

# Primary Trauma Care (PTC) Course Report

Connaught Hospital,  
Freetown, Sierra Leone

9<sup>th</sup> - 13<sup>th</sup> April 2018



Written by:

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Dr Caroline Kane

# **Primary Trauma Care (PTC) Course Report**

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## **Executive summary**

We are proud to have delivered the first Primary Trauma Care (PTC) course in over 15 years, and the first to train new local trainers in Sierra Leone. The course was funded by the Africa Grants Programme (AGP), managed through the Tropical Health and Education Trust (THET) as part of a wider project aiming to implement structured trauma care and improve surgical safety at Connaught Hospital, Freetown.

Connaught Hospital is the principal tertiary referral centre in Sierra Leone's capital city, and part of the University of Sierra Leone Teaching Hospitals Complex. It is integral to undergraduate and postgraduate medical, nursing and allied health sciences training in the country, with Part 1 accreditation of postgraduate surgical training, and Part 2 accreditation of general surgical training by the West African College of Surgeons.

Research and audit work over the preceding two years has highlighted a large burden of trauma (including paediatric trauma) at Connaught Hospital, with insufficient levels of staff knowledge and training.

Our aim is to deliver a sustainable PTC course to address this knowledge gap, and provide high quality trauma teaching to complement requirements of the postgraduate surgical residency. In addition, Connaught's role as a teaching hospital means that knowledge gained by rotating junior doctors may be disseminated to rural centres in the following months and years.

Collaboration between the Department of Surgery and King's Sierra Leone Partnership (KSLP) led to the delivery of very successful PTC and Training of Trainers (PTC) courses, with longer-term aims for new instructors to train new house officers on a six-monthly basis, as well as all nursing staff working in relevant departments.

## **Key Personnel involved in Planning and Coordination**

Partners from both the Department of Surgery and KSLP were involved in planning and coordinating this course.

Dr Caroline Kane, KSLP anaesthesia volunteer was nominated as course director, supporting implementation by the local surgical team.

Dr Peter George, surgical registrar with an interest in trauma at Connaught, was nominated as local course coordinator.

Stakeholder meetings were held from late February 2018 with Dr Kane, Dr Youkee (KSLP country director), Dr Bundu (Orthopaedic surgeon and Connaught Hospital Trauma lead) and Connaught's six surgical residents including Dr Smalle (senior resident) and Dr George (course coordinator). The course dates were chosen to ensure attendance of the majority of surgical residents.

### Further roles included:

Recruitment of faculty training team	Dr Youkee (KSLP), Dr Kane (KSLP)
Selection and recruitment of course participants & trainee instructors	Dr Smalle, Dr George, Dr Kane (KSLP), Lisa Cleveley (KSLP)
Follow-up of registered participants, coordination of release from clinical duties and distribution of course manuals prior to start	Dr Kane (KSLP)
Organisation of course venue & equipment	Dr George, Dr Kane (KSLP), Abdul Turay (Hospital maintenance), College of Medicine and Allied Health Sciences (COMAHS) faculty
Timetable & session planning	Dr Kane (KSLP), Dr George, Dr Smalle, Dr Bundu & faculty training team
Printing, photos and logistics	Ibrahim Kabia (KSLP)
Travel, accommodation & logistics for visiting faculty	Martha Thorpe (KSLP)
Catering	Martha Thorpe (KSLP)

### **Professional Aspects of Visit**

The course was delivered in line with the traditional '2-1-2' teaching model. An initial two-day course was run by the faculty training team, followed by a one-day instructors training course. New instructors subsequently taught and facilitated a second two-day programme, training a further group of participants.

- Slides, lectures and practical sessions were delivered in English.
- The course venue included a university teaching classroom able to accommodate 35 people, and a purpose-built clinical skills training room.
- Administrative support was provided by King's Sierra Leone Partnership and hospital maintenance.

