

**Zambian Anaesthesia Development Project (ZADP) Senior Fellowship**  
**Dr Sarah Helen El-Sheikha**

**Introduction:**

I am a senior Anaesthetic trainee with an interest in Global Health. From February 2019 to July 2019 I have undertaken a 6 month Out of Program Experience to work with ZADP in Zambia.

Zambia is a landlocked country in Sub-Saharan Africa. It neighbours the Democratic Republic of Congo to the North, Tanzania to the North-East, Malawi to the East, Mozambique to the South-East, Zimbabwe and Botswana to the South, Namibia to the South-West and Angola to the West. The capital city is Lusaka, where the majority of the population is concentrated. The Copperbelt is in the north west and is the core economic hub of the country.

Life expectancy is 52.2 for men and 56.9 for women.<sup>1</sup> In addition, Zambia is a country of young people, with the majority of the population under the age of 18 (53.4%). The estimated median age is 16.7 years (2015), which is one of the lowest in the region and globally. An estimated 54.5 per cent of the population lives below the national poverty line. In rural Zambia, up to 65% of children suffer from at least three deprivations or more (lacking access to nutrition, education, health, water, sanitation, adequate housing).<sup>2</sup>

Like many LMIC, Zambia faces a crisis of increasing number of chronic disease and non-communicable conditions. In addition, Zambia's population is currently growing at a rate 3.2% per year. The country has one of the highest fertility rates in the world at 6.2 births per woman. While the HIV prevalence in Zambia has declined, it is still at 13.5% among adults.<sup>3</sup>

Over the past decade there has been a significant drive to tackle maternal and neonatal mortality. The incidence has decreased; however, it still is a significant problem. Between 2007 and 2014 maternal mortality ratio declined from 591 to 398 deaths per 100,000 live births, under-five mortality rate decreased from 119 to 75 deaths per 1,000 live births and neonatal mortality rate decreased from 34 to 24 deaths per 1,000 live births.<sup>2</sup>

Safer perioperative care has been highlighted as a major focus for improving healthcare. The Lancet has set an agenda for "Global Surgery 2030" to try and increase awareness and funding for projects aiming to bridge this gap. In 2010, surgical conditions killed four times more patients than HIV, TB and Malaria combined (16.9 million people).<sup>4</sup> The Lancet Commission on Global Surgery found that as many as 5 billion people worldwide don't have access to affordable anaesthetic and surgical care with only 6% of all operations being delivered to the world's poorest populations.<sup>5</sup> In Zambia, there are 0.49 physician anaesthetists per 100,000 which is significantly short of the target of 20 physician anaesthetists per 100,000 by 2030.<sup>6</sup>

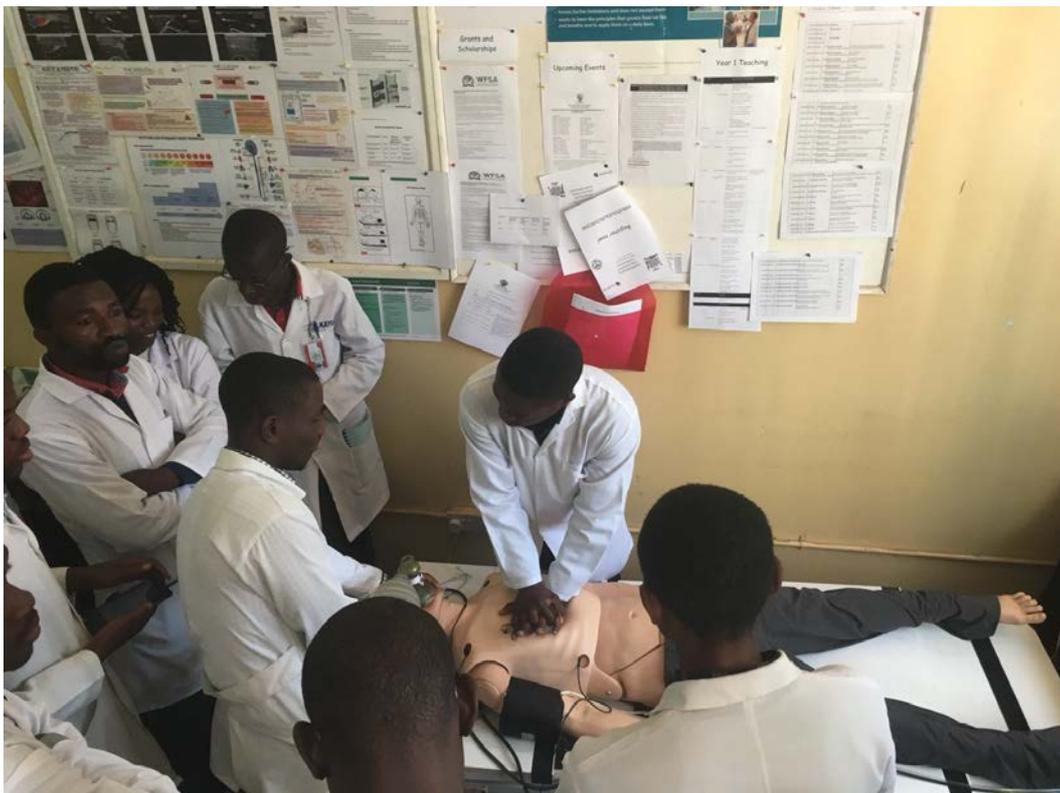
ZADP has been developed with the Royal College of Anaesthetists (RCOA), Association of Anaesthetists of Great Britain and Ireland (AAGBI), Society of Anaesthetists of Zambia (SAZ), Ministry of Health (MOH) and the University of Zambia (UNZA) School of Medicine. ZADP provides direct mentorship of Zambian Anaesthetists to ensure high quality training and support through a structured training scheme.<sup>6</sup> To date, 23 Zambian physicians are certified anaesthetists and we are currently training 12.

