Sri Lanka

Nallur Kandaswamy temple in Jaffna. Originally founded in 948 AD, the temple has been rebuilt several times with the present structure dating from the Dutch colonial era in 1749. The temple is a socially important institution for Sri Lankan Tamils of Hindu faith and a famous landmark within the Northern Province of Sri Lanka.

Feb - March 2013

Report for the International Relations Committee, AAGBI
Dr. Peter Odor, ST4 Anaesthetics

Key Aims:
1. To deliver a postgraduate lecture series for doctors training in anaesthesia at Jaffna Teaching Hospital.
2. To provide relevant educational content for other speciality doctors, particularly those preparing for examinations in surgery.
3. To improve postgraduate examination results for local doctors.
4. To learn about the challenges of practicing anaesthesia in the developing world.
5. To aid the introduction of the WHO Surgical Safety Checklist.

Background

Sri Lanka is a densely populated and compact island in the Indian Ocean. The country is now emerging from the wake of both the 2004 tsunami and a notorious 26 year long civil war, in which the Liberation Tigers of Tamil Eelam (known as the “Tamil Tigers”), a separatist military organisation fighting to create an independent Tamil state, battled government forces resulting in a unconfirmed death toll of over 80,000 civilians. Following conclusion of the conflict in 2009, with victory to the governmental military forces, the country has now opened up again to international visitors.

Healthcare within Sri Lanka is generally of a high standard and reasonably comparable to those in industrialised countries, however resources are more stretched within the conflict-affected areas of the Northern and Eastern provinces. The International Development Agency rates Sri Lankan health outcomes as “among the best in South Asia” and services are free to the public at the point of contact.

Despite the end of civil war hostilities, geographic and political barriers still divide Jaffna, the regional capital of the Northern province, from the remainder of Sri Lanka. The trained doctors that I encountered whilst present at Jaffna Teaching Hospital were all highly intelligent, hard working and well educated at undergraduate level, but lacked opportunities for post-graduate education courses – almost all of which are conducted a 10 hour drive away in the Sri Lankan capital, Colombo.

Many of the post-graduate medical and surgical examinations in Sri Lanka are based upon the UK equivalent exams. The Sri Lankan anaesthesia exams borrow heavily from the UK Royal College of Anaesthetists (RCoA) Fellowship exams, to the extent that some of the exam board members are ex-RCoA staff! The goal of our project was to help redress this balance of post-graduate education in Jaffna and deliver a local examination preparation course, focused particularly on anaesthesia but also on the basic sciences.
relevant to surgical, medicine and intensive care trainees. As a secondary goal we planned to introduce the trainees to related clinical anaesthetic equipment and techniques that may not be available yet in Jaffna.

Undergraduate medical education, post-graduate exams and training in Sri Lanka are all conducted in English. The vast majority of the population will speak some English as a second language too. Language was therefore not a significant obstacle to the lecture project.

Teaching course

My primary point of liaison in Jaffna was with Dr. Premakrishna (Lead Consultant in the Jaffna Teaching Hospital Anaesthetic Department), who was extremely helpful in aiding the planning, publicity and delivery of the project. Additional support came from two anaesthetic consultants within the UK, both of Sri Lankan Tamil origin, Dr. Kan Chandradeva and Dr. Eswaran Velayuthapillai. I travelled to Sri Lanka and delivered the lecture series in conjunction with a CT2 Anaesthetic Trainee, Dr. Sam Ma. Although at a relatively early stage in his anaesthetic training, Sam has previously passed MRCP, MRCS and MCEM examinations. His previous experience added great depth and knowledge to his lectures.

In the months prior to the visit I developed a teaching programme with a curriculum based upon the subjects embodied in the Primary FRCA examination. Each day of teaching was structured to revolve around a central theme, beginning with an early focus on core principles (such as Day 2, “Challenges to maintaining oxygenation”) and progressing with increasing complexity and the introduction of more clinically relevant content towards the end of the course.

The final day of lectures was planned to integrate many of the previous topics with a theme of “The high risk surgical patient”.

The teaching programme underwent many revisions and re-drafts. In fact we were open to changes even during the teaching process whilst in Sri Lanka. Following collection of informal feedback at the end of the first day of teaching we decided to condense the programme from 10 days into 8 days of teaching – fewer days but fitting more lecture content into each single day. The principles of the themes to each day were maintained, but some topics

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<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8am-8.30am</td>
<td>Introduction &amp; MCQ</td>
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<tr>
<td>8.30am-9.15</td>
<td>Why O2? Oxygen transport physiology</td>
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<tr>
<td>9.15-10am</td>
<td>Principles of pulse oximetry</td>
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<td>10.15-11.15</td>
<td>Control of ventilation &amp; ventilatory failure</td>
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<td>11.15-12.15</td>
<td>Lung compliance and resistance</td>
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<tr>
<td>Lunch</td>
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<tr>
<td>1pm-2pm</td>
<td>Lung mechanics and V/Q matching</td>
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<tr>
<td>2pm-3pm</td>
<td>Exercise and altitude physiology</td>
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</tbody>
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Example lecture programme from Day 1 “The role and important of oxygen”:

Lectures in progress
Most lectures were conducted in an interactive “chalk-and-talk” style, using the white board within the auditorium. PowerPoint presentations were used for some topics that suited a more didactic teaching method.

I am in the left picture, and Sam Ma is demonstrating cardiac cycle relationships on the right.
were moved and the extent of focus for some days was broadened slightly.

The final teaching programme comprehensively covered all of the essential basic sciences relevant to anaesthesia exams through to significant clinical topics, such as risk assessment for surgical patients, goal-directed therapy and emerging theories on the pathophysiology of multi-organ dysfunction syndrome. Inevitably it was impossible to cover every single topic, but the most important subjects (and those most popular with examiners) were all incorporated. In total the lecture programme covered over 50 hours worth of lectures.

The teaching programme started on Friday 22nd February, running through to Monday 4th March. Sundays were taken as a break, as was Wednesday 27th February, but otherwise teaching took place every day. Lecture schedules were delivered to the anaesthetic department and trainees in advance of our arrival by Dr. Premakrishna. Following changes updated programmes were distributed to the trainee doctors on the second day of lectures.

Attendance varied from day-to-day and was largely dependent upon whether the trainee doctors were able to swap their work duty commitments. The vast majority of attending doctors were resident at Jaffna Teaching Hospital but a small number travelled from further afield in the Northern Province. Attendance records were kept daily. In total 30 different trainee doctors attended the lectures, with mean daily attendance of 13-14 doctors. The majority group of attendees were anaesthesia trainees, accounting for 37.2% of those present. Medical intensive care unit trainees were 14% and surgical intensive care unit trainees represented 8.1% of those present. Doctors working with the ICUs were a mixture of medical, anaesthetic and surgical speciality trainees. Other specialities in attendance included obstetrics, paediatrics and even a psychiatry trainee.

The majority of lectures were conducted in my preferred style of visually and verbally explaining a topic using a pen and white board and through open discussion amongst the trainee doctor group. An interesting change was apparent through the course of the lecture series: on the first day the trainee doctors were very reluctant to volunteer answers or comments to the questions we asked, but as the course progressed they became increasingly vocal and ready to respond or offer opinions. I would like to think that this reflects an increase in not just the knowledge of the group but also their confidence to speak in front of others and their ability to compose coherent verbal responses to questions – a trait that will serve them well in vivas. I even went as far as to invite anyone in the group to deliver a teaching lecture on a topic of their choice. This offer was politely declined, but I would like to hope that it might be possible to incorporate some teaching from the local trainees in future lecture series.

Facilities provided to us for the teaching programme were of a high standard. Opposite the main hospital building was a medical student accommodation block that contained an air-conditioned lecture theatre with PowerPoint and white board facilities. This lecture theatre was used for all our lectures.

Results and feedback

We conducted a pre-course MCQ on the first day of the teaching programme. All questions were taken from previous Primary FRCA MCQ papers and covered the range of topics that we were due to lecture on. Each MCQ question consisted of a stem statement and then 5 following true or false questions. 20 questions were used in each test, with no negative marking, giving a maximum total mark of 100. A comparative MCQ test with questions taken from the same question bank was also conducted on the final day of lectures to assess if any changes in performance could be observed. MCQs were completed by all doctors present on that particular day (note that some were not anaesthetic trainees). The mean scores from each of the MCQs were as follows:

<table>
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<tr>
<th>Test Type</th>
<th>Mean Score</th>
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<tr>
<td>Pre-course MCQ</td>
<td>50.8%</td>
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<tr>
<td>Post-course MCQ</td>
<td>69.9%</td>
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See chart on page 4 for a graphical representation of the results.

The pre-course score was not much better than would be expected from random answering of true/false questions alone. However an absolute
improvement of almost 20% was seen in the post-course MCQ – a welcome progression and not far off the score required to pass the primary FRCA exam.

Feedback forms were collected on the final day of lectures. Each form was anonymous and consisted of 10 questions, most of which used a numerical rating scale to score our performance on different aspects of the lecture series. A scale of 0 to 4 was used to on the forms to grade our performance, with 0 representing very poor, 2 being neutral and 4 being very good. Space for free comments and suggestions for improvement was given in the final questions. A summary of the feedback we received follows.

12 feedback forms were collected. The feedback respondents universally agreed without exception that the lecture series had helped their preparation for future exams and/or clinical practice. In response to the question “what is your overall view of the teaching programme?” 50% of respondents thought the course was very good, 42% gave us a score of good and a single respondent scored us neutrally at 2. Our visual presentation was highly rated. Content of the lectures was rated as 3 by 58% and 4 by 42%. No-one rated the content as less than 3. The most significant problem arose on the question “did you find it easy/convenient to attend the lectures?”. Although the modal response was in favour of convenience with 42% answering as 3, 1 respondent scored it as not easy, 3 scored us neutral and only 3 rated it as very easy to attend lectures. Several respondents commented that evening times might be preferable to mornings for lectures, as this would involve less disruption around normal working duties. Others commented that they were unable to attend all the lectures due to difficulty in swapping shifts. Of note on 1st May Jaffna Teaching Hospital formally opened a new ICU and theatre complex, which had been funded and constructed by the Japanese Government. Additional staff were required during the changeover day. The new opening meant that fewer trainee doctors were able to attend our teaching on 1st May when compared with during the rest of the programme.

Jaffna Teaching Hospital
Northern Provence, Sri Lanka

MCQ score
Pre-course MCQ scores expressed as mean % correct across the group, compared with post-course MCQ score.
An absolute improvement of almost 20% was seen in the MCQ scores following the lecture series.
The picture to the right is a group of some of the doctors we taught during our time in Sri Lanka.
Minimal problems were reported in understanding the lectures in English and the respondents found it very easy to ask questions during lectures. General suggestions included comments that the lectures using white board method of teaching were preferable to using PowerPoint presentations. One respondent wrote “No one has explained on the white board the topics as well as you did”. Several responses thanked us, saying that the lectures improved their basic science knowledge and helped with exam preparation. A number of trainee doctors reported that they would preferred to have received handouts for each lecture. Although all of our lecture PowerPoint presentations were distributed to the trainee doctors, less than half of the lectures were prepared using this method and we did not prepare any formal handout notes. Future teaching projects should include specially prepared handouts for the trainee doctors. A few respondents hinted that a dedicated lecture on exam, viva and essay writing advice would be useful. Although we gave tips on answering viva questions and the principles of drawing suitable graphs and diagrams as part of the lectures, it may be worth considering a separate lecture on exam tips in future projects. Our initial informal feedback had suggested that longer days with more content would make it easier for trainee doctors to attend the lectures, however one respondent asked that daily sessions not exceed 3-4 lectures in a row or a maximum of 3 hours.

It will be impossible to set lectures at a time that suits the different duty rosters of all the different specialities doctors, but perhaps shorter evening sessions might be the most appropriate timing for lectures in future projects and thereby maximise the possible attendance.

During our time at Jaffna Teaching Hospital and through liaison with Dr. Premakrishna, we were able to hasten existing plans to introduce the WHO Surgical Safety Checklist. The checklist came into first use in the theatre complexes at Jaffna Teaching Hospital during the time of our visit.

Reflections and future recommendations

In time between lectures I opened my eyes to different methods of practicing anaesthesia, learnt new ways to achieve similar goals using simpler equipment, I saw different approaches to solve similar problems faced in the UK of over-demand for a limited resource supply and I experienced the culture and cuisine of a wonderful country. I have made friends and lasting contacts with the consultants and trainee doctors that we worked with, several of whom invited us to share meals at their family homes. I eagerly look forward to hearing from them regarding their future exam results. The process of teaching during this project has also taught me many lessons, most importantly a greater sense of humility gained from witnessing the fantastic dedication and optimism of the doctors that I met. I hope that I can use all these lessons to be part of another (improved!) educational project for the Jaffna region again in the coming years.

Dr. Peter Odor
St. George’s Hospital, London

Oxygen cylinders for use in the ICU at Jaffna Teaching Hospital

The existing ICU had no piped gas supply and relied upon a large, rotating stock of oxygen cylinders. A newly constructed ICU had been built within the new theatre complex at Jaffna Teaching Hospital and featured piped oxygen, although the unit did not open until after our departure.