### **Faculty training team**

Our faculty were a well-balanced team with respect to gender, cultural background and professional training including:

- Dr Caroline Kane (course director): KSLP volunteer anaesthetic trainee at Connaught Hospital

Although new to PTC, prior ATLS training, generic instructor training and experience of working in major trauma centres in South Africa and the UK provided sufficient background for PTC course delivery. In addition, a current job focus on improving surgical and trauma care at the hospital, and relationships with local staff proved very useful.

- Lisa Cleveley: KSLP Implementation coordinator at Connaught Hospital

ED/Trauma/NICU/ICU/obstetrics nurse by training, and prior KSLP nurse educator at Connaught. Lisa's extensive experience of teaching, in-depth knowledge of the health system and relationships with A&E staff in this setting proved invaluable throughout the course. A highlight included delivery of the disaster management session during course 1.

- Dr Ibrahim Bundu: Consultant Orthopaedic Surgeon & Trauma Lead at Connaught Hospital

Sole trauma and orthopaedic surgeon at Connaught and motivated to improve trauma care in Sierra Leone, Dr Bundu was the most appropriate member of the team to deliver the opening lecture on the local trauma perspective. He also delivered lectures and workshops relating to his specialist interests.

- Dr Thomas Hampton: ENT surgery trainee, Warrington Hospital, UK

Previous PTC faculty and KSLP surgical volunteer at Connaught Hospital in 2016, Tom's understanding of the PTC mission, alongside his knowledge of the local context and relationships with the surgical residents were an asset particularly when delivering the one-day instructors course.

- Philip Andrews: ED/Trauma nurse, Royal London Hospital, London

Also previous PTC faculty and with experience working in Sierra Leone during the Ebola outbreak, Phil was able to provide valuable insight into what did and did not work well when delivering training in similar contexts. As a trauma nurse instructor, acting as a role model and mentoring some of the nurse participants during workshops and scenario practice was particularly beneficial.

- Dr Anne Binjdsorp: Tropical medicine doctor, Lionheart Medical Centre, Yele, Sierra Leone

Trained as a tropical medicine doctor in Holland and approaching completion of two years working in rural Sierra Leone, Anne's input and perspective were unique and instrumental during the course. With extensive surgical experience and an understanding of the challenges facing doctors in the district hospital setting, she quickly gained the respect of course participants and delivered several very engaging lectures.



Dr Bundu delivering the 'Local Trauma Perspective' opening course lecture

### Instructors

Trainee instructors were selected in advance of the course, and included six surgical registrars, two medical officers working in surgery, two accident & emergency (A&E) trauma nurses and one senior nurse anaesthetist. The selection process

involved nomination by local and longstanding KSLP staff (alongside the course director and coordinator), to identify experienced, motivated and influential individuals who will be likely to inspire and teach within their departments. The majority of instructors were trainee surgeons, due to the WACS requirement for improved trauma training at Connaught, but feedback suggested that a more equal balance of doctors and nurses would be preferred in future.

### Participants

We planned to train 20 participants on course 1 (including the new 11 instructors), and 20 participants on course 2. A combination of doctors and nurses on each course was thought to be desirable, and although not done previously in trauma, the coordinating surgical team agreed.

Employing a similar selection process to the above, a group including A&E nurses from the trauma receiving unit, ICU nurses, nurse anaesthetists, surgical ward nurses and the operating theatre matron were registered. All nine new surgical house officers were required to attend, as well as three house officers/medical officers pursuing anaesthesia training at Connaught. Finally two current house officers and an ENT consultant who expressed interest were registered. A waiting list of nurses and doctors who were unable to attend due to numbers, has been kept.

Observers from Masanga Leprosy Hospital in Northern Province, Sierra Leone were also present during course 2, as well as donor representatives from THET. Rev Dr Sahr Yayah Kpakiwa, retired Consultant Anaesthetist and Physician at Connaught also acted as an observer during course 1.

