SAFE

Safer **A**naesthesia **F**rom **E**ducation

Obstetric Anaesthesia Course
Mbale, Uganda

July 9-11 2013

Ugandan Society of Anaesthesia

Association of Anaesthetists of Great Britain and Ireland

World Federation of Societies of Anaesthesiologists

THET
PARTNERSHIPS FOR GLOBAL HEALTH

UKaid
from the Department for International Development

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Executive Summary

- A fourth visit to Uganda was made in July 2013 to run a further two parallel SAFE (Safer Anaesthesia From Education) Obstetric anaesthesia courses in Mbale.

- 58 anaesthetic officers and 4 anaesthetic residents were trained during the week. 9 of the anaesthetic officers had attended a previous SAFE Obstetric Anaesthesia course. This brings the total number of anaesthetic providers trained over the first two years (July 2011 – July2013) to 299.

- There was a total of 15 facilitators which is the largest faculty number we have had on a SAFE course. 11 of the 15 (73%) were Ugandan physician anaesthetists: 4 lecturers of anaesthesia and 7 residents who trained on the Training of Trainers (TOT) course in Jan 2013. There were 2 consultants and 2 anaesthetic registrars from the UK. One of the UK consultants was a long-term volunteer who was working at Mbarara Regional Refererral Hospital.

- The course was directed by Dr Stephen Ttendo, Dr Joseph Kiwanuka and Dr Maytinee Lilaonitkul.

- Overall coordinators were Dr Kate Grady, Dr Isabeau Walker & Dr Maytinee Lilaonitkul in the UK and Dr Stephen Ttendo in Uganda.

- The SAFE courses were combined with the Lifebox course.

- Delegates attending this course were predominantly from Mbale and the surrounding Eastern region of Uganda.

- Feedback from the delegates was excellent.

- Knowledge and clinical skills were formally assessed before and after the course and showed statistically significant improvements.

- One final SAFE Obstetric Anaesthesia course is planned for Jan 2014. By 2014 we aim to have trained all anaesthetic officers and anaesthetic assistants in Uganda.

- No additional equipment was required for this course.

- Monitoring and evaluation will be undertaken again in the subsequent three months after the course. This will be conducted by a UK long-term volunteer or by one of the Ugandan faculty member. This will include a review of the delegates' logbooks, an informal interview and may also include a repeat of the their skills assessment and MCQ to formally assess retention of knowledge and skills.

Acknowledgements

We are wholly grateful to Dr Stephen Ttendo yet again for his dedication and contributions towards the course. His tireless pursuit to improve patient safety and to provide educational opportunities for his fellow anaesthetic providers is never-ceasing. We would also like to express our gratitude to Dr Fred Musana, President of the Ugandan Society of Anaesthesia for his support and for enabling the course. Further thanks to the Tropical Health and Education Trust and UK Aid for their financial support as part of the DFID Health Partnership Scheme, and to the World Federation of Societies of Anaesthesiologists (WFSA) and the Association of Anaesthetists of Great Britain and Ireland (AAGBI) for their continued support.

A particular thank you goes to Dr William Harrop-Griffiths, President of the AAGBI for his support for the project.

A huge thank you goes to the faculty for their hard work, enthusiasm and great camaraderie.

Thanks to Kate Thornton, Karin Pappenheim and Sarah Kessler for their enormous help in the administrative work for the SAFE and Lifebox course.

Last but not least, we would like to thank our course delegates for their welcome, friendship and for being such a pleasure to teach and to learn from.

Background

The lifetime risk of maternal death is the largest discrepancy of all public health statistics. Despite the Millennium Development Goals, and significant efforts towards them, the WHO estimates 358,000 women die each year from complications of pregnancy and childbirth.

