



REMEMBERING

# THE GENTLE GIANT

BEHIND THE NATIONAL CANCER REGISTRY



*Dr Elvira Singh*

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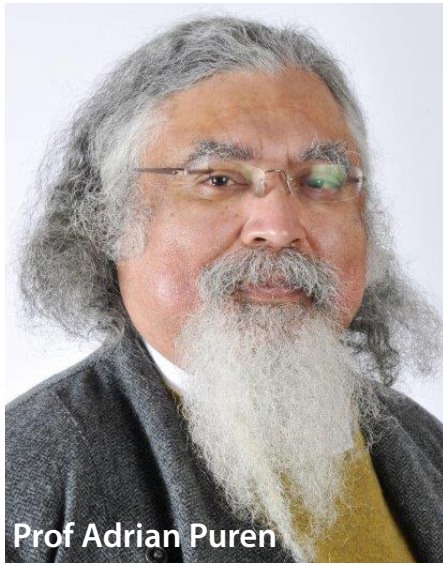
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## MESSAGE FROM EXECUTIVE DIRECTOR



**Prof Adrian Puren**

**"B**ut at this place, at this moment, all mankind is us, whether we like it or not. Let us make the most of it before it is too late!" (*Waiting for Godot*, by Samuel Beckett)

As I read through the latest edition of Pulse, it is incredible to think that we are entering year three of the COVID-19 pandemic and its uncertainties. On 11 March 2020, Dr Michael J. Ryan, a World Health Organization Informal Advisory Group member, said, "All countries need to review their strategies now". We have reached a point where we have to reconsider our strategy on how to reset South Africa's Health System on the road to recovery from COVID-19. I hope the activities we describe will contribute towards the integrated scheme of this resetting.

Reflecting back, it has been quite a quarter. One filled with many highlights but also with great

sadness as we bid farewell to a beloved colleague and friend, Elvira. Many fond memories of her, and not to mention that infectious laugh, will stay with us. As we gradually pick up the pieces, let us find comfort in the extraordinary legacy she has left behind.

March recognised TB Awareness Month, and the must-read feature not only highlights TB elimination efforts, but also touches on how the SARS-CoV-2 pandemic impacted progress made towards TB elimination. Despite efforts taking a provisional backseat, it is encouraging to note that South Africa achieved the 2020 End TB Strategy milestone of a 20% reduction in new TB cases. And while there have been great strides in reducing cases, the high burden reinforces the Centre for Tuberculosis' commitment towards achieving the ultimate goal of ending TB by 2035.

Next, Zibusiso Masuku's shares an interesting take on the regional training and certification program for biosafety and biosecurity experts. The training involved various stakeholders, including Africa CDC, and was hosted virtually by the institute earlier this year. I thoroughly enjoyed the wastewater feature that delves into the importance of tracking wastewater, and understanding its relation to the transmission of COVID-19. Spearheaded by the Centre for Vaccines and Immunology, the wastewater surveillance program was established 2 years ago in response to the pandemic.

International Women's Day (IWD) was celebrated on 8 March and saw Dr Waasila Jassat address delegates at a commemorative event hosted by the Swedish Embassy in South Africa. Honoured to be part of the event, Dr Jassat delivered an inspiring talk about challenges and triumphs that has led to her success and illustrious career. Thank you for flying the NICD flag high Dr Jassat. We salute you and all the other remarkable women at the NICD, not only on IWD, but every day.

The high burden of sexually transmitted infections amongst adolescents and the youth saw the NICD partner with the Alexandra Community Health Centre and Anova Health Institute for this year's STI condom awareness week. Facilitated by the Centre for HIV and STIs, the campaign focused on creating awareness of STIs, banished myths and stressed the importance of correct condom use. On a different note, the National Cancer Registry (NCR) helped raise awareness of childhood cancers through CHOC's Flip Flop Day. Annually up to 1,000 children are diagnosed with cancer, and sadly most diagnoses only occur once the disease is at an advanced stage. Flip Flop Day raises awareness of childhood cancers and early detection, and I would like to extend my sincere gratitude to NCR and the staff who participated in the initiative.