## Media Coverage

There was no media coverage for this course. Local awareness was raised through presentation to hospital management and matron teams, presentation at a joint operating theatre and surgical departmental meeting, introduction during the house officer induction programme, and via personal visits by the course director to the relevant hospital departments. Promotion using posters, and social media discussion on local 'whatsapp' groups also proved highly effective.

## PTC course 1: 9<sup>th</sup> - 10<sup>th</sup> April



The first two-day PTC course was run by the faculty training team, with a total of 24 participants and 1 observer. The course participants came from a diverse set of professional backgrounds and included: 6 surgical registrars, 5 trauma nurses, 4 nurse anaesthetists, 3 medical officers, 2 ICU nurses, 2 ward nurses, 1 ENT

surgeon and 1 matron. Engagement and enthusiasm of participants was excellent, and many interesting dialogues and experiences were shared.



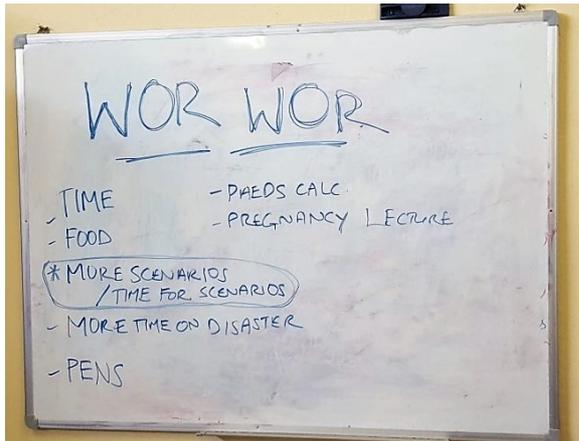
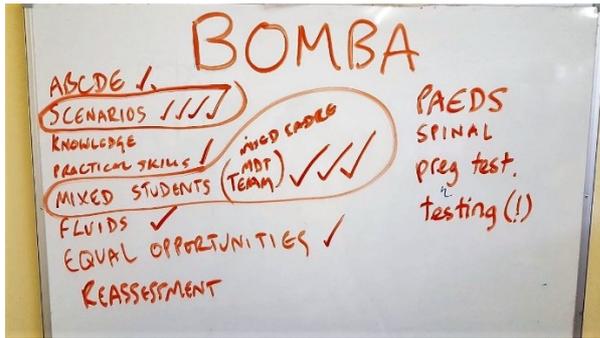
MCQ test results showed a 25% improvement from pre- to post-course testing with averages scores increasing from 13.2 to 16.5 out of 20. Confidence in trauma management within the group was evident with an average pre-course confidence matrix score of 28.6 out of 40, which increased by 17% to 33.4 by the end of the course. All participants completed written feedback forms. A verbal feedback session was also held at closing, and the most commonly raised points were:

Bomba (done well)

1. Scenarios to practice and build on learning
2. The mixed cadre/MDT arrangement of the course
3. Weight and fluid calculations for management of paediatric and burns cases

Wor Wor (for improvement)

1. More scenarios/more time for scenarios
2. Food not up to standards
3. More time on disaster management



Please refer to Appendix A for the course schedule.

### Instructors Course: 11<sup>th</sup> April

The 11 instructors selected to attend the 'training of trainers' day were highly motivated to learn and to deliver future PTC courses. Although only five had previous formal teaching experience, their overall confidence as a cohort was high; with average self-scoring responses of 4.1/5 pre-course and 4.8/5 post course with no areas differing significantly (see breakdown below).

