SAFE Paediatrics Anaesthesia Report

Hyderabad, India

Plaza Inn Hotel

17 -20th August 2017

Summary

- The SAFE (Safer Anaesthesia From Education) Paediatric Anaesthesia Course is a modular refresher course in paediatric anesthesia for anesthesia providers in low or low-middle income countries

- A SAFE Paediatrics course in India was run at the Plaza Inn Hotel in Hyderabad from August 18-20th 2017. This was the 1st SAFE course in India.

- The course coordinators were Dr. Subrahmanyam Maddirala, Rainbow Children's Hospital Hyderabad, India, and Dr Jolene Moore, Aberdeen, UK.

- External faculty included 2 anaesthetists from the UK, 1 from the US and 1 from Bangladesh. There were 10 Indian paediatric anesthesiologists, 6 from Hyderabad, and 1 each from Delhi, Mumbai, Vellore and Chandigarh.

- A one day Train-the-trainer course was held on 17th August 2017, prior to the SAFE Paediatrics course for all of the SAFE Paediatrics faculty who had not participated or taught on a previous SAFE course (13). Participants were all physician anesthesiologists including Professors, Assistant Professors, Consultants and a paediatric anaesthesia fellows. All but 1 taught on the SAFE Paediatrics course.

- Participants in the three day SAFE Paeds course (40) were Anesthesia residents and physician anaesthesiologists from a number of facilities, who regularly care for children. 34 participants attended each day and completed the course.

- Most delegates improved on both their knowledge and skills over the 3-day course. On average scores on the knowledge quiz improved from 36/50 (73%) to 42/50 (85%) by the end of the course.

- Delegate feedback received for lectures, breakout sessions, and overall course delivery was very good.

Country Background

India is the 7th largest country in the World by area and the 2nd most populous with a population of over 1.2 billion. The WFSA estimates 1.27 anaesthesiologists per 100,000 population in India (WFSA, 2017). Anaesthesia practice covers both urban and rural and government and private practice and standards vary greatly.

Since 1990 infant mortality worldwide under the age of 5 years has decreased steadily from 12.7 million to 5.9 million in 2015. In 1990 the global under-five mortality rate was reported to be 91 deaths/1000 live births. In 2015, it is estimated at 43 deaths per 1000 live births. Although this is a significant decrease, 11 children still die every minute worldwide. In India, the overall under-five mortality rate is estimated to be around 48 per 1000 live births (World Bank, 2015)

Aims

Our aim was to deliver the SAFE Paediatric Anaesthesia course and a Train-the-trainers to participants in India who frequently anesthetize children in Telengana State including both urban and rural facilities. This was the first SAFE course in India, where all anaesthesia providers are physicians, and we aimed to assess its potential usefulness.

Partnerships

The course was funded by the WFSA (through Masimo funding) and also supported by:

- The Indian Association of Paediatric Anaesthesiologists
- Smile Train

SAFE Paediatrics TTT & Faculty

Faculty at the completion of the Train the Trainers course

This was the first SAFE Train-the-trainers (TTT) in india. There was a total of 15 physician anesthesia providers who participated in the TTT, 14 who acted as faculty.

External Faculty:

- Dr Jolene Moore (Aberdeen, UK)
- Dr Nick Owen (London, UK)
- Dr Adele King (Columbus, Ohio)
- Dr Banik Bebrabata (Dakar, Bangladesh)

Indian Faculty:

- Dr Subrahmanyam Maddirala (Hyderabad)
- Dr Ravi Nagaprasad (Hyderabad)
- Dr Swapnil Aswar (Hyderabad)
- Dr Aavula Muralidhar (Hyderabad)
- Dr Sunil Kumar (Hyderabad)
- Dr Gita Nath (Hyderabad)
- Dr Neerja Bhardwaj (Chandigarh)
- Dr Ekta Rai (Vellore)
- Dr Sapna Bathla (Delhi)

- Dr Vibhavari Naik (Hyderabad)

The TTT course was run by Dr Jolene Moore & Dr Nick Owen.

Some modifications to the suggested program were made:

- The relevant lecture was given prior to practice session for each of Discussions, Skills and Scenarios sessions
- The TTT participants were asked to prepare a lecture within their groups over an extended lunchbreak on a non-medical topic, and deliver it following lunch.