Finally, Khuliso Ravhuhali gives insight into the Frontline Epidemiology training that recently took place in Mpumalanga, in which 19 healthcare workers participated. I firmly believe that strengthening the public health workforce, to detect and respond to disease threats swiftly, is a critical role that is facilitated through the South African Field Epidemiology Training Programme.

I applaud all the teams who were involved in the successful execution of the various initiatives and thank everyone for starting 2022 off on a memorable note.

**Regards, Adrian**

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# REMEMBERING THE REMARKABLE DR ELVIRA SINGH

“When we lose someone we love, we must not learn how to live without them, but to live with the love they leave behind.” The National Institute for Communicable Diseases, in particular the National Cancer Registry, has lost a beloved colleague, dear friend and a force to be reckoned with.

Respected Head of the South African National Cancer Registry, Dr Elvira Singh obtained a medical degree in 2000 and completed her specialisation in Public Health Medicine in 2009, the same year she was bestowed the prestigious Henry Gluckman Medal for the best candidate in the College of Public Health Fellowship examination. Elvira represented the NCR on the Ministerial Advisory Committee on Cancer Prevention and Control, and developed a keen interest in optimising cancer surveillance in South Africa. She had sound knowledge of the South African health system and her interests included the strengthening of these systems for cancer care, cancer surveillance and epidemiology.

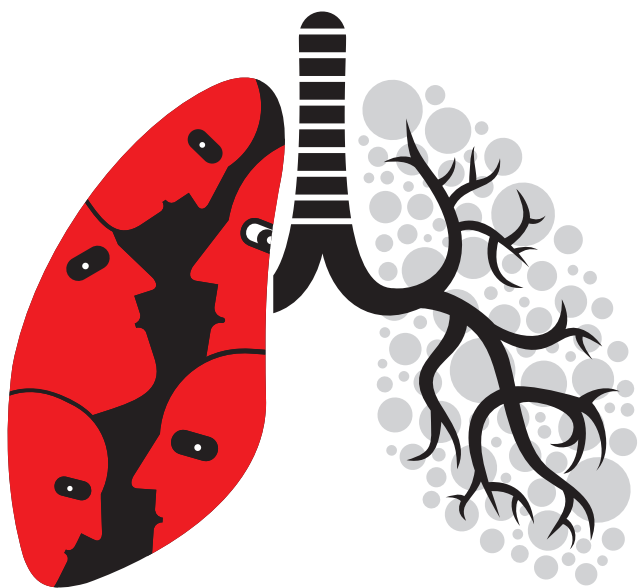
Elvira was a valued member of a global community and leaves a tremendous void. She will be deeply missed by all her cancer research and registration colleagues around world, including those at the National Department of Health, the National Institute for Occupational Health and the University of the Witwatersrand, not to mention her family and friends.

In remembrance of Elvira’s dedication and commitment to cancer surveillance and public health, the Daily Maverick wrote a tribute feature that can be read [here](#).



## TIME TO TALK TB

By Nileen Gale



**T**he incidence of tuberculosis (TB) in South Africa is especially high, ranking it amongst the high-burden TB, drug-resistant TB and HIV-co-infected TB countries, globally. However, over the past decade, the country has made significant progress in turning the tide by adopting the World Health Organization (WHO) recommended diagnostic technologies and therapies aimed at reducing the burden of the disease. These interventions have resulted in a year-on-year decline in TB incidence, pinning South Africa as one of six countries to achieve the 2020 End TB Strategy milestone of a 20% reduction in new TB cases. This is an incredible accomplishment that could have not been achieved without the collective efforts of all public health colleagues, including the Centre for Tuberculosis (CTB).

Located at the NICD, CTB conducts laboratory-based public health surveillance for TB in the country. Formerly known as the National TB Reference Laboratory, the centre was established out of a need to incorporate broader TB surveillance. And as it celebrates a decade of existence, CTB continues to serve as a National TB reference laboratory and was endorsed by the WHO as a supranational reference laboratory in 2016. Dr Shaheed Vally Omar leads a capable team that has been instrumental in the establishment and implementation of molecular-based applications. This has, in turn, shaped the capacity to perform molecular typing and Next-Generation Sequencing.

