

# Developing a Critical Care teaching portfolio for COSECSA

Jacob S Dreyer, NHS Dumfries & Galloway, UK

David Ball, NHS Dumfries & Galloway, UK

Joseph Musowoya, Ndola General Hospital, Zambia

Abebe Bekele, Addis Ababa University, Ethiopia

# Why teach Critical Care in Africa?

1. Because we were asked (by COSECSA, National surgical societies and Universities/Colleges) [2].
2. Critical care is part of the COSECSA curriculum.
3. Patients who get to intensive care in Africa are generally young, economically active, have reversible conditions such as major injuries and surgical sepsis, and generally spend only a few days in the ICU with good recovery and return to economic activity in most cases [3]

# Aim of the Project

1. To develop a curriculum based on universal principles of care of critically ill surgical patients, but adapted to local pathology and resource availability.
2. To teach thinking processes; to understand the physiology of critical illness and how to support the patient's physiology while they recover from traumatic injuries, major surgery or sepsis.
3. To evaluate course development.
4. To critically analyse course evaluation through feedback.
5. To assess if the course influenced clinical practice.

# What is Critical Care?

1. Good clinical observations.
2. Rapid clinical assessment of deteriorating patients, using ABCDE.
3. Emergency support of ABCD to allow time for more thorough assessment and treatment.
4. Thorough further assessment using all available information.
5. Effective decision making at different levels.
6. Specific interventions to support critical organ function and prevent physiological deterioration.

## What CC emergencies are trainees called for?

- Cardiac arrest or impending arrest
- Hypoxic patient/Breathlessness
- Hypotensive patient/Tachycardia
- The patient has collapsed
- Oliguria
- Pyrexia
- Confusion
- Pain relief
- The patient is dying
- To explain what is going on

# Aim of CC module:

- Help trainees to ***think*** straight under pressure in the clinical arena (trainees usually are “at the coalface” of emergency surgical care.
- Provide trainees with knowledge, technical and communication skills to facilitate successful care.
- NOT to make them intensivists. This course is about management before the patient gets to ICU.

# Contents follow an ABCDE approach:

## DAY 1

Introduction to critical care

**A: Assessment** of patients; **ALS**; **Airway** management.

**B: Breathing**: Chest trauma; Post-op Hypoxia.

**C: Circulation**: Physiology of Shock, Management of Haemorrhage; Cardiac complications; Fluid therapy, Oliguria.

## DAY 2

**D: Disability**: Confusion in surgical patients; Head and spinal injuries (including preparation for transfer); Surgical sepsis; Emergency management of Burns; Anaesthesia for surgeons; Pain management.

**E: Extras**: Monitoring in CC; Communication skills; Obstetric CC for surgeons; Quality control/Patient Safety; End-of-Life Care.

## **Domains of Learning:**

1. Knowledge
2. Judgement & Decision making
3. Practical skills
4. Non-technical skills (Communication, Teamwork)

## **Assessment tools:**

- Knowledge and judgement:
  - Written test:
    - Four scenario-based “best answer” interactive questions
    - Allowed to discuss in groups but answer individually
  - Formative assessment at tutorials.
- Practical skills: CPR, Airway management, Spinal board.
- Teamwork: spinal board transfer; group interactions during tutorials.
- Communication skills.



# Mentorship

- 3 groups of 6 (for rotations)
- Colour coded
- Allocated a mentor per group = CC tutor
- Formal and informal meetings in programme
- To discuss group and individual progress and concerns
- To obtain informal feedback

# Reading Material

On invitation from the Office of International Surgery at the University of Toronto a series of critical care review article were written and published from December 2011 to April 2013 under Surgery in Africa Reviews for the Ptolemy Project, an open access online resource for surgical trainees in Africa ([www.ptolemy.ca](http://www.ptolemy.ca)).

A faculty teaching handbook has been published through Alba CCCD SCIO (ISBN 978-0-9927099-7) and a critical care manual for course participants will be published in 2014, based on the Ptolemy Project review articles.