SAFE Paediatrics Course

Delegates and faculty at the completion of the course

This was the first SAFE Paediatrics course to run in India. There were 40 anaesthesia providers (physician, qualified & residents) who participated in the SAFE Paediatric course, and 33 who completed the courses. Participants were identified by Indian anesthesia colleagues (Dr Subrahmanyam Maddirala & Dr Ravi Nagaprasad) through contacting local colleges for recommendations. Some participants were very experienced (job titles & years' experience in Appendix 2).

The course coordinators were Dr Jolene Moore and Dr Subrahmanyam Maddirala. Dr Subrahmanyam Maddirala was responsible for planning, coordination and logistics for the course and Dr Jolene Moore was responsible for daily running of the course.

Dr Swapnil Aswar was responsible for printing of materials and preparation of equipment in advance of the course, and assisted with administration. In addition, Dr. Subrahmanyam's secretary Veeraswamy S supported the course with registration and administration on a daily basis.

Local faculties were pre-selected by Dr Subrahmanyam Maddirala based on their current or expected ongoing contribution to anesthetic education within Telengana and other regions in India. Only 3 of the external faculty had ever participated or taught on a SAFE course. Dr Jolene Moore and Dr Nick Owen led a TTT course for all faculty members to familiarize them with the SAFE Paediatrics course materials and teaching methodology, having both previously taught on the SAFE Paediatrics course.

Dr Ravi Nagaprasdad arranged participants through contact with local Colleges.

Mansi Tara also attended on Day 1 as Lifebox representative and Lifebox kindly donated an oximeter for the course.

Logistics

Dr Subrahmanyam Maddirala carried out pre-course logistics including site selection and acquisition of course equipment and supplies, with input from Aaliya Ahmed (WFSA).

All printing apart from the SAFE pocket handbooks was carried out in country. Lanyards, USB flash drives, and SAFE pocket handbooks were carried to India by Dr Jolene Moore. Mannequins were sourced from an in-country branch of supplier Laerdal. Disposable equipment necessary to run the course was sourced from local hospitals. A complete equipment list is included in the appendix. All equipment used to run the course was donated to the Indian Association of Paediatric Anaesthesiologists to be used for future SAFE Paediatrics courses and other educational initiatives. The equipment is to be stored at under the care of Dr Subrahmanyam Maddirala.

Candidate recruitment was carried out prior to visiting faculty arrival by Dr. Ravi Nagaprasad through consultation with local colleges. Smile Train arranged for a number of candidates (up to 15) and expected participants numbered around 40. Due to considerable interest in the course, the number expected was 50-60 total by the time of starting the course, although final number was 40.

As we had expected up to 60 participants and had enough space and faculty, it was decided to run sessions simultaneously with 1 faculty per session to prevent numbers in each group becoming too large. This meant having group A1, A2, B1, B2 and so on. Even with 40 participants this resulted in groups of 5 people.

The Plaza Inn Hotel was an excellent venue for the course. It was centrally located with enough rooms to accommodate visiting faculty and participants. We were able to utilize 2 large rooms and a dining area in 1 half of the conference floor.

The largest room easily accommodated the lectures, and 4 small groups and a 2nd large room accommodated the other 4 groups for breakout sessions. A projector was hired and microphone capabilities were available. 8 white boards were sourced locally for breakout sessions. The catering and tea breaks were in an area between the 2 rooms which was logistically excellent and added to smooth timing.

The Course

Day 1 opened with a short inaugural session with the president of the Indian Society of Anaesthesiologists (Hyderabad Branch) Dr G Venkateshwarlu, and representatives.

Some modifications were made to the suggested course program.

- Due to travel across town and rush hour traffic, it was requested by both local faculty and participants to commence the course later e.g. 9am.
- Lunches were considered a little too early so program was adjusted to allow later lunches.
- Due to expected high numbers, groups A-D were run simultaneously as A1-D1 and A2-D2 in the 2 separate rooms with 1 faculty for each breakout session.

- A number of participants had flights booked on Day 3 which meant they were required to leave early, thus the program was modified to allow an earlier finish.
- The breakout session on sickle cell was removed as faculty agreed it was not commonly seen. For this breakout session, group A was divided amongst other groups.
- Some breakout sessions were reduced to 20 minutes to allow for the later morning start and to keep to time. The burns breakout session was further reduced to 15 minutes on Day 3 to allow an earlier finish and local faculty felt this session could be reduced.

