2018

DISCOVERY FOUNDATION AWARDS

OUR
FUTURE
HEALTH IS IN
GOOD HANDS

2018

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The Discovery Foundation is honoured to profile the work and research of the 2018 Discovery Foundation grant recipients. Over years, the Foundation has supported specific areas of need in our healthcare system and main focus areas include to develop more clinician scientists and grow specialists to care for those in underserved communities.

We believe this is crucial as we move towards a universal healthcare system that not only provides care to all people, but also care that is of a high quality. Each of the grant recipients' work and their research support this – to better the quality of care for people to make sure they live better lives and have better health outcomes. To achieve this goal, we need to join hands and work even harder to continue to develop world-class clinician scientists that scrutinise data, develop new protocols of care and help to ensure that our entire healthcare system remains at the forefront of medical science. The work of these inspiring medical practitioners who are increasing knowledge and furthering training to become the next generation of clinician scientists also give us the ability to, through their dedication, train future doctors and keep the health of all people in good hands.

There is no doubt that working as a medical professional comes with many challenges, which many dedicated to public service address and overcome through inner motivation, collaboration, innovation and further learning. Our country still mourns the loss of Professor Bongani Mayosi, which brought many issues that clinician scientist and medical professionals deal with in silence to the forefront. The lessons that come with experience and how many of our recipients stay motivated and positive have been shared in this book. These resilience building methods and the ability to ask for help need to be passed down to our next generation of doctors. For these young doctors, it has to be acknowledged, the growing demands and stresses in completing their medical training can be overwhelming. As they start treating, healing and caring for patients who live with a myriad of healthcare issues, we need to support them to build their physical and mental spirit.

This is especially true in our country, where we are dealing with the unfortunate quadruple burden of disease, which also comes with the tsunami of non-communicable diseases. These diseases are already affecting our healthcare budgets and continued research is the only answer to help us know and encourage the changes required to curb their effects. The Discovery Foundation remains committed to support these efforts highlighted in our national health goals. We are humbled by the work done across our public sector and, especially in our rural communities, to find ways to better the care of mothers, children, and all people affected by mental disorders and other diseases.

Only through training, nurturing and developing our clinician leaders will we be able to make our healthcare system strong to continue its good work into the future.

Handle gently.

This premium, environmentally-friendly woven book has been meticulously crafted with the same light touch and level of considerate care that patients have come to expect from the committed doctors in South Africa. Each fine detail is deliberate and – though fragile to the touch – is designed to last, because with constant care comes resilience.

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SURGICAL AND CLINICAL

CAPABILITIES

MCPHERSON

DR DEIDRÉ MCPHERSON

Sub-Specialist Award: University of Cape Town

"I hope my life story will inspire young women. Women remain under-represented in both general and trauma surgery. There's still a misperception that men are better suited to this subspecialty."

Dr Deidré McPherson

“IF YOU BELIEVE YOU CAN, YOU WILL!” – HOW ONE WOMAN BECAME A DEDICATED TRAUMA SURGEON

Dr Deidré McPherson hopes her life story will inspire young women to chase their dreams

Doctor Deidré McPherson’s mother wanted to be a doctor but, as Dr McPherson explains, lack of funding and the political situation of the 1960s held her back from realising her dreams. “Instead, she helped me develop and nurture my love for biology and the sciences, encouraging me to pursue my dreams of becoming a doctor.”

After graduating with distinction from Settlers High School, Dr McPherson obtained an MBChB from the University of Stellenbosch and an MMed (General Surgery) – with distinction – from the University of Cape Town (UCT). In 2017, she completed an FCS (SA) from The Colleges of Medicine of South Africa. Today, Dr McPherson is a Postgraduate Fellow in the UCT Trauma Surgery and Critical Care Unit at Groote Schuur Hospital.

“Currently there is no available subspecialist funding for trauma surgery, despite the trauma unit being a world-renowned surgical division at UCT. The funding will allow me to do subspecialist training in trauma and critical care, as well as allow me to complete my research in the field of trauma.”

Dr McPherson’s desire to be a trauma surgeon stems from two great loves: science and helping people.

“The defining moment for me was during my community service working as a doctor at Wesfleur Hospital in Atlantis, Cape Town. I was confronted with trauma on a daily basis, as the community is fraught with poverty and violence. I didn’t have the necessary surgical skills to save lives. This stimulated my interest in trauma and motivated me to pursue a career in general surgery and to become a trauma surgeon.”

“South Africa is facing a trauma epidemic and trauma surgeons are in desperate need,” Dr McPherson explains. Cape Town has the highest homicide rate in South Africa (seven times the global rate) and the second largest number of transport deaths of all the major cities (among the highest in the world and double the global average). “Trauma-related mortality and road traffic injuries remain extremely high in South Africa, and specifically among young adult males in our population.” She’s determined to make a difference in public health.

“I feel that this is where I can contribute the most. It’s where knowledge and skills are most needed, and I will be involved with research and the continued search for new treatment modalities and developments in patient care and technology.”

Dr McPherson is currently doing her PhD research on how to Enhance Recovery after Trauma Surgery (ERATS). “Penetrating abdominal trauma (for example gunshot or stab wounds) is a major cause of morbidity and mortality in large urban trauma centres,” she explains.

“Injuries affect all age groups but have a particular impact on young people and people in their prime working years. For people between the ages of 15 and 29 years, injury-related causes are among the top five causes of death.”

She hopes to see more resources given to trauma prevention and education. “Education about trauma should start at grassroots and be aimed at young children. If we can prevent them from choosing a life of gangsterism, it would make a big difference to the amount of trauma seen because of firearms. We also need to continue educating the public and motorists about their driving behaviour.”

When she was seven years old, Dr McPherson waited every Friday for a weekly magazine called How My Body Works, which included a toy organ. In 1996 when her little sister was born with neonatal jaundice, she documented, photographed and researched the condition for her grade 9 biology class – and got an A for the assignment! “My biology teacher mentioned that I had shown early insight into an actual medicine-related project and should consider pursuing a career in medicine.”

She hopes her life story will inspire young women. “Women remain under-represented in both general and trauma surgery. There’s still a misperception that men are better suited to this subspecialty,” she says. “Women are doing amazing things in fields that were previously off limits. So, in pursuing my dream of becoming a trauma surgeon, I want to show them that if you believe you can, you will!”

MOGASE

DR LEGAE GOMOLEMO MOGASE

Sub-Specialist Award: Sefako Makgatho University

ANOTHER MUCH-NEEDED VASCULAR SURGEON IS BORN

How vascular surgery captured the imagination of Doctor Legae G Mogase

"It would be my desire to be afforded the opportunity to fulfil my dream to be a vascular surgeon so that I can deliver quality and skilled patient care."

This Dr Legae G Mogase, a Registrar at the Dr George Mukhari Academic Hospital (DGMAH), writes in his motivation letter to Discovery. The young doctor has since embarked on his journey – he is now doing a vascular fellowship at the Sefako Makgatho Health Sciences University (SMU).

Why is there such a need for vascular surgeons?

South Africa is in great need for subspecialty-trained individuals to deal with the wide range of complicated pathology, and vascular surgery is a crucial component of subspecialty training. Vascular pathology entails everything from benign, easily treatable diseases to more intricate and life-threatening conditions.

This range of pathology holds opportunities for continued research to enhance knowledge and patient care. My area of interest would be the prevalence of asymptomatic abdominal aortic aneurism (AAA) in HIV-infected patients.

What sparked your interest in this topic?

Unique to our setting in Ga-Rankuwa (a township north of Pretoria) and sub-Saharan Africa at large is the high prevalence of HIV. This chronic disease is constantly changing the face of vascular surgery with younger patients experiencing earlier onsets of peripheral vascular disease and AAA. HIV is also a significant risk factor for deep vein thrombosis (DVT). Inflammatory aneurisms are also on the rise owing to HIV infection. All these diseases can lead to significant impact on quality of life, increased loss of limbs and mortality. Any discipline that gives you the opportunity to make a difference in patients infected or affected by the disease will capture my imagination.

More about Doctor Mogase.

Dr Mogase comes into the programme with a solid base: an MBBCh (Wits, 2010); an ACLS in Basic Surgery Skills (Wits, 2012) and an FCS (SA) (Colleges of Medicine South Africa, 2017). His MMed research, still in progress-through SMU, is on "Failed Extubation at DGMAH Intensive Care Unit". He spent two years as a medical intern at Klerksdorp Tshepong Hospital Complex and did his one-year community service in the Department of Surgery at Sebokeng and Kopanong Hospital Complex. He's been in his current registrar post since 2014.

Dr Mogase's subspecialist education is in good hands. Not only will he learn from Dr Cloete, but also from world-renowned vascular surgeon Professor Jacobus van Merle, who tutors and gives clinical assistance on a sessional basis.

More about the institutions of learning.

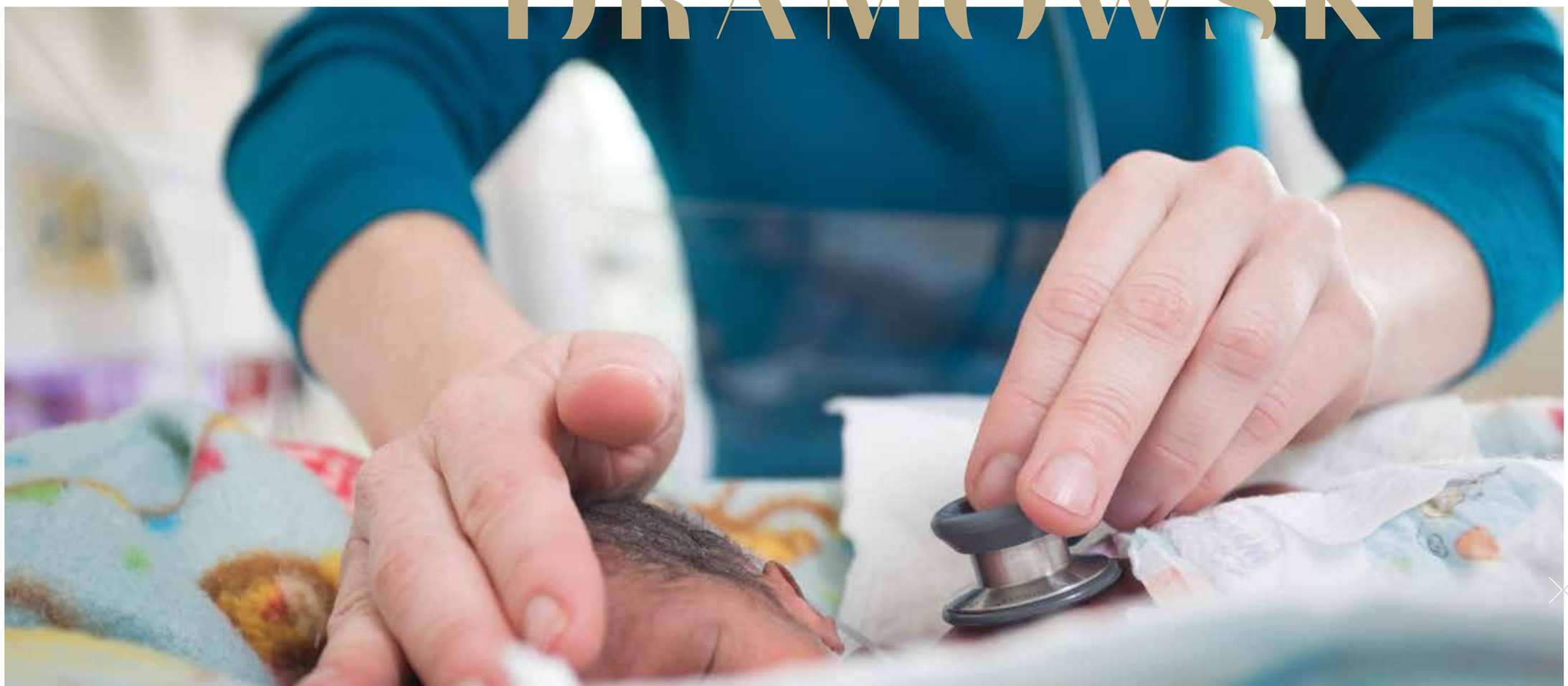
Formerly known as Ga-Rankuwa Hospital, the Dr George Mukhari Academic Hospital was built in 1972 in Tshwane. Today, it serves as a health sciences teaching platform after gaining academic status in 2011. The Sefako Makgatho Health Sciences University was established in May 2016, as announced in the Government Gazette by then Minister of Higher Education and Training, Dr Blade Nzimande. Its motto, "knowledge for quality health services", complements GMAH's vision to be a "centre of excellence, providing efficient and accessible healthcare services".

The two institutions have gone from strength to strength: in 2014, a vascular unit was initiated in DGMAH and the Department of Surgery at SMU with the arrival of Dr Niel Cloete, a trained vascular surgeon, as Principal Specialist.

Since 2014, the unit has undergone many improvements, including a revamp of the endovascular suite that now offers cutting-edge, world-class services to vascular patients. The unit provides outpatient care to around 500 patients a month, has a weekly theatre list for major cases and six to 10 endovascular lists a month. The unit provides cover for vascular emergencies and trauma to large portions of Gauteng, North West, Limpopo and Mpumalanga.

The unit has been accredited for training of subspecialists, but past funding shortfalls have kept it from appointing a trainee – until now.

DRAMOWSKI



DR ANGELA DRAMOWSKI

Distinguished Visitor Award: Dora Nginza Hospital

Doctor Angela Dramowski wants to help prevent hospital-acquired diseases at Dora Nginza Hospital

Dora Nginza (1891-1955) was a nurse, a midwife, a cook and a pioneer of public health. Known as the "Mother of New Brighton", she was one of the first black women who trained as a nurse at Victoria Hospital. Around 1919, she opened a makeshift hospital with little more than six stretchers.

Today, the Dora Nginza Regional Hospital in Zwide, Eastern Cape, has 500 beds of which 160 are dedicated to paediatrics as the hospital provides care to 1.2 million children. It serves patients from underserved urban, semi-rural and rural areas. But the hospital needs urgent help to lower its high neonatal, infant and under-five mortality rates.

The Paediatrics Department at Dora Nginza Hospital has reached out to Doctor Angela Dramowski – a Paediatric Infectious Diseases Sub-Specialist and Clinician Researcher based at Stellenbosch University – to develop strategies to reduce Healthcare Associated Infections (HAI) and improve implementation of Infection Prevention and Control measures (IPC). These infections are associated with high morbidity and mortality, increased healthcare costs and duration of hospital stay.

Dr Dramowski will embark on a two-year visiting academic programme to address these issues and develop an antibiotic stewardship programme. She outlines the aims of her visit: "The Distinguished Visitor Award will help me to train and mentor the paediatric staff at Dora Nginza in the important areas of infection prevention and antibiotic stewardship.

During her visits, Dr Dramowski will provide training workshops on IPC. This will give the paediatric nursing, medical and infection prevention staff the knowledge and skills to develop and implement a comprehensive IPC programme at Dora Nginza, with the aim of reducing HAIs.

She explains why the area of Paediatric Infectious Diseases is such a big issue in South Africa: "Hospital-acquired infections are the most common complication of hospitalisation and can affect as many as one in four children. Hospital-acquired bacterial infections are also increasingly antibiotic-resistant, so antibiotic stewardship is important to preserve our therapeutic options for infections." In the future, Dr Dramowski would like to see mandatory surveillance and reporting of hospital-acquired infections in South Africa.

Like Dora Nginza, Dr Dramowski is a pioneer.

Paediatric Infectious Diseases (PID) has been her passion since the start of her medical career. She was the first PID Fellow to train at Tygerberg Hospital in 2011 and is one of the only African academics with expertise in both PID and IPC. She is a national opinion leader and advisor of this issue and in 2013, she became the first South African selected for the Society for Healthcare Epidemiology of America International Ambassadors Programme.

She's written two books on infection prevention for low-resource settings, which are widely used to support infection prevention education and training in Africa. In 2017, she completed a doctorate on the Determinants of Healthcare-Associated Infection in Hospitalised Children; and this year she received an NIH K43 career development award (the Emerging Global Leaders programme) to develop a care bundle for neonatal sepsis prevention in low-resource settings.

Dr Dramowski qualified as a paediatrician at the height of the HIV epidemic. "Paediatric HIV was the reason I chose infectious diseases," she says. "I have always been fascinated by pathogens and infectious diseases epidemiology and I particularly enjoy working with children as they are so resilient and positive."

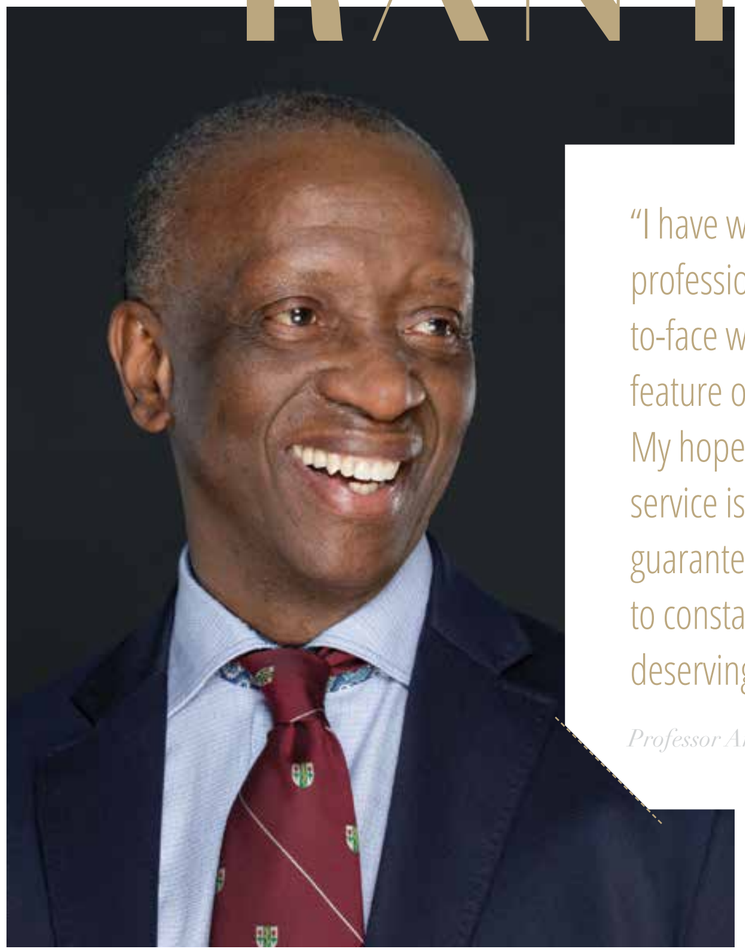
Striving for zero preventable harm to patients and healthcare workers motivates Dr Dramowski, and her favourite quote is, "There are two primary choices in life: to accept conditions as they exist, or accept the responsibility for changing them."

Like Dora Nginza, Dr Dramowski chooses the latter.

"There are two primary choices in life: to accept conditions as they exist, or accept the responsibility for changing them."

Dr Angela Dramowski

RANTLOANE



"I have worked in public health all my professional life and have come face-to-face with the unmet need that is a feature of healthcare in our country. My hope for the future is that the service is so resourced that access is guaranteed and doctors don't have to constantly decide who is more deserving of access to care."

Professor Arthur Rantloane

PROFESSOR ARTHUR RANTLOANE

Distinguished Visitor Award: Limpopo Provincial Clinical Specialist Team

PAVING THE WAY FOR FUTURE ANAESTHETISTS

Professor Arthur Rantloane is committed to upskilling healthcare workers in Limpopo

Limpopo needs people with skills in anaesthesia. At the moment, there are only four anaesthesiologists serving a population of 5.7 million people at 37 hospitals in the province.

The University of Limpopo Trust (ULT) and the Limpopo Provincial Clinical Specialist Team: Anaesthesiology (PCST) have invited Professor Arthur Rantloane to visit the province and share his skills. As a distinguished visitor, Professor Rantloane will train staff in anaesthesiology and give support two days a month for two years.

What is your current role and where are you based?

I am the Deputy Dean for Stakeholder Relations in the Faculty of Health Sciences at the University of Pretoria. I am also Professor in the Department of Anaesthesiology where I teach and conduct clinical supervision. From 2003 until recently, I was the Chief Specialist and Clinical HOD of Anaesthesiology at Steve Biko Academic Hospital, as well as the Academic HOD of Anaesthesiology in the School of Medicine.

Please give a short description of your specialisation and leadership roles.

I specialise in Clinical Anaesthesia with special interest in Thoracic Anaesthesia. I've served as President of the South African Society of Anaesthesiologists, the Africa & Middle East Region of the World Federation of Societies of Anaesthesiologists (ARS), and the College of Anaesthetists of South Africa. I am a recipient of the Nelson Mandela Medallion in Gold (2014) and the Steve Biko Academic Hospital Service Excellence Award (2016).

What is your favourite motivational quote?

I have drawn and continue to draw great inspiration from the life and achievements of one Sir Christopher Wren whose epitaph, written on a simple headstone for one so accomplished, advises the reader: "If you seek his monument, look around you." For me this has borne the message that one's deeds will speak for you, so be content with doing what you can for your fellow man without looking out for acknowledgement.

What will you do during your outreach programme?

For the next two years, I will share my skills in anaesthesia with healthcare workers in Limpopo. First, I will give onsite support and mentorship to Kgapane Hospital in Modjadjiskloof, Limpopo; an institution suffering from high maternal mortality rates. Hospital records show over 60 caesareans take place here every month and there's been a marked increase in anaesthetic complications during these procedures.

I will:

- Support the PCST anaesthesiologist to develop a training and mentoring plan for doctors and anaesthetic nurses working at Kgapane Hospital;
- Conduct onsite training for doctors and anaesthetic nurses in general and spinal anaesthesia, pre-operative assessment and post-anaesthetic care.
- Provide onsite mentoring and support of doctors and anaesthetic nurses to ensure acquisition and application of knowledge and skills.
- Support the PCST anaesthesiologist to incorporate lessons learned and best practices into the provincial plan to improve anaesthesia care.

What is the problem that you hope to address?

Providing access to surgery for the millions of indigent patients who die waiting, develop complications while waiting or suffer complications (even death) in the course of receiving their surgical interventions as a result of unsafe anaesthesia provided by poorly skilled practitioners.

How do you aim to solve the problem?

I aim to help by training healthcare workers in the practice of safe anaesthesia at their place of work. The key objective of my role as distinguished visitor is to improve patient safety and in particular maternal deaths and morbidity.

I hope to empower these providers of anaesthesia with the skills and attitudes to improve the safety of their clinical environment. We would like to train them in the setting where they will deliver services and to use tools of trade they are familiar with.

What changes would you like to see in this area of healthcare?

Exposure to anaesthesia is potentially fatal in unskilled hands. What I would advocate for is for all providers of anaesthesia to hold a diploma in the specialty, so that they have the basic knowledge and skills required to provide a safe anaesthetic.

LOCKHAT

DR YUSUF MOOSA LOCKHAT

Institutional Award : King Dinizulu Hospital

Doctor Lockhat makes dreams come true with his new Internal Medicine Training Programme at King Dinuzulu Hospital

Dr Yusuf Moosa Lockhat has introduced a practical three-year training programme at King Dinuzulu Hospital (KDH) in the eThekwini Metropolitan Municipality of KwaZulu-Natal. The programme aims to educate medical officers (MOs) interested in pursuing a diploma in Internal Medicine, while improving the quality of care at the hospital.

"The medical officers have shown a keen interest in writing the diploma in internal medicine, as this will further enhance their knowledge and skills and improve service delivery," Dr Lockhat says. The programme will teach them how to identify and prioritise critically-ill patients to prevent early mortality and later morbidity.

The MOs will study specific disease profiles, discuss rare cases with unusual presentations of common diseases, and attend local or national conferences. "The knowledge and skills obtained from this project will serve as a further platform to attain a diploma in internal medicine," Dr Lockhat says. "The improved knowledge and skills will lead to better job satisfaction and staff retention that will capacitate improved healthcare and medical research from district hospitals."

King Dinuzulu Hospital is a district-level facility, which serves 16 clinics, two community health centres and treats 3 000 outpatients and 400 inpatients a month.

The MOs deal with extremely ill patients – with both communicable (HIV/TB) and non-communicable diseases – and have the support of only one family medicine consultant. The hospital has built a strong relationship with King Edward VIII Hospital over the past five years, which lends its support to the initiative.

Dr Lockhat has been working at King Dinuzulu Hospital since its commissioning in 2012. He knew he wanted to be a doctor since childhood.

"I grew up during apartheid where there were no television sets and to make a telephone call you had to stand in line at a telephone booth; where days seemed like years and all little boys had dreams. My mother had several phrases she used to quote and one of them was, 'if you can dream it, you can achieve it', which I constantly tell my own children. "

"I had two dreams, one was to be free and the other was to be a doctor. This was reinforced when my uncle returned from Dublin as a doctor and bought me a toy doctor's bag, which I playfully used to treat my family. I finished matric at 17 and as there was a limited number of non-whites accepted to the then, Natal Medical School, my parents were forced to send me to study abroad for which I will always be grateful, and where I achieved my goal."

