

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

THE END OF COVID-19 DAILY REPORTING



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MESSAGE FROM THE EXECUTIVE DIRECTOR

ommunity and service come to mind when reading this month's issue. When I refer to a community, I include our NICD community, the broader communities we serve, and our duty of care to these varied communities. I started thinking about how we take this home and serve our community through science and our roles. Prof Jonathan Jansen, a distinguished Professor of Education at Stellenbosch University, transformative talk resonated with

me, **"We cannot transform others unless we have transformed ourselves**." When we transform ourselves, we can serve others effortlessly. When we do, we are rewarded and recognized by organizations, such as The Gift of the Givers Foundation. This South African non-governmental organization (NGO) and disaster relief group have placed modular units at hospitals throughout the country. In supporting and appreciating the NHLS and NICD's contribution in responding to the COVID-19 pandemic, the NGO donated a modular office that can house 30 staff.

The official handover of the modular unit took place on 28 July 2022 at a charming ceremony that was attended by esteemed guests, including Dr Imtiaz Sooliman, Director and founder of the Gift of the Givers Foundation; Dr Karmani Chetty, NHLS Chief Executive Officer; Prof Adrian Puren, NICD Executive Director; and Dr Natalie Mayet, NICD Deputy Director. Our very own Head of the Centre for Emerging Zoonotic and Parasitic Diseases, Prof Janusz Paweska, was recently honoured with a Benedykt Polak Award from the Polish Chapter of the Explorers Club. The award recognizes the activities of those who shape and strengthen the ties that link Polish culture, science, and history with the international community. The award is a fitting recognition of a remarkable scientific career.

A vital responsibility of the NICD is to generate new knowledge through research and inform policy, including the control of disease transmission. The NICD engaged a local community on the Sterile Insect Technique (SIT). Community engagement is a bedrock for implementing public health interventions. Involvement and association with communities have proven effective and resulted in improved acceptance and acceptability. Elimination of Malaria remains of fundamental importance in our country and affected countries. The Sterile Insect Technique (SIT) feasibility project was initiated by the National Department of Health, the Department of Science and Innovation, the International Atomic Energy Agency, the South African Medical Research Council, and the South African Nuclear Energy Corporation and the NICD.

A central mandate for the NICD is training. Two wonderful examples of the types of training are presented. These initiatives inform how we improve as an institute to serve



Prof Adrian Puren

and support the government's response to (communicable) disease threats. One such initiative is to enhance the public health genomics scientific capacity in South Africa and Africa. The objective is to provide training for health professionals to efficiently and rapidly respond to health threats. Through those efforts, The Department of Health in the Eastern Cape identified that the tiered approach described would benefit their province. They jumped at the opportunity for their health professionals to be trained to improve Field Epidemiological capacity. Plans to implement the tiered approach across the country are underway.

The COVID-19 pandemic is not yet over, but we need to focus on what reporting is essential. It's been a grueling two and a half years of consistent reporting demanding staff time. The month of August 2022 will see a change in approach to our COVID-19 surveillance reporting strategy. As of Monday, 1 August 2022, the daily COVID-19 surveillance data will no longer be released. We thank you for your understanding as we make this change. Thank you for your continued support of COVID-19 surveillance. We remain committed to providing you with the most up-todate information possible.

The National Institute for Communicable Diseases is thrilled to announce the appointment of the Head of Notifiable Medical Conditions (NMC), Dr Susan Nzenze, who has over ten years of experience working on research projects in vaccine-preventable diseases (pneumonia and diarrhoea), HIV, and TB, including mHealth to impact health care. We wish you the best in your new role.



The end of COVID-19 daily reporting

by Nande Harmans

s we approach a new month, we look to a new reporting strategy for COVID-19 surveillance, it has been decided that a new reporting strategy is necessary.

As of Monday, 1 August 2022, the daily COVID-19 surveillance data will no longer be released on a daily basis. The reporting of COVID-19 surveillance data is published every Wednesday and can be accessed here.