The overall maternal mortality ratio (MMR) in Uganda is estimated at 435 per 100,000 live births. However, it is now predicted that the MMR is as high as 1200 per 100,000 live births in certain districts within Uganda. Many of the Health Centre IVs (small district hospitals) in these areas are now running on skeleton staff with few, if any, operations being performed. The main reason for this is an overall lack of resources, in particular, adequately trained staff. Obstetricians and surgeons, as well as other staff, are migrating away from rural hospitals. As a result, patients have to travel up to 70 miles to receive urgent obstetric care. Given the availability and affordability of transport in some of the peripheral rural villages, mothers will often not present until they are in a critical condition.

Improving the training of the anaesthetic officers in these areas will help to equip them to deal with obstetric emergencies and manage the critically ill mother.

Partnerships

The course was held thanks to the continued support and funding from:

- The Department for International Development: UK Aid
- The Tropical Health and Education Trust
- The Ugandan Society of Anaesthesia
- The Association of Anaesthetists of Great Britain and Ireland.

The venue

Mbale Regional Referral Hospital, Mbale, Uganda.

The July 2013 Course

This was the 5th SAFE obstetric anaesthesia course that was held in Uganda. The aim of the project is to deliver the course to all anaesthetic providers in Uganda by the beginning of 2014. In order to facilitate this, the venue of the course had been rotated to different regions of Uganda each time. The July 2013 course was held in Mbale, a city 150miles east of Kampala, with the catchment area being the Eastern Region.

Although a maximum of 90 delegates were originally predicted, 58 attended. As with previous courses, it was difficult to confirm the exact number of attendees despite early notifications to the relevant hospitals and health centres within the region. This was mainly due to transport issues, especially from remote areas, and the reluctance of medical superintendents to release their anaesthetic officers (who could be the sole anaesthetist in the hospital) from duty. We also trained 4 anaesthetic residents from Mulago on the Training of the Trainers (TOT) course, making the total number attending the course 62.

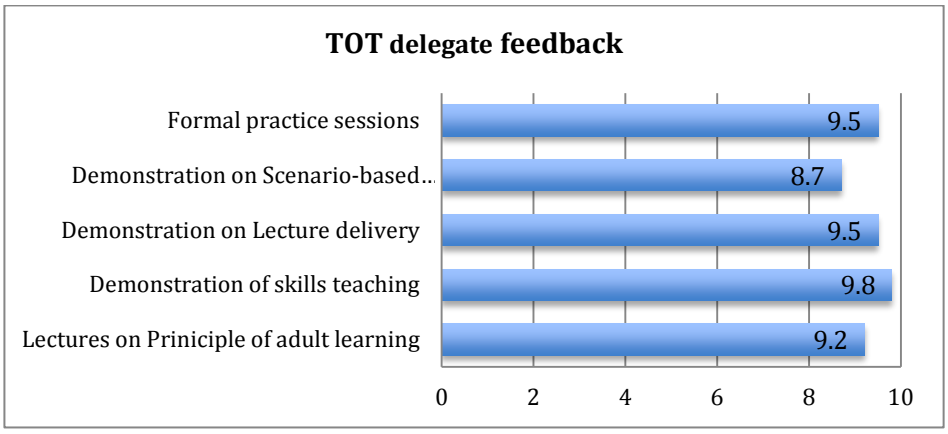
Following the successful running of 2 parallel courses in Gulu (Jan 2013), the SAFE course was conducted in a similar manner in Mbale. There were 6-8 delegates and 2 facilitators per room, enabling a teacher to student ratio of 1:3.5. This greatly optimised the teaching delivery and more importantly, the learning experience for the delegates.

The Training of the Trainers Course

The TOT course was run alongside the Lifebox and WHO surgical checklist course on the first day of the course.

From the previous course, it was evident that delegates were unfamiliar with scenario-based teaching and 4-stage approach to skills teaching. We were able to revise and adapt the TOT course in Mbale such that more time was spent on these 2 teaching methods. It was an intensive course with 1:1 teacher to student ratio. Each of the delegates was then assigned to shadow an experienced faculty member during the SAFE course to enhance their learning opportunities. Formal feedback on the TOT course was done for the first time and this demonstrated excellent response from the delegates.

The chart below illustrates session specific feedback. Feedback was on a scale of 1-10 based on the usefulness of the session. The bar represents the average score for each session.