From there, his career took flight: "I began as a general practitioner in the township of KwaMashu in Durban where I practised for 15 years. However, after that I began to yearn for a new challenge and to give back to the community. I joined the public service as a principal medical officer and was encouraged by a colleague to join the Master of Family Medicine Programme. I completed my MMed in 2010 from the University of KwaZulu-Natal."

"My field of study towards Family Medicine was based on my desire to offer my patients a holistic and patient-centred approach to management." Dr Lockhat plans to do PhD research on the uniform delivery of primary healthcare to the population of South Africa and to encourage public-private partnerships.

"Seventy percent of the public sector seeks medical assistance at our local clinics and district hospitals. It is only logical that doctors working at these facilities should be trained as general physicians," he says, explaining that doctors should be able to manage all medical problems at these levels."

"First, the public health system has to focus on delivering a package of services to the vast majority of people in this country to improve the overall wellbeing of all. Second, the early detection and management of disease will streamline and improve service delivery at district, regional and tertiary facilities in our country. Third, I wish to develop a health system that delivers the same level of care as well as the same standard of care at all facilities throughout the country."

"If you can dream it, you can achieve it."

Dr Yusuf Moosa Lockhat

MHLARI

DR TSAKANI MHLARI

Institutional Award : University of Limpopo Provincial Clinical Specialist Unit

> "We have so much hope for our country. All we need to do is to mentor and motivate our junior doctors."
>
> *Dr Tsakani Mhlari*

Dr Tsakani Mhlari is bringing her skills in anaesthesiology to Limpopo Province

There are only four anaesthesia specialists in Limpopo Province serving over 5.9 million people in 37 hospitals. Dr Tsakani Mhlari – Provincial Clinical Specialist in Anaesthesiology for the Limpopo Province – is determined to train future anaesthetists through a robust three-year programme.

What is your role?

I work in the Provincial Clinical Specialist Unit, which was set up in 2014 as part of the National Department of Health's Primary Healthcare re-engineering efforts at the recommendation of the ministerial task teams to support the Minister of Health. Its overarching role is clinical governance with a focus on reducing maternal and child mortality in line with the Millennium and Sustainable Development Goals. I supervise, mentor and upskill medical officers and registrars in anaesthesiology in all 37 hospitals in Limpopo Province. My future plans are to see all district hospitals with a Diploma in Anaesthesiology and more qualified specialists in Limpopo.

What is the key objective of the programme?

The aim is to reduce anaesthetic-related maternal mortality and morbidity in Limpopo. South Africa has high maternal mortality and morbidity rates, and according to the latest triennial report, Limpopo is the third-highest province with maternal deaths. Limpopo has the most cases of anaesthetic deaths in South Africa.

Why do you teach?

Teaching is my passion and purpose in life. I'm so motivated when I see the knowledge imparted on others change the lives of our patients and the lives of our doctors to become the best they can be. I'm so inspired when I can make a positive change in people's lives.

What will you do as team leader?

I will supervise and mentor up to 15 candidates for their Diploma of Anaesthesia (DA) training. Part of the funding will go towards accommodation in Polokwane to enable those coming from far to undergo training at the Polokwane Hospital.

The training programme is indeed in good hands. In addition to her medical qualifications – MBChB (Medical University of South Africa, 2004); DA (SA) (Colleges of Medicine of South Africa, 2010), and MMed in Anaesthesiology (University of Limpopo, 2012) – Dr Mhlari is also a highly-skilled trainer in Essential Steps to Management of Obstetric Emergencies (ESMOE) and Safer Anaesthesia from Education (SAFE) in obstetrics. She's developed spinal and general anaesthesia protocols for Limpopo.

How did your childhood shape your decision to study medicine?

My parents gave me the best education and took me to good schools where we had career guidance. My parents always emphasised the importance of education. My parents shaped my decision of becoming a doctor.

Why did you choose your specialisation?

I have a passion for Obstetric Anaesthesiology. During my community service, I realised that in Limpopo district hospitals, we don't have anaesthesiologists and there are poor skills and knowledge in anaesthesiology. I also had bad experiences in anaesthesiology. I then told myself I wanted to know more about it.

What is your hope for public health?

The public health sector will be excellent with mentoring and motivation.

HOBE

"The hospital was the only resource available to the community, which meant that the doctors that worked there needed to provide other resources that contributed to the health of the community, such as water, sanitation, gardens and ideas on how to deal with poverty."

Dr Lungile Leslie Hobe

DR LUNGILE LESLIE HOBE

Institutional Award: Mseleni Hospital

MSELENI'S DAUGHTER RETURNS TO ESTABLISH A RESOURCE CENTRE FOR TEACHING AND LEARNING AT THE HOSPITAL

Mseleni Hospital is redefining what is possible in remote rural healthcare and Dr Lungile Hobe is leading the charge

Senior Rural Clinician, Doctor Lungile Leslie Hobe, grew up in the community of Mseleni in uMkhanyakude District, KwaZulu-Natal, near the Mozambican border.

"As a little girl growing up in this area of Mseleni with my mom – a nurse who is now retired – her dream had been to become a doctor," Dr Hobe says. "I wanted her to have a doctor in the house and it wasn't long after my decision that she was involved in a near-fatal car accident. Had it not been for the doctors that treated her, she wouldn't have survived the accident to put us through school."

Dr Hobe explains, "The hospital was the only resource available to the community, which meant that the doctors that worked there needed to provide other resources that contributed to the health of the community, such as water, sanitation, gardens and ideas on how to deal with poverty."

Mseleni is a 185-bed rural district hospital with 10 primary healthcare clinics and serves an estimated population of 92 000 people. There are currently no tertiary-level hospitals in the district. Mseleni spearheaded the clinic-based initiation of antiretroviral therapy (ARVs) in 2004; developed specialist surgical services; and built a strong network of clinics and community caregivers. Mseleni is involved in orphan care, youth projects, an early childhood development centre, and more.

The hospital's Umthombo Youth Development Foundation helped Dr Hobe to become a doctor. She obtained her MBChB from the University of KwaZulu-Natal in 2006 and joined Mseleni Hospital as a medical officer in 2010. In 2014, she left the nest to complete her family medicine training at Bethesda Hospital.

Dr Hobe has since returned to Mseleni, and successfully applied for the Discovery Rural Fellowship Institutional Award to establish a resource centre for teaching and learning at the hospital.

"I feel a responsibility to improve the quality of care in Mseleni Hospital. We can achieve this by giving different role players in the hospital the appropriate resources, information and guidelines so that each individual feels confident enough to challenge the care provided to their patients without fear of prejudice," Dr Hobe says. "I believe the hospital needs to be more appealing to healthcare workers seeking employment in an environment that supports learning and development. This will help them give healthcare to the vulnerable members of this community."

Dr Hobe aims to re-engineer primary healthcare in rural district hospitals with the hope that these entry-level hospitals will practise more preventive healthcare rather than curative care. She says: "We can achieve this by giving employees the skills, knowledge and support necessary for the task at hand, but also improving retention of staff for prolonged periods to go through the process of community diagnosis, intervention planning and implementation."

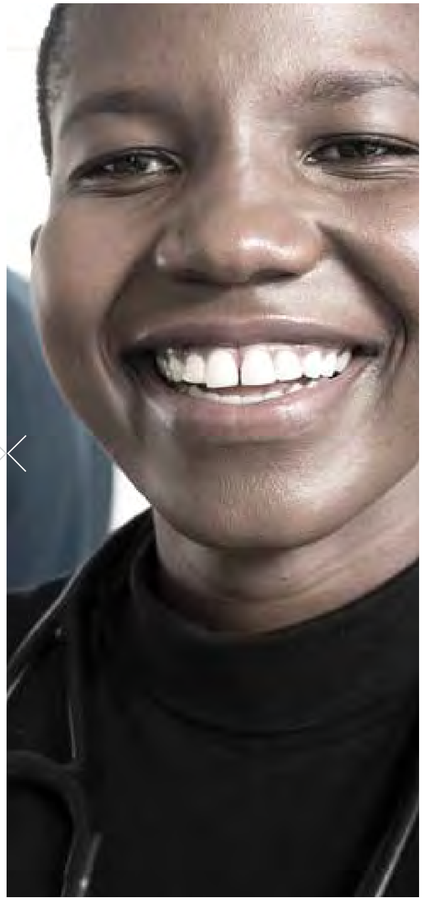
Dr Hobe says the project aims to provide:

- Ongoing training and support for employees in the hospital.
- A resource centre that all staff can access to develop and stimulate their learning.
- An environment that stimulates learning and critical thinking.

"I believe with the learning centre, development of learning modules and developing a decentralised Family Medicine training site, Mseleni Hospital will give an enormous advantage to healthcare workers seeking employment in rural areas," Dr Hobe says. "It would mean they continue to study, research and develop even in a rural area, which is what's currently happening in Bethesda Hospital."

DR HOBE SHARES HER HOPES FOR THE FUTURE

"It would be great if the Department of Health could realise that preventive medical care is much cheaper than curative care and invest more into re-engineering primary health. They should focus on community diagnosis, identify and address social determinants of health in different communities, and employ manpower for community mapping and clustering. They should invest in equitable distribution of healthcare services and personnel, which will solve the issue of oversaturation of healthcare workers in urban areas, while rural communities are left to fend for themselves. They could also invest in reliable data collection systems to illustrate the needs of specific communities."



NDIMANDE

"I hope that public health takes its position as the backbone for health. There is no substitute for the good that public health can achieve."

Professor John Velaphi Ndimande

PROFESSOR JOHN VELAPHI NDIMANDE

Institutional Award: Jubilee District Hospital

CAN WE ATTAIN UNIVERSAL ACCESS TO HEALTH FOR VULNERABLE COMMUNITIES?

Professor John Ndimande believes we can – through improving health facilities and boosting skills and attitudes of healthcare workers

Sixty years ago, a group of Baptist Missionary Society doctors started the Jubilee District Hospital in a garage in Hammanskraal. Today, the level 1 hospital has 551 beds and serves the rural communities of Gauteng, Mpumalanga and the North West provinces. Many of these around 900 000 people suffer from mental health problems, drug abuse, HIV, and high maternal and perinatal mortality rates.

The hospital is situated along the N1 from Polokwane – 50 kilometres north of Pretoria – which exposes it to a large amount of trauma. The location and high volume of work make it difficult to retain healthcare workers, but the hospital hopes to attract talent by introducing the new Jubilee Hospital Training Centre, under the leadership of Professor John Velaphi Ndimande.

The Discovery Rural Fellowship Institutional Award will help bring the Jubilee Hospital Training Centre to life, with the continued support of Sefako Makgatho Health Sciences University (SMU). The clinical skills training programme will run for two years from March 2018 to February 2020.

Heading up the project is Professor Ndimande – Head of the Family Medicine Unit for Tshwane District Health, district family physician and senior consultant at SMU.

Professor Ndimande does research on service delivery to rural communities and developing training grounds for students. He's been a medical practitioner since 1982. "My interest in medicine developed when I was 13 years old. I grew up as a sickly child who spent most of the time with a doctor. The doctor who treated me was very compassionate and I was then motivated to help others. I even visited him in Canada after I became a doctor. He was very happy to see me."

"I was born in Rustenburg and at that time there were not enough African doctors. I told myself that I would work in Rustenburg when becoming a doctor." The idea never faded, and when he qualified he became the third African doctor in the area.

In private practice, Professor Ndimande developed a maternity home at primary healthcare level. "I'm a generalist at heart," he says of his chosen specialisation. "I believe in primary health, especially to underprivileged communities. I was not born in the city so rural medicine is my greatest interest. Even in my undergraduate training, I encourage students to think of the rural communities who need the best treatment. I emphasise preventive medicine. Hospicentric medicine has a shorter impact than primary and community medicine."

Professor Ndimande hopes to solve challenges around health promotion and preventive medicine. An awareness of the conditions of the most vulnerable communities is important, which he aims to achieve through research, awareness campaigns, and to use his influence in the Department of Health to advocate for vulnerable groups.

On what inspired him to work in Family Medicine, Professor Ndimande responds: "Experience of the rural communities and what we can do to improve their health challenges. The social determinants of health at practical level are important. It's important to make our students aware of the needs of vulnerable communities. I am a proponent of universal access to health for the needy."

Professor Ndimande says universal access to health is of utmost importance in South Africa, "My objectives are access to health, improving our health facilities and improving attitudes of healthcare workers in health promotion. Training all healthcare workers (doctors, nurses, clinical associates, dentists, physiotherapists, etc.) will assure universal access to health. The public sector has the potential to improve lives."

The main question Professor Ndimande aims to answer is: "Can we attain universal access to health for vulnerable communities?" His hope for this area of healthcare is to have enough dedicated healthcare workers who are not burnt out or demotivated by the system.

Professor Ndimande plans to create a learning environment at the Jubilee Training Centre by using the funding to buy learning equipment, books for the library, and to develop learning programmes on how to reduce maternal and perinatal mortalities and the scourge of HIV/Aids.

Professor Ndimande shares his wish for the future. "I hope that public health takes its position as the backbone for health. There is no substitute for the good that public health can achieve."

> "Through this study, I hope to create greater awareness of the fact that patients' genotypes greatly impact on their individual healthcare. I also want to encourage more research on this topic, especially in such a genetically diverse country as South Africa."
>
> *Dr Warren Muller*

Preventing organ rejection through a move towards personalised medicine

A specialist physician, Dr Warren Muller has chosen Transplant Medicine as his area of research. He says, "I am passionate about treating cardiovascular disease, especially heart disease. During my time as a medical registrar, I obtained my specialist qualification in Internal Medicine. Since then, I have grown as a physician. My knowledge in transplant medicine has increased and I feel I am better equipped to manage transplant patients."

Due to colliding epidemics of communicable and non-communicable diseases, there has been an increase in chronic kidney disease. This has meant more patients need kidney transplants. Renal transplants are done in Cape Town.

Because they currently lack the expertise to undertake transplant operations at Livingstone Hospital where he works, Dr Muller decided to focus his research on renal transplant medicine, which he says is similar to heart transplant medicine. Dr Muller will collaborate with specialist teams at the University of Cape Town who will help with DNA extraction and genotyping. "The assistance from the Discovery Foundation will enable us to pay for genotyping and DNA extraction, and to present our work at the Renal Congress and publish it in local and international journals."

What made you decide to follow a career in medicine and what motivates you?

Medicine has always fascinated me. I can't pinpoint the exact moment I decided to become a doctor, but I knew very early on that this would be my vocation. It simply felt right. I have always admired medical professionals who serve their communities. Practicing as a doctor in South Africa can be tough, but it is also very rewarding, especially public health. Looking after patients and making a positive impact in their lives motivates me. Part of this, is finding solutions to better patient care. Another appealing factor, is to teach younger doctors and encourage them to train further to improve the quality of healthcare in South Africa. These words by Sir William Osler also guides my thinking,
"The good physician treats the disease; the great physician treats the patient who has the disease."

What will you research and what questions do you hope to answer?

As my research study says, I will be looking at CYP3A5 polymorphisms and their effect on tacrolimus levels in our ethnically diverse renal transplant population. In simpler terms, I will investigate how genetic differences and gene mutations affect the varied need for and metabolism of immunosuppressive medicine in organ transplant patients to lower the risk of organ rejection.

In South Africa there is a shortage of donor organs. So, with recipients of donor organs, the biggest challenge is to prevent rejection of the organ. We have noticed that patients using immunosuppressive medicine, such as tacrolimus, need varying doses. This varying need increases the risk of either organ rejection or exposure to high tacrolimus levels that can cause unwanted side effects. It is extremely important to maintain stable levels of immunosuppressive medicines. I will investigate if there are genetic factors that can explain this wide variability in concentration levels and dosing requirements. We are specifically interested in the cytochrome pathway and enzymes that metabolise medicine, which may explain why some patients metabolise this medicine better than others and have more stable dosing requirements.

What inspired you to focus your research on this topic?

This project excites me because genetics play a big role in how we metabolise medicine and, I believe, genotype based dosing is the future. It is also the first time that a study like this one is being done in South Africa to my knowledge.

Organ rejection and unwanted side effects from immunosuppressive medicines are constant challenges in transplant medicine. Given the shortage of organs, it is important to understand how to maintain immunosuppression to avoid organ rejection. Certain patients, depending on their genes, may be susceptible or resistant to certain medicines. This study may explain the wide variability in the necessary therapeutic medicine levels to help identify patients' reactions to medicines and eliminate unwanted side effects of organ rejection.

MULLER

DR WARREN MULLER

Individual Award : Walter Sisulu University

MENTAL HEALTH

THELA

DR LINDOKUHLE THELA

Sub-Specialist Award: University of Cape Town

DR LINDOKUHLE THELA DREAMS OF A WORLD-CLASS HEALTH SYSTEM FOR ALL

The Durban-born psychiatrist hopes to make a difference in the field of neuropsychiatry

> "It goes without saying that South Africa is the centre of the HIV epidemic, and that HIV is ultimately a neuro-behavioural disease."
>
> *Dr Lindokuhle Thela*

Doctor Lindokuhle Thela dreams of a world-class health system for all. The 34-year-old psychiatrist from Durban, KwaZulu-Natal, is deeply committed to serving a highly vulnerable group of people within our healthcare system – patients suffering from mental illnesses.

"In my childhood I saw there was a need for medical services in my community," Dr Thela says. "I wanted to make a difference in my area. I wanted to discover new interventions that can improve public health systems and service delivery."

Dr Thela is a Fellow in the Division of Neuropsychiatry at Groote Schuur Hospital and the University of Cape Town (UCT). Neuropsychiatry is a branch of psychiatry that deals with mental disorders attributed to diseases of the central nervous system. Dr Thela also helps Professor John Joska – Associate Professor of Psychiatry and Director of the Division of Neuropsychiatry – in teaching medical students and registrars.

From 2006 to 2007, Dr Thela did an internship at Ngwelezana Hospital in KwaZulu-Natal, and in 2008 he did community service at the Hoedspruit Military Base and Bethal Hospital in Mpumalanga. During this time, he grew interested in psychopathology – the scientific study of mental illness – and intervention measures for these conditions. "People with psychiatric disorders are still the most marginalised in the health system. I wanted to advocate for these individuals," he says. Dr Thela is inspired and motivated by "learning and discovering new things, helping people and working with innovative individuals".

He explains that neuropsychiatry is a young field in South Africa, yet the burden of neurological conditions means there's a huge need for subspecialists in the area. Neuropsychiatric disorders are the third leading cause of global disability-adjusted life years (DALY) – a measure of overall years lost owing to the burden of disease.

"Within our country, neuropsychiatry is a much-needed clinical service that would greatly benefit patients who suffer from mental illnesses and are the most vulnerable group within our healthcare system," he says. We need medical professionals that can manage and evaluate the behavioural, emotional and cognitive consequences of neurological conditions such as HIV, traumatic brain injury, epilepsy and movement disorders. These conditions cause morbidity, mortality and disability in patients.

"It goes without saying that South Africa is the centre of the HIV epidemic, and that HIV is ultimately a neuro-behavioural disease," Dr Thela says. Stigma and shame often keep people from getting tested for HIV; while depression, despondency and sometimes substance abuse can cause people to drop out of care.

"Similarly, the epidemic of traumatic brain injury, and the complications of epilepsy (the most common neurologic condition) are frequently associated with behavioural issues," he continues.

"There are few neuropsychiatrists in South Africa and there is a dire need for more people to be trained in the field. Neuropsychiatric disorders are debilitating and are more prevalent in South Africa than we're aware of. "

Dr Thela recently wrote an article in the journal Transcultural Psychiatry entitled "Counting the cost of Afrophobia: Post-migration adaptation and mental health challenges of African refugees in South Africa."

There aren't many studies on the impact of migration on mental health in Africa, and in his research Dr Thela investigated post-resettlement adaptation and mental health challenges of African refugees and migrants in Durban. He found evidence of high levels of mental distress – anxiety, depression and post-traumatic stress symptoms – among the people that he interviewed.

With his subspecialist grant, Dr Thela plans to complete his exit examination towards a Certificate in Neuropsychiatry from the Colleges of Medicine of South Africa, as well as his MPhil Neuropsychiatry from UCT under the supervision of Professor Joska.

"As a young field, and with the burden of disease of these disorders, there is a huge need for subspecialists who can lead teams to provide services, teaching and research at primary, secondary and tertiary care levels," Dr Thela explains. In the future, he wants to be a neuropsychiatrist and train students and young doctors in the field of neuropsychiatry.

THUNGANA

"There is lack of effective treatment for drug abuse and I would like to add to the knowledge that will change this for the better."

Dr Yanga Thungana

DR YANGA THUNGANA

Individual Awards: Walter Sisulu University

IS THERE A LINK BETWEEN PSYCHOSIS AND DRUG USE IN THE EASTERN CAPE?

Dr Yanga Thungana's research seeks to change the lack of data around substance use and people who experience psychosis for the first time

Doctor Yanga Thungana is a Registrar in the Department of Psychiatry and Behavioural Sciences at Walter Sisulu University (WSU). He is currently doing his MMed research project in the Acute Mental Health Unit (MHU) at Dora Nginza Hospital in Zwide Township in Port Elizabeth.

Dr Thungana's research project is entitled, "First episode psychosis in urban South Africa: Prevalence and substance use correlates in an acute mental health unit." The retroactive study includes subjects that were admitted with first episode psychosis between November 2016 and October 2017 at the Dora Nginza Acute Mental Health Unit (MHU)

"We have noted an increase in the use of substances in patients with psychiatric illness, but there is no study done in our area to confirm this," Dr Thungana explains.

"The objectives are to determine the prevalence of substance use in a subset of the psychiatry inpatients – those with first onset of psychosis," Dr Thungana says. "Second, it is to document which substances are used frequently and to estimate the effects of substances on the outcome of their psychiatric illness."

The Dora Nginza MHU has 35 beds and is the only inpatient unit in the city of Port Elizabeth that provides involuntary 72-hour assessment as per Mental Health Care Act 17 of 2002. Dr Thungana says there are not enough centres for people with both mental illness and substance use problems in the Eastern Cape. "I would like to see increased attention to this area as a majority of people with mental illness also have substance use problems."

"I am still very early in my career as a specialist but a few things have stuck with me already, such as the increasing use of illicit substances and their effect on the brain function or pathology," he says.

Dr Thungana was inspired to focus on this specific issue by an increase of abuse of illicit substances, lack of effective treatment and being aware of the extensive damage that illicit drugs do to a person. He says, "South Africa is among the top countries with high levels of substance abuse, especially alcohol abuse. We are also among the top countries with the most dangerous drinking behaviour. The topic is very relevant as every community in the country is affected by the use of drugs."

He explains why he chose psychiatry, "I have always been fascinated by the working of the mind and that led me to wanting to know more about the brain structure and function while I was in medical school. I first thought I would do neurology but after my internship, I was more fascinated by how the brain regulated behaviour and how this can go wrong, so psychiatry became my first choice. Also, I like to help those who are vulnerable and psychiatry offers that opportunity."

Dr Thungana is driven by his desire to help others. "I am from a socially and financially disadvantaged background so from my earliest childhood, I was motivated to make a better future for myself and my family, but most importantly to empower those who are still facing such devastating situations on daily basis," he says.

Dr Thungana earned his MBChB from the University of KwaZulu-Natal and the Nelson Mandela School of Medicine in 2011. He completed a course in Basic Surgery Skills from Livingstone Hospital in 2013; a Diploma in Mental Health from the Colleges of Medicine of South Africa in 2014; and started his four-year registrar training at WSU and Dora Nginza in 2015.

Dr Thungana says of his achievements: "I am motivated daily by the belief that, if I could manage to change my situation, so can another person. I needed help from other people because I could not do it all by myself, so I understand the importance of offering help to others."

MADALA-WITBOOI

Profiling of patients to help guide planning of mental health services

Dr Nombulelo Madala-Witbooi knew she wanted to be a doctor since grade school. She accomplished her dream and has progressed to complete her Registrar training in Psychiatry. She is currently a Medical Officer at Cecilia Makiwane Hospital in Buffalo City in the Eastern Cape. Dr Madala-Witbooi is preparing to write part two of the FC Psych exam to qualify as a psychiatrist and will be doing research towards her MMed.

Please tell us a bit about your research and why it is important.

My research aims to develop profiles of patients who are admitted to the East London Mental Health Unit. I will mainly profile them across socio-demographic backgrounds, their clinical health diagnoses and geographical areas. Mental health is very significant in South Africa. Caring for mental health and the research around this topic are not advanced. This field is also not yet recognised as a subspecialty and I think it should be.

I hope to identify trends and patterns while developing these profiles so that we can learn more about the implications for mental health planning in the region. This profiling will also allow me to submit a mini-dissertation towards obtaining my MMed in Psychiatry. Once this research is done, I also plan to write an article for publication in a medical journal.

How did your interest in mental health develop?

Over the years, I have worked mostly with patients who have HIV. I ended this part of my career working with children infected or affected by HIV. There was a significant link between behavioural science and mental health, and my interest in and desire to pursue a career in psychiatry developed from there.

