

GASOC report.
Dr Helena Dunn

The GASOC travel fund was set up to help support practitioners doing medical projects in resource limited settings. I was awarded the fund at the end of 2024 for my teaching fellowship in Zambia with the Zambian Anaesthetic Development Programme (ZADP) commencing in 2025.

Zambia has a population of just under 21 million, with the majority of the population living in its Capital, Lusaka. The main public teaching hospital is University Teaching Hospital (UTH) which has 1655 beds. The average life expectancy of those born and living in Zambia is 61, with infectious diseases remaining the leading cause of death¹. However, non-communicable diseases are an increasing burden in low and middle income countries (LMIC's), and the healthcare that is provided is adjusting to these changes. With the recent announcements of cuts to USAID, it is presently unclear what the impact will be on healthcare in Zambia². However, with the US additionally cutting \$50 million in annual aid to Zambia over "systemic theft"³, it is inevitable that this will be a challenging time for Zambia's healthcare sector.

Approximately 5 billion people worldwide do not have access to safe and affordable surgical and anaesthesia care, and it is estimated that an additional 143 million surgical procedures would be needed each year in LMIC's to save lives and prevent disability⁴. Surgery is an "indivisible, indispensable part of healthcare"⁵, of which safe anaesthesia is an essential component. Presently, there are 0.66 anaesthesia providers per 100,000 population in Zambia⁶, which is a far reach from the Lancet's 2030 target of 20 per 100,000 population⁴. Placing this into context, the UK presently has 14.23 per 100,000 population. To provide safe surgery, the number of trained anaesthetists must continue to grow to match the deficit in available surgical care.

In Zambia, anaesthetic care is delivered by physician anaesthetists, nurse anaesthetists, and clinical officers. The post-graduate training of physician anaesthetists has been available in Zambia since 2011. ZADP was created in 2012 and has been fundamental in assisting with the educational delivery of the content of specialist anaesthesia training in Zambia. ZADP works in unison with the Society of Anaesthesiologists of Zambia (SAZ) to tailor training and educational needs to the residents. From ZADP's 10 year review in 2022, there have been an additional 30 consultant anaesthetists trained in Zambia since the initiation of the specialist programme. This increase in capacity has resulted in 12 hospitals now having a consultant anaesthetist employed⁷. Although the numbers remain small, the safety and educational impact of having a consultant anaesthetist is invaluable. ZADP remains in country to help with the educational programme whilst there is still a large deficit of trained physician anaesthetists.

ZADP delivers teaching to Zambian anaesthesia residents via both remote and in-country formats. The remote teaching fellows can deliver the teaching via video link from anywhere in the world. I fulfilled this role for a period of 6 months in 2024 prior to spending 3 months as an in-country fellow in Zambia. I am a UK trained anaesthetist who has completed core training and holds the primary FRCA, therefore I joined ZADP as a junior teaching fellow alongside a small team of other anaesthetic trainees. The senior fellows hold the final FRCA and have completed at least 4 years of anaesthesia training. As in country fellows, our teaching time is split between being in theatre with the residents and classroom sessions.

Due to the frequent changeover of ZADP fellows every 3-6 months, teaching structure can be unpredictable and risks missing key content. Whilst in-country our team aimed to create

predictability and structure to the teaching programme. It started by continuing our predecessor's format of a weekly teaching timetable as seen in figure 1. Developing from this we have now created a yearly timetable, with each month delivering a different theme of anaesthesia. If employed, this will give structure to the residents and incoming fellows, ensuring that there are no thematic gaps in teaching delivered. With the annual structure, organising the delivery of sessions becomes more predictable for the busy Zambian consultants, therefore we hope it will give the opportunity for increased local consultant teaching delivery. Local expert teaching delivery is paramount for a sustainable programme and has been wanted by both the residents and consultants in Zambia. A formal teaching structure is a key step towards a fully Zambian taught programme.