The main objectives of the centre include conducting laboratory-based public health surveillance for drug-sensitive TB, drug-resistant TB and new drugs for the treatment of TB. Furthermore, it provides specialised reference mycobacteriological services, both nationally and abroad. Through innovative techniques, the goal is to improve the diagnosis and treatment of TB and drug-resistant TB. He adds that initiating applied public health research and providing enhanced intelligence on the

drivers that underlie the TB epidemic in South Africa, is vital to eliminating the TB burden.

Public health surveillance remains a primary activity at CTB, as it plays a critical role in informing policy and guiding health responses for the National Department of Health. Global TB policies and guidelines are initiated through WHO and their strategic documents have included representation from the centre. Serving as both a National TB Reference Laboratory and supranational reference laboratory in Africa, the centre addresses complex clinical cases, in addition to providing programmatic support and quality assurance to laboratories.

Critical to the control and management of TB is universal

## TIME TO GET TB BACK ON TRACK #EndTB

testing of all individuals with indicator symptoms. This approach has been severely impacted by the COVID-19 pandemic, where years of progress in reducing the disease burden have been reversed. WHO has noted the most obvious impact in a large drop in the number of newly diagnosed TB cases. In 2020, the number of TB associated deaths had increased back to levels last seen in 2017, a direct result of reduced access to TB diagnosis and treatment. "The most urgent TB priority at this stage is to restore access and provision of essential TB services to mitigate and reverse the impact of the COVID-19 pandemic," Omar stresses.

In conclusion, while there have been great strides in reducing the number of TB cases, the burden remains high. Efforts need to be bolstered to further decrease the burden of disease and to achieve the ultimate goal of Ending TB by 2035.

## CONGRATULATIONS



Congratulations to the TB slogan winner, Nevashan Govender!

The slogan: *TB or not TB? No longer a choice. End TB was voted best* by the Centre for Tuberculosis team and bagged Govender a Takealot voucher!



## REGIONAL TRAINING AND CERTIFICATION PROGRAMME FOR BIOSAFETY AND BIOSECURITY EXPERTS

By Zibusiso Masuku

The Africa Centres for Disease Control and Prevention (Africa CDC) launched its Biosafety and Biosecurity Initiative (BBI) in April 2019 in Addis Ababa, Ethiopia. The initiative aimed to strengthen the African Union (AU) Member States' laboratory biosecurity and biosafety systems, and to enable them to comply with associated international standards. Some of these international regulations include, but is not limited to the International Health Regulations (IHR) of 2005, Biological Weapons Convention (BWC), United Nations Security Council Resolutions (UNSCR 1540) and Global Health Security Agenda (GHSA).

To ensure that there is a coordinated implementation of the interventions in biosafety and biosecurity in the African region, the Africa CDC developed a five-year strategic plan based on the objectives of the BBI, in addition to following extensive regional consultations and priority listing by the Member States and collaborating partners. The AU Members States highlighted the need for human resource capacity building for biosafety and biosecurity experts in the region. This is a priority activity for the implementation of the BBI, and the Africa CDC is developing Regional Training and Certification Programmes in four specialised areas of practice. These areas are Selection, Installation, Maintenance and Certification of Biological Safety Cabinets; Biorisk Management; Design and Maintenance of Facilities Handling High-Risk Pathogens (Biocontainment Engineering); and Waste Management.