What do you hope to achieve from your research?

My research topic is focussed on public mental health. I hope the data and use of this data I generate during clinical work can help inform health service planning going forward. As I have mentioned, mental health is an area of healthcare where much still has to be done. I was concerned to see that clinical work and research in mental health are still done in isolation from each other. I believe that health planners can benefit from data generated from clinical work, especially in the Eastern Cape. That is exactly what I hope to achieve. I want to share the findings of my study with health planners to create awareness of the need for greater clinical and research attention in this field.

Where do you see this research taking you in the future?

While I am preparing to write part two of the FC Psych exam and to then qualify as a psychiatrist, I hope this study and my career development can ensure that I become more involved in public mental health matters. I hope to see more clinician involvement in mental health planning and would like to be involved in those processes as a clinician.

With the support from the Discovery Foundation, I can ensure that I have the necessary resources to help me deliver a study of high quality that can have a positive impact on mental health service planning.

What keeps you inspired to be your best and to develop your skills?

I am inspired by the amount of work being done in public health. Even in our settings, we do everything possible to ensure the best quality of care. We all give our best – from the grassroots health workers in rural clinics, those in smaller rural hospitals and in under-resourced bigger hospitals like the one where I work. There are thousands of grateful patients that go through our system. I believe they all deserve better and I stay inspired by making sure that I am part of improving systems and health service planning for better outcomes.

I believe in and live by the words, "Life is a marathon, not a sprint. Therefore, pace yourself and aim to end well".

Dr Nombulelo Madala-Witbooi
Individual Award : Walter Sisulu University

MELATO

Focussed to better identify and treat catatonia – a lethal psychiatric emergency

"I believe mental illness is one of the driving forces in many problems. The more resources and time we can allocate to address mental illness in our communities, the better the health of our people," says Dr Lerato Melato who is currently a Registrar in Psychiatry at Dora Nginza Hospital in Zwide, Port Elizabeth.

A personal experience woke her desire to be a doctor. "It was after my mother fell ill and passed away. I was only 11 years old, but I wanted to understand her condition. In matric, I went to Livingstone Hospital and observed surgical procedures – that ignited my desire further," she says as she prepares to take the next step in her research on catatonia.

A potentially lethal psychiatric emergency from the dysregulation of psychomotor functions, catatonia leads to abnormal speech, movement and behaviour. "It is a psychiatric emergency that is poorly understood. There is limited data on the management of this condition worldwide. At Dora Nginza Hospital, we see many patients presenting with catatonia. The main aim of my research is to identify the value of biomarkers for diagnosis. Another registrar is also completing a study on the validity of a rating scale. With these results, we hope to improve the management of patients in our hospital and even in other regions," says Dr Melato.

What attracted you to your specialisation and what specifically will you research?

I have always been interested in the brain and the mind. In South Africa, we are plagued with trauma and breakdown in our structures. I believe not enough emphasis is placed on addressing the psychological conflict.

Psychiatry provides a holistic approach. We are a part of a community and affected by our surroundings. We can address the issues we identify in our children and work towards raising psychologically well individuals for the future. My research on catatonia management will look specifically at the relevance of serum iron and creatinine kinase levels.

I presented my protocol at the World Psychiatric Association Congress in Australia. My plan is to publish my research internationally and to present my findings to the American Psychiatric Association.

What is the aim of your research and how will it solve the questions you have?

Catatonia has become more prevalent in the Eastern Cape compared with the rest of South Africa and the world. Essentially, I want to know why and if we can predict and prevent its presentation. Through my research I want to understand the association between catatonia and the investigations that we do.

By improving our approach, we can improve the way we apply resources with the hope to identify methods of preventing the condition. I anticipate to identify biomarkers that can help in the management of patients with catatonia. It is a clinical diagnosis and can be missed by inexperienced health practitioners. Having evidence of biomarkers to diagnose and manage catatonia will improve the care and health outcomes of these patients.

What changes do you hope to see in this field?

I hope to see improved recognition and management of psychiatric emergencies. I believe we can also educate other resource-deficient countries by sharing evidence-based research they can use to help their patients. The support I am getting from the Discovery Foundation will help me to access international journals and publications. We will also produce data that is interpreted correctly for the most reliable information that other regions can apply in their treatment protocols too.

How do you stay motivated and inspired to make a difference?

I am inspired by the potential I see in patients. We may not always have a favourable outcome. However, I am always motivated by the improvement that patients' health can have on their families and community. My faith keeps me going and I know that is where this desire in my heart comes from to add to the betterment of society. It may be a small step at a time. I know, "All you can do is your best. All the hardship has a purpose."

THE BURDEN OF MENTAL ILLNESS IN SOUTH AFRICA IS ALARMING AND THERE IS A HIGHER PREVALENCE THAN IN MANY OTHER LOW AND MIDDLE-INCOME COUNTRIES

RESEARCH SHOWS THAT AN ESTIMATED ONE IN THREE SOUTH AFRICANS SUFFER FROM MENTAL ILLNESS IN HIS OR HER LIFETIME

DR LERATO MELATO

Individual Award : Water Sisulu University

MOTHER AND CHILD

AND WOMEN'S HEALTH

JORDAN

SOUTH AFRICAN BREASTMILK RESERVE

Excellence Award

BREASTMILK RESERVE USES TECHNOLOGY, INNOVATION AND PARTNERSHIPS TO ENSURE THAT NO CHILD IS LEFT BEHIND

In a country where water is scarce and electricity is fickle, the South African Breastmilk Reserve is fighting to keep newborn and premature babies alive

The Discovery Excellence Award goes to the South African Breastmilk Reserve (SABR) – a national organisation that supports 100 neonatal intensive care units (NICU) countrywide with its 24 public sector human milk banks and one Reserve bank.

The SABR carries out research and development, innovation, service delivery, and training to reduce the mortality and morbidity rates in newborn and premature babies through the proven method of exclusive breastmilk feeding (EBM), either in the form of mother's own milk (MOM) or donor breastmilk (DBM).

Ms Staša Jordan, Executive Director and Founding Member, explains what the SABR does: "We work in human milk banking, infant survival and the technological advancement of locally-produced state-of-the-art pasteurisation equipment at low cost. Our focus is technologies for good that will render human milk banking accessible to low-resource settings. Our equipment is technologically superior to international brands at a third of the price and proudly South African. In 13 years, we have developed seven generations of pasteurisers and deployed over 44 machines to various hospitals."

With the Discovery Foundation funding, technical expertise of Sostieni, and in partnership with the South African Civil Society for Women's Adolescent and Children's Health, the SABR is embarking on another innovative project: to design, build and deploy low-cost container human milk banks, breastfeeding shelters and support clinics for mothers and children that are green and fully self-sustainable. The pilot programme will be implemented in partnership with the Limpopo Department of Health in an ECD crèche in Mankweng, Limpopo.

Ms Jordan explains the necessity of the project. "Having worked extensively in rural areas, the SABR has found that limited access to power and water hinders access to health resources. Furthermore, without access to transport, travelling even 10 km to the nearest clinic is a far distance for a mother with a new baby and toddlers who must accompany her. Mothers need 121 litres of water per week to prepare substitute formula. In addition, the lack of potable water, and the areas of drought across the country, renders the use of formula risky. It results in higher mortality from acute malnutrition and diarrhoeal disease."

She encourages all mothers everywhere, particularly in low-resourced environments, to practise exclusive breastfeeding. "Breastfeeding is a life-saving strategy that promotes food security and improved outcomes for infants globally."

Breastfeeding is a universal practice that benefits all populations. "Failed breastfeeding and the consequences thereof are more evident in poor communities where mothers often can't afford formula, leading to dilution, malnutrition and stunting in children," she explains.

The SABR aims to solve these problems by giving underserved communities in remote areas access to primary care breastfeeding and human milk banking services.

Ms Jordan says: "The containers will be equipped with solar power and an independent, replenishable reservoir of water and can be transported by truck and installed onsite."

Ms Jordan's activism for women and child health is personal. In 2007, four years after she founded the SABR, her son Maximillin died of asymptomatic pneumonia. She shares her story.

"I found myself racing to the hospital, in the thick Johannesburg traffic. I was running throughthe parking lot of Milpark Hospital towards the Emergency Room, holding my nine-week-old dying baby, crying uncontrollably and screaming 'save my baby's life'. It was then that I realised the loss and devastation of having to bury your own child."

"Through the breastmilk bank project, in its infancy, we have brought support to many a parent, like me, screaming inside for their baby's life, feeling powerless and defeated at a bedside in the NICU. I suddenly knew how helpless a mother feels when unable to lactate after giving premature birth and often while fighting for her life. It was in this life-defining moment that I understood clearly the key role that donated breastmilk plays in supporting infants and mothers in the NICU. I became passionately driven to prevent parents from suffering as I did and I was ever more determined to make a difference to the outcomes of children's lives in South Africa."

The SABR wants to see improved access to primary healthcare services through upstreaming . By bringing the container clinics closer to communities, mothers and children have better access to health services, so preventing high mortality rates in children.

Ms Jordan says, "We hope that our containers will alleviate the burden of disease through preventive medicine and by offering rural communities a go-to point and support system that will prevent, for example, the hospitalisation of children due to diarrheal disease, or severe and acute malnutrition."

MANZINI

"The aim of my specialisation is to provide specialist cardiology services to the children of Limpopo in their own province as much as possible and so reducing the number of children travelling weekly to access such services here in Gauteng as is currently the case. Once I am qualified, I will return to my home province to provide specialist cardiology services."

Dr Dellina Manzini

DR DELLINA DUMELA MANZINI

Sub-Specialist Award: University of Pretoria

DOCTOR DELLINA MANZINI IS DETERMINED TO SAVE THE HEARTS OF CHILDREN

The life-long learner lives by the motto "caring through serving"

Doctor Dellina Manzini plans to make a difference in the hearts of children. In May this year, she started her subspecialist training in Paediatric Cardiology in the Steve Biko Academic Hospital at the University of Pretoria (UP).

The Paediatric Cardiology Unit is the only one north of Johannesburg and currently cares for children from Northern Gauteng, North West Province, Limpopo and Mpumalanga. Dr Manzini explains that congenital and acquired heart disease in children is a significant cause of morbidity and mortality. Through her work and research, she hopes to answer some questions on "how we can be of better help to our patients".

There's a massive shortage of paediatric cardiologists in South Africa. In a recommendation letter on behalf of Dr Manzini, Professor Farirai Fani Takawira – the Head of Department of Paediatric Cardiology at UP – writes that there are only 40 trained paediatric cardiologists in the country to date. He further explains that half of them work in the private sector. This means there are only 20 paediatric cardiologists working in public health – a staggering one per three million people.

In her current role, Dr Manzini trains as a paediatric cardiologist but also teaches students and conducts research. She explains why she chose this field. "I was attracted to the subspecialty based on the paediatric cardiology service need I saw in my home province of Limpopo." She has a keen interest in the function and pathology of such a vital organ as the heart. "I was exposed to paediatric cardiology as a registrar and was fascinated by all the aspects of echocardiography (a sonogram of the heart) and cardiac catheterisation (a diagnostic procedure that gives information about heart structure and function)."

To date, there are no paediatric cardiologists in Limpopo. Dr Manzini says, "The aim of my specialisation is to provide specialist cardiology services to the children of Limpopo in their own province as much as possible and so reducing the number of children travelling weekly to access such services here in Gauteng as is currently the case. Once I am qualified, I will return to my home province to provide specialist cardiology services."

Dr Manzini is optimistic about the future of public health. "I would like to see cardiology services being more easily accessible in the rural provinces of South Africa. I hope to see health services in South Africa reach the level of the best in the world," she says. "I am inspired by the spirit of the people of South Africa. I am also inspired by the difference made by good healthcare services."

One look at Dr Manzini's CV and you'll know she's a lifelong learner dedicated to her field. She has an MBChB from the University of Cape Town (UCT) and a diploma in Child Health from the Colleges of Medicine of South Africa. She also completed an FC Paed(SA), as well as her MMed at the University of Pretoria.

Dr Manzini speaks English, Afrikaans, French, Xitsonga, Sepedi and isiXhosa; and she's done several postgraduate courses in, among others, Clinical Practice and Paediatric Life Support as well as Management of HIV/Aids and STIs. Throughout her academic career, Dr Manzini has shown exceptional leadership skills – in 2005 she was selected to represent South Africa at the International Youth Leadership Conference in Czech Republic.

She's impressive, yet humble. "As a child I saw my mother work tirelessly as a nurse and was inspired to work in the health sector. I also saw that there was a great need for more healthcare professionals in my local community as people would wait long hours to access healthcare in local facilities."

Her life motto is, "Caring through serving. It has been my desire to improve the life of others by serving them to the best of my ability, whether at home or at work."

BUSINGE

FUTURE MOTHERS ARE IN
GOOD HANDS

DR CHARLES BUSINGE

Individual Award : Water Sisulu University

Dr Charles Businge investigates how iodine deficiency relates to preeclampsia – a pregnancy complication characterised by high blood pressure and organ damage

Doctor Charles Businge seeks to determine whether iodine deficiency is a major risk factor of preeclampsia among pregnant women in rural Eastern Cape.

The specialist Obstetrician and Gynaecologist at Nelson Mandela Academic Hospital (NMAH) and Senior Lecturer at Walter Sisulu University (WSU) – is studying toward his PhD in Medicine at the University of Cape Town (UCT).

Dr Businge wants to identify factors that will improve reproductive health outcomes, and find innovative ways to screen for subclinical non-communicable diseases (NCDs) among women of reproductive age. By doing this, he hopes to mitigate the early onset of chronic NCDs.

Dr Businge describes his research problem. "Iodine deficiency in pregnancy is increasing worldwide, even in countries thought to be iodine sufficient. The risk of iodine deficiency and its complications in pregnancy is higher in countries like South Africa and the Democratic Republic of Congo, which had endemic goitre before iodine supplementation."

"Preeclampsia is one of the leading causes of maternal and perinatal morbidity and mortality here in South Africa and around the globe. Although several risk factors for preeclampsia have been identified, the exact trigger is unknown. Sub-clinical hypothyroidism (SCH) in pregnancy has been identified as a risk factor for preeclampsia. However, the direct relationship between preeclampsia and iodine deficiency, which is the leading cause of SCH, has not been widely investigated."

He explains the local connection. "South Africa is one of the sub-Saharan countries with iodine-deficient soils. Although salt iodisation has been in practice, about 30% of the population are not yet adequately reached. In addition, rural communities and subpopulations that depend on processed foods are likely to be exposed to diet deficiencies in iodised salt."

"Environmental factors may further reduce the bio-availability of iodine from the diet." Dr Businge adds. "There is likely to be a significant proportion of expectant mothers with iodine deficiency and SCH secondary to iodine deficiency."

"SCH hypothyroidism resembles pregnancy symptoms and can go unrecognised and untreated," he says, "Yet it is associated with short-term and long-term complications to mothers and their babies, especially in populations at risk of iodine deficiency and exposure to inhibitors of iodide uptake by the thyroid gland."

Dr Businge outlines his goals. "I wish to establish if pregnancy among women in rural Eastern Cape predisposes them to iodine deficiency and whether this increases the risk of preeclampsia and its complications. If so, we'll have identified the gap in healthcare, which requires iodine supplementation among women at risk of iodine deficiency in pregnancy."

But the work won't stop there. "After the current project I will focus on how macro and micronutrient deficiencies in pregnancy may cause epigenetic changes of the DNA of babies in the womb and how this predisposes them to cardiovascular disease and other NCDs," he says.

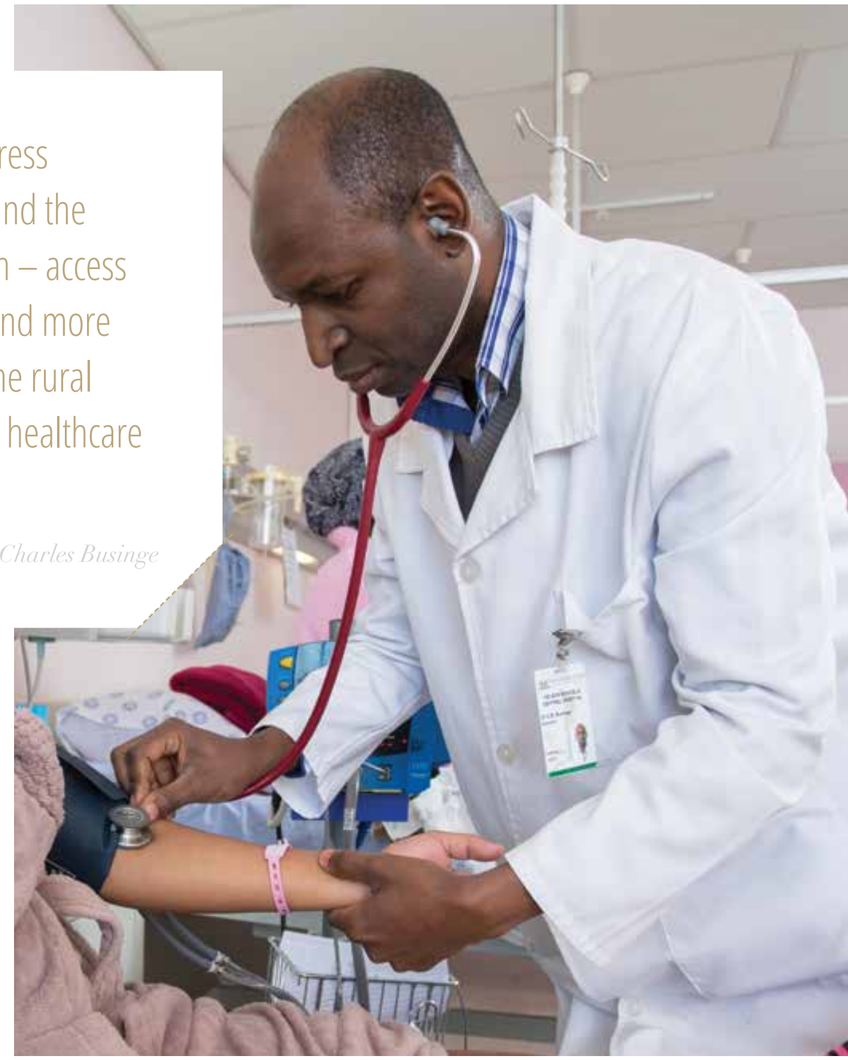
Dr Businge qualified as a junior doctor (MBChB) in 1997 from Makerere University Medical School. He returned to Uganda years later and graduated as a specialist Obstetrician and Gynaecologist in 2004. In 2007, he became the team leader of a project on human papillomavirus studies at the Uganda Virus Research Institute/Medical Research Council (UK). He joined WSU the same year, where he's been a doctor, teacher, researcher and mentor ever since.

"I am optimistic about the future of public health in South Africa," Dr Businge says. "Not only are health institutions producing more doctors and allied health workers; there is an increased awareness among healthcare workers and the general public of the impact of macronutrition, obesity and the lack of exercise on the disease profile in South Africa. These are some of the intermediate drivers of NCDs that are emerging as the major causes of premature death, after HIV."

"The mandatory community services by recently qualified health workers, if supervised by senior personnel, and the proposed implementation of National Health Insurance, are two other strategies that will improve equity in access to healthcare," he concludes.

"There's urgent need to address micronutrient malnutrition and the social determinants of health – access to education, employment and more improved infrastructure in the rural areas – if sustainable public healthcare is to be achieved."

Dr Charles Businge



FINE

> "I have fallen in love with the area, the people and the work."
>
> *Dr Nick Fine*

DR NICK FINE

Individual Award: Walter Sisulu University

THRIVING ON TAKING ACTION TO POSITIVELY TOUCH PEOPLE'S LIVES

Dr Nicholas Fine is one of two Registrars in Family Medicine, part of Walter Sisulu University's decentralised Family Medicine Registrar Programme, at Zithulele Hospital. Following a two-year internship at Chris Hani Baragwanath Academic Hospital in Soweto, Dr Fine joined the healthcare team at Zithulele in 2015, first completing community service and then training as a medical officer. At this 147–bed hospital in the deep rural Eastern Cape, he is part of a dedicated team that takes care of the healthcare needs of 130 000 people from the beautiful Wild Coast.

Zithulele Hospital may be smaller than the average urban government healthcare facility, but the hospital and the people who serve the community have a big vision. A vision to "become a model of excellence in rural healthcare by developing good management practices and putting patients first." This is exactly what Dr Fine, who has a love for the ocean and scuba diving, says he thrives on. "I've always revelled in the people and community aspect of medicine and I want to further explore the social aspects of health while providing holistic, quality care."

In such a small rural hospital, it is often necessary for doctors to have diverse skills. "I feel that being adaptable in various situations is useful. Each stage of my life teaches me something different, so my aims, goals and ideas are continually changing," says Dr Fine, who decided to study medicine following work with children with learning difficulties. Today, Dr Fine works in all areas of care at Zithulele and is responsible for patient management in wards, clinics and the hospital's casualty and outpatient departments. He has a teaching role at the hospital and at two primary care facilities. With the grant he received from the Discovery Foundation, Dr Fine will also start research on the after-care of women who give birth by caesarean section in a rural setting to identify ways to better the personal and medical care of patients.

"Zithulele Hospital delivers about 2 000 babies each year and up to 600 of these deliveries are by caesarean section. With my research, I want to understand what women experience after a caesarean section so that we can implement effective management of these patients and their babies," says Dr Fine. This management protocol he wants to develop includes making sure patients' pain is well-controlled, an area that was of particular interest to Dr Fine who also holds a Diploma in Palliative Care. His research will also delve into social aspects. Some of which include the experience of breastfeeding and bonding between mother and baby, how women experience their return to mobility after a caesarean section, and whether or not they are adequately functional by the time they are discharged from hospital.

Dr Fine also hopes to develop, as part of his protocol, a follow-up home visitation programme for mothers and babies.

The study, which Dr Fine expects to complete in 2020, will involve an isiXhosa speaking person from the local community doing open-ended interviews with about 100 mothers. Without a language and cultural barrier, Dr Fine believes that patients will express themselves adequately. By excluding health professionals from this interview process, he hopes to get a more accurate view by ensuring there is no partiality to saying what the interviewer may want to hear.

He says, "I look forward to the results, which will allow us to design a management protocol for caesarean sections that is specific to a rural setting. Hopefully, this is just a stepping stone for further research that can ensure the best care both from a medical and human perspective, especially in early bonding between mothers and infants."

Dr Hans Hendriks, senior lecturer at Walter Sisulu University is the supervisor of this study and says, "There is a great need in this Eastern Cape community to understand the needs of women who give birth by caesarean section. The outcome of this study can inform future clinical care in this important area. Given Dr Fine's vast experience and commitment to good pain management, he is well informed to ensure this study answers this question and helps us understand relationship building and functional ability to make sure the hospital and staff can provide the best possible care."

About the future, Dr Fine, who has already made a big difference at Zithulele, says, "I have fallen in love with the area, the people and the work. I hope to continue working here for many years. With the experience gained here, I would also like to branch out to other rural hospitals in the Eastern Cape. I thrive most when I see the impact my actions have on others' lives. I will always continue to push for the wellbeing of those who need help."

ZITHULELE HOSPITAL HAS

147

BEDS

AND PROVIDES HEALTHCARE SERVICES TO

130 000

PEOPLE FROM AROUND THE BEAUTIFUL WILD COAST.

ZITHULELE HOSPITAL DELIVERS ABOUT

2 000

BABIES EACH YEAR

600

OF THESE DELIVERIES ARE BY CAESAREAN SECTION.

MASWIME

A CLOSER LOOK AT TISSUE THAT CONNECTS MOTHER AND BABY – THE PLACENTA AND HIV

Specialist Obstetrician and Gynaecologist at Chris Hani Baragwanath Academic Hospital in South Africa, Dr Salome Maswime, recipient of the Trailblazer and Young Achiever Award from the President in 2017, has received the Discovery Foundation MGH Fellowship Award. This young clinician scientist is visiting Massachusetts General Hospital to find answers academics need about causes of stillbirths in HIV positive mothers.

What has your experience at Massachusetts General Hospital been like so far?

It's been amazing to meet some of the best scientists and clinicians in the world. It is a very welcoming and inspiring environment. Everyone is busy doing something big, on the cutting edge of medicine. I have been introduced to global leaders in different fields, all willing to listen to what I am doing and how they can contribute to it. There is a lot of partnerships with African universities, especially Uganda, Ghana and Kenya. I have also seen marked differences between the way we interact with our patients, and the patient centred approach at the Massachusetts General Hospital. There are basic practices that do not cost anything that we could easily adapt for the public sector to improve women's experiences. The use of technology in avoiding foetal complications has also been good to observe. I find this exposure enriching and inspiring.

How do you see the future in this field of research and your work?

I see myself becoming a research leader and a global expert in the field of women's health, and contributing as a scientist to advancing knowledge locally and internationally. My research interests are both in basic sciences and public health, and I will contribute to knowledge, while changing or improving clinical practice.

What motivated you to become a doctor?

