

COOL Spine Course

Advanced Orthopaedics Course: 22-25 April 2014

AIC-CURE International Children's Hospital, Kijabe, Kenya

COURSE REPORT



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Executive Summary

In April 2014 AIC-CURE International Children's Hospital Kijabe, Kenya, hosted a pioneering three-day spine course for surgical trainees from East and Central Africa. Held in the Rift Valley in Kenya, this course was the first spine course for trainees in the 10 constituent countries of the regional College of Surgeons of East, Central and Southern Africa (COSECSA). The course was led by Dr Joseph Theuri, Medical Director at AIC-CURE Hospital Kenya, where there is a growing spinal department, and Professor Chris Lavy, from the spinal unit at the Nuffield Orthopaedic Centre, Oxford, UK. 10 faculty members and 35 surgical trainees from around COSECSA attended the course. This course was the second of a series of three COSECSA Oxford Orthopaedic Link (COOL) short courses aimed at strengthening postgraduate orthopaedic training in the region. This introductory course provided an overview and foundation of principles and approaches in spine surgery and generated interest in a specialty where most of the delegates had limited prior experience. Feedback from participants was very positive and there is strong interest in repeating this course elsewhere in the region.



Background

Spine surgery is an emerging sub-specialty in the region and practised in very few places. Amongst the leading causes of spinal cord injuries (SCI) is trauma, many due to road traffic accidents and falls. Spine damage as a result of tuberculosis and other infections is also common. There is, however, very little data on the burden of SCI in the region and there are many challenges in managing these conditions, such as poor pre-hospital care, delayed presentation, few ambulance services, limited radiology, a critical shortage of human resources and a lack of dedicated acute spine injuries units.

Objectives

The course aim was to develop participants' understanding of concepts of treatment and management of spine conditions requiring surgery.

1. To provide an overview of spine conditions requiring surgery
2. To demonstrate the classic approaches to the spine in all the regions
3. To outline how common conditions are treated, including indications, operative technique and complications
4. To demonstrate use of spinal instruments

Faculty

The faculty team was led by Dr Joseph Theuri and Professor Chris Lavy and drew on expertise from the UK and around the region:

Mr. Gavin Bowden, Nuffield Orthopaedic Centre, Oxford, UK

Prof. Alex Buteera, Rwanda Military Hospital / King Faisal Hospital, Kigali, Rwanda

Prof. Chris Lavy, Nuffield Orthopaedic Centre, Oxford, UK

Dr Anthony Maina, Kijabe Hospital, Kenya

Dr Valentine Mandizvidza, Parirenyatwa Group of Hospitals, Harare, Zimbabwe

Prof. Paul Marks, Harrogate General Hospital, UK

Dr. Tim Mead, Michigan, USA (former Medical Director, AIC-CURE Hospital, Kijabe, Kenya)

Prof. Nyengo Mkandawire, Queen Elizabeth Central Hospital, Blantyre, Malawi

Dr Elijah Muteti, Moi Teaching and Referral Hospital, Eldoret Kenya

Dr Joseph Theuri, Medical Director, AIC-CURE Hospital, Kijabe, Kenya



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Participants

The course was attended by 35 surgeons and postgraduate senior surgical trainees from 8 of the COSECSA countries.



Dr Ephrem Gebrehana	Addis Ababa University, Black Lion Hospital
Dr Geletaw Tessema	Addis Ababa University, Black Lion Hospital
Dr Worku Belay	Addis Ababa University, Black Lion Hospital
Dr Mamo Deksis	Addis Ababa University, Black Lion Hospital
Dr Nesredin Yusuf	Dire Hospital, Jijiga, Ethiopia
Dr Getnet Asnake	Addis Ababa University, Black Lion Hospital
Dr Geoffrey Chege	AIC-CURE Hospital, Kijabe, Kenya
Dr Robert Cheruiyot	Moi Teaching Referral Hospital, Kenya
Dr Caroline Gatoba	University of Nairobi
Dr James Kinyua	AIC-CURE Hospital, Kijabe, Kenya
Dr Paul Mang'oli	AIC-CURE Hospital, Kijabe, Kenya
Dr Petrus Marakalala	Moi Teaching Referral Hospital, Kenya
Dr Namunguba Mbuta	Moi Teaching Referral Hospital, Kenya
Dr Levis Nguku	AIC-CURE Hospital, Kijabe, Kenya
Dr Philemon Nyambati	AIC-CURE Hospital, Kijabe, Kenya
Dr Victor Oteki	Kisii Level 5 Hospital, Kenya
Dr Peris N. Waithiru	University of Nairobi
Dr Kumbukani Manda	Kamuzu Central Hospital, Malawi
Dr Boston Munthali	Kamuzu Central Hospital, Malawi
Dr Nohakelha Nyamulani	Queen Elizabeth Central Hospital, Malawi
Dr Albert Nzayisenga	King Faisal Hospital, Rwanda
Dr Bryson Mcharo	Muhimbili Orthopaedic Institute, Tanzania

