







DOCTOR  
**SAIM**  
SURKA



DOCTOR  
**NELISWA**  
GOGELA



DOCTOR  
**ELIZABETH**  
MAYNE



DOCTOR  
**PHELADI**  
MAMPANE



DOCTOR  
**JOSHUA**  
IRUEDO



DOCTOR  
**CATHERINE**  
ORRELL



DOCTOR  
**SHIRAAZ**  
GABRIEL



DOCTOR  
**PORTIA**  
MOSES



DOCTOR  
**MOSES**  
MAHLANGU

**CONNECTING HEALTHCARE EXCELLENCE**



DOCTOR  
**FARIED**  
ABDULLAH



DOCTOR  
**LEEGALE**  
ADONIS



DOCTOR  
**JOANNA**  
SKELTON



DOCTOR  
**MARISSA**  
MULLER



DOCTOR  
**ZUREIDA**  
KHAN



DOCTOR  
**ROBYN**  
RAUTENBACH



## DISCOVERY FOUNDATION MGH AWARD

1. Dr Neliswa Gogela

## DISCOVERY FOUNDATION ACADEMIC FELLOWSHIP AWARDS

- |                         |                                |
|-------------------------|--------------------------------|
| 1. Dr Elizabeth Mayne   | 8. Dr Robyn Rautenbach         |
| 2. Dr Matthys van Aardt | 9. Dr Sam Surka                |
| 3. Dr Leegale Adonis    | 10. Dr Joanna Skelton          |
| 4. Dr Marieke Brauer    | 11. Dr Mohamed Faried Abdullah |
| 5. Dr Marissa Muller    | 12. Dr Catherine Orrell        |
| 6. Dr Mergan Naidoo     | 13. Dr Shiraaz Gabriel         |
| 7. Dr Portia Moses      |                                |

## DISCOVERY FOUNDATION SUB SPECIALIST AWARDS

1. Dr Zureida Khan
2. Dr Anell Meyer
3. Dr Arifa Parker
4. Dr Moses Mahlangu
5. Dr Butsi Pheladi Mampane
6. Dr Neliswa Gogela

## DISCOVERY FOUNDATION RURAL FELLOWSHIP AWARDS

- |  |   |
|--|---|
| 1. Polokwane Mankweng Hospital Complex, Limpopo                            | 11. Dr Vangile Mkhathswa  |
| 2. Moses Kotane Hospital and Brits Hospital, North West                    | 12. Dr Chinedu Nwangwu  |
| 3. Ngaka Modiri Molema District, North West                                | 13. Dr Kingsley Ogbonna   |
| 4. Mthatha General, St. Barnabas and Malizo-Mphele Hospitals, Eastern Cape | 14. Dr Temitope Adedayo   |
| 5. Prof Claire van Deventer  | 15. Prof Jimmy Chandia  |
| 6. Dr Joshua Iruedo  | 16. Zithulele Hospital, Eastern Cape                            |
| 7. Dr Nomsa Mogosetsi  | 17. Ngwelezana Hospital, KwaZulu-Natal                          |
| 8. Dr Andrew Ross  | 18. Tonga Hospital, Mpumalanga                                  |
| 9. Dr Emeka Ugwu   | 19. Van Velden Hospital, Limpopo                                |
| 10. Dr Mothetho Dibetso  | 20. Department of Family Medicine, University of the Free State |
|  | 21. Department of Family Medicine, Walter Sisulu University     |

## DISCOVERY FOUNDATION EXCELLENCE AWARD

1. Polokwane Mankweng Hospital Complex, Limpopo



# Foreword by Vincent Maphai

## CHAIRPERSON OF THE DISCOVERY FOUNDATION

We live in a beautiful, diverse country with a population of 51 million, which is still growing. Statistics show that we are entering an era of population growth, but not necessarily in the way we think. Instead of the world getting younger, the world is actually getting older, and it will not be long before geriatrics globally outnumber our youth. In Africa, we are fortunate – as the world ages, our continent will be on the cusp of realising our demographic dividend, with many of our youth entering the workforce, and contributing to our country’s economic future. Thanks to the advances of medical research and technology, today people live longer, more productive and, overall, healthier lives. It is critical to recognise that generally, the world we live in is predominantly an ageing world, and an ageing society comes with a host of healthcare problems and persistent high healthcare costs. This highlights the importance of leading healthy, active, more productive lives for as long as possible. When people take responsibility for their own health and wellbeing, it goes a long way in helping them to offset the high healthcare costs associated with chronic diseases of lifestyle, which are, given the current global chronic diseases epidemic, set to rise in the coming years.

I am excited to see this dream taking shape through the number of lives that have been impacted positively through the compounding effect the awards have on the recipients and the communities they serve. Please join us in congratulating this year’s recipients of the Discovery Foundation Awards, whose inspiring stories you will read about in the following pages. We are proud to partner with them, and we wish them all the best in their research in their chosen specialties.

The challenges that an ageing world will present in the near future necessitate the strengthening of our country’s healthcare system so as to serve our nation’s many different healthcare needs adequately. One of the ways in which we need to do this is to ensure that there are a sufficient number of healthcare professionals in our healthcare system. South Africa has unfortunately, in recent years, experienced a critical shortage of medical skills. Statistics show that out of the combined 1 200 medical graduates our eight medical schools produce each year, half of these young medical graduates choose, for a variety of reasons, to pursue their professional careers in other countries. The irony is that these healthcare professionals could be working here at home, in South Africa. Here, they would gain invaluable experience through working in some of our country’s far-flung, remote and rural areas where medical skills and technological innovation are sorely needed.

This is an issue of concern for government, and indeed for all of us as a nation. While we may boast one of the best private healthcare systems in the world, our overburdened public healthcare system remains in dire need of medical talent. This is where the private sector can partner with our government. We can contribute to the vision of strengthening and improving our country’s healthcare system to make quality, equitable healthcare services, especially in terms of primary healthcare, more accessible and affordable for all South African citizens.

As a leading business founded in South Africa that is expanding globally, and as a key role player in the healthcare industry, Discovery has set an objective to help strengthen our country’s healthcare system. Through the Discovery Foundation, Discovery invests in the education and training of our medical specialists to retain scarce medical talent and boost the number of healthcare professionals working in South Africa. As I reflect on the impact the Discovery Foundation has had on our recipients and the lives of people and communities they serve, I am proud to say that many of our recipients have played a critical role in strengthening the country’s academic medicine sector. They have also boosted and continue to cement South Africa’s rich medical legacy as a leading hub of clinical research and ground breaking medical technological innovations. We continue to produce a number of the best medical experts internationally who are choosing to remain in South Africa and contribute towards the vision of building a better, stronger, more efficient healthcare system that will benefit all – both current and future generations.

## VINCENT MAPHAI

Chairperson  
Discovery Foundation



# We are passionate

## ABOUT MAKING QUALITY HEALTHCARE MORE ACCESSIBLE TO ALL SOUTH AFRICANS

At Discovery, our core purpose is to make people healthier, and enhance and protect their lives. This core purpose permeates our businesses, and manifests in our products and services. We believe a healthy society is more productive and progressive. Corporates across the world need to partner with their respective governments, and private, and civic sectors to help their governments to achieve the goal of realising a stable, healthy, thriving society.

We support the South African government's National Development Plan which details a strategic blueprint for our country's economic future growth; and addresses a number of socio-economic developmental challenges, which all sectors of society should work together to address. One of these challenges is providing quality healthcare to all South African citizens.

Healthcare is one industry that reflects this need for innovative partnerships to address one of the most critical, pressing issues the global society is facing – that of access to quality affordable healthcare, an ageing society and how to best contain increasing healthcare costs without negatively affecting quality and affordability.

### **The changing face of healthcare, and the challenges facing our country**

It is becoming evident that many more people globally are experiencing a longer life expectancy than their predecessors, thanks to modern medical advancements and technological innovations. Access to healthcare is deemed a universal human right, however, not everyone experiences this quality of healthcare, or even longevity.

Despite our country being home to one of the best private healthcare systems in the world, there is much we need to do to bring the public healthcare sector on par with our private healthcare sector. The majority of South Africans depend on the public healthcare sector which may not have adequate primary healthcare services available, especially in the remote, rural areas. This impacts negatively on their ability to lead healthier lives and make informed decisions about their own health and wellbeing. One of the biggest challenges we face is a dwindling pool of healthcare practitioners available in our country to serve our nation's healthcare needs. The exodus of top quality healthcare practitioners needs to be contained to ensure we retain critically needed medical skills. As a corporate, and as one of our country's key role players in the healthcare industry, we are able to make our biggest contribution in this arena and play an important role in improving and strengthening our country's healthcare system for the benefit of all.

### **Planting the seeds for quality healthcare services that will benefit current and future generations**

We established the Discovery Foundation in 2006 to help government address our country's critical shortage of healthcare professionals, and ensure we have enough healthcare professionals working in the country to address the nation's healthcare needs.

The aim of the Discovery Foundation is to invest over R150 million in the education and training of 300 medical specialists over ten years, and in the development of academic and research centres with a specific focus on those areas with the greatest need.

Each year, these funds are disbursed to a number of selected recipients through the Discovery Foundation Awards, which consists of a series of grants that enable recipients to specialise further in the medical specialty of their choice. Through these awards, we are boosting South Africa's reputation as an international hub of academic excellence and clinical research, contributing to the nation's future health and wellbeing.











**1**

DISCOVERY FOUNDATION  
**MGH AWARD**

Support for the training of  
South Africa's specialists



## DR NELISWA GOGELA

Senior Registrar in Gastroenterology,  
Groote Schuur Hospital,  
Cape Town, Western Cape

The fervent desire to become a doctor in spite of an inferior high school education has paid off for Dr Neliswa Gogela who is the recipient of this prestigious R2 million award, which will take her to the world-renowned Massachusetts General Hospital (MGH) to further her training and research.

### UNDER THE MICROSCOPE

*Dr Neliswa Gogela graduated cum laude from Medunsa in 2002. She is currently engaged in an MPhil "Chronic hepatitis C virus infection in men who have sex with men" which she aims to complete by 2014. Dr Gogela is married to pharmacist husband, Thibedi Mafokwane, and has two sons Matome (8) and Itumeleng (16 months). They will accompany her to MGH.*

"She is going to learn about new techniques in transplantation and new techniques in liver diseases and how to treat them, bring those skills back to South Africa and help develop this field which is still in its infancy in South Africa," says Prof Bongani Mayosi, head of the Department of Medicine at the University of Cape Town.

"I was driving home when I got the news from Prof Mayosi. I said, 'What, are you kidding me?' My goodness, God is good. It was a dream come true," says Dr Gogela.

One of the top three hospitals in the US, MGH has long been a leader in bridging innovative science with state-of-the-art clinical medicine. With an annual research budget of more than \$750 million, MGH conducts the largest hospital-based research programme in the US, spanning more than 20 clinical departments and centres. It performs more than 38 000 operations a year.

South Africa has a serious shortage of hepatologists trained in transplantation and the burden of liver disease and the complexity of available treatments have increased significantly. One of the main goals of the MGH programme is to enhance and enrich the training of promising young physicians and researchers so that they can take that knowledge and those skills back to their own institutions, says Dr Raymond Chung, professor of medicine and director of hepatology at MGH. At MGH, Dr Gogela will participate in around 50 liver transplants rather than the five she gets exposure to in Cape Town.

Her interest in liver disease, she says, was sparked during her internship at Frere Hospital in East London where she helped save the life of a young woman with acute liver failure.

"I decided I wanted to be a doctor when I got to high school but I knew I would have study hard and get good grades." Battling against inferior teaching, she nonetheless persevered with the support of her grandmother and was accepted by the University of Limpopo (Medunsa) to study medicine. She joined the Division of Hepatology, Liver Research Centre at Groote Schuur Hospital in 2010.

Dr Vincent Maphai, the Discovery Foundation Chairperson says, "Without a sufficient number of thought leaders and experts to teach our future healthcare specialists and leaders, South Africa cannot continue its proud legacy of excellence in healthcare. South Africa's academic specialists are ageing and dwindling in numbers. What we need very urgently is a new breed of mid-career people to replace them."



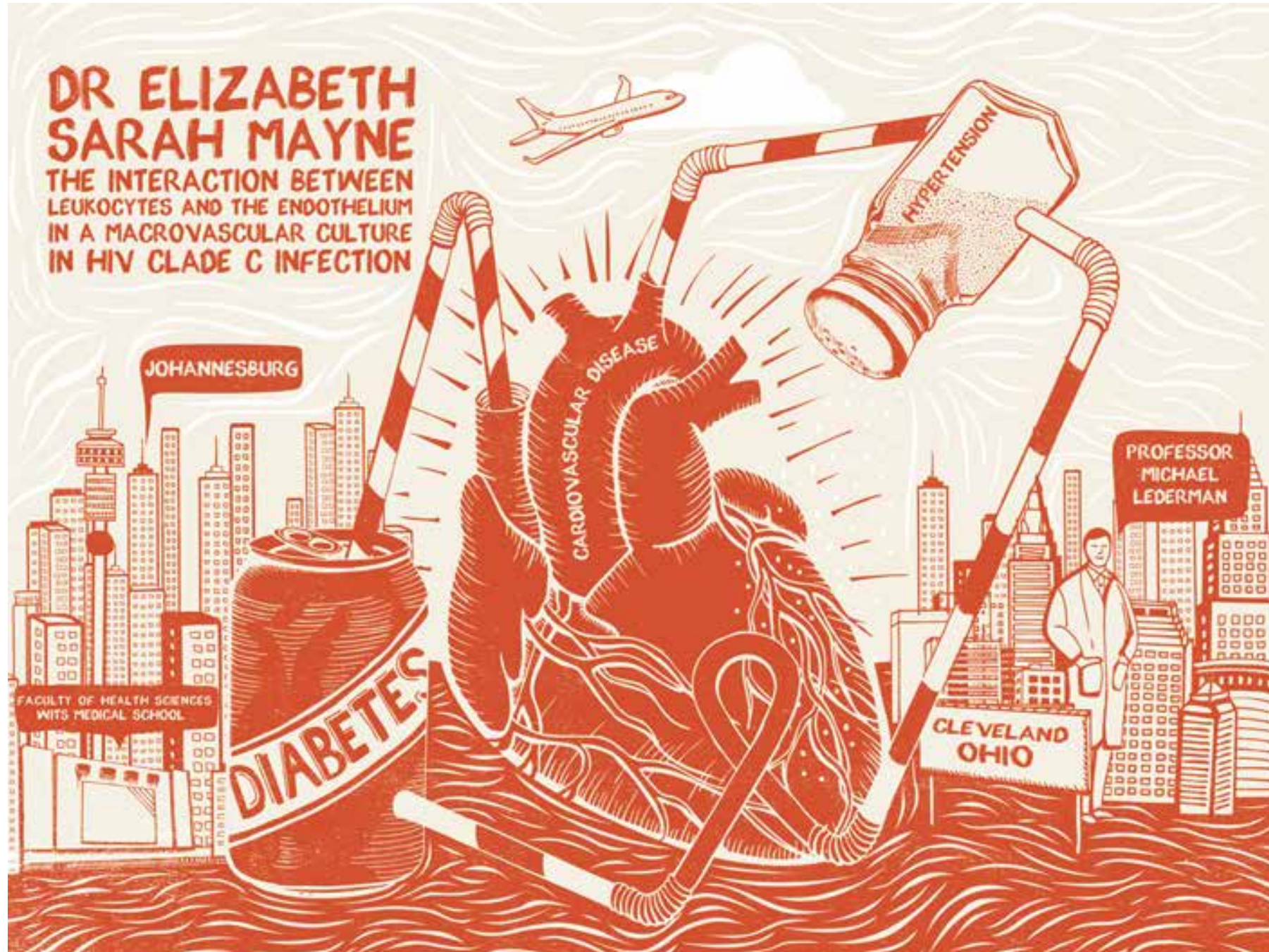




DISCOVERY FOUNDATION  
ACADEMIC FELLOWSHIP AWARDS

Support for the training of  
South Africa's specialists





# DR

## ELIZABETH MAYNE

**Consultant Haematologist**, Department of Molecular Medicine and Haematology and the National Health Laboratory Service, University of the Witwatersrand  
**Phd:** Haematology and Immunology

Thanks to the improved access to antiretrovirals fewer HIV patients are dying from opportunistic infections, but there is a notable rise in cardiovascular disease.

### UNDER THE MICROSCOPE

*Dr Elizabeth Mayne is married to an anaesthesiologist and she has a young daughter. When not researching the human body, Dr Mayne delves into the ancient history of the Near East and Africa. She obtained a Bachelor of Arts in Psychology, Religion and Ancient History with Distinction through Unisa in 2009.*

The human immunodeficiency virus (HIV) is rife in sub-Saharan Africa, but thanks to the widespread availability of antiretrovirals, the opportunistic infections have declined. But there has been a rise in non-infective complications such as pathogenic thrombosis, with increased risks of heart attack, stroke and deep vein thrombosis, says haematologist Dr Elizabeth Mayne.

This key complication of HIV infection is likely to become more common in South Africa as the access to antiretroviral therapy increases and fewer patients succumb to opportunistic infection. “The South African population is already at an increased risk of hypertension and type 2 diabetes and the combination of these metabolic diseases with chronic inflammation associated with HIV infection is likely to result in an epidemic of cardiovascular disease,” says Dr Mayne.

And because younger people and women – particularly those from poorer classes—are likely to be affected, the potential effects on income generation and social structures are devastating. Dr Mayne’s research will focus on inflammation, immune activation and the role of the blood vessel lining in HIV infected patients.

“Immunology is an area of medicine which is an orphan because it is underexplored, not just nationally but internationally,” says Dr Mayne. Most of the research in the area of endothelial dysfunction in HIV has focused on the strain of HIV prevalent in Western Europe and the US but not the strain most commonly found in South Africa. It is more immunosuppressive and the effects on other tissues are therefore likely to be different, Dr Mayne says.

Dr Mayne, who is currently based at Wits University in a large research group at the largest haematology unit in South Africa under Professor Wendy Stevens, has a special interest in haematological complications of HIV. US-based Prof Michael Lederman with whom Dr Mayne will collaborate on this research is able to offer her significant assistance both academically and in aiding in the development of new scientific techniques.

“Elizabeth introduced my laboratory to studies of coagulation that opened up a robust research direction for us that has been extremely productive. I am very keen to work with her on this project,” Prof Lederman says.

Dr Mayne, who joined the NHLS in 2005 as a pathology registrar, has enormous faith in immunology research and its role in modern medicine.

“It has been pushed to the head of the research agenda by the advent of HIV and our recognition that it will be impossible to win the war not just against HIV but against a number of vital non-communicable diseases without understanding human immunology better. We have very few clinicians who have a clear understanding of immunopathogenesis despite the fact that it underlies every human disease. “For this reason, basic research in immunology has profound implications for all areas of healthcare and for the public health system in general,” she says.

Though she is a medical doctor by training, her passion lies in research, teaching and training. “This includes everything from teaching the next generations of doctors to a number of postgraduate students who I am currently supervising. “I believe that medicine can only be made stronger by a good foundation of basic science and teaching.”







# DR MATTHYS VAN AARDT

Research Fellow in Gynaecology Oncology Unit, Steve Biko Academic Hospital

PhD: Cervical neoplasia in women with and without HIV related immune depletion: epidemiology and pathogenesis related to HPV types

Approximately eight South African women die every day from cervical cancer. Dr Matthys van Aardt believes local research could help reduce those numbers.

## UNDER THE MICROSCOPE

*Dr Matthys Cornelis van Aardt, or MC as he likes to be called, is a specialist gynaecologist obstetrician at the Steve Biko Academic Hospital in Pretoria. He did his community service in Standerton and his internship at Helen Joseph Hospital in Johannesburg. He spends his downtime pursuing a variety of sporting events. "I like being physically active," the 33-year-old says.*

Cervical cancer has a significant impact on society, because death often occurs in young women at the age when they're raising families. Unfortunately in sub-Saharan Africa, where other life-threatening illnesses like HIV/AIDS, malaria and tuberculosis take precedence, cervical cancer does not get the attention it needs.

Prof Greta Dreyer, the head of gynaecologic oncology at the University of Pretoria, says the question Dr van Aardt will attempt to answer through his research will be crucial for cervical cancer screening test selection in South Africa, and lies at the base of cancer prevention policies and programmes.

"Invasive cervical cancer is preceded by HPV infections. Despite numerous HPV types illustrated on cervical surface typing, the causal relationship between the specific oncogenic type and the resultant neoplasia is complex," says Dr van Aardt, and it is here that he is focusing his research. "I would like to add new insight into HPV causing cervical abnormalities in our country and in guiding future HPV vaccines in women with and without HIV."

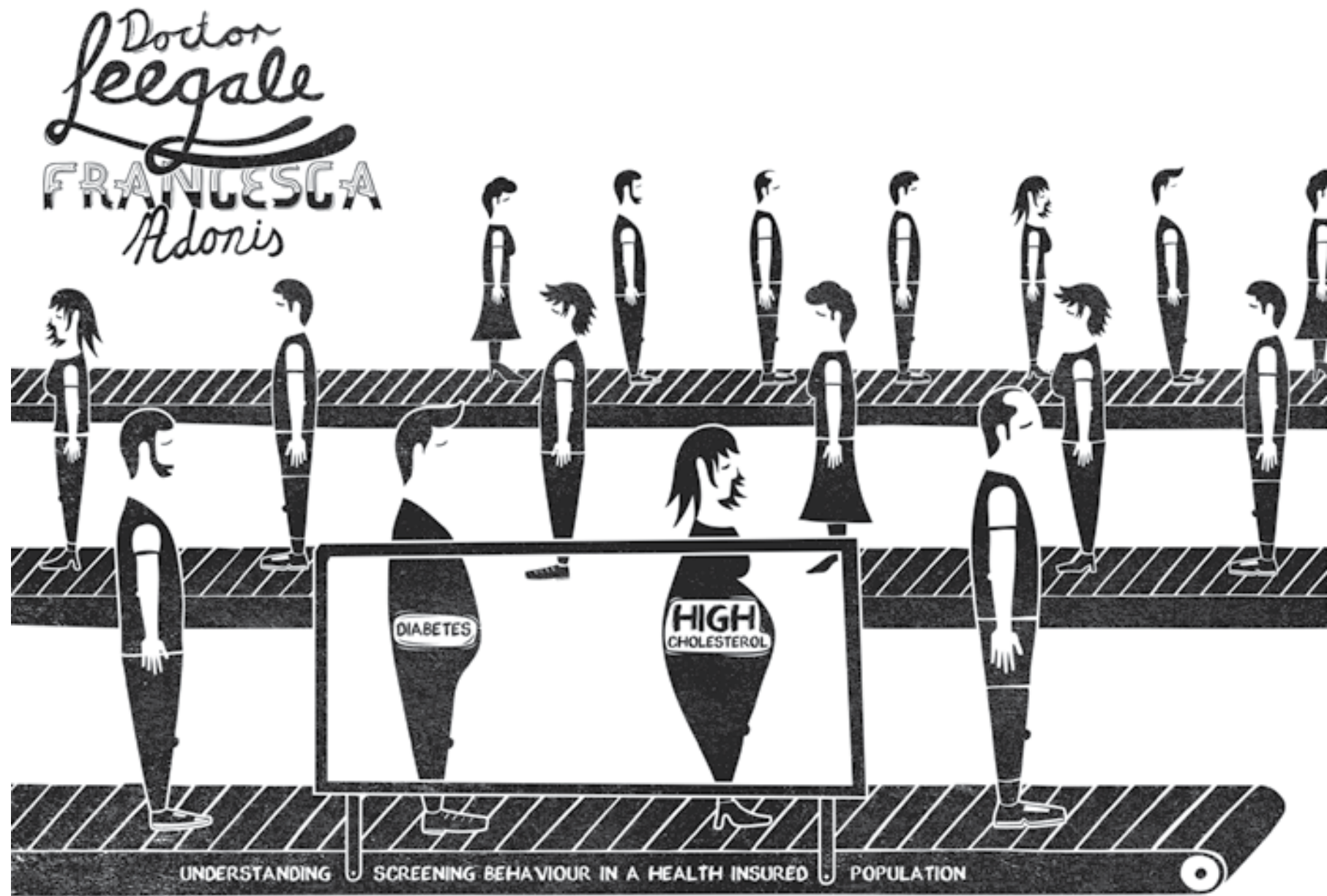
Dr van Aardt's passion for medicine has been many years in the making. "I have a constant desire to be the best I can possibly be and medicine is the field that best suited to this need. As a constantly evolving and challenging field, it enables me to push my own limitations and forces me to improve my abilities. I believe that we serve a purpose greater than ourselves and that God planned this life for me."