Growing up I knew I wanted to become a doctor. But, I also wanted to study drama because of my passion for the arts. Towards the end of high school, it just made more sense to study medicine because I felt I could contribute more to humanity. I quickly got frustrated and wanted to change to performance arts. I was strongly advised to finish my medical degree. So, I have spent most of my years in medical school studying during the week and creating drama productions over weekends.

Do you have a quote or reading that inspires you?

I find the Chinese proverb "A journey of a thousand miles begins with a single step" inspirational.

SOUTH AFRICA, ACCORDING TO UNAIDS HAS THE LARGEST HIV EPIDEMIC IN THE WORLD

19%

OF ALL THE PEOPLE IN THE WORLD WITH HIV LIVE HERE

WITH THE BIGGEST GOVERNMENT-FUNDED PROGRAMME IN THE WORLD

95%

OF PREGNANT WOMEN ACCESS TREATMENT OR PROPHYLAXIS TO PREVENT THEIR BABIES FROM BEING INFECTED

CHRIS HANI BARAGWANATH ACADEMIC HOSPITAL, THE TEACHING HOSPITAL FOR THE UNIVERSITY OF THE WITWATERSRAND MEDICAL SCHOOL, IS THE THIRD LARGEST HOSPITAL IN THE WORLD THAT REGISTERS OVER

600 000

IN- AND OUT-PATIENT CASES

20 000

BABIES DELIVERED A YEAR

MASSACHUSETTS GENERAL HOSPITAL MANAGES UP TO

3 700

DELIVERIES IN A YEAR, MANY OF THEM WITH COMPLICATIONS OR NEEDING OBSTETRIC INTERVENTION

DR SALMOME MASWIME

Massachusetts General Hospital: Fellowship Award

TSHIKOSI

DR RENDANI TSHIKOSI

Sub-Specialist Award: University of Cape Town

EVERYONE DESERVES GOOD REPRODUCTIVE HEALTHCARE

Dr Rendani Tshikosi is committed to returning to Limpopo after training as a subspecialist in reproductive medicine

Doctor Rendani Tshikosi is a Fellow at the University of Cape Town's Reproductive Medicine Unit (RMU) in the Groote Schuur Hospital. Since March, he's been receiving subspecialist training in reproductive health under the guidance of Professor Silke Dyer, who is respected throughout Africa and the world for bringing reproductive health services to impoverished communities.

"My training is only possible because of the funding and I'm very blessed to be given this opportunity," Dr Tshikosi says. The 37-year old hopes to return to his home province of Limpopo where he'll use his knowledge to uplift communities riddled with reproductive health problems.

"We need to make quality healthcare accessible to all South Africans, including those from urban and rural areas," Dr Tshikosi says. His hope for the future of reproductive health in our country is that each district hospital would have a specialist running it, and that each province would have a tertiary hospital.

"The aim for now is to complete my fellowship and aspire to make a difference in our health and training system," Dr Tshikosi says.

Dr Tshikosi graduated with an MBChB from the University of KwaZulu-Natal in 2005. He says his career kicked off and his love for medicine really started during his internship at Tshilidzini Hospital from 2005 to 2006. "I loved being a clinician and I enjoyed every moment of my internship. We were five interns in that hospital and we worked as a team the whole year."

From 2006 to 2007, Dr Tshikosi did community service at Seshego Hospital. "We drove around the rural areas of Polokwane doing outreach. Most of our patients were pensioners and people on chronic medication. The genuine smiles and warm welcomes we received from the clinic staff and patients really motivated me to do more outreach," he says.

Dr Tshikosi became a senior Medical Officer at the Polokwane-Mankweng Hospital in 2008, and six months later he opened a private practice in Flora Park Medical Centre, Polokwane. He also did emergency room consulting in Nelspruit, and was a trauma officer at the Polokwane Mediclinic.

"I also had to find time once a week to help in a men's international clinic. I worked almost seven days a week with no rest. I spent five years driving around three provinces working harder than an ant," he says.

In 2013, Dr Tshikosi joined the Department of Obstetrics and Gynaecology at UCT, where he impressed the Head of Department, Professor Lynette Denny. In her letter of recommendation for Dr Tshikosi, Professor Denny writes: "Dr Tshikosi is an outstanding doctor with an impeccable record in our department. He is particularly noted for his clinical skills and commitment, his dedication to patients, his compassion and congeniality. He is a true professional who does the profession proud.

His patient-centredness is such that he always goes "the extra mile" and is especially fond of teaching colleagues, junior doctors and nurses to ensure overall high quality care."

Professor Denny describes Dr Tshikosi as curious, a reader of academic journals and dedicated to South Africa and our health system. "He is committed to returning to Limpopo after being trained. There are no reproductive health specialists in that province and he will be a major asset to their health system," she writes.

Dr Tshikosi says gynaecology became his passion in his fourth year of medical school. "My discipline has both medicine and surgery, and I love doing both," he says. He's studying reproductive health because he loves it, but also because he wants to educate and develop more people across the country and continent in the discipline. He says he wants to lead in continuous research and innovation in the development of this field of medicine.

Dr Tshikosi concludes: "I draw my inspiration from everyone around me, past life experiences and the edge of wanting to learn more. Being a black South African in a country with such rich history makes you want to work hard every day. My life motto is that I always think I can do better. Stay humble, enjoy life and serve your God."

MFEKA-NKABINDE

CREATING A SAFER WORLD FOR GIRLS AND BOYS

Doctor Nompumelelo Gloria Mfeka-Nkabinde's research explores how rural teenagers perceive their sexuality and fertility

Doctor Nompumelelo Gloria Mfeka-Nkabinde has known that she wanted to be a doctor since she was a little girl. "By age 10 I was making business cards and posters for my practice," she says. "The motivation to become a doctor was my father. He was a sickly man who was in and out of hospitals, and I would often assist with administering his insulin injection and taking care of him even in his last days. His dream was that one day he would hear my name being called out on the hospital intercom."

Today, Dr Mfeka-Nkabinde is a family physician and lecturer in the Department of Family Medicine at the University of KwaZulu-Natal (UKZN). Her PhD research is on "Adolescent constructions of fertility in the context of high adolescent pregnancy in a rural district of KwaZulu-Natal, South Africa".

Dr Mfeka-Nkabinde is investigating high adolescent pregnancy in the uMkhanyakude District. "This district has the highest facility delivery rate for girls under 18 years in KwaZulu-Natal, and the third highest in South Africa," she says.

The 2015/2016 report by the District Health Barometer indicates that 8.7% of all babies delivered in public health facilities were born to teenage mothers, which is higher than both the national average (7.1%) and the national target (6.8%). uMkhanyakude District has an astounding figure of 10.9%.

Dr Mfeka-Nkabinde will follow a qualitative approach: "The goal of this research is to explore how adolescents construct their fertility in the context of rurality and to understand factors and processes that influence their choices regarding fertility. In order for rural adolescents' sexual and reproductive health to be a target of interventions, their perspectives regarding how they perceive their sexuality and fertility must be acknowledged and appreciated."

DR NOMPUMELELO GLORIA MFEKA-NKABINDE

Academic Fellowship Award: University of KwaZulu-Natal

Dr Mfeka-Nkabinde explains how she became interested in teenage pregnancy.

"I had several years of experience working as a family physician in Bethesda Hospital, a rural district hospital in the uMkhanyakude District in Northern KwaZulu-Natal. During my time of practicing as a rural doctor, I was responsible for initiatives to improve health services in response to the unacceptably high burden of sexual and reproductive health problems among adolescent girls. One such initiative was establishing and coordinating the ZAZI committee. The ZAZI project was conceived to conduct ZAZI camps at high schools in the Jozini sub-district. The word "ZAZI" means 'know thy self' and is a government-endorsed strategy to reduce teenage pregnancy."

Dr Mfeka-Nkabinde's team invited 150 to 200 girls from high schools most affected by teenage pregnancy in the Jozini sub-district to the ZAZI camps, which ran over a two-day period during school holidays and adopted a comprehensive and holistic approach, with emphasis on:

- Providing effective sexual and reproductive health services to adolescent girls, like contraception and HIV testing
- Sexual and reproductive health education
- Providing career guidance through contact sessions and encouraging girls to stay in school

She describes the significance of her research: "In every region of the world – including South Africa – girls who are poor, poorly educated or living in rural areas are at a greater risk of becoming pregnant than those who are wealthier, well-educated or living in urban areas."

Despite landmark scientific discoveries – such as contraception and healthcare interventions like adolescent and youth-friendly health services, school health teams and the Choice on Termination of Pregnancy Act (1996) – adolescent pregnancy has been identified as a major public health problem in South Africa resulting in medical and socio-economic consequences."

Dr Mfeka-Nkabinde hopes to make a real change "I would like to see boys and girls receive comprehensive sexual and reproductive health education that will enable them to make informed decisions about their sexual and reproductive health, and that these decisions are free from discrimination, coercion and violence."

"Nothing happens by mistake."

NALEDI

The Chief Director of Health Programmes in the Western Cape says her journey into public health was inevitable

Dr Tracey Naledi – a Public Health Specialist and Chief Director of Health Programmes in the Western Cape Department of Health – had barely started school when she knew she wanted to be a doctor. She can clearly remember the day when Doctor Jacob Seobi opened the first medical practice in Duduza Township near Nigel where she grew up. Until then, residents had to go into town if they needed medical help.

"He really had a profound impact on me and what I dreamed was possible. I wanted to be just like him," she says, then smiles as she remembers how she pretended to be sick so she could go and visit him. "I saw somebody like me who was a doctor and he planted the seed of that dream in me. My parents made me repeat the words over and over again – I want to be a doctor and I can be one. It became something I had to do. Everything in my life became about achieving this goal." And she did it!

Today, Dr Naledi's goal is to inspire all young women to believe in themselves and to achieve their dreams. Her PhD research, for which she received a grant from the Discovery Foundation, focusses specifically on the impact of the Women of Worth Project. This empowerment and social protection programme touches the lives of ten thousand young women between the ages of 19 and 24 in Klipfontein and Mitchells Plain in the Western Cape.

Adolescent women between 18 and 24 are three and a half times more likely to have HIV than boys that age. Dr Naledi says only a third of the HIV positive girls in their cohort are virally suppressed, which means the vast majority are not taking their medicine regularly. She also says that in the same cohort more than half of those who are HIV negative don't believe they can get HIV.

Funded by the Global Fund to Fight Aids, Tuberculosis and Malaria through the South African National Aids Council and the Western Cape Department of Health, the programme provides adolescent-friendly health and social services that focus on the needs of young people. The programme also offers 12 empowerment sessions on topics like healthy living, sexual education, writing a CV and finding a job.

Another area that Dr Naledi's research will test is the effect of conditional cash transfers on the behaviour of young women enrolled with the Women of Worth Project. Half of the participants are randomly selected to receive R300 when they attend an empowerment session. Dr Naledi hopes to see whether or not the modest stipend has any effect on the way they interact with the sessions and health services in general.

"The whole project is trying to build them up from the inside for them to have the confidence to do things for themselves," she says. "It's about giving them a reason to live, to get a job or to have a business; to keep themselves healthy by taking HIV tests and using contraceptives. We want them to build self-efficacy; to want to do something with their lives."

Dr Naledi says once she has enough information, she aspires to create a theory of change that can guide the government on which elements of the study to implement in society.

"I was destined to be in public health; it gives me a great sense of peace and joy." She loved her time working as a medical officer in Khayelitsha, but always felt like she wasn't doing enough. "A child would come in with kwashiorkor and I'd stabilise his condition, but in no time he'd be back. I was trying to put my fingers in a water can that had multiple holes but I didn't have enough fingers; the water was just seeping out."

With her current work and research in public health, Dr Naledi can get closer to the root of the upstream causes of diseases. "We need to reduce the burden of disease so health systems can cope better." Social determinants like poverty, lack of education, unemployment and premature motherhood are making girls vulnerable to diseases and mental illnesses like anxiety and depression. The Women of Worth Project aims to get girls to believe in themselves, to build resilience and to give them access to information and resources that aid their empowerment.

Dr Naledi's work will put young women on a path to know their worth and to realise that anything is possible – much in the same way her life was changed by the first doctor she met in the township of Duduza.

DR NONCAYANA TRACEY DAWN NALEDI

Academic Fellowship Award: University of Cape Town

PAEDIATRICS

ONE SMALL TEST CAN POTENTIALLY MAKE ALL THE DIFFERENCE IN PROTECTING LITTLE HEARTS

Dr Ditheko Seefane is a third year registrar in the Department of Paediatrics and Child Health at Dr George Mukhari Hospital where she works in the Wards and Outpatient Department.

Her passion is to care for children and in this tertiary hospital north of Tshwane, she is known as a "hardworking registrar and great leader who is committed to the public health sector." The soft spoken Dr Seefane wants to qualify as a paediatrician. Moving towards this goal, she started a research project that can better the health of many of the 10 000 babies born at Dr George Mukhari Hospital every year.

"Her study is critical to our and other communities. It can help us change the protocol to screen newborn babies for heart disease," says Professor Mawela, the study co-supervisor and Head Department of Paediatrics and Child Health at Sefako Makgatho Health Sciences University. In the public health sector, antenatal attendance is often poor and there are no routine scans available to pregnant women. With a limited number of beds, many women and their babies are discharged from hospital only six hours after normal vaginal deliveries.

This leaves very little time for physical examination and in many babies who look healthy, the possibility of a critical heart defect can be easily overlooked. All it takes to identify this condition is a non-invasive pulse oximetry screening – a test that is part of routine screenings in many other parts of the world.

"A pilot study on the effectiveness of pulse oximetry screening has already been done in Cape Town. It is a fairly simple test, which involves measuring a baby's oxygen levels about three times over a set period by placing a pulse oximeter on the baby's right hand or feet ," explains Dr Seefane.

She calls the support from the Discovery Foundation a "true blessing" and says it will help her achieve what she has to do. Her task is to screen as many as 227 babies, between six and 72 hours after birth, in her three-month study.

Every baby will undergo the pulse oximetry screening. If oxygen levels are lower than 90% after three tests, babies will be referred to the paediatric cardiologist for detailed scans of their hearts. "I am excited by this study because it can potentially save many children's lives through early detection and proactive management of heart defects. I hope to show the feasibility of the test, to get an idea of the incidence of infant heart disease at our hospital, and to describe the types of cardiac lesions we find in affected babies," says Dr Seefane who is an avid netball player and exercises daily to stay in top physical shape.

She says, "I love the community and want to give babies and children the best care. That is why I wake up happy every day, ready to do my best. Through this research I want to increase awareness of childhood heart disease in our community. Many babies show symptoms six weeks after birth and early detection can ensure better health outcomes and lower the costs of delayed treatment. Ultimately, I hope it will give enough evidence to support the implementation of a screening programme or a protocol for newborn babies before discharge in all settings."

Dr Seefane knew she wanted to save lives when a fellow classmate was injured. She says, "All the children ran away at the sight of the blood. I was the only one who stayed and called for help. From there, I studied hard to qualify for bursaries. My own children are my motivation to always do my best. I try to be one person at work and at home and helping people makes me happy. I have come a long way and I remain inspired by my faith as I work towards further specialising in neonatology and possibly paediatric cardiology," says Dr Seefane about the love for her work and life.

DR DITHEKO SEEFANE

Individual Award: Sefako Makgatho University

SEEFANE

DR GEORGE MUKHARI ACADEMIC HOSPITAL DELIVERS

10 000

BABIES EACH YEAR

CONGENITAL HEART DISEASE IS THE MOST COMMON INHERITED DISORDER IN NEWBORN BABIES

CRITICAL CONGENITAL HEART DISEASE IS LIFE THREATENING AND REQUIRES SURGERY OR CATHETER-BASED INTERVENTION WITHIN

28

DAYS AFTER BIRTH

OR WITHIN THE

1ST

YEAR

UP TO THREE BABIES IN EVERY 1 000 ARE BORN WITH CRITICAL CONGENITAL HEART DISEASE

3 IN 1 000

THE HEALTH OUTCOMES OF BABIES WITH CRITICAL CONGENITAL HEART DISEASE ARE POOR IN AREAS WHERE THERE ARE NO SCREENINGS IN PLACE FOR THE CONDITION

KUBHEKA

DR SIBUSISO KUBHEKA

Sub-Specialist Award: University of KwaZulu-Natal

ALL CHILDREN DESERVE GOOD HEALTH

Doctor Sibusiso Kubheka believes that by helping children, we can improve public health from the start

Doctor Sibusiso Kubheka embodies the words of his favourite quote by Mahatma Ghandi: “Be the change you want to see in the world.”

In July this year, Dr Kubheka embarked on an important and thrilling adventure: he started his subspecialist training in Paediatric Infectious Diseases at the Nelson Mandela School of Clinical Medicine (NRMSM) at the University of KwaZulu-Natal (UKZN).

Dr Kubheka is passionate about child health. “All children deserve good health for development and reaching their full potential. I feel it is where we still have a chance to do more good by preventing the effects of disease on a developing mankind.“

He currently works in the Paediatric Infectious Disease Unit in King Edward Hospital in an outreach and research capacity. The 37-year old is doing ongoing research on the mortality and associated risk factors in children with burns at Edendale Hospital. He’s also been involved in innovative ways to improve retention in care and virological suppression in children and he runs the hotline for KZN Paediatric Diseases.

Dr Kubheka firmly believes that his subspecialist training will benefit disadvantaged children who are at risk of getting HIV. He plans to do more HIV research, concentrating on convenient HAART (highly active antiretroviral therapy) options for children under three years. HAART focusses on decreasing a patient’s total burden of HIV, preventing infections that could lead to death, and maintaining a healthy immune system.

Paediatric Infectious Disease is a critical speciality in KZN owing to the high burden of HIV and other infectious diseases. There are currently only four subspecialists to serve a population of 10 million children.

Dr Kubheka says his love for child health developed during his internship at Ladysmith Provincial Hospital from 2007 to 2008. “There was a new enthusiastic paediatrician who was head of the unit who taught and inspired me to join that path,” he says. During his community service at Estcourt Provincial Hospital, he continued to pursue a path in paediatrics. From there, it was clear what he had to do. “I eventually moved to Kind Edward Hospital and worked as a medical officer in the Paediatrics Department. This is where I was exposed to all the possibilities and I decided to join the Registrar Programme.”

After matriculating from Siyamukela High School in Madadeni, KZN, Dr Kubheka completed a course in industrial engineering, but he didn’t feel that it was the right career for him. Inspired by his late uncle who had worked as a midwife and encouraged him to go into medicine because of his good grades, Dr Kubheka decided to go to medical school. He completed his MBChB at the University of Limpopo Medunsa in 2006, where he was also an avid soccer player.

Dr Kubheka pays homage to his late father, a prominent figure in his life that inspired him to achieve greatness. “He only went up to Grade 2 and became a farm labourer. He always stressed the importance of education. He was a hard worker. He managed to put us through university through his taxi business. All my siblings have a qualification because of him.”

Family is clearly important to Dr Kubheka. He says, “My wife and kids motivate me. They are the reason I am doing this.”

Dr Kubheka is already becoming the change he wants to see in the world. His vision for a better South Africa is stirring: “I hope for equal and sustainable healthcare for all races in South Africa irrespective of your social standing in the community.” May his vision be realised in our lifetime.

DR MBILAELO TSHAMISWE

Institutional Award: University of Limpopo Paediatrics Resource Centre

"With the help of other healthcare professionals, I will facilitate workshops to train healthcare professionals around Limpopo province. The aim is to help them realise it is possible to render good quality services to families with autistic children."

Dr Mbilaelo Tshamiswe

TSHAMISWE

Please tell us about your work.

I am a Senior Paediatric Registrar in the Paediatric Outpatient Department at Polokwane Hospital and I run the Neurodevelopment Clinic Service in Limpopo Province. I've started a three-year project to train healthcare workers on how to diagnose and manage Autism Spectrum Disorder (ASD) at an early age, through the University of Limpopo's Department of Paediatrics and Child Health.

Once I've finished my FC Paed (SA), I plan to subspecialise in Paediatric Development at the University of Witwatersrand. The aim is to come back to Limpopo and serve my province in the public sector and improve the neurodevelopment of our children to build a strong society.

Please describe the problem at the heart of your work.

ASD has become the most common neurodevelopmental condition affecting children attending neurodevelopmental clinics in Limpopo. The prevalence of autism has increased internationally to 1 in 68. Reliable data is not available for South Africa; however, the increasing trend is well documented.

ASD cases diagnosed are the tip of the iceberg; in general, only 20% of children with chronic conditions access specialist care in Limpopo. Autism presents before the age of two years, but our cases usually only present between five and six, missing vital years of early intervention.

How do you plan to solve the problem?

With the help of other healthcare professionals, I will facilitate workshops to train healthcare professionals around Limpopo province. The aim is to help them realise it is possible to render good quality services to families with autistic children. Through the project, we can assess ASD services and healthcare professionals will have enough skills to diagnose and treat children at an early age.

What inspired you to start this programme?

There are many families in South Africa living with children diagnosed with autism and there is limited access to good quality therapy at public hospitals. I have friends and family with children with autism who are receiving therapy at private facilities and with such good therapy, their quality of life has improved remarkably. So, I realised with great services in the public sector, children coming from less privileged backgrounds can also receive good quality therapy at their local hospital.

Why did you study medicine and child health in particular?

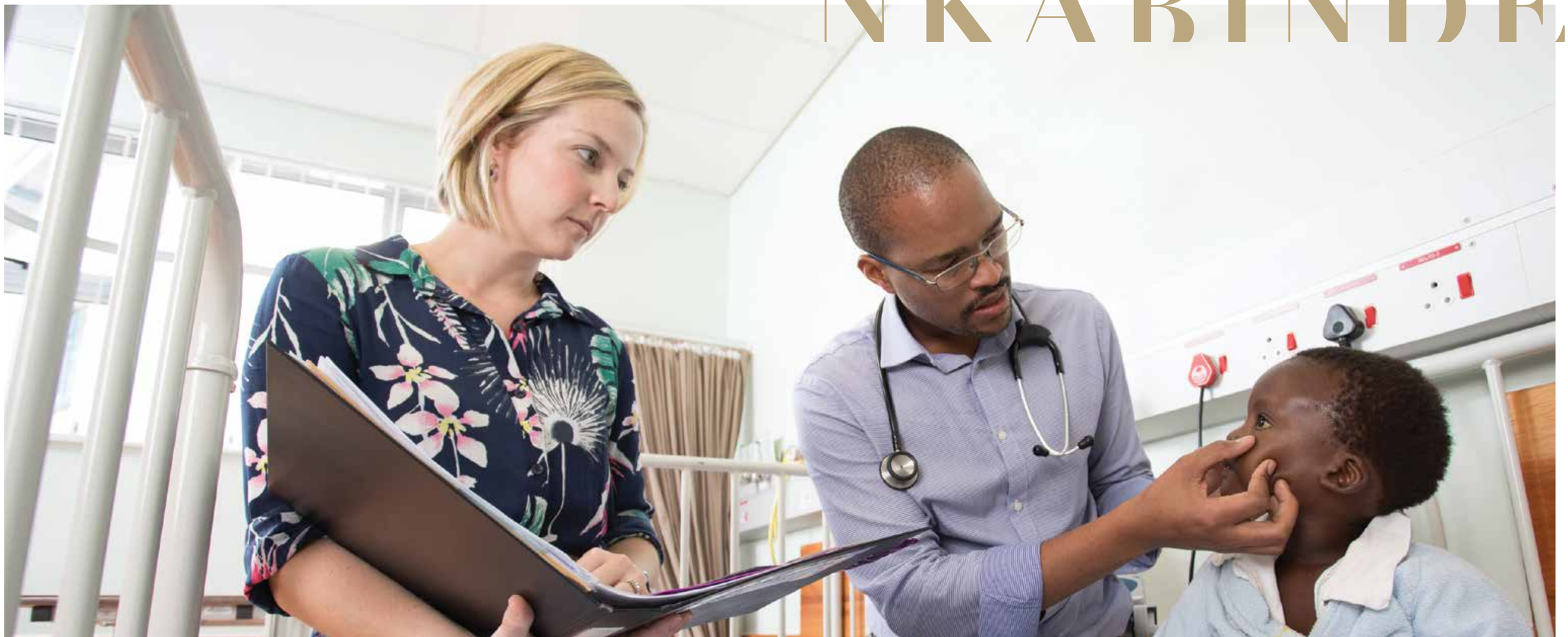
I was born with a congenital abnormality that was being treated at former Ga-Rankuwa Hospital, currently Dr George Mukhari Hospital. Most of my school holidays, I spent in a hospital bed surrounded by a crowd of young doctors and their professors. I began to have an interest in medicine as a career. During my admissions I realised there are just too many sick people who need help.

As I grew up, I realised kids are the most adorable people. Their innocence and their potential made me pursue a career that will improve children's wellbeing, because children are our hope for a better world.

What do you hope for the future of public health?

Over the next three years, I'll monitor families' satisfaction with autism services through the University of Limpopo. I hope to see improved quality of health services delivered to civil society, good attitudes of healthcare professionals, and to see them seek more knowledge to deliver new evidence-based healthcare.

NKABINDE



GATE

DR THANDAZA NKABINDE
AND MS MARY-JANE GATE

"We would like to see malnutrition totally eradicated in our rural communities."