The COVID-19 surveillance data was coordinated, compiled, and syndicated by a team of dedicated professionals. Their dedication and commitment to fulfilling a public duty are commendable and most appreciated.

We thank you for your understanding as we make this change. Thank you for your continued support of COVID-19 surveillance. We remain committed to providing you with the most up-to-date information possible.



IMPROVING FIELD EPIDEMIOLOGIC CAPACITY ACROSS THE COUNTRY: A NEW TIER

By Puseletso Kobedi

ield Epidemiology Training Programmes (FETPs) have been established in many countries around the world to provide training for health professionals in an effort to effectively and rapidly respond to health threats. This objective is achieved by equipping health professionals with the necessary skills to contribute to evidence-based decisions. The South African Field Epidemiology Training Programme (SAFETP) at the NICD was established in 2006 as a joint collaboration with the National Department of Health (NDOH) to build field epidemiology capacity for health professionals in South Africa.

SAFETP currently offers three programmes, referred to as tiers. These include an Advanced tier (2-year training) aimed at health professionals at a national level, a Frontline tier (3-months training) for health professionals at a local level, and a recently introduced Intermediate tier (9 months training). Hetani Mdose, Senior Field Epidemiologist, and Facilitator believe that the introduction of the intermediate tier will help close the gap between the Advanced and Frontline training. She adds that the intermediate tier will build capacity for these professionals to collect, analyse, interpret and disseminate data to individuals who need to take the necessary action for outbreak management and prevention.

The Department of Health in the Eastern Cape identified a gap in their province and jumped at the opportunity for their health professionals to be trained. This led to the pilot



launch of the Intermediate tier earlier this year, with a cohort of 15 trainees. Some of the trainees consist of environmental health managers, district clinical specialists, professional nurses, and information managers, among others. The objective is to roll out the new tier across the other eight provinces in South Africa in order to improve epidemiologic capacity across the country.

To learn more about The South African Field Epidemiology Training Programme (SAFETP) click here.

REDUCING THE MALARIA EPIDEMIC, ONE STERILE MALE MOSQUITO AT A TIME

By Nileen Gale

alaria elimination remains a crucial priority in South Africa. Although the country has made significant progress in regressing the number of malariatransmitted cases pre-COVID-19, it is time to get elimination efforts back on track. What better way to do that than through the sterile insect technique (SIT) feasibility project that was initiated by the National Department of Health, the Department of Science and Innovation, the International Atomic Energy Agency, the South African Medical Research Council, the South African Nuclear Energy Corporation and the NICD. The project has evolved since its conception in 2010 with a key partner Technology Innovation Agency coming on board to sponsor most of the activities. The project is not in Phase 3 where the objective is to demonstrate the technical feasibility of using the technology through a small-scale field pilot trial sterile male release program. The start of the project's sterile male release was denoted by the release of 13 000 sterilised Anopheles arabiensis male mosquitoes in November 2021 in a rural area in Jozini, Mamfene, located in the northern parts of KwaZulu-Natal. The initial releases were characterised by a number of teething problems. Subsequently, these challenges were addressed leading to a flawless release exercise in May 2022. Throughout the sterile release phase, it is envisaged that the release of 30 000 sterile male mosquitoes will occur on a weekly basis until December 2022.

SIT is colloquially referred to as a "genetic birth control method" that involves rearing and sterilising male mosquitoes in the laboratory and releasing them into the wild in the thousands. "This forces most females to mate with sterile males, substantially reducing their fecundity and resulting in population suppression," says Dr Givemore Munhenga, Principal Medical Scientist in the Vector Control Reference Laboratory at the Centre for Emerging Zoonotic and Parasitic Diseases. This approach suppresses mosquito populations, which carry malaria parasites thereby reducing malaria transmission risk. Dr Munhenga manages the South African Vector Mosquito Rearing Facility at the NICD, which is instrumental in the mass rearing and sterilising of male mosquitos, which are being released.