# Course History

## **Independently**

Hawassa, Ethiopia 2009, 2011

Addis Ababa, Ethiopia 2012

Kigali, Rwanda 2013

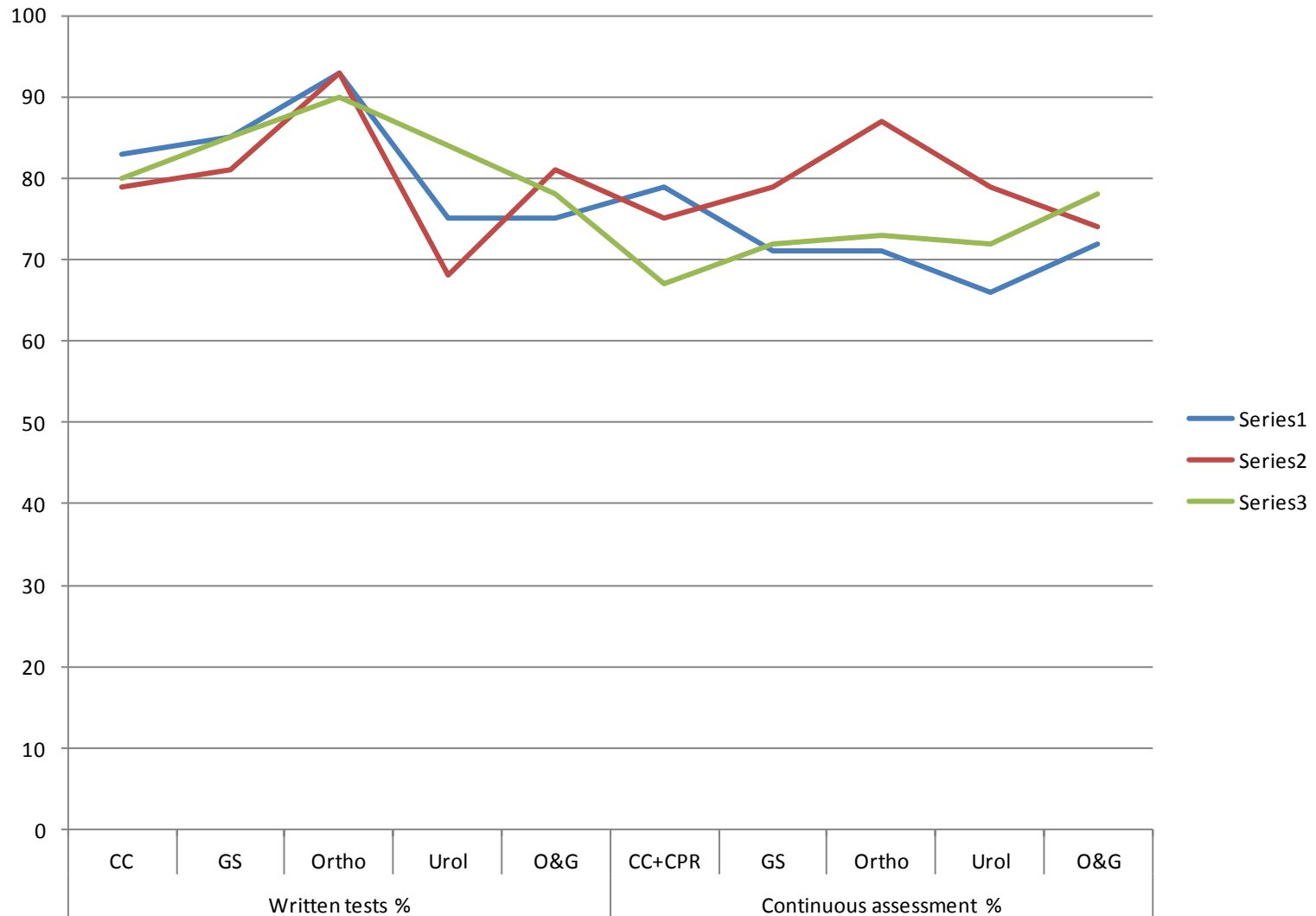
Dar es Salaam (for Dec 2014)

