS and the importance of solidarity. This year, South Africa marked the day under the theme "Equal Rights, Equal Care," emphasising equitable access to prevention, treatment, and support, while advocating for reduced stigma and strengthened community-driven efforts.

During the hybrid webinar, NICD Executive Director and Head of the Centre for HIV and STI, Prof. Adrian Puren, was joined by Health-e News Editor, Ms Ina Skosana, and Dr Fareed Abdullah, Director of the Office of AIDS and TB Research at the South African Medical Research Council. The discussion was facilitated by Dr Tendesayi Kufa-Chakezha from the NICD.

"Our healthcare system isn't agile enough. We don't consider how people live and move around in South Africa," said Ms Skosana, addressing the challenges of retaining patients on antiretroviral therapy (ART). "If we can get digital patient records sorted, it would be a crucial step in ensuring patients continue treatment regardless of where they are."

Dr Abdullah echoed these concerns, lamenting gaps in the healthcare system. "There are many places where the system works, but it's not at the standard we need. Issues like poor organisation and inadequate care can cause HIV programmes to falter," he explained.

Prof. Puren offered a note of cautious optimism, saying, "there are hints and signs that we're moving in the right direction. The question is, what will it take to overcome these barriers and ensure real progress?" The discussion highlighted the strides made against HIV/AIDS while stressing the urgency of addressing systemic challenges. It left a poignant reminder that behind every statistic is a life -and that achieving equitable, patient-centred care is a collective responsibility.