## **Projects:**

### **Basic life support, Advanced life support and Rapid sequence induction:**

We have provided a one-day interactive teaching session training 6<sup>th</sup> year medical students in basic and advanced life support. Teaching these lifesaving skills provides awareness and introduces the practical application of managing a deteriorating patient. For this training we used a simulation mannequin donated by the Royal College of Anaesthetists. Our participants had not been exposed to this method of training before which they found enjoyable and helped to retain skills and knowledge.

The teaching day has helped to increase the credibility of anaesthesia as a training speciality. Following this teaching session, undergraduates have requested theatre sessions and taster weeks in anaesthesia. By promoting the practical and supportive role of anaesthesia, we hope to encourage future interns to apply for anaesthesia training.



### **Potassium Patient Safety Project:**

It was recognised that the storage of drugs in theatre posed a significant risk to patient safety. Vials of strong potassium were stored amongst anaesthetic agents posing a significant risk of inadvertent administration. This follows the NPSA alert in 2002 which gave recommendations for the safe storage of potassium.<sup>7</sup>

Potassium was immediately removed from theatre and a policy was introduced and disseminated through the department. The project was presented in the QI Zambia Conference. Following this I have helped to create a forum to improve communication between pharmacy and theatres. Pharmacy will now attend the departmental meetings to discuss the current stock levels. In addition, we aim to implement drug boxes in theatre containing emergency drugs for specific critical situations (i.e. hypokalaemia, bronchospasm etc).



### **QI Zambia Community:**

Quality Improvement (QI) is one of the main strategic policies for the MOH in Zambia. However; the awareness and understanding of how to conduct QI has significant variability, detrimentally impacting implementation.

In September 2018 I was part of the faculty designing a QI Zambia course. This was a four-day didactic course held in Lusaka. Unfortunately, not one of the thirty-four candidates completed a QI project. It was decided a different approach was required.

The QI Community has been designed as a scalable and self-sustainable solution to providing support and education about QI. Evidence on the effectiveness of such educational initiatives show that multi professional, practical programs with interactive teaching methods are the most effective. Such as approach allows participants to understand QI tools and apply these in their own work setting.

The community is based online where people can network, buddy and problem solve. This also provides a platform for projects to be scaled up from regional to national. We co-designed four full day sessions spread across a month. These were termed 'Masterclasses'.

A technical working group was established to gain support from the hospital and to ensure that the content was co-produced and that participants were supported to implement the proposed improvements. The Zambian faculty were trained to deliver a 'train- the-trainer' approach. They then mentored participants through their own QI project.

Projects are kept simple with SMART objectives enabling participants to understand the basic tools of QI evaluation. This highlighted the benefit of having new eyes on the issues through the multi-disciplinary groups. The concept of 'ubuntu', a sense of togetherness, was expressed and propagated.

The Zambian faculty intend to continue to develop the content and recruit colleagues to join them in building a movement for quality and a culture of 'ubuntu'.

The online resources are free and easily accessible. The costs for the programme were minimal as no equipment or rooms were needed and people attended in their own time or took time out of work but stayed within the hospital. The project is therefore effective, frugal and scalable.

This program was started in 2019 in Lusaka with the aim of establishing a strong Zambian faculty. In 2020 the Masterclass will be taught in the northern province with the aim of creating a national programme.

QI Community Website: <http://qizambia.weebly.com>



**QI Zambia Conference:**

I was involved with three oral presentations in this national conference. Furthermore, I was chosen to be an assessor for submitted abstracts.

**Regional blood transfusion:**

Maternal mortality is a substantial problem within Zambia and administration of blood products has significant association.

We attended national blood transfusion meetings to discuss concerns and formulate a road map. From these meetings we recognised the potential for instituting e-learning educational package to assist with educating health care professionals about the safe administration of blood products. This is in association with Blood Transfusion Scotland (BTS) who has developed and given Zambia access to their e-learning modules. We have facilitated the communication between Zambia and Scotland BTS and will support the upcoming pilot in the Northern province.

**Teaching:**

I have delivered teaching sessions to the first year and senior M Meds. First year M Meds require support with their primary examinations, whereas senior M Meds require support for their final examination.

In facilitating senior teaching, I recognised a need for restructuring the teaching session to make it more efficient to aid effective learning.

I have also helped to support simulation teaching in theatre.

**Theatre sessions:**

I have been involved with directly mentoring of physician anaesthetists and clinical officers in safe anaesthesia practice. In addition, I have directly mentored midwives with neonatal resus.

**Acknowledgements:**

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## References:

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