<b>Confidence in:</b>	<b>Pre-Test Average</b>	<b>Post Test Average</b>
Teaching a PTC skill	4.0	4.6
Delivering a PTC lecture	4.1	4.6
Running a trauma scenario	4.2	4.8
Running a discussion group	4.2	4.9
<b>Total average</b>	<b>4.1</b>	<b>4.8</b>



Verbal feedback from the group revealed what was:

Bomba (done well)

1. Practical workshops
2. Being taught how to communicate and teach PTC through various methods including giving feedback, interactive teaching and scenarios
3. Increased confidence in teaching skills

Wor Wor (for improvement)

1. Time-keeping
2. More practical sessions and fewer lectures
3. Include more pictures and real-life scenarios which are common in this environment



*“Thanks... team for such a wonderful and timely PTC course. I am very sure that we'll all endeavour to practice what has been learnt to improve trauma care in Sierra Leone” - Dr Smalle (senior registrar & instructor)*



Please refer to Appendix B for course schedule.

### **PTC course 2: 12<sup>th</sup> - 13<sup>th</sup> April**

The second PTC course was run principally by 10 of the 11 new instructors. They delivered a high quality course demonstrating skill in delivering lectures, holding workshops, running scenarios and managing logistics. In planning for the course, the instructors felt it would be more important in their local context to teach 'spinal patient transfer' rather than

advanced airway management as a skill on day 1. A lecture on 'Ethics in Trauma' was also requested and delivered by a Professor in Surgery. The faculty team's role was in observing, coaching and giving regular feedback to instructors throughout the two days including hosting evening faculty debrief sessions.



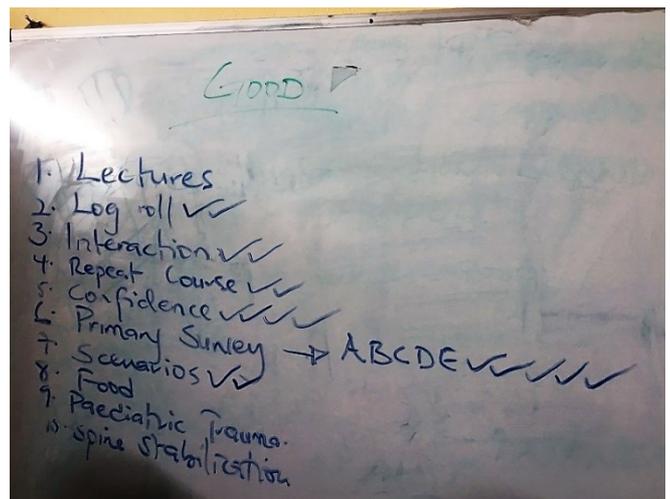
The 22 participants completing the course were again a mixed cadre group including 12 house officers, 6 nurses (A&E/ICU nurses/surgical wards) and 4 nurse anaesthetists. MCQ pre- and post-test results improved for all candidates by an average of 26% from 11.2 to 14.1 out of 20. Confidence in managing trauma patients increased by 40% from an average confidence matrix score of 24.3 to 34.1 out of 40. Written feedback was completed by 77% of participants and the most commonly raised points from a verbal feedback session at course closing included:

#### Bomba (done well)

1. ABCDE/primary survey model
2. Increased confidence/composure in managing trauma patients
3. Scenarios/Interaction

#### Wor Wor (for improvement)

1. Time Management (including poor time-keeping and time distribution - with suggestion of running the course over three or four shorter days)
2. More triage training and training of triage team
3. No 'party bags'





*“I’ll like to congratulate all for a successful training and I request all apply what we learn to our day-to-day practice” – Dr George (registrar & course coordinator)*

Please refer to Appendix C for course schedule.

### **Course Evaluation: Success and relevance**

Overall the five days of training were felt to be extremely positive by the faculty, instructors and participants. Attendance on the course was excellent throughout, with large numbers of participants on each course, which unfortunately resulted in overcrowding in the skills lab during practical sessions – particularly for course 2. This could be improved by recruiting smaller numbers and ensuring more interactivity on future courses. Of 49 participants enrolled in advance, one did not attend due to clinical requirements, and two did not complete the course for personal reasons.

A multi-disciplinary group attended both courses 1 and 2, with more experienced medical staff attending course 1 (registrars and medical officers), compared with course 2 (house officers). This may have accounted for the slightly higher baseline MCQ scores on course 1. Average score improvement was consistent at 25% and 26% on each course respectively.

