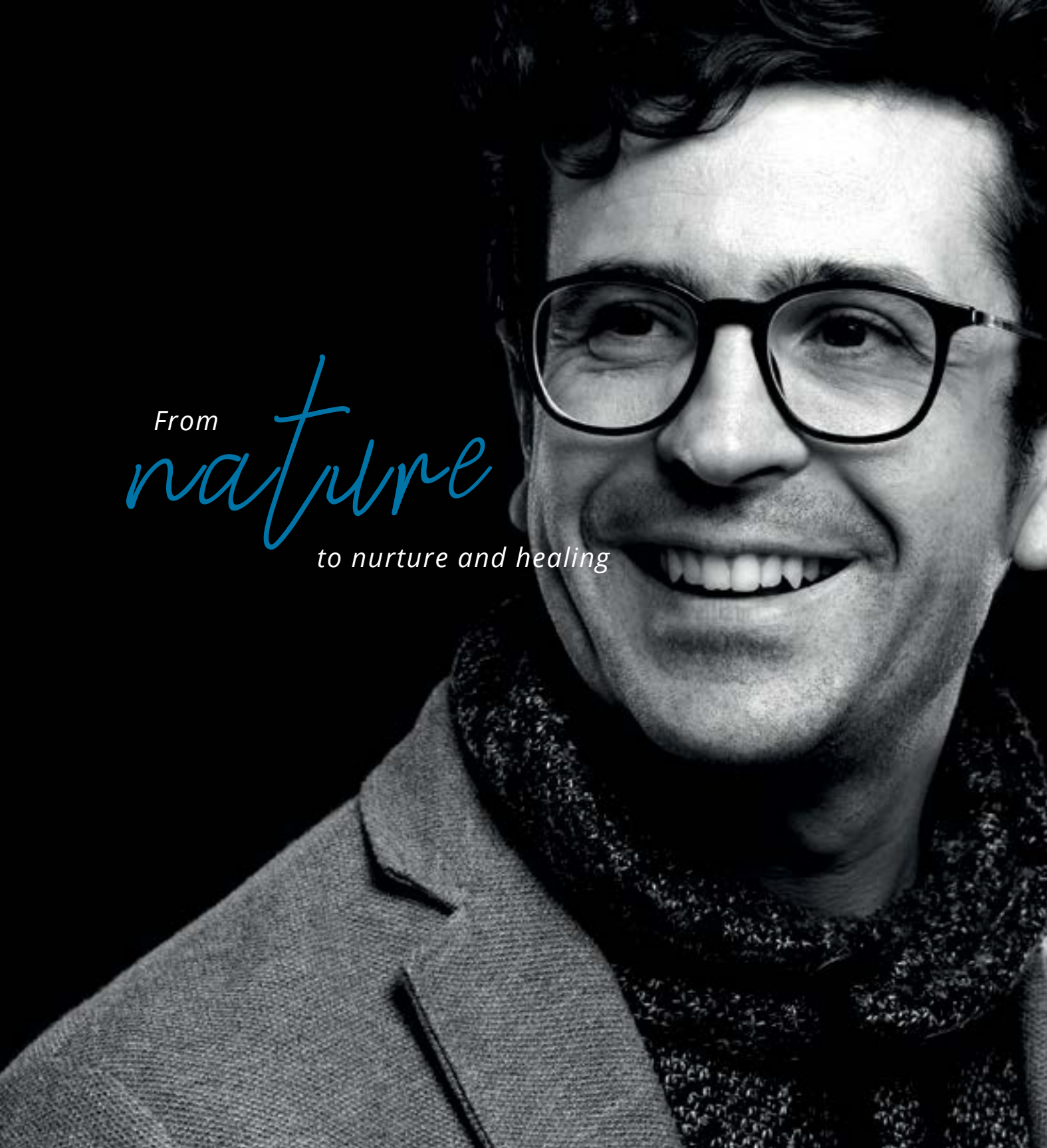


From
nature
to nurture and healing



DR JONATHAN OXLEY-OXLAND

Rural Individual Fellowship Award

Walter Sisulu University

*Assessing the scope and resource burden
of severe Theophylline toxicity.*

For former Rondebosch Boys High School matriculant, Jonathan Oxley-Oxland, now a 32-year-old registrar in Internal Medicine at Livingstone Hospital in Port Elizabeth, his dad's career as a marine biologist was where it all started.