The release exercise was no mean feat for the project as it saw the team painstakingly sort the male mosquitoes into batches of 1 000 and 250 respectively. The males were also marked with green and yellow ultraviolet dust, to make the detectable under UV light. This is important for monitoring purposes to establish if the laboratory-reared mosquitoes are integrating with the wild mosquitoes.

About the mosquito release, Munhenga says that there was something oddly mesmerising about releasing them back into





their natural habitat. "Once released the males formed a swarm as part of their mating ritual, alerting the female mosquitoes. "Mating with wild female mosquitoes (of the same species) will take place, resulting in the females laying eggs that will not hatch. This will go a long way in diminishing the malaria-carrying vectors," he quips.

But why SIT? Historically, malaria control programmes have been applying tried-and-tested methods, however, additional innovations and technologies are necessary to realise zero transmission. While indoor residual spraying (IRS) has been successful, research on malaria-transmitting mosquitoes indicated that this method alone is not an effective driver to end malaria. This is due to IRS mainly targeting indoor biting and resting mosquitoes, a solution that does not factor in the outside feeding and resting mosquito population. The latter will be addressed through SIT.

About the next steps, Dr Munhenga enthusiastically shares that if the concept of population suppression is proven, a costbenefit analysis will be undertaken to understand whether the technology is sustainable. "Additionally, an epidemiological study will have to be instigated to deduce if population suppression can indeed result in a decrease in malaria cases."



CLOSING THE RESEARCH-CAPACITY GAP IN PUBLIC HEALTH GENOMICS EPIDEMIOLOGY

By Puseletso Kobedi

he genomic epidemiology of virus infections is a fairly new research area that connects epidemiological data with viral genomics and sophisticated bioinformatics tools. Genomic epidemiology enables the tracking of pathogen transmission over all spatial scales, whether a local outbreak or global pandemic, to highlight the scale of interventions required. For example, viral genomic data combined with epidemiological and ecological data, have helped identify the origin of outbreaks and sites of pathogen invasion in recently emerged viral diseases, including Ebola in Africa, the Zika virus infection in South America, and SARS-CoV-2. Understanding the carriage and transmission of *Streptococcus* pneumoniae through a community cohort study in South Africa by Maimuna Carrim, Molecular characterisation of Candida auris by Dikeledi Kekana, and Advanced diagnostics for meningitis by Nosihle Msomi.

When asked about training highlights, PhD student, Rutendo Mapengo expressed that"I really appreciated the feedback we received during the trainee presentations from the mentors, both local and abroad. It showed that we have support for our projects, particularly with Next Generation Sequencing data analysis." MSc student, Nosihle Msomi

In order to enhance the public health genomics, and scientific capacity in South Africa and ultimately the continent, the South Africa -Pittsburgh Public Health Genomic Epidemiology (SAPPHGenE) Training Program was established between the



believes that the SAPPHGenE training helped improve her skills as a scientist and was invaluable for the bioinformatics analyses she has been conducting. She adds that "I've learned how genomics, epidemiology, and bioinformatics can interconnect to solve serious challenges we face in the fight against certain infectious diseases."

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University of Pittsburgh (Pitt) in the United States and the NICD. The programme involves the multidisciplinary training of young South African health and academic researchers and focuses on the genomic epidemiology of respiratory disease-causing bacterial and fungal pathogens, which is of local and international importance.

Trainees comprise a combination of full-time and parttime post-graduate (MSc and PhD) degree candidates, including 11 from the NICD. A recent online retreat at the beginning of June involved trainees who presented research findings to experienced mentors from Pitt, the Centres for Disease Control and Prevention (CDC) in Atlanta, and the NICD. Some of the presentations included Genomic epidemiology training is an opportunity to improve the detection rate, and control of healthcare and community outbreaks. Moreover, to understand transmission dynamics, monitoring of antimicrobial resistance, and measure the impact of immunisation programs. South Africa has a major research capacity gap in the area of public health genomic epidemiology, including bioinformatics expertise as well as the integration of genomic and epidemiology data into public health. The SAPPHGenE program will have an extensive and long-lasting impact on elevating the scientific capacity in the country's public health genomics field.