He chose Obstetrics and Gynaecology as his specialisation because he says it is a field where many different aspects of medicine are at play. "After starting specialisation I realised that I had a special interest in gynaecologic oncology. I feel there is a big difference we can make in women diagnosed with cancer, from conveying bad news to guiding treatment and treatment options and palliative care."

Prof Dreyer says doctorate students and successful candidates in the clinical sciences are scarce and few clinicians are interested in full time research posts. In addition, full time doctorate studies in clinical sciences are difficult to fund and salaries are expensive. As a full time doctorate student Dr van Aardt will contribute in a major way to the research done at the University's Women's Cancer Research Centre and its clinical sub-specialty unit. The Centre focuses on cancer prevention strategies for gynaecological and breast cancer. Its ongoing projects include investigating how HPV vaccine implementation in schools can best be done.







## DR LEEGALE ADONIS

Public Health Specialist, Discovery Vitality

PhD: Screening practices of a health insured population, the role of behaviour economics

What will it take to get more of us to take responsibility for our health? Dr Leegale Adonis intends to find out.

### UNDER THE MICROSCOPE

*Dr Leegale Adonis was in part co-supervised by senior economist and professor of policy analysis, Roland Sturm, from the Rand Corporation and Pardee Graduate School in Santa Monica in the US. Economics professor John Luiz, from the University of Cape Town Graduate School of Business, currently supervises her. Dr Adonis' first publication on her work was published in the May 2013 issue of the South African Medical Journal. Preliminary data was presented at a Public Health Association Conference in South Africa and Dr Adonis also presented at the 3rd Annual Health, Wellness and Society Conference in Sao Paulo in Brazil, March this year. She has been married for 17 years, is a mom of two and lives in Hyde Park, Johannesburg.*

We know we should but we don't. It's a common human failing, particularly when it comes to taking responsibility for our health.

We know, for example, that chronic diseases of lifestyle, HIV and some cancers can to a large extent be prevented, yet they're on the rise. One of the most effective ways of reducing disease burden and its economic consequences is through preventive screening, and it is this area of human behaviour over which Dr Leegale Adonis has focused her microscope.

Her fascination with the human condition goes back to childhood. "My mother was a community nurse in the small town I grew up in. I spent a lot of time in the clinic, helping her out and seeing the interaction she had with people. This intrigued me and spurred my interest in medicine. My mother feared that medicine was a trying career and she tried to dissuade me, but I loved the sense of helping people in need and seeing their sincere gratitude and appreciation.

Now, as a public health specialist, Dr Adonis will try to unravel why preventive screening rates are low. "Knowing how to get more people to screen would have a positive impact on morbidity, mortality and cost outcomes," she says. Her population of study is the Discovery Health-insured population from 2005 to 2011.

"This work is the first of its kind and will contribute to our understanding of incentivising health seeking behaviour, some of which could be transferable to the larger South African population," says Dr D Basu, the acting head of the Public Health Unit in the Department of Community Health at Johannesburg's Charlotte Maxeke Academic Hospital.

"This important area of medicine has unfortunately and incorrectly been set aside for other competing priorities. My hope is that I can convince policy makers to incorporate health screening policies and targets as an integral part of the National Health Insurance," Dr Adonis says.

Her dreams don't stop there. "I dream of a South Africa with a health profile not inextricably linked to inequality and not marred by poverty, mismanaged health systems and poorly implemented policies."







# DR MARIEKE BRAUER

Senior Registrar in Medical Virology, University of Pretoria  
MMed: Molecular detection and characterisation of mumps virus in cerebrospinal fluid in a Gauteng laboratory

A teenager's fascination with tropical viruses forged an adult scientist colleagues describe as an outstanding and dedicated researcher.

## UNDER THE MICROSCOPE

*Dr Marieke Brauer who is described by her supervisor as an 'outstanding and dedicated medical practitioner and scientific researcher and a notable expert within certain clinical conditions', did her internship at Charlotte Maxeke Academic Hospital in Johannesburg and joined the National Health Laboratory Services at the University of Pretoria in 2009.*

*Seeing human suffering first hand and needing to help by getting behind the scenes and into the world of research, is what motivated her to choose the laboratory. When not peering through a microscope she enjoys photography, reading and knitting.*

When Dr Marieke Brauer was 16 she heard the words Ebola and Marburg and was instantly drawn to virology, which, she believed, was a field of medicine that promised plenty of research and many exciting developments. She hasn't been disappointed.

"I enjoy being able to assist colleagues with complicated clinical cases and to educate fellow doctors and other healthcare practitioners. The laboratory plays a pivotal role in diagnosis and management of patients. Clinicians rely on the laboratory to provide accurate results, which guide them in the care of patients, and pathologists aim to assist their colleagues by guiding them in result interpretation and providing information on medical conditions in their field of expertise."

Dr Brauer's chosen field of research – the current prevalence of acute mumps CNS infection in South Africa's largely unvaccinated population – is prompted by the paucity of epidemiological data regarding mumps in South Africa, and the absence of data around central nervous system (CNS) involvement.

"Prior to the introduction of the mumps vaccine, mumps was the most common cause of viral encephalitis in many countries. The vaccine has not been included in the South African National Immunisation Schedule and as a result, mumps surveillance is not prioritised."

According to the World Health Organization, information on the proportion of meningitis and encephalitis attributable to mumps can help to determine the relative burden of the disease in a country.

"Through my research I hope to gather more information on the epidemiology of mumps in the South African setting, which may guide future decisions on appropriate diagnostic testing for mumps in patients presenting with meningitis, and also the possible need to include mumps vaccination in the routine childhood vaccination schedule," says Dr Brauer.

CNS involvement is the most common extra salivary complication of mumps, with symptomatic meningitis occurring in approximately 15% of cases. Up to 50% of these cases will not present with typical parotid swelling.

Diagnosis of acute mumps CNS infection could also prevent the unnecessary continued use of intravenous antibiotics and prolonged hospitalisation.







## DR MARISSA MULLER

Senior Registrar, Department of Anatomical Pathology, University of Pretoria

**MMed** in Anatomical Pathology: Histomorphometric study of endometrial CD56+natural killer cells in women with unexplained infertility compared to fertile females

As a child of health professionals, Dr Marissa Muller has strong family connections with medicine, and she's hoping her research can help others to build families too.

### UNDER THE MICROSCOPE

*Dr Marissa Muller finished her undergraduate studies at the Medunsa and is currently doing her postgraduate MMed degree in Anatomical Pathology at the University of Pretoria. She completed her two year internship at Steve Biko Academic Hospital and her year of community service at Thabazimbi Hospital in the Limpopo province. She is a mother to two sons, one who is four years old and a 20-month-old baby and lives in Wonderboom, Pretoria.*

*When not in the laboratory or tearing around after her toddlers she enjoys a healthy lifestyle – running, cycling and swimming. “The most impactful moment of my career so far was the day that I received a registrar post in Anatomical Pathology. I was given the chance to fulfil my dream of becoming a researcher and a specialist in the field that I enjoy the most.”*

An estimated 15% of couples are considered infertile. This can further be divided in approximately 35% due to female factors alone, 30% due to male factors alone, 20% due to combination of male and female factors, and 15% due to unexplained infertility. Treatment options for infertility and the success rate of the treatment vary, depending on the causes identified.

The potential causes of unexplained infertility have been described as disturbances in endocrinological balances, immunological and genetic disturbances, and reproductive physiology.

“We know that natural killer cells are important players in the innate immune system but the role of CD56+ endometrial natural killer cells in the immunological mechanism of unexplained infertility is still unknown.”

“My research serves to potentially contribute to the understanding of unexplained infertility with the long-term goal of reducing the percentage of couples with unexplained infertility and building a healthy population,” Dr Marissa Muller says.

Though she could have followed the paths of her doctor father or nurse mother, pathology has become Dr Muller's passion. “It is a discipline that bridges clinical practice and basic science. It involves the investigation of the underlying cause of the disease, and the mechanism that results in the presenting signs and symptoms of the patient.”

“This research project is not only for the partial fulfilment of my MMed degree in Anatomical Pathology, but also as part of a larger effort to determine the mechanism of unexplained infertility. I believe every mother and baby deserve the best care possible.”

Her hope for South Africa is that every person has access to proper healthcare services and informational resources.





## DR MERGAN NAIDOO

Lecturer in Family Medicine, UKZN  
PhD: Improving Obstetrical Surgical Safety in KwaZulu-Natal

Comrades marathon runner Dr Mergan Naidoo ‘ran’ from obstetrics as a medical student but the challenges of rural practice soon turned that attitude on its head.

### UNDER THE MICROSCOPE

*Dr Mergan Naidoo joined Northdale Hospital in 2005, helping to set up the O&G department and in 2008 he joined the UKZN/KZN Department of Health where he helped set up the O&G unit at Wentworth Hospital. In 2010 he became a maternal assessor for the province and is a master trainer in Essential Steps in the Management of Obstetric Emergencies. He is the KZN Coastal branch chairman for the South African Medical Association. When not working, this 47-year-old father of three is a committed runner and cyclist and loves the outdoors.*

Dr Mergan Naidoo didn’t choose obstetrics – it chose him. “I hated O&G as a medical student and was very happy that I did not do it as an intern. Then two years post internship I began practice in a rural area and this required that I know obstetrics. I volunteered to assist with operative work at Greytown Hospital and eventually picked up the skills required, running the maternity unit there for three years.

“It was here that I realised I enjoyed practicing as a generalist in a rural setting and became very involved in obstetrics.”

As a maternal assessor Dr Naidoo has seen the huge gains made in South Africa in bringing down the number of deaths due to HIV – but also a troubling increase in the number of women dying from obstetric haemorrhage. “Maternal health is a major problem in South Africa yet the committee dealing with the Confidential Enquiry into Maternal Deaths says many of the fatalities that occur are preventable.

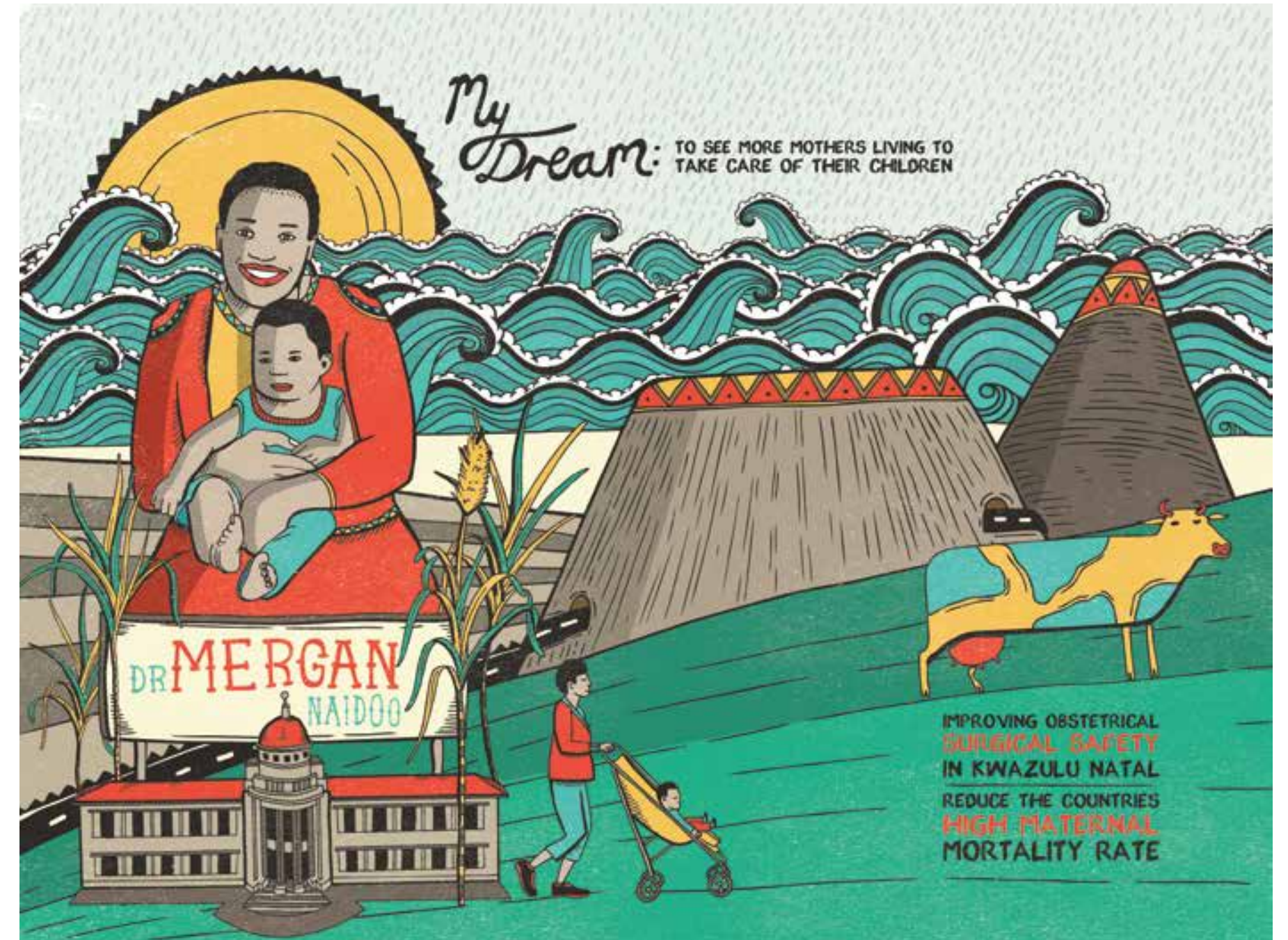
“In particular, Caesarean section as a mode of delivery is associated with a 50% increased risk of death compared to normal vaginal delivery, and as many as 85% of anaesthetic-related maternal deaths could be avoided.”

“We have looked at ways in which maternal health can be improved in KwaZulu-Natal and we believe that the preliminary findings from a WHO commissioned multi-centre trial have yielded positive results that require further testing in a clinical environment.”

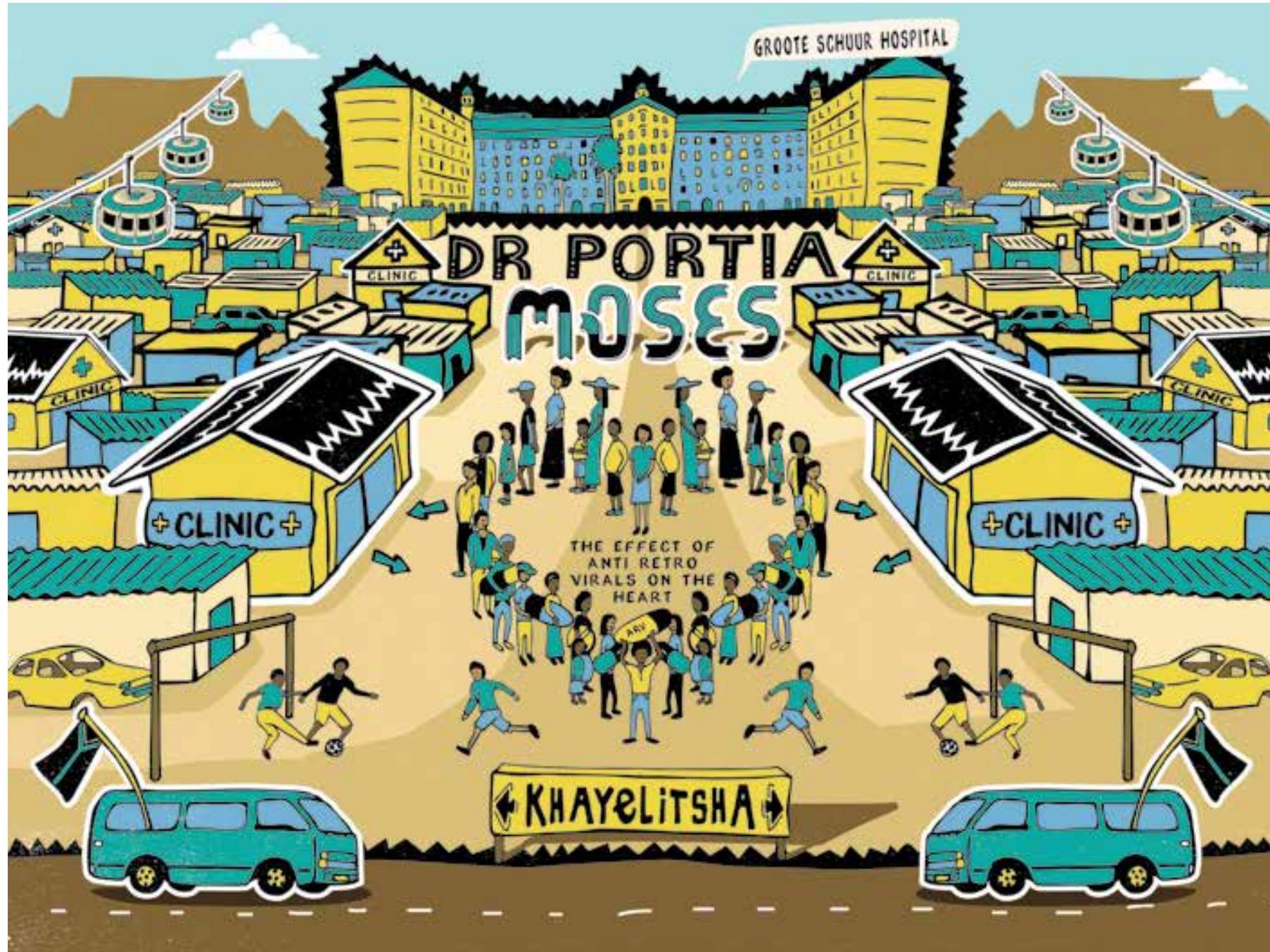
Dr Naidoo’s research will test the effect of the WHO surgical safety checklist in various district and regional hospitals in the province. Outcome measures will be severe acute morbidity and maternal mortality.

“If the outcomes are significant, an implementation and training plan will be devised so that all hospitals providing obstetric surgical care can benefit.”

Dr A Ross, Principal Specialist in the Department of Family Medicine at the Wentworth Hospital in KZN says Dr Naidoo’s PhD has the potential to significantly reduce maternal mortality associated with anaesthetic related deaths in district hospitals. His research, says Prof Jack Moodley, Professor Emeritus in the Women’s Health & HIV Research Unit, at UKZN, will help minimise errors that occur in surgical theatres, improve patient safety and decrease morbidity.







## DR PORTIA MOSES

Senior Registrar in Cardiology, University of Cape Town  
**MMed:** Myocardial dysfunction in advanced HIV and the impact of anti-retroviral therapy

Access to antiretroviral treatment does not mean the battle against HIV has been won. The only way to improve survival is to gather new knowledge by engaging in ongoing, local research, argues Dr Portia Moses.

### UNDER THE MICROSCOPE

*Dr Portia Moses is a physician working at Groote Schuur Hospital in Cape Town with her sights fixed on cardiology, working as a clinician but also engaging in ongoing clinical research in the field of HIV-related cardiovascular medicine.*

*Dr Moses was the winner of the Golden Stethoscope award in cardiology at Groote Schuur in 2008 for the best registrar in that unit. When not focused on medicine she reads for entertainment and hikes mountains to stay fit.*

The HIV/AIDS pandemic has ravaged South African society. Thousands of orphans whose parents have died from the disease rely on elderly grandparents to raise them when their own health and financial resources are waning. The impact on the economy is profound. "Once you have seen the devastation HIV/AIDS causes in our society, you realise that unless we address this scourge everything else we can achieve will mean absolutely nothing."

"But there is hope. Science is making steadfast progress in finding treatment and hopefully a cure for HIV/AIDS and I want to be part of that hope by engaging in research that will lead to better health for those infected with the disease," says Dr Portia Moses.

The direct effect of HIV on the heart is a neglected area of medicine in South Africa and it is here that Dr Moses will focus her attention. Her study aims to find conclusive evidence of what effect ART has on myocardial dysfunction in HIV patients with a CD4 count greater than 350. "Given the availability of ART and that the life expectancy of HIV people is now several decades, the overlap between HIV and non-communicable diseases will become an increasingly important aspect of medicine in South Africa," believes Graeme Meintjes, Associate Professor at the Institute of Infectious Diseases and Molecular Medicine at the University of Cape Town.

Much of the research on HIV/AIDS is done in European centres, yet we do not share the same population characteristics. Therefore many of their recommendations cannot be readily extrapolated for application here, Dr Moses points out. "These Discovery Foundation Awards are giving South Africans an opportunity to build our own HIV/AIDS research knowledge base."

A chance encounter with an orphaned boy during her fourth year at medical school is what still drives Dr Moses. "As I held his little hand and saw the trust and hope on his face, I knew that I had made the right decision choosing medicine. You may not be able to do it all, but you still owe it to yourself and your patient to do your best. That is what it means to do clinical medicine. That is what has always been and will continue to be my inspiration."











## DR ROBYN RAUTENBACH

**Ophthalmologist**, University of Cape Town  
**MMed in neurosciences and cell biology** (by dissertation): Investigating the role of TGF- $\beta$ 1 in the development of ophthalmoplegia in a subset of myasthenia gravis patients of African ancestry

South Africa's healthcare professionals are duty bound to contribute to medical science with the same commitment and enthusiasm as their predecessors, says Dr Robyn Rautenbach.

### UNDER THE MICROSCOPE

*As a post-graduate student in ophthalmology, Dr Robyn Rautenbach published two significant papers in international peer review journals and is described as a 'dedicated and gifted clinician and surgeon' by Ophthalmology Department head at Stellenbosch University, Professor D Meyer. "Ultimately I would like to be actively involved in teaching and training prospective ophthalmologists, and continue to keenly participate in clinical and scientific research within ophthalmology." Her interests outside of medicine include running on Table Mountain, mountain biking and playing golf. She is expecting her first child later this year.*

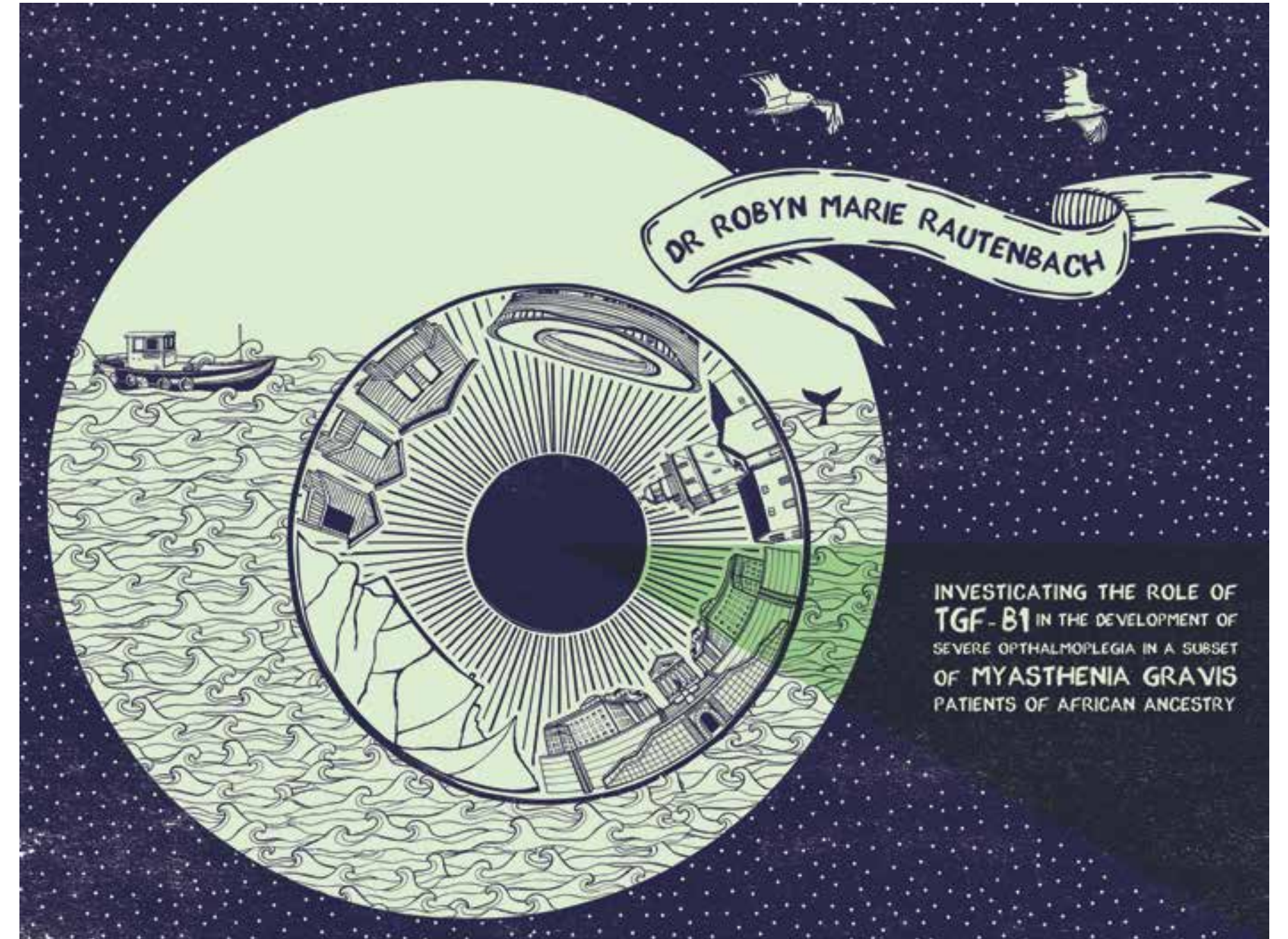
South Africa's strong pioneering culture has played a significant role in the strides made in healthcare and medical science and it isn't over. This generation shares that responsibility, Dr Robyn Rautenbach believes. It is her desire to make a significant contribution to academic medicine, particularly in the South African context. "That is probably what draws me into research and into the laboratory," she says. And it's the field of ophthalmology that is of particular interest.