Daily registration was conducted by Mr Veeraswammy S. Not all participants attended for the full 3 days. Local faculty felt this was most likely due to work commitments. Faculty agreed that only participants attending all 3 days would complete the course and receive a certificate. The final number was 33.

Daily running of the course, administration, timekeeping, and any program or time re-adjustments were conducted by Dr Jolene Moore and Dr Nick Owen, as both had previously taught on SAFE Paediatrics Courses. They were supported by other faculty who when not teaching and available. Most faculty were available throughout the course, except for a couple of other commitments intermittently, and all faculty were very engaged and enthusiastic.

The faculty held an option essay competition which 6 participants entered. Participants were asked to write up to 500 words on either 1. The challenges of anaesthesia in Telenagana / India; 2. A time their intervention saved a child; or 3. Their most challenging case. Dr Hariprassad Reddy won the prize with his personal account of saving his own child.

A social event was held for all participants on the evening of Day 2 of the course.

Monitoring and Evaluation

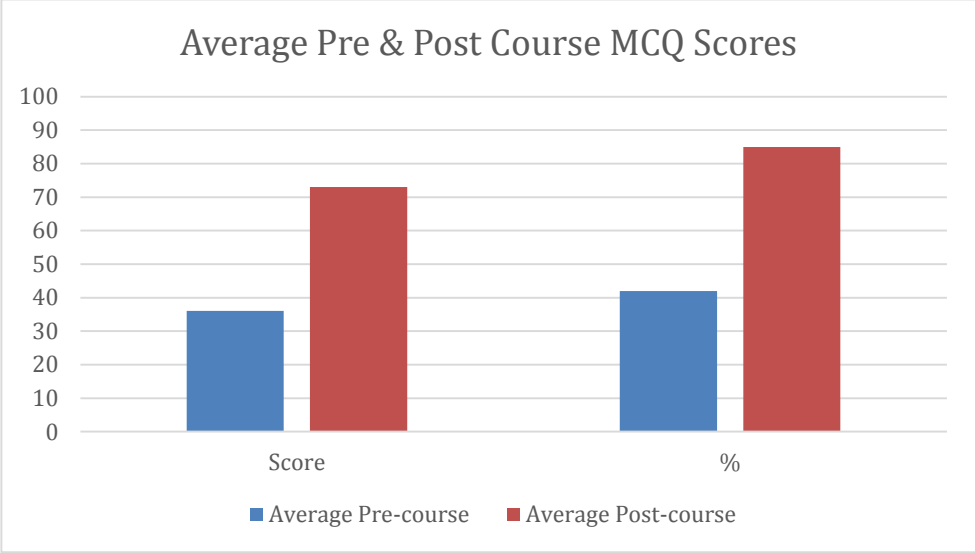
Part of the SAFE-Paediatrics method is to administer both a pre- and post-test of knowledge and skills. Everyone takes the same knowledge test. Due to some late arrivals, 33/40 participants completed the pre-course MCQ. All 34 who completed the course did the post-course MCQ.

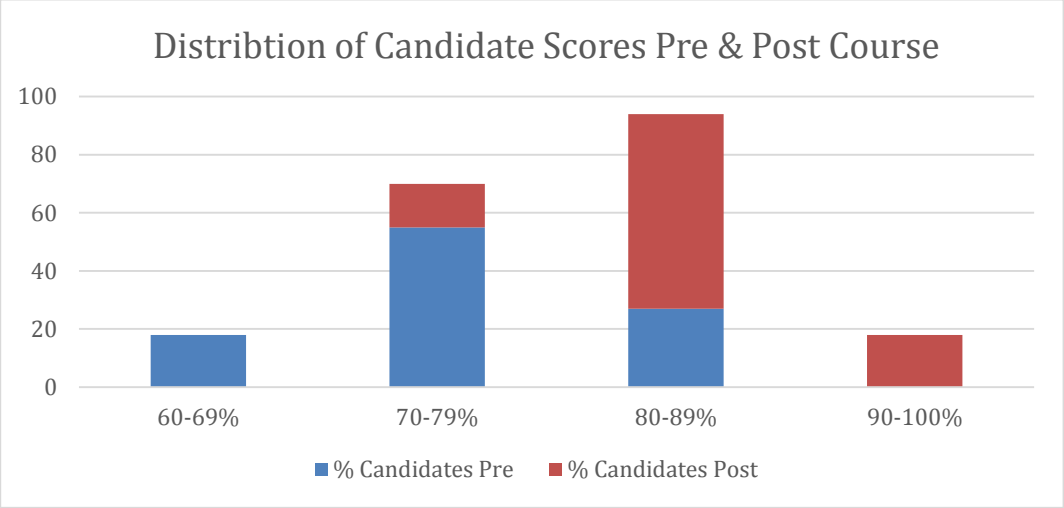
Due to initial expectation of a very large number of participants (up to 60), faculty decided not to conduct the skills test. There was discussion as to whether a small sample should be taken for the skills test, although it was difficult to agree the best was to do this, and some concerns that it would be seen as unfair for only some participants to do this.