The SAFE Obstetric Anaesthesia Course

The SAFE Obstetric Anaesthesia Course started on the second day. The teaching faculty was made up of 2 UK consultants, 1 UK senior registrar, 9 Ugandan post-graduate physician anaesthetists and the 4 newly TOT-trained Ugandan residents. The course was coordinated by Dr Stephen Ttendo, Dr Joseph Kiwanuka and Dr Maytinee Lilaonitkul.

Table 1. The course timetable

Sun 7th July	Mon 8th July	Tue 9th July	Wed 10th July	Thurs 11th July	Fri 12th July
Flights from UK to Entebbe Travel to Mbale, Faculty Meeting & preparation of venue	Lifebox/ WHO checklist & TOT	SAFE day 1	SAFE day 2	SAFE day 3	Travel to Kampala & Return flight to UK

Several key improvisations and progressive changes were witnessed on this course. This was mainly noted in the motivation and attitude of the Ugandan faculty. Not only did they take on the teaching responsibilities with great enthusiasm, many took the initiative to tailor their teaching to the needs of the delegate such that the learning objectives could be delivered more effectively. They were also highly engaged during the faculty meetings and provided valuable input into ways to improve the course. Interestingly, the SAFE course was also an eye-opening experience for many of the Ugandan faculty, allowing them to deeply appreciate the difficult working environment faced by their fellow anaesthetic officers in the rural health centres. This made them realise that they are inevitably the future leaders and champions of the specialty and that their role as educators will have a huge impact in the development of anaesthesia in Uganda.

For the first time, the faculty members were also formally assessed and their teaching skills were evaluated by the course co-ordinators. Feedback sheets were given and learning points discussed at the end of the course. Many other small alterations were also made to the contents of the modules following the recommendations from previous courses.

The Mbale SAFE course was held in a courtyard under 8 canopy tents. Meetings, lectures and meals were conducted in the hall adjacent to the courtyard. This innovative set-up received positive feedback from both the faculty and delegates. From the organisational point of view, it allowed for easy movements of delegates during the breakout sessions and for gathering in the hall. It also made distribution of equipment, and preparation for different sessions more convenient and the faculty members were able to exchange ideas with their neighbouring tents readily in between modules. It was certainly a novel experience for the UK volunteers!

Other new additions to the course included the provision of course bags to the delegates which was taken by storm! A new e-SAFE DVD demonstration session was also introduced. This was highly useful as many of the anaesthetic officers had limited access to computers and were unfamiliar with the user interface. An Essay competition was re-instituted again for the first time since the pilot SAFE course in Mbarara in 2011. The idea behind the competition was to allow the delegates to reflect on what they had learnt on the course and also as a way for them to share their stories and the challenges they face working in remote areas. Essay titles included: ‘A mother I will always remember’, ‘A mother who lived because we did the right thing’, ‘A mother who died who should have survived’, ‘How to reduce maternal mortality in my setting’. The stories were highly reflective and emotive and the winners received cash prize money from AAGBI.

Monitoring and Evaluation Results

The course evaluation will be comprised of the following levels:

- Delegates’ feedback (overall feedback and individual sessions)
- Pre and post course knowledge (MCQ) assessment
- Pre and post course skills assessment
- Logbooks (assessment to occur in the months following the course)
- Field work to include Key Informant Interviews and Focus Group Discussion
- Three-monthly skills and knowledge assessments are to be repeated this time to formally assess retention of knowledge. This will be performed by the Ugandan residents and maternal hub UK registrars.