Over the past four to five years, there's been a significant reduction in the child mortality rate at Bethesda Hospital – from 45% in 2013 to 0% in 2017. Dr Thandaza Nkabinde and Ms Mary-Jane Gate formed part of the team that helped to reduce the mortality rate associated with severe acute malnutrition seen within Bethesda Hospital. They are now embarking on a project that helps to prevent children from becoming malnourished.

Dr Nkabinde, a family physician and lecturer at the University of KwaZulu-Natal (UKZN), describes his area of research as two fold: first, around professional development in rural hospitals, and second, looking at the effects of malnutrition in rural communities.

To this end, Dr Nkabinde has teamed up with Ms Gate, Chief Dietitian at Bethesda Hospital, on a collaborative research project entitled: "Exploring factors that influence the risk of developing severe acute malnutrition in children aged six months to five years of age in rural Northern KwaZulu-Natal."

What is severe acute malnutrition?

Severe acute malnutrition (SAM) is a major contributor to the under-five mortality rate in South Africa. Within sub-Saharan Africa, an estimated 10% to 40% mortality rate prevails despite effective strategies being available. Umkhanyakude is a poverty-stricken health district in the northern parts of KwaZulu-Natal (KZN) in which Bethesda District Hospital is located.

What challenge does your research aim to address?

The medical and allied healthcare team at Bethesda, mainly led by the dietitians and supported by the senior doctors, have been battling the fight against malnutrition for years now. Our statistics have improved over the years after we have developed stringent protocols on how to manage malnutrition, but even with these we find that, at community level, malnutrition is still a problem. So, Ms Gate and I are looking to get to the source of this malnutrition problem by starting to ask the questions, why in the same community there will be children who are thriving and children who are dying from malnutrition? What exactly are the drivers and preventive measures that predict if a child gets malnutritioned or is protected from it?

What is the key objective of the research?

The main objective of their research is to identify whether or not there are certain factors within the day-to-day practices of well-growing children (and their families) that potentially protect them from becoming malnourished. The lack or presence of these factors could be contributing to the incidence of severe malnutrition in other children within the same community. Hopefully by investigating these drivers and preventive measures, we would be able to come up with tangible programmes and support our community in steps to eradicate malnutrition.

How will the Discovery funding help with your work?

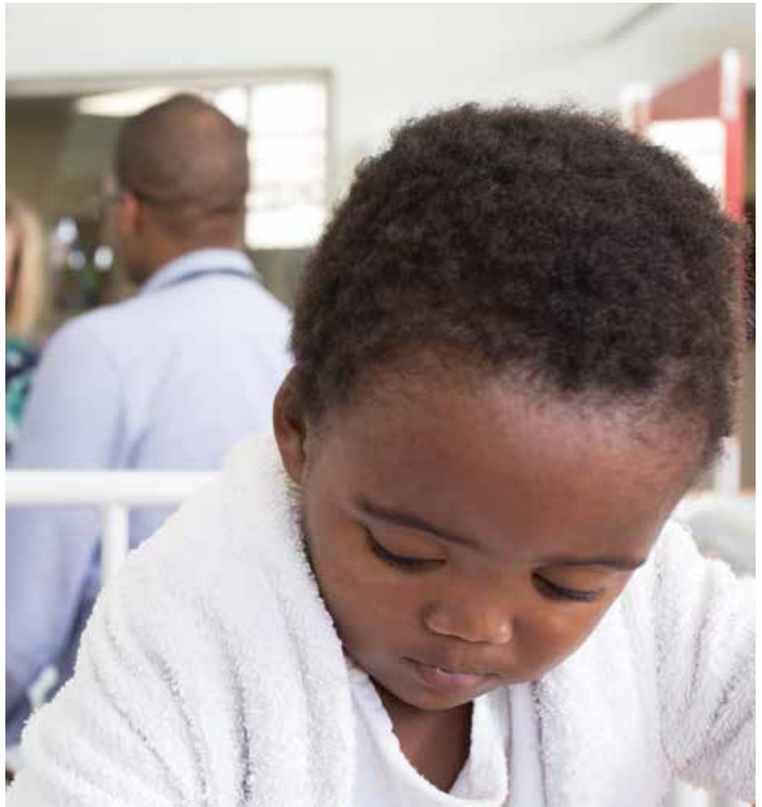
The Bethesda staff will invite caregivers of all children between six months and five years that are brought to the hospital to participate in the study. The qualitative research will take place in the homes of the children, and the Discovery Foundation grant will go towards hiring a research assistant that can help to gather information, speak to caregivers in their home language and transcribe the interviews. Rural areas are at times difficult to navigate, and we will need a person with local knowledge as well as appropriate vehicles to traverse the poor road infrastructure.

What is your hope for this area of healthcare in South Africa?

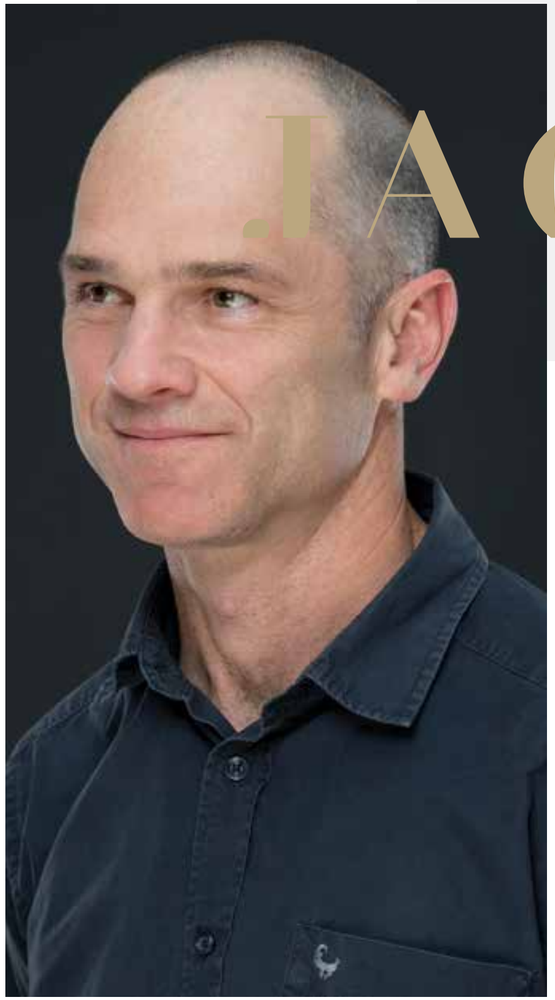
We would like to see malnutrition totally eradicated in our rural communities. We live in the 21st century, in a country that has a constantly widening gap between the rich and the poor. In the same community, you will find both rich and poor living together or within short distances from each other. Malnutrition should not be so rife in such a setting, especially when you consider the amount of effort that healthcare workers are putting into eradicating it. Clearly, there are things happening in our communities that we need to explore. So, embarking on this research will hopefully get us a step closer to solving this malnutrition problem.

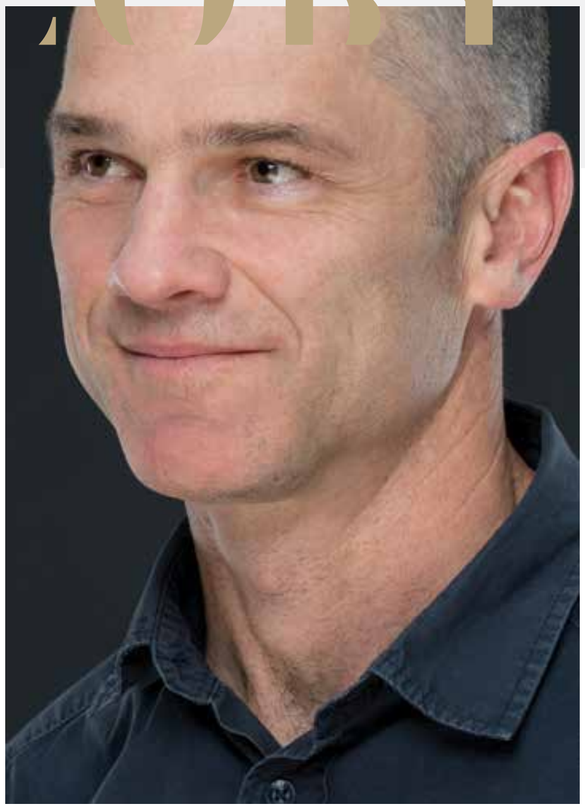
What inspires you?

I am inspired and motivated by seeing change and improvement in someone else's life.



JACOBY





> "Restoring sight to the blind is extremely rewarding and makes going to work very easy. Our patients also teach us so much about life – about patience, about uncertainty, about hope, about joy, and about seeing life in perspective."
>
> *Dr Mark Jacoby*

DR MARK JACOBY

Distinguished Visitor Award: Uitenhage Provincial Hospital

Retinopathy of Prematurity (ROP) is an eye disease that affects premature-born babies and is a growing problem in South Africa. Thirty percent of premature babies will have a degree of ROP and 2% are at risk of going blind if doctors don't diagnose and treat them in time.

Paediatric eye disease is one of five leading causes of preventable blindness in the Eastern Cape. This is why the Uitenhage Provincial Hospital invited Doctor Mark Jacoby to launch a programme to help curb the problem.

Please tell us about your current role and future plans.

I am Head of the Ophthalmology Department at Port Elizabeth Provincial Hospital. We are affiliated to the Walter Sisulu University and train both undergraduate and post-graduate students.

My interests are mainly paediatric eye disease and vitreoretinal surgery. I hope to develop both these subspecialty clinics in our hospital. This should improve service delivery and enhance the learning experience of the students.

What are the problems in this area of healthcare?

ROP screening has been steadily improving over the years, but there are still many neonatal units not offering sight saving screening and treatment. At present ROP screening only takes place at one centre in the Eastern Cape, exposing many babies to the risk of losing sight. Human resource limitations preclude adequate care in most neonatal units.

And what are the solutions?

Telemedicine screening has been successfully implemented in other countries to curb the problem. This allows trained technicians to screen the babies and send images to an ophthalmologist who can screen multiple units from a central reading centre. This is a cost-effective method of ensuring wider coverage.

What do you aim to achieve with the project?

- To provide a safe, cost-effective screening programme to prevent ROP blindness.
- To harness modern technology to overcome the hurdle of human resource shortages.
- To validate the Uitenhage Provincial – Port Elizabeth Provincial Telemedicine Programme through an audit.

You've introduced the Telemedicine ROP Screening programme between Uitenhage Provincial Hospital and Port Elizabeth Provincial Hospital – now what?

I am currently collecting data on a project aimed at validating our Telemedicine ROP Screening Programme at Uitenhage Provincial Hospital. We bought a retinal camera with funds from the XOVA Foundation and placed it in the premature baby unit at Uitenhage Hospital. We've started to train local healthcare staff to identify at-risk newborns and to take pictures of their retinas with the special camera. We've also begun to teach healthcare workers how to detect ROP by showing them the process of grading and classifying retinal images.

Next, we will buy user-friendly software; establish a reading centre at PE Provincial Hospital to grade and classify images remotely; and explore ways to expand the programme to other units in the district.

What drew you to this specialisation?

Having a blind child is devastating for any family. For families with limited access to essential support structures this becomes an insurmountable problem. Premature babies face a multitude of challenges, some avoidable, some not. ROP is one issue where meticulous attention to neonatal care can ensure favourable outcomes in the majority of babies.

Why is ROP such a big issue today?

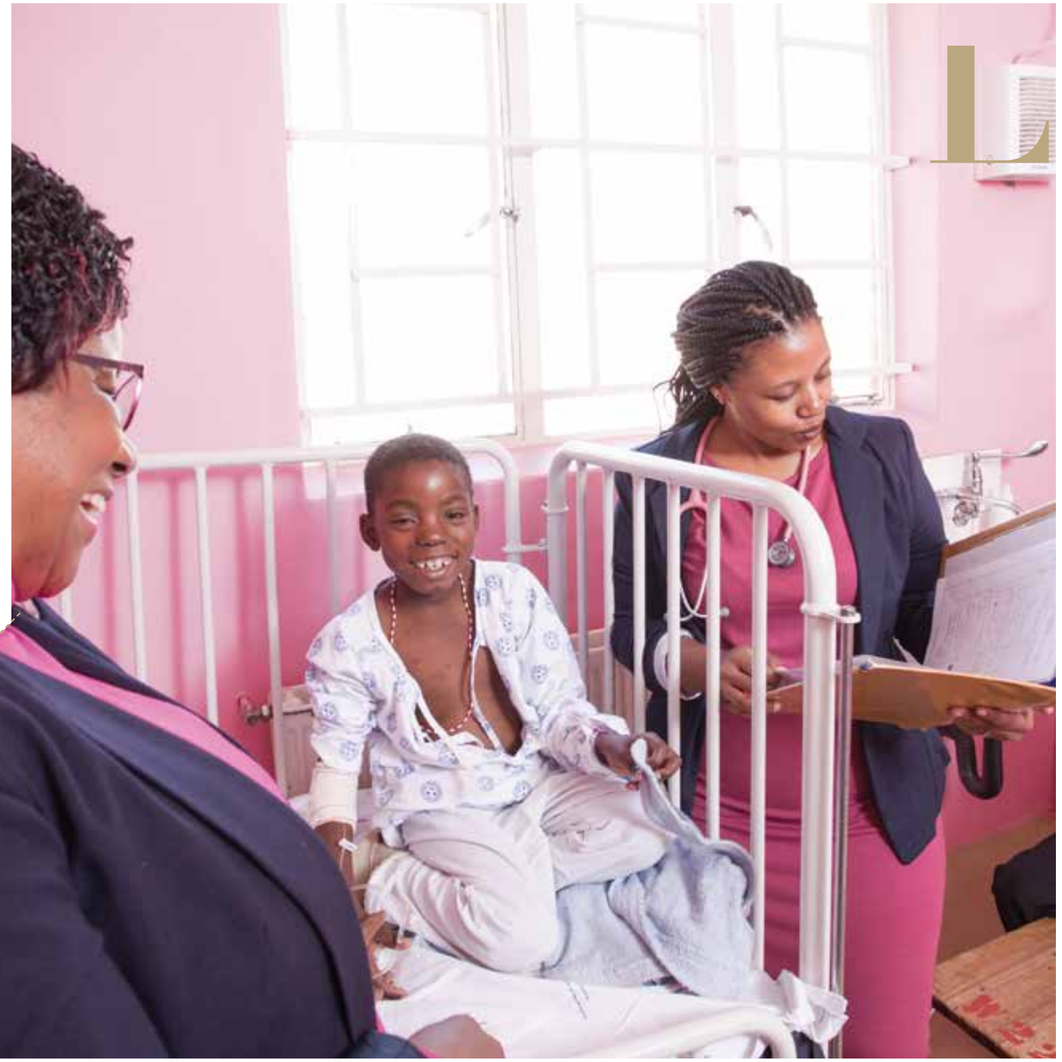
There have been three major ROP epidemics worldwide in the last 70 years. South Africa is one country currently experiencing the "third epidemic". This happens in mixed economy countries where survival rates of premature babies have improved owing to improved paediatric care, but where a lack of supporting services has been unable to provide the necessary ophthalmic care.

What's your favourite quote and what motivates you to do this job?

"A life lived for others is a life worthwhile," by Albert Einstein. Restoring sight to the blind is extremely rewarding and makes going to work very easy. Our patients also teach us so much about life – about patience, about uncertainty, about hope, about joy, and about seeing life in perspective. It is a privilege to be part of their lives in a small way.

"I don't think any child's health should ever have to suffer due to a lack of a basic necessity like food. If changing the bacteria in the gut (microbiota) can help in any way, it will be a significant step forward in combatting the diseases linked to malnutrition and reducing the high number of deaths among young children."

Dr Dimakatso Letsie



LETSIE

What area of healthcare do you work in and why did you choose it?

I am a Paediatric Registrar at Dr George Mukhari Hospital in the North of Tshwane, near Ga-Rankuwa. I have always loved children and I have a desire to take away any emotional or physical difficulty they experience. I have realised, following my community service year in Odendaalsrus, that paediatrics is an area where I can contribute and decided to further my knowledge through research.

What is the objective of your research and why is it relevant to South Africa?

Malnutrition is a global problem and poor nutrition greatly increases the risk for infections, like diarrhoea, in the intestine. In South Africa, malnutrition and related infections are among the top five leading causes for illness and death among children younger than five years. While there are many studies on the link between diet and health, a lot still has to be done in our region. In my study, I will compare the microbiota or bacteria in the intestines of 150 children at our hospital. This will give me a base to work from and to understand the effects of diet and environment on gut bacteria. From there, I will investigate treatment with probiotics to alleviate or reverse the negative effects on the gut bacteria and immune system to ultimately prevent diseases and deaths linked to malnutrition.

How do you remain inspired and how will the assistance from the Discovery Foundation support you?

It was at church that I stood up confidently and said, "I want to be a paediatrician when I grow up." And, here I am today building further knowledge as an aspiring children's health specialist. My favourite movie line is by the wise Mr Kesuke Miyagi in The Next Karate Kid where he says, "Ambition without knowledge, is like a boat on dry land." This is how I always make sure my ambition and knowledge match to achieve my goals. The assistance from the Discovery Foundation will support my efforts to take action and add to existing studies on this subject of malnutrition and gut bacteria. Having children of my own, I understand the needs of parents better. I really hope to confirm the benefits that supplementation with probiotics can have in protecting the health and the lives of our country's malnourished children.

MALNUTRITION IS A GLOBAL PROBLEM

POOR NUTRITION GREATLY INCREASES THE RISK FOR INFECTIONS

INTESTINAL INFECTIONS, RELATED TO MALNUTRITION, REMAIN THE LEADING CAUSE OF DEATHS

AMONG CHILDREN YOUNGER THAN 5 YRS

IN SOUTH AFRICA, MALNUTRITION IS AMONG THE LEADING CAUSES OF ILLNESS AND DEATH

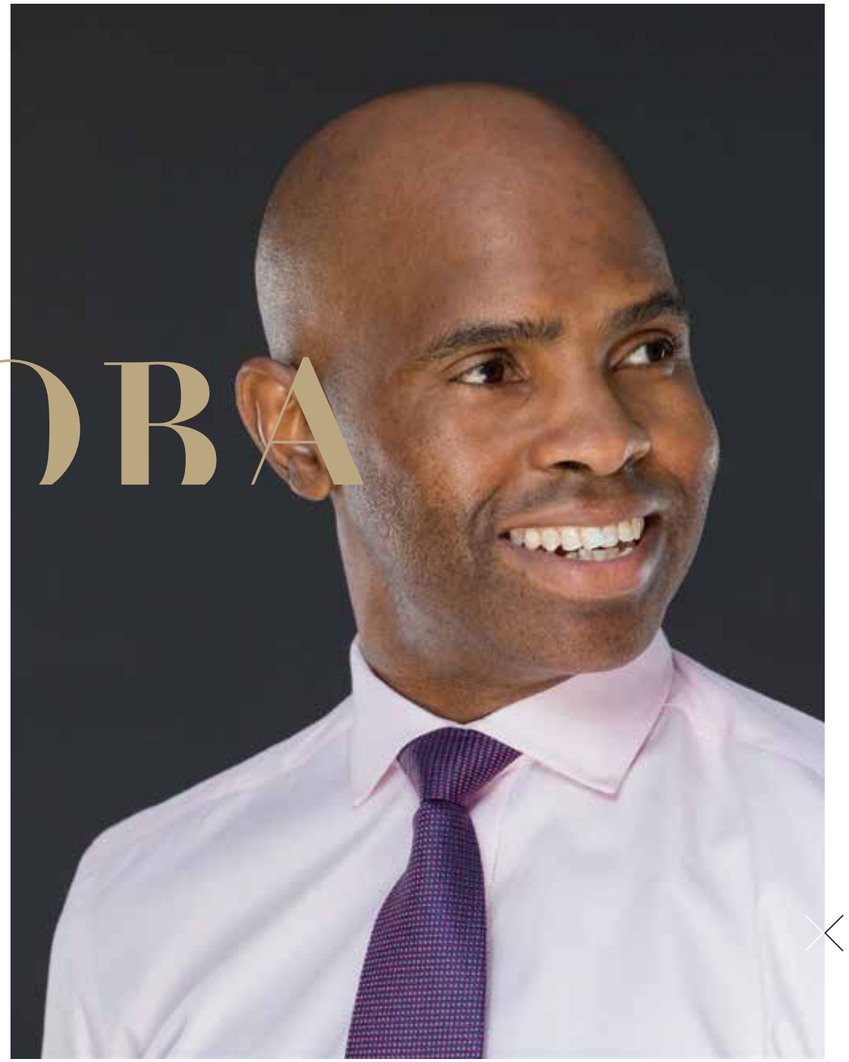
TOP 5

DR DIMAKATSO LETSIE

Individual Award : Sefako Makgatho University

CANCER

SHOBA



DR BONGINKOSI SHADRACK SHOBA

Academic Fellowship Award: University of KwaZulu-Natal

COMBATING THE BRUTAL EFFECTS OF CANCER ON THE POOR

Dr Bonginkosi Shoba's research explores the links between people's immune systems and breast cancer

In the past decade, Doctor Bonginkosi Shoba has seen first-hand the devastating effects of cancer on the poor.

Dr Shoba is currently a Fellow in Medical and Haematological Oncology at the University of Nairobi, Kenya. With the Discovery Foundation research grant, he will complete a Masters by Dissertation on the role of inflammation on clinical stage and prognosis of cancer in Africa at the University of KwaZulu-Natal (UKZN).

Dr Shoba says that unravelling how cancer develops – its athogenesis – is the key objective of his research. He hopes to uncover how infection and inflammation affect breast cancer in Africa. "I have always been fascinated by the biochemical, molecular and genetic mechanisms of disease processes since my second-year biochemistry lectures at Wits," he says. "The Introduction to the Immunology course by Professor Ahmed Wadee in third year engraved in my mind the belief that perturbation of the normal bodily protective processes lies at the heart of all human and animal pathology."

Dr Shoba has an MBChB from the University of the Witwatersrand, an FCP(SA) from the Colleges of Medicine of South Africa, and since 2016 he's been a Fellow at the University of Nairobi and Kenyatta National Hospital.

Once he completes his research, Dr Shoba will return to KZN as the first specialist physician trained in Medical ncology in the province.

Professor Nombulelo Magula, Head of Department of Internal Medicine at UKZN, writes in recommendation of Dr Shoba: "Dr Shoba has spent most of his career working in deep rural areas and doing the best he can to save lives without many resources. The burden of cancer in the country and in particular the rural community that he served, made him acutely aware that he needed to upskill himself to serve his community better. As a selfless person, he took a fellowship on a meagre stipend to acquire training in Medical Oncology at the University of Nairobi."

Dr Shoba was born in Uitval, a village outside Wasbank in KwaZulu-Natal. He says: "I owe my Africa, South Africa, and black people relevant, significant and life-changing contributions to better our lives. I owe my tiny village a place on the world map. Let even that small village say that we were able to produce a researcher. I owe it to all those young people from my village, and there are many – some are doctors now, others young physicians – who are following in my footsteps. They must be able to say that it is possible, it can be done, and I would have shown them the way."

Dr Shoba has spent the bulk of his career at Ngwelezana Hospital in the Nkonjeni District. "My heart is where the most suffering is," he says. He's also worked at Hlabisa Provincial Hospital, Nkonjeni Hospital, Nquthu Hospital, and Nkandla Hospital.

While he was working at Ngwelezana Hospital, he established a clinic from scratch and ran it single-handedly. His work eventually became the topic of a research paper that he published with the help of a junior colleague. In the paper, Dr Shoba proposed an important algorithm for tuberculosis and lymphoma. His senior colleagues have encouraged him to turn the paper into a PhD.

His research looks at the meeting point between infection, inflammation, and breast cancer in Africa. "Cancer is not only a problem of the West but is increasingly becoming a sickness of the poor."

Dr Shoba says internal medicine is broad and challenging, while oncology goes to the basics of cell and molecular biology. "This is what excites me. I hope to understand some of the molecular causes of cancer and improve its treatment. Inflammation seems to be at the centre of causing cancer. If I can study it further, I can advance our understanding of cancer." He fell in love with science in Grade 10, when he discovered aerodynamics and how an internal combustion engine works. "I tried to build an aeroplane that did not fly," he says.

His plans for the future are inspiring. "I would like to see South Africa train more medical oncologists. I hope to establish a cancer molecular biology institute somewhere in the country. I also plan to set up an oncology centre in one of the underserved universities in South Africa."

Sharing knowledge and skills to better the care for women with cancer

The Gynaecologic Oncology Subspecialty Unit at University of Pretoria established an outreach programme to provide clinical care and to build knowledge in gynaecologic oncology. The goal is to establish a gynaecologic oncology service at Grey's Hospital to serve the healthcare needs of women.

An advocate for partnerships in the public health sector, Professor Dreyer says, "In establishing this partnership, we want to share and build up knowledge to provide immediate clinical intervention that substantially reduces the long waiting periods that some women who need critical surgeries currently experience. So far, reduced waiting times and better patient outcomes have been two of the clear benefits of our outreach programme."