Summary Results Pre- and Post-course knowledge test (MCQ)

	Average (percentage score)	**Range**
Pre-course MCQ	36 (73%)	32-43
Post-course MCQ	42 (85%)	39-48

All but 2 candidates improved from their pre-course scores.





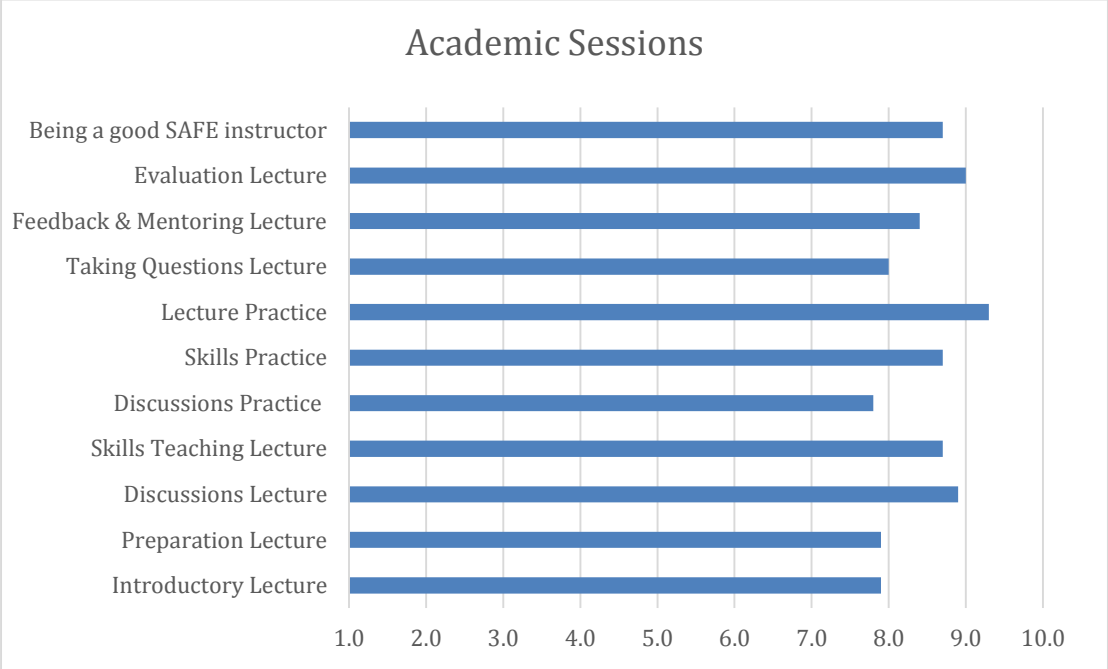
Feedback

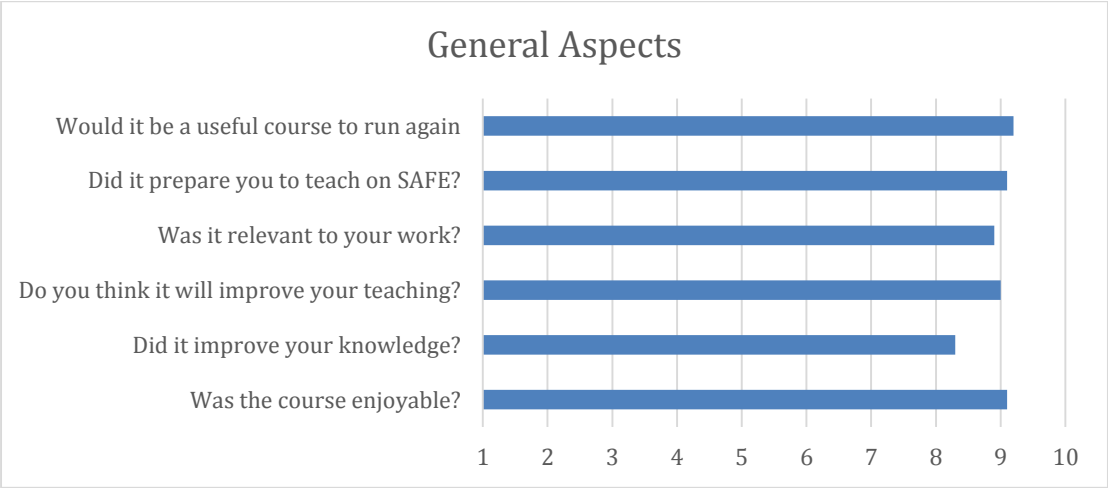
All participants who completed the course provided feedback by anonymous course evaluation form.

TTT & Faculty Course Feedback

Feedback on TTT was very good. Faculty course feedback was also very positive. Faculty commenting on having enjoyed teaching on the course and an overall feeling that the course is useful for participants.

Some faculty commented on the time commitment for teaching on the course and it being tiring. For those not familiar with the course, some felt they could have received more information on what was expected from them prior to the course. Planned teaching sessions could be assigned and sent to the faculty further in advance, although given the modifications made to the course and some faculty preference for certain topics, this this may have been difficult. An extensive faculty meeting took place on TTT day and further faculty meetings on a daily basis to discuss modifications to the course, daily faculty availability, preferences and assignments.