"There are many misperceptions in medicine about the field of ophthalmology. The scope and burden of patients and disease is far greater than most people will appreciate, with ophthalmology outpatient departments being amongst the three busiest departments at the tertiary hospitals in the Cape Town metropole. Ocular conditions affect an extended spectrum of patients from pre-term infants to the elderly, and everyone in-between."

"It is a field with enormous scope to improve patients' quality of life, assist them in regaining or maintaining their independence, dignity and sense of self-worth," she says.

The Discovery Foundation Award has allowed her to invest time and resources in investigating a serious condition affecting a proportion of young South Africans, which, she hopes, will ultimately lead to an identification of novel targets for treatment and as a result, significantly improve these young patients' quality of life. "These patients develop a severe and treatment-resistant form of external ophthalmoplegia, which is accompanied by significant morbidity and functional visual impairment. The ultimate research objective would be to translate the results from bench to bedside," Dr Rautenbach says.

And her health message to all South Africans? "Understand the importance of wellness promotion and disease prevention, empowering yourselves to take control of your own future health. Healthcare facilities in South Africa are already overburdened and under-resourced. Yet we are currently experiencing a growing epidemic of both childhood and adult obesity, together with its associated disease burden as well as an escalation in the number of tobacco-, drug-, and alcohol-related diseases. There has never been a more critical time to take control of and to prevent lifestyle-related diseases."







## DR SAM SURKA

Senior Scientist, Telemedicine and mHealth Unit, Medical Research Council

**MMed in e-Healthcare:** Use of mobile phone technology in enabling community health workers to screen patients for cardiovascular disease

Mobile phone technology holds heartening possibilities for healthcare in South Africa says enthusiast Dr Sam Surka.

### UNDER THE MICROSCOPE

*Dr Sam Surka is helping to organise the first Inclusive Health Innovation Summit at the UCT Graduate School of Business, as part of the work being done by the Bertha Center for Social Entrepreneurship and Innovation, <http://gsbblogs.uct.ac.za/inclusivehealth/>.*

*When not trying to wrestle his mobile phone from his 18-month-old daughter, he smashes squash balls to relieve stress or takes to the road on his bicycle.*

As a senior scientist in Telemedicine and mHealth at the Medical Research Council, Dr Sam Surka is an ardent proponent of mobile technology as an aid to community health workers.

“The ubiquity of mobile phones, cutting across all socioeconomic sectors of society, makes it a very exciting platform to leverage for the purposes of improved healthcare delivery,” he says. Mobile phone technology, including apps and connected devices, are already being used to screen for various medical conditions such as respiratory disease, mental health disorders and diabetes and Dr Surka wants to expand this to include cardiovascular disease, which is a leading cause of death worldwide and, in particular, in developing countries. Though there is a large amount of interest in this form of technology there is, as yet, little evidence of its impact on health outcomes.

But Dr Surka believes that enabling community health workers to screen for cardiovascular disease using low cost technology like mobile phones offers significant relief to communities where health professionals are scarce. “I think it has the ability to meaningfully impact on the delivery of healthcare in South Africa. Community health workers have already been identified by the Department of Health as a potential workforce that can contribute in addressing the many challenges we face and mobile phones have been shown to be a useful job aid,” Dr Surka says.

His hope is to develop a mobile phone version of the cardiovascular disease risk assessment tool developed by Gaziano et al. and to ensure that evidence-based solutions are adopted and integrated into the health system.

Dr Surka is pursuing his studies at the Centre for Online Health at the University of Queensland in Brisbane, Australia, which is one of the first institutions to develop an e-Health degree and it offers a comprehensive e-Health programme. His research project will be done in collaboration with the Centre for Chronic Disease Initiatives in Africa at the University of Cape Town and Harvard Medical School in Boston.





# DR JOANNA SKELTON

Senior Registrar in Endocrinology, Groote Schuur Hospital  
MMed by dissertation: Phenotype of patients with diabetic ketoacidosis in Cape Town

Never tell a 10-year-old what not to do.  
Dr Joanna Skelton is living proof of that.

## UNDER THE MICROSCOPE

*Dr Joanna Skelton is mom to a 21-month-old son and lives in Newlands, Cape Town. When not at work she runs and swims to keep fit and stays as far away from the oven as possible. "Luckily I have a husband who can cook!"*

More than two decades ago Dr Joanna Skelton's parents tried to warn her off medicine. It would be too difficult to get into medical school, they argued. But the determined pre-teen persisted, shadowing a GP in rural KZN during her holidays.

"I was hooked." Hours of extra lessons and holiday cramming sessions eventually paid off when she was accepted at the University of Cape Town. "I remember every word of that phone call and the tears of relief and sheer joy."

Dr Skelton, a recently-qualified endocrinologist, is particularly concerned with diabetes. "The International Diabetes Federation has predicted a 98% increase in diabetes numbers by 2030 in Africa and a recent report from our university says that one in five black Capetonians have diabetes. This has profound implications for our already overburdened public healthcare system," she says. Type 2 diabetes is largely preventable and all forms of diabetes are treatable. The better the treatment, the lower the risk of complications. "I'm particularly interested in the large impact that can be made by good motivation and education and appropriate treatment," says Dr Skelton.

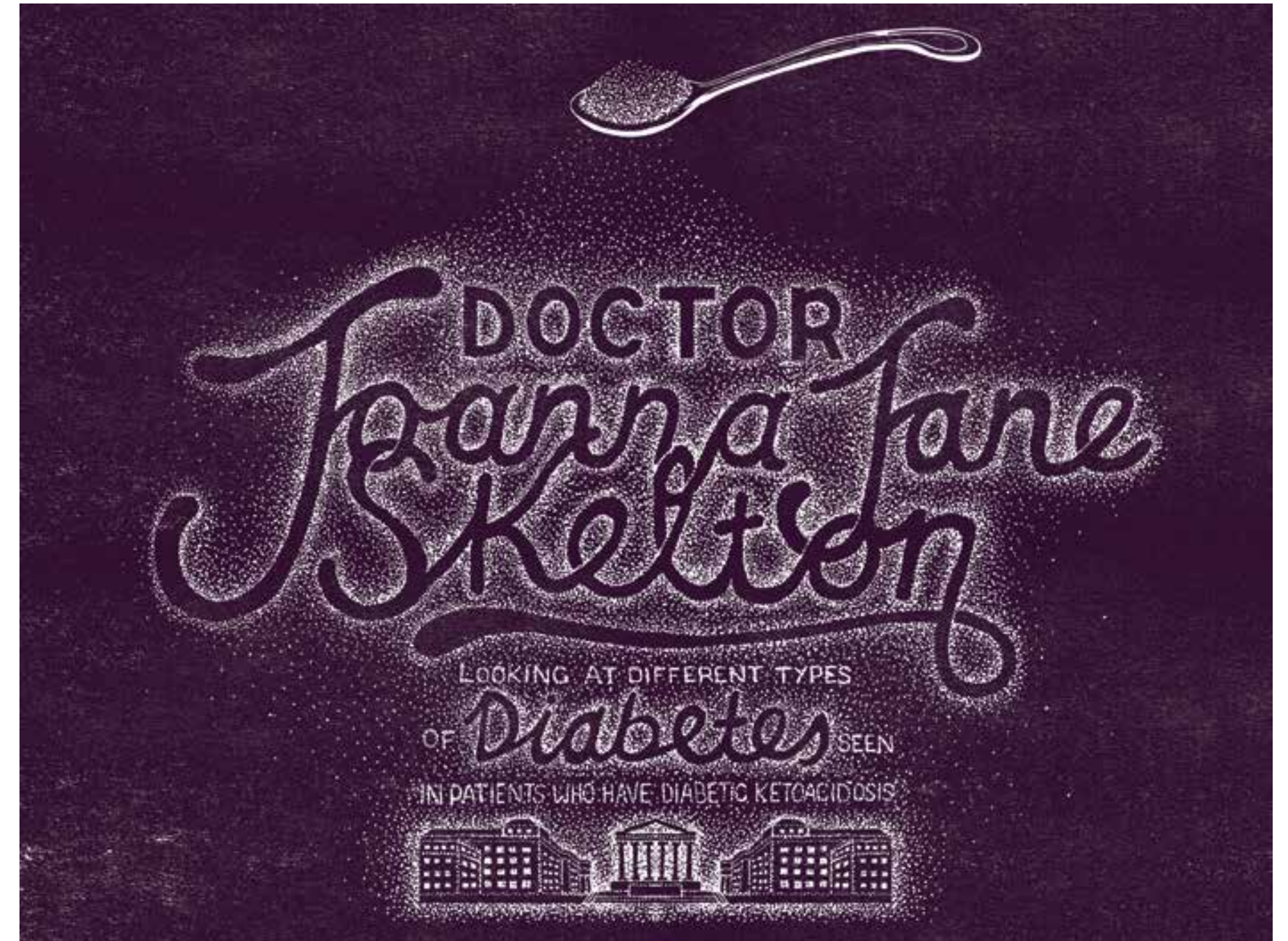
According to Prof Naomi Levitt, head of the Division of Diabetic Medicine and Endocrinology at UCT, increasing numbers of black Africans are presenting with DKA, the hallmark of type 1 diabetes, but who over time demonstrate a lack of dependency on insulin to live. This type of diabetes, also known as ketosis prone type 2 diabetes, is a particularly ripe area for research.

Dr Skelton suspects that if properly diagnosed, some patients with true type 2 diabetes will be able to discontinue insulin therapy and be managed on oral treatment. This will have a significant impact on the individuals and huge cost savings for the state.

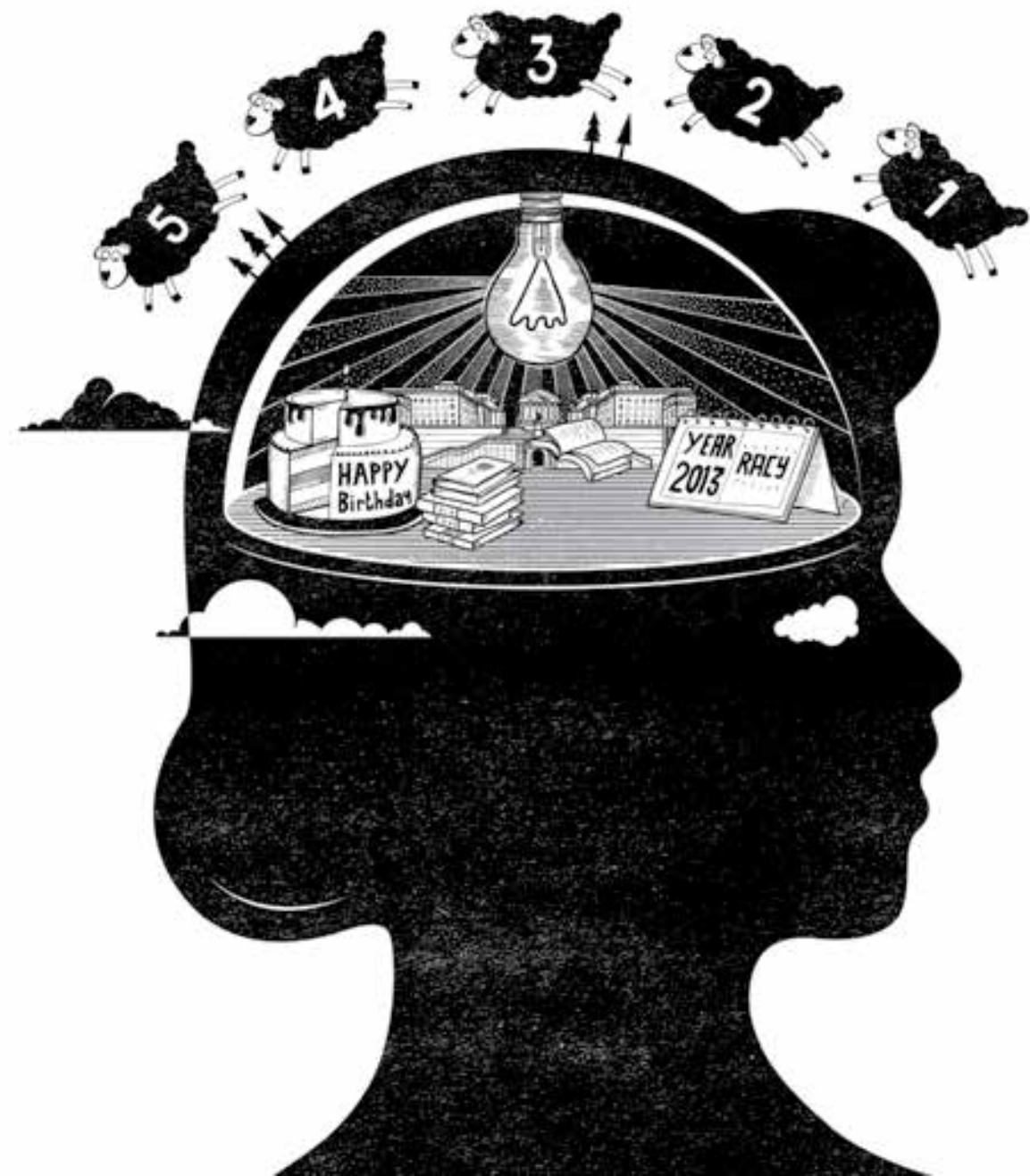
It's been more than two decades since Dr Skelton closed her ears to her parents' pleas. And she's still not listening. "We are told not to become personally attached to our patients but show me a doctor who is able to do that when you become all that the child has," says Dr Joanna Skelton, recalling her interaction with an eight-year-old blinded by toxoplasmosis. When a bucket of chicken was brought for a patient in a ward and it was shared with everyone except the blind child, Dr Skelton was outraged. But the little girl simply said: 'don't worry doctor, I know my day will come'.

"I drove around at 11pm that night to find more chicken for the girl. When I handed her the two chicken wings and drumsticks she ate one drumstick and asked me to share the rest with the other children. She died a week later. That little girl taught me a great deal."

"Joanna has all the attributes of a good doctor: compassion, understanding, honesty, empathy, humanity and respect. This, and her intellect, broad knowledge, additional scientific experience and international exposure will turn her into an exceptional endocrinologist and clinician scientist," says Dr Peter Raubenheimer, head of the Division of General Medicine at UCT.







Doctor  
**MOHAMED FARIED ABDULLAH**

DEVELOP A SIMPLE EFFECTIVE DIAGNOSTIC SCREENING TOOL FOR DETERMINING IF A PATIENT HAS DELIRIUM



# DR MOHAMED FARIED ABDULLAH

Medical Registrar, Groote Schuur Hospital  
 MMed: Validation of the simple "RACY" 4-question delirium screening tool in general medical hospital admissions

His mother's desire to be a doctor was never fulfilled but Dr Faried Abdullah is bringing that dream to life.

## UNDER THE MICROSCOPE

*Dr Faried Abdullah is a self-confessed computer 'geek' and a self-taught computer programmer. He loves designing his own applications and programs, creating digital CG sculptures and 'messing around' with animation. When not glued to a screen, he is an enthusiastic social soccer player.*

Watching his mother pore over medical books and encyclopedias in a quest for knowledge was the inspiration behind Dr Faried Abdullah's own journey to medical school. "You could say that my exposure to the subject and field was destined."

Eight years after graduating from the University of Stellenbosch, Dr Abdullah is captivated by delirium. "Delirium is a very common and serious medical disorder that is associated with significant short, medium and long-term morbidity and mortality. The presence of delirium correlates with prolonged hospitalisation, and increased likelihood of being discharged to a secondary care facility and this consequently impacts negatively on healthcare costs. Yet it still remains under-diagnosed and poorly reported in routine medical care, despite having in-patient mortality rates comparable to those with acute myocardial infarction and sepsis," Dr Abdullah says.

His proposed research project is to validate a simple delirium screening tool for use in general medical patients. "This provides me with an excellent opportunity to conduct pertinent, locally-relevant research that, if successful, will be immediately translated into clinical practice."

A recent study of medical admissions to Groote Schuur Hospital noted no mention of delirium or formal cognitive testing in any clinical folders, yet found undiagnosed delirium in approximately 20% of patients and confirmed an association with poor outcomes. Delirium remains poorly detected due to the complexity and time-consuming nature of available diagnostic tools and the lack of validated instruments for non-geriatric, developing country patients.

"Dr Abdullah has the necessary drive to make a success of the ambitious project he has proposed for his MMed dissertation, which will require intensive data collection and will provide him with training in the research method and sophisticated data analysis, while simultaneously offering a useful clinical tool that may influence future practice," says Dr Peter Raubenheimer, the head of the Division of General Internal Medicine at the University of Cape Town.

"This is a big and important study with a big cohort being conducted at two hospitals across the Western Cape. It will not only validate an easy clinical tool to make the diagnosis of this condition easier, but will also test the impact of a 'package of discharge' and specialist follow-up, on 12-month mortality and hospital readmission rates. I hope it will provide important information for policy makers on how best to change resource allocation and improve investment in the public health sector," Dr Abdullah says.







# DR CATHERINE ORRELL

Senior Investigator, Desmond Tutu HIV Centre  
PhD: Adherence-failure relationships in a South African anti-retroviral delivery site

The death of a woman in a beautiful blue dress is a poignant reminder to Dr Catherine Orrell of the lifesaving power of ARVs.

## UNDER THE MICROSCOPE

*Dr Catherine Orrell is a medical doctor and clinical pharmacologist working as a senior investigator at the Desmond Tutu HIV Centre in Cape Town. She is the mother of two young children and she and her husband, Derek Zellie, are keen outdoor enthusiasts who cycle, hike and rock climb and who have climbed Mount Kenya and Aconcagua, the highest mountain in the Andes.*

In the 1990s a woman called Gladys sought treatment for late stage HIV but there was no antiretroviral treatment then, and the fungal ulcers in her mouth prevented her from eating. “She had a beautiful blue dress that she wore to come to the clinic and each time she came to see me, getting thinner and thinner, she dressed up in that best blue dress.

“When she died, her family thanked me for all I had done, when in fact all I had done was watch her die with dignity. After 2002, when we gained access to antiretroviral treatment at our Gugulethu site, people began to have the option of saving their own lives and I am pleased to say that most of them did.”

It is stories like these that motivate Dr Catherine Orrell to seek better treatment options for people with HIV.

Though ARVs are widely available today treatment has many challenges. “I have come to realise that adherence to treatment alone does not explain all virological failures. I also question the methods of adherence assessment available in our resource-poor setting, and through my work in pharmacology came the recognition that biological factors, such as drug absorption and metabolism, may also play a role in treatment success.

“People on antiretroviral therapy have to take medication every day of their lives. I hope to make things easier by proving the benefit of a small, locally-made electronic adherence device, the Wisepill. It looks good, not at all like a pillbox, and sends a subtle SMS reminder to take meds. It does not remind them every day, only on the days when they do not manage to open the pillbox in the window of time they usually do, so it is not an intrusion.”

“If we can use this technology to improve adherence to ART, then we reduce the burden on the clinics and staff, which might allow us to treat more people over time.”

Dr Orrell has been working with HIV-infected patients since 1996, was involved in several of the first programmes to develop antiretroviral therapy in South Africa and has been training nurses and doctors to deliver ART for 10 years.

“I went into HIV medicine after getting to know a young man with hemophilia who was infected by a blood transfusion in 1984. He, and others living with HIV, were treated so badly by healthcare staff in the early 1990s that I decided I would have to work to change this,” Dr Orrell says.

“The Discovery Foundation Award means a lot to me. It has allowed me to spend a year dedicated to completing a study I am passionate about. It gives me the time to make my research perfect and produce results that will make a difference. I can’t thank the Discovery Foundation enough.”







## DR SHIRAAZ GABRIEL

Senior Registrar in Gastroenterology, Grootte Schuur Hospital  
MMed: Helicobacter Pylori resistance patterns and standard drug efficiency at Grootte Schuur Hospital

Local knowledge is key to understanding and treating common infections like Helicobacter Pylori (HP), says Dr Shiraz Gabriel.

### UNDER THE MICROSCOPE

*Dr Shiraz Gabriel graduated from the University of Cape Town and did his internship and community service in KwaZulu-Natal. He has been at Grootte Schuur since 2007. A committed family man, Dr Gabriel attributes his decision to become a doctor to his parents, and to his love of helping people. "My parents believed medicine was a good field to get into, and they didn't have the opportunity in their lives to study further so that inspired me," he says. He also loves the process of seeing someone who is ill made well again, and smiling. When he isn't chasing tummy bugs he likes to relax with his family and go to the movies.*

At Grootte Schuur Hospital's gastroenterology unit a significant part of a doctor's day is treating patients for dyspepsia, or more specifically HP-related disease. Helicobacter Pylori infects more than half the world's population. Though it shows up more commonly as heartburn, it can have deadly consequences. HP was classified in 1994 as a group 1 carcinogen by the International Agency for Research on Cancer. In the 1990s treatment showed remarkable success rates but in recent years those successes have plunged from 90% to around 60%. At Grootte Schuur Hospital that figure has been cited as low as 36%. Eradication rates are falling worldwide and there is the presumption that drug resistance plays a role though there is no local data to back this up.

And that's where Dr Shiraz Gabriel comes in. His research is focusing on establishing local resistance patterns for HP in previously untreated patients and those who have received standard first line therapy and to use this information to optimise eradication rates with first line microbials. "We know from a study in PE that antibiotic resistance in HP treatment was about 95% but it is essential to gather local knowledge in order to understand our own patterns of eradication" says Dr Gabriel.

He hopes that his research could lead to an informed change in the treatment policy of HP. This will, of course, improve patient care at Grootte Schuur and in surrounding hospitals and clinics. Dr Gabriel's Discovery Foundation Academic Fellowship Award will finance HP culture and drug susceptibility testing and the data will facilitate completion of his MMed. "Dr Gabriel is passionate about research and imparting the clinical and research skills he will learn at Grootte Schuur to other doctors. As a relatively senior doctor he will assist in the training of junior doctors, medical students and nurses," says Dr Sabelo Hlatshwayo of the hospital's gastrointestinal clinic.

"Dr Gabriel is keen to increase the research output of the division of gastroenterology at Grootte Schuur and this is a highly worthwhile project which will provide solid rationale for local management of this common infection in our local population.

"It should also contribute much needed further information to base national recommendation," says Professor Sandie Thomson, head of the gastrointestinal clinic.