This Week:		
Date	Topic	Presenters/ Facilitators
Mon 12/05/25	All Day: Bedside Teaching – <u>Phase 3/C Block/D Block</u>	ZADP Team
	0700: Online - Department Meeting	Anaesthetic Dept
	1500: Online Junior Teaching - IN PERSON – Placenta, Foetal Circulation; Physiology of Pregnancy – <u>Seminar Room</u>	Dr. Deborah, Dr. Suzie
Tue 13/05/25	All Day: Bedside Teaching – <u>Phase 3/C Block/D Block</u>	ZADP Team
	1800: Online Senior Teaching – Chronic Pain Interventions (Open for ALL to attend via senior teaching link)	Team USA
Wed 14/05/25	All Day: Bedside Teaching – <u>Phase 3/C Block/D Block</u>	ZADP Team
	0700: Simulation Teaching – Critical Incidents in Anaesthesia – <u>Seminar Room</u>	Dr. Chibs, Dr. Muzumara
	1800: Online Senior Teaching – Awake Fiberoptic Intubation (Open for ALL to attend via senior teaching link)	Team USA
Thur 15/05/25	All Day: Bedside Teaching + Awake Fiberoptic Intubation Teaching – <u>Phase 3/C Block/D Block</u>	ZADP Team; Team USA
	0700: In Person Senior Teaching – Thyroid Surgery - <u>Seminar Room</u>	Dr. Helena
	1800: Online Junior Teaching – Pacemaker, Cardiac + Nerve Action Potential, Iron Metabolism	Dr. Alice, Dr. Ezekiel
Fri 16/05/25	0900: In Person Junior Teaching – Metabolism/Stress/Exercise, Electricity - <u>Seminar Room</u>	Dr. Krishna/Poppy/Nancy

Figure 1: Example of weekly teaching timetable

On a similar theme, we assisted with simulation teaching each Wednesday morning. Over time, this has been increasingly Zambian led by consultants and anaesthesia fellows. We are writing a simulation booklet that can be utilised by the simulation leads to deliver sessions on a range of topics. The booklet of simulation scenarios will minimise the workload of the simulation facilitators and offer the opportunity for those less familiar with facilitating simulation an accessible way to initiate sessions.



Figure 2: Simulation teaching

Furthermore, we delivered in-person teaching in theatre and in the classroom. On request of the senior residents, we started a weekly in person teaching session which aimed to develop both knowledge and exam skills whilst also being an interactive seminar. The sessions were well received as prior to this the majority of learning for the senior residents was occurring remotely online. Remote teaching has its benefits, but the value of learning in person is undeniable. Around the various classroom sessions, we delivered one on one bedside teaching in theatre. Bedside teaching is an incredibly valuable tool as it has direct clinical context which aids in learning. We worked in general theatres (including general surgery, trauma, urology, neurosurgery and ENT), obstetrics, gynaecology, paediatrics and emergency theatres.

We had some specific teaching projects whilst in country, which were based on the requests of the residents. Firstly, we organised a mock OSCE. OSCEs can be a form of annual examination for the Zambian residents, however due to staffing, frequently do not occur. Due to this, many of the residents had never sat an OSCE and requested assistance in developing confidence in approaching this type of examination. ZADP organised an 8 station anaesthesia OSCE, assisted by 4 local consultants and many 1st year trainees who kindly fulfilled the role of actors. The OSCE was a great success, and the residents have now had exposure to this very specific style of examination. As expected in any mock OSCE, there were many general learning points to be had, which will also aid in structured clinical approach in real life.



Figure 3: ZADP Mock OSCE

Beyond the teaching programme itself, we have supported the residents in developing their local QI projects and enacting on learning points from research they had conducted. An example of this was assisting one of the final year residents to disseminate the learning from her research project on maternal mortality from sepsis. She found there was a high mortality from patients diagnosed with sepsis on the obstetric ICU, and she identified that sepsis recognition may work towards improvements in mortality. Therefore, together, we developed a simulation session on sepsis for the obstetric department which was well received.



Figure 4: Obstetric sepsis teaching

In addition to the teaching delivered in Lusaka, we spent a week delivering teaching to the residents in Ndola. UTH and Ndola teaching hospital are the two sites in Zambia that can train physician anaesthetists. These residents are a 6.5 hour car journey from the main teaching hospital in Lusaka. The residents receive fantastic support from their consultant, however the

visits from ZADP fellows give an in person teaching week, when at baseline their theoretical teaching needs are mainly supported by remote teaching sessions.

On top of the hospital based education we organised, we joined SAZ in delivering the SAFE (Safer Anaesthesia From Education) paediatric course to anaesthesia providers who attended from across the country. The SAFE courses are a fantastic learning tool which are sustainable in their structure due to the associated “train the trainers” course. Due to this, SAFE paediatrics is now a Zambian lead. It was an incredible course in which the attendees developed notably over the programme.



Figure 5: SAFE Paediatrics

These examples are just a sample of the engagements of being an in-country ZADP fellow. However, there was also time to explore the city of Lusaka and the incredible surrounding attractions. Trips were inclusive of Livingstone and Victoria Falls, Chobe National Park in Botswana and South Luangwa National Park.



Figure 6: Victoria Falls



Figure 7: Painted Dogs in South Luangwa National Park

I want to take this opportunity to thank GASOC for the Travel Grant. My passion for global health and development of safer surgery has only been enhanced by this experience. I look forward to seeing the opportunities which arise in the future, and watching ZADP continuing to support the sustainable growth of Zambian specialist anaesthetic training.

References

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