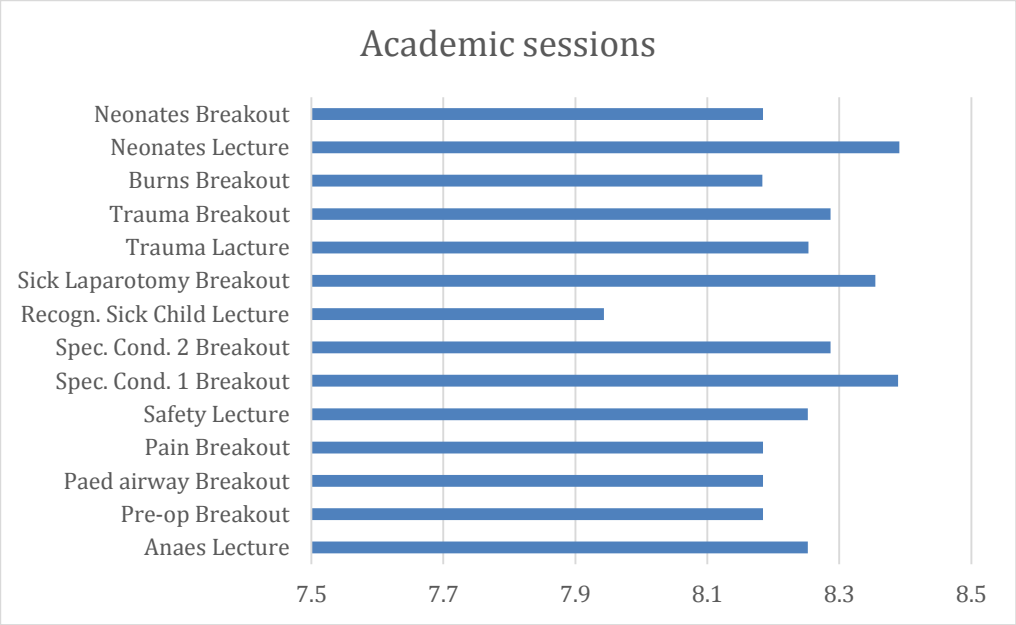


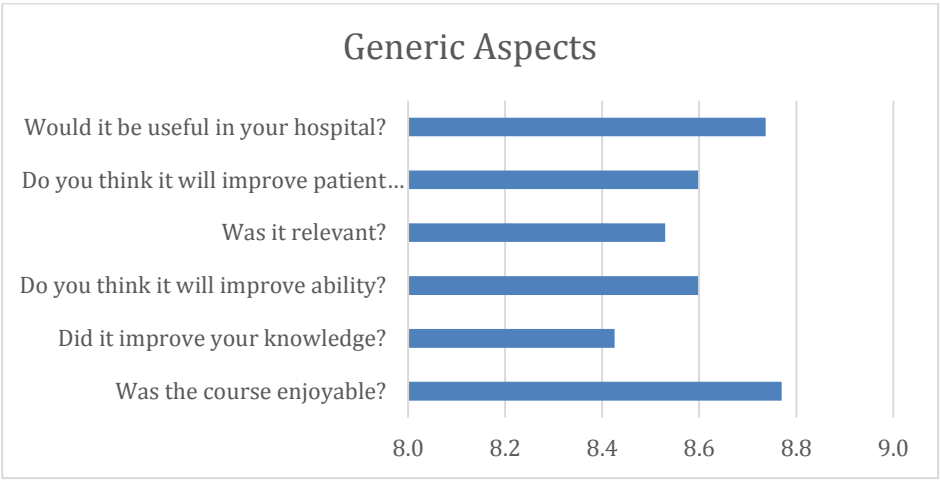
Course Feedback

In general, the written and verbal feedback regarding the overall course was extremely positive and encouraging and most felt additional SAFE Paediatrics courses and similar type courses should be offered in other areas.

The feedback from the participants was very positive. All individual participant session scores were in the range 5-10 (1 being the lowest and 10 being the highest). Average scores for each session were between 7.9-8.4. Generally, Day 2 & 3 sessions scored higher than Day 1 sessions, perhaps related to the experienced participants on this particular course, and Day 2 & 3 sessions being more complex.

There were some comments that some of the content was a little basic, and more advanced topics would be useful. Suggestions included considering the inclusion of additional topics e.g. Trache-oesopagheal Fistula, Congenital Diaphragmatic Hernia and Endocrine Disorders.





Summary

The first SAFE Paediatrics course in India was delivered successfully.

It was clear that local instructors and participants enjoyed the course and learned a great deal. All faculty and participants expressed their gratefulness for the course. The course was well organized and ran smoothly. Documented improvements in knowledge were demonstrated. The feedback was very positive

