Bringing regional anaesthesia to Rwanda






An ANZCA Overseas Aid Scholarship contributed to Dr Matthew Ho's four-month mission in Rwanda, where there are just 14 anaesthetists for 12 million people. Dr Ho worked in Rwanda from January to May as part of a Global Health Anaesthesia fellowship at Dalhousie University, Canada.

Though I wasn't particularly fond of the Canadian winter, I felt a sad "snow nostalgia" as I walked across the frozen runway at Halifax airport in January 2016 to board a flight for warm Rwanda.

This is what happens to an Australian experiencing overwhelming trepidation. My family and I were leaving our western comforts for a four-month mission to Kigali, Rwanda. Until that point, my thoughts had centred on halothane hepatitis, malaria, glostavents and draw-over vapourisers.

But now I realised this journey would involve far more than mastering anaesthesia in the austere environment. This moment, though it seems a lifetime ago, was as vivid as it was prophetic. While I did learn much in operating theatres about safety and danger, wealth and poverty, order and chaos, my most profound experiences occurred in everyday life – through the relationships we invested in, within the hospital and outside.

A Rwandan and an Australian in Canada

I first met Dr Francoise Nizeyimana in March 2015 during Nova Scotia's harshest winter in 40 years. We had both recently arrived in Canada to work in the same anaesthesia department, but had travelled there from very different places – Francoise from Kigali, Rwanda, and myself from Sydney, Australia. Francoise was a third-year Rwandan anaesthetic registrar who had been selected for a three-month elective as part of the Canadian Anaesthesiologists' Society International Education Fellowship (CASIEF) residency exchange program.

Its aim is to improve access to safe surgery for all Rwandans, by supporting the anaesthesia residency program, established through partnership with the University of Rwanda in 2006. CASIEF started its partnership with the University of Rwanda in 2006, to establish the anaesthesia residency program. In 10 years, this program has increased the number of anaesthetists in Rwanda from one to 14.

I had left Australia with my wife and two young children, in order to take part in the program, as part of my fellowship in Global Health Anaesthesia at Dalhousie University.

Several elements drew me to Dalhousie: a four-month mission trip to Rwanda; the support network into Global Health projects offered by the Dalhousie Global Health Office and CASIEF; and a strong relationship that I developed with my fellowship director, Dr Patty Livingston. Above all, I saw in Rwanda a country in need.

There are only 14 anaesthetists for 12 million people. Technicians, nurses, or general practitioners with one year of anaesthesia-specific training, perform more than 95 per cent of anaesthesia. As a regional anaesthesia specialist, I discovered that there was no regional anaesthesia practice or training in any hospital! Dwarfing these statistics were the ongoing effects of the 1994 genocide: approximately one million people (10 per cent of the population) killed in 100 days, with countless more injured, orphaned and traumatised. Nearly everyone I met had lost a relative. If there was a place in which I could help (or try), this was it.

While our transition from Australia to Canada was straightforward, Francoise's experience was a contrast. She left her family back in Kigali. This homesickness, combined with the harsh winter, foreign working conditions and culture, made life very challenging. Francoise persevered through these trials, and I was blessed to witness her flourish through the clinical and cultural opportunities she embraced.

Becoming Rwandan

Ten months later, and it was my turn to experience life and anaesthesia practice in Francoise's home country. My personal goals reflected the opportunity this trip offered to integrate my values, faith and family with work: to foster relationships among locals in resource-poor communities; and to evaluate our suitability to live and work sustainably in these communities.

To say that we experienced culture shock doesn't capture the helplessness we felt in the first week in Kigali. Like Francoise in Canada, small and big tasks seemed either frustratingly difficult or entirely insurmountable: finding a place to live, getting furniture, fixing plumbing, buying SIM cards, getting visas, and grocery shopping. We had never felt so humbled.

"In a devastating blow, one of the staff anaesthetists abruptly resigned from the hospital due to burnout towards the end of my mission."