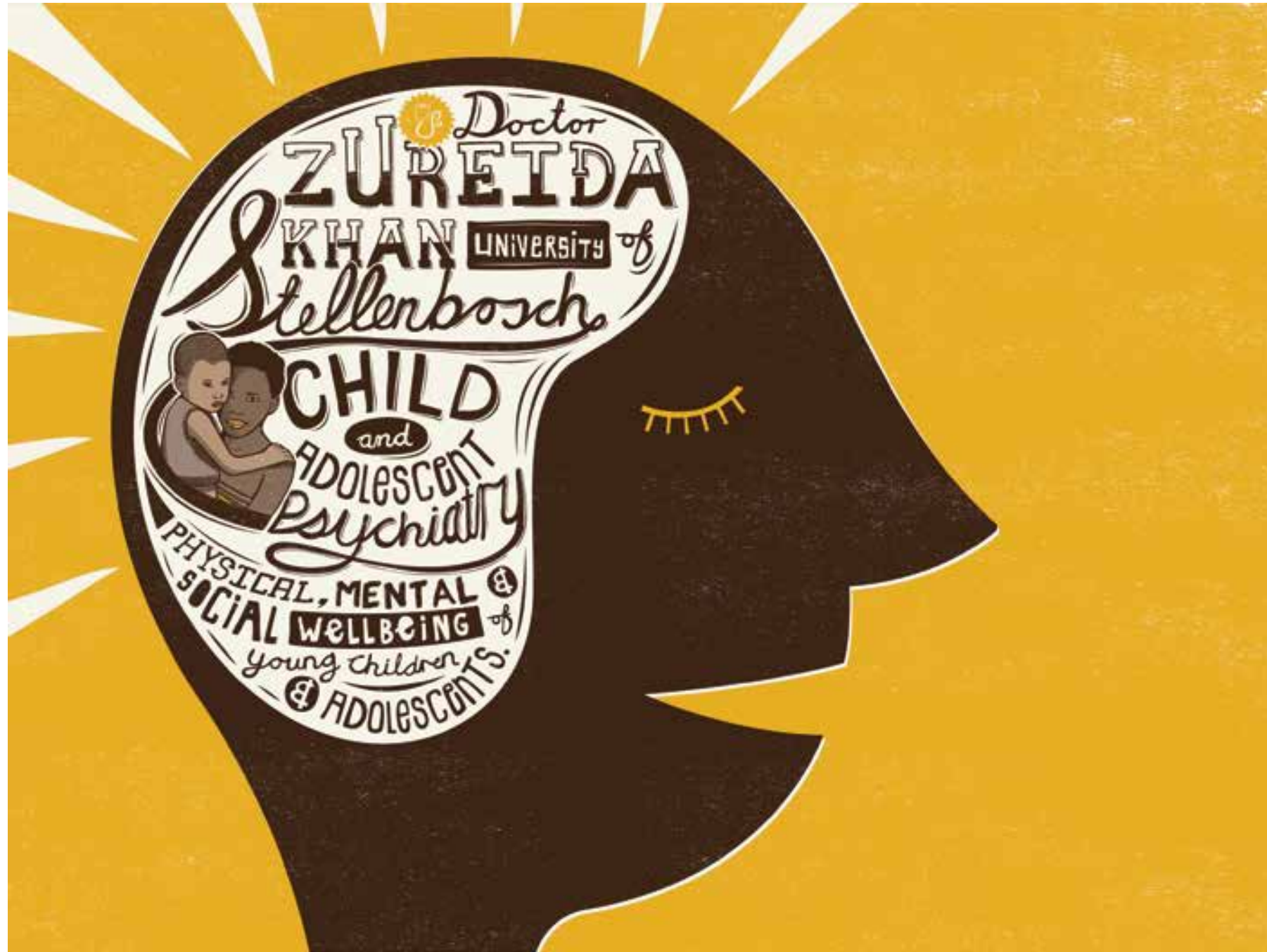


# 3

DISCOVERY FOUNDATION  
SUB SPECIALIST AWARDS

Support for the training of  
South Africa's specialists





## DR ZUREIDA KHAN

Registrar in Psychiatry  
 Sub-specialty: Child Psychiatry,  
 University of Stellenbosch

South Africa's children and adolescents face enormous mental challenges wrought by poverty, abuse, drugs and alcohol, and disease, says Dr Zureida Khan.

### UNDER THE MICROSCOPE

*Dr Zureida Khan packs a lot into life. In addition to her hospital work and studies, she is mom to two young sons, grows her own organic herbs and vegetables which she uses in her cooking, and she takes on interior decorating projects for friends. She keeps fit by dancing, running and practicing yoga. She lives in Ottery, Cape Town.*

It was during her community service at Lentegeur Hospital in the Western Cape that Dr Zureida Khan began to realise that the bulk of psychiatric illness began during the adolescent years and early adulthood. "Much of the scene for future psychopathology is set from very early development, and besides rehabilitation and recovery, prevention and early intervention is an essential component of tackling the burden of psychiatric disease."

"It was at Lentegeur that I also realised that this field of medicine was one of the most caring."

She completed her registrarship in psychiatry earlier this year.

"The challenges facing the children of South Africa are manifold. Many people in our country live in poverty. The association between adversity and mental illness is supported by good evidence, making our young population particularly vulnerable. In addition, in the Western Cape, we have high rates of foetal alcohol syndrome, a methamphetamine epidemic with infants born to methamphetamine-abusing mothers, and of course the HIV epidemic across South Africa, affecting the children directly by infection, neuropsychiatric effects in exposed infants and by loss and suffering in families," Dr Khan says.

"During my child psychiatric rotation as a registrar I had a particular difficult young patient who had suffered severe abuse and was intent on ending her own life. She had attempted numerous times to commit suicide and then entered into long term therapy with me, with the case being supervised by a very experienced and dynamic senior psychologist. After months of therapy she had improved substantially and today has finished school and college and is in a stable relationship. This was an inspirational experience in my career."

With her Discovery Foundation Award, Dr Khan will complete her MPhil in Child and Adolescent Psychiatry through Stellenbosch University. "This will enable me to join a limited pool of much needed child and adolescent psychiatrists in South Africa."

According to the University's Department of Psychiatry, child and adolescent mental health services are in short supply in South Africa with tertiary centres currently found only in the major urban centres and only around 15 child and adolescent psychiatrists employed fulltime by public health facilities. "The results of this longstanding deficit are already seen in phenomena such as increasing youth substance abuse, juvenile criminality, educational failure and family disintegration, and we need to train as many child and adolescent mental health professionals as possible, as soon as possible."

The Department has 46 provincial in-patient beds for adolescents at Tygerberg Hospital and Lentegeur Psychiatric Hospital, a consultation liaison service to Tygerberg Hospital, and two large tertiary out-patient services covering two third of the province as well as supervision and support to community psychiatry services and regional and district hospitals.





## DR ANELL MEYER

Fellow in Paediatric Gastroenterology, Hepatology and Clinical Nutrition  
Sub-specialty: Paediatric Gastroenterology,  
University of Pretoria

The acute shortage of specialist paediatricians in South Africa is impacting the mortality rates of children suffering diseases of the gastrointestinal tract, liver and disorders of nutrition. Dr Anell Meyer hopes to change that.

### UNDER THE MICROSCOPE

*Dr Anell Meyer was born and raised in Pretoria and will return to the capital city once her Australian studies are complete. This mom to a three-year-old boy is a keen photographer who loves to experience new locations and different cultures with her husband, Monré. "I knew medicine was right for me when, during my third year as a medical student, we interacted with patients for the first time. Standing there in my white coat armed with my brand new stethoscope, knowing that I have the tools and that I am acquiring the knowledge to make a difference in the lives of these patients, gave me a sense of belonging. I knew I made the right career choice."*

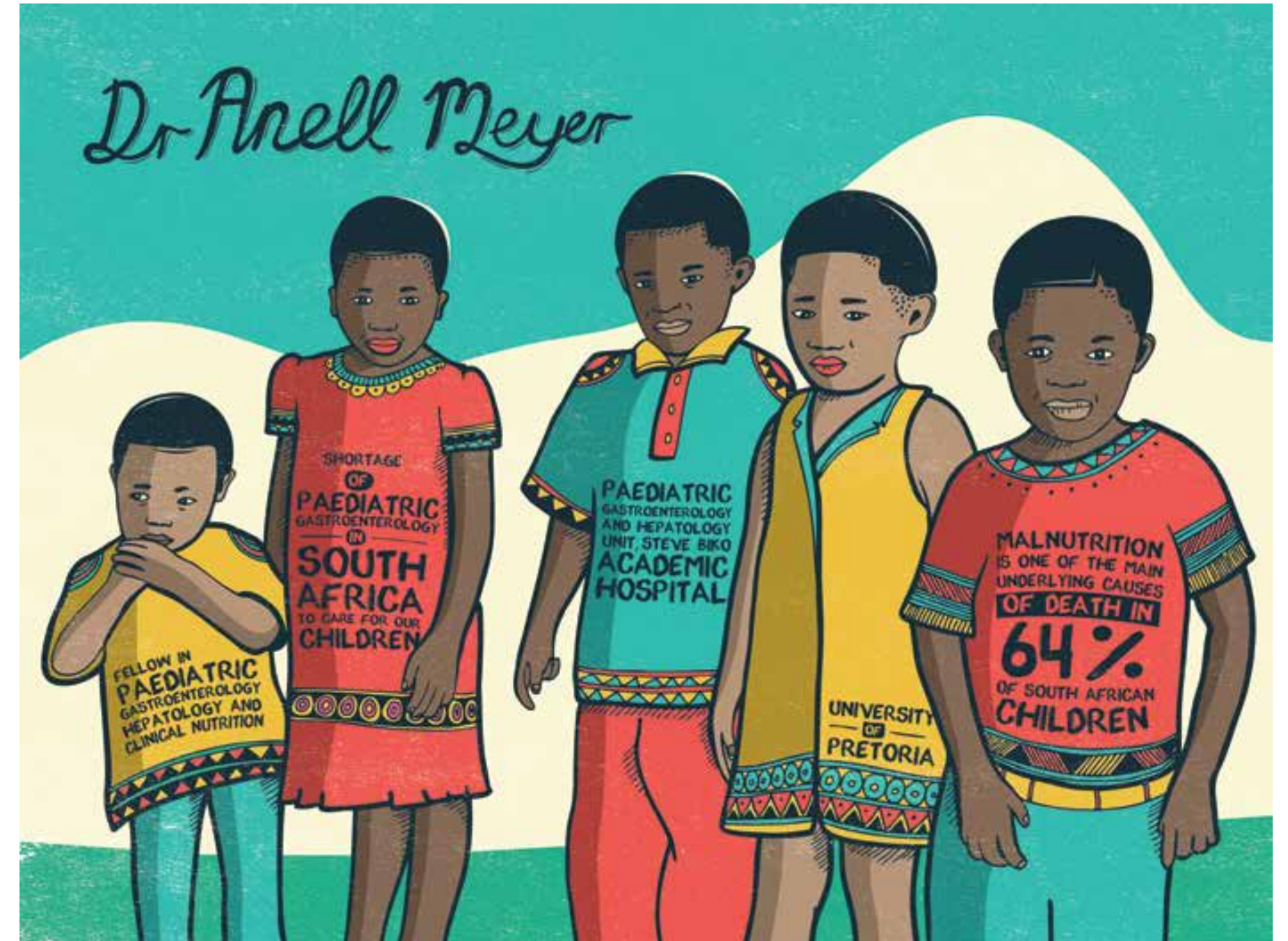
South Africa sits with a unique disease profile. Diseases common to developed countries like inflammatory bowel disease, cystic fibrosis, celiac disease and biliary atresia are frequently encountered as are the those diseases related to infectious illnesses like HIV and tuberculosis, and malnutrition related to poverty. "There is not only the obligation to treat these diseases optimally, but also the opportunity to lead in research around these diseases," says Dr Anell Meyer.

Dr Meyer, who is currently working as a fellow in Paediatric Gastroenterology, Hepatology and Clinical Nutrition at the Royal Children's Hospital in Melbourne, Australia, is pursuing a sub-specialty in gastroenterology. "My aim is to stay actively involved in clinical research, thereby striving to find better ways of treating and caring for this population of patients while advocating equal access to care for all," she says.

The care and treatment of children with gastrointestinal and liver disease differs vastly from that of adults due to the dramatic physiological and anatomical changes that occur from birth and infancy into adolescence and adulthood. "Children present a different spectrum of disease and also a different response to illness and to treatment," Dr Meyer says.

Paediatricians trained in this field can make an important contribution to the specialised care of these children. Optimal management of these conditions requires specialised knowledge of the specific disease processes and treatment options available, as well as diagnostic and interventional skills.

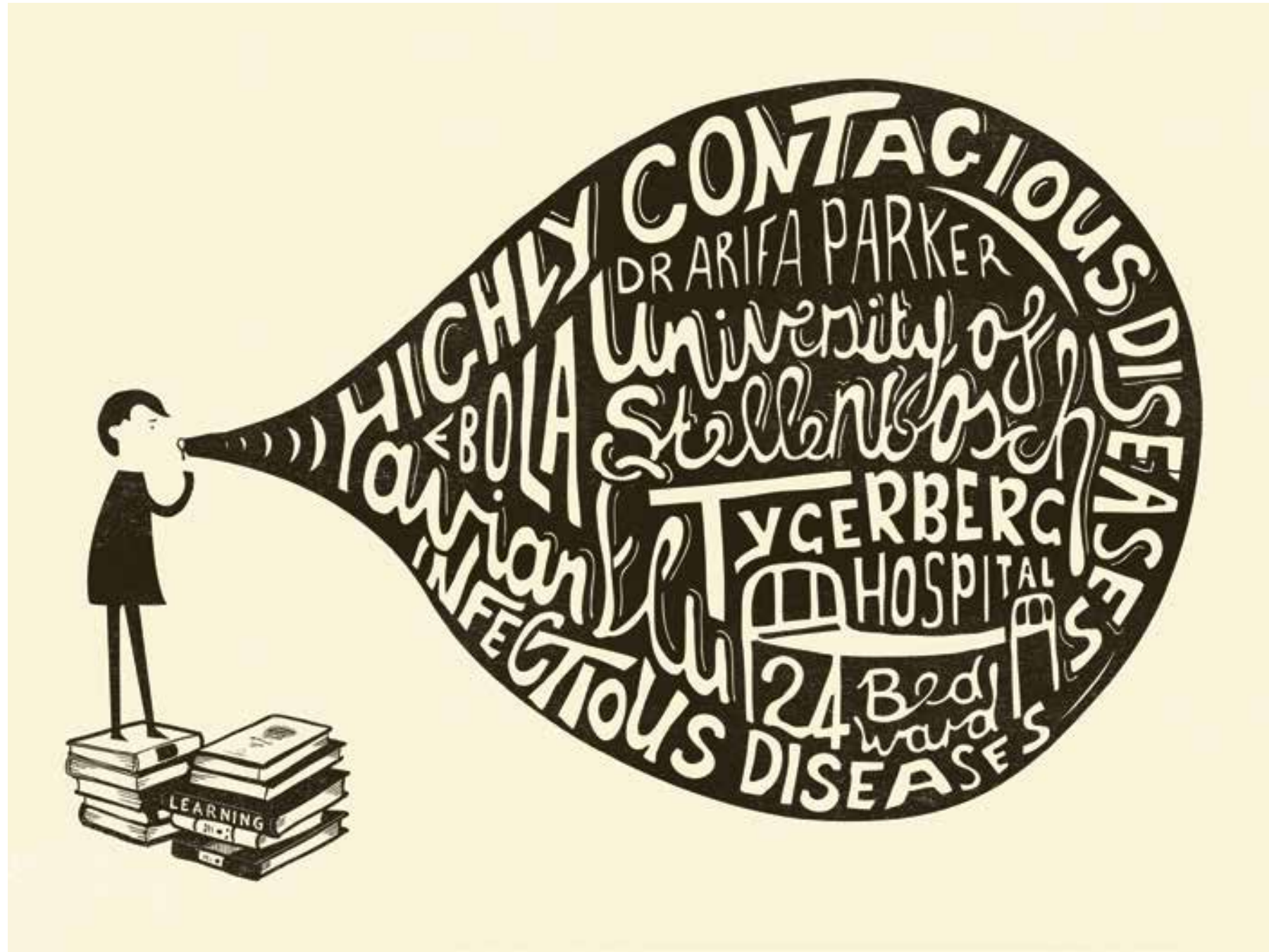
"In view of the paucity of paediatric gastroenterologists in South Africa relative to the enormous number of patients requiring service in this field, it is imperative to train more specialists," says Consultant Paediatric Gastroenterologist at the University of Pretoria, Dr Alta Terblanche. Dr Terblanche was the first candidate to complete a Fellowship in Paediatric Gastroenterology in South Africa thanks to funding from the Discovery Foundation. "Dr Meyer was recently awarded a scholarship from the Nestle Nutrition Institute to complete one year of her Fellowship in Australia. This is an excellent opportunity but she still has to complete the remainder of her training in South Africa. With help from the Discovery Foundation she may be able to do this. This would encourage a step towards service delivery towards a group of patients in dire need," says Dr Terblanche.











## DR ARIFA PARKER

Specialist Registrar and Senior Lecturer in Internal Medicine  
Sub-specialty: Infectious Diseases,  
University of Stellenbosch

South Africa’s burden of HIV and TB is well known, but there is so much more that the infectious diseases clinician has to contend with, says Dr Arifa Parker.

### UNDER THE MICROSCOPE

*Dr Arifa Parker credits her parents and teachers with her discipline and dedication to her career. “My parents inspired me to achieve my goals. They have sacrificed much to ensure that my four siblings and I went to university.” When not at work she enjoys walks along the beach and if she had more time, this Capetonian would travel the world.*

Multi-drug resistance, hospital-acquired infections, pandemic flu and even the more exotic tropical killer diseases like Ebola and Congo fever are just some of what Dr Arifa Parker and her colleagues at Tygerberg Hospital will witness at its newly-opened Infectious Diseases Unit – in addition to the overwhelming presence of HIV and TB.

Ideally, the people who staff the unit and work with infectious diseases in a broader context should be familiar with the challenges faced in the South African landscape.

“With the majority of deaths in South Africa attributable to infections and the huge challenges posed by tuberculosis (especially drug resistant strains), HIV and other non-hospital-acquired infections, in-depth local training and clinical leaders are needed in this field,” says the Director of the Centre for Infectious Diseases at Stellenbosch University, Prof Jean Nachega.

The infectious diseases clinician plays a role in all aspects of healthcare, from planning cost-effective public health strategies to the diagnosis and management of complex individual infectious diseases cases.

“Poverty, increasing globalisation and climate change contribute significantly to the spread of infectious diseases and the emergence of new epidemics such as pandemic flu and multi-drug resistant hospital-acquired infections. The latter is also closely associated with inappropriate antibiotic use and is of a global concern. There is also a dire need to train physicians in antibiotic stewardship and hospital infection prevention and control,” Prof Nachega says. Because of the shortage of trained Infectious Diseases specialist posts, providing specialist Infectious Diseases care and training is challenging.

Infectious diseases specialists also play a key role in the care of the ICU patient, as well as immunosuppressed transplant and oncology patients. “I love that Infectious Diseases is a continually evolving discipline,” says Dr Parker. “Every day new strides are made to improve the diagnosis and treatment of a host of conditions, which will ultimately improve patient care. I love that I work with a team of people who are passionate about improving the Infectious Diseases service at Tygerberg and its affiliated hospitals.”

She developed an interest in Infectious Diseases during her Internship where it was heartbreaking to see the impact of AIDS. “With the rollout of antiretroviral therapy it was amazing to see patients, who otherwise would have died, respond so well to treatment”. Her path has been strewn with many inspirational healthcare workers whose influence and encouragement have driven her to strive to be the best physician she can be. “I now know that I cannot always ‘cure’ everyone, but I still aspire to make a difference in the lives of those in need.”



# DR MOSES MAHLANGU

Senior Registrar in Internal Medicine  
Sub-specialty: Nephrology,  
University of Limpopo, Medunsa

The remarkable recovery of an HIV patient in renal failure prompted Dr Moses Mahlangu to pursue a career in nephrology.

## UNDER THE MICROSCOPE

*Dr Moses Mahlangu was born in Pretoria and is married to a doctor. He is a course co-ordinator for third year dental students and when he is not busy being a father to his child, he likes a game of soccer or volleyball, listening to gospel music or playing pool with his pals.*

When Dr Moses Mahlangu was growing up his father suggested he leave medicine to his brother so he chose engineering but two seminal events prompted him to change course: television coverage of the separation of Siamese twins at Chris Hani Baragwanath Hospital, and his brother's sponsored switch to quantity surveying. "Inside I knew I wanted to be a doctor. I was so inspired by my uncle who was a doctor, and his love for his patients.

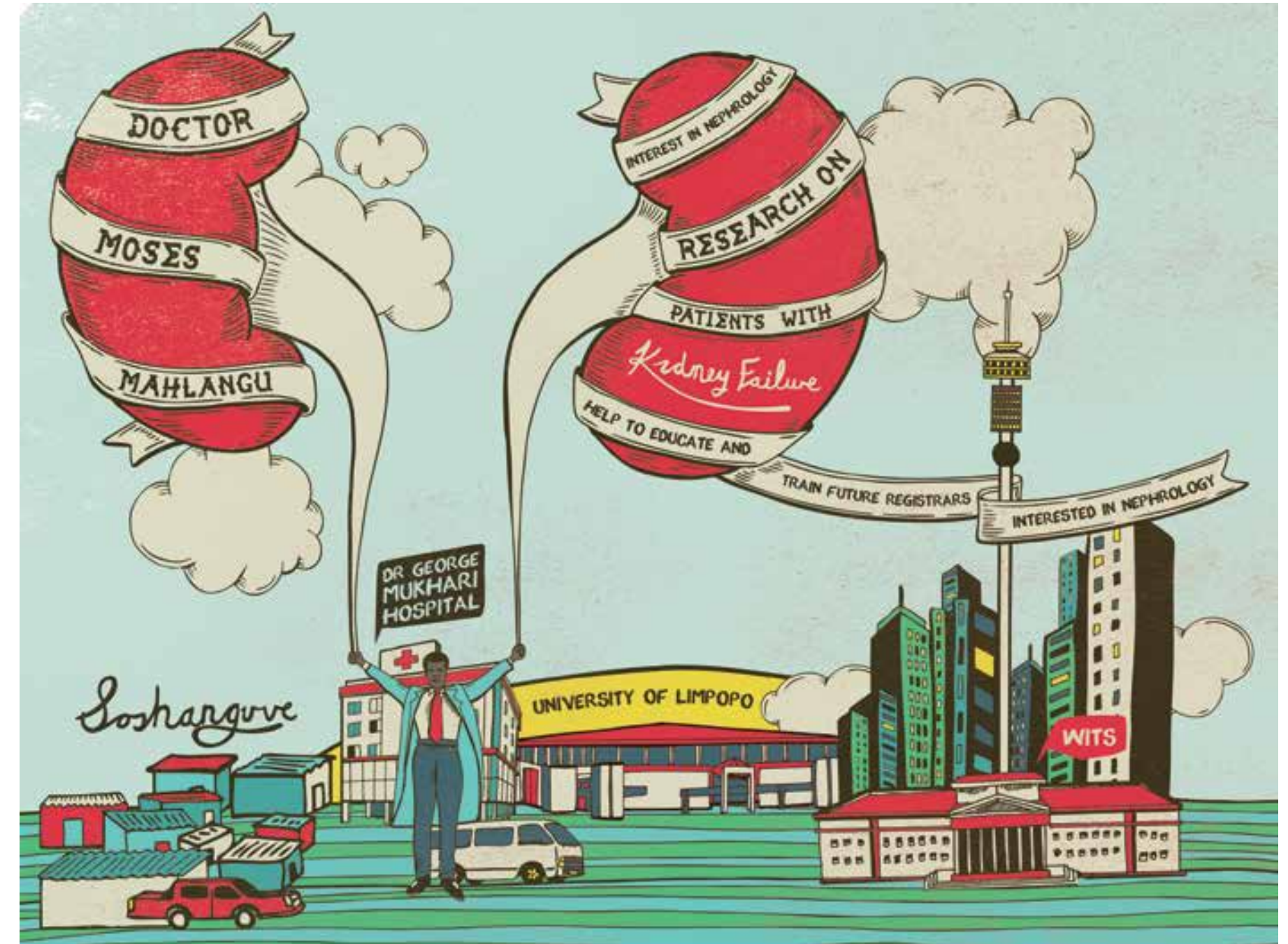
Dr Mahlangu graduated from Wits University in 2005. "I loved nephrology the first day I started my rotation as a registrar and because of that I learned quickly and was able to run the unit independently." Then in 2009 he met an HIV patient who had recently begun ARV and tuberculosis treatment. "He had renal failure, pericarditis, confusion, low level of consciousness and bleeding. He was in distress due to acidosis. There was no ICU bed for him," Dr Mahlangu recalls.

Drawing on everything he had learned during his rotation, Dr Mahlangu treated the man as best he could and took the man off all offending nephrotic drugs, especially the ARV, tenofovir. "The patient did well and improved on treatment. On day five he was transferred to the general ward and taken off dialysis. His family was happy and shocked, praising Dr George Mukhari Hospital as the best, but I kept thinking that if we had better qualified staff and more resources we could do so much more for many more patients."

The man was discharged on day 10, given alternative ARVs and is now back at work. "I know it seems impossible but my wish is that all humankind has access to high standards of medical management," Dr Mahlangu says.

"Dr Mahlangu is very committed to the Department of Internal Medicine and Dr George Mukhari Hospital and his nephrology interest comes at an opportune time. Over the years we have struggled to attract a nephrologist to the unit, and if he can be successfully trained, we will not only be addressing our local needs but improving the care of the most vulnerable citizens of our country as well," says Professor PS Mntla, head of the Department of Cardiology at Medunsa. "Management of patients with renal problems has been an Achilles' heel in this institution with many patients being turned down in theatre because of renal dysfunction. What a welcome addition Dr Mahlangu will be on completion of his nephrology training."