Delegates' feedback

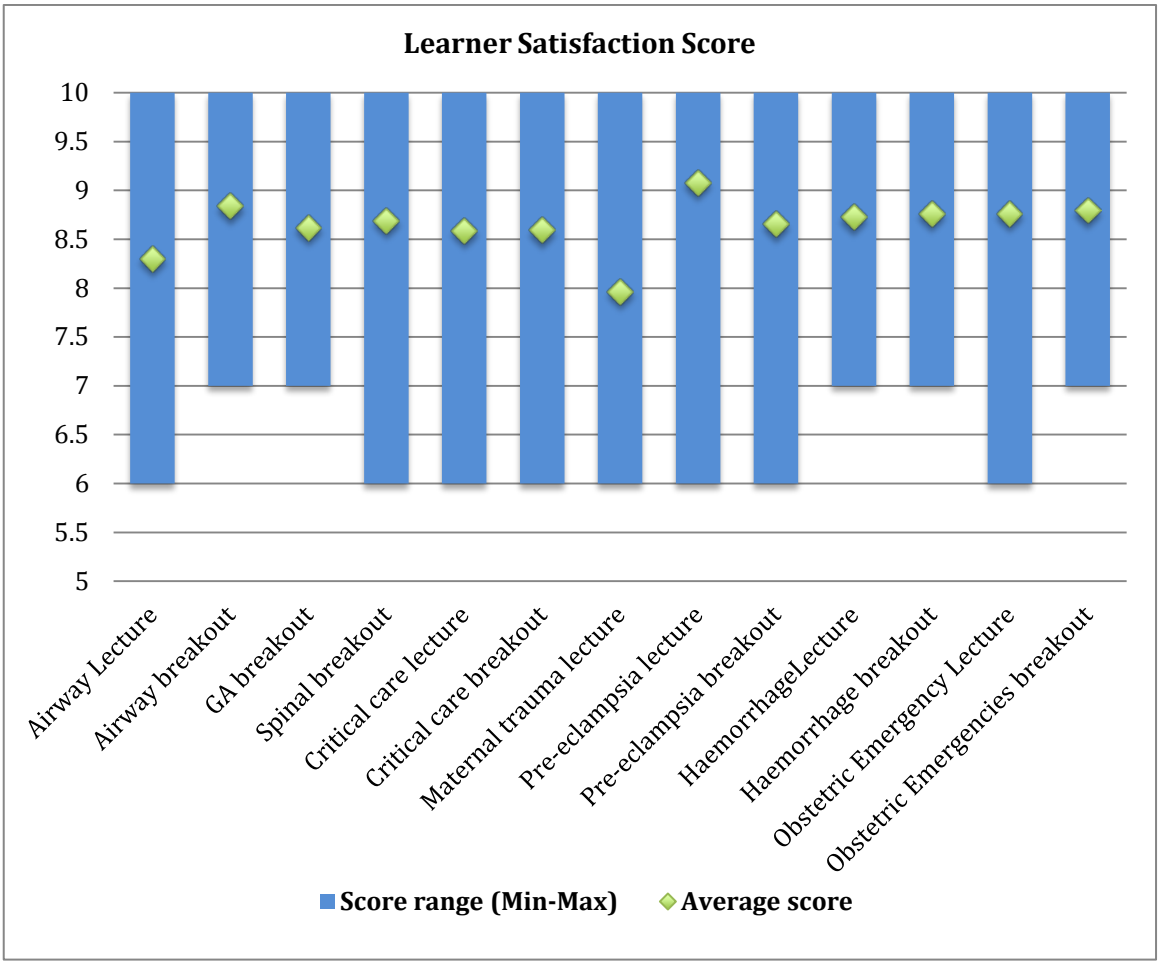
In general, the feedback regarding the overall course was extremely positive and encouraging.

Despite the smaller groups however, the main negative feedback was that there was too much to discuss and practice in the allocated breakout times. However, this will continue to be an issue. Although there may be the opportunity to rearrange the time allocations for some of the sessions, in general, if we are to cover all the topics deemed necessary, it shall continue to be a lot to teach and absorb.

Other suggestions include provision of paper, pens and lecture handouts so they could take notes. Many of the delegates also requested for laminate copies of clinical guidelines taught on the course so that they can be used at their base hospitals.

The importance of filling in the feedback form after each session was highlighted repeatedly to the delegates during the course. The scores are hence, an honest representation of their feedback

The chart below illustrates session specific feedback. Feedback was on a scale of 1-10. The chart shows the spread of the scores and the average; illustrated by the blue bars and green diamonds, respectively.



