SAFE
Safer Anaesthesia From Education

Obstetric Anaesthesia Course
Cotonou, Benin

October 28th – November 2nd 2015

Authors: Dr Helen Howes & Dr Savini Wijisingha
Executive Summary

The SAFE (Safer Anaesthesia From Education) Obstetric Anaesthesia Course has been delivered in many countries worldwide. The curriculum was developed by Dr Kate Grady for the Association of Anaesthetists of Great Britain and Ireland (AAGBI), aimed primarily at anaesthetic officers, to provide training in obstetric anaesthesia and emergencies. This was the first time that SAFE Obs had been delivered in Benin.

The course was conducted in French, using local and international interpreters. We used the same format that worked well on previous courses, with the help of Mercy Ships, in Congo-Brazaville and Madagascar. Omissions included one to one mentoring, and the train the trainer course due to the difficulty presented by language/translation and time constraints.

The course director was Dr Emma Halliwell. The lead contacts in Benin were Professor Martin Chobli and Professor Eugene Zoumenou who were also responsible for organising a separate anaesthetic conference “Societe des Medecins Anaesthesistes Reanimateurs du Benin” (SMARB) alongside the SAFE Obstetric course.

There were 9 anaesthetic facilitators for the course: 4 UK + 1 French Consultant, and 4 UK trainees. Dr Willy Serge, Mireille Benge, and 2 local translators provided interpreting services.

Delegates were invited from hospitals in and around Cotonou. Attendees on the course were predominantly from the capital, but some had travelled from further afield. A total of between 45-50 Anaesthetic Officers and physician Anaesthetists attended each day during the three-day course.

Feedback from the delegates was excellent. Knowledge and clinical skills were formally assessed before and after the course and showed improvements.
Knowledge scores improved from 69.8% to 75.8% (average). There was a consistent improvement in all skills stations, with the greatest improvement seen in the newborn resuscitation assessment.

The Mercy Ship is planning to return to Cotonou in August 2016 for 10 months and it is anticipated that follow up SAFE Obs and train the trainers courses will be conducted during this visit.

**Background**

The variability in lifetime risk of maternal death between countries remains despite every effort to improve the situation.

Benin is a West African country on the Gulf of Guinea that sits between Togo and Nigeria. The total population is just over 10 million. The Maternal Mortality Ratio (MMR) in Benin is 350 per 100,000 births. National statistics from 2008-2012 show that 85.8% of pregnant women attended at least one antenatal visit, and 60.5% of women receive the four prenatal visits recommended by WHO. A skilled health professional is present at 84.1% of births, although this figure varies by household wealth, falling to 51.6% for the poorest 20% of the population. The caesarean section rate is reported as 3.6%, however, we were informed that the rate is considerably higher (approximately 40%) at Hopital da le Mere et L’enfant la Lagune (HOMEL), the tertiary maternity hospital in Cotonou.

In 2009, the government implemented a scheme to provide free Caesarean section at several hospitals including HOMEL as part of its policy to reduce maternal mortality. This is not the case for hospital based normal deliveries, and the doctors we spoke to suggested that since the inception of the scheme they have noticed an increase in the number of families requesting CS.
There are 35 members of the Benin Society of Physician Anaesthetists, of which 22 are currently working in the country. There are currently 34 Physician Anaesthetists completing a four year training course, 8 of whom are in their final year of study. Of these, one student is from Benin, the others are international students.

The vast majority of anaesthetics performed in the country are done by the approximately 250 Anaesthetic Officers. Unfortunately, funding for the anaesthetic officer training school was suspended 3 years ago but there are plans being developed to start a new 2-year MSc anaesthetic conversion course for trained nurses.
Course Venue

The course was held at the University of Abomey Calvi, Faculty of Medicine in Cotonou, the capital city of Benin. The university campus is vast. Facilities included a large lecture theatre and many rooms that are suitable for small group break out sessions. There is electricity, audiovisual support in the lecture theatre, and access to toilets with running water for the faculty.