Initial confidence scores were higher on course 1, and improved by an average of 17%. On course 2, despite lower initial scores, an improvement of 40% was seen by completion, resulting a final average score which was higher than that seen on the first course. This may again reflect the more clinically experienced group attending course 1 – but the new instructors teaching on course 2 should be

highly commended for their (near completely independent) delivery of a very successful course!

Written feedback was not completed by all participants during course 2, the importance of which may need to be emphasised by new instructors when participants receive their paperwork on future courses.

Common **positive** themes seen in both written and verbal feedback included:

- **Multi-disciplinary participant group**
- **Scenarios and practical workshops**
- **Structured approach to trauma care**
- Increased confidence
- Fluid management and calculations in paediatrics and burns
- Circulation lecture, disaster management session

Areas **for improvement** were:

- **More time**, particularly for **scenarios**
- Difficulty of some staff to attend two consecutive full-days – suggested running 4 x half days
- **Environment for skills training too small / group too large**
- **Include ward 1 (paediatric) and triage nurses**
- Confidence matrix/forms confusing
- Misunderstanding of ‘what would you change’ section of feedback forms interpreted as own practice and not course related
- Provide more materials/stationary
- Food

On analysis of the above, practical scenarios were enjoyed by most during the course. The *importance of a multi-disciplinary approach* to training was also raised consistently, not only in the course setting, but as a vital for improving teamwork and breaking down hierarchical boundaries in clinical practice. Much enthusiasm around this concept was generated, and we hope this can be harnessed and continued in clinical practice.

*‘Essence is to maintain this teamwork. We won’t be angry if our nurses remind us we have forgotten BP. It’s not - whatever the doctor says is final’ – Dr Smalle (senior resident & instructor)*

### **Going forward**

In the final debrief meeting with faculty and new instructors, a course director for the next PTC course was identified and encouragingly there was clear interest from the group to deliver a follow-up course within three months at Connaught to reinforce the new instructors’ skills. Interest in running regional courses was also expressed.

The need to improve practice relating to paediatric weight and fluid calculations, burns calculations, logroll technique and the A-E approach to initial trauma assessment were noted. Ideas for future quality improvement projects were discussed.

*'This course has completely changed my view as to what we are doing with trauma in (my department). Feel energised to do something.'* - House officer

### **Faculty feedback and recommendations to PTC foundation**

- Some participants found the MCQ, confidence matrix and evaluation forms confusing. Another way of assessing participants might be appropriate in certain contexts.
- Post-course faculty debrief sessions were held on all evenings except for one (prior to the training of trainers course). On reflection, more time and preparation would have been useful here, and daily debriefs could be recommended in the logistics manual (as is the pre-course faculty meeting).
- Logistics manual: Documents such as the course timetable in PDF format are difficult and time consuming to edit.
- Suggest an online instructor forum for sharing ideas and materials, beyond what is available in the logistics manual.

### **Acknowledgements and thanks**

Many thanks to Connaught Hospital and COMAHS for hosting this course. In particular, we would like to thank the Department of Surgery for their motivation to improve trauma care and bring PTC to Sierra Leone. We are grateful to all nursing teams for your enthusiasm, involvement and drive to widen training opportunities for nurses at Connaught Hospital. Many thanks to the maintenance department, for their reliable support during the week.

Acknowledgements to the Royal College of Anaesthetists (UK), for supporting the course director's position. And finally we would like to thank our donors: THET, AGP and Johnson & Johnson, without whom such training would not be possible.