## **Through ASGBI as a part of a course on Managing Surgical emergencies**

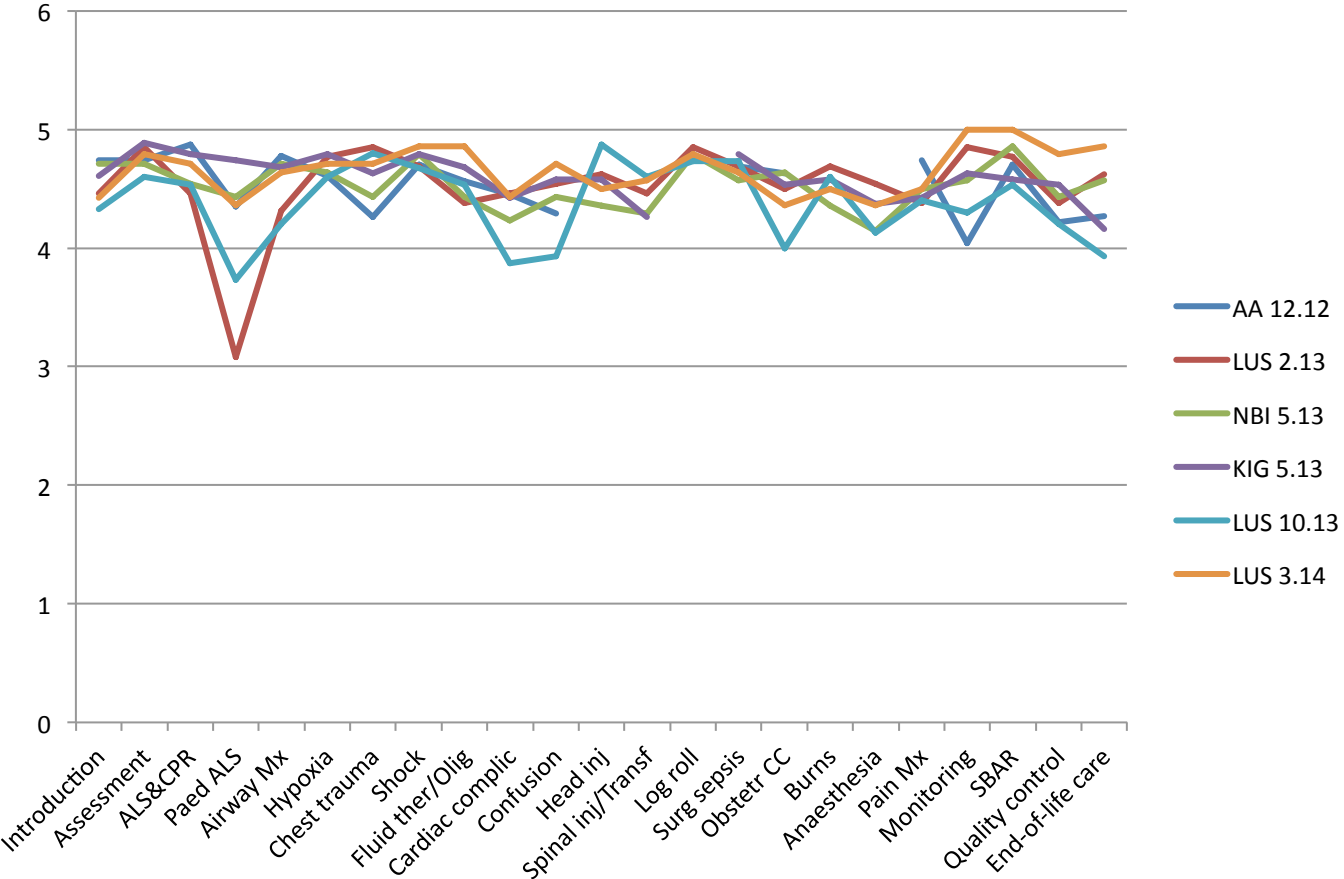
Lusaka, Zambia 2011, 2013 (x2), 2014

Nairobi, Kenya 2013, 2014

# Correlation of Assessment Score % in CC with other modules in MSE course:



# Combined Feedback Scores for all Critical Care Courses 2012-2014



# Course Evaluation:

## examples of positive points on immediate feedback

- Small group tutorials and interactive teaching
- Course organisation
- *Emphasis on simple and practical things that will make a difference.*
- Rapport with faculty and clarity of scenarios.
- *Overall the critical care component was an eye-opener to things that we take for granted in daily practice.*

# Course Evaluation: Feedback after 6 months

100% reported that the course has been very useful for practice.

- *The CC course made a tremendous difference in the way I deal with critically ill patients. My treatment is more focused and goal directed, and I have adequate scientific knowledge to direct the process.*
- *My communication skills in referring/presenting patients improved.*
- *I had the experience of looking after a severely septic patient due to faecal peritonitis. The patient got a cardiac arrest and acute kidney injury during their stay in ITU but managed to survive. Critical care principles were applied in looking after this patient.*

# 6-month Feedback Examples:

## 1. Impact on management of surgical emergencies:

- Very considerable 45%; Considerable 45% (2011).
- e.g. *“My management is now orderly & systematic.”* (2011)
- *“I had the experience of looking after a severely septic patient due to faecal peritonitis. The patient got a cardiac arrest and acute kidney injury during their stay in ITU but managed to survive. Critical care principles were applied in looking after this patient.”* (2013)

## 2. Modules “useful” or “very useful”? (2011)

- CC 90%; GS 95%; Ortho 100%; Urol 90%; Obst 45%

➔ Good Content and Face Validity.



# Conclusions

1. It is possible to develop a surgical critical care course that meets training needs in a different clinical environment based on basic universal principles of surgical care, but adapted through short PDSA cycles dependent on input from local faculty and course participants.
2. Quantitative feedback indicate good inter-course reliability and feasibility.
3. Qualitative feedback, especially after applying course principles in clinical practice, indicate good content, predictive, construct and face validity.