The Africa CDC, through its implementation partner, the African Society for Laboratory Medicine (ASLM), appointed

the NICD, through the Division of Biosafety and Biosecurity (DBB), to develop the Regional Training and Certification Programmes, in addition to developing a Regulatory and Certification Framework for Institutions Handling High-Risk Pathogens for the Africa Region. This work has been subjected to a rigorous review process, including numerous regional consultative meetings convened by the Africa CDC. The Regional Training and Certification Programmes have been finalised and the DBB team is leading the development of the training material in this regard. They are ably supported by a subcommittee of the NICD Institutional Biosafety and Biosecurity Committee (IBBC), constituting of biorisk management experts from the institute. Experts from the National Institute for Occupational Health (NIOH) and the University of the Witwatersrand's (WITS) Steve Biko Centre for Bioethics are contributing to this effort in the areas of waste management and bioethics respectively.

The NICD has had a long-standing collaboration with Sandia National Laboratories (SNL) and the US Defense Threat Reduction Agency (DTRA) in advancing and strengthening biosafety and biosecurity system capabilities in South Africa. Thus, in January 2022 the NICD hosted a hybrid Biorisk Management Curriculum Development Work Session for the Regional Training and Certification Program for Biosafety and Biosecurity Experts, in close collaboration with the Africa CDC, SNL and DTRA. The SNL facilitated the workshop virtually with the NICD, NIOH, and the Africa CDC at the Sandringham campus.



## UNDERSTANDING COVID-19 COMMUNITY TRANSMISSION THROUGH WASTEWATER SURVEILLANCE

By Puseletso Kobedi

**T**racking of wastewater plays a key role in the development of early warning systems for various enteric diseases. In response to the COVID-19 pandemic, the wastewater surveillance program at the NICD was established in late 2020. However, prior to this in 2018 the Centre for Vaccines and Immunology (CVI) commenced with polio environmental surveillance, in line with World Health Organization recommendations.

Early on in 2020, there was a growing interest in the use of raw wastewater (i.e. sewage) to monitor epidemiological patterns of SARS-CoV-2. The former head of CVI, Dr Melinda Suchard, initiated SARS-CoV-2 testing using wastewater samples collected for polio environmental surveillance. The centre, in partnership with the Water Research Commission (WRC), started implementing a national program for monitoring SARS-CoV-2 in communities using a water and sanitation-focused approach. The purpose of the program was to coordinate and build the nation's capacity to track the presence of SARS-CoV-2, the virus that causes COVID-19, in wastewater samples collected across the country. Those infected with SARS-CoV-2 can shed the virus in their faeces, even if they are asymptomatic. The virus can then be detected in wastewater, enabling wastewater surveillance to capture the presence of SARS-CoV-2 shed by those, both with and without symptoms.

To support this initiative, a network was created between municipalities and laboratories capable of detecting SARS-CoV-2 in wastewater using appropriate methodologies. Laboratories interested in the detection came together to form the South African Collaborative COVID-19 Environmental Surveillance System, or SACCESS in short.

Collectively CVI and laboratory partners started monitoring the presence of SARS-CoV-2 at 95 sites located in all nine provinces. Samples are collected on a weekly basis and quantified through amplification of viral genetic fragments, which may be present in the sample. In addition, the centre uses Next Generation Sequencing to identify variants of concern in the wastewater.

Currently, the team consists of six members, namely Dr Kerrigan McCarthy (Principal Investigator), Dr Said Rachida (Senior Project Scientist/Administrator), Dr Mukhlid Yousif (Senior Genomic Data Analyst), Nkosenhle Ndlovu (Project Scientist), Dr Chinwe Jaja (Epidemiologist) and Setshaba Taukobong (Bioinformatics Scientist). In addition, the team is also working with seven additional laboratories who make it possible to implement the SARS-CoV-2 wastewater surveillance at a national level. Some of the challenges that wastewater surveillance presents are given that wastewater is a complex matrix, for instance, the testing results are affected by factors like rainfall and presence of industrial products, amongst others. Along with these challenges, there is a need for increased confidence in the data produced and to encourage policy makers to use the results to help strengthen public health responses.

Wastewater surveillance has served as an early warning that COVID-19 spreads in communities. Moreover, data from wastewater testing has assisted in supporting public health mitigation strategies by providing additional information about the prevalence of the disease. A special thanks to the wastewater surveillance team for their ongoing efforts in the fight against COVID-19.



