I would like to express my thanks to the International Relations Committee of the AAGBI for the £750 travel grant. I hope that my report highlights why this was a worthwhile visit and how such links may be developed in the future.

I am currently a 3\textsuperscript{rd} year SpR in the Wessex Deanery and, following a conversation at the World Anaesthesia Seminar with Dr. Mai Wakatsuki who has previously worked in Jimma, I arranged the visit to alongside staff from Nottingham University Hospital in October 2008.

Jimma University Specialized Hospital has a strong educational link with Nottingham University Hospitals and there are six-monthly visits from Nottingham to Jimma. This exchange scheme is funded by THET (Tropical Health and Education Trust) and frequent fundraising events. Personnel on this visit included an ICU nurse, an NICU nurse, consultant paediatrician, medical SpR, senior laboratory technician, risk manager and the link co-ordinator, Ben Halliday. There were also 5 teachers from Nottingham spending time at the local community school.

Jimma University Hospital is a 300 bedded teaching hospital which covers population of over 1 million. Four years ago, a B.Sc. qualification was set up for non-physician anaesthetists and currently there are approximately 60 B.Sc. anaesthesia students. The first two years of their course is largely medical sciences (similar to pre-clinical teaching in traditional medical schools), the latter two years are solely anaesthesia-specific. There is currently one lecturer, Dr Yeman Ayele, the only physician anaesthetist in the hospital. He single-handedly runs the anaesthesia service (with 5 anaesthesia nurses), the school of anaesthesia, and the 6-bedded intensive care unit.

My role during the visit included:

- Delivery of an educational programme for 3\textsuperscript{rd} year anaesthetic B.Sc. students
- Education and clinical support for staff on ICU (including an ICU Nurse from the U.K.)
- Education and clinical support in the operating room
- Investigation into the delivery of anaesthetic services in the obstetric unit and the management of obstetric emergencies
DELIVERY OF EDUCATIONAL PROGRAMME FOR 3RD YEAR ANAESTHETIC B.Sc. STUDENTS

I conducted 6 formal teaching sessions for the same group of students, covering a broad spectrum of subjects including obstetric, paediatric and regional anaesthesia, monitoring and the approach to the critically ill patient. The lectures were conducted with PowerPoint and blackboard presentations supplemented with case-based discussions.

The knowledge level of the basic medical sciences of these students was impressive, although obtaining a two-way discussion with the students was difficult at first, they soon got used to a less didactic method of learning and we had some very useful discussions. Similarly, the female members of the group were less vocal, so I split them into smaller groups for the case-based discussions and this seemed to work well.

It was immensely rewarding for me to see the same students regularly and use this time to build on their sound theoretical knowledge in some specialist areas. I was acutely aware of the limited resources and monitoring available in Jimma and I felt it important not to continually make comparison with management of patients in the UK. However, I believe that with the resources available to them and appropriate practical training, effective and safe anaesthesia can be delivered. Undoubtedly, additional equipment and monitoring would be helpful, but not without expertise to maintain and service this equipment and appropriate training in its interpretation. This was evident in ICU where we found five defibrillators in a store room, not in working order and no means of servicing or safely testing them.

I invited ‘my’ students out one evening and we had useful conversations about some of their concerns (this was easier out of the formal classroom setting, and after a beer!).

One of the prime concerns was the access to information and up-to-date textbooks. The internet access in patchy at best in Jimma, and virtually non-existent in the more rural areas. Most of the students were living and studying away from home (some by 1000km or more) and intended to
return home post-qualification to practice locally. Keeping themselves current in knowledge and skills will be a formidable challenge to them.

Secondly, they were concerned with their status as anaesthetic practitioners. I think this is an important issue, but difficult to address. The surgeons in the hospital are very much top of the ‘food chain’ and the anaesthetic practitioners said they have to “do what they tell us to do” and are frequently shouted at by the surgeons. I tried my best to reassure them of the importance of the job they are training to do. I explained that, although we are technicians who facilitate the surgeons work, there is no point in a surgeon performing a wonderful piece of life-saving surgery, if there is no oxygenated blood circulating round the patient! Only through our continued education and training would we have the knowledge and skills to best treat our patient and improve the status of the non-doctor anaesthetists. I explained that, even if their service is not obviously appreciated, they need to consider for themselves whether they have best served the patient and if there are things they would do differently if they were faced with the same challenge again. There are only 5 doctors in Ethiopia who are practicing as anaesthetists. I hope I can continue the link and maybe help address some of these concerns.

EDUCATION & CLINICAL SUPPORT FOR ICU STAFF

During my 2 weeks in Jimma, I worked alongside an ICU Nurse from Nottingham in trying to address some of the issues on ICU. The local staff on ICU could not have been more welcoming and kind towards us.

Patients were admitted with a variety of medical and surgical conditions, e.g. cerebral malaria, burns, head injury, hepatitis and post-operative surgical patients.

Dr. Yeman Ayele held a morning meeting daily to discuss each patient with the senior nurse and ICU interns (medical and surgical interns on ICU placement) and decide on a daily management plan. Some of the key areas, from a nursing perspective, we tried to address included daily patient personal care, cleaning of bed spaces, sharps disposal and using a sterile field for dressing changes. Observation charts were in use and we both emphasised the importance of accurate observation recording and fluid balance. The ICU was frequently left unattended by nursing staff and staff could not access the equipment room out of hours. There was no running water for two consecutive days.
There was a limited supply of fluids and drugs available to patients, but mostly relatives were given a list of things to purchase at the local pharmacy. Relatives were not allowed on ICU.