with faculty and participants recommending future SAFE Paediatric (and Obstetric) courses. Given that anaesthesia in India is provided by physicians / anaesthesiologists, it may be beneficial to make some modifications to the course content to reflect the learning needs of this specific group of providers. Having donated all the equipment to the Indian Association of Paediatric Anesthesiology, it is anticipated that the more courses will be able to be run throughout the region and country. This would be particularly beneficial for anaesthesiologists practicing in rural areas and it would be useful to follow-up with the Indian Association of Paediatric Anaesthesiologists and help them to organize future courses within the next year.

Respectfully submitted for, and on behalf of, the entire SAFE Paediatrics Hyderabad, India, team.

Jolene Moore & Subrahmanyam Maddirala

August 2017

Appendix

Knowledge and Skills Test Results

Candidate	Pre MCQ	Post MCQ		Candidate	Pre MCQ	Post MCQ
1	41	45		**21**	33	41
2	39			**22**	37	41
3	36	46		**23**	35	39
4	43	42		**24**	41	46
5	43	44		**25**	38	
6	32			**26**		38
7	33	42		**27**	34	
8	43			**28**	42	43
9	40	40		**29**		
10	36	40		**30**	39	41
11	39	44		**31**	40	48
12	40	41		**32**		46
13	32	42		**33**		39
14	35	40		**34**	38	47
15	36			**35**	36	42
16	37	43		**36**	32	41
17	38	43		**37**		40
18	35	47		**38**		43
19	39			**39**		
20		40		**40**		

Appendix

Program - SAFE Paediatric Anaesthesia - Hyderabad 18-20th August 2017

Day 1: 18th August 2017	
08:00	**Registration + Pre course MCQ**
09:15	**Welcome address + lecture 1: Introduction to the course**
09:30	**Lecture 2: Overview of paediatric anaesthesia**
09.45 Tea and coffee break (15 minutes)	