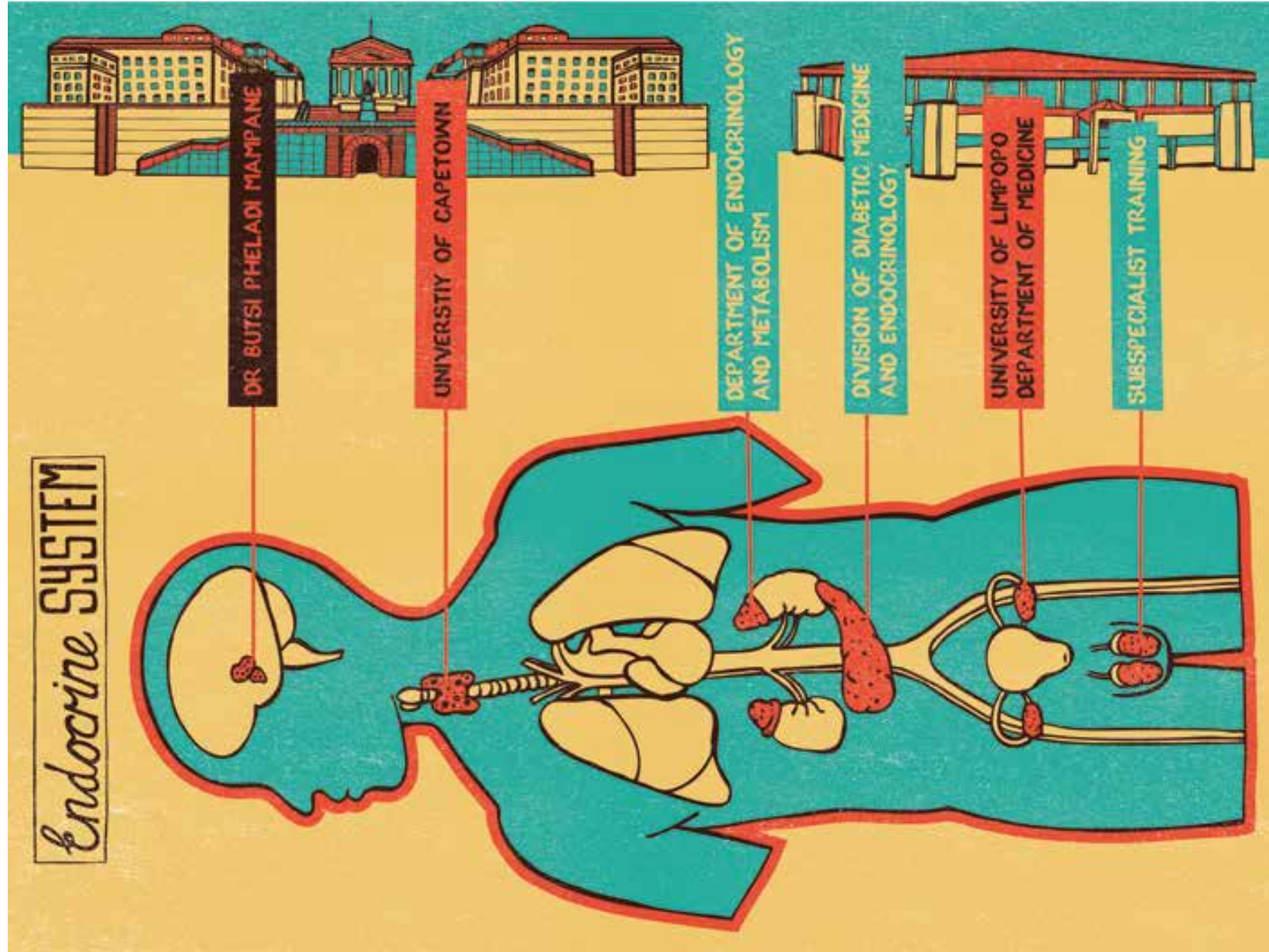
"Policies and protocols in the management of renal patients are lacking because there isn't a nephrologist in the unit so patient management is not what it should be," Dr Mahlangu says. And, he says, registrars rotating through Dr George Mukhari Hospital would also benefit from a full-time nephrologist.











# DR BUTSI PHELADI MAMPANE

Registrar in Internal Medicine  
 Sub-specialty: Diabetic Medicine and Endocrinology,  
 University of Limpopo, Medunsa

The death of her paralysed grandmother from an unknown illness prompted Dr Butsi Mampane to become a doctor.

## UNDER THE MICROSCOPE

*Dr Butsi Mampane was an undergraduate student at Medunsa in 1999 and did her internship at Charlotte Maxeke Academic Hospital in Johannesburg. The most rewarding part of her career, she says, is being stopped in hospital corridors by patients, some of whom she hardly remembers, seeing their smiles and hearing them say, 'thank you, you helped me Doctor'. When she's not at the hospital this mom of one cooks for her family, goes to gym and loves to go on safari trips.*

As a child Dr Butsi Mampane witnessed the sick from her rural village travel long distances in search of medical care but it was her beloved paternal grandmother, paralysed from the waist down, who proved the catalyst for Dr Mampane's career choice. "She died without my family knowing what was wrong with her. I became a doctor because I want to help people like her."

Once she has completed her training at the University of Cape Town's division of Diabetic Medicine and Endocrinology (a collaborative agreement between the University of the Limpopo and UCT), Dr Mampane will return to Dr George Mukhari Hospital in Garankuwa near Pretoria where there are currently no endocrinologists.

"There are fewer than 50 endocrinologists in the country and almost all are in the private sector yet the majority of the population relies on the public sector for their healthcare needs," says Dr Naomi Levitt, head of the Division of Diabetic Medicine and Endocrinology at UCT. "It is essential that more endocrinologists are trained in order to improve the rates of diagnosis and appropriate management of the wide range of endocrine disorders prevalent in our society, the most common being diabetes, thyroid and bone diseases."

Dr Mampane has a personal interest in endocrinology: Her father, almost all of his cousins, and his uncle are diabetic. "My Dad's uncle had an above knee operation from diabetes-related complications; I want to improve my understanding and knowledge to help other families with a history of diabetes like mine," she says. She was also prompted to specialise in this field by the burgeoning rates of obesity in South Africa and its related endocrinopathies.

The University of Limpopo (Medunsa) has struggled since the inception of its Department of Internal Medicine to establish an Endocrinology and Metabolism Unit yet the hospital sees more than 1 000 patients a month with some form of endocrinopathy or metabolism disorder. Currently diabetes patients are managed by registrars and interns, with the assistance of registered nurses.

"My dream for the health of South Africa is that everyone has access to basic medical care, including people who live in deep rural areas," Dr Mampane says.





# DR

## NELISWA GOGELA

Senior Registrar in Gastroenterology

Sub-specialty: Gastroenterology and Hepatology,  
University of Cape Town

Despite the considerable public health burden of liver disease in South Africa, exacerbated by the HIV epidemic, hepatology is an extremely under resourced specialty.

### UNDER THE MICROSCOPE

*Dr Neliswa (Nelly) Gogela was born in the Eastern Cape where she attended eMazazini High School in Peddie. She credits her grandmother with her discipline as a student. "She would watch the first students come out of school and count how long to took me to get home then, if I took long, I would have to explain why. So all I could do was study, study, study," says Dr Gogela. Having graduated cum laude from Medunsa she did her internship and community service at Frere Hospital in East London before moving to Cape Town in 2005. "As a medical officer at GF Jooste Hospital I participated in the recruitment of patients for research in pulmonary tuberculosis and HIV infection.*

In South Africa the doctor-to-patient ratio is 5.5 per 10 000 in urban areas and 5.5 per 100 000 in rural areas. Specialist numbers are critically low.

In gastroenterology there are just 110 specialists countrywide of whom 25 are in academic practice, and hepatology is barely surviving. "It needs to develop a critical mass and expand and an ideal start would be to train a black African female," says Prof Sandie Thomson, head of the gastroenterology division at the University of Cape Town (UCT).

Of the eight female gastroenterologists in South Africa only two are black and five have special training in hepatology.

"From my clinical exposure it is evident that there is a need for more specialists with a focus in hepatology. This is because of the impact of HIV on liver disease, evolving and expanding therapies available to manage liver disease, especially viral hepatitis, and the fact that liver transplant is now fully recognised as an alternative to failed medical therapy for end stage liver disease," says senior gastroenterology registrar, Dr Neliswa Gogela. "These patients need care from specialists that are highly trained and comfortable in the complexities of managing these diseases."

Dr Gogela, whose interest in hepatology developed during her intern years at Frere Hospital in East London, joined the liver team at least twice a week for clinics and teaching ward rounds while working as a physician at New Somerset Hospital in Cape Town in 2010. "The exposure was fascinating," she says.

She is currently working on a Masters research project investigating the prevalence of Chronic Hepatitis C (HCV) among HIV positive men.

The gastroenterology programme at UCT includes a full year dedicated to hepatology. Dr Gogela has been seconded to one of only two posts in this training programme which this Discovery Foundation Award will help fund.

Gastroenterology is a three-year programme at UCT and gives the best, dedicated hepatology exposure currently available in South Africa, Prof Thomson says. Trainees gain practical experience and better exposure to the newer therapies used in the management of chronic liver diseases and the equipment they work with is of tertiary standard. "The recent addition of access to the American College of Gastroenterology Education Universe has further complemented the trainees' exposure and we practice in a combined medico-surgical unit and have excellent relations with our surgical counterparts. Overall the unit provides all aspects necessary for thorough training in hepatology and gastroenterology."

Dr Gogela was also awarded the R2 million Discovery Foundation MGH Award and will spend a year at the renowned Massachusetts General Hospital in Boston. Deputy Health Minister Dr Gwen Ramokgopa called her 'an inspiration', who is able to defy racial, gender and rural barriers.







# 4

DISCOVERY FOUNDATION  
RURAL FELLOWSHIP AWARDS

Support for the training of  
South Africa's specialists



## POLOKWANE MANKWENG HOSPITAL COMPLEX

Limpopo Initiative for Newborn Care (LINC)  
Sekhukhune District, Limpopo  
Distinguished Visitor Award

For good quality healthcare to be sustainable there needs to be continued capacity development of staff, particularly in rural areas where there are few or no specialists and poorly equipped facilities.

### UNDER THE MICROSCOPE

*In South Africa, about 38% of deaths in children under the age of five are among newborns. In Sekhukhune District that neonatal mortality rate is 11,6 per 1000 live births – that's 2,9 more than the national average. "A decrease in the mortality rate for low birth weight infants, especially in the 1000g to 1999g birth weight group, is a marker of the quality of care which newborns receive. Good neonatal care should result in a reduction in neonatal mortality rates in all birth weight categories," Dr Robertson believes. And it is only when we reduce neonatal mortality that we stand a chance of achieving Millennium Development Goal targets in our country.*

In many ways Sekhukhune is a blessed place. It has awe-inspiring natural beauty, huge deposits of precious metals, a wealth of unique plant life, and rich cultural history. But for newborn babies this rural wonderland, 200km north of Pretoria and 150km west of Nelspruit, is a precarious entry point into the world. Early neonatal mortality rates are higher here than the national average, in some cases more than double.

"The reasons are multifactorial," says Dr Anne Robertson, head of the clinical unit in the Department of Paediatrics and Child Health at the University of the Limpopo. These include facilities that are not up to standard, limited equipment, insufficient and inexperienced staff and transport difficulties for patients.

In 2003 the Department of Paediatrics started a programme called the Limpopo Initiative for Newborn Care (LINC), which led to the establishment of neonatal units in all hospitals, and better care in all. "Rural hospitals were providing only very rudimentary services for sick and small newborns. With the aid of specialists visiting all of our hospitals one or two times a year, advising, supporting and mentoring, and the development and implementation of tools and training, all hospitals now have neonatal units which include kangaroo mother care units.

"Of 37 hospitals, 20 have now been accredited as providing excellent care and neonatal mortality rates have declined in four out of five districts by eight to 28%," Dr Robertson says.

However, in some rural districts like Sekhukhune, where only 5% of the population lives in urban areas, there are no paediatricians at the regional hospital and no district paediatricians. "Ongoing support of district hospitals is imperative until the health system has specialists in place," Dr Robertson says.

Thanks to his Discovery Foundation Rural Fellowship Award Dr David Greenfield, principal medical officer and senior lecturer at the University of Cape Town, will conduct clinical training and reviewing of cases in Sekhukhune and regular assessments of facilities. In addition he will hold discussions with hospitals' management during regular monthly visits. Dr Greenfield has been a consultant to LINC since its establishment.

Under his tutelage, staff at the Sekhukhune hospitals will be trained in the essential knowledge and skills for newborn care and managers will be taught to run appropriate in-service training and conduct regular audits.







## MOSES KOTANE HOSPITAL AND BRITS HOSPITAL

Bojanala District, North West  
Distinguished Visitor Award

Anaesthetic complications contribute significantly to the high maternal mortality rates in the Bojanala district in North West Province.

### UNDER THE MICROSCOPE

*The father of four daughters, Prof Joel Matsipa was inspired to become a medical doctor at his home in Katlehong on Gauteng's East Rand. "My home was opposite a clinic headed by the first black doctor I had ever seen. He became my role model." Prof Matsipa graduated from the University of Natal in 1974 and after a long and distinguished career as a specialist anaesthetologist, officially retired from Dr George Mukhari Hospital and Medunsa in Limpopo in 2011 where he still serves on contract. Prof Matsipa cites poorly resourced healthcare facilities as one of the reasons rural areas struggle to attract anaesthetists.*

"Anaesthetic services in district hospitals are rendered by medical officers without formal training. This has resulted in a large number of anaesthetic complications, particularly among pregnant women undergoing emergency operations. This district has the third highest maternal mortality rate in the country," says Dr JM Tumbo, principal family physician for the Bojanala district.

The Discovery Foundation Rural Fellowship Award will fund regular visits by retired specialist anaesthetist, Prof Joel Matsipa, to each of two district hospitals – Moses Kotane and Brits – where he will administer anaesthesia alongside medical officers on theatre days, conduct post-operative ward rounds and hold formal teaching sessions of multidisciplinary teams. "Once a month he will run a continuous professional development session at a district training centre at Swartruggens. Prof Matsipa will also be available for teleconferences and telephonic consultation with the facilities," Prof Tumbo explains.

Accessing Prof Matsipa's specialist skills and knowledge for these district hospitals will also help in the development of standardised anaesthetic guidelines throughout all district hospitals.

"He will add clinical value as a consultant for difficult clinical/ anaesthetic problems, be a mentor to medical officers and registrars and enhance their skills," says Dr Tumbo.

Patient safety will be improved and mortality rates – particularly of mothers – reduced. "This will contribute to this district achieving Millennium Development Goal number four," Dr Tumbo says.







## NGAKA MODIRI MOLEMA DISTRICT

North West  
Distinguished Visitor Award

Vacancy rates for medical officers and specialists in the far North West Province are in excess of 40% but the presence of a visiting physician specialist may encourage more doctors to work here.

### UNDER THE MICROSCOPE

*Prof Yosuf Veriava has a distinguished teaching career, particularly among disadvantaged students and as a rural hospital consultant. He graduated from the University of the Witwatersrand in 1968, is a registered nephrologist and has been a director of the hypertension clinic at Helen Joseph Hospital and president of the Hypertension Society. He is an ardent campaigner for ethics and human rights in medicine and is widely published in scientific journals. He was one of the six doctors involved in the Supreme Court application which directed the South African Medical and Dental Council to convene a disciplinary hearing into the behaviour of Drs Lang and Tucker during the medical care of political detainee, Steve Biko.*

Ngaka Modiri Molema District, bordered by Botswana in the north, comprises more than 28 000km<sup>2</sup> of largely rural land inhabited by more than 840 000 people. The unemployment rate is at an estimated 33%, roads are poor and though there is a well-developed hospital and clinical referral system, facilities are far apart. As a result, most residents do not have access to quality health services, especially specialist skills. Efforts to employ a full time physician in this district were unsuccessful for eight years, says Dr Alhagi Njie, a foreign national who was recruited as principal family physician specialist for the district last year thanks to last year's Discovery Foundation Distinguished Visitor Award.

"The vacancy rates for medical officers and specialists in this district are 42% and more than 50% respectively," says Dr Njie. Having a visiting physician specialist to perform major ward rounds, and offer seminars and skills workshops would provide a teaching and learning platform for doctors, interns and community service doctors. "This is imperative for the recruitment and retention of health practitioners into rural areas," Dr Njie says. Thanks to this year's Discovery Foundation Distinguished Visitor Award, Prof Yosuf Veriava, whose career spans more than 40 years, will serve the district for a year. He is currently Professor of Medicine attached to the Dean's office at the University of the Witwatersrand.

"The hope is that a foundation being set up by Prof Veriava can be continued to improve training in the district and strengthen the district's referral system," Dr Njie says. Prof Veriava has already served in the area for a year. As a distinguished visitor he will be involved in organising and supporting learning in the district through small group learning sessions in clinical settings where local outreach has not been possible.

"In addition local senior doctors will be mentored by him and he will teach postgraduates, community service doctors, interns, final year medical students and clinical associate learners."

"With this kind of support specialist and senior doctors will be motivated to deliver quality internal medicine to this rural community," Dr Njie says.

Another important consequence of Prof Veriava's presence in the district will be his availability as a consultant in complicated cases. "These contact sessions with Prof Veriava will transfer clinical assessment and interpretive skills to these doctors. Numerous studies have shown that health professionals move out from rural areas to urban areas because of a lack of supervisory support in rural areas," Dr Njie points out.







## MTHATHA GENERAL HOSPITAL, ST. BARNABAS HOSPITAL AND MALIZO-MPEHLE HOSPITAL

Walter Sisulu University, O.R. Tambo District, Eastern Cape  
Distinguished Visitor Award

Maternal deaths in the Eastern Cape remain unacceptably high and a significant number of these are linked to poor anaesthetic services.

### UNDER THE MICROSCOPE

*Dr Lionel Smith obtained his medical degree at the University of Natal in 1970 and became a Fellow of the College of Anaesthetists South Africa in 1983. He has worked at the Red Cross War Memorial Children's Hospital in Cape Town and served on Groote Schuur's Cardiac Anaesthetic team. He is currently the Academic Co-ordinator for Post Graduate Studies at the Walter Sisulu University Medical School. When not putting people to sleep, he enjoys hiking, Indian cooking, calligraphy and has a special interest in rural training.*

Analyses of maternal death statistics in the Eastern Cape has revealed a huge need for anaesthetic training, particularly for rural doctors working at district hospitals in the province. "Empowering these doctors with quality anaesthetic skills will result in better health service delivery in this province, and will enable the province to realise one of the Millennium Development Goals in improving maternal health," says the Executive Dean of Walter Sisulu University's Faculty of Health Sciences, Professor NE Sokhela. More efficient district services will also mean fewer referrals to the already overburdened Nelson Mandela Academic Hospital in Mthatha.

With the help of this Discovery Foundation Rural Fellowship Award, retired specialist anaesthetist Dr Lionel Smith will train doctors on-site in theatres at three district hospitals in the region. These hospitals are: Mthatha General Hospital, St. Barnabas Hospital and Malizo-Mpehle Hospital. Between April 2011 and March 2012 more than 2 400 caesarean births were recorded at these three hospitals.

Dr Smith, whose distinguished career includes heading up the anaesthetic department at PE Metropole Group of Hospitals, is one of only two people, and the only South African, to have been honoured with the OVS Kok Award by the SA Society of Anaesthetists for services to anaesthesia, especially for rural anaesthesia development.

His district hospital training programme will ensure that doctors are competent to manage general anaesthesia, intubation and ventilation, drug management, anaesthetic machines and patient recovery. He will also provide training in regional anaesthesia as a safer alternative, where appropriate, to general anaesthesia.

The head of clinical governance at each hospital and Dr Smith will work together to ensure that doctors will be allocated time for training, that there are theatre lists on the days that he visits and that there are sufficient numbers of patients for meaningful hands-on training to take place.

"When specialists visit and provide skills and encouragement, rural doctors are more likely to be motivated to stay and care for rural populations," says the University's Department of Family Medicine. "And patients will benefit not only from improved management but will also gain from better resuscitation before and during transfer to referral hospitals."



# PROF CLAIRE VAN DEVENTER

Adjunct Professor in Family Medicine at the University of the Witwatersrand and Family Physician, North West Province  
Rural Individual Fellowship Award

Patient participation adds significant value and insight to quality improvement in health, particularly at primary level suggests Prof Claire van Deventer.

## UNDER THE MICROSCOPE

*For Prof Claire van Deventer medicine was a calling. "I felt very strongly as a Christian in high school that this was God's plan for my life and was fortunate enough to be able to cope intellectually with the challenge."*

*"Every successful Caesarean section remains a miracle, comforting someone before an anaesthetic, the correct diagnosis with a good outcome, helping people come to terms with chronic illnesses, teaching people skills that make a difference between life and death ... these all confirm that this was the right choice for me." When not finding ways to improve patients' experience of healthcare, this mom of three likes to paint, read, garden, travel and cook.*

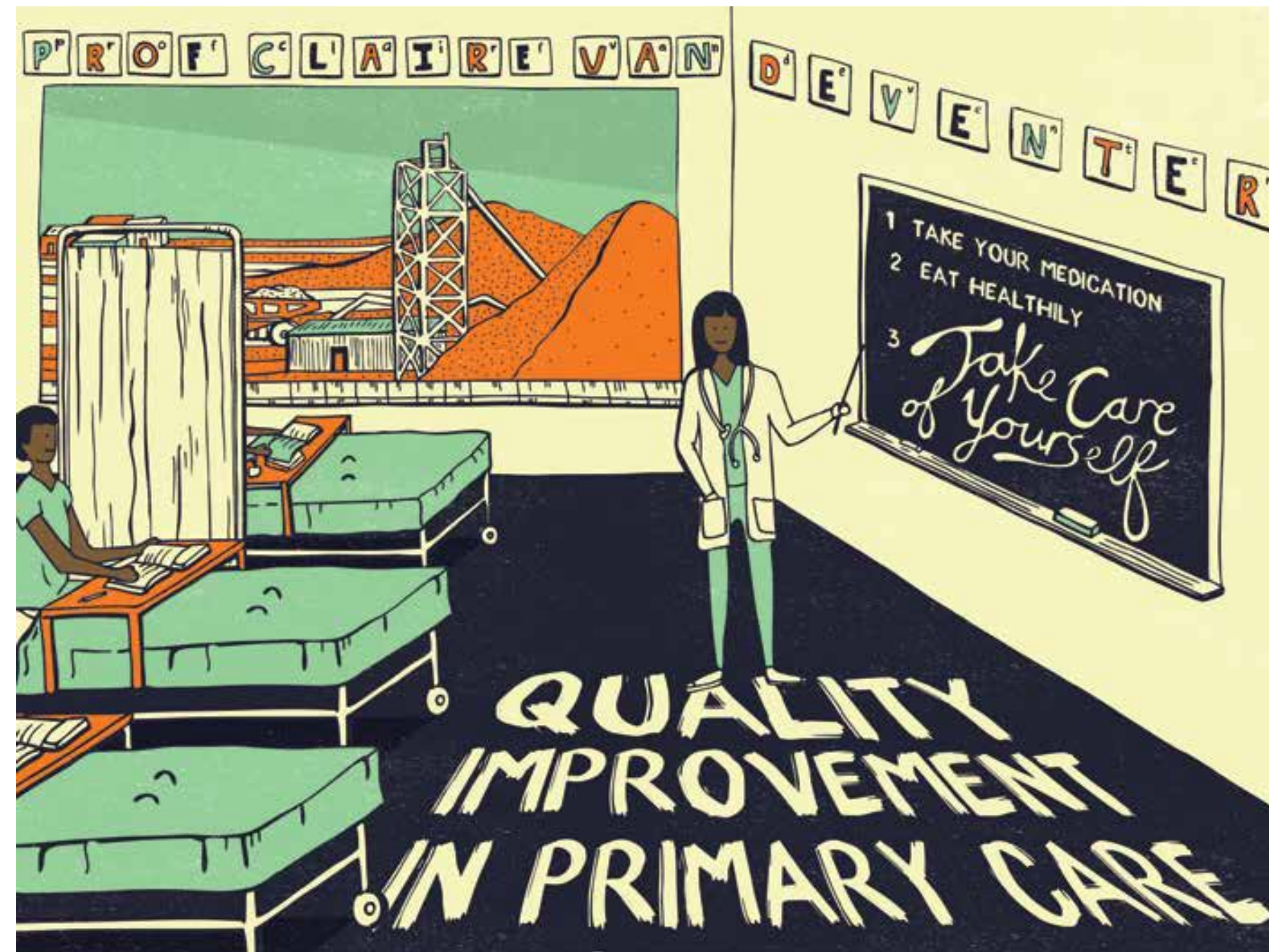
Dr Kenneth Kaunda District Municipality in the North West Province is located 65km south west of Johannesburg, bordering Gauteng. Home to some of the most prominent gold mines in the world, its population reflects many of the health challenges faced by peri-urban and rural communities in South Africa, such as infectious diseases like HIV, tuberculosis and high rates of maternal and infant mortality. It is here that Professor Claire van Deventer works as a district family physician, taking a special interest in the quality of healthcare provided at primary care level.