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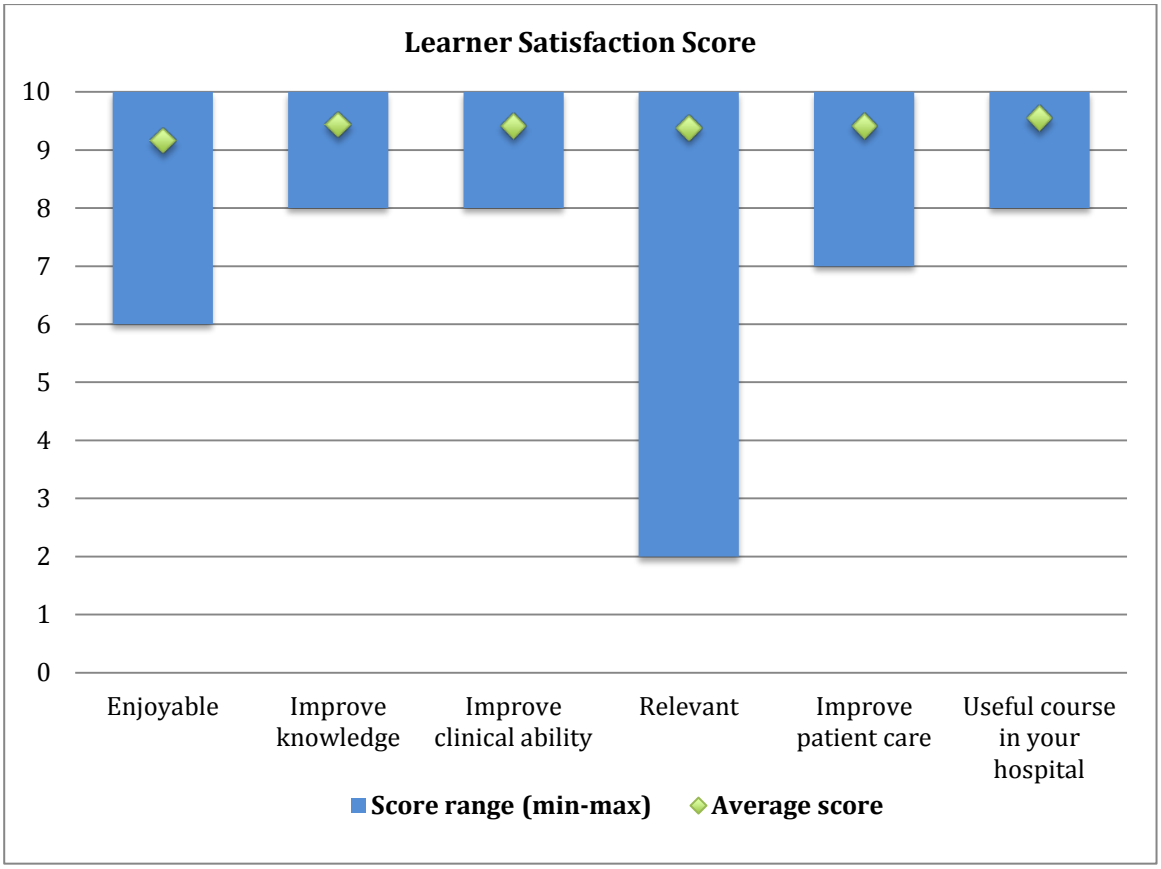
This second chart illustrates overall course feedback. Again, feedback was on a scale of 1-10.



There was an outlying score of 2 given by one delegate with regards to the relevance of the course. Despite this, we had an overwhelmingly good feedback on the course with each aspect scoring an average of >9 out of 10.

Some of the comments from the delegates are listed below:

"The training was very good and knowledgeable."

"I am so grateful for the knowledge I have acquired within the 4 days training."

"The course was so enjoyable and educational. May you keep it up. Thanks a lot."

"Please keep on with this education to help us manage the patients well."