Dr Felix Mrita	Muhimbili Orthopaedic Institute, Tanzania
Dr Anthony Pallangyo	Kilimanjaro Christian Medical Centre, Tanzania
Dr Pamela T. K. Samoyo	Kilimanjaro Christian Medical Centre, Tanzania
Dr Justin Onen	Cure Hospital, Mbale, Uganda
Dr Nachor K. Bunda	University Teaching Hospital, Lusaka, Zambia
Dr Penelope K. Machona	University Teaching Hospital, Lusaka, Zambia
Dr Godfrey Phiri	University Teaching Hospital, Lusaka, Zambia
Dr Jonathan Sitali	University Teaching Hospital, Lusaka, Zambia
Dr Akimu C. Mageza	Parirenyatwa Hospital, Zimbabwe
Dr Raphael Makota	Mpilo Hospital, Bulawayo, Zimbabwe
Dr Munyaradzi Ndekwere	Harare Central Hospital, Zimbabwe
Dr Brian Paketh	Parirenyatwa Group of Hospitals, Zimbabwe
Dr Richard Thapelo	Moi Teaching Referral Hospital, Kenya

Delegates' previous experience of spine surgery

Attended spine teaching	48%
Assisted with spine operations	88%
Performed spine operations	18%

Teaching

This introductory spine course covered anatomy, imaging, surgical approaches, degenerative changes, trauma, and deformity through a series of interactive lectures, case studies, discussions and skills sessions. There was a practical session on pedicle screws using sawbones, pedicle screw sets and drills. (See Appendix 2 for teaching schedule.)

Assessment

At the start and end of the course participants completed a multiple choice questionnaire written by the course faculty to assess baseline and increase in knowledge of spine conditions and treatment.

	Pre-course score	Pre-course percentage	Post-course score	Post-course percentage	Percentage change
MAX	35	81%	38	88%	30%
MIN	18	42%	21	49%	-7%
MEAN	26	61%	31	73%	12%
MEDIAN	26	60%	32	74%	12%

Most improved: Dr Ephrem Gebrehana, Black Lion Hospital, Ethiopia (30% percentage change)

Highest post-score: Dr Geoffrey Chege, AIC-CURE Hospital Kijabe, Kenya (88%)



Evaluation

All participants and faculty were invited to complete a course evaluation on the final day.

	Average scores from 1-10 (1= poor; 10 = excellent)
Teaching Sessions	9
Case discussions	9
Opportunities for professional networking	9
The course overall	9
Did you enjoy the course?	Yes = 97%
Would you recommend the course to a colleague?	Yes = 100%
Would you be interested in attending a follow-up spine course?	Yes = 100%

What did you enjoy about this course?

- Objective, informative, helps to improve my patient management +++++++
- Interaction with multiple surgeons ++++
- Expert and knowledgeable teaching ++++
- Eye-opener ++++
- Other: lecturers bringing their cases; evidence-based; educative and stimulating

What was the best part of the course?

- Comprehensive, in-depth introductory course +++++
- Pedicle screws, step by step +++++
- Interesting and dedicated lecturers, friendly delivery, diverse experience of faculty ++
- Spine surgery is possible despite limited resources +
- Well-organised +++
- Other: opened up my mind; networking; value of apprenticeship; open discussion; correlating clinical presentation, radiological findings and management

What have you learned/gained that will benefit your future practice?

- Understanding various approaches and techniques +++++
- Consultation with colleagues improves outcomes
- Diagnosis and management plans, improved decision-making +++
- New interest in spine surgery +
- Confidence in spine surgery ++
- Eye opener. I will try to start a spine unit in my country.
- Other: Better interpretation of radiographic investigations; approaching trauma patients; some tricks from the masters; demystified cervical fixation; refreshed anatomy; evaluation of MRIs; management of TB spine

How could this course be improved?

- More practicals (inc live practicals, operative videos, equipment) ++++++
- Case discussions every day/evenings – more of a problem-based approach +++
- Cadavers ++++++
- Continue! +++
- Pre-course reading material +
- More on: spinal deformity, neurological examination, rehab for spinal patients, pedicle screws under fluoroscopy
- Other: shorter presentations; visual aids; more eye-contact during teaching; Encourage spine surgeons to publish so that local data can be cited

Further comments

- Encourage more spine training (fellowships, training hospitals) +++
- Lovely course – continue running this course +++++
- Overall very helpful +++++
- Great organisation ++
- Microphone +
- Record teaching sessions to assist with future training
- Faculty very nice and easy to interact with ++
- Topics well prepared and presented, inspiring
- Course dinner was awesome++
- Wrist/hand course in the future

Future planning

It is hoped that further spine training courses may be run again in the region as, encouragingly, all respondents would recommend this course to their colleagues, and all would be interested in a follow-up spine course.

