

An Insight Into The Zambia Regional Anaesthesia Project By Regional Enthusiast, Dr Arthur Polela

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Learning a new anaesthetic technique can be a challenge. Learning a new anaesthetic technique remotely and then being a driving force for a nation of anaesthetists to learn that technique is nothing short of remarkable. In-country ZADP Senior Fellow, Dr Erica Morris, talked with Dr Arthur Polela about how his dream is becoming a reality.

What is Regional Anaesthesia?

[Regional anaesthesia](#) is an anaesthetic technique whereby you inject local anaesthetic with a needle around specific nerves or group of nerves to try and achieve anaesthesia in a specified region of the body. This may be beneficial for one of two reasons: it enables you to do surgical procedures while a patient is awake (and therefore avoid general anaesthesia) and it is also an excellent modality for pain relief.

Tell Me About You And The Zambia Regional Anaesthesia Project

I did my MMed Specialist training in Anaesthesia and Critical Care in Lusaka, Zambia. During my training I was supported by the [Zambia Anaesthesia Development Project \(ZADP\)](#). Most of this training was delivered to a group of us. Periodically however, we would have mentors come to Zambia to focus on delivering 1-to-1 training on a particular sub-specialty such as paediatrics, critical care or regional anaesthesia. One of my colleagues, Dr Mbangu Mumbwe, who now works in Ndola, was trained in regional anaesthesia. This was the first time I'd been exposed to it. I then applied for a 1-month WFSA sponsored observership in South Africa where I witnessed more regional anaesthesia being delivered in a developed healthcare system. It really impressed me and planted a seed in my mind about regional anaesthesia and its potential impact.



In 2018, [THET](#) advertised an opportunity to apply for grants for specific projects. To decide on the project, Dr Sonia

Akrimi (co-director of ZADP) ran a session whereby approximately ten of us created a Theory of Change template for some aspects of anaesthesia we were passionate about improving. We all presented our ideas and then voted on which to submit. I wrote a proposal on creating a Regional Anaesthesia Project in Zambia. It was chosen by the group, submitted to THET, and accepted for the grant! We were also donated an ultrasound machine. Unfortunately, the COVID-19 pandemic prevented mentors from ZADP coming to Zambia so we had to adapt the project in many ways. We teamed up with [Ganga Hospital](#) in India. For approximately 6 months we had lectures online every two weeks. So instead of being taught in person, I was taught online.

The Regional Anaesthesia Project is still growing. There are a small group of us Zambians who are trained, like myself. With support from in-country fellows and visiting Consultants from ZADP we deliver classroom and theatre-based teaching.

How Did You Learn Regional Anaesthesia Online?

This is not straightforward, but it's possible. You need to be logical. I'll start with the biggest problem I encountered. The books tell you about many side-effects of regional anaesthesia, such as nerve damage or pneumothorax. If you only read about [nerve blocks](#) you will be scared to try it, because of all the listed risks. Really though, you have to think rationally and focus on the benefits that regional anaesthesia provides patients in order to decide that sometimes it's necessary to step into a place that makes you feel uncomfortable. You have to be brave. You either continue what you're doing and never improve or you wait for an angel to bring you the optimal situation, such as someone to teach you in person.

Firstly, I told myself I am not performing these procedures

with ignorance. I really did my best to prepare myself. I went through many textbooks, I watched [NYSORA](#) and YouTube videos, I attended virtual teaching sessions. I prepared myself very well with knowledge of each procedure, possible complications and how to manage those complications. One of the first blocks I performed was a [supraclavicular block](#). One of the complications is a pneumothorax. Whilst I took steps to prevent pneumothorax I also told myself that I have managed patients with pneumothorax before and therefore I can manage this potential complication.

There Are Sometimes Opportunities To Travel Elsewhere And Learn Regional Anaesthesia In A Different Healthcare Setting. What Was Your Motivation To Learn Regional Anaesthesia In Zambia As Opposed To Going Elsewhere?