"If we can develop a unit that provides timeous care, we believe it can alleviate the extra social and physical anxiety that women have to deal with when they need major surgery at a hospital that is often far from family and friends who can support them. Timeous care can speed up recovery and help build trust that your health is in good hands at a high-quality hospital," says Professor Snyman.

"With support from the Discovery Foundation, we believe we can stretch the potential of this programme to train more specialists and to treat more women with cancer in the region. While the programme currently runs until 2019, this support gives us resources to bring our goal into reach as we partner with Grey's Hospital," says Dr Mnisi.

PROF G DREYER,
PROF L SNYMAN,
DR E MNISI,
DR A MOUTON,
DR MATHONSI

Distinguished Visitor Award: Greys Hospital

_1_6_3_

YEARS

EARNING A RESPECTED REPUTATION

Over the years, this humble hospital has been recognised for excellence in care across healthcare

_3.5_MIL_

PEOPLE

PROVIDED WITH EARLY CARE IN PIETERMARITZBURG

Since it's establishment, Grey's Hospital has been committed to addressing the late, sub-par and lack of treatment for people living in vulnerable and overlooked communities

_5_0_5_

BEDS IN USE

ON A MISSION TO PROVIDE OUTSTANDING TERTIARY CARE

There are people seeking out Grey's Hospital from every corner of Kwa-Zulu Natal every day

_5_0_0_

BIOPSIES

IN SCREENINGS FOR CANCEROUS CELLS

In 2017, gynaecological oncology specialists partnered to provide the administration of Colposcopy and LLETz reviews as part of the Visiting Gynaecological Oncology Programme

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INPATIENTS

AT THE AFTER LLETZ SURVEILANCE CLINIC

Alleviating post-treatment anxiety, speeding up recovery, building up trust and understanding between patients and their healthcare providers

_1_5_0_0_

WOMEN

TREATED IN THE STAGING UNIT

Early intervention and the programme to train and upskill doctors in the specialised field of gynaecological oncology has enabled notable improvement in patient outcomes

_1_7_5_

SURGERIES

FOR PRE-MALIGNANCY DISEASE

During scheduled visits to Grey's Hospital, specialists provide surgical training to the hospital doctors while treating patients, and up to twelve surgical procedures are competed at each visit

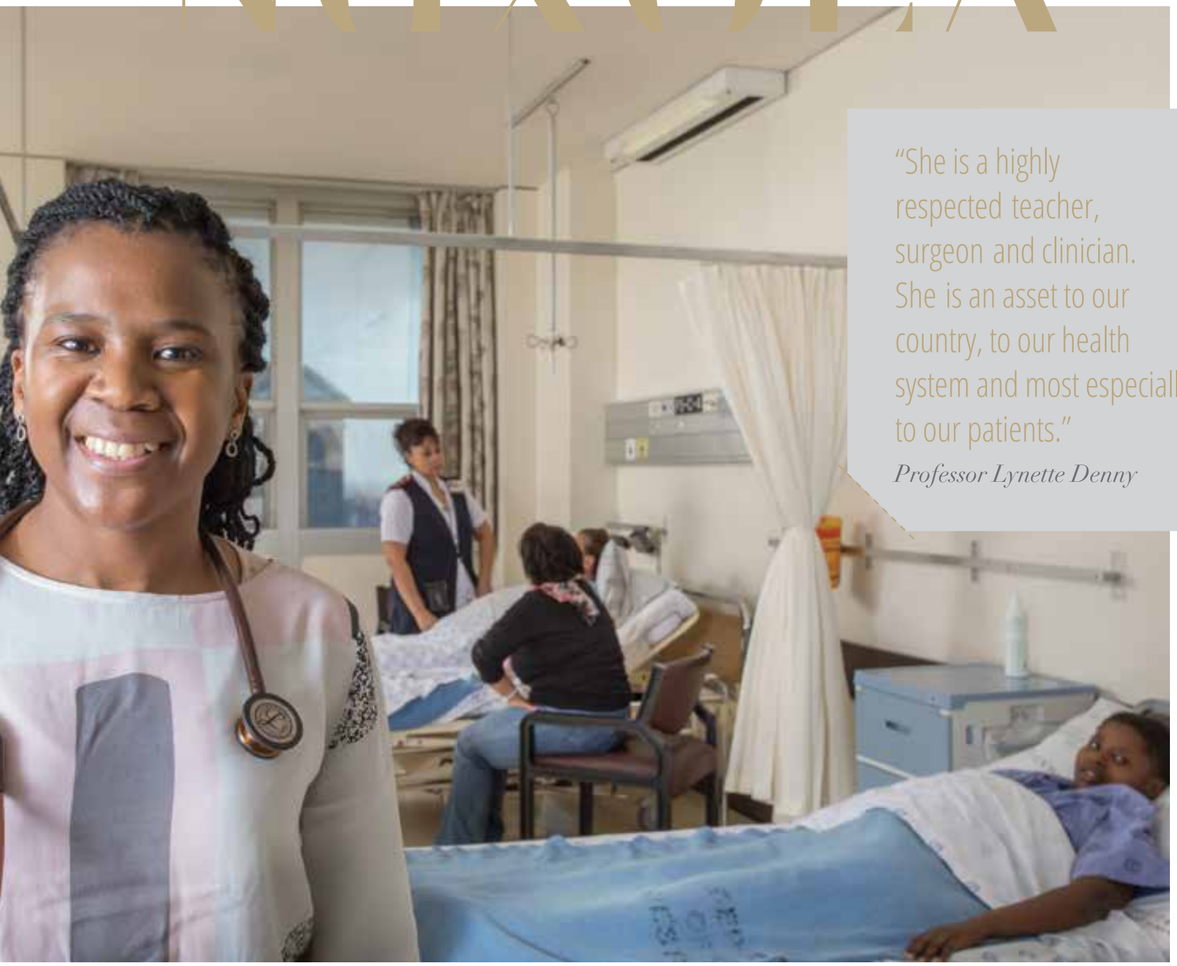
_7_5_

SURGERIES

FOR CANCER

The next goal for Grey's Hospital is the development of an independent gynaecologic oncology service to add to the efforts in collaborative research in this area

NGXOLA



"She is a highly respected teacher, surgeon and clinician. She is an asset to our country, to our health system and most especially to our patients."

Professor Lynette Denny

DR NONDUMISO NGXOLA

Sub-Specialist Award: University of Cape Town

THE EASTERN CAPE-BASED GYNAE-ONCOLOGIST HAS MADE MANY SACRIFICES TO ACHIEVE HER DREAMS AND IMPROVE THE LIVES OF WOMEN

Doctor Nondumiso Ngxola is fiercely determined to change the lives of women. Her goal is clear, train as a subspecialist in gynaecological oncology at the Groote Schuur Department of Obstetrics and Gynaecology, and then take the knowledge and experience back to the Eastern Cape.

Why is the Eastern Cape in dire need of a gynaecological oncologist?

In the Eastern Cape, cancer of the cervix is the most common cancer in women and it's one of the cancers that can be prevented or even cured if diagnosed early.

Women die of some cancers because of late presentation and in some areas of this country even when they present early they do not get the treatment because of a lack of services. As a gynae-oncologist, I'll be able to assist primary healthcare to raise awareness about these cancers and manage cases as they come up.

How did you get where are you today?

I obtained an MBChB from Walter Sisulu University (WSU) in 2005 and was a Fellow of the College of Obstetricians and Gynaecologists (FCOG) of The Colleges of Medicine, South Africa.

I worked in hospitals in the Eastern Cape, including the Nelson Mandela Academic Hospital in Mthatha, the East London Hospital Complex at WSU, and Frere Hospital in East London, before moving to Cape Town with my two daughters.

What sparked your interest in gynaecological oncology?

My passion for gynaecological oncology was triggered by what I'd witnessed while I was working with gynaecological cancer patients at Nelson Mandela Hospital. It made me realise that there is a big gap in how we manage these patients, because there was no gynae-oncologist there at that time.

The scenario didn't change when I moved to Frere Hospital in East London. The Eastern Cape is in serious need of skilled doctors – especially gynaecological oncologists.

Please tell us more about the time you spent at Frere Hospital?

During my time at Frere, I started an outreach programme in Butterworth where I ran a clinic in colposcopy – a procedure where the doctor examines the cervix, vagina and vulva for signs of disease. My focus was to detect cancers in their early stages and to manage precursors of cancer of the cervix. I then got gynaecological oncologists from Groote Schuur and Tygerberg Hospital to go to Butterworth and operate on patients who had early cancer symptoms.

What did you learn from the experience?

I learnt a lot from this experience and it made me want to have the same skills so that I can go back to the Eastern Cape where my services would be of immense value. Once my training is completed, I'll focus on cancer prevention, early detection, and palliative care and support for people with end-stage cancer.

What are your hopes for public health?

I always say if the government can focus on education for a few years, most things will fall into place but I think health is the next important thing. I hope for health systems that are efficient and are able to improve important outcomes in healthcare.

I also hope that there will be a significant uptake of immunisation against the Human Papilloma Virus (HPV) among young girls and a reduction in cases of cervical cancer.

Why do you want to change people's lives?

Being born and growing up among the shacks in Cape Town and in the rural Transkei has kept me motivated and always aiming higher. My background helps me understand the stories of most of my clients in the public sector and for me that is something special.

Professor Lynette Denny, Head of the Department of Obstetrics and Gynaecology at the University of Cape Town, has been a staunch advocate of Dr Ngxola's career. In a letter of motivation on behalf of Dr Ngxola, Professor Denny writes: "Dr Ngxola is an exceptional doctor who is not only dedicated to practising the best medicine possible, but is completely patient-centred and focussed on the public sector and the needs of women. She is diligent, always goes the extra mile and takes those around her with her."

KOKOSE

FINDING SOLUTIONS TO ADDRESS DELAYED TREATMENT OF HEAD AND NECK CANCERS

Dr Banele Kokose is a second-year registrar in the Department of Otolaryngology (ENT) at Nelson Mandela Academic Hospital (NMAH). He says, besides him, the department consists of two consultants and eight medical officers. They are affiliated with Walter Sisulu University and, as a department, they are actively involved in undergraduate teaching.

"In our ENT department we have seen many patients presenting with advanced cancer of the head and neck. In my study I will be looking at factors leading to the delay in presentation and management, and also correlate risk factors involved in developing these cancers. My goal is to provide local statistics of head and neck cancers. This will hopefully will help the hospital to develop educational strategies to reduce the cancer burden in our region. I hope to gain research knowledge and skill so that I can, ultimately, assist colleagues and students to identify and effectively treat these cancers in our resource-limited environment," says Dr Kokose.

Dr Kokose's study will look at the prevalence of head and neck cancers, which arise from the upper aero-digestive tract. These include the mouth, pharynx, larynx, sinuses, nasal cavity and salivary glands. Tobacco use and alcohol consumption are associated with risk factors for developing these cancers and these behaviours can be changed. Other risk factors include the Human Papilloma Virus, Epstein-Barr Virus and occupational (wood dust), environmental (radiation) and genetic predispositions. In South Africa, the annual number of new HPV-related pharyngeal cancer cases (excluding nasopharynx) are 11 153.

Dr Kokose's retrospective study will look at patients who presented with cancer at the hospital between 2013 and 2017. He will investigate the staging of these cancers to determine the factors that can explain the delay in presentation and initiation of treatment. By understanding these factors, he hopes to identify gaps in skills at various levels of care that may be contributing to delays in accessing care and the consequently poor patient outcomes. Dr Kokose believes these findings will form the basis to establish strategies to address poor or delayed access to otorhinolaryngology services, which can later improve the overall outcomes of patients diagnosed with these head and neck cancers in the region.

NELSON MANDELA ACADEMIC HOSPITAL

TEACHING HOSPITAL AND INCLUDES AN ORTHOPAEDIC HOSPITAL — 736 Beds

SERVING AN AREA WITH A POPULATION OF — 3MIL

THE REGION IS MAINLY RURAL AND MANY AREAS HAVE LIMITED ACCESS TO HEALTHCARE FACILITIES

HEAD AND NECK CANCERS

TOBACCO USE AND ALCOHOL CONSUMPTION ARE MAJOR RISK FACTORS FOR DEVELOPING THESE CANCERS

OTHER RISK FACTORS INCLUDE HUMAN PAPILLOMA VIRUS, EPSTEIN-BARR VIRUS AND OCCUPATIONAL (WOOD DUST), ENVIRONMENTAL (RADIATION) AND GENETIC PREDISPOSITION

IN SOUTH AFRICA, THE ANNUAL NUMBER OF NEW HPV-RELATED PHARYNGEAL CANCER CASES (EXCLUDING NASOPHARYNX) — 11 153

DR BANELE KOKOSE

Individual Award: Walter Sisulu University

TB AND HIV

ZACHARIAH

DR DON ZACHARIAH

Academic Fellowship Award: University of the Witwatersrand

GROUND-BREAKING NEW RESEARCH WILL REDEFINE THE WAY WE TREAT PATIENTS WITH HIV

Dr Don Zachariah is a cardiologist who seeks to use his skills and knowledge to help the greater population of South Africa

Doctor Don Zachariah has embarked on a mammoth task: to do research on the cardiovascular characteristics in HIV reactive patients for his Master of Science (MSc) degree. He will conduct a large prospectus study on HIV positive outpatients at the Flora Life Clinic in Roodepoort to screen for cardiovascular disease.

The implications of the study are profound.

Dr Ahmed Vachiat – a specialist physician and Senior Cardiologist at the Charlotte Maxeke Johannesburg Academic Hospital – writes in his recommendation letter:

"The study will be one of the largest HIV cohorts and hence stands to redefine the way we treat HIV patients in the future."

Dr Anthony Becker, a cardiologist at the Flora Life Clinic, believes Dr Zachariah is the person for the job, "Dr Zachariah is an astute clinician with an enquiring mind, a young researcher with endless potential."

Dr Zachariah holds an MBBCh and an MMed from the University of the Witwatersrand (Wits), as well as an FCP(SA), a Diploma in Health Management and a Certificate in Cardiology from the Colleges of Medicine of South Africa.

He says, "I recently concluded a study showing the burden of HIV-related cardiac disease in ward patients is already sitting at 10%. From my understanding, this number is inevitably going to increase."

Dr Zachariah explains that there are 37 million cases of HIV worldwide, while the leading cause of death in the HIV reactive population is now said to be cardiac disease. The cause of this increase is a complex interaction between viral infections, host factors, traditional risk factors as well as therapies for HIV.

He explains further, "It is said that one in five people in SA are living with HIV. As the roll-out of ARVs improves, we see fewer opportunistic infections and those patients live longer. We are preparing ourselves to see a massive influx of HIV patients presenting with cardiovascular conditions such as myocardial infractions and strokes."

With his research, Dr Zachariah hopes to answer questions about the links between HIV and heart disease, "Not much is known about the pathophysiology, prevalence and impact of HIV-related cardiovascular disease locally or globally. I believe we need to understand our local problem and why these patients are prone to cardiovascular complications."

Dr Zachariah's time in clinical practice sparked an interest in HIV and heart disease, "I have seen how the HIV pandemic has burdened the health sector. This does not seem to be easing down. We need strategies of curbing this crippling disease. Hopefully with the work I'm doing now, we will be able to decrease the cardiovascular impact of this disease."

He emphasises the importance of this issue in South Africa: "Two-thirds of the world's HIV burden is currently in sub-Saharan Africa. South Africa now follows the WHO recommendation of ARVs for all, irrespective of CD4 count, and I believe the second wave of destruction is soon to happen. The unwanted metabolic side effects of these drugs as well as the longer life expectancy of HIV reactive patients pose a major challenge to cardiovascular physicians."

Dr Zachariah shares his plan of action: "First, I want to establish the burden of cardiovascular disease in people living with HIV. We don't have this kind of data in the out-patient population in South Africa. I will then use my clinical cardiology background and try and understand why HIV positive patients have this higher-than-normal prevalence of cardiovascular disease."

He hopes his research will help him to identify high-risk features in HIV patients to prevent life-threatening heart diseases from occurring in the first place.

"The reality is that the majority of patients are underserviced owing to inadequate medical supplies and equipment and not having enough health professionals. I sometimes wonder if the healthcare decision makers know what is happening to patients on the ground," he says.

Yet, his work keeps him fighting. "There is no more noble a profession than medicine. That is enough motivation to continue what I'm doing. However, I also believe there is fairness in this world. So keep working hard and eventually it will pay off."

OKAFOR

DR CHIKE OKAFOR

Individual Award: Walter Sisulu University

Doctor Chike Okafor – a second year Medical Registrar in the Department of Family Medicine and Rural Health at Walter Sisulu University – lives by the words, "pursue your goal with passion."

Where are you based?

I am based at Dr Malizo Mpehle Memorial Hospital – a district hospital in Tsolo in the Eastern Cape – where I'm conducting research on HIV non-adherence.

What is the title of your research?

Prevalence and factors associated with non-adherence to antiretroviral therapy among adult patients accessing primary healthcare services in Mhlontlo sub-district, Eastern Cape, South Africa.

What is the objective of your research?

- To determine the prevalence of adherence to antiretroviral therapy in the study context.
- To establish an association between patients' socio-demographics, health system factors and therapy-related factors to non-adherence to ART.
- To explore the role of poor clinician-patient relationships and inadequate counselling to non-adherence to therapy.

You're a passionate clinician who's been working in the community for the past seven years. What attracted you to your specialisation?

I'm currently pursuing a specialist course in Family Medicine at WSU. I have an interest in patient-centred care and assisting patients in overcoming their problems through shared decision making.

What is the challenge that your research aims to solve?

The outcome of the research will go a long way in identifying common related factors to non-adherence to antiretroviral therapy among adults in Mhlontlo. This will aid in developing an intervention strategy towards improving adherence through shared decision making, knowing full well that one of the principles of family medicine is to view the community as a population at risk.

What drove you to focus on HIV as your research topic?

HIV is a global issue and the level of non-adherence based on personal observation at district level where I have worked for seven years is of great concern. There's also limited research done on the issue in Mhlontlo.

> "HIV is a global issue and the level of non-adherence based on personal observation at district level where I have worked for seven years is of great concern. There's also limited research done on the issue in Mhlontlo
>
> *Dr Chike Okafor*

What is the local significance of this issue?

South Africa has the largest epidemic of HIV globally and about seven million people are receiving ARVs. In the Eastern Cape, the HIV prevalence has steadily increased from 10.2% in 2005 to 19.9% in 2012. The adherence level is expected to be bigger than 95% but studies have revealed that the adherence rates in South Africa reach far below 95%.

Please describe your methodology?

My research will take the form of a descriptive cross-sectional study using a structured questionnaire. It will include all adults older than 18 who have been on treatment for six months and have missed at least two days of treatment.

When did you decide to become a doctor?

It was during my high school days when I realised my talents in science-related topics.

Briefly describe your career so far

I obtained my MBBS in 2000 from the Nnamdi Azikiwe University in Nigeria, followed by an internship at the same university. In 2007, I relocated from Nigeria to South Africa, and from 2008, I worked as a private practitioner in Botswana. I started my current post at Dr Malizo Mpehle Memorial Hospital in 2011. I hold a Postgraduate Diploma in HIV/Aids Management (2013) and a Postgraduate Diploma in Family Medicine (2017) from the University of Stellenbosch.

What are your hopes and plans for the future?

My plan for the future is to work as a registered family physician where all I have learned will be put into practice. I hope my research will contribute to the alleviation of HIV through policy making by government intervention and collaboration with patients living with HIV.

SCOTCHER

DR PHILIPPA CLAIRE SCOTCHER

Individual Award: Walter Sisulu University

"South Africa has an HIV prevalence of over 7 million people, with an incidence of 1.3% that doesn't seem to be dropping despite our best efforts."

Dr Philippa Claire Scotcher

Doctor Philippa Claire Scotcher is a second-year Family Medicine Registrar at Walter Sisulu University, based at Zithulele Hospital in the Eastern Cape. Her MMed research project explores the knowledge, attitudes and perceptions of Xhosa men towards HIV testing in the Zithulele catchment area of the rural Eastern Cape.

What is the problem at the heart of your research?

Kathryn Dovel, a PhD candidate at the University of Colorado Denver (2015), famously said, "HIV has a woman's face, and AIDS looks like a dying man."

South Africa has an HIV prevalence of over seven million people, with an incidence of 1.3% that doesn't seem to be dropping despite our best efforts. It is well known that there are more HIV-positive women than men, and yet men account for 60% of HIV-related deaths. Essentially, men are not accessing HIV services, and so the spread of HIV continues. Why they are not using these services is a critical question in answering the problem of these missing men and in reducing the number of new infections.

How do you plan to do this explorative research?

I plan to interview local Xhosa men between the ages of 25 to 49 years. My research aims to understand why Xhosa men in the Zithulele catchment area are not accessing HIV testing services, what barriers they encounter and what novel means we can generate to encourage testing among this cohort. I intend to conduct these interviews in isiXhosa, using a local isiXhosa-speaking female data collector. I plan to use an already validated questionnaire, designed by Helen Struthers, who did similar qualitative research among men in Soweto; an urban, informal setting.

What is the objective of your research?

The objective of this study is to explore men's perceptions of HIV and Aids, their behaviour regarding services and their experience of stigma associated with HIV testing. I am eager that we find new ways to focus on men within our healthcare and HIV services. I am also hopeful that the stigma surrounding HIV, especially among men, might be overcome.

Please tell us about your career so far?

I am still a young doctor with years of experience ahead of me. I completed my studies at Stellenbosch University in 2013, spent my internship at Pietermaritzburg Hospital Complex from 2014 to 2015 and was fortunate enough to get placed at Zithulele Hospital for my community service in 2016, where I have been ever since."

What are your future plans?

My hope is to recreate a similar work and community environment , which I have grown to love here at Zithulele Hospital, at another district hospital in South Africa in time to come.

How did you become interested in this topic?

I am passionate about HIV medicine, and realised while working at clinics how few men I see in and around the clinic, and yet how many men I see admitted with end-stage HIV and Aids in our hospital wards. It seemed nonsensical that people are dying of HIV when we have antiretroviral medication available. However, I realised that we aren't focusing enough time and energy into understanding what is keeping our men from testing or taking treatment. We have made such great headway with our Prevention of Mother-to-Child Transmission (PMTCT) Programmes, and we ensure all women get tested at least twice during pregnancy, but the men seem to have fallen off the radar. My motivation for this research is to understand what's keeping our men from living long and healthy "status-known" lives.

What motivates you?

I am inspired by the community in which I live, my colleagues, and by the various people I encounter throughout South Africa working to create positive change in our country. There is so much good happening, despite the challenges, and it is through hope for a better, fairer South Africa for all, that I am motivated to 'ukunyamezela' (keep on keeping on).

What is your favourite quote?

"Start where you are. Use what you have. Do what you can." – Arthur Ashe.

MOGHADA

DR MAMPHO MOCHAOA

Individual Awards: University of KwaZulu-Natal

BUILDING KNOWLEDGE AMONG YOUNG RURAL MALES FOR BETTER HEALTH OUTCOMES FOR ALL

Dr Mampho Mochaoa is a third year Family Medicine Registrar at Bethesda Hospital in Northern KwaZulu-Natal. She is completing her training at this rural hospital as part of the University's Registrar Training Programme. It is people who keep her inspired. "I'm motivated by people from all walks of life who are passionate about giving quality care to all South Africans, and particularly in our rural communities," says Dr Mochaoa.

With her MMed research, "Black African male learners' knowledge, attitudes, and practices regarding sexual and reproductive health in rural Northern KZN" she aims to tackle an issue that she feels needs urgent attention in these communities. Explaining why this research area attracted her, she says, "I was prompted to investigate this because I noted our failure in efforts to bring down our teenage pregnancy rate and the HIV infection rate among young women. Poor sexual and reproductive health outcomes and its social effects continue to impact negatively on the South African health system."

Who are the subjects of your research and why did you choose them?

I randomly identified six out of 20 high schools in the uMkhanyakude sub-district around the hospital. My study includes 268 young, black males. I am looking at the knowledge, attitude and practices of black, rural male leaners in three specific areas: HIV and other sexually transmitted infections, teenage and unwanted pregnancies, and responsible fatherhood.

While interventions target young women in sub-Saharan Africa in the improvement of sexual and reproductive health, there are still high rates of HIV infections and teenage and unwanted pregnancies, and a lack of responsible fatherhood.

Very little research has focussed on the role that young black men have regarding these issues. Women continue to be at higher risk for HIV due to a complex mix of biological, behavioural, structural, cultural and social factors. I believe the general attitude of young men towards sex, females and relationships often causes negative health and social consequences. Currently, I have collected the 268 questionnaires on the various sexual and reproductive health questions and I am busy capturing this data to write up my findings.

What are the questions you hope to answer and the changes you want to see?

I hope to show the demographic and socio-economic profile of the rural young male community. Then I plan to assess their knowledge, attitudes and practices around sexual and reproductive health. I have placed emphasis on teenage and unwanted pregnancies and on HIV and other sexually transmitted diseases. Another element is their attitudes towards responsible fatherhood.