One problem we encountered was the issue of pain relief. There was a 5 year old child with severe burns who was having regular dressing changes. We continued to remind local staff on the importance of analgesia (ketamine) to facilitate this. In addition, I was concerned that pancuronium alone was being used to facilitate ventilation. On closer questioning, the doctors were fully aware of its lack of analgesic or sedative properties. There was no morphine available.

I spent a period of time focusing on ventilation on ICU (and appropriate sedation). The ventilators were Servo 900C and I’m very glad I went armed with a manual as the machines were in German! I remain concerned about the sedation of ventilated patients and also the availability of trained personnel to manually ventilate when power cuts occur.

**EDUCATION & CLINICAL SUPPORT IN THE OPERATING ROOM**

I was pleased to have the opportunity to work independently in the OR, as it gave me a chance to familiarise myself first-hand with the equipment and drugs available. There were plenty of students eager to help!

I was pleased to see that strict attention was paid to sterility and the use of masks was universal. The anaesthetic machines were efficient, although the only monitoring available was SpO₂ and NIBP. It is
an interesting experience when you are using Halothane for the first time without vapour analysis! There is no morphine available and the surgeons did not want to use local anaesthetic to the wound.

The use of regional anaesthesia is not widespread, but spinal anaesthesia is increasing. I performed spinal anaesthesia for an asthmatic patient requiring a prostatectomy (Pfannenstiel incision) with 5% Lignocaine, as this was the only suitable drug available. With 4ml, I had a good block to T8/9 and the patient, who fortunately had a good command of English, was comfortable throughout.

Again, power cuts happened frequently. However, it was excellent training for me to use all of my observation skills and clinical judgement to adequately monitor and manage these patients. I believe that anaesthesia can be safely delivered in this environment and I hope that I was able to demonstrate this to the students. I hope also that the presence of more ‘doctor’ anaesthetists helps to raise the profile of the profession locally.

INVESTIGATION INTO THE DELIVERY OF ANAESTHETIC SERVICES IN THE OBSTETRIC UNIT AND THE MANAGEMENT OF OBSTETRIC EMERGENCIES

As my time in Jimma was so limited, I felt that I could not get actively involved in the management of patients on labour ward and provide a useful service. I did however spend some time observing practice and gained a little insight, through conversations with the Obstetric Residents, about some of the problems they face.
Most deliveries take place at home and thus, most complications of pregnancy and labour present very late as geography and transport makes transfer to hospital difficult.

Anaesthesia for caesarean section is exclusively general anaesthesia (usually ketamine and suxamethonium). There are no recovery facilities for patients post-GA.

There does not appear to be the skills or drive to introduce spinal anaesthesia, but I believe that this would be a difficult intervention to safely introduce. The reasons for this include the availability of appropriate drugs for spinal and vasopressors, the urgency of the procedures often preclude anything other than GA, laboratory investigations e.g. platelets, coagulation screen are not universally available and lack of sterile equipment. At present, GA is the safest method for anaesthesia to be delivered. I was however concerned about the use of Ketamine in patients with pre-eclampsia and eclampsia and its effect on the patient’s blood pressure.

Magnesium is not available. Eclampsia is common and a significant cause of death.

The anaesthetic practitioner’s role was purely to provide GA for caesarean section.

**FINAL THOUGHTS & THE FUTURE...**

My trip to Jimma was immensely rewarding, but also presented me with many testing situations. On a personal level, it has challenged me in terms of my clinical, communication and teaching skills and I believe that I have developed personally and professionally from this.

It has made me acutely aware of the importance of links such at this to the sustained education and development of such institutions in the developing world. This is of paramount importance during difficult international economic times when foreign aid budgets will be stretched for pressing domestic demands. These small but crucial interventions should be sustained and supported.

I would like to return to Jimma next year with the following intentions:

Firstly, spending more time in the OR and introducing some basic techniques for regional anaesthesia. I believe that this will help in the provision of some post-operative pain relief.

Secondly, I will endeavour to return to Jimma with more up-to-date material for the students to access.

Thirdly, I would like to continue some classroom-based teaching. The students are all highly motivated and a pleasure to teach and the feedback I had showed they have found these sessions enjoyable and useful.

Finally (a slightly more ambitious plan!), in conjunction with the obstetricians, I would like to look towards the introduction of a protocol for Magnesium use and ensuring a reliable supply. If this is successful, I would like to investigate the possibility of widening this protocol to other hospitals. There has been much emphasis placed on reducing maternal mortality by the World Health Organisation (Millennium Development Goal 5). The WHO Partnership for Maternal, Newborn & Child Health has many international professional affiliations, but none of the many listed are of
I believe that anaesthetic specialists have a prominent role to play in achieving MDG5 and I would like to pursue this goal and promote the use of magnesium to help achieve this.

I will continue to promote the role of anaesthetic practitioners and support their training and professional development in the developing world and hope that I can help sustain the Jimma-Link and promote the formation of further such important links in the future.

Thank you again for your support.