Working as a Volunteer Physician for AMREF Flying Doctor Service.

Report to AAGBI IRC

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Background:

Being born and brought up in Kenya, I had always been aware of the work of the African Medical Research Foundation, in particular their Flying Doctor service (FDS), particularly when family members had needed emergency evacuation by the service. Uncoupling of speciality training in the UK, allowed me to take a break from working for the NHS and successfully apply for a Volunteer Physician post with AMREF Flying Doctor Service.

AMREF FDS is an income generating arm of the charity AMREF which provides free healthcare and health education to those most in need throughout Africa. Through a paid membership base of the Flying Doctor’s association and providing medical evacuations and repatriations for medical insurance firms, AMREF FDS is able to provide charity evacuations to those who cannot afford to pay. The FDS also supports AMREF’s clinical outreach programme, contributing to the cost of flying medical teams and equipment throughout East Africa to provide free healthcare and specialist care to over 150 remote hospitals. AMREF FDS has full accreditation for Special Aeromedical care from URAMI, the European Aeromedical Institute.

Working as a Volunteer Physician contributes to this important charity work, saving the FDS money in doctors’ fees and allowing doctors from overseas to positively contribute to the Flying Doctor service. Each Volunteer Physician is expected to conduct at least one teaching session with the flight nurses during their time with the service. The following account summarises my experience of working with AMREF FDS, working between August and December 2010. During this time I was the first on call doctor, working a 12 days on 2 days off pattern, available 24 hours a day. There were also local locum doctors working within the Nairobi area who provided availability so there was always a 2nd and 3rd on. The medical director was based in the office within office hours or available to call for advice. All flights had one doctor, one nurse and one or two flight crew depending on aircraft type.

Emergency Evacuation Flights:

The calls and requests are processed through a 24 hour control room, via phone, email or a High Frequency radio network. Information would be gathered as to the condition of the patient, number of patients, weather at the patients location, nearest airfield and current location/transport logistics for the patient to the nearest airfield. The nearest airfield and distance would determine the type of aircraft we used – Cessna Caravans were used to the shortest, roughest airfields but were slower aircraft with unpressurised cabins. Beechcraft Kingair was the next option for dirt strips, but they require a longer runway than the Caravans, but have a pressurised cabin. For all tarmac/concrete airfields we could use Citation Bravo jets. Night operations were unusual unless to a lit, 24 hour
airfield, which are a bit of a rarity in Africa. There was also the option of helicopter rescue for mountain/inaccessible areas, taking into account running costs.

The variety of cases were as would be expected for an emergency service – ranging from Acute coronary syndromes, strokes, gastroenteritis, acute abdomens, acute mountain sickness to trauma. We did a lot of emergency evacuation work for the UN and in particular evacuation of African Union peacekeeping troops from war-torn Mogadishu. These were particularly challenging flights as normally involved multiple casualties with mixture of blast and gun-shot wound injuries, in a Citation Bravo or Kingair which have cramped cabins to work in. For safety reasons we were limited to 30 minutes on ground, one jet engine kept running at all times. Patients were transported to the airport in armoured ambulance where we would do a primary triage determining what immediate medical management was warranted, if any, pre flight. The least injured would be seated in the rear of the aircraft, with room for 2 stretcher cases, the most severely injured being loaded last and offloaded first. Most medical intervention would therefore be implemented in flight. Exceptions to this were any immediate indication for a secure airway or if a chest drain was required. As long as it was safe to do so, these would be done on the airfield before loading. We would normally be given some indication of injury severity from a brief report and in cases of severe injury it was possible for blood products to accompany the patients from the field hospital as AMREF FDS does not routinely carry or stock blood products. I flew a total of 16 emergency flights to Mogadishu, treating a total of 36 combat injured/acutely ill military personnel.

**Charity Evacuations:**

Request for a charity evacuation could be made by any hospital or health clinic within East Africa. The patient would be evacuated to the nearest, most appropriate government facility that could manage the patient’s complaint. These evacuations were often the most challenging, with the patients severely ill without adequate treatment, usually due to lack of resources and equipment.

The charity cases I was involved in included a case of penetrating chest trauma of a herdsman gored by a buffalo, a 15 year old with eclampsia, stab wounds to the neck and abdomen, 60% full and partial thickness burns, obstructed labour, fractured femur and a paediatric case with malaria.