## A MISSION ACCOMPLISHED – INSPIRING YOUNG WOMEN THROUGH SCIENCE

By Lesego Sibilanga

The Ambassador of Sweden in South Africa, Mr Håkan Juholt, contacted Dr Waasila Jassat, Public Health Specialist at the NICD, with a request to be a speaker at their commemorative event for International Women’s Day (IWD) on 8 March 2022. Dr Jassat typified what the Embassy sought, namely women working in Civic Technology, Science and Innovation, whose work has resulted in the advancement of democracy and gender equality.

This celebratory event aimed to motivate girls and young women to reimagine how they can enter these fields, which they are often discouraged from entering. Furthermore, pursuing a career in these fields can have a positive social impact through advancing democracy and gender equality.

For their third celebration of IWD, the Embassy of Sweden hosted a Master Class, ‘Harnessing the power of Civic Technology, Science and Innovation for democracy and gender equality’, to inspire the young learners from Pretoria Technical High School.

With a momentous task of delivering a compelling message relating to how technology and science can be used as an instrument to increase the representation of girls in decision-making and advance their democratic rights,

Dr Jassat came to the fore by inspiring these learners with her own experiences that have led to her success, talking to the challenges she faced and triumphs she enjoyed. “We feel inspired by our speakers and young girls who attended the event. The future is women and it is bright,” said the Swedish Embassy spokesperson.

Dr Jassat is a medical doctor who specialises in Public Health Medicine. With over 20 years of experience in the health sector, she has a strong interest in the effective implementation of health programmes. From her encouraging talk, there is hope that these young girls have been inspired to chase their dreams.







## GET A CLUE, WITHOUT GETTING AN STI

By Puseletso Kobedi



South Africa has the highest prevalence of HIV infections among adolescents worldwide, and in a study published in 2018 accounted for nearly 18% of global HIV infections among 15 to 24 year-olds. Although HIV incidence has been decreasing, South Africa still had 9.9 new infections per 1 000 adults, with approximately 37% of those new infections occurring in young people (22% in young women). The prevalence of other sexually transmitted infections (STIs), such as chlamydia, gonorrhoea, trichomoniasis and syphilis is also higher among young people (15-24 year olds) than older populations.

Despite extensive efforts in promoting condom use, young people continue to engage in risky sexual behaviour due to peer pressure, condom fatigue, unplanned sexual encounters, and alcohol and drug use. Furthermore, young people face multiple obstacles in obtaining high-quality sexual health information and STI care that can help them avoid, and at the very least treat these infections.

In light of the high burden of STIs amongst adolescents and youth, for this year's STI condom awareness week the STI section at the Centre for HIV and STIs at the NICD partnered with Alexandra Community Health Centre and the Anova Health Institute to create awareness of STIs in the hope of banishing myths around condom use and STIs. Frans Radebe, Research Manager at the STI Reference Laboratory, stresses that despite the availability of over 800 million male

and female condoms through the NDoH annually, myths around condoms and STIs remain a big challenge. Some popular stories include 'condoms are only for men' and that 'you can see an STI if your partner has one.'

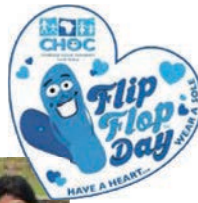
There is still a significant stigma attached to STIs, and for some, it means an apprehensiveness to raise sexual health concerns or questions with a doctor. The reluctance to speak openly about sexual health can breed misinformation, which is why working together with local clinics and non-governmental organisations are essential in creating a safe space where young people can openly discuss sexual health. Anova is actively involved in community outreach, support, engagement and awareness programmes. They are currently leading a project, *MyFutureFirst*, which is aimed at promoting the sexual reproductive health and rights of adolescent girls and young women.

While the NICD plays a vital role in tackling the STI burden in South Africa through its surveillance and research function, the partnership with Alexandra Community Health Centre has assisted in merging community engagement and laboratory support.