"Family physicians within the district health system have been recognised by the Minister of Health as key to providing quality in primary care." Prof van Deventer is pursuing a PhD on quality improvement (QI) in primary care and, in particular the involvement of patients in QI, through the University of the Witwatersrand. "The unique feature of this specialisation is that the academic family physician is placed in the district where the discipline is taught, supervised and practiced at clinics, health centres and district hospitals – in other words, at the coal face and not in an academic institution. "The overall aim of my research is to explore the potential value (in terms of patient outcomes, for example adherence, satisfaction, improved control in chronic illness) of patient-inclusive interventions while implementing QI in primary care."

Some of the quality improvement projects she has already worked on have led to the Dr Kenneth Kaunda District becoming a pilot site nationally for several new initiatives including a primary care mental health project, and an integrated training package for common illnesses in primary care.

Quality improvement in healthcare is high on the agenda among healthcare institutions worldwide with best practice experiences being shared through conferences like the annual International Forum on Quality and Safety in Health that Prof van Deventer attended in 2009 and will participate in 2014. Coupled with time spent at Britain's National Health Service Institute for Innovation and Improvement, Prof van Deventer hopes to be able to implement their interventions in South Africa. "Experience-based design is one of the approaches which has had great success in involving patients and improving patient outcomes," she says.

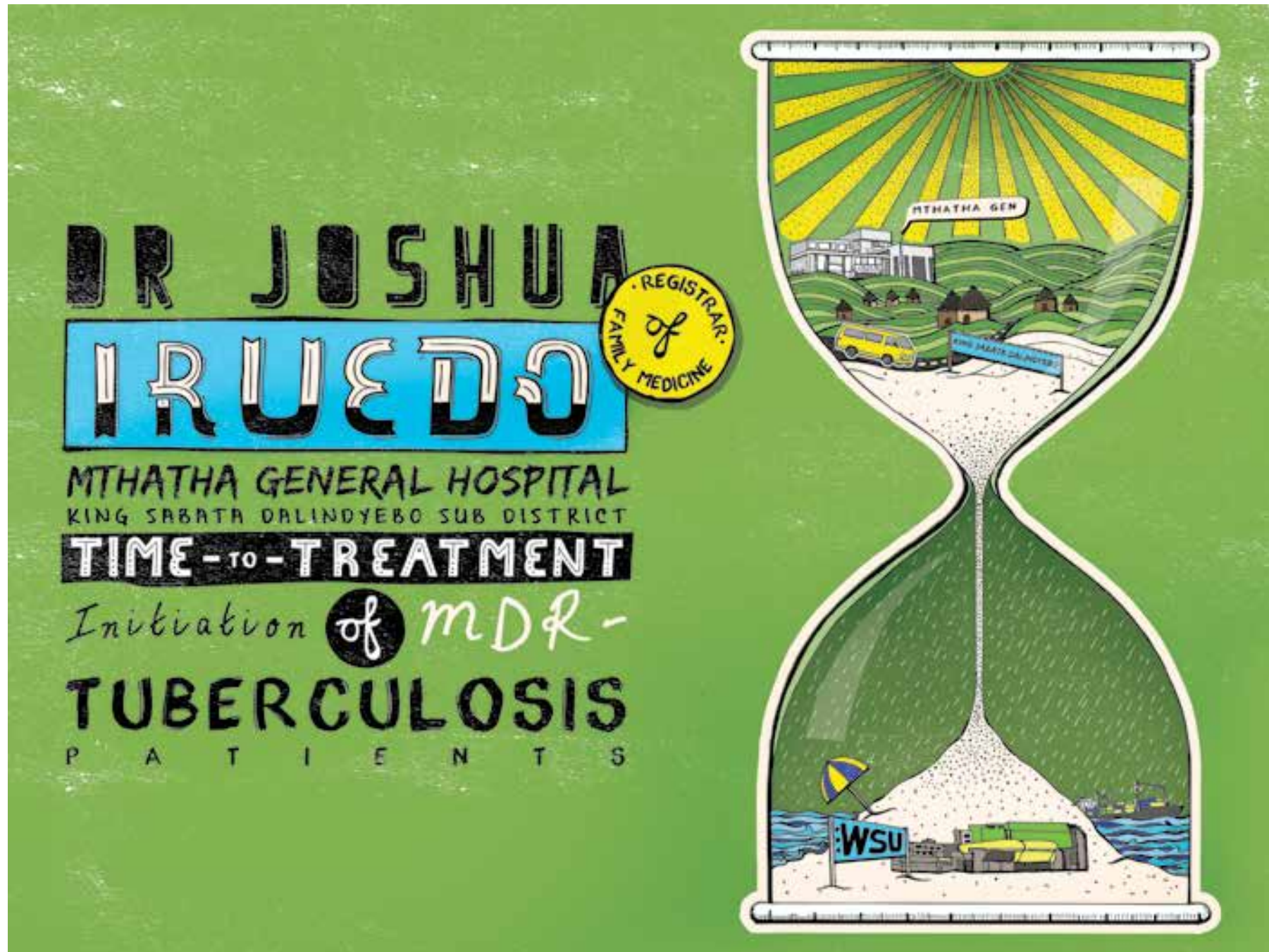
"I believe that the involvement of patients in quality improvement in health, specifically in primary care, has the potential to lead to improved quality of patient care, including patient satisfaction. Patient empowerment, in other contexts, has led to increased patient responsibility and better health outcomes. This is currently not happening in a consequential, sustained way in South Africa," she says.











## DR JOSHUA IRUEDO

Registrar in Family Medicine, Mthatha General Hospital  
Rural Individual Fellowship Award

The speed at which multi-drug resistant tuberculosis is treated after diagnosis significantly impacts its spread, says Dr Joshua Iruedo.

### UNDER THE MICROSCOPE

Nigerian-born Dr Joshua graduated in 2000 from the University of Benin. He did his internship in Nigeria and joined the Greenville District Hospital in Bizana in the Eastern Cape in 2006 as a senior medical officer. He is currently based in Mthatha where he lives with his wife Hope and two daughters, Isabel and Michelle. In his free time he plays chess and soccer.

Despite highly effective drugs, tuberculosis kills thousands of South Africans each year. The World Health Organization estimates that 1% of the population is infected with tuberculosis every 12 months and that the mortality rate of multi-drug resistant TB is as much as 40% within 30 days of diagnosis.

Home transmission is a significant factor in its rapid spread as is the delay from sputum collection to treatment initiation – up to 12 weeks in some cases, as a KwaZulu-Natal study showed.

In King Sabata Dalindyebo (KSD), a sub-district of OR Tambo Municipality in the Eastern Cape, multi-drug resistant tuberculosis (MDR-TB) is a major problem, with delays in treatment initiation contributing to increasing transmission rates. “The time to treatment initiation of MDR-TB is not known in this district, nor do we know whether the introduction of Gene Xpert – a TB diagnostic tool with a two-hour turnaround – has impacted the time to initiation,” says Dr Joshua Iruedo. His study will investigate these unknowns, a research project which, says Prof NE Sokhela, the executive dean of the Faculty of Health Sciences at Walter Sisulu University, could contribute significantly to improving the health of this primarily rural community – one of the most economically-deprived in the country.

“It’s a very rewarding feeling when you discharge a patient home from care, when you successfully reverse a life threatening or potentially life threatening condition, and when you advise patients about lifestyle changes that could impact their lives positively,” Dr Iruedo says.

But to do that effectively, he says, South Africa needs to revitalise its primary healthcare system, the only platform on which the vision of ‘health for all’ can be achieved.

“South Africa urgently needs a well-performing health workforce, a well-functioning health information system, and equitable access to healthcare services for all.”







## DR NOMSA MOGOSETSI

Registrar in Family Medicine, University of Limpopo, Medunsa  
Rural Individual Fellowship Award

An unpleasant childhood encounter with a disinterested doctor is behind Dr Nomsa Mogosetsi's devotion to primary healthcare.

### UNDER THE MICROSCOPE

*Dr Nomsa Mogosetsi completed her internship at Jubilee Hospital in Temba, Gauteng and has been a registrar in family medicine at the Medunsa campus of the University of the Limpopo since 2011. She cites Nelson Mandela's unselfishness and willingness to put other people first as her greatest inspiration. When not caring for her community or her daughter she enjoys playing tennis, Scrabble and travelling.*

"I imagined myself being a doctor from a very young age after seeing one of my aunts battling with cancer. Before she died I promised her I would become a doctor to help ease people's suffering. And then I consulted a doctor who listened to the radio while I tried to discuss my illness with her. She seemed not to be interested in what I had to say, never examined me and simply handed me medication from her cupboard. That was one of the most horrible experiences of my life."

Today, Dr Mogosetsi is a firm believer of the teaching that a primary healthcare doctor interacting with a patient is a meeting of two specialists: the patient as the person experiencing the disease and the doctor as the person with knowledge of the disease. And that is the doctor she strives to be.

"My vision is to work in rural areas and deliver quality primary healthcare services. People residing in rural areas are disadvantaged in so many ways. I have spent most of my working life in rural hospitals and have seen the need for well-rounded doctors or family physicians in these communities.

"I want to offer more to these communities and that is why I enrolled to do family medicine," she says.

Dr Mogosetsi is a graduate of Medunsa and is currently studying towards a Masters degree in Family Medicine. She is particularly interested in HIV/AIDS and tuberculosis.

In South Africa, we scaled up our treatment services of HIV to reach 1.7 million people in 2011 - a 75% increase from two years prior. "As access to ART improves, there is an observed decline in levels of adherence and poorer outcomes in ART programmes. Good adherence is needed to achieve all the benefits associated with ART."

Dr Mogosetsi's study will examine the socio-demographic, behavioural and clinical factors and medication issues that predetermine good adherence. "The findings will help counselors, nurses and doctors caring for HIV-infected individuals to take a proactive rather than a reactive approach in identifying patients during consultation who are at risk of poor or suboptimal adherence, and who can then institute appropriate measures to improve treatment outcomes."

Patients will be drawn from Phedisong 4 Clinic in Pretoria, says Dr Mogosetsi who has worked in and around the rural communities in Mpumalanga, Limpopo, Northern Cape and North West provinces.

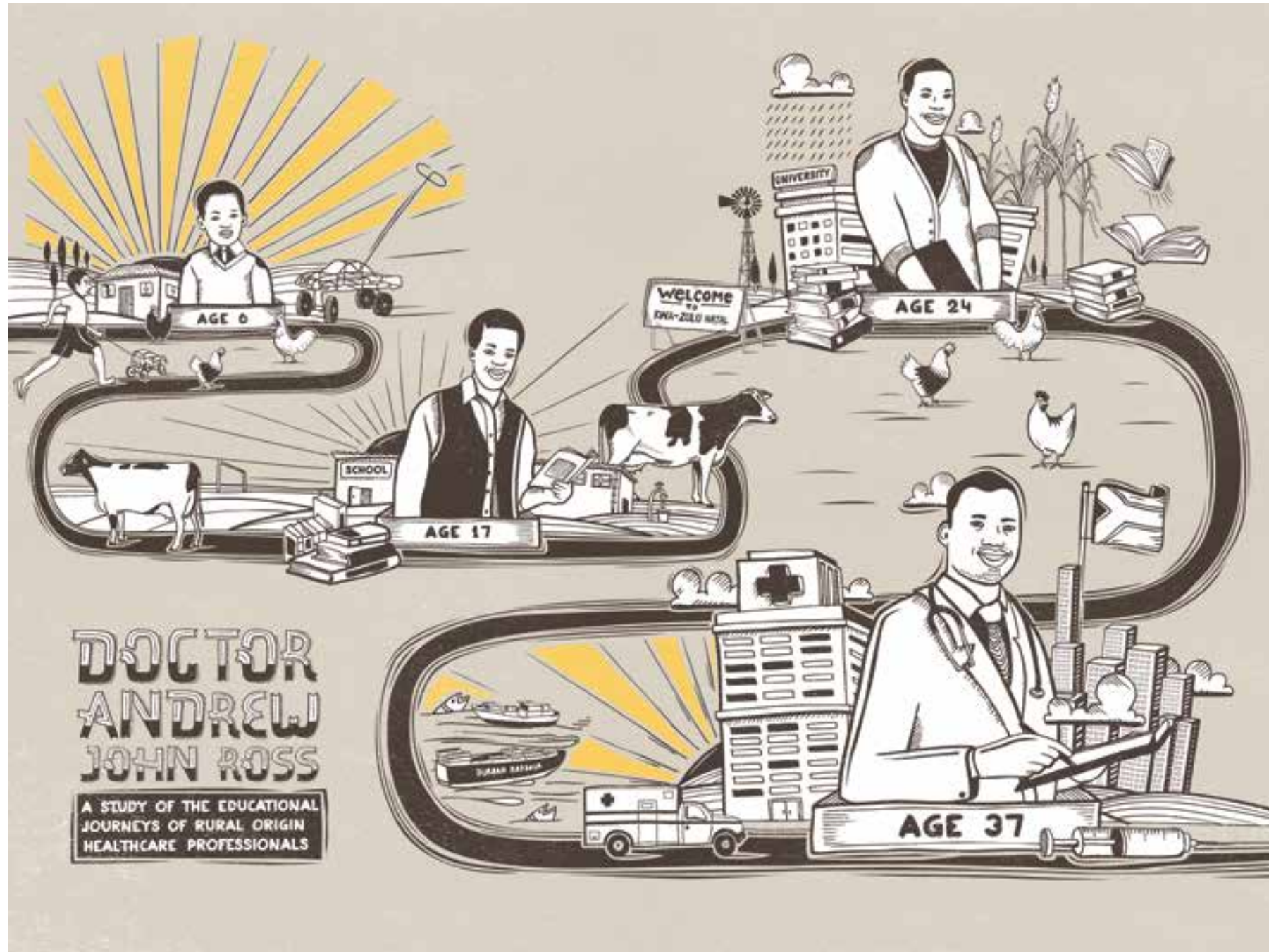
"I am not going to join the masses that flock to cities and abroad to practice. It has given me great pleasure to see the small changes made in the lives of people in rural communities and it is my wish to continue doing this for the remaining days of my working life. I cannot imagine doing anything else."











## DR ANDREW ROSS

Senior Lecturer, Department of Medicine, University of KwaZulu-Natal  
Rural Individual Fellowship Award

Understanding the challenges rural youth face in accessing tertiary education and learning from those who succeed may help address staff shortages at rural institutions.

### UNDER THE MICROSCOPE

*Dr Andrew Ross's parents were missionary doctors in Nigeria and Ethiopia, and that exposure and his Christian faith motivated him to study medicine and to work in areas of need. His love of wild places takes him to game reserves in his downtime. Dr Ross lives in Westville, Durban with his physiotherapist wife Glenys and two teenage sons.*

South Africa's rural students are poorly equipped both academically and socially for tertiary education and their success rates at universities are as low as 35% yet Dr Andrew Ross has seen 132 of these students graduate as healthcare professionals. This pioneer of the rural scholarship scheme Umthombo Youth Development Foundation (UYDF) believes that investing in rural youth is one of the most effective strategies in improving staff levels at outlying hospitals and clinics.



"Staffing remains a massive challenge in rural hospitals. Through UYDF we have been able to identify and support a significant number of rural scholars who we have trained as healthcare professionals. All have returned to fulfill their work back obligation and 75% have stayed in rural or underserved areas after completion of their compulsory work back obligation to the Trust," says Dr Ross.

Seeing those students graduate, hearing their stories and seeing them achieve great things despite having to overcome enormous challenges have been the highlights of his career, he says.

While the trustees of the UYDF believe that the mentorship the scheme provides, the holiday work and the comprehensive financial support and accountability demanded are responsible for the excellent outcomes, important pre-university factors as well as graduates' perceptions of factors contributing to their success have not been studied. It is Dr Ross's intention with the support of this Discovery Foundation Award to gain a better understanding of the personal factors, within a very challenging environment, which enabled these scholars to progress from rural students to healthcare professionals. This, he hopes, will strengthen initiatives to support the training of future rural origin healthcare professionals.

Health outcomes have been linked to staffing levels, and shortages of staff have been identified as the bottle neck in the improvement of health outcomes in rural areas. "Well staffed public healthcare facilities which provide great services to all the people of South Africa is my vision for our country," says Dr Ross.

"Dr Ross is passionate about rural health and I have been hugely impressed by his desire to pursue a PhD in this sadly neglected field. I have no doubt that his research will contribute enormously in promoting and training rural origin students to take their rightful place in serving their communities," says Prof S Naidoo chief specialist, Servier chair and Head of the Department of Family Medicine at the University of KZN.

Evidence shows that rural origin health science graduates are more likely than their urban colleagues to work within the public health sector.



# DR EMEKA UGWU

Registrar, Department of Family Medicine, University of Limpopo, Medunsa  
Rural Individual Fellowship Award

In the rural village where he grew up there were no doctors to help the sick, so Dr Emeka Ugwu set his sights on becoming the first.

## UNDER THE MICROSCOPE

Dr Emeka Ugwu graduated from Port Harcourt University in Rivers State, Nigeria with a Bachelor of Medicine and a Bachelor of Surgery. He has subsequently completed courses in Trauma and HIV at various institutes in South Africa and was a senior medical officer at Kwa-Mhlanga Hospital in Mpumalanga before moving to the University of the Limpopo. He lives in Faerie Glen, Pretoria and when not focused on medicine he loves to read and write. "I also have a great passion for politics and business," he says.

"I have always preferred the road less travelled. When I was growing up, I had an irrepressible desire to be a medical doctor because I felt that my community was in need of one. I wanted to set an example for the younger generations," says Dr Emeka Ugwu.

This Nigerian born father of two is now helping patients across a wide swathe of rural Tshwane including Mabopane, Hammanskraal, Soshanguve, Refentse, Temba and several other districts desperately in need of healthcare services.

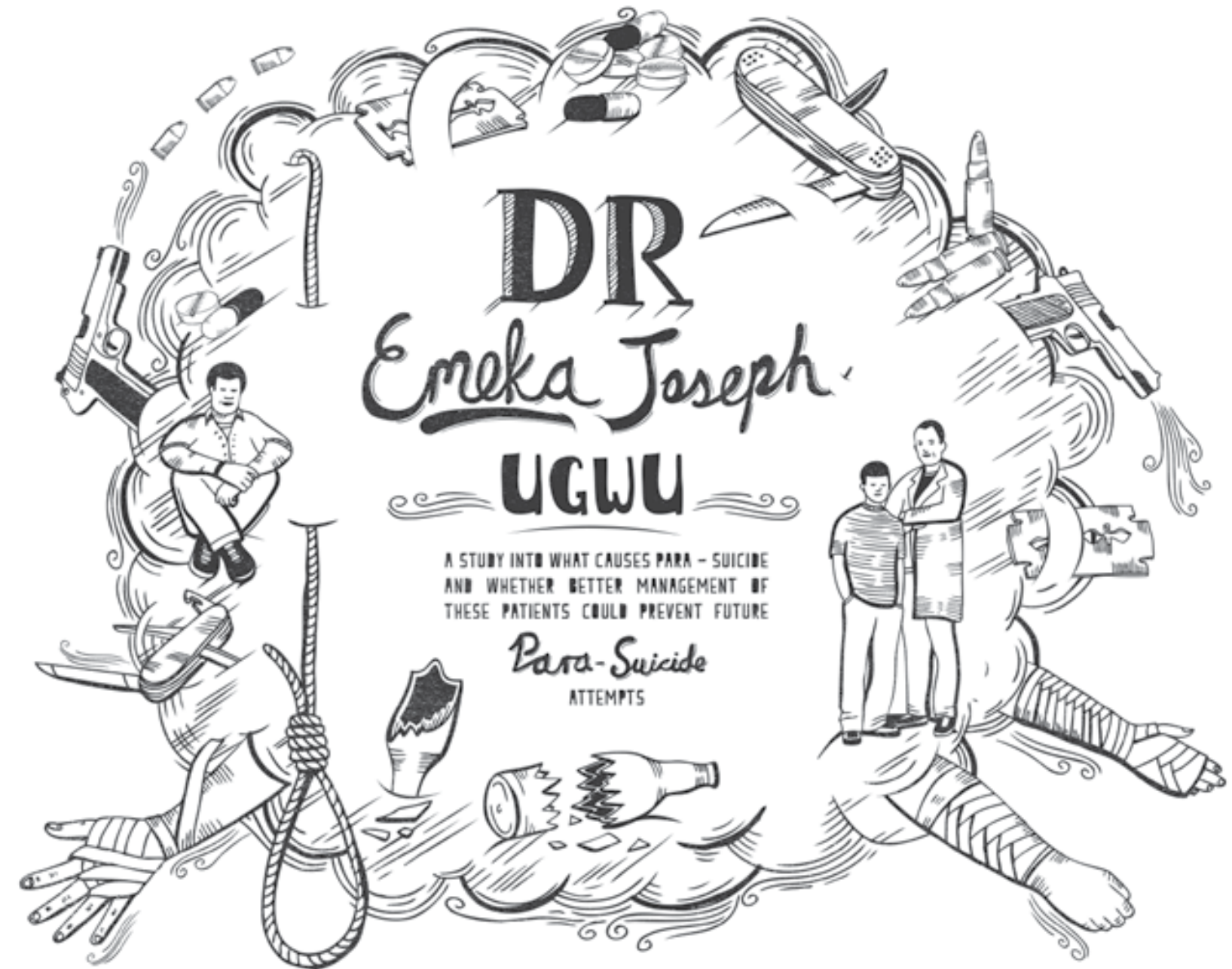
"What I love most about what I do everyday is that I constantly have the opportunity to make someone smile and be happy, and every day I am challenged by things I do not know."

The health challenges in rural Tshwane are significant. There is a huge burden of chronic disease, there is drug addiction, HIV/AIDS and a health system lacking in accountability. And there are unusually high numbers of attempted suicides.

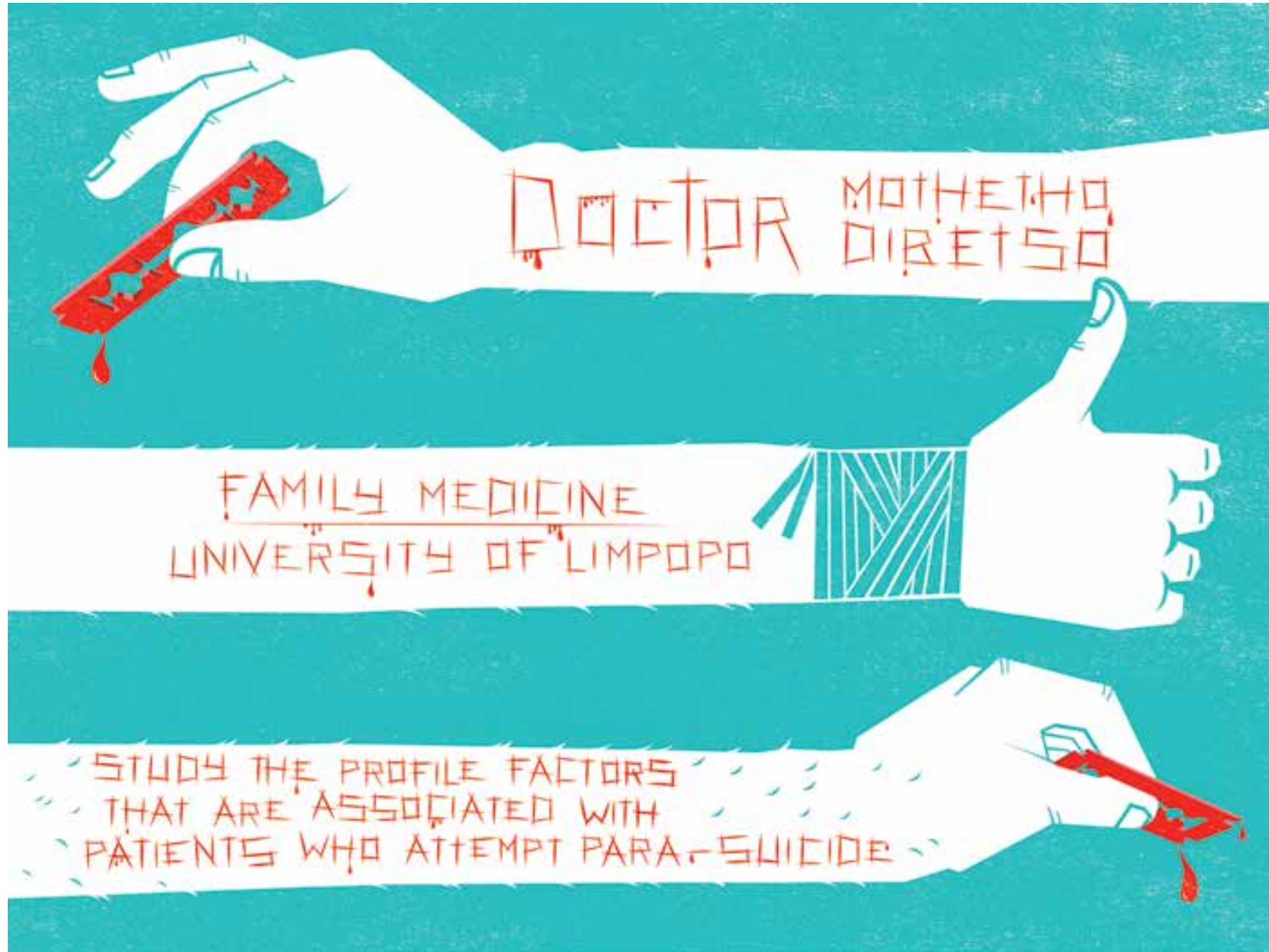
"In the course of my work at Jubilee, a level one hospital in Hammanskraal, I noticed that attempted suicide is relatively common among patients brought in to casualty – between 10 and 15 cases per month. Why do they want to kill themselves, and if they are managed properly by healthcare professionals can a second attempt be prevented? These are the questions I would like to answer through my research," Dr Ugwu explains. His study will include a retrospective review of patient case files.