HIGHLIGHTING IMPORTANT GAPS IN THE PROVISION OF ADEQUATE SANITATION ON

WORLD TOILET DAY 2024

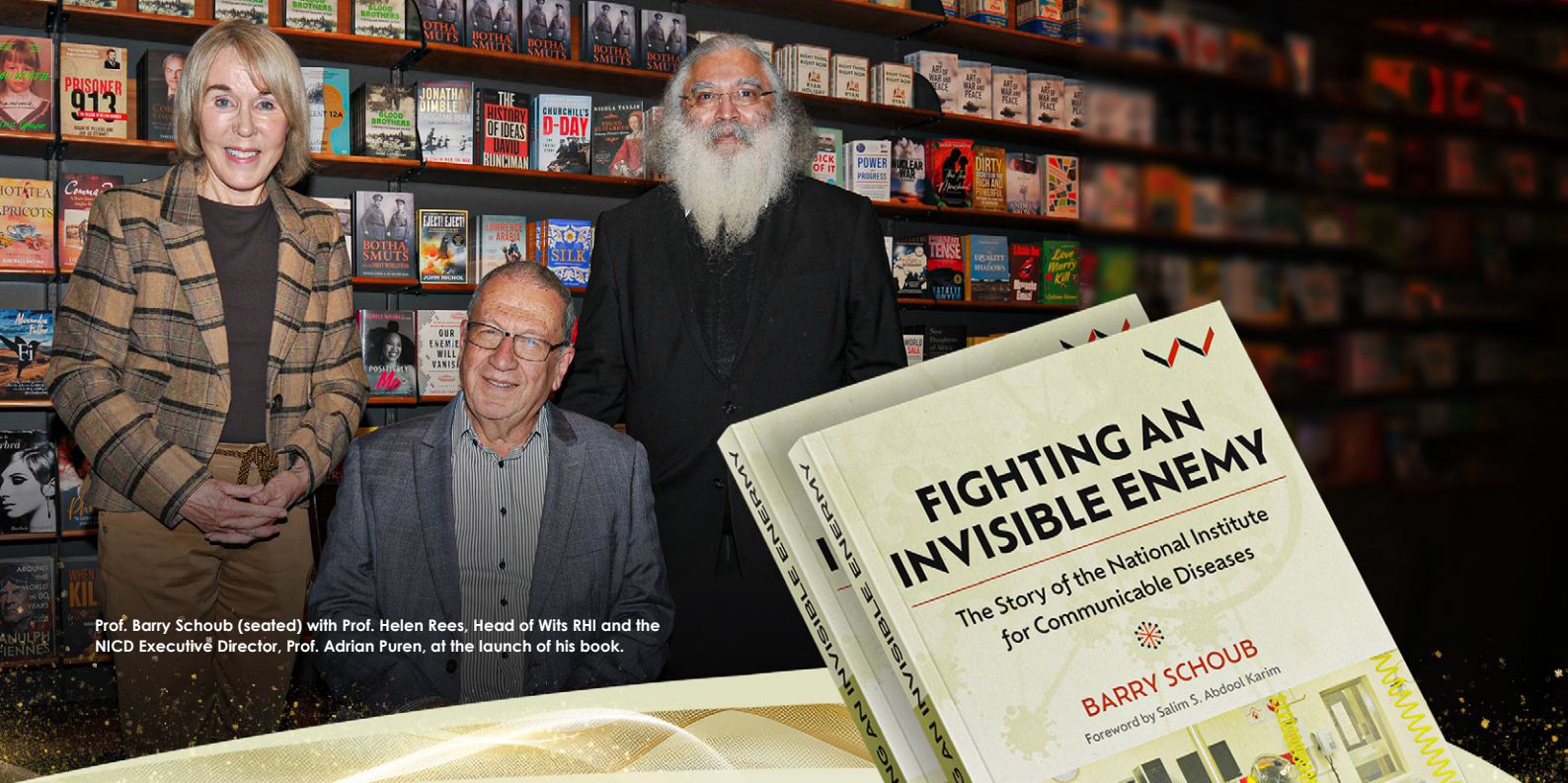
By Prof. Nicola Page

World Toilet Day is held every year on the 19th November to celebrate the humble toilet and raise awareness of people living without access to safely managed sanitation. We need to take action to tackle the global sanitation crisis and achieve Sustainable Development Goal 6: water and sanitation for all by 2030. The theme for the 2024 event was "Toilets: A Place for Peace"- an essential space in our lives that should be safe and secure. However, for billions of people, sanitation is under threat from conflict, climate change, disasters, and neglect.

In celebration of World Toilet Day 2024, the Centre for Enteric Diseases (CED) invited Marion Wagner, Director of Breadline Africa to address the NICD/ NHLS on the work her organisation is doing to reduce the number of pit toilets in schools in South Africa. Her presentation on "Transforming school pit toilets into safe facilities" highlighted important gaps in the provision of adequate sanitation facilities to children attending primary schools in Limpopo, KwaZulu-Natal, and Eastern Cape, with close to 4000 pit toilets reported. During her presentation, she shared pictures of the shocking state of sanitation facilities in many schools in South Africa, especially in rural areas.

Over the next 18 months, Breadline Africa wants to replace all pit toilets at schools across South Africa and is currently embarking on fund-raising efforts locally and internationally to achieve this goal. It costs approximately R35000 to install one new toilet to safely serve 20 – 30 children. The new toilets also include maintenance for up to 5 years after installation and during installation of the new toilets, all old unsafe pit toilet structures are filled in and sealed to prevent children from falling into them. Anyone interested in getting more information on Breadline Africa and their toilet crisis campaign can find them at <https://breadlineafrica.org/toiletcrisis/>





Prof. Barry Schoub (seated) with Prof. Helen Rees, Head of Wits RHI and the NICD Executive Director, Prof. Adrian Puren, at the launch of his book.

NICD Through the Eyes of Its Founding Executive Director: A Review of Prof. Schoub's Book

By Vuyo Sabani

Writing a book about the history and evolution of the National Institute for Communicable Diseases (NICD) was not just a labour of love but also an opportunity to showcase the vital behind-the-scenes work involved in responding to public health outbreaks and pandemics.

This is according to Prof. Barry Schoub, the founding executive director of the NICD, whose new book *Fighting an Invisible Enemy: The Story of the National Institute for Communicable Diseases* was published in August 2024.

The book chronicles the NICD's evolution from its origins in 1912 within the South African Institute for Medical Research and the Poliomyelitis Research Foundation, later evolving into the National Institute for Virology and becoming the NICD in the early 2000s.