"I am really impressed by the way the course was organised."

"Facilitators are very friendly, knowledgeable and co-operative."

"Knowledge and skills acquisition is wonderful."

"Good venue"

Comments suggesting improvements:

"There is a lot to be learnt in a short time."

"Some stations time was short especially in resuscitation."

"Please send invitation letters in advance."

"The lecture sessions are done rapidly and do not satisfy slow learners. I suggest powerpoint lectures be modified to be slow for learners to get the facts right. However, practical sessions and demonstrations are best."

There were also several comments by delegates on consideration for transport refund and per diem allowances. These comments most probably reflect previous exposures delegates may have had at seminars or courses run by other non-governmental organisations (NGOs) and charities where these reimbursements were provided. As the long-term goals of the SAFE course are focussed on capacity building and decreasing reliance on external help, we do not feel that these requests can realistically be fulfilled. These comments were addressed by Dr Stephen Ttendo at the end of the course to clarify the objectives of the SAFE course.

Pre and post course knowledge assessment

Adequate time was allocated for completing the assessment. The pre course assessment was conducted after registration on the first day of the SAFE Obstetric Anaesthesia Course. The post course knowledge assessment was conducted on the last day, following the last breakout session and before the final ceremony.

54 of 58 delegates completed both the pre and post course knowledge assessment. Their absence from one test excluded them from analysis. 9 delegates previously attended an earlier SAFE course. The raw scores are marked out of 50 and the percentage expressed in brackets.

Table 2: Pre and post course knowledge test.

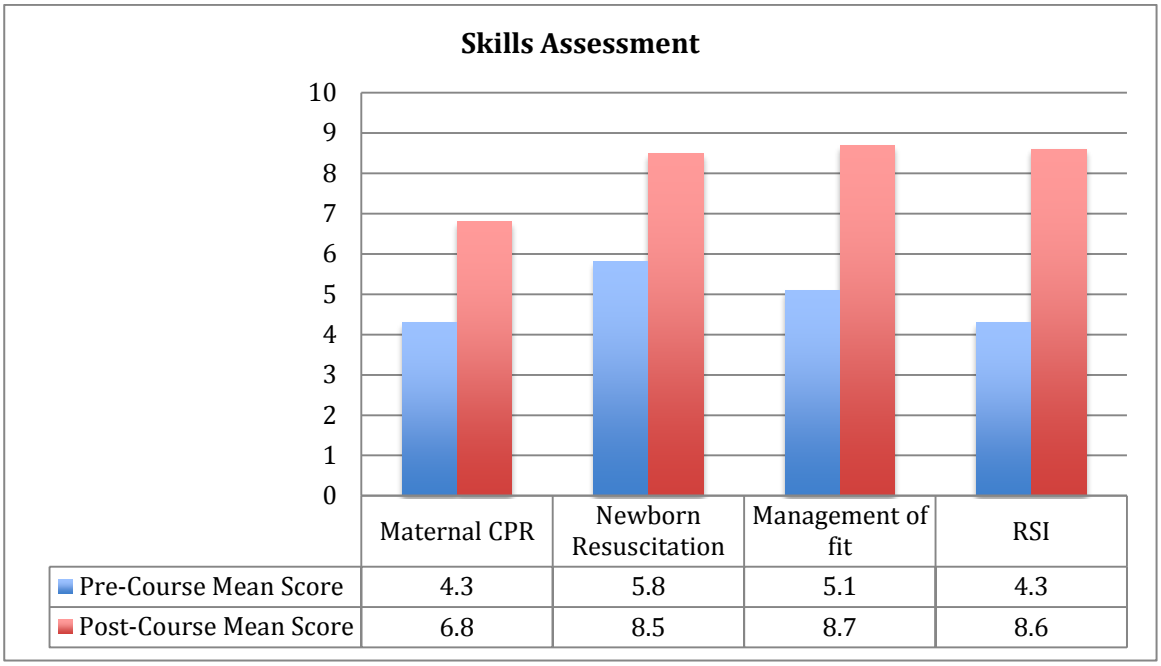
	Average Mark All Attendees (%)	Average Mark 1st Time Attendees (%)	Average Mark 2nd Time Attendees (%)
Pre Course	38.8 (78)	38.6 (77)	39.9 (80)
Post Course	42.5 (85)	42.5 (85)	42.8 (86)
P Value	0.000000000011	0.000000002	0.021

There were significant improvements (p value< 0.05) in the scores across the board, reflecting knowledge acquisition and retention by the delegates.