Dr Ugwu's future is mapped out. His commitment, he says, is to rural health where need is greatest. "Dr Ugwu has demonstrated exceptional practical skills and academic precision in caring for the rural population. He has considerable insight into rural health promotion, prevention as well as curative interventions," says Dr Champak Burua, lecturer in Family Medicine at the University of the Limpopo's Medunsa campus.

"My vision for health in South Africa is to be part of a healthcare system that is evidence-based, accessible and affordable to all and sundry, continuous and always evolving," Dr Ugwu says.







# DR MOTHETHO DIBETSO

Registrar in Family Medicine, University of Limpopo, Medunsa Rural Individual Fellowship Award

Many of South Africa's most pressing health challenges could be prevented if resources were directed at primary healthcare, Dr Mothetho Dibetso believes.

## UNDER THE MICROSCOPE

*Dr Mothetho Dibetso worked as a dietitian for the Department of Health in Limpopo for two years and became a registrar in family medicine in 2010. He works at the Koster/Swartruggens district hospital complex in the North West and lives with his family in Rustenburg. "I had a passion for medicine from a very young age. I enjoyed caring for others in my community," he says, citing his ability to remain calm when dealing with the sick and injured as his greatest asset as a clinician. This father of a four-year-old de-stresses by swimming, watching soccer and taking time out to travel.*

In the North West Province, about 45km south west of Rustenburg, is a 90-bed hospital complex serving a population of almost 40 000 mainly rural residents. Each year, some 200 patients come here for help after attempting suicide, almost all of them younger than 35.

"Most district hospitals lack personnel and the physical facilities to appropriately manage victims of attempted suicide. The mental health units where they should be managed are at provincial hospitals and are usually overcrowded and the healthcare professionals trained to manage mental health disorders are also scarce," says Dr Mothetho Dibetso. As a result many of these people do not get the care they need.

Added to this is the cost of managing these patients – beds, medication and personnel.

South Africa, suicide statistics sit between 11,5 and 25 in 100 000, which is higher than many other industrialised nations. And it's the young who most often die – young black women in particular, Dr Dibetso says.

While we have no accurate numbers for attempted suicides we know that the most frequently used methods are self-poisoning, cutting, hanging, firearms and burning. "Studies have shown that psychiatric disorders coexist with a suicide attempt and that high risk patients need after care, especially during the first two years after attempted suicide," says Dr Dibetso.

"The problem of para-suicide is on the increase and comes at a high cost. The fact that it affects mainly the young raises concerns about the survival of the younger generation, and the absence of coping strategies in the community."

Dr Dibetso's study hopes to identify those factors within this North West community which influence attempted suicide so that proper prevention structures and appropriate patient management can be put in place.

"This research project will provide useful information for the improvement of quality of care for this group of vulnerable patients in a rural setting," says Dr John Tumbo, principal specialist in the Department of Family Medicine at Limpopo University.

Dr Dibetso dreams of being able to offer quality care to all patients at a primary health level. "I want to be among the top medical researchers in the country and be able to transform the country's primary healthcare system. The challenges facing our health system are HIV/AIDS and tuberculosis, teenage pregnancy, infant and maternal mortality rates and malnutrition in children under five years of age, all of which can be prevented if resources are directed to primary healthcare.

"And we need more healthcare professionals at primary healthcare facilities where they are needed most."









# DR VANGILE MKHATSHWA

Registrar in Family Medicine, University of Limpopo, Medunsa  
Rural Individual Fellowship Award

The death of her cerebral palsied child drew Dr Vangile Mkhathswa to medicine.

## UNDER THE MICROSCOPE

*Dr Vangile Mkhathswa graduated from the University of the Limpopo as a pharmacist in 1998 and as a doctor from the University of the Witwatersrand in 2007. She is motivated by outreach, she says, and is a certified counselor. Her parents' charity work was the inspiration that drew her to community work in medicine, in her church and now as a women's empowerment advocate.*

*Music is her other love! I plan to learn how to play a musical instrument after college exams, probably the guitar," she says.*

For seven years, Dr Vangile Mkhathswa worked as a pharmacist within the pharmaceutical industry, but three years after her son died she went back to university. "Thinking about my journey with my son, I felt there was a need for good and compassionate doctors in the world". Primary healthcare, particularly in rural areas, is where she is focusing her attention.

"Primary health is the foundation of any country's health system, thus there is no room for mediocrity among healthcare workers," she says.

"Dr Mkhathswa has a keen interest in rural health and has demonstrated exceptional practical and academic insight in caring for the rural population. She has considerable knowledge in rural health promotion and prevention as well as curative interventions," says Dr Chompak Barua, a lecturer in Family Medicine at Medunsa.

It is while working at the rural Odi Hospital in Gauteng that Dr Mkhathswa realised that doctors were not adequately caring for the significant numbers of obese patients attending outpatient clinics. There is no clinical protocol on the management of obesity at this hospital. Obese patients are usually either referred to the dietitian or simply told to reduce food intake and participate in exercise, without being given specifics.

Approximately 56% of South African women and 25% of men are overweight or obese, with the highest incidence among black and coloured women. "With obesity comes many diseases of lifestyle and the obese are at increased risk of premature death from cardiovascular complications. And obesity is a growing problem not only in adults but also in paediatric patients. There are several studies highlighting the problem but not enough focusing on what is done at primary health level to manage this condition."

"As health workers in the public sector, I feel we are not treating this with the seriousness it deserves. We focus on the results of obesity but not obesity itself and we are also not well equipped to manage it," says Dr Mkhathswa.

The obese, she believes, need expert help and support. "As healthcare professionals we need to be skilled so we can reduce the prevalence of this condition which will result in better quality of life and impact positively on other diseases of lifestyle." Obesity significantly impacts diseases of the heart, hypertension, diabetes, osteoarthritis and sleep apnoea. It affects not just the individual but communities and health services.

Obesity management among healthcare workers is where Dr Mkhathswa will focus her studies. "I look forward to the day when we will run obesity clinics like we do for other chronic diseases," she says.







## DR CHINEDU NWANGWU

Registrar in Family Medicine, University of Limpopo, Medunsa  
Rural Individual Fellowship Award

Prevention of Mother to Child Transmission (PMTCT) has proven remarkably successful in well-resourced countries but progress in South Africa has been slow, says Dr Chinedu Nwangwu

### UNDER THE MICROSCOPE

*Dr Chinedu Nwangwu graduated from the University of Nigeria and has a post graduate diploma in HIV management from the University of Stellenbosch. His greatest inspiration is his family. "They were always there for me, all through medical school." Rural medicine offers tremendous career, and personal fulfilment. "I get great self-satisfaction from helping people." Dr Nwangwu is married and lives in Pretoria North. When at home he enjoys going to the movies, watching soccer and hanging out with friends.*

Odi Hospital in Mabopane in the Tshwane Metropolitan Municipality (TMM) north of Gauteng, is a pale face brick structure with a handsome, columned entrance. Above the entrance there is a large banner advertising free HIV testing. HIV/AIDS is a major focus of healthcare here.

Dr Chinedu Nwangwu is a second year registrar at Odi, studying for his MMed in Family Medicine at the University of Limpopo's Medunsa campus. "Reducing the incidence and prevalence of HIV should be paramount for health authorities in South Africa," he says. "Good knowledge and practice of the steps needed to achieve this is essential, particularly in a setting like ours where prevalence is high." Dr Nwangwu aims to determine if the PMTCT national guidelines are being adhered to by doctors and nurses at Odi and how this is impacting on the level of patient care. "The findings of this study would help the health management of Odi and possibly Gauteng as a whole," he says. "They might also serve as a blueprint for other health facilities to work with".

Dr Nwangwu will launch a retrospective study of pregnant women who attended antenatal care and delivered babies at Odi between January 2011 and December 2012. For this he will review the medical records of these women, evaluating each record for evidence of voluntary counselling and testing, provider-initiated counselling and testing, whether CD4 counts were done and whether women who tested negative for HIV were re-tested three months later. Included in his data collection would be evidence of referral and initiation of antiretroviral therapy, the administration of nevirapine to the mother in labour and to the baby post-delivery and what information the mother was given on the choice of infant feeding.

According to a 2011 report by the Foundation for Professional Development, the number of pregnant women needing counselling and testing in the TMM was nearly 40 000 in 2011 and an estimated 10 000 in need of PMTCT and antiretroviral therapy. "I have a passion for family medicine, particularly HIV and basic emergency medicine – passions which are well met in a rural setting," Dr Nwangwu says. "But my great passion is equity in health without additional cost implications."









# DR

## KINGSLEY CHIDEBE OGBONNA

Senior Registrar, University of Limpopo, Medunsa  
Rural Individual Fellowship Award

Patient adherence is not the only imperative governing prevention of mother-to-child transmission (PMTCT) guidelines.

### UNDER THE MICROSCOPE

*Dr Kingsley Chidebe Ogbonna graduated from the University of Calabar in Cross River State, Nigeria. It was his engineer father's prompting that led him to medicine. "He believed that with nepotism in the country and job insecurity, the only way to survive was to become a doctor," he chuckles. "It has been challenging and it doesn't make me wealthy but I am comfortable and I have job fulfillment," he says. A thoroughly community-minded individual, Dr Ogbonna says when he retires from medicine one day he plans to offer his services in some community forum, possibly an NGO. Dr Ogbonna is married and has two daughters. When not thinking about or practicing medicine, he enjoys reading, writing, music and soccer.*

Thirty four million people have been infected worldwide by the human immunodeficiency virus (HIV), with sub-Saharan Africa suffering the brunt of the disease. It is here that 69% of infected people live and millions of children have been orphaned. More frightening is the number of new infections among children in this region – more than 90% of the global tally.

One way to reduce this terrible statistic is through PMTCT, which has already had substantial success. According to the World Health Organization, the percentage of HIV positive pregnant women receiving treatment to prevent virus transmission to their children rose from 33% in 2007 to 45% a year later.

"There are four basic elements of the PMTCT programme. These are: primary prevention of HIV, especially among women of child bearing age, preventing unintended pregnancies among women living with HIV, preventing HIV transmission from a women living with HIV to her infant and providing appropriate treatment, care and support to women living with HIV and their children and families," says Dr Kingsley Ogbonna.

Dr Ogbonna's concern is that though PMTCT guidelines are in place and are in some instances proving successful, there are many health professionals – particularly in under-resourced rural areas – where the guidelines are not known or clearly understood. "I want to assess how health professionals are educating patients. My colleagues and I have noticed that the information is not always at their fingertips. What has exacerbated this situation is that the national PMTCT guidelines have been updated three times in the past four years."

With the assistance of the Discovery Foundation, Dr Ogbonna will investigate the knowledge and practice of PMTCT guidelines among doctors and nurses at Odi Hospital in Mabopane near Pretoria.

"This assessment will give us an indication of what health workers' inputs are around the advice they are giving patients, what to do with babies, what medication to prescribe etcetera. The focus has been very much on patient adherence but if patients are adhering to the wrong information we need to address that," he says.

Dr Ogbonna, who is a senior registrar at Medunsa, hopes that his research will help to improve information training at graduate level, and among all doctors even private practitioners.







# DR

## TEMITOPE ADEKUNLE ADEDAYO

Registrar in Family Medicine, Walter Sisulu University  
Rural Individual Fellowship Award

Like their international counterparts, South African hospitals and doctors may be using too much blood and too many blood products.

### UNDER THE MICROSCOPE

*Dr Temitope Adedayo is a registrar in Family Medicine at Walter Sisulu University in the Eastern Cape. Inspired by his general practitioner father, he graduated from the College of Medicine at the University of Ilorin in Nigeria in 2001 and completed a post-graduate diploma in Family Medicine at the University of Stellenbosch in 2011. He is married with one child and is a keen tennis player.*

At Mthatha Hospital Complex in the Eastern Cape, an estimated R2 million a month is spent on blood and blood products, making it the biggest consumer of blood in the Eastern Cape. “Though blood transfusion is a life saving procedure if used wisely, unnecessary usage exposes individuals to undue risks and may have inappropriate cost implications,” says Dr Temitope Adedayo.

Knowing when to use transfusion and how transfusions are made could influence unnecessary usage. “At the Mthatha Hospital Complex, which is part of Mthatha General Hospital, we are concerned that there may be over-ordering for elective operations and transfusion when the patients’ haemoglobin is adequate. Blood products used by doctors are reflecting a very high spend on transfusions,” Dr Adedayo says.

His research, funded by the Discovery Foundation, will provide information on the management of blood transfusions and hopefully provide insights into how and why it is used and how to curb costs. The study will assess clinician knowledge, attitudes and practice. “Studies worldwide have demonstrated unnecessary use of blood in spite of the availability of clinical guidelines,” Dr Adedayo points out.



# PROF JIMMY CHANDIA

Associate Professor and Principal Specialist of Family Medicine,  
Walter Sisulu University and Mthatha General Hospital, Eastern Cape  
Rural Individual Fellowship Award

The global trend towards preventive healthcare and primary care medicine places even greater emphasis on the need for Specialist Family Physicians, says Prof Jimmy Chandia.

## UNDER THE MICROSCOPE

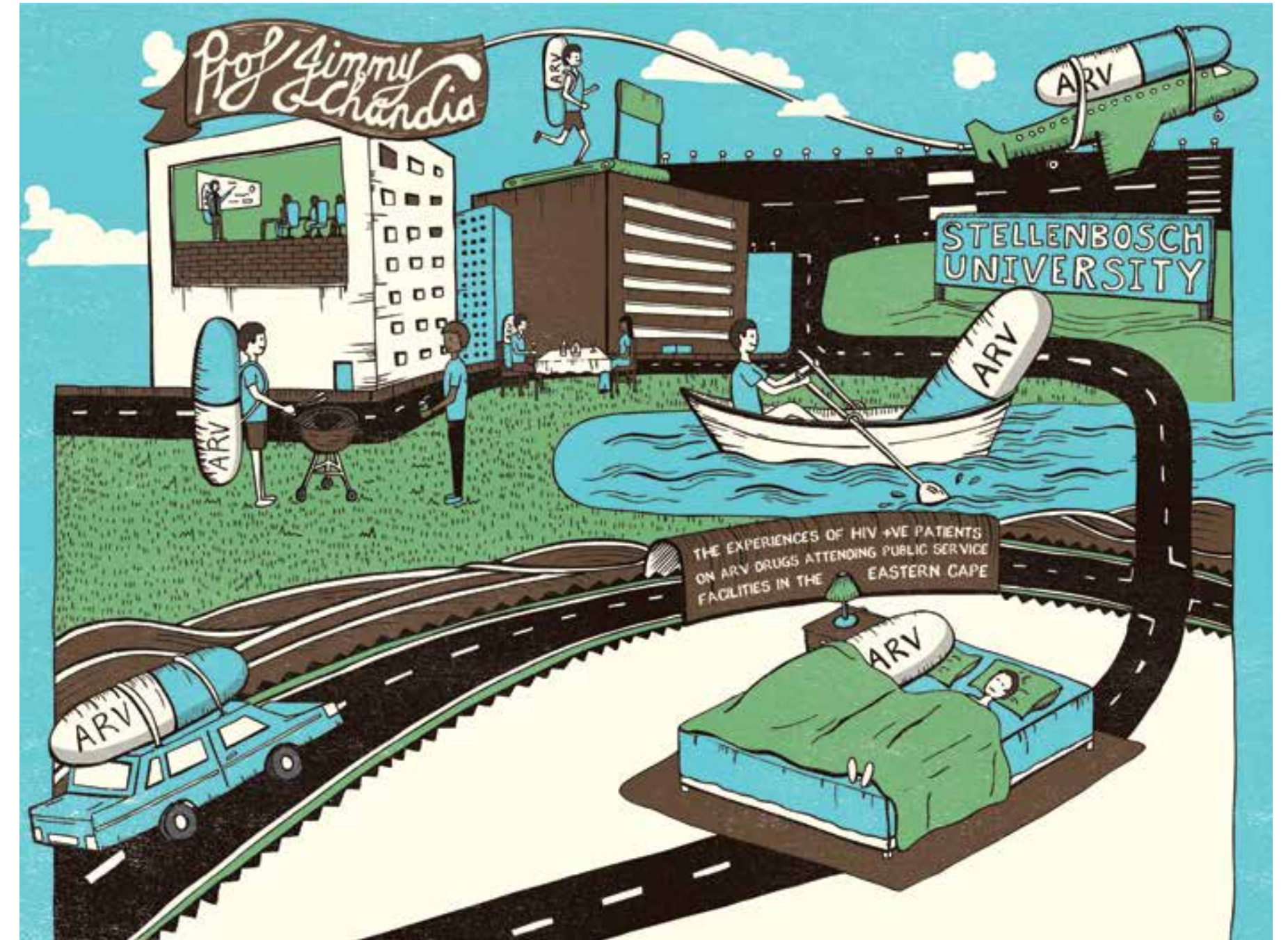
Prof Jimmy Chandia graduated at Makerere University in Kampala, Uganda and came to South Africa in 1983 for post graduate studies. "My interest has always been to be a doctor of service to anyone with a health problem. The person-centred holistic approach of family medicine attracted me to the discipline. "This Discovery Foundation Rural Fellowship Award is going to make a lot of difference to me because it means I can finally complete the PhD I started in 2008." His PhD research is on the qualitative evaluation of the ARV programme in the Eastern Cape. Prof Chandia is currently the Acting Head of Department of Family Medicine at Walter Sisulu University and the Principal Investigator for WSU HIV Vaccine Research Unit funded by the Medical Research Council. He has published ten peer-reviewed articles and presented papers at 40 local and international conferences. He is married and has six children and four grandchildren. A goalkeeper in his youth, he is a keen soccer spectator and supporter and he enjoys travelling.

Primary healthcare is the backbone of South Africa's healthcare system. From remote rural clinics to large regional hospitals, thousands upon thousands of patients rely on basic health services. Yet until now, the doctor practicing family medicine did not attain the academic heights of surgeons or health professionals from other specialist disciplines. But that's changing. The worldwide trend towards prevention and early intervention has placed unprecedented emphasis on primary care and with it the need to acknowledge the family physician as a specialist particularly in terms of academic leadership in the discipline of Family Medicine.

"There are very few PhDs in Family Medicine in the whole of South Africa, and none in the Eastern Cape," says Prof Jimmy Chandia. He intends to change that. Prof Chandia is completing his PhD at the University of Stellenbosch and will take his knowledge back to Walter Sisulu University and Mthatha General Hospital where he has served a largely rural community for the past 30 years. The fact that there are so few PhDs in Family Medicine severely impacts the development of research in this field; his PhD will open up possibilities for higher-level research in one of the most impoverished provinces, says Prof Bob Mash, Head of Family Medicine and Primary Care at Stellenbosch University.

Mthatha General Hospital in the Eastern Cape serves the city of Mthatha but more especially the largely rural population of King Sabata Dalindyebo district. The Department of Family Medicine at Walter Sisulu University (WSU) provides both in-and outpatient care at Mthatha General hospital and supports five health centres and the clinics linked to the health centres as an outreach programme.

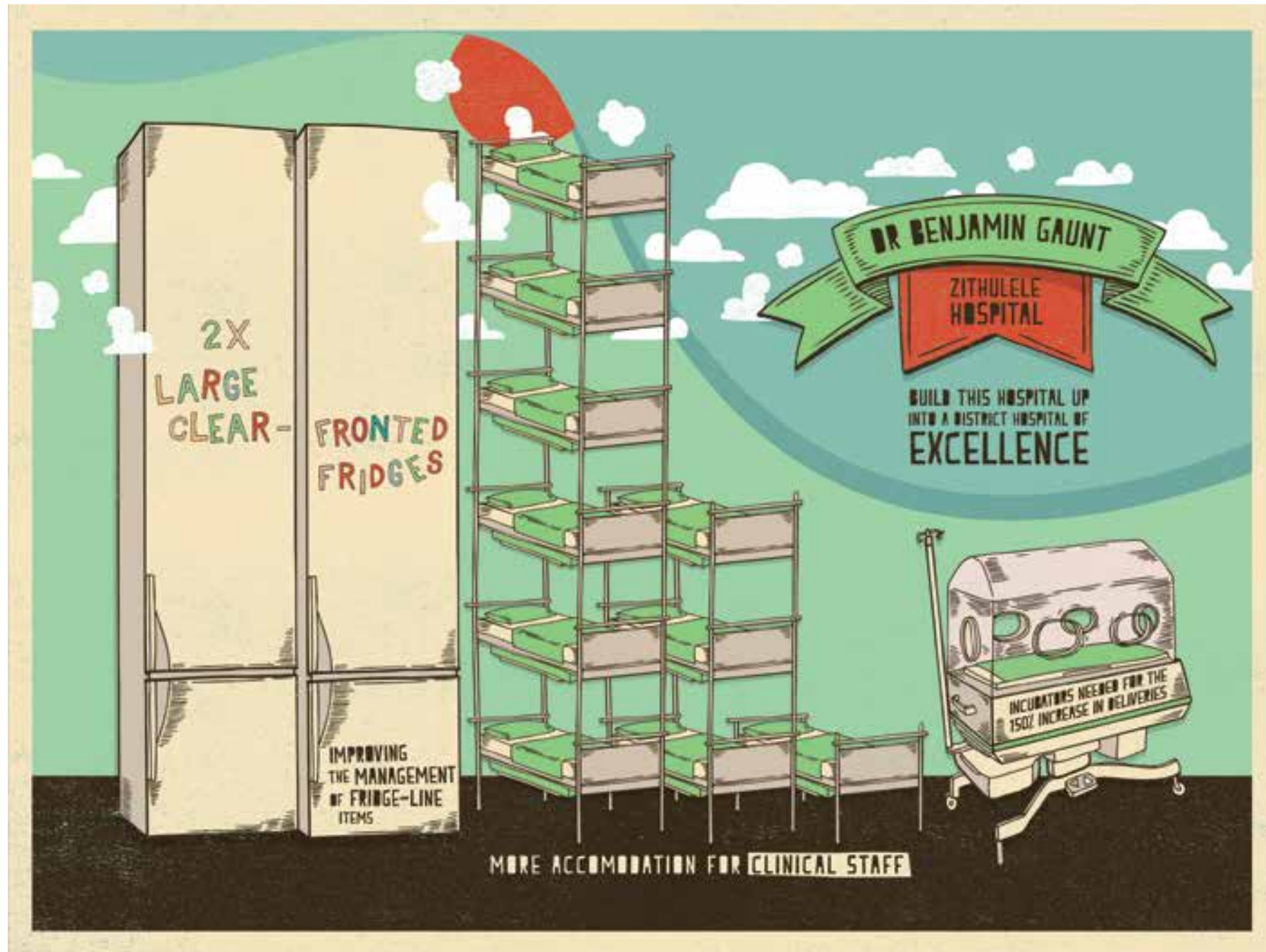
Prof Chandia has been running a post-graduate Masters programme in Family Medicine at WSU since 1992 and has graduated 27 family physicians. It is his desire to start a PhD programme at WSU too because, he says, it is evident that in order to give patients the quality care they deserve at primary care level, South Africa must have Specialist Family Physicians with academic leadership capability.











## ZITHULELE HOSPITAL

Eastern Cape  
Rural Institutional Fellowship Award

Continuing education is essential if rural health facilities are to attract health professionals and deliver quality care to communities.