I could probably have gone to Ganga Hospital in India – it would likely have been easier to learn the skill in person. The reality is though, I wanted to learn in Zambia, not just to learn the skill but to simultaneously learn about and understand the barriers to regional anaesthesia and the barriers to change and innovation in general. Ultimately, the aim was to set up a regional anaesthesia service here in Zambia, so learning the barriers to the service would help me establish it. I felt that if I start putting interventions in place maybe I could learn something in the process. I knew starting a regional service would be difficult to implement, so if I learned locally, I would also learn how to navigate challenges. We still have work to do, some growing to do, but it brings me great joy to be able to offer regional

anaesthesia to our patients consistently.

In Addition To Learning Theory, What Practical Advice Do You Have For Those Wanting To Learn Regional Anaesthesia?

Firstly, I'm not claiming I'm magical – even I'm still learning! I do have tips though. Before doing your first block, it's important to practise with the ultrasound and the needle. Use the ultrasound to scan yourself or colleagues to familiarise yourself with the basic anatomy and learn how to hold the probe. Then practise your needle movement with a gel-based block. This might be an official object like the [BluePhantom](#) or an improvised alternative like making a jelly-like block using gelatin powder bought in some supermarkets. After getting comfortable with both the ultrasound and needle, I then advise choosing just one block to focus on. Do five or even ten of this one block and then move onto other blocks.

When I teach, I usually start by teaching supraclavicular blocks because it is so impactful which can be really important in our clinical setting. The beauty about the supraclavicular block is that it's complex enough to fully engage a learner but also highly valuable in what it can achieve. If you can learn this block, you will have an easier time learning other blocks. At the start consistency is key.



My next piece of advice is that as you learn your aim should

be analgesia or pain relief, not anaesthesia. Combine your first blocks with a [general anaesthetic](#) or a [spinal](#) (if lower limb). Then after the procedure speak to your patient and assess how successful your block has been. When you start to realise your blocks are very good then you can start to target surgical anaesthesia and awake surgeries. Practically, you also want to know that you have adequate time to do a block, particularly when you start out. If I'm aiming for analgesia, I do my blocks at the end of the procedure so as not to delay the theatre team if they are waiting for me at the start. This will avoid feeling pressured by the surgeons or theatre team. If you're doing a block for anaesthesia (awake surgery) you will need approximately 30 minutes for it to work, so make sure you are patient and allow time for it to work. If I logistically can, I sometimes do these blocks in the recovery room to allow sufficient time for the block to work prior to surgery. If you prepare well, and your block is successful the surgeons will be so happy that they don't have to wait for you to perform a general anaesthetic! If you can demonstrate that you can save theatre time with blocks the surgical team will help you more and more.

Finally, choose very wisely the right dose of local anaesthetic especially if you don't have intralipid as there is no room to make a mistake.

What Do You Think Are The Biggest Difficulties That You Have Encountered Starting This Regional Anaesthesia Service?

That's a difficult one as there are and have been several problems. I think the biggest, on many levels, is challenging the mindset around regional anaesthesia. There are people who don't see the need for it. Even within the specialty of

anaesthesia, individuals can complete their anaesthesia training and not have to learn regional anaesthesia. If trainees haven't been exposed to regional anaesthesia in their training, they will rely on spinal and general anaesthesia as their only means of anaesthesia, and not see the need to learn an alternative. I'm trying to make people understand that regional anaesthesia can be a safer anaesthetic technique, but also that it is also an important method of pain management.



Another issue is the lack of equipment. Many of these issues

are ones we can't anticipate. For example, we were generously donated an ultrasound machine which filled us with lots of energy and enthusiasm for regional anaesthesia, but after a month the ultrasound machine broke. We had to find another one. We managed to get another when the THET funding came through for the project. Since then, we have been fortunate to have been donated two machines from UK colleagues. Over the long run, this is not sustainable: we can't rely on donations. If the project is to grow in Zambia we need home support. My idea is to develop the regional anaesthesia service in Lusaka; to make regional anaesthesia available to the public with what we currently have; to show other hospital specialties, our colleagues, the benefits of regional anaesthesia and the skills that come with using ultrasound. For example, people now call our department to ask us to use the [ultrasound machine](#) to put central or peripheral venous catheters in. I will then be able to tell our hospitals: "This is what we managed to achieve without your help, now we need your help to sustain and develop the service." However, in order for me to do this, I need data – I need evidence.