Pre and post course skills assessment

Assessment took place before the start of the course on the first day of the SAFE course and after the final breakout session on the final day. 54 delegates took part in the pre and post course assessments. The same skill was taken by the delegate pre and post course and each performance marked by the same assessor. Each station was marked out of 10.

Graph 2: Skill assessment difference pre and post course



There were statistically significant (p value < 0.05) improvements between pre and post course assessments in all four skills assessed.

	Maternal CPR	Newborn Resuscitation	Management of Eclamptic seizure	RSI
P value	0.00064	0.00033	0.00000028	0.000019

Post Intervention Activity

The Monitoring and Evaluation applied to the SAFE course is as follows:

- Level 1: Reaction and enjoyment – measured by numerical analogue scores
- Level 2: Change in knowledge – assessed by before and after MCQ test
- Level 3: Change in skill ability –assessed by before and after skills test
- Level 4: Change in behaviour and ability in the workplace – recorded in logbook and through Key Informant Interviews and Focus Group Discussions
- Level 5: Institutional (and ultimately widespread) change – assessed by analysis of institutional records

Levels 1 - 3 were assessed during the course and the results are published in this document in the monitoring and evaluation section.

Prof Ttendo and Dr Snell are organising for knowledge and skill retention to be tested at three months. It is intended that the Ugandan residents, along with UK registrars on short-term attachments in Uganda with the Maternal Hub, will follow up the delegates. They will repeat their skills and knowledge test and perform a more qualitative assessment.

Level 4 and 5

Change in behavior and in the workplace is going to be measured by the keeping of logbooks. The logbook has a brief introduction and pages for 30 examples of care that was improved for having attended the SAFE Obstetric anaesthesia course. Logbooks were given to all delegates and will be collected and reviewed during the three-month visit.

Summary

The Ugandan SAFE Obstetric Anaesthesia courses continue to be well received with excellent results and feedback. It is highly encouraging to see the teaching and organisational responsibilities of the course being shifted and taken on positively by the Ugandan faculty. The increasing number of post-graduate doctors training to become anaesthetists is also a great reflection of the increasing appeal and recognition of the speciality amongst other medical specialities in Uganda. More inspiringly, these young budding physician anaesthetists are also beginning to recognise their role as future leaders of this ever-rapidly developing specialty.

The next and last course will be held in January 2014. This course will be coordinated and directed, predominantly by Dr Joseph Kiwanuka and Dr Emmanuel Ayebale, under the supervision of Dr Stephen Ttendo. Given the progress made on this course, we look forward to seeing how the next course will pan out. It may be necessary to have an individual in the UK to help coordinate if there are to be UK faculty involved.

Appendix I: Faculty List

Stephen Ttendo	Consultant Anaesthetist / SAFE Course Organiser (Mbarara, Uganda**)**
Maytinee Lilaonitkul	Specialist Registrar Anaesthetics/ SAFE Course Coordinator (Exeter)
Joseph Kiwanuka	Lecturer in Anaesthesia/ SAFE Course Coordinator (Mbarara)
Emmanuel Ayebale	Lecturer in Anaesthesia (Mulago Hospital)
Mary Nabukenya	Lecturer in Anaesthesia (Mulago Hospital)
Sadic Kagwa	Resident Anaesthetics (Mbarara Hospital)
Andrew Kwikiriza	Resident Anaesthetics (Mbarara Hospital)
George Kateregga	Resident Anaesthetics (Mbarara Hospital)
Diana Serumaga	Resident Anaesthetics (Mulago Hospital)
Hannington Ssemmanda	Resident Anaesthetics (Mulago Hospital)
Mary Juliet Nampawu	Resident Anaesthetics (Mulago Hospital)
Catherine Namutebi	Resident Anaesthetics (Mulago Hospital)
Amanda Baldam	Consultant Anaesthetist (Lancashire)
Andy MacLennon	Consultant Anaesthetist (Manchester)
Ailie Pigott	Specialist Registrar Anaesthetics (Torbay)