On what inspired the book, Prof. Schoub, who was instrumental in establishing the NICD, stated that he wanted to share the Institute's evolution from inception to its current reincarnation. He argues that the NICD's story is not only inspiring but also engaging, informative, and educational. "The experiences of the Institute through various administrations make for an absorbing and fascinating tale," explained Prof. Schoub.

The book, which Prof. Schoub stresses is not just another text on infectious diseases or public health, is targeted at a diverse group of readers. "Firstly, for the younger reader, perhaps at an undergraduate student level, I hope the book will illustrate what a career in infectious diseases involves – from bread-and-butter surveillance to the more dramatic formidable disease outbreak management."

"Secondly, I seriously hope that the book will resonate with key decision makers, particularly those handling the purse strings, to show how crucially important it is for the welfare of the nation to have a well-resourced public health infectious diseases facility. Lastly, for the person in the street, who has been fascinated by the many fictional outbreaks and pandemics, here they could see what the real life looks like," added Prof. Schoub.

Now retired, Prof. Schoub, serves on the Board of Trustees of the Poliomyelitis Research Foundation and other committees. During the COVID-19 pandemic, he chaired the Ministerial Advisory Committee on COVID vaccines. **The book is available at all good bookstores. For an extensive Q&A with Prof. Schoub about the book, visit the NICD website blog section or [Click here](#)**



THE NICD THROUGH GUY'S LENSES



"Through photography, you can capture the essence of the good old days and realise you're living in them before they slip away."

By Laura De Almeida

For 35 years, Mr Guy Hall has been capturing the heart and history of the National Health Laboratory Service (NHLS) and its divisions, the National Institute for Communicable Diseases (NICD) and the National Institute for Occupational Health (NIOH), through his lens. His passion for photography took root in childhood, leading to a career that began unexpectedly.

Initially working in retail and subsequently at a photographic shop, Mr Hall was hired as a black-and-white printer at the old South African Institute for Medical Research, where his path took an unforeseen direction. When his boss left and was not replaced, he seized the opportunity to step into the role of photographer, taking courses to hone his skills.

Over the years, Mr Hall has captured countless events, each holding a special place in his memory. "Every function is unique; every capture is unique," he reflects. From significant milestones during pandemics to everyday moments of camaraderie, his work has become a testament to the legacy of the NHLS and NICD. While Mr Hall has many favourite photographs, one stands out above the rest.

"My all-time favourite picture (right) was taken in September 2012. It snowed beautifully, and I went to the paddocks where our horses were. The trees were blanketed in snow, and the horses were calmly outside. I captured that moment. It's a moment I'll never forget."

The evolution of photography, driven by technological advancements, has greatly influenced Mr Hall's role. He embraces innovation, continuously adapting to new equipment and styles, always striving to bring a unique touch to every project. This creativity is encouraged by the freedom he has in his work, while still ensuring his artistic choices align with the organisation's serious mission.

Mr Hall's vision goes beyond simply capturing images; he seeks to tell the untold stories behind public health efforts. Through his photos, he hopes to inspire a deeper sense of gratitude and appreciation for these often-overlooked moments.

Looking ahead, Mr Hall envisions a future filled with continued innovation, quality, and meaningful storytelling at the NHLS and NICD—ensuring that every moment, big or small, is remembered and valued.



BOLSTERING GLOBAL BIOSECURITY: SOUTH AFRICA'S ROLE IN TRAINING EXPERTS

By Nande Mbanga

The Regional Diagnostic Demonstration Centre (RDDC), a hub of excellence in Biorisk management training within the National Institute for Communicable Diseases plays a vital role in global preparedness for biological threats. The Centre provides various training programmes to experts in the field of biological sciences. The Centre recently hosted the Third Annual training course for experts on the roster of the United Nations Secretary-General's Mechanism for Investigation of Alleged Use of Chemical and Biological Weapons. The two-week UNSGM training programme is a rigorous and multifaceted experience. It introduces all relevant elements of a possible UNSGM investigation. Participants delve into various topics including:

- **Background and Context** of the UNSGM as the only international mechanism to investigate the alleged use of biological weapons.
- **Outbreak Investigations:** Exploring the nuances of differentiating between natural, accidental, and deliberate biological outbreaks.
- **Technical Skills:** Exploring sampling techniques for human, animal, and environmental samples, ensuring proper packaging and transportation.
- **Mission Readiness:** Introduction to the UN Security Management System, understanding of risk assessments, safety protocols, and field communication strategies.
- **Investigative Techniques:** Gaining insights into forensics, chain of custody, and interviewing techniques.
- **Multidisciplinary Teamwork:** Learning to collaborate effectively with a diverse team of experts.

Beyond the technical expertise, the training fosters a valuable opportunity for international experts to network and build relationships. This strengthens the UNSGM's operational readiness by fostering a global network of experts prepared to respond effectively to potential biological weapons use. The training programme has been praised by participants, who have been particularly impressed by the technical expertise of the trainers. Here are some quotes that exemplify the programme's impact:

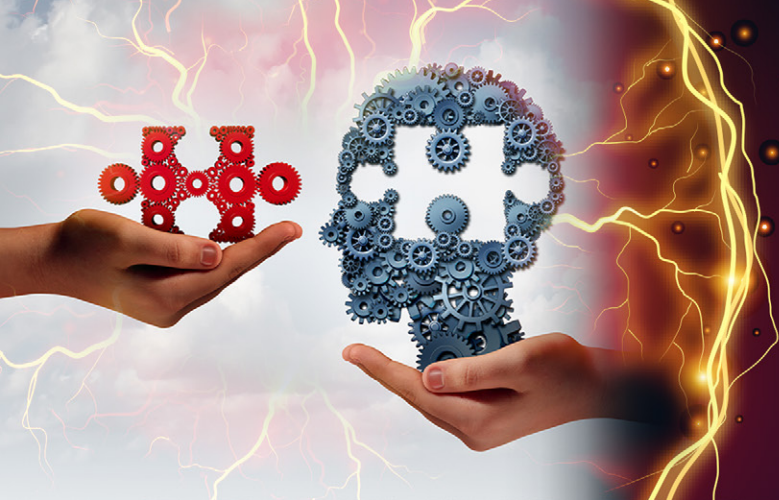
- **"Both the UNODA team and the entire team of NICD did a fantastically great job. Your efforts and support along the whole time of the course was incredible."**
- **"The field trainings and the very realistic implementation of the scenarios both surprised me and proved how seriously the work is taken."**
- **"It has been a great opportunity to learn and understand UNSGM and UNSGM missions better, and meet highly qualified experts from all over the world."**

The NICD's commitment extends beyond domestic biosafety and biosecurity. Since 2022, it has hosted three annual basic training courses dedicated to the UNSGM

roster of experts. These experts, nominated by UN member states, could be called upon to investigate potential biological weapons use. The NICD-hosted training fosters a deeper understanding of the UNSGM's mandate, procedures, and investigation life cycle.

The RDDC serves as the Southern African Centre of Excellence, offering a comprehensive suite of biorisk management training programmes that cater to a diverse professional landscape from budding laboratory personnel to seasoned experts. The RDDC promotes best practices aligned with "One Health" principles, a holistic approach to animal, human, and environmental health by equipping laboratorians with the knowledge and skills.

The RDDC's commitment to biosecurity, coupled with the UNSGM's vital role in investigating alleged biological weapons use, forms a powerful partnership. The training programmes continue to evolve based on participant feedback, ensuring they remain relevant and impactful. This collaboration serves as a cornerstone for a more secure future, ensuring the global community is prepared to address biological threats.



Training & Development

Empowering Africa's Biosafety Workforce Through Training and Certification

Welcome to the ABSA International
67th Annual Biosafety and Biosecurity Conferen



The RSA Team, comprising staff from the NICD and ARC, proudly represented South Africa at the 67th Annual Biosafety and Biosecurity Hybrid Conference in Phoenix, Arizona.