STIs continue to be a burden in the country and we would like to thank the STI team for their continued commitment and hard work in tackling this burden. Their research focuses on STI aetiology, epidemiology and antimicrobial resistance, vital factors in ensuring STIs are appropriately treated in South Africa.

## WEAR YOUR HEART ON YOUR 'SOLE'

By Lesego Sibilanga



**T**he staff at the NICD came together to support the National Cancer Registry and the CHOC Childhood Cancer Foundation in CHOC's annual fundraising initiative, South Africa Flip Flop Day.

Flop flops are a popular style of comfort, yet often informal and regarded inappropriate in workplace environments. So what better way to raise funds than to allow staff to wear their most colourful flip flops for a good cause (if safety is not a concern). With a donation of R10, colleagues purchased Flip Flop Day stickers, slapped on their favourite flip flops and on 18 February took on a colourful stand with their soles out in support of children battling the life-threatening disease.

Childhood cancer is a frightening reality that many families across South Africa have to deal with. Nationally between 800 to 1 000 children are diagnosed with cancer every year. Often children are diagnosed too late when the cancer is already in an advanced stage due to a lack of knowledge regarding the disease and how it presents in children, as the symptoms and signs are similar to other illnesses. South African families face one of the most challenging battles they will ever have to encounter – alongside the little warriors fighting the disease. But luckily, these brave children and teenagers, along with their families, never have to stand alone.

The aim of this initiative is to create greater awareness and to encourage early diagnosis that may lead to improved outcomes for ill children. Thank you to everyone at the NICD who participated in the initiative. Through staff participation, R2 300 was raised. This money will go towards supporting children with cancer and other life-threatening blood disorders. Through this donation, the CHOC Foundation will provide care and assistance to these children and their families

## ACHIEVEMENTS

Hats off to colleagues, Profs Janusz Paweska and Cheryl Cohen, who were recently included in the 2022 Edition of Research.com's Ranking of Top 1 000 Scientists in the area of Microbiology. Prof Paweska was ranked number 6 in South Africa, and 1 320 globally, whereas Prof Cohen boasts a national ranking of 11, and 1 934 globally. The ranking is constructed using the H-index



Prof Janusz Paweska



Prof Cheryl Cohen

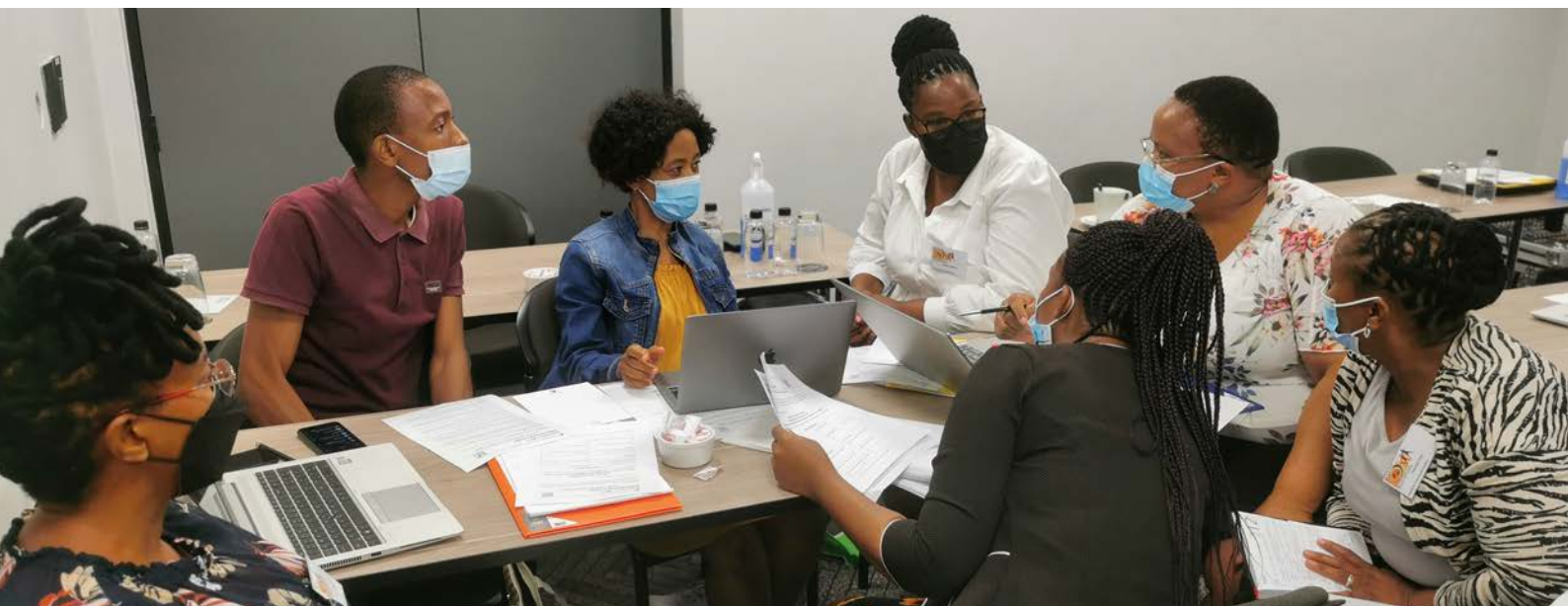
data gathered by Microsoft Academic and includes only prominent scientists with an H-index of at least 40 for scientific papers published in the field of Microbiology.