To read more about this programme click here



NHLS AND NICD COVID-19 EFFORTS RECOGNISED THROUGH DONATION

By Nileen Gale

t the forefront of the COVID-19 response was the team from the South African Field Epidemiology Training Programme (SAFETP), who on request from the Director General of the World Health Organization (WHO), were tasked to increase its outputs by training 200 epidemiologists for the region. The country requires approximately 300 epidemiologists, and with the paucity of epidemiologists, the NICD had to rapidly upscale its training efforts to meet demands. SAFETP also launched the intermediate tier of the training program aimed at building surveillance capacity in the department of health, this 9-month training complemented the basic training and

the advanced 2-year residency training. This required additional staff. Adequate space proved challenging accommodate to the extra staff and residents, which steered the NICD contact The to Gift of the Givers Foundation. This South African nongovernmental organisation (NGO) and disaster relief group have been placing modular units at hospitals throughout the country. In an act of support and appreciation of the NHLS and NICD's in contribution responding to the COVID-19 pandemic, the NGO donated a modular office that can house 30 staff.

The official handover of the modular unit took place on 28 July 2022 at a charming ceremony that was attended by esteemed guests, including Dr Imtiaz Sooliman, Director and founder of the Gift of the Givers Foundation; Dr Karmani Chetty, NHLS Chief



the proceedings, reminiscing about the project's origin. "After making a call to Dr Imtiaz, I was overwhelmed by the generous assistance offered by the foundation," Dr Mayet recalls. About the donation, Prof Puren conveys his

sincere gratitude, stating, "To many, this may only be a building, however, to us this facility is central to strengthening the epidemiology capacity in the country." Dr Chetty echoed these sentiments and commended the foundation on the incredible work they do, both locally and abroad. "As a true beacon of hope, Gift of the Givers is committed to making a fundamental

and Dr Natalie Mayet, NICD Deputy Director. Dr Mayet started

difference in the lives of ordinary South Africans." During Dr Sooliman's address, he complimented the NHLS and NICD on the significant services they performed during COVID-19 the pandemic, stressing that there was no hesitation to assist when the request for a facility was made.

The unit is located the institute's at Sandringham campus and is a form of Alternative Building Technology (ABT). The unit comes complete with typical office features and amenities, including ablution and kitchen facilities, rendering the completed product a functional and suitable workspace. This generous donation enables the imperative done work by SAFETP to continue uninterrupted. The benefits of this donation are farreaching, as these epidemiologists will continue to review

surveillance systems, plan future systems and hone their skills as expert disease detectives.

Executive Officer; Prof Adrian Puren, NICD Executive Director;

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ARE YOU GOING TO BE PART OF IT? TRANSFORMATION AND INCLUSION

By Lesego Sibilanga

n 23 March 2022, Prof Jonathan Jansen, a distinguished Professor of Education at Stellenbosch University, engaged the NICD in a transformative talk about how we can approach and improve diversity, fairness, equity, and inclusion in the workplace so we can have an environment where differences are celebrated.

Professor Jansen spoke through seven elements for deep transformation in organisations, that are not superficial, which left attendees reflecting on the part they can play in enforcing change and transformation;

- 1. You have to have the capacity to see yourself and others as the same
- 2. Transformation should move beyond the first base in order to avoid the enmity of transformation
- **3.** Deep transformation is genuinely inclusive of all parts of our humanity

- 4. Deep transformation can only happen if there is leadership committed to making it happen
- 5. We cannot transform others unless we have transformed ourselves look in the mirror
- 6. Changes in our relationship with others demand that we treat each other with respect
- 7. Transformation is the best way to build unity

Through these elements, Professor Jansen sandwiched his personal experiences and current affairs that were relatable in helping us achieve transformation and inclusion. It can be deduced that once we look within and treat others with respect, we can start to make the change. Diversity has to speak across all borders of humanity; disabilities, gender orientation, ethnicity, etc. Such conversations have to be ongoing with committed leadership. Be transformed by renewing your mind's metamorphosis.