Mr Netshilema ended his trip on a high note by participating in an exciting 10km race, showcasing both his endurance and enthusiasm for adventure!

In November 2024, Mr Thendo Netshilema, Assistant Biosafety Technician at the NICD, led the session on "Establishing a Regional Training and Certification Programme: Selection, Installation, Maintenance, and Certification of Biological Safety Cabinets" at the Regional Training and Certification Programme, presented at the 67th Annual Biosafety and Biosecurity Hybrid Conference in the United States of America. The conference, hosted by

the American Biological Safety Association (ABSA), aimed to strengthen the expertise of biosafety and biosecurity professionals across Africa.

On his final day in the US, Mr Netshilema ended his trip on a high note by participating in an exciting 10km race, showcasing both his endurance and enthusiasm for adventure!



Training & Development

Strengthening Fungal Disease Surveillance in Southern Africa: A Regional Stakeholder Collaboration



The Centre for Healthcare-Associated Infections, Antimicrobial Resistance, and Mycoses (CHARM) held a virtual Southern African Regional Stakeholder Meeting on 22–23 October 2024 as part of its Fungal Disease Surveillance project. The meeting brought together over 44 participants from nine African countries, the US Center for Disease Control, and St. George's University to present

findings on fungal and bacterial colonisation, antifungal resistance, and genomic analysis. Discussions focused on regional surveillance plans and strategies for managing multidrug-resistant *Candida auris*, fostering collaboration, and enhancing diagnostic capacity for fungal diseases in Southern Africa.



ACHIEVEMENTS



Dr Simone Richardson

Dr Simone Richardson Recognised with the Meiring Naudé Medal for Pioneering Vaccine Research

Dr Simone Richardson's work in vaccine design and immunisation, particularly her research on cytotoxic antibodies and HIV co-infection in children, was recently recognised with the Meiring Naudé Medal, highlighting the vital role of vaccine design in addressing global health challenges. As a Senior Research Scientist at the NICD and University of the Witwatersrand and the Head of the South African Medical Research Antibody Immunity Research Unit, Dr Simone has earned prestigious awards, including the amfAR Mathilde Krim and L'Oréal Women in Science fellowships. She also serves on the South African Immunology Society's executive, where she leads communication initiatives.

"It is a great honour for my research to be recognised with the award of the Meiring Naudé Medal. This acknowledgement not only reflects my contributions but also emphasises the critical role of vaccine design in addressing the significant challenges humanity faces in our ever-evolving world."



Prof. Lizette Koekemoer with fellow award recipients and Wits Vice-Chancellor.

Prof. Koekemoer Honoured with the 2024 Wits Vice-Chancellor's Research Award

The NICD extends heartfelt congratulations to Prof. Lizette Koekemoer from the Centre for Emerging Zoonotic and Parasitic Diseases for being awarded the 2024 Wits Vice-Chancellor's Research Award! This recognition celebrates her exceptional 27 years of pioneering research in vector biology and control, with particular emphasis on her invaluable work in addressing malaria and other vector-borne diseases.

The Vice-Chancellor's Research Award, presented on 23 October 2024, is Wits University's highest honour

and celebrates the extraordinary achievements that shape the world through research, teaching, and service. Prof. Koekemoer has made significant strides in the field, including pioneering the sterile insect technique project and co-funding South Africa's first mass-rearing facility for mosquitoes. This achievement marks a major milestone for Africa. Her recognition highlights her incredible work and the vital impact of her research on global health.

PRL Staff Achieve Level 1 Microscopist Certification



All four Parasitology Reference Laboratory (PRL) staff members, Ms Thandokuhle Tshabalala, Ms Angelina Seko, Ms Bhavani Moodley, and Ms Lisa Ming Sun, who attended the ECAMM assessment in Kenya from 11–15 November 2024, successfully achieved Level 1 certification—the highest grade for malaria microscopists. This accomplishment lays the foundation for establishing regional ECAMM training and implementing national competence assessment for malaria microscopists (NCAMM).