From my findings, I want to make recommendations for an interventional research study focussed on the role that young males in rural communities can have on the improvement of sexual and reproductive health outcomes. In future, I would like to see more rural youth development projects that are aimed at both young men and women to tackle the challenges that are related to poor sexual and reproductive health.

The solution to this problem has to come from both groups. With this support from the Discovery Foundation, I can travel the required distances to gather data and keep my focus on my clinical work and academics in a busy, often challenging district public health sector and also recruit the help of a professional research assisting in data collection, capturing and analysis – which are all time consuming.

PILLAY

> "I have always been attracted to internal medicine as a discipline owing to its diverse nature that challenges you on a daily basis."
>
> *Dr Sarusha Pillay*

DR SARUSHA PILLAY

Individual Award: University of KwaZulu-Natal

Doctor Sarusha Pillay is a second-year Registrar in Internal Medicine at the Nelson Mandela School of Medicine at the University of KwaZulu-Natal (UKZN). She's based in Durban and works at the Inkosi Albert Luthuli Central Hospital. In October this year, she will present two interesting medical cases at the World Congress in Internal Medicine in Cape Town.

What is the problem at the core of your research?

Tuberculosis (TB) poses a huge burden of disease management in South Africa. The World Health Organization (WHO) in 2013 estimated an incidence of 450 000 cases of active TB. Furthermore, in 2014 the South African Department of Health estimated that 73% of TB patients were HIV co-infected. The introduction of GeneXpert (GXP) testing in 2011 greatly improved the screening and prompt diagnosis of TB. However, little is known of the compliance with these management guidelines and the GXP algorithm. My study aims to test compliance with the GeneXpert sputum guidelines.

Sputum collection forms the cornerstone of TB diagnosis and further management. According to the South African guidelines, GeneXpert forms the initial investigation for the diagnosis of TB with South Africa having the largest GeneXpert rollout programme in the world.

How will you solve this problem?

This study will aim to test compliance with the national tuberculosis GeneXpert MTB/RIF guidelines. There is currently a paucity of data regarding compliance with these guidelines. I hope this study will serve as a quality improvement project by identifying the possible reasons for non-compliance and proposing possible further areas for developments within the guidelines.

How did you become interested in your research topic?

I completed my internship at King Edward XIII Hospital in Durban and my community service year at KwaMashu Community Health Centre. My research will focus on the KwaMashu area in Durban, which is a hotbed for TB and HIV.

During the time I spent doing my community service at the KwaMashu Community Health Centre, a clinic that caters for the needs of a socio-economically depressed community, I became painfully aware of the ravages of TB and its impact on a struggling community. I witnessed firsthand the gaps in knowledge the staff had when following the GXP algorithm, both for the diagnosis and follow-up on TB patients. Having identified this, I decided that my research should focus on an area of study that would address the problem and address the health needs of the community.

As I became actively involved in the KwaMashu community, I realised that patients and their relatives are poorly educated about HIV and TB. People struggle to comply with treatment guidelines and sputum follow-ups.

What sparked your interest in internal medicine?

I have always been attracted to internal medicine as a discipline owing to its diverse nature that challenges include you on a daily basis. Patients' diagnoses are often intricate puzzles that require solving. Patient care is commonly long-term which also allows you to build lasting relationships with your patients. The discipline is changing and with ongoing research the field is continuously evolving. Keeping up to date with the latest practices is academically stimulating.

What are your hopes for the future of healthcare?

With better compliance we will hopefully be treating patients more successfully and also identifying drug-resistant TB earlier.

What motivates you?

My patients are a constant source of inspiration. The fact that every day I am making a difference to someone's life motivates me to continue with the work I engage in, irrespective of the challenges I face in the public healthcare system.

What is your life motto?

The impossible is always the untried.

DR. M. SIKHOSANA

Academic Fellowship Award: University of Pretoria

SIKHOSANA

DR MPHO LERATO SIKHOSANA

Academic Fellowship Award: University of Pretoria

FIELD EPIDEMIOLOGISTS, OR DISEASE DETECTIVES, ARE THE BOOTS ON THE GROUND

"One of the core skills of the programme is investigating disease outbreaks. I had the privilege of presenting one of the outbreaks that I was involved in at the Field Epidemiology Training Programme International Night at the 67th Epidemiology Intelligence Service Conference in Atlanta, Georgia, on 17 April 2018. At the moment, I am drafting a journal article on this outbreak."

Please tell us about your work and research.

I am a resident in the two-year South African Field Epidemiology Training Programme (SAFETP). The aim of the programme is to develop field-trained epidemiologists that can apply practical epidemiological methods to public health problems. Field Epidemiologists, or disease detectives, are the boots on the ground. Field Epidemiology is about rapidly, effectively and efficiently responding to health threats by employing the necessary methods and skills that will provide data for action, to improve the health of the general public. Where are you doing your field training?

I am placed at the Centre for Vaccines and Immunology, at the National Institute for Communicable Diseases (NICD) in Sandringham, Johannesburg, for my field training.

Where are you doing your field training?

I am placed at the Centre for Vaccines and Immunology, at the National Institute for Communicable Diseases (NICD) in Sandringham, Johannesburg, for my field training.

What are you working on at the moment?

I am working on three research projects:

1. *An evaluation of the South African Congenital Rubella Syndrome Surveillance System:*

The extent of Congenital Rubella Syndrome (CRS) is not well defined in South Africa. The South African CRS Surveillance Programme was established in 2015, with the aim of describing the epidemiology of laboratory-confirmed CRS cases in the country. The aim of this study is to evaluate the performance of this surveillance programme since its establishment.

2. *Epidemiology of laboratory-confirmed mumps virus infection in South Africa, 2012 to 2017:*

Data on the burden of mumps disease in South Africa are sparse. The aim of this study is to describe the epidemiology of mumps infections in our setting.

Association between pre-eclampsia and HIV. A case control study in a tertiary hospital, Gauteng, South Africa:

Pre-eclampsia complicates 2% to 15% of pregnancies worldwide, and is associated with adverse maternal and neonatal outcomes. In developing countries, the incidence has been estimated to be 3.4%. One theory regarding the pathogenesis of pre-eclampsia proposes that the condition has an immunological basis. It has therefore been hypothesised that in immunosuppressed states such as HIV, pre-eclampsia would occur less commonly. Together with a high HIV prevalence of approximately 30% in the antenatal sub-population, our setting is suitable for conducting this case-control study that aims to determine whether there is an association between pre-eclampsia and HIV.

What sparked your interest in virology?

I completed my internship and community service at Natalspruit Hospital in Ekurhuleni. I began to appreciate the importance of preventive medicine all the more during my internship and community service. My interest in viral infections also grew during that period.

What will you do once you qualify as a field epidemiologist?

I plan to register for a Master's Degree in Vaccinology. I aspire to work in the area of vaccine-preventable diseases. I believe that the two qualifications (Field Epidemiology and Vaccinology) will complement each other well.

What are your hopes for the future of public health?

I hope that more African scientists and researchers will be trained and encouraged to work towards developing African solutions to African health problems.

What inspires you?

In my daily life, I draw strength from a verse from Zechariah 4:6, "Not by might, nor by power, but by my Spirit, says the Lord of hosts."

FLATELA

DR MLUNGISI FLATELA

Award for Healthcare in Rural and Underserved Areas: Individual Award

"Having completed my undergraduate degree, I am now keen to continue my studies. I would like to further specialise in obstetrics and gynaecology, with the ultimate intention of carrying out this research-based MMed to help find solutions that could address the adverse outcomes among pregnant women with HIV and pregnancy-related high blood pressure. I am confident that this research project will positively add to knowledge around a locally relevant healthcare problem and its outcomes will be beneficial to the community at large."

Dr Mlungisi Flatela

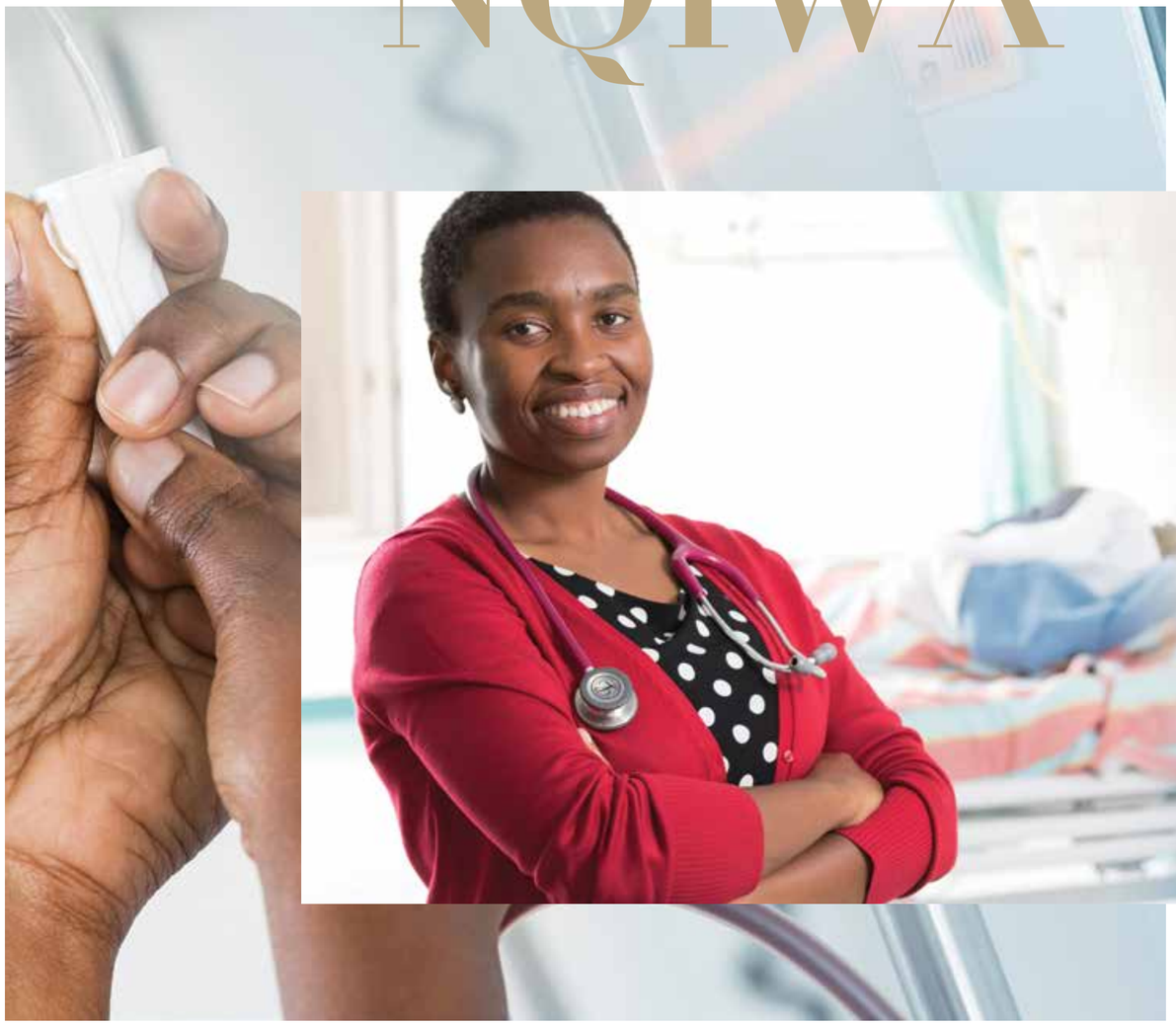
LEARNING FROM MOTHERS WITH HIV AND PRE-ECLAMPSIA TO IMPROVE FUTURE CARE OF OTHERS

Dr Mlungisi Flatela, a Senior Registrar in Obstetrics and Gynaecology at Nelson Mandela Academic Hospital, received a grant from the Discovery Foundation towards completing his MMed. The study name is, "Arterial stiffness in pregnant women with pre-eclampsia and HIV infection at Nelson Mandela Academic Hospital."

Dr Flatela has been working at Nelson Mandela Academic Hospital for the past seven years. He is committed to the improvement of healthcare in the resource-limited region of the Eastern Cape. Dr Flatela is known as a dedicated clinician and also mentors interns who rotate through their department. The study he is undertaking will help shed more light on predicting adverse cardiovascular outcomes and organ damage in pregnant women with HIV and with pregnancy-related high blood pressure. The aim is to improve the maternal and foetal outcomes of mothers affected by these conditions in the Eastern Cape.

Through this study, Dr Flatela will be equipped with statistical and epidemiological skills that will enable him to further his career in research. The outcomes can potentially identify remedies to the daunting healthcare challenges that are associated with high rates of maternal and foetal morbidity and mortality in South Africa, especially in the underserved areas. His supervisor fully supports this high-quality MMed research project that will allow Dr Flatela to take active steps to solve a locally relevant maternal healthcare problem.

NQIWA



DR KHAYAKAZI NQIWA

Individual Award: University of KwaZulu-Natal

INVESTIGATING PRIMARY CARE TO IMPROVE THE OCCURRENCE OF CARDIOVASCULAR RISK FACTORS

Dr Khayakazi Nqiwa is a Medical Registrar in Internal Medicine and will, through the University of KwaZulu-Natal, complete her MMed research. She aims to look at compliance with guidelines for management of cardiovascular risk factors in patients with diabetes, hypertension and HIV in a rural clinic. She says it is important for primary healthcare, combined with specialists' care, to translate into outcomes that improve the lives of South Africans. Specialist care is often concentrated in urban areas and out of reach for the majority living in rural areas. This means that primary healthcare centres most commonly manage patients for diseases that require ongoing care. Prevention of disease and the associated complications is, therefore, the primary role of these facilities.

Adequate screening and managing patients with chronic conditions at the primary healthcare level can help to avoid complications and reduce death rates. Dr Nqiwa says, "My research project will focus on hypertension, diabetes and HIV and the associated cardiovascular risk factors. The aim of the study is to determine compliance with guidelines for management of cardiovascular risk factors in these patients. The management guidelines provide healthcare practitioners with the approach to manage diseases and, where necessary, to do other investigations or refer patients for specialist interventions."

The National Development Plan 2030 has a goal to significantly reduce the prevalence of non-communicable diseases. To address the risk factors of these diseases, timely screening, counselling and mentoring of primary healthcare personnel is essential. This will ensure that care for chronic diseases is not only of higher quality, but also that complications can be identified for quicker referral to specialists. While this has started happening through government projects, Dr Nqiwa hopes to identify areas of mentoring to strengthen these programmes and the health system. One of the outcomes she hopes for is that, Southport Clinic in the Ugu district, where she will do her research will become an example of a primary healthcare centre that applies guidance to benefit the district and assist decision-making bodies at health planning platforms.

The supervisor of her study, Professor Magula, the Head of Internal Medicine at University of KwaZulu-Natal says, "Dr Khayakazi Nqiwa is a hardworking young doctor who is making excellent progress as a Registrar. She has experience working in an underserved part of KwaZulu-Natal. Her study will help identify factors associated with cardiovascular complications, which eventually need management at higher levels of the healthcare system."

The study will mainly look at blood glucose maintenance and good blood pressure control among patients with chronic conditions. Hypertension and diabetes are growing concerns among patients with HIV and Aids due to their therapy often increasing their risk for cardiovascular conditions. "I believe this retrospective study that will review medical records of patients who attended Southport Clinic from June 2015 to August 2016 will provide a step forward in areas of intervention to ensure compliance with guidelines that will help decrease the occurrence of complications at a primary care level," says Dr Nqiwa.

GUMEDE

What is cryptococcal meningitis?

Cryptococcal meningitis or CCM is a form of meningitis and is one of the most devastating opportunistic infections among people living with HIV and Aids. It remains one of the biggest challenges for doctors to treat. Globally, this opportunistic infection is the most common cause of Aids-related deaths. In sub-Saharan Africa, CCM is the cause of 33% to 63% of all adult cases of meningitis and more than 500 000 deaths around the world.

What is the problem that your research aims to solve?

Cryptococcal meningitis is a common infection in people living with HIV and Aids. It has a significantly high morbidity and mortality rate. Doctors face a great challenge in changing the course of this disease to prevent neurological damage with no clear treatment guidelines. My research aims to thoroughly analyse relevant and current literature to provide evidence-based medical guidelines, specifically around the use of steroids in the treatment plan. I hope to set clear standards in evidence-based care to help doctors treating HIV-positive patients with CCM on a daily basis, and to stimulate further research on this subject.

Why did you choose to research this topic?

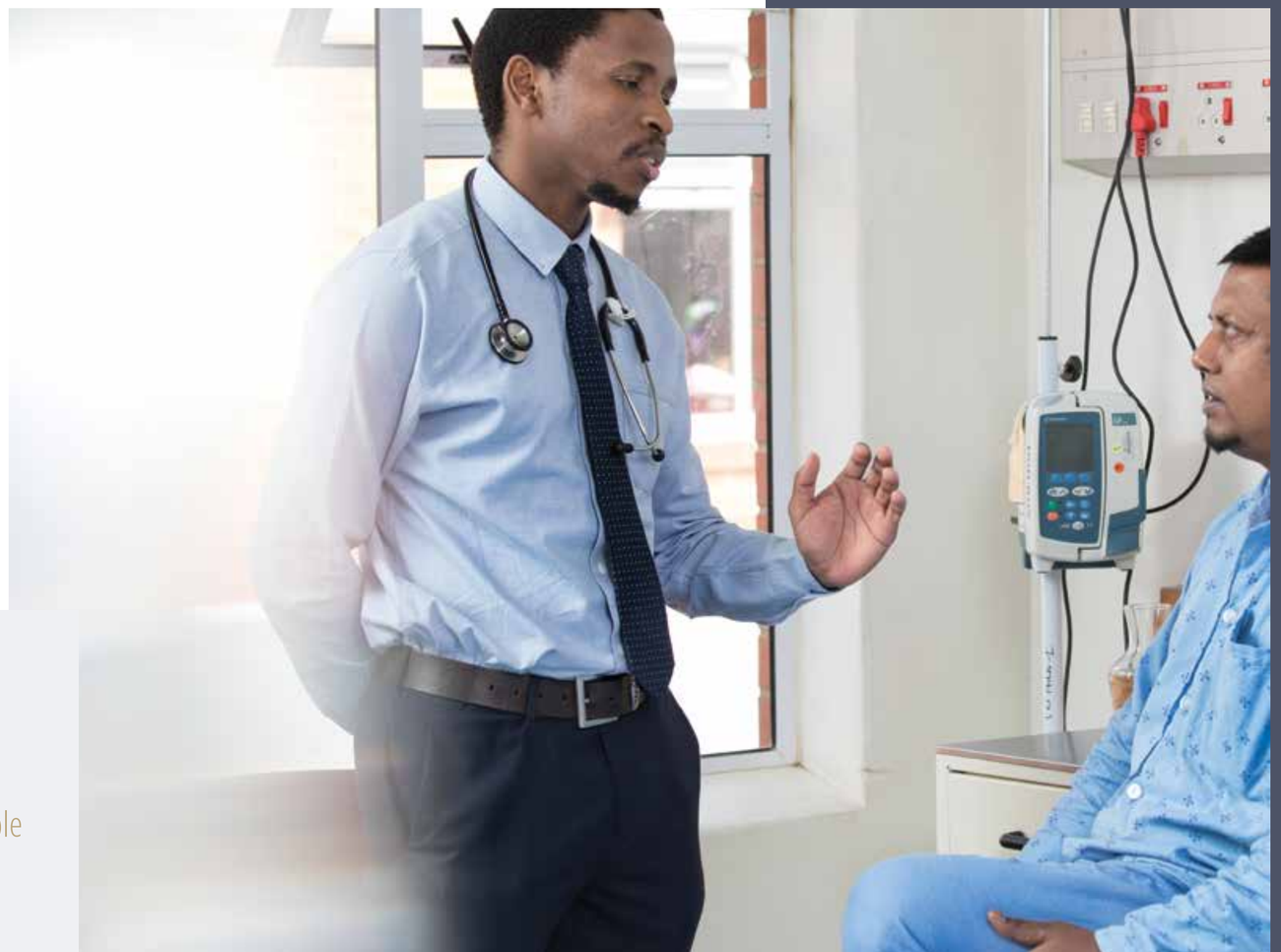
South Africa has made major advances in treating HIV and Aids. However, opportunistic infections, especially CCM, still lead to a high number of deaths. The biggest question for me is: How do we change the course of this disease and improve patients' survival rates? I believe having clear standards of care that is evidence based can help us move towards improved outcomes in treating CCM in people living with HIV and Aids.

What inspires you?

I am motivated by the words, "Our greatest glory in living lies not in never falling, but in rising every time we fall." I make sure that I keep asking questions and keep learning. The little changes I make motivate me, seeing the difference I make in the lives of my patients, my community and the lives of my family.

"I believe having clear standards of care that is evidence based can help us move towards improved outcomes in treating CCM in people living with HIV and Aids."

Dr Dumisane Gumede



DR DUMISANE GUMEDE

Individual Award: University of KwaZulu-Natal

DR JOHN-D LOTZ

Individual Award: Walter Sisulu University

LOTZ

BEDS

_1_8_0_

MADWALENI HOSPITAL

Situated in the deep rural Eastern Cape

PEOPLE

_F_E_W_

IN THE COMMUNITY RECEIVE TREATMENT FOR TB FROM MADWALENI HOSPITAL

The aim is to make sure most patients receive TB treatment at their local clinics

PEOPLE

_6_0_ _T_O_ _7_0_

CURRENTLY RECEIVE TREATMENT

For drug-resistant TB at Madwaleni Hospital

PATIENTS

_5_0_0_ _T_O_ _7_0_0_

THE STUDY ON PATIENT OUTCOMES AIMS TO INCLUDE

From Madwaleni and Zithulele Hospitals

CURRENT CURE RATE

_5_0_%_

DRUG-RESISTANT TB AT MADWALENI

This is similar to the national picture for curing drug-resistant TB

DR JOHN-D LOTZ

Individual Award: Walter Sisulu University

TAKING RURAL HEALTHCARE TO A NEXT LEVEL THROUGH PASSION AND ACADEMIC PURSUIT

"I work at Madwaleni District Hospital," says Dr John-D Lotz. On a map, you will find it near the coastline of the Eastern Cape. Described as, "Deep rural, there are rolling hills dotted with colourful huts." A close knit group, the doctors here give this 180-bed hospital a warm heart that welcomes locals to receive medical care. Dr John-D Lotz and his wife, Dr Michaela Lotz, are two of these dedicated doctors who joined the team in 2014 to care for the rural people.

Dr Lotz is a Family Medicine Registrar who, making up for limited resources, says, "I take care of any and every ailment that brings people to Madwaleni Hospital. My research, however, is on a special interest I have developed while here – treating drug-resistant tuberculosis (TB)." He says managing the TB unit at Madwaleni since 2015 has been both fulfilling and frustrating due to the many challenges and limited evidence-based guidance on treatment.

"In this environment, we face difficult administrative and clinical questions every day. Most of the time without clear guidance or specific standards. I believe, as do my supervisor and colleagues at Zithulele Hospital, that my research – specifically the findings on patient outcomes – can help us close the gap in our current understanding. We hope it will guide and improve care for all people with drug-resistant TB in rural settings," he says about his planned research.

On choosing his career, Dr Lotz says," I thought if I did nothing else, I would at least be helping people. After a few years, my studies got better and I knew it was my calling." He always had an interest in paediatrics and rural medicine. But, as an early mentor pointed out, only Family Medicine consultants ventured into rural healthcare. And so, always having the desire to help people who he thought may need it most, Dr Lotz decided to specialise in Family Medicine.

Now focussed on TB, he says, "Treating drug-resistant TB is a part of my duties that I am particularly passionate about. The high TB incidence frustrates me immensely when I think about how old the disease is and that it is curable. Yet it still affects people of all ages and it is running riot as it goes hand-in-hand with our HIV epidemic." His research is a passion he is eager to pursue because of the exciting developments in the science behind treating TB and HIV. But, for Dr Lotz, there is also a more personal reason. "I have also grown an interest in HIV and TB after I lost a friend to this deadly pair of conditions a few years ago. I watched a young man in the prime of his life wither away. He was a victim of disease and of a healthcare system that still needs a lot of work," says Dr Lotz.

And a lot of work has been done. The current national treatment programme for drug-resistant TB is being researched from every end. In Dr Lotz's research, he is particularly interested to see if the newly introduced short-course treatment (nine months and not 18 to 24 months) will make a difference.

Dr Lotz says the management of drug-resistant TB at Zithulele Hospital, an identical community to the one Madwaleni serves, is exemplary. "Part of my research will be to tell our stories of overcoming the challenges we have faced. I also want to grow the collaborative efforts between our two hospitals to help our communities even more. The bigger goal is to look at shared characteristics among our patients, how well patients are doing and what the outcomes are for them. I am hoping this will lead to further research on interventions that can improve the care we provide." He says the Discovery Foundation's help will allow him freedom to extend his research as far as it needs to go, without being held back by practical limits.