ABOUT PROF JONATHAN JANSEN

Prof Jonathan Jansen is a Distinguished Professor of Education at Stellenbosch University. Following seven years as Vice-Chancellor and Rector of the University of the Free State, he spent a year as a Fellow at the Center for Advanced Study in the Behavioral Sciences at Stanford University. He is President of South Africa's Institute of Race Relations and of the Academy of Science of South Africa.

> NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES



New Head of NMC: Dr Susan Nzenze

By Puseletso Kobedi

he National Institute for Communicable Diseases is excited to announce the appointment of Dr Susan Nzenze as the Head of Notifiable Medical Conditions (NMC). As Head of NMC, she is tasked with improving notification rates for Notifiable Medical Conditions in order to assist stakeholders including the National Department of Health, in timely decision-making and effective control measures.

Dr Nzenze has over 10 years of experience working on research projects in vaccine-preventable diseases (pneumonia and diarrhoea), HIV, and TB, including mHealth to impact health care. She holds a Bachelor of Medicine and Surgery from the University of Zimbabwe, a Masters in Public Health (specialised in Health Economics; awarded with distinction) from the University of Cape Town, and a PhD in Public Health from the University of the Witwatersrand.

Dr Nzenze holds tenure as Associate Professor of Public Health at the University of Zimbabwe, training medical students and the next generation of public health practitioners. Most of her public health work has been on projects in South Africa, evaluating the



effect of public health interventions on health outcomes. Her research interests include communicable and non-communicable disease prevention, the use of digital tools in health care, cost-effective analyses, and healthcare financing.

Since joining the NICD, she has taken up knitting for the Mandela day blanket drive. When she is not working, you will find her at home, with her husband and four children, 11, 4, 2, and 6 months and reading is what she loves to do to unwind.

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ENGAGING A LOCAL COMMUNITY COMMUNITY ON THE STERILE INSECT TECHNIQUE IN KWAZULU-NATAL

By Lesego Sibilanga

ommunity engagement is a cornerstone to the success of any public health intervention. Connecting with communities has proven effective and resulted in improved buy-in and acceptability. Failure to consider the beliefs and perceptions of a community may lead to negative attitudes and the inability to achieve intended goals. This is especially so for technologies such as the Sterile Insect Technique (SIT) being piloted in northern KZN by the NICD.

The SIT technology involves releasing laboratory-reared sterile male mosquitoes into communities, therefore likely to generate debate and raise social, ethical, and regulatory concerns. The NICD SIT project has been engaging and working collaboratively with the Jozini community to achieve a better uptake of the SIT technology.

The use of drama was identified as a probable effective approach for engaging the Jozini community to embrace a pending weekly sterile male release program. Drama is highly regarded as an effective and valuable teaching strategy because of its unique ability to engage reflective and active learning. As part of this initiative, Dr Givemore Munhenga and Pinky Manana from the NICD's Centre for Emerging Zoonotic and Parasitic Diseases (CEZPD), went to the community of Jozini, KwaZulu-Natal, on 23 April 2022, during the World Malaria Commemoration Day, to pilot this community engagement tool. The World Malaria Day Commemoration was combined with a tribal event to enhance outreach and improve attendance.

Before the presentation, children from selected local schools in the community were approached and



guided in creating a drama using a pamphlet with SIT information. Various vital messages were emphasised; such as signs and symptoms of malaria, preventative measures to reduce the risk of getting malaria, and that only males will be released after they have been sterilised and males do not aid the malaria transmission cycle. Subsequently, the drama developed by each school was performed on a stage in front of the community, with the school best demonstrating the key messages getting a prize awarded to them by the chief of the land.