10:00	**Breakout Stations 1: Preoperative assessment (25 minutes per session)**			
Station	**1a Preoperative assessment**	**1b Basic calculations**	**1c Preoperative fasting**	**1d Maintenance fluids**
Group Starting Location	**A1 (Room 1) A2 (Room 2)**	**B1 (Room 1) B2 (Room2)**	**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room
11:40 Break (20mins)				
12:00	**Breakout stations 2: The paediatric airway (25 minutes per session)**			
Station	**2a Paediatric airway- basic**	**2bAirway - advanced**	**2c The anaesthetic plan**	**2d Extubation**
Group Starting Location	**Groups Starting Location**	**B1 (Room 1) B2 (Room2)**	**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room
13:40 Lunch (45 minutes)				
14:25	**Breakout stations 3: Pain management (a+b 40 minutes; c/d 20 minutes each)**			
Station	**3a Pain assessment & 3b Pain management**		**3c Local anaesthetic infiltration/blocks**	**3d Recovery/handover**
Group Starting Location	**A1 + B1 (Room 1) A2 + B2 (Room 2)**		**C1 (Room 1 C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room

15:45 General Feedback from Participants and Close
16:00 Faculty Meeting

DAY 2: 18th August 2017				
08.55	**Registration**			
09:00	**Lecture 3: Safety in paediatric anaesthesia**			
09.30	**Breakout stations 4: Special conditions Part 1 (20 minutes per session)**			
Station	**4a. ENT**	**4b. Clefts**	**4c. Eyes**	**4d. Inhaled FB**
Group Starting Location	**A1 (Room 1) A2 (Room 2)**	**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**

	Rotate within room	Rotate within room	Rotate within room	Rotate within room
10.50 Tea and Coffee break (25 minutes)				
11:15	**Breakout sessions 5: Special conditions part 2 (20 minutes per session)**			
Station	**5a.NO STATION**	**5b. Airway emergencies**	**5c. Seizures**	**5d. Cardiac disease**
Room	**A Groups to distribute into groups B-D**	**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
		Rotate within room	Rotate within room	Rotate within room
12.15	**Lecture 4: Recognition of the sick child + *demonstration scenario***			
12.45 Group Photo then Lunch (45 minutes)				
13:30	**Breakout stations 6: Resuscitation (20mins each)**			
Station	**6a + b. Basic life support**		**6c. Intraosseous access**	**6d. Recognition of the sick child**
Group Starting Location	**A1 + B1 (Room 1) A2 + B2 (Room 2)**		**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
	Rotate within room		Rotate within room	Rotate within room
14:50 Tea & Coffee Break (20 minutes)				
15:10	**Breakout Stations 7: The sick laparotomy (4x 15mins)**			
Station	**7a. Assessment**	**7b. Induction/RSI**	**7c. Intraoperative**	**7d. Postop care/HDU**
Group Starting Location	**A1 (Room 1) A2 (Room 2)**	**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**	**D1 (Room 1) D2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room

16.10 General Feedback from Participants & Closure

16.20 Faculty Meeting

DAY3: 19th August 2017	
08:30	**Registration**
08:45	**Lecture 4: Trauma in children + demonstration scenario**
09.05	**Breakout stations 8: Trauma in children (20 minutes per session)**

Station	**8a. Trauma assessment**	**8b. Assessment of blood loss**	**8c. Head injury**	**8d. Transfer**
Group Starting Location	**A1 (Room 1) A2 (Room 2)**	**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room

10.25 Tea & coffee break (15 minutes)

10.40	**Breakout stations 9: Burns in children (15 minutes per session)**			
Station	**9a. Burns assessment**	**9b. Burns size estimation and fluid resuscitation**	**9c. Burns sedation**	**9d. Difficult airways in burns**
Group Starting Location	**A1 (Room 1) A2 (Room 2)**	**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room
11:40	**Lecture 6: Neonates**			
12.00	**Breakout sessions 10: neonates (20 minutes per session)**			
Station	**10a&b Neonatal resuscitation**		**10c. Imperforate anus**	**10d. Pyloric stenosis**
Group Starting Location	**A1 + B1 (Room 1) A2 + B2 (Room 2)**		**B1 (Room 1) B2 (Room 2)**	**C1 (Room 1) C2 (Room 2)**
	Rotate within room	Rotate within room	Rotate within room	Rotate within room
13.00 Lunch (45 mins)				
13.45	**Post-Course Assessment MCQ**			
14.30	**Faculty Meeting, Feedback, Certificates, Essay Prize Presentation & Close**			