*"On behalf of my colleagues am happy to give plenty thanks to the team that organized the PTC training. We learned so many things, once again I say THANK YOU" - Ellen Koroma (nurse anaesthetist)*



## Appendix A: PTC course 1

Timetable, 9<sup>th</sup> & 10<sup>th</sup> April

Day 1				
08:00	30'	Registration	Phil and Tom	Anne (Timekeeper)
08:30	30'	Welcome and Introductions	Caroline	
09:00	15'	Local Trauma Perspective	Dr Bundu	
09:15	15'	PTC Overview	Tom	
09:30	30'	ABCDE of Trauma and Primary Survey	Phil	
10:00	10'	BREAK		
10:10	40'	Airway and Breathing	Caroline	
10:50	35'	Circulation and Shock	Lisa	
11:25	35'	Chest Injuries	Tom	
12:00	45'	LUNCH BREAK		
12:45	80'	<b>Skills Stations</b>		Lisa (Timekeeper)
	(20')	<i>Basic Airway</i>	Anne	
	(20')	<i>Advanced Airway</i>	Caroline	
	(20')	<i>Log Roll</i>	Phil	
	(20')	<i>Chest Drains</i>	Tom	
14:05	10'	BREAK		
14:15	35'	Abdominal and Pelvic Injuries	Anne	
14:50	15'	Limb Injuries	Dr Bundu	
15:05	15'	Scenario (Demo)	Caroline/Tom/Phil	
15:20	70'	Scenario Practice	All	
16:30	5'	Overview and Summary	Caroline	
Day 2				
08:00	30'	Registration	Phil and Tom	Lisa (Timekeeper)
08:30	45'	Head and Spinal Injuries	Anne and Dr Bundu	
09:15	30'	Trauma in Children in Children and Pregnancy	Caroline and Anne	
09:45	30'	Burns	Tom	
10:15	15'	BREAK		
10:30	80'	<b>Workshops</b>		
	(20')	<i>Analgesia</i>	Caroline	
	(20')	<i>Burns</i>	Tom	
	(20')	<i>Paediatric Trauma</i>	Phil	
	(20')	<i>Neurological assessment</i>	Dr Bundu and Anne	
12:00	30'	<i>Secondary Survey</i>	Phil	
12:30	40'	LUNCH BREAK		
13:10	50'	Disaster Management	Lisa	
14:00	80'	Scenario Practice	All	
15:20	10'	BREAK		

15:30	15'	Repeat MCQs	Caroline	Phil (Timekeeper)
15:45	20'	Summary, feedback, and evaluation	Tom	
16:05	15'	Closing	Caroline	
16:20	15'	Certificates	Caroline	

### Appendix B: PTC instructors Course Timetable, 11<sup>th</sup> April

Instructors Course Schedule					
08:00	15'	Registration and Forms	Phil and Tom	Caroline (Timekeeper)	
08:15	15'	Introduction and our educational philosophy	Tom		
<b>08:30</b>	<b>55'</b>	<b>Session 1: Communication Skills</b>	<b>Tom</b>		
	15'	Training input	Tom		
	5'	Explain feedback	Tom		
	30'	Practical workshop - 3 groups	Caroline/Lisa/Phil		
	5'	Reflection and Summary	Tom		
<b>09:25</b>	<b>80'</b>	<b>Session 2: Interactive Teaching</b>	<b>Phil</b>		
	20'	Training input 1: Questions	Phil		
	15'	Practical workshop	Tom/Lisa/Phil		
	5'	Reflection	Phil		
	15'	Training input 2: PTC workshops	Phil		
	20'	Practical workshop	Tom/Lisa/Phil		
	5'	Reflection and Summary	Phil		
10:45	20'	BREAK			
<b>11:05</b>	<b>80'</b>	<b>Session 3: Scenarios</b>	<b>Caroline</b>		
	20'	Training input & demonstration	Caroline/Tom/Phil		
	15'	Participant scenarios - 3 groups	Caroline/Tom/Phil		
	40'	Practical workshop - 2 groups	Lisa/Phil		
	5'	Reflection and Summary	Caroline		
12:25	45'	LUNCH BREAK			
<b>13:10</b>	<b>80'</b>	<b>Session 4: Skill Stations</b>	<b>Tom</b>		Phil (Timekeeper)
	15'	Training input 1: Teaching the skill	Tom		
	15'	Training input 2: Running the skill station	Tom/Caroline/Phil		
	5'	Organisation of the skill stations	Tom		
	40'	Practical workshop: Set up and practice log roll skill	Lisa/Tom/Phil		
	5'	Reflection and Summary	Tom		
<b>14:30</b>	<b>35'</b>	<b>Session 5: How to run a PTC course</b>	<b>Caroline</b>		
	15'	In a new venue			
	15'	Who does what the next day			
	5'	Taking charge of the room and safety			