The event was made possible through a partnership between NICD and the project's research assistants, the local community radio station, the chiefdom, local health workers, local schools, and the Mamfene community. Activities of the project and the day were sponsored by South Africa's Department of Science and Innovation, Technology Innovation Agency, and International Atomic Energy Agency (IAEA). Prizes for the winning schools were donated by Lasec and Air Technology Services.

What people are saying on social media



Chikwe Ihekwe... Ø @Chikw... · 4h ···· So proud of you @GoNevashan. I still remember the very first days of the EOC @nicd_sa!

I miss the beautiful @nicd_sa campus, but grateful for the excellent work going on there and other national public health institutes around the world.



ACHIEVEMENTS

SAFETP Residents Shine at Scientific Conference

By Nileen Gale

he 2nd AFENET (The African Field Epidemiology Network) Southern Africa Regional Scientific Conference tookplaceinNamibiarecently, dedicated to strengthening sub-Saharan African health systems through field epidemiology. Topics that dominated the presentations over the 3-day conference from 3 to 5 August 2022 included outbreak investigations, surveillance and experiences with immunisation.

Residents from the South African Field Epidemiology Training Programme also partook in the presentations, with Gcobisa Ncaza clinching the award for Best Oral Presentation for Surveillance of hospitalized healthcare workers due to Coronavirus disease 2019

A noteworthy science achievement for the Network of Genomics Surveillance team



The 24th National Science and Technology Forum (NSTF) Awards took place on 21 July 2022 at a prestigious gala event that recognised the outstanding contributions to science, engineering and technology (SET) and innovation. Congratulations to the Network for Genomics Surveillance (NGS-SA) in SA who walked away with top honours by clinching the Data for Research Award. Representing the team

Dr Jinal Bhiman-NSTF Award

and accepting the award was Dr Jinal Bhiman, Scientific Lead: Global Immunology and Immune Sequencing for Epidemic Response South Africa (GIISER-SA). The award recognises the value of data that is of national interest or for the public good, and that ultimately contributes to the development of South Africa.

Well done to Dr Jinal and the NGS-SA team!

in the Eastern Cape province from April 2020 - December 2021. The Second runner-up in the same category went to Maxwell Mabona's Investigation of COVID-19 Outbreak in a Correctional Service Center in Kokstad - KwaZulu-Natal, July - August 2021. Leigh Johnston secured the first runner-up spot in the category, Best Poster Presentation, for Using gaps identified during an enteric fever outbreak investigation to formulate targeted educational messaging, North West Province, 2021.

Congratulations to all the winners! Your active involvement in strengthening the capacity of frontline health professionals drives health programs that inform and shape public health policy.

Head of the Centre for Emerging Zoonotic and Parasitic Diseases honoured with a Benedykt Polak Award



Head of the Centre for Emerging Zoonotic and Parasitic Diseases, Prof Janusz Paweska, was recently honoured with a Benedykt Polak Award from the Polish Chapter of the Explorers Club. "I am tremendously honoured by this accolade, and am grateful for the opportunity to be in a profession that satisfies both my curious nature and

Prof J Paweska

pursuit of knowledge," quips Prof Paweska. Granted annually, this esteemed award recognises Polish and foreign researchers for their outstanding exploration and research achievements. Moreover, the award denotes the activities of those who shape and strengthen the ties that link Polish culture, science, and history with the international community.

Regional Diagnostics and Demonstration Centre are the Regional Centre of Excellence for Biosafety and Biosecurity...



Regional Centre of Excellence

Congratulations to the Regional Diagnostics and Demonstration Centre at the NICD for being recommended as a Regional Centre of Excellence for Biosafety and

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Biosecurity. This recommendation follows a rigorous two-day evaluation conducted by a team of experts from Africa CDC, Botswana, Lesotho, Namibia and Zimbabwe.