"I am excited about growing in my role as a Family Medicine physician and improving health and lives in this community. My studies will end in 2021. By then, I will know if I will continue my work here or if my wife and I, and our growing family, will be called to serve other communities," says Dr Lotz who walks by faith, pursues meaning and lives with gratitude.

He says he reminds people who wish him luck that there is no such thing. The people around Madwaleni Hospital are lucky. They have Dr Lotz and others like him with the will to be better and do better for the rural communities in the Eastern Cape.

MBANJWA

TACKLING QUESTIONS AROUND TREATMENT OF LIVER DISEASE IN THE HIV ERA

Dr Bavumile Mbanjwa is a medical practitioner who is pursuing her MMed in Internal Medicine through the University of KwaZulu-Natal. She works at Inkosi Albert Luthuli Central Hospital. Her area of work, she says, is, "liver disease in the HIV era." After working in underserved areas of KwaZulu-Natal, Dr Mbanjwa says she developed a greater understanding of the challenges in communities who don't have easy access to healthcare. This is why she hopes to see equal healthcare provision for everyone in the future by bridging the wide gap between public and private healthcare service delivery.

When did you know you wanted to be a doctor?

I knew very early on that I wanted to be doctor. I grew up in one of the most remote areas of KwaZulu-Natal in uMzimkhulu. The closest we had to medical doctors, were traditional healers. My biological father was one too. I used to see families coming to consult with my father and leaving with a great sense of hope in their eyes. I fell in love with the idea of being a source of such hope and that's when I knew I wanted to be a doctor.

Please tell us more about your research topic and where you are.

My research will focus on the causes of liver disease in patients admitted to the gastroenterology unit at Grey's Hospital. It is a retrospective study and will look at the effects of HIV. I am new to research and still establishing relationships with contributors. I am pleased that, during my research so far, I have finalised seven of the eight research processes. The process on data analysis is still pending. The support from the Discovery Foundation will help me to reach my objectives to conduct medical reviews to collect biochemical, radiological imaging, microbiological and histological data of patients with liver disease and their outcomes at discharge from hospital. The burden of HIV disease and systemic manifestations continue to contribute to significant morbidity and mortality, in spite of therapy. I will focus on liver disease in patients with and without HIV infection.

How significant is liver disease in South Africa and what do you hope to answer?

Mortality and morbidity due to liver disease is an increasing burden worldwide. There are many causes of liver disease and its frequency varies geographically. South Africa invests fairly in the aim to promote the improvement of health and quality of life through accessible healthcare for everyone. Liver disease is a serious condition that can result in ending most medical interventions, especially in patients with any of the highest mortality causing diseases such as tuberculosis, HIV, Aids, and diabetes. These conditions require treatment that is intense on the liver function. Investigating outcomes of liver disease and co-morbidities can help us determine improved treatment plans to assist patients.

How were you inspired to do this research and what is the problem you aim to solve?

My supervisor, Professor Nombulelo Magula, encouraged me to do this research. I was further inspired to take up the challenge because I feel solving problems in medicine is like solving a puzzle. Patients come to you with different symptoms, just like pieces in a puzzle, and my duty is to put these pieces together to make an assessment. This research will help to identify patterns of liver disease and cost-effective methods of diagnosis to plan resource distribution.

What are your plans for the future and how do you stay motivated to achieve your goals?

This research has sparked a great desire in me to take my academic career further. The seven years of experience working in underserved community hospitals prompted this enthusiasm to develop my knowledge in internal medicine and return to Academic Medicine. I hope to pursue a Doctoral degree and see myself as a research professional and faculty member at a university.

I stay motivated to tackle challenges in our healthcare system, and hope to make an effective difference with my approach. I cannot bring about this change on my own, but I can try by casting my stone across the water and hoping it creates a positive and continued ripple.

DR BAVUMILE MBANJWA

Individual Award: University of KwaZulu-Natal

"I use these words to keep me motivated, "Hard work spotlights the character of persons: some turn up their sleeves, some turn up their noses, and some don't turn up at all"

Dr Bavumile Mbanjwa

IRUEDO

DR JOSHUA IRUEDO

Individual Award: Water Sisulu University

> "If we can show the success of this model to manage drug-resistant TB and identify aspects of care we can strengthen across the district for this model to reach its exceptional potential to help people and to ensure better health outcomes, I will be extremely pleased."
>
> *Dr Joshua Iruedo*

When did you know you wanted to practice medicine?

I was quite sickly during my childhood and had to visit the hospital many times. My fascination with medicine began from looking at the demeanour of doctors and the respect they commanded. I knew I wanted to be a doctor since the age of nine and that interest never changed.

What is your research focus and what does it aim to solve?

My research is focused on the community-care model for drug-resistant TB in the OR Tambo district. This model is fairly new to the district and there is so much effort being made, both provincially and nationally, to make it a success. It offers significant technology and programme innovations to manage drug-resistant TB. I hope my research will give us insight into how this model of care has expanded access to care, especially with the limited capacity for in-patient care at central treatment facilities. Also, how it affects transmission and health outcomes in our communities. The results can help us identify structural changes, including the establishment of clinics applying this model and better participation of health workers and possible partnerships with non-government organisations.

How significant is the issue drug-resistant TB in South Africa?

The challenge of drug-resistant TB cannot be overemphasised. It frustrates global efforts towards having a TB-free world. We have, by what is reported, an incidence rate of 37 cases for 100 000 TB cases. The government has made it a priority to align with global and national priorities to reduce and manage these health risks.

How did rural healthcare become your passion?

My passion for rural healthcare began at Greenville Hospital in the rural area of the Pondoland in the Eastern Cape. It was on a gravel route and very rural. What I remember clearly is the warmth and love from all the people. I was the youngest there and my biggest achievement was opening the operating theatre and performing the first major operation in over ten years. In eight months, I had done well over 100 operations. After an appointment at All Saints Hospital, I returned to Greenville Hospital and simply started where I left off. I recruited more doctors and from then on it was smoother sailing.

One thing was consistent. Our engagement with the community, health centres and schools. It was during this time that my interest for rural and family medicine developed. Working with local communities, the most rewarding part of the experience was that a small intervention made such a tangible difference. But we also had many challenges and the solutions often needed a multi-faceted approach. So, in 2009, I decided to study Family Medicine at Walter Sisulu University. This turned out to be a life changing decision for me. I was introduced to pioneers of Family Medicine and have been learning from them since. Today, I am making my small contributions wherever I find myself.

HEART, KIDNEY AND DIABETES CARE

MRARA

DR BUSISIWE MRARA

Academic Fellowship Award : Walter Sisulu University

ACUTE KIDNEY INJURY IS AN EXPENSIVE PUBLIC HEALTH PROBLEM THAT WE OFTEN MISS IN ITS EARLY STAGES

Dr Mrara is the Head of the Anaesthesia and Critical Care Department at the Nelson Mandela Academic Hospital (NMAH) and Walter Sisulu University (WSU) in Mthatha in the Eastern Cape. This year, she began her PhD research into acute kidney injury (AKI) in critically-ill patients.

Dr Mrara obtained her MBBCh at Wits in 1998 and completed several qualifications at the Colleges of Medicine of South Africa: A Diploma in Anaesthesia (2004); an Anaesthesiology Fellowship (2007); and a Certificate in Critical Care (2010). Dr Mrara serves as a member of the Colleges of Medicine Council for Anaesthesia, representing WSU and the Eastern Cape.

Why did you choose to focus on acute kidney injury in your research?

Our health system is struggling to accommodate the burden of acute kidney injury. AKI is an expensive public health problem that we often miss in its early stages when it could be prevented from progressing into renal failure where dialysis is needed.

Why is AKI such a big problem?

In our overburdened healthcare system, and difficult access to healthcare, patients present in acutely ill states from common ailments like sepsis and pre-eclampsia. These two are the leading pathologies that cause AKI in the Eastern Cape.

It's a huge problem in our resource-limited country. South Africa has high rates of acute kidney injury – 25% to 50% of critically-ill patients develop AKI, while 30% to 40% of patients admitted to intensive care have AKI – yet access to resources like dialysis and renal transplants remains scarce. Critically-ill patients suffer serious consequences, ranging from needing expensive renal replacement therapy (RRT) to death.

What do you hope to achieve with your research?

The research will shed light on what can be diagnosed and modified to prevent acute kidney injury. We need a more vigilant approach to the prediction and prevention of AKI.

This research aims to address some of these gaps, which are important in resource-limited settings where management of AKI to curtail the need for ongoing RRT is imperative, and where general ICU management, including ventilation, is a scarce resource.

Key aims of the research:

- To investigate the risk predictors of AKI in an intensive care unit in a rural hospital.
- To develop and validate a predictor tool for development of AKI.
    - Controversial issues around AKI in an ICU setting;
    - The accurate diagnosis of AKI in critically-ill patients;
    - The appropriate management of fluids; and
    - The extent of involvement of other organ systems such as the respiratory and coagulation system.

Please tell us about your career so far.

I did my undergraduate and postgraduate medical studies at the University of the Witwatersrand in Johannesburg. I've trained and worked at Chris Hani Baragwanath Hospital in Johannesburg. This is a very busy public hospital and I gained valuable clinical experience in both anaesthesia and critical care. I've worked as an ICU Fellow in Brisbane, Australia, which is a highly-resourced area with state-of-the art systems. This gave me ideas of what to strive for in the South African health context. I am currently the lead in a rural facility where I can combine the experience I have from the two urban centres to bring expertise to the rural facility.

What are your future plans once you have your PhD?

My plans include improving the smooth running of the service and facilitating research output. I hope for better efficiency in access and care of patients in public hospitals.

How did your childhood affect your decision to become a doctor?

My mother was a nurse and used to help sick people in the neighbourhood and extended family. I wanted to be helpful in that regard. My father was an academic and one of the pioneers of the (then) University of Transkei, now Walter Sisulu University. His work as a geographer gave him insight into the living conditions in rural Eastern Cape, which he ensured we understood. He encouraged me to look outside my own needs and to be part of initiatives to better society and the lives of struggling rural folk.

I am committed to improving critical care services in the Eastern Cape, and research and teaching at Walter Sisulu University.

TSABEDZE

DR NQOBA TSABEDZE

Academic Fellowship Award: University of The Witwatersrand

Dr Nqoba Israel Tsabedze (35) is the Academic Head of Cardiology at the University of the Witwatersrand (Wits) and the Clinical Head of Cardiology at the Charlotte Maxeke Johannesburg Academic Hospital.

Dr Tsabedze earned his MBBCh from Wits in 2005 and completed his medical internship at Chris Hani Baragwanath Hospital, for which he received the Medical Intern of the Year Award in 2006. He worked as a medical registrar at Wits from 2008 to 2011, when he had to decide between nephrology and cardiology. At first cardiology intimidated him, but when his father was diagnosed with a conduction problem of the heart, the choice became clear.

In 2015, Dr Tsabedze received the Wits Carnegie Clinician Scientist Programme Fellowship and started his PhD research on "Genetics of Idiopathic Dilated Cardiomyopathy (IDCM) in Johannesburg."

Why did you choose this research topic?

Heart failure is the number one reason for admission of black South African patients into a cardiology ward. IDCM accounted for up to 35% of heart failure cases in the Heart of Soweto Study.

The World Health Organization predicts cardiovascular diseases to cause the greatest global burden of morbidity and mortality. In sub-Saharan Africa, there is an emerging epidemic of non-communicable diseases lead by cardiovascular diseases. My PhD research project focuses on the genetic variants responsible for IDCM in sub-Saharan Africa.

What is IDCM and how is it relevant to South Africa?

IDCM is a primary myocardial disease of unknown cause. The incidence and prevalence of this illness is unknown in South Africa. In the USA the prevalence is estimated to be one in 250 individuals, with a higher predicted prevalence in people of African origin. Often these patients present with advanced heart failure, which harbours a prognosis worse than that of most cancer diagnoses.

This study will be the first in South Africa to investigate the genetics of IDCM systematically. Affected patients and their families will have an advantage of early diagnosis and management. We're collaborating with researchers from Vanderbilt University to identify sub-Saharan African genetic variants responsible for IDCM. This research will provide a foundation to pioneer novel diagnostics unique to sub-Saharan Africa and a platform to develop innovative heart failure therapeutics.

What sparked your interest in IDCM?

From the time I started specialising as a cardiologist, it became evident that a lot of black patients were suffering from heart failure – more than their white and Indian counterparts. Our preliminary data shows that IDCM affects black males (78.1%) with a mere age of 42.6 (+/- 11.6) years.

A significant number of these patients were confounded by hypertension, there was still a unique group of patients who had no other explanation for their heart failure. The evidence led us to hypothesise that black patients are genetically predisposed to heart failure. Therefore, my PhD project is designed to identify any novel genes or polymorphisms of genes that are associated with heart failure of unknown origin.

What question does your research aim to answer?

Are there unique African genetic markers that can predict heart failure?

What future changes do you hope to see in cardiology?

I would like to see more heart failure clinics established in all tertiary and secondary hospital in South Africa. This disease is common among black patients and the elderly. The type of heart failure that I am investigating is particularly common among young adults and it has a grave prognosis if left untreated.

What are your future plans?

My aim is to establish myself as a competitive clinician scientist doing globally impactful research which is relevant and responsive to the health needs of South Africans.

How did it feel when Mail & Guardian named you one of the Top 200 Young South African Leaders for 2017?

This was such a great honour. It was a stamp of approval that someone noticed the work that we do behind the scenes. It was a validation that I am on a path that will yield answers to some of the key questions we need answered regarding Africans and their health challenges.

What are your hopes for the future of public health?

I hope all citizens can have access to affordable, quality healthcare; that the gap between private and public healthcare can become smaller; and that public health can be managed better and become a priority at national level.

BANA

DR TASNIM BANA

Academic Fellowship Award: University of Cape Town

DOCTOR TASNIM BANA HOPES TO UNRAVEL ENIGMAS AROUND LUPUS AND GOUT

The Durban-born doctor is set to become a future leader in rheumatology and a mentor for women in medicine

Doctor Tasnim Bana grew up in the crowded quarter of the city of Durban's old market place, where she attended a public school for Indian children during the declining era of apartheid. She says, "While being a culturally colourful part of the city's history, the area was unfortunately notorious for being crime-ridden and plagued with gangsterism as most young people lacked direction and had minimal opportunities to uplift themselves."

"Fortunately, my parents – although not having formal education themselves – were determined that their children would have better opportunities and encouraged us to study and play sport, which kept us fit, occupied and clear from negative influences." She excelled in both: she was the vice-captain for the Natal under-19 Girls' Cricket Team and was selected for the South African Girls' Cricket Team in 1995 at the age of 16 years.

With four distinctions in matric, Dr Bana went on to earn an MBChB at the Nelson Mandela School of Medicine (2003); a Dip HIV (Man) from the Colleges of Medicine South Africa (2008); an MMed in Medicine from the University of Cape Town (2015) and an FCP (SA) from the Colleges of Medicine SA (2015).

Her MMed research on prolonged tuberculosis-associated immune reconstitution inflammatory syndrome received a distinction and was published in an international journal – BMC Infectious Diseases – in 2016.

Since then, Dr Bana has been working at UCT as a senior lecturer and specialist physician. She recently started her PhD project entitled, "Pathophysiology of cardiovascular disease in systemic lupus erythematosus and gout – a clinical, multimodal imaging, serum and proteomic biomarker study."

Dr Bana says, "My research is centred on the fields of rheumatology and cardiology. I am investigating cardiovascular diseases (CVD) in patients with systemic lupus erythematosus (SLE) and gout by multimodal means including inflammatory and proteomic biomarkers, as well as advanced cardiovascular imaging techniques, with a focus on MRI (magnetic resonance imaging)."

She explained that SLE is an autoimmune disorder that affects predominantly young women and tends to run an unpredictable course of relapses and remissions. "The triggers of flares and mechanisms involved remain largely an enigma," she says.

Gouty arthritis (GA) is one of the most common joint disorders the world over, causing significant morbidity and joint destruction. She explains, "While it has been long known to have a myriad of cardiovascular associations, the mechanisms are not well delineated and there is little understanding of the pathways that link GA and CVD."

Dr Bana says she hopes that their multimodal techniques will help her to understand the processes that are involved. "I hope this work will advance our understanding of cardiovascular involvement in SLE and GA, and offer the chance to better understand the mechanisms, and pave the way to developing preventive and therapeutic strategies in the future."

After completing her PhD, Dr Bana will do subspecialist training in rheumatology and become a clinician scientist and academic in this field. She says, "I believe women need stronger representation in the academic arena to mentor and be role models. I want to contribute to developing other women clinicians, researchers and those wanting to build careers in Academic Medicine."

Professor Ntobeko Ntusi, Dr Bana's supervisor and Chair of the Department of Medicine at UCT, has worked with Dr Bana for five years and writes in her letter of recommendation: "Tasnim is respected by her colleagues, admired by her students and loved by her patients. She is committed to remaining in Academic Medicine and in the state sector in South Africa. I see her being a future leader in rheumatology in this country who will inspire a new generation of clinician-scientists and female physicians to take up research."

Dr Bana is committed to making a difference. "Every clinical encounter is an opportunity to touch the life of another person. I've realised over the years that as much as the science of what we do is important, how we interact with people in the medical context is an art form. Research inspires me because its potential for benefit extends beyond the consulting room. High-quality research can help people around the world through scientific writing and publication."

TSATSANE

> "Populations are ageing at an unprecedented rate. Chronic non-communicable diseases (NCDs) have overtaken infectious diseases as the leading cause of morbidity, disability, and mortality in our communities. The root causes of chronic diseases reside in non-health sectors. Prevention has become problematic."
>
> *Dr Doriccah Tsatsane*

DR DORICCAH TSATSANE

Individual Award: Sefako Makgatho University

When Doctor Doricca Tsatsane was only nine years old, she knew she wanted to be a doctor. Today, she is a Registrar in the Department of Family Medicine at the Sefako Makgatho Health Sciences University (SMU) in Ga-Rankuwa.

Dr Tsatsane's research project for her MMed degree in Family Medicine focuses on the importance of nutrition and diabetes self-management in treating patients with type 2 diabetes mellitus. Upon completion, she will present her findings at the South African National Family Practitioners Conference, as well as at the SMU Research Day.

What is the aim of the cross-sectional study which you'll be conducting study at the Kgabo Community Health Centre in Winterfield in the Tshwane District?

To empower health professionals concerning the importance of nutrition and diabetes self-management that can reduce the morbidity and mortality in type 2 diabetes patients. Health professionals will know that it is not only the treatment that controls patient's glucose level but also the food they are consuming.

How significant is this issue in South Africa?

According to the World Health Organization, the incidence of diabetes mellitus is rapidly increasing on a global basis. Statistics on causes of death in South Africa show that besides HIV, the disease that showed the highest increase in the number of deaths between 2004 and 2005 was diabetes mellitus. In 2015, it was estimated that there are approximately two million people living with diabetes in South Africa.

Why did you focus on this research topic?

Diabetes mellitus affects people worldwide and poses major public health and socio-economic challenges. I realised that nutrition was not included as part of diabetes treatment. The focus was only on insulin and oral medication. Diabetes self-management education is not mentioned at all regarding the management of type 2 diabetes mellitus. Most of the patients couldn't control their glucose levels. Diabetes is a chronic disease that requires patients to make a multitude of daily self-management decisions and to perform complex care activities. Diabetes self-management education and support (DSME/S) provides the foundation to help people with diabetes to navigate these decisions and activities and has been shown to improve health outcomes.

What changes would you like to see in this area of healthcare?

I would like to see patients understanding their condition better because of the empowerment of healthcare professionals. Patients must understand that it is not only oral medication and insulin that involve their treatment. Lifestyle modification is also important in the management of diabetes mellitus.

What attracted you to primary healthcare?

Living in a rural community, I have realised that many people there are sick and for them to see a doctor is a challenge. I want to bring health services to my community because most people do not even have money for transport to go and visit a doctor. The only way for me to reach these communities and people staying in rural areas is to be a family physician. I need to empower them; the closer I am, the better for them.

Populations are ageing at an unprecedented rate. Chronic non-communicable diseases (NCDs) have overtaken infectious diseases as the leading cause of morbidity, disability, and mortality in our communities. The root causes of chronic diseases reside in non-health sectors. Prevention has become problematic.

What inspires and motivates you?

What motivates me is making a difference in patients' lives who are living in rural settings and have lost hope concerning their illness. What inspires me also is putting a smile on the faces of those patients who have lost hope and appreciate the services we are offering them.

What is your plan for the future?

My plan for the future is to work with community-based, primary care and district hospital teams to provide high-quality clinical care to individual patients.

What is your life motto and favourite quote?

"The best view comes after the hardest climb."

"Be kind, work hard, stay humble, keep honest, stay loyal, travel when possible, never stop learning, be thankful always, and love."

MNTLA

"I hope to teach them the importance of guidelines, both national and international, and how they dovetail in our situation in South Africa. Treatment guidelines are very important to teach new doctors and students alike – these will leave a legacy to all of us when our patients are properly managed to the best of our abilities."

Professor Pindile Mntla

PROFESSOR PINDILE MNTLA

Distinguished Visitor Award: Nelson Mandela Academic Hospital

COMMUNITY ENGAGEMENT LIES CLOSE TO PROFESSOR PINDILE MNTLA'S HEART

The heart of the problem

Heart disease is a heavy burden on the Eastern Cape. People are suffering from cardiovascular problems that come with obesity, communicable diseases related to rheumatic heart disease, and the complications of HIV and TB, which include cardiomyopathy (disease of the heart muscle) and constrictive pericarditis (inflammation of the sack that surrounds the heart).

Nelson Mandela Academic Hospital (NMAH) in Mthatha in the Eastern Cape serves over three million people. It is the main teaching hospital for undergraduate and postgraduate medical students of Walter Sisulu University (WSU).

A distinguished visitor is called to help

The hospital has commissioned a cardiac catheterisation laboratory under the leadership of Dr Khulile Moeketsi, and has invited Professor Pindile Mntla to serve as distinguished visitor over the next two years.

Professor Mntla is the Head of Cardiology at George Mukhari Hospital and Sefako Makgatho University and has been in public service since 1985. He is an accomplished teacher and mentor, a widely-published researcher and is committed to advancing public healthcare in South Africa.

The plan of action

As part of the outreach programme – which will take place over three days a month for nine months a year – Professor Mntla will:

- Teach seminars on trends in managing heart problems;
- Help bolster the specialist cardiology clinic;
- Teach undergraduate and postgraduate medical students and medical officers from referring hospitals; and
- Conduct special outreach visits to neighbouring hospitals and primary healthcare centres.

How did you become involved in the programme?

I felt that this programme resonates with my vision of empowering the most rural areas of our country. Over the years, I have been involved in outreach programmes to Swaziland and I've recently been a regular visitor to Botswana for registrar training and preparation for the exit examinations.

What key lessons do you hope they will take away from your visit?

I hope to teach them the importance of guidelines, both national and international, and how they dovetail in our situation in South Africa. Treatment guidelines are very important to teach new doctors and students alike – these will leave a legacy to all of us when our patients are properly managed to the best of our abilities.

What do you most look forward to about your visits?

I look forward to strengthening and deepening the registrars' medical knowledge; the exchange of new information at the bedside teaching of registrars; mentoring students and ward rounds teaching. Most importantly, I look forward to being with the most impoverished population in our country and learning from their experiences.

Why is community engagement so important to you?

It's important to me to strengthen healthcare services and patient management in the most remote areas of our country. We need to start thinking about community-based research activities that will help to shape future and relevant research in our country, not just copying international practices.

Please tell us more about your career as a cardiologist and academic.

It was a chance occurrence when the minister refused me entry into Wits University for mechanical engineering. My interest in cardiology developed as a second year registrar at Johannesburg Hospital – now Charlotte Maxeke Academic Hospital – during my rotation into Coronary Care ICU. I was excited about saving a life when there was no hope and despair prevailed.

What has been the highlight of your career?

Coming to Sefako Makgatho University and helping them to produce over 70 super-specialist physicians (medical specialists). Assisting some to specialise in nephrology, medical oncology, cardiology, pulmonology, endocrinology, gastroenterology, rheumatology, and more. I have managed to get most of them through the Discovery Foundation scholarship as their mentor.

What are your hopes for public health in South Africa?

My hope for public health in South Africa is to see disease prevention and health promotion forming the fulcrum of our health sector and the pillar of healthcare. Preventable diseases should be addressed aggressively and South Africa should rid itself of rheumatic fever and rheumatic heart disease (RHD) in our lifetime.

What does it mean to you to be a Discovery Distinguished Visitor in rural and underserved areas?

This honour is valuable to me to participate in the wellbeing of the underserved and poorly-resourced communities of our beloved country. I feel happy to assist in the strengthening of care in these areas.

The Discovery Foundation is an independent trust in South Africa with the vision of helping to develop future medical specialists in South Africa's public healthcare system, particularly in the field of research and Academic Medicine. The Awards are made up of three categories that each address a specific area of medicine for development Academic Medicine and research, further specialisation in niche and scarce fields of medicine, rural medicine and human resource and capacity-building programmes.

2018

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