15:05	15'	BREAK	
<b>15:20</b>	<b>90'</b>	<b>Session 6: Slides and Lectures</b>	<b>Lisa</b>
	10'	Training input 1: Using slides effectively	Lisa
	20'	Practical Workshop: Speaking with slides on a laptop	Lisa/Caroline/Tom
	15'	Training input 2: Preparing the PTC lectures	Lisa
	40'	Final presentations	All observing
	5'	Reflection and Summary	Lisa
16:50	10'	Confidence matrix, Evaluations and Summary of the day	Caroline

### Appendix C: PTC course 2 Timetable, 12<sup>th</sup> & 13<sup>th</sup> April

<b>Day 1</b>			
08:00	30'	Registration	Dr George & Alusine
08:30	30'	Welcome and Introductions	Dr Smalle
09:00	15'	Local Trauma Perspective	Dr Smalle
09:15	15'	PTC Overview	Dr Smalle
09:30	30'	ABCDE of Trauma and Primary Survey	Hassan
10:00	10'	BREAK	(Alusine)
10:10	40'	Airway and Breathing	Dr Forde
10:50	35'	Circulation and Shock	Dr Johnpaul
11:25	35'	Chest Injuries	Dr George
12:00	45'	LUNCH BREAK	(Alusine)
12:45	80'	<b>Skills Stations</b>	
	(20')	<i>Basic Airway</i>	Dr Forde & Dr Bah
	(20')	<i>Spinal Transfer</i>	Dr Smalle
	(20')	<i>Log Roll</i>	Alusine
	(20')	<i>Chest Drains</i>	Dr Johnpaul/Dr Caulker
14:05	10'	BREAK	(Alusine)
14:15	30'	Ethics in Trauma	Prof Ogundiran
14:45	50'	Abdominal, pelvic, and Limb Injuries	Dr Cummings-John
15:35	15'	Scenario (Demo)	Dr Cummings-John/Hassan
15:50	70'	Scenario Practice	All Instructors
17:00	5'	Overview and Summary	Dr George
<b>Day 2</b>			
08:00	30'	Registration	Dr George
08:30	45'	Head and Spinal Injuries	Dr Johnpaul
09:15	30'	Trauma in Children in Children and Pregnancy	Dr Cummings John/Dr Thorpe
09:45	30'	Burns	Dr Bah

10:15	15'	BREAK	(Dr Thorpe)	Dr Thorpe (Timekeeper)
10:30	80'	Workshops		
	(20')	<i>Analgesia</i>	Dr Johnpaul/Alusine	
	(20')	<i>Burns</i>	Dr Bah/Hassan	
	(20')	<i>Paediatric Trauma</i>	Dr Cummings-John	
	(20')	<i>Neurological assessment</i>	Dr Smalle	
12:00	30'	<i>Secondary Survey</i>	Alusine	
12:30	40'	LUNCH BREAK	(Dr Thorpe)	
13:10	50'	Disaster Management	Dr Caulker	Thorpe (Timekeeper)
14:00	80'	Scenarios Practice	All Instructors	
15:20	10'	BREAK	(Dr Thorpe)	
15:30	15'	Repeat MCQs	Dr John Paul	
15:45	20'	Summary, feedback, and evaluation	Dr George	
16:05	15'	Closing	Dr Smalle	
16:20	15'	Certificates	Dr George & Caroline	