### UNDER THE MICROSCOPE

*Zithulele Hospital started as a single hut on church grounds. Today this burgeoning complex offers maternity, paediatrics and general male and female wards, nurses' residences and flats for professional staff, TB wards, physiotherapy and occupational therapy departments, speech therapy and audiology and a multi-disciplinary team of health professionals that also includes pharmacists, a dentist and dietitians.*

In the deepest reaches of the rural Eastern Cape, rolling hills and long stretches of spectacularly pristine beach lure thousands of city dwellers looking for an escape from their frantic lives. What they see is paradise, but the residents of this district have a somewhat different view.

Only 9% of rural villagers here have access to electricity and a little over a quarter to piped water. The average household income is less than R1 000 a month. Tuberculosis and HIV/AIDS are endemic.

Yet there is a place here that is changing – and saving – lives against all odds. Started by missionaries in 1956, Zithulele Hospital is today a district hospital of excellence thanks to a team of passionate and dedicated multi-disciplinary professionals headed by clinical manager Dr Benjamin Gaunt who attributes its successes to its growing reputation in the community as a place of quality care.

There has been significant and sustained improvement in all clinical areas. "This is reflected not only in the many improved services, but by the massive increase in patient numbers and improved morbidity and mortality data despite the increase," says Dr Gaunt.

Dr Gaunt, who also lectures fourth year medical students in rural health at the University of Cape Town, has attracted a team of health professionals to Zithulele that has created a culture of learning together. "That forms a critical mass making a significant impact on the health of the community of that district," says Steve Reid, Professor of Primary Healthcare at UCT. "Zithulele is inspiring others in rural district hospitals around the country to aim for similar results, since they have shown that it is feasible even under the most challenging circumstances."

Continual learning, says Dr Gaunt, is one of the core values of the clinical team at Zithulele Hospital. "One of the inherent challenges of the process, however, is the fact that by definition, it is never complete. Although we have achieved notable successes over the past number of years, rural hospitals are by nature fragile and effort is required to keep improving the learning environment and processes in order to avoid stagnation," Dr Gaunt says.

His vision of the future for Zithulele includes improved neonatal care, management training for nursing managers, administration managers and the clinical manager, accommodation for an additional doctor, a pharmacy fridge to improve management of fridge-line items and funds for clinicians to attend conference or courses.

"These seemingly unrelated items are strategic areas where input would have positive knock-on effects in other areas too," he says.



## NGWELEZANA HOSPITAL

KwaZulu-Natal  
Rural Institutional Fellowship Award

Most doctors working in the Emergency Room environment in the public sector do not have emergency qualifications and many lack the skills needed to work there.

### UNDER THE MICROSCOPE

*The collaborative efforts of the Departments of Family Medicine, Emergency Medicine, Trauma and Nursing gave rise to a successful modular workshop at Ngwelezana for outreach training. Thanks to Discovery's support, this collaboration of Emergency Medicine will continue with this programme. "The plan is to train all hospitals in three predominantly rural districts with high poverty rates," says Dr RD Govender, the Head of Clinical Unit and lecturer in the Department of Family Medicine. A self-evaluation questionnaire will be completed by participants after completion of the workshop.*

In the Empangeni district of KwaZulu-Natal, clinical mortality audits at local district hospitals revealed that a large percentage of patients died within 24 hours of admission. "This may be due to the fact that patients may have been sub-optimally managed in the emergency room," says Dr Mergan Naidoo, the head of the clinical unit at Wentworth Hospital, and a lecturer at the University of KwaZulu-Natal.

To this end, the Department of Family Medicine at the university and its Department of Nursing in association with the Emergency Medicine Department and the KZN Department of Health have launched a training programme to improve emergency skills among emergency room doctors and nurses working at these hospitals and in community health centres. "It is hoped that at least one emergency room doctor and one emergency room

nurse will be trained in each institution in KZN. These trained staff will then train all members of the healthcare team working in the emergency room at their respective institutions – making this, in effect, a 'train the trainer' project," Dr Naidoo says.

Taking into account available epidemiological data drawn from emergency room disease profiles, ten training modules have been identified for the project. These include resuscitation, cardiology, common paediatric emergencies, radiology in the ER, toxins and poisons, common medical emergencies, HIV emergencies, trauma and more.

"The emphasis is on realistic practical approaches and skills in a primary care emergency environment. 'Fire drills' will reinforce theoretical and procedural skills taught in the course," says Dr Naidoo.

"The training of doctors and nurses at a district level is critical for a seamless management system for emergencies from the rural areas to the central academic centres," says Dr Darryl Wood, chief specialist and clinical head of the Department of Emergency Medicine at Ngwelezana, a 554-bed hospital offering district, regional and tertiary services to communities in the Uthungulu, Umkhanyakude and Zululand districts. Ngwelezana is about 5km from the former mission station, Empangeni, which was established in the 19th century and grew rapidly with the advent of a timber plantation and a sugar mill. Empangeni is 20km from the bustling harbour port of Richard's Bay. Services at Ngwelezana Hospital include paediatric, orthopaedic, surgical and ophthalmological care and an ICU.

"It is hoped that this training project will improve the clinical and procedural competencies of medical officers and emergency room nurses seeing primary care emergencies, improve the retention of healthcare workers in underserved areas and encourage team work in the emergency room environment," Dr Naidoo says.

Additional benefits are upgrading the training skills of health workers and improving health outcome indicators.







## TONGA HOSPITAL

Mpumalanga  
Rural Institutional Fellowship Award

Responsible, accountable community leaders will enrich any community, no matter where it lies geographically.

### UNDER THE MICROSCOPE

*Tonga Hospital opened in 1999 to serve a portion of the previous KaNgwane homeland called Nkomazi East. Swazi and Tsonga cultures predominate here, and being close to two borders, the area sees many illegal immigrants crossing to Nkomazi in search of a better life.*

*Dr Rogers dreams of being able to hand over management of the hospital to a Swazi speaking doctor who has a passion for helping to develop the community. "My long term dream is to see the younger generation living with hope; to see an end to reckless living – for individuals, families and communities to discover their purpose and to flourish." He also dreams of the day local authorities pave the roads, build pavements and gutters and stormwater drains and erect streetlights. "Rural should not always equal poor," Dr Rogers believes.*

South of the Kruger National Park, bordered by the Lebombo mountains and Mozambique, Swaziland and Malelane, is a rural hospital serving a population of more than 300 000 people. Diseases of lifestyle are prevalent: alcohol-related trauma, rape, HIV/AIDS, tuberculosis, teen pregnancy, and poverty-related malnutrition among others, but so are the more unusual injuries like animal bites and trauma from community mob justice assaults.

Here at Tonga Hospital there are 11 doctors but an average of five each year leave to work elsewhere.

One of the ways to retain current staff would be to have a fund available to sponsor academic development, believes Dr Patrick Rogers, the hospital's Acting Medical Manager. "A well-resourced academic development programme will show rural medicine to be a viable career option; it will help us to recruit and retain our staff, and it will boost our morale."

There are courses available in Johannesburg, Dr Rogers says, such as Advanced Trauma Life Support and Advanced Cardiovascular Life Support, which keep doctors up to date with emergency patient management, and there are certain courses applicable to allied staff too. "The idea is that each staff member who successfully passes a course would return with a certificate. The hospital would reimburse when the staff member passes a course."

"We need supportive management to retain a stable team of health professionals. Ideally we need to be staffed by graduates from Nkomazi. We would love to have around six community service doctors per year and for half of them to stay longer," Dr Rogers says.

In addition, the hospital hopes to extend its WiFi network to cover all wards and offices. "Internet access is a vital solution to professional isolation. We regularly email photographs of X-rays and CT scans to consultants in urban hospitals, and some doctors use Skype."

"Tonga Hospital is an important deep rural learning centre", says Dr Martin Bac of the Family Medicine Department at the University of Pretoria. "As one of the Mpumalanga Clinical Learning Centres of the university for many years, the formation of a stable learning environment at Tonga with the necessary equipment and facilities is strongly supported by the university. Students who learn here will work and thrive here long after they graduate", Dr Bac believes.







## VAN VELDEN HOSPITAL

Limpopo  
Rural Institutional Fellowship Award

A working environment that supports and inspires health professionals will contribute to staff retention in under resourced clinics and hospitals.

### UNDER THE MICROSCOPE

*Dr Lydia Myburgh is in charge of paediatrics and neonatology at Van Velden, as well as the paediatric clinic. "There are relatively high numbers of children with severe malnutrition here, similar to other economically deprived regions, and nutrition education is poor. We lose most children below the age of six months, and some under two, mainly because of severe traditional medicine overdoses with fatal complications, followed by severe malnutrition and its complications."*

*Dr Myburgh works at Van Velden with her medical doctor husband, John.*

Tall palm trees stand sentinel above the dense tropical foliage that embraces Van Velden Memorial Hospital in Tzaneen. This 86-bed level 1 facility, founded in 1964, services the greater Tzaneen area, Limpopo's second biggest town after Polokwane. There are nine full time doctors here and three community service doctors that offer general services, but also special clinics for high-risk pregnancies, children and newborns, surgery and orthopaedics, HIV and tuberculosis, dentistry, and other allied services. The hospital supports seven clinics and two mobile clinics in the area.

Around 650 000 people live within a 30 km radius of Tzaneen, many of whom rely on Van Velden for their healthcare; the burden on the doctors and other health professionals is substantial.

German-born chief medical officer Dr Lydia Myburgh is passionate about improving conditions at Van Velden. In 2011 she won a Discovery Foundation Rural Fellowship Award for this hospital, which led to a significant upgrade of facilities, training for doctors and the provision of much-needed medical equipment. The Award also contributed to the construction of a doctors' centre. "I have great vision for our hospital to provide an excellent service for the patients and a beautiful, encouraging work environment for our colleagues in the health profession," Dr Myburgh says.

With this year's Foundation Award, Dr Myburgh hopes to fund a medical library, set up a computer and internet connection, provide boardroom facilities and a kitchen and recreational area for doctors, with a residential unit for doctors on call. "We would also like to continue supporting both external and internal training for our doctors, and to buy equipment to better facilitate emergency medical care, particularly for babies and children," Dr Myburgh says. Training will include internal medicine, emergency medicine, psychiatry, paediatrics, surgery, obstetrics and gynaecology, ultrasound, nutrition, trauma release exercises and natural medicine like homeopathy. "Our aim is to give all doctors the chance to increase their knowledge especially in their field of work and interest to increase our service delivery excellence.

"South Africa needs doctors and other health professionals who are passionate about their jobs and the people of this beautiful country; health professionals who will inspire others to follow and give their all for a better future for all South Africans."

Van Velden Hospital - Dr Lydia Elisabeth Myburgh

www.vanveldenhospital.co.za

Research

further establish our doctor's centre by adding a medical library, a computer, internet connection and a boardroom table with chairs

Research I'm feeling healthy

VanVeldenHospital.co.za offers excellent healthcare services  
Dr Lydia Elisabeth Myburgh





## DEPARTMENT OF FAMILY MEDICINE

University of the Free State, Free State  
Rural Institutional Fellowship Award

Patient numbers at Free State primary healthcare facilities have grown substantially, but there are not enough medical professionals to care for them.

### UNDER THE MICROSCOPE

*The Department of Family Medicine at the Free State Medical School renders primary healthcare services in greater Bloemfontein, and medical education and training for the Free State Province. It has two outreach satellite campuses in Welkom and Kimberley. It has 12 consultants, 14 registrars, eight affiliated lecturers and two administrative staff.*

*The Department offers integrated clinical and academic training in primary healthcare at both undergraduate and postgraduate level. The department also assists Free State Health Department in training all categories of health professionals in HIV, TB, triage, maternal and child healthcare and clinic forensic medicine, among others.*

The life expectancy at birth of the Free State population is estimated at 44.6 years for men and 47.9 years for women, and the infant mortality rate is 57 per 1 000 live births.

In spite of the availability of natural resources, the people in general are poor with only 24% employed and 64% with some secondary and Grade 12 education. Many of them live in overcrowded conditions, which put them at higher risk of communicable diseases like tuberculosis. Maternal and child health related problems contribute significantly to burden of disease in the province. The other aggravating factors to health challenges are violence and injury.

“The prominence of HIV and AIDS has, in a way, submerged all other health problems in its enormity with regard to the health needs of the community and the strategic response of the department. The most common cause of death in the province is HIV/AIDS related illnesses and there has been a resurgence of tuberculosis,” says the Free State Health Department’s Annual Performance Plan Report.

One of the major challenges facing the Free State is to attract health professionals to rural areas, especially to the farming communities and small settlements.

To staff required primary healthcare outreach teams, the Department of Health currently uses retired professional nurses and 3 388 community caregivers. Volunteers are retained on stipends.

“Primary healthcare facilities are ‘nurse-driven’ with limited support from medical professionals, and they focus mainly on promotive and preventative care and the treatment of minor ailments. Medical and other equipment is in short supply.

“Because of the lack of resources at clinic level, patients are forced to use district and regional hospitals increasing the workloads here. The quality, quantity and skill-mix of the human resource in the province are critical in service delivery,” the Report says.

To improve healthcare delivery in rural areas, the Department of Family Medicine at the University of the Free State envisions extending its existing training platform into the more rural parts of the province, providing training opportunities at rural sites and offering access to the learning resources of this academic institution to training from rural communities. “We believe that by training family physicians, local general practitioners and medical officers in their rural communities, we will provide the much needed support and leadership to the existing but often overburdened health system,” says head of department, Dr Nathaniel Mofolo.

“Well trained family physicians, local general practitioners and medical officers with an understanding of the rural context will add essential clinical skills to the multi-disciplinary health teams.

“This Discovery Award will allow us to strengthen our outreach and interaction with the more remote rural areas by providing us with the necessary resources for transport, communication and training equipment for those areas,” Dr Mofolo says.



## DEPARTMENT OF FAMILY MEDICINE

Walter Sisulu University, Mbekweni and Baziya Community Health Centres, Eastern Cape  
Rural Institutional Fellowship Award

Ultrasound equipment and training at community health centres in the Eastern Cape's Oliver Tambo District could impact the region's high maternal mortality rates.

### UNDER THE MICROSCOPE

*Mbekweni and Baziya are rural CHCs serving a combined population of just under 40 000. Healthcare workers attend to more than 8 000 patients each month. There are about 30 nurses at each CHC and one full-time medical officer at each, though because of high turnover there are times when there is no medical officer at all. There is one registrar at each clinic. "A great joy for me working at CHCs is being nearer to people in their communities and being able to look after them in a cost effective manner such as greatly reduced transport costs as a result of not having to go to a hospital and earlier diagnosis," Dr O'Mahony says. Also, nurses and doctors have a closer, long-term relationship with people over time at CHCs and one feels more accountable to the patients. "They are more open in expressing themselves and less intimidated in a community setting."*

If you live in King Sabata Dalindyebo (KSD), a predominantly rural sub-district of Oliver Tambo District Municipality, community health centres (CHCs) are your lifeline.

Unemployment rates here are almost 40% and residents have limited financial resources to travel in search of healthcare. In KSD, an estimated 450 000 people rely on the services of CHCs and satellite clinics. Registrars assist with clinical care at two of the CHCs. Their challenges are huge.

The Oliver Tambo (ORT) district is ranked 50th worst out of 52 in South Africa on the Deprivation Index, and it is one of the 18 priority districts in the country with poor health outcomes and health services in desperate need of delivery improvements. Maternal mortality is amongst the highest in South Africa.

There are no ultrasound machines at the CHCs and with the Eastern Cape's Department of Health in financial crisis, there is no likelihood of funding, says Dr Don O'Mahony of the Department of Medicine at Walter Sisulu University. An ultrasound machine costs around R250 000. Although ORT is a National Health Insurance (NHI) pilot site, no funding is allocated for equipment in its business plan.

"Ultrasound has a high diagnostic yield and is important in pregnancy and also for patients with HIV/TB. The incidence of extrapulmonary TB, lymphomas and DVT have substantially increased as a result of the HIV pandemic," Dr O'Mahony says.

Due to the shortage of specialist radiologists and ultrasonographers in rural areas, it is imperative that doctors in primary care must learn ultrasound skills. Walter Sisulu University is supporting this initiative by supplying senior specialists from its Family Medicine Department to train registrars at the centres. "The ultrasounds will be used in the training of registrars, medical officers and midwives at each CHC. I would reckon it takes about six months to become good at scans," Dr O'Mahony says. The ultrasound machines purchased with this Award will be used by midwives for confirming and monitoring pregnancy and by doctors for the diagnosis of gynaecological and general medical conditions such as heart failure, thrombosis, tuberculosis of the abdomen and heart and liver conditions. Three research studies are also planned as part of ultrasound training.







5

DISCOVERY FOUNDATION  
EXCELLENCE AWARD

Support for the training of  
South Africa's specialists



## DEPARTMENT OF PAEDIATRICS AND CHILD HEALTH

University of Limpopo, Polokwane Mankweng Hospital Complex, Limpopo

All South Africans, and children in particular, should have access to appropriate healthcare, including the services of highly skilled specialists.

### UNDER THE MICROSCOPE

By 2012 the Paediatric and Child Health Department had grown to nearly five times its original size. Over 2000 professional nurses have been trained in Integrated Management of Childhood Illness; 20 paediatricians have trained as registrars; the Limpopo Initiative for Newborn Care (LINC) was started in 2003 and has seen every one of 37 hospitals in Limpopo receive one to two comprehensive neonatal support visits; neonatal mortality has declined in two hospitals. The Polokwane Mankweng Hospital Complex now includes a neonatal and intensive care unit, cardiology services, neurology, one of the country's biggest haemophilia centres, an oncology unit, endocrine, nephrology and pulmonology clinics. An eight-bed paediatric ICU has just been commissioned.

Limited infrastructure, minimal resources and high unemployment rates severely impact healthcare access and delivery in South Africa's northernmost province. Lying in the great curve of the Limpopo River, it is widely regarded as one of the country's poorest regions yet it is here that medical miracles happen every day thanks to the passion of healthcare professionals at the Paediatric and Child Health Department, University of the Limpopo.

Formed in 1998 from a core group of three specialists - Professor Nancy Shipalana, Dr Anne Robertson and Dr Chris Sutton and later joined by Dr Kenny Hamese – the Department has led to a dramatic expansion of children's health services in Limpopo, as well as in the knowledge and skills acquired by health workers.

"From the beginning the vision was that there should be seamless sharing of appropriate best care from the clinic to the district hospital, the regional hospital and the central hospital and back. In order to achieve consistent care there would need to be a common understanding of what constituted best practice, and a means of clear communication," the Department says.

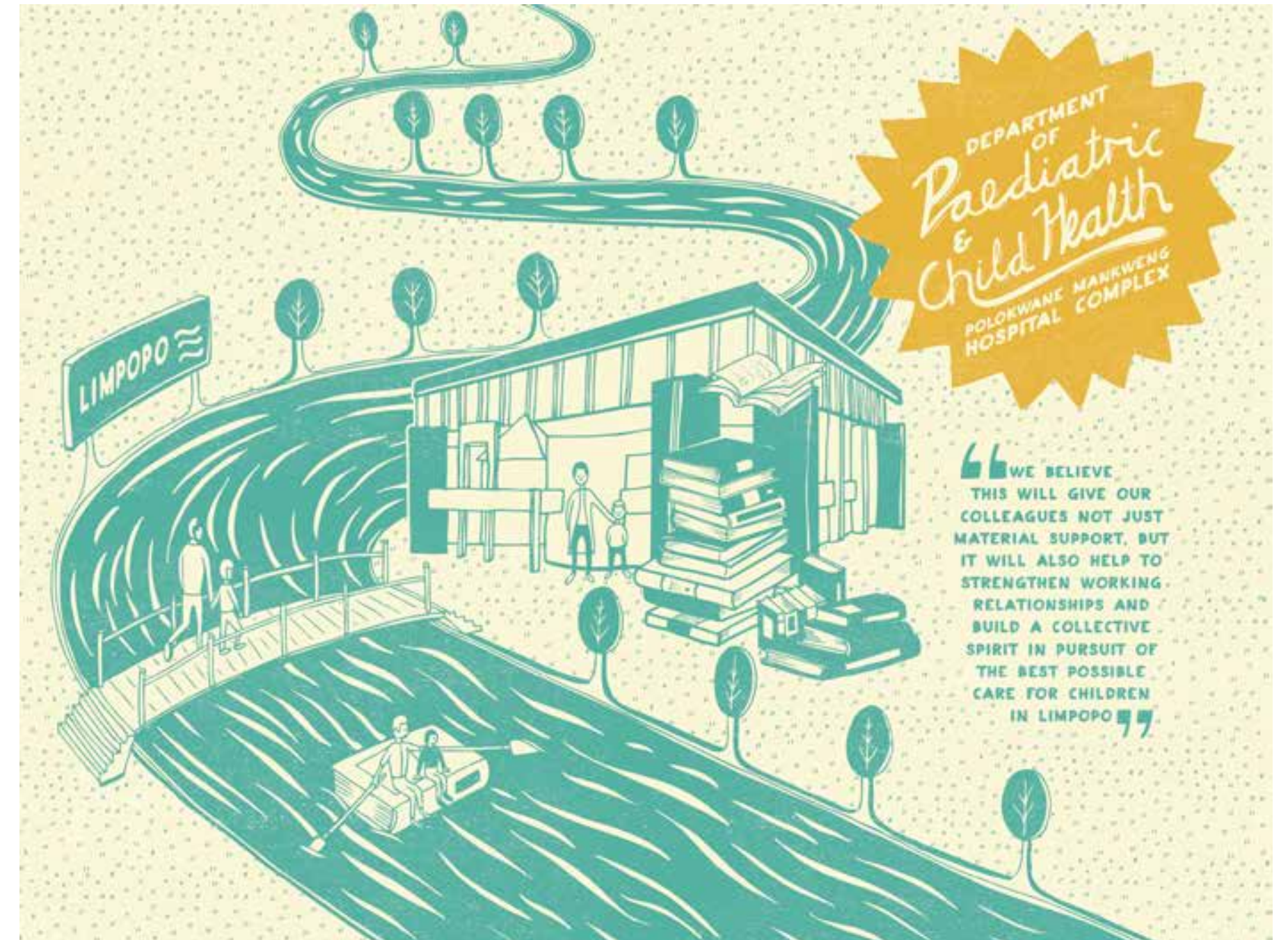
Outreach programmes and training initiatives were prioritised and extensive effort was devoted to selecting and developing appropriate training programmes and support materials for health workers. As a result, increasing numbers of children access appropriate care and those with chronic illnesses are managed in partnership at all levels of the health service. Hundreds of healthcare workers have been trained and receive ongoing support.

The Department has a Child Health Unit led by Dr Robertson, which supports comprehensive paediatrics and child health in the province to health workers in 37 hospitals and 454 primary healthcare clinics or community health centres in the form of technical assistance, training, mentoring, clinical support and governance.

"This award has given us the opportunity to work towards a structured resource unit, that can be accessed both remotely and on site; a repository for easily accessible (both electronic and manual) paediatric and child health resources for health workers such as reference materials, job aids and clinical aids for training.

"We believe this will give our colleagues not just material support, but it will also help to strengthen working relationships and build a collective spirit in pursuit of the best possible care for children in Limpopo," the Department says.

By building teams of healthcare workers who support, motivate and inspire one another it is possible to create and maintain the systems needed to offer appropriate healthcare to all South Africans, the Department believes.







DOCTOR  
**ARIFA  
PARKER**



DOCTOR  
**TEMITOPE  
ADEDAYO**



DOCTOR  
**CHINEDU  
NWANGWU**



DOCTOR  
**MOTHETHO  
DIBETSO**



DOCTOR  
**MERGAN  
NAIDOO**

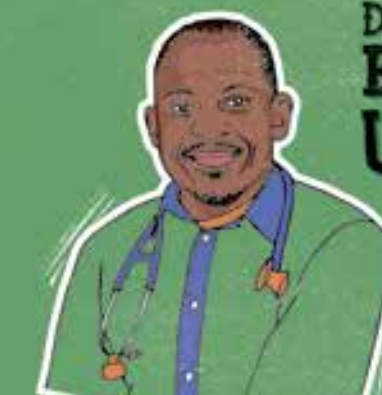


DOCTOR  
**KINGSLEY  
OCBONNA**

# CONNECTING HEALTHCARE EXCELLENCE



PROFESSOR  
**CLAIRE  
VAN DEVENTER**



DOCTOR  
**EMEKA  
UGWU**



DOCTOR  
**VANGILE  
MKHATSWA**



PROFESSOR  
**JIMMY  
CHANDIA**



DOCTOR  
**MATTHYS  
VAN AARDT**



DOCTOR  
**MARIEKE  
BRAUER**



DOCTOR  
**NOMSA  
MOCOETSI**



DOCTOR  
**ANDREW  
ROSS**



DOCTOR  
**ANELL  
MEYER**