A separate Anaesthetic Conference (SMARB) organised by Prof’s Chobli and Zoumenou was running on the same site over the same dates. This caused logistical problems and some confusion, especially during the SAFE Obs registration process. Several delegates attending the main conference turned up to our registration instead of the conference registration, and it was initially difficult to know which delegates were attending the SAFE Obs course. Professor Zomonou was instrumental in clarifying the situation. However, the conference running alongside the course wasn’t ideal. Several delegates attended both, and were consequently not at all of the break out sessions. Similarly, delegates attending the conference turned up for some course sessions, and managing attendees and numbers proved more difficult than in the past. This resulted in an increased drop out rate for the post course testing, and some delegates only taking the post course test. It would be advisable to run the course at a separate location should the situation arise again.

Accommodation for the faculty was provided in The Hotel du Lac, a short drive away from the University.

An outside catering company supplied traditional Beninese food for the course delegates and faculty.
The 2015 Course

The Safer Anaesthesia From Education (SAFE) obstetric course, an initiative of the Association of Great Britain and Ireland, was designed in 2010. It is a 3-day intensive training course of lectures, small group discussions and simulation sessions aimed specifically to teach the safe conduct of obstetric anaesthesia for anaesthetic practitioners in developing countries. It has been taught throughout the world, particularly in Africa in English-speaking countries. In 2014 the SAFE Obs course was delivered parts of French-speaking Africa; in Pointe Noire (Congo-Brazzaville) in March and Antananarivo (Madagascar) in December, in association with Mercy Ships.

Once again the course was conducted in French, using interpreters. The local interpreters were enthusiastic and excellent at conveying the course message.

Faculty timetable

<table>
<thead>
<tr>
<th>26/27 Sept</th>
<th>28 Sept</th>
<th>29 Sept</th>
<th>30 Sept</th>
<th>1 Oct</th>
<th>2/4 Oct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flights to Cotonou/Rest day</td>
<td>Faculty meeting, visit to CNHU and HOMEL, and venue preparation</td>
<td>SAFE course Day1</td>
<td>SAFE course Day2</td>
<td>SAFE course Day3</td>
<td>Rest day/Return flights</td>
</tr>
</tbody>
</table>
Monitoring, Evaluation and Results

Evaluation of the Benin SAFE Obstetric Anaesthesia course comprised objectively of pre and post-course knowledge (MCQs) and skills tests, and subjectively through individual feedback on the lectures and sessions, and course overall. The SAFE Obs Anaesthetic course was well received in Benin, with excellent feedback from course participants.

Participants completed a pre-course Multiple Choice Questionnaire (MCQ) as well as a practical skills test in one of four stations (basic life support, rapid sequence intubation, management of an eclamptic fit, and newborn resuscitation). At the end of the course, participants repeated the MCQ and the same skills test to measure knowledge gained and acquisition of skills.

Time was allocated for completing the assessments. The pre course assessment was conducted during and after registration on the first day. Several SMARB delegates completed the MCQ & skills pre course testing. The skills test results below represent results from Safe Obs delegates only. The post course knowledge assessment was conducted on the last day, following the last breakout session and before the closing ceremony.

Table 1: Summary of skills test results: Score out of a maximum of 10

<table>
<thead>
<tr>
<th>Newborn Resuscitation</th>
<th>Management of a fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1 Pre-course average</td>
<td>5.4 Pre-course average</td>
</tr>
<tr>
<td>6.3 Post-course average</td>
<td>7.1 Post-course average</td>
</tr>
<tr>
<td>42% Increase in skills</td>
<td>17% Increase in skills</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Rapid Sequence induction</th>
<th>Maternal CPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.0 Pre-course average</td>
<td>4.9 Pre-course average</td>
</tr>
<tr>
<td>7.8 Post-course average</td>
<td>6.6 Post-course average</td>
</tr>
<tr>
<td>8% Increase in skills</td>
<td>17% Increase in skills</td>
</tr>
</tbody>
</table>
The average MCQ score improved from 69.8% to 75.8% after the course. The skills testing results are summarised above, they represent the results from delegates who completed both pre- post-course testing.

Participant feedback

Participants were asked to rate individual lectures, work-shop sessions, and the course in general. Feedback sheets were collected on the final day of the course. All figures are means from a 1-10 scale, with 10 being the highest rating.