We thank you for your valued contribution to your respective fields and congratulate you on this outstanding achievement.

## A NAME TO REMEMBER



Theresa Mazarire from the Centre for Emerging Zoonotic and Parasitic Diseases is a name to remember. This dynamic scientist walked away with the regional sub-Saharan award in the L'Oréal-UNESCO For Women in Science Sub-Saharan Africa Young Talents Awards 2021. The budding PhD candidate won the award for her research on Geographical Information System and remote sensing application in malaria vector control. Her research seeks to explore the use of advanced geospatial technologies to determine the spatio-temporal distribution of *Anopheles arabiensis* populations and to contribute to the South African Mosquito Sterile Insect Technique (SIT) programme.



## STRENGTHENING THE PUBLIC HEALTH WORKFORCE TO RAPIDLY DETECT AND RESPOND TO DISEASE THREATS



By Khuliso Ravhuhali

**T**he COVID-19 pandemic has shown that a public health workforce that is able to rapidly detect and respond to disease outbreaks is key to an effective health system. The South African Field Epidemiology Training Programme (SAFETP) is providing the country with critically needed public health services through a mentored, learn-by-doing approach that emphasises fieldwork and improves the effectiveness of the workforce through the FETP Frontline training. The SAFETP-Frontline programme is a 3-month on-the-job training that addresses the critical skills needed to effectively conduct disease surveillance and response activities at a local level, focusing on improving disease detection, reporting and response.

SAFETP conducted workshop 1 of the Frontline Epidemiology training for Mpumalanga Provincial Department of Health

in February 2022, with support from the Africa Field Epidemiology Network (AFENET), the United States Centres for Disease Control and Prevention (US CDC) – South Africa office, and the World Health Organization (WHO).

A total of 19 healthcare workers were trained, of which nine were the communicable disease coordinators (CDC), four Environmental Health Practitioners (EHP), five Infection Prevention and Control (IPC) nurses, and lastly, an Expanded Programme on Immunisation (EPI) Manager. The participants have returned to their regular job sites for five weeks to review local surveillance data and to conduct data quality audits with the assistance of their mentors. The participants will return for a second 5-day workshop in April 2022 to present their work and to receive feedback from SAFETP staff, mentors and their peers on their projects.

## ‘FRESH FACED’ SAFETP RESIDENTS

The start of the new year saw a total of 14 residents enrol for the South African Field Epidemiology Training Programme (SAFETP). The cohort comprised of various health professionals, including veterinarians, nurses, microbiologists, and nutritionists. Established in 2006, SAFETP encompasses both didactic and practical training where residents are exposed to the academic basics of applied epidemiology and assigned to field sites. We wish these new the residents all the best as they complete the programme.