Most cases required significant stabilisation and intervention in the plane before take off, a challenge due to space constrictions and limitations of not having specialist back up as we are used to in NHS hospitals. The only cardiac arrest in flight during my time occurred on a charity flight, culminating in over an hour of CPR before landing at the receiving hospital where efforts were stopped shortly after landing – an exhausting task with only 2 medical crew!

**International Repatriations:**
AMREF FDS has a very good working relationship with a lot of international medical insurance companies, providing repatriations from Africa worldwide, either in private air ambulance or by providing medical escort on commercial carriers.

My involvement was predominantly with the international repatriations via private air ambulance. The majority of these carried out in Citation Bravo jets. A lot of the work was within Africa itself, transferring patients either to Nairobi or South African for specialist care or surgery. Some cases required transfer out of Africa to further afield such as Europe, India or Asia.

I transferred patients from Seychelles, Uganda, Tanzania, Democratic Republic of Congo, Sudan and Mozambique to Nairobi. I did a total of 4 flights from within Africa to South Africa, 2 flights from Nairobi to India via Oman, and 2 flights from Nairobi to Europe (Dublin and London). We also did a wing to wing transfer from Addis Addaba, transferring our patient to another air ambulance in Hurgada, Egypt for further transfer to Norway. 5 patients required level 3 care, being ventilated cases. 2 cases required non-invasive ventilation in flight.

A pleasant change from the evacuation flights was that we were able to stabilise the patients in the hospitals, with most equipment and imaging available, rather than on the airfield/in the aircraft before take-off.

**Education and Training:**

I tried to conduct regular teaching sessions with the flight nurses, usually based around recent cases. These were generally an hour long and included internet and further reading resources. We aimed to do a training session every fortnight, though sometimes these were missed if I was away on flights. Early on we did an advance airway management moulage to familiarise the nurses with my practice of rapid sequence induction and allow them to practice with i-gel LMAs and Airtraqs which was equipment that I had brought with me and was not standard issue equipment.

Topics covered in other sessions included pre-hospital management of head injury, pre-hospital analgesia, chest trauma, management of burns, arrythmias and ALS revisited, risk management and incident reporting, and IV fluids and blood products. All sessions were recorded in the flight nurses CME journals and signed off as evidence for future appraisals.

**Clinical Outreach:**

I had planned to accompany a specialist surgical team on outreach to Tanzania to provide anaesthetic support and get a feel for developing world anaesthesia, particularly the challenges faced. Unfortunately I was unable to attend due to a family bereavement at the time. I would suggest that this would be a well worthwhile undertaking for any anaesthetists planning a placement with the flying doctors.
**Summary of Experience:**

Each morning we would have a handover when all the cases from the previous day were discussed with the medical director. This gave a chance for reflection and ideas of how to improve the service could be raised. All cases were followed up daily over the phone by staff on night duty for as long as the patient was in hospital.

Working with the Flying Doctor service was unlike any clinical work I have experienced. It tested my clinical skills and approach, pushing the boundaries of my comfort zones. Well aware that help would not be forthcoming once in-flight and indeed in many of the remote areas we were evacuating from, I had to develop a lateral way of thinking and problem solving when things didn’t immediately go to plan. I have become even more meticulous in doing things in a systematic way and vocalising my thought processes to my flight nurse colleagues, whose own experiences and advice were invaluable. I was reassured at what good stead my training in the UK stood me in for working with the Flying Doctor service. Working alongside air crew and learning about aviation safety was also immensely educational and fulfilling. I also got to work alongside my childhood friend and best man to be who is a pilot for AMREF FDS. I flew a total of 106, 406 statutory miles which is just under 5 times around the world! The figure below summarises all the cases I cared for in my time with AMREF FDS.

![Classification of Cases Managed with AMREF FDS n=88](attachment:image)

I have an interest in Pre-Hospital medicine anyway and work with a BASICs scheme in the Midlands, so found that work with the Flying Doctors not only complemented my anaesthetics/ITU training, but also my pre-hospital training and work.

Core Skills essential for working with AMREF FDS are RSI, chest drain insertion, suturing, spinal immobilisation and limb splinting. All equipment was to a European standard and well maintained. There was an on-site clinic at the base in Nairobi for any occupational health concerns.
For further information on AMREF FDS and the Volunteer Physician programme, please visit www.flydoc.org

**AAGBI IRC Travel Grant:**

I would like to thank the AAGBI IRC for their generous travel grant awarded for my work with AMREF FDS. My time in Kenya was all self-funded. The grant went towards funding my airfares and my personal indemnity insurance.