We're not doing too well on data management, but we are working on it. We have a spreadsheet which we use to record the blocks we do. A challenge is motivating people to input their blocks to the spreadsheet. With this data we will be able to canvas support from our hospitals, use it to develop the service and share our data at conferences. It's so important to go to conferences as it is at these places that you meet other people, where you get new ideas about how to set up and develop services.

I did a 1-month [WFSA](#) sponsored observership in South Africa. It really opened my eyes. Before doing the observership I found it difficult when people came to Zambia to teach new skills. I used to think, 'What's the big deal why do I have to learn this? I have done many cases before, even complex cases, and the patient is alive at the end of the case.' Going to

South Africa and seeing a different healthcare system allowed me to see a different picture, different anaesthetic goals. It is so difficult, sometimes impossible to understand a new objective when you've never had the opportunity to see what you're aiming for. I had never seen regional anaesthesia before or had the opportunity to see its benefits. The observership helped me to see a gap that was present in Zambia.

Where Do You See The Regional Anaesthesia Program Going In The Next Few Years?

With regard to my hospital – Levy Mwanawasa Hospital in Lusaka – there are currently only three of us doing regional anaesthesia. Our idea is to start a training program for regional anaesthesia. At the end of this program an individual should be able to do certain high impact blocks such as [Plan A blocks](#). Whilst initially this will develop their in-theatre anaesthesia practice, in the long run we aim to set up an acute pain service. For example, if someone comes to the hospital with fractured ribs, they could be provided adequate pain relief with an [erector spinae plane block](#). Even if I manage to teach five more people then my job is done – others can then learn from those five.

I would also love to be in a position where we are able to offer residents and consultants observerships, as I benefited so much from one. Many people come to Africa, to Zambia to teach anaesthesia, I'm so grateful and I'm not saying it's bad, but I really feel passionately that a lot can be gained from individuals from Africa going to do observerships elsewhere. It inspired me and motivated me to bring other techniques, other standards to Zambia.

What Opportunities Has Doing Regional Anaesthesia Given You?

The world of regional anaesthesia has opened up many opportunities to me. Firstly, I got exposed to the [African Society of Regional Anaesthesia](#) (AFSRA). Through AFSRA I have met people from [Regional Anaesthesia UK](#) (RA-UK), the [American Society of Regional Anaesthesia](#) (ASRA) and the [European Society of Regional Anaesthesia](#) (ESRA). By meeting all these people I have learned many things that have allowed me to develop the service in Zambia, I have also been able to share my story. I share a lot of information on Twitter which demonstrated my commitment to regional anaesthesia. At the AFSRA annual conference in Egypt last year I was encouraged to apply for the role of Ambassador for Zambia for AFSRA. I got appointed!



I now network with the [Global Anaesthesia, Surgery and Obstetric Collaboration](#) (GASOC). I have joined their missions to try and expose regional anaesthesia to other low- and middle-income countries (LMICs) so that they can also implement similar models in their countries. I was in Uganda with them in April.

This endeavour has allowed me to travel and I have other trips planned. I have been asked to present at the [WCRAPM](#) in Paris in September and I will also go to Morocco later on in the year for the AFSRA board meeting as I am now a board member. Next year I believe I will go to Cameroon.



Finally, Do You Have A Favourite

Block?

This is difficult because I like all of the blocks but it has to be either supraclavicular because of its high impact or recently I've come to love erector spinae plane blocks (ESP). We have been doing these for mastectomy patients. The general surgeon loves them, they really want us to do them for all their patients. Many of the patients have been discharged earlier, need very little opioids throughout their stay in hospital, have fewer opioid side-effects and less pain issues on the ward. In truth, I like many blocks, I'm just obsessed with setting up the whole service, the bigger regional anaesthesia picture.

If you'd like to get involved with the Zambia Regional Anaesthesia Project either in country or remotely please get in touch.

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