Appendix II: Training of Trainers Delegate List

Richard Mwase	Resident Anaesthetics (Mulago Hospital)
Isabella Epiu	Resident Anaesthetics (Mulago Hospital)
Cornelius Sendagire	Resident Anaesthetics (Mulago Hospital)
Fred Bulamba	Resident Anaesthetics (Mulago Hospital)

Appendix III: Delegate List

	Name	Hospital/ Health Centre
1	Ogala John Baptist	Kumi Hospital
2	Kule Moses	Kagando Hospital
3	Achan Filder	Kalongo Hospital
4	Najjinko Teddius	Nkozi Hospital
5	Khalaji K Agnes	Busia HC IV
6	Odong Ekong Sam	Mbale regional referral hospital
7	Bamwitisa Proscovia	Busesa HC IV
8	Ayoo Anna Monica	CURE
9	Fatuma Nazziwa	Kiganda HC IV
10	Bawube Joyce	Kamuli General Hospital
11	Liya Wilfred	Amai Hospital
12	Nanyanzi Eunice	Mengo Hospital
13	Nakye Mary Esther	Magale HC IV
14	Tukei Dinah	Kumi Hospital
15	Ocitti Walter	Nankoma HC IV
16	Apil Patrick	APACH
17	Nabirye Leticia	Bugiri Hospital
18	Wampaalu George	Buwenge HC IV
19	Mulumia Topista	Busia HC IV
20	Ochen Charles	Rubongi Military Hospital
21	Stephen Werukwagana	Mbale regional referral hospital
22	Mwase Aggrey	Jinja regional referral hospital
23	Kasango Robinah	Bumanya HC IV
24	Kutusa Ellen	Kamuli Hospital
25	Kato Tom	Iganga Hospital
26	Besigomwe Daniel	Bugangali HC IV
27	Waniala Francis	Budaditi HC IV
28	Opio Philip Moses	Mbale regeional referral hospital
29	Chekwoti Robert	Kapchorwa Hospital
30	Nakasango Amina	Baduda Hospital
31	Namagonda Olive	Kojja HV IV
32	Tukwasiibwe Ronald	Bwindi HC IV
33	Muhwezi Patrick	Masazu
34	Bwire Godfrey	Masazu
35	Mugisa Emmanuel	Mbale regional referral hospital
36	Tuboine Muhindo Wildrey	Mulanda HC IV
37	Kasuubo Evenlym	Nsambya
38	Laaki Kenneth	Budaga HC IV
39	Namara Fidelis	Bukuku HC IV
40	Ocokoru Philista	Gulu regional referral hospital
41	Kayongo Wilson	Kakumiro HC IV
42	Mary Mayende	Mbale referral regional hospital
43	Naluswa Prossy	Bugembi HC IV
44	Yogera Betty	Buyinja HC IV
45	Kamogoli F Cavin	Bugobero HC IV
46	Kaguna Edith	Kiboga Hospital
47	Mabira Kenneth	Nakaseke Hospital
48	Mabusimba Harriet	Kaynnga Hospital
49	Chelangat Asha	Bufumbo HC IV
50	Nyiro Stephen David	Badaka HC IV
51	Kalembe Fatuma	Kiwandalo HC IV
52	Eilor Charles	Ngora Hospital

53	Komudenge Ellen	Kida Hospital
54	Napuwa Peter Julius	Villa Harva Hospital
55	Igoe Bernadatte	Serere HC IV
56	Mukhwana Julius	Tororo Hospital
57	Obuku David	Mabale regional referral hospital
58	John Stephen Okinei	CURE

Course Photographs