We also felt isolated at times, as Asian Australians are a rare breed in Rwanda. Grappling with our own wealth among the poor was a daily dilemma: guilty for our excesses; torn by the desires to be generous and yet to promote sustainable living behaviours. "African time" was at first a frustrating experience, particularly for our kids at meal times – let no one convince you that fast food exists in Rwanda!

However, we couldn't be more thankful for the experience. Through persistence and adaptation, we learned valuable cultural lessons that shaped us for the better. For example, "African time" may seem inefficient to westerners, but it is because relationships are prioritised over tasks. It is far more important to embrace a friend on the way to a meeting than it is to arrive at that meeting on time.

Anaesthesia in Rwanda

These very relationships were the foundation of my work as a volunteer anaesthetist and visiting lecturer at the University of Rwanda. I planned the following goals during a needs-assessment trip in 2015: to establish a sustainable regional anaesthesia service in the University Teaching Hospital of Kigali (CHUK); build the anaesthesia residency curriculum through mentoring local teachers; and run a collaborative research project evaluating the barriers and facilitators to establishing this service.

My pre-trip planning included developing a simple regional anaesthesia curriculum and sourcing donated regional block equipment to perform these techniques.

The first week was a rude awakening. There was no room to perform blocks (no induction rooms in the hospital); only one anaesthetist in the whole country who had regional anaesthesia training; no system for identifying patients; lack of perioperative staff awareness of regional techniques; and no process for acquiring or storing regional anaesthesia equipment. Thus, in the second week, I drafted a strategic plan that categorised the problems (and hence solutions) into "the 4 Ss": Space, Staff, Stuff and Systems. This helped Dr Bona Uwineza (head of the anaesthesia department) and I plan our implementation. (see table on page 78).

Two major barriers hindered us. Firstly, local anaesthetists worked many hours with heavy on-call duty and responsibility. It was difficult to get the time to teach basic regional blocks and to engage them in the efforts to establish this new service.

In a devastating blow, one of the staff anaesthetists abruptly resigned from the hospital due to burnout towards the end of my mission. Also, while getting hospital approval to purchase regional equipment was straightforward, the process of acquisition was complicated and time-consuming due to local policy. Equipment "ordered" at the beginning of my four-month teaching mission was still not due to arrive until three months after I left the country.

Yet I learned humility and resourcefulness from my colleagues who work in these conditions daily with minimal complaint. When I would grumble, they would smile, shrug their shoulders and find a solution. To keep the ultrasound probes clean, we used condoms instead of prohibitively expensive probe covers. ECG electrodes were made using wet gauze, ultrasound gel and sticky tape. I even made DIY phantom ultrasound models out of Metamucil and Aeroplane Jelly for our teaching workshops, due to a lack of cadaver facilities.

The regional anaesthesia impact

By the time I left in May 2016, all anaesthetic registrars in Rwanda, and anaesthesia technicians at CHUK had completed a comprehensive training course in regional anaesthesia. Regional anaesthesia was being performed regularly in a dedicated "block room" in the CHUK theatres.

Two collaborative research projects in regional anaesthesia had been approved by the local ethics committee and started, and CHUK had an organised system in which patients received safe regional anaesthesia.

Many patients thanked me for a painless perioperative experience, as I quickly learned that most Rwandans fear that they will never wake up from general anaesthesia. Word spread quickly about this new technique, and we had some patients asking about regional blocks when they were previously unknown in the country.

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Above from left: Dr Matthew Ho enjoys the Rwandan Gorilla Experience; Dr Ho with Dr Francoise (right) and two fellow volunteer anaesthetists as we instructed the SAFE course; Dr Francoise leading a simulation scenario for the anaesthetic registrars; The newly established CHUK regional block room; Rwandan staff leading the Safer Anesthesia from Education (SAFE) obstetrics course; Anaesthetists and surgeons watching as Dr Ho performs an ultrasound-guided paravertebral catheter.