Acknowledgements

First, we would like to thank the excellent teaching faculty who gave so generously of their time. We are very grateful to the AIC-CURE International Children's Hospital for hosting this training, the generous use of their venues and facilities and for organising the course dinner at Lake Navaisha. Thank you to all who have supported the training and who have helped in its organisation and running, including Peter Kyalo, Christine Kithome, Anne Sikiku, Titus Njoroge, John McLaughlin and CURE International UK. This course was funded through the COOL Project (see Appendix 3) through the Health Partnership Scheme, which is funded by the UK Department for International Development.



Dr Joseph Theuri, Professor Chris Lavy & Grace Le

June 2014

Email: cool@ndorms.ox.ac.uk

Web: www.ndorms.ox.ac.uk/cool.php

APPENDIX 1: Comments from Participants



“I wish this kind of course can be organised in different COSECSA countries so that every orthopaedic surgeon can attend. This is really good work done by COOL.”

“Thank you for the brilliant team of consultant spine surgeons and sharing your experience and expertise.”

“Thanks to COOL, CURE and others for organising the course which is needed for the region.”

“I would like to commend all the work COOL is doing. I have acquired a lot of knowledge through these courses and recommend that you continue with this programme. Looking forward to future courses.”

“I have great praise for the COOL Project for organising several excellent training programmes over the past months to enhance orthopaedic registrars and orthopaedic surgeons to interact across countries and attain much more knowledge and skills to make our patients better in this regard.”

“The knowledge I gained here is of great importance- there are just a few individuals to teach us back home... I urge you to keep it up.”

“Thank you very much for making all arrangements, it was a well organized course and indeed an interesting one. I learnt new things and polished the things that I already knew. Also, it was a wonderful opportunity to network and get acquainted with other surgeons from the COSECSA region.”

“Thanks a lot for your excellent organisation of the spine course. I was very happy & inspired by the course. Hope it will continue to inspire fellow surgeons.”

“In general we enjoyed our stay at the Kijabe spine course - it meant a lot for us. We thank you for the great opportunity you gave us. Keep it up with all the good work!!!”

APPENDIX 2: TEACHING TIMETABLE

Day 1	Wednesday 23 April	
7.00	Breakfast	
8.00	Devotions*	
8.30	Welcome & Introductions	Prof Lavy & Dr Theuri
8.45	Pre-course MCQ	
9.00	Anatomy of the Spine	Dr Muteti
10.15	Coffee	
10.45	Imaging the Spine	Dr Mandizvidza
11.30	Approaches to the Spine	Mr Bowden
12.30	Lunch	
13.30	Infections of the Spine, including TB	Dr Maina
14.30	Degenerative Changes of the Lumbar Spine	Prof Buteera
15.30	Tea	
16.00	Degenerative Changes of the Cervical Spine	Prof Marks
17.00	Questions and Close	
17.10	End of Day	

Day 2	Thursday 24th April	
7.00	Breakfast	
8.00	Devotions	
8.15	Recap and Introduction	
8.20	Cervical Spine Trauma	Prof Buteera
9.10	Thoracic and Lumbar Spine Trauma	Dr Mandizvidza
10.00	Coffee	
10.30	Pedicle Screws	All Faculty
12.20	Dr Parikh presentation	
12.30	Lunch	
13.30	Introduction to Deformity	Mr Bowden
15.00	Tea	
15.30	Operative Videos	
16.00	Post-Course MCQ	
16.15	Depart for course dinner	

Day 3	Friday 25th April	
7.00	Breakfast	
8.00	Devotions	
8.15	Recap and Introduction	
8.20	Spine Surgery in Africa	Prof Mkandawire
9.10	Case Discussions (1)	All Faculty
10.00	Coffee	
10.30	Case Discussions (2)	All Faculty
11.30	Closing Session inc. Certificates & Course Evaluation	
12.00	Lunch and Depart	

APPENDIX 3:

COSECSA Oxford Orthopaedic Link (COOL)

COSECSA Oxford Orthopaedic Link (COOL) is a multi-country partnership programme between the Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences (NDORMS) at the University of Oxford and the College of Surgeons of East Central and Southern Africa (COSECSA). The three-year project (2012–2015) combines research and training in primary trauma care and musculoskeletal impairment across the ten sub-Saharan countries in the COSECSA region: Burundi, Ethiopia, Kenya, Malawi, Mozambique, Rwanda, Tanzania, Uganda, Zambia and Zimbabwe. It aims to meet the critical need for more health workers trained in treating serious injury and musculoskeletal impairment. Primary activities include primary trauma care training courses in the COSECSA countries, clinical fellowships in paediatric orthopaedics for surgical trainees, short orthopaedic courses for surgical trainees, epidemiological research studies, and study grants for trainees to undertake research in trauma and musculoskeletal impairment.

AIC-CURE International Children's Hospital of Kenya

In 1998, CURE International, in cooperation with the African Inland Church, opened the AIC-CURE International Children's Hospital in Kijabe, Kenya. The hospital provides medical and surgical care to children with physical disabilities. The hospital provides the best medical and spiritual care possible and expert medical training.

AIC-CURE International Children's Hospital was Africa's first orthopaedic/ paediatric teaching hospital for children with disabilities. The 30-bed hospital provides care for children suffering from conditions like clubfoot, cleft