"It began with an interest in biology and nature. Watching him work, I felt that the ultimate in applied biology would be medicine. Internal Medicine was a field where you have to take all systems into account. I loved the way everything was related. The whole body functions interdependently – and Internal Medicine forces you to have an understanding of all the different systems and how they relate to one another. I guess my decision to specialise in this discipline stems from that desire to see it all put together," he says.

Born a dozen years later than his three older siblings, Jonathan had more solo time with his dad, accompanying him on his marine expeditions and exploring the great outdoors. Jonathan chose to study medicine at the University of Cape Town, before travelling to the Eastern Cape for his internship. He was grateful to secure an extended tenure there through his Community Service posting. Working at various State hospitals in the Nelson Mandela Metropole, he settled down at Livingstone Hospital where he has been shifting between various departments as a medical officer since 2012.

A six-month spell as a casualty officer at a private hospital in PE gave him a taste of that sector, but the lure, challenges and thrill of a public hospital drew him back to Livingstone Hospital.

His study aims to free up resources and create awareness

Supporting his application for the Rural Individual Fellowship Award, Dr Elizabeth van der Merwe, the Head of the Adult Critical Care Unit at Livingstone Hospital,

expressed concern about the results of often-inappropriate use and over-prescription of Theophylline, a third line treatment for asthma and chronic obstructive pulmonary disease (COPD), in her unit.

Highly toxic and easily available in pill form, the ever-present use of Theophylline in primary care healthcare facilities is suspected of increasing the burden of patient care in the local ICU – not to mention the expensive use of scarce dialysis equipment to help detoxify patients. Dr van der Merwe wrote, "We as specialists have noticed the burden on limited resources caused by this preventable condition. Quantifying and characterising these cases may assist in advising regulators and clinical bodies involved in clinical practice guidelines on how to position Theophylline."

Jonathan will be conducting a retrospective, descriptive study assessing the scope and resource burden of severe Theophylline toxicity in Livingstone Hospital's critical care unit.

This inappropriate use of the medicine means more patients are coming to the ICU than necessary, putting avoidable pressure on all resources. Dialysis, which is required to clean the blood in cases of severe Theophylline overdose, also costs a lot of money. "There are always more patients that need dialysis than what we can offer, so we have to stratify to see if it's an appropriate case to get dialysis – and in severe Theophylline overdose it nearly always is," he stresses.

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Reducing the use of Theophylline

Jonathan says, "This medicine can cause seizures and it's quite resistant to treatment. It can also cause severe abnormalities, like arrhythmia (irregular heartbeat), by depressing potassium levels. All of this, if not managed properly, can lead to death."

He says such cases come to Livingstone Hospital from throughout the Nelson Mandela Metropole and beyond, emphasising that many patients have non-severe Theophylline toxicity, which his study will not cover.

Jonathan says Theophylline has been around for over 35 years and has been superseded by other, more expensive medicines – although in the South African public sector it still has a place – if used correctly. When overprescribed in an often critically under-resourced environment, it can have a severe knock-on effect.

Over-prescription is a real danger

"It's easier and cheaper to prescribe than an inhaler, which a clinician has to demonstrate how to use. My suspicion is that the lack of awareness around the current guidelines on asthma and COPD is contributing to its over-use," he says.

He adds that it is so readily available that often a friend or family member of the patient uses it in a suicide attempt.

"Para-suicide is a global problem – it just so happens that Theophylline is available and toxic. If it wasn't this medicine, it would probably be something else," he adds.

The key potential for his study lies in Livingstone Hospital being a tertiary hospital in an under-resourced referral environment, reflecting the situation countrywide. It will hopefully inform primary care practitioners of the risks involved in prescribing Theophylline and make them more careful when prescribing it. The study also hopes to inform the national essential medicine list of the risks and costs incurred at Livingstone Hospital – and influence policy makers.

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