Lectures feedback

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway and general anaesthesia</td>
<td>9.1</td>
</tr>
<tr>
<td>Critical care and resuscitation</td>
<td>9.0</td>
</tr>
<tr>
<td>Maternal trauma</td>
<td>9.0</td>
</tr>
<tr>
<td>Pre-eclampsia and eclampsia</td>
<td>9.5</td>
</tr>
<tr>
<td>Haemorrhage</td>
<td>9.5</td>
</tr>
<tr>
<td>Obstetric emergencies</td>
<td>9.2</td>
</tr>
</tbody>
</table>

Workshops feedback

<table>
<thead>
<tr>
<th>Workshop</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway</td>
<td>9.2</td>
</tr>
<tr>
<td>General Anaesthesia</td>
<td>9.3</td>
</tr>
<tr>
<td>Regional Anaesthesia</td>
<td>9.4</td>
</tr>
<tr>
<td>Critical care</td>
<td>9.3</td>
</tr>
<tr>
<td>Resuscitation</td>
<td>9.3</td>
</tr>
<tr>
<td>Pre-eclampsia and eclampsia</td>
<td>9.6</td>
</tr>
<tr>
<td>Haemorrhage</td>
<td>9.3</td>
</tr>
<tr>
<td>Obstetric emergencies</td>
<td>9.2</td>
</tr>
</tbody>
</table>
General Course Feedback

Did you enjoy the course? 9.3
Did the course improve your knowledge? 9.3
Do you think it improved your clinical ability? 9.3
Was the course relevant to your everyday practice? 9.5
Will what you have learnt improve the care of your patients? 9.6
Would running this course in your hospital be useful? 9.7

I wish we had more time on the workshops (several along this line)
Do this course every year
Less moving around between workshops
Course is too short. Could it be done in 5 days to look at other aspects of emergency obstetric care?
The three day course was very good. We would like these sessions every three months.
We would like the ‘Chief of Service’ to realise that we do not have enough of these types of courses.
Very interesting – above all the practical side complimenting the theory.
Please organise another conference for our colleagues who could not attend this one.
I suggest that this course is repeated for the anaesthetic support staff
Nothing to say – all was perfect. Thank you to everyone.
Pretty good overall.
More demonstrations. More practical workshops for emergency situations.
Not enough time for questions in the workshops.
No comments or suggestions. All expectations met.
We wish that God would help you to do more training to improve standards in anaesthesia.
Summary of responses from feedback forms

Summary

The ‘SAFE Obs course aims to equip anaesthetic providers with the skills and knowledge to deliver safe obstetric anaesthesia in a resource-poor setting. The course was enthusiastically received in Cotonou, Benin, demonstrated by the excellent feedback. Once again skills in four key areas of anaesthetic practice were assessed and shown to have improved following delivery of the course. Copies of Lucille Bartolomeuz textbook ‘Anesthesie a moindre risqué’ were distributed at the closing ceremony.

Acknowledgements and thanks

International Relations Committee (IRC) of the Association of Anaesthetists of Great Britain and Ireland (AAGBI), Mercy Ships and Mrs Jean Thomson, without whose support the trip would not have been possible.

Professor Zoumenou and Professor Chobli for their support for the course.

Daslin Small for in-country logistical and administrative help, organising transport, accommodation and course food.

Our faculty for their hard work, enthusiasm, and humour. Special thanks goes to Dr Emma Halliwell for co-ordinating the course, Dr Hannah Tuckwell and Dr Gary Dickinson for providing the necessary equipment, the interpreters: Ms Gaetane Koumalon, Mr Samuel Houndje, Dr Willy Serge and Mirelle Benge without whom the course would have been impossible, and Dr Keith Thomson for his tireless work in organising these trips.
Appendix 1: Course staff

Faculty List

Dr Emma Halliwell Consultant Anaesthetist, Salisbury
Dr Chirag Patel Consultant Anaesthetist, London
Dr Gary Dickinson Consultant Anaesthetist, Winchester, UK
Dr Willy Serge Mfam Consultant Anaesthetist, Orleans, France
Dr Keith Thomson Consultant Anaesthetist, Basingstoke (retired)
Dr Savini Wijesingha ST5 Anaesthetist, Edinburgh, Scotland
Dr Helen Howes ST6 Anaesthetist, Bristol, UK
Dr Hannah Tuckwell ST7 Anaesthetist, Southampton, UK
Dr Alexandra Monkhouse CT2 Anaesthetist, London, UK
Ms Mireille Benge Translator, Toronto, Canada

Local Interpreters’

Ms Gaetane Koumalon
Mr Samuel Houndje
Course Photographs : CNHU
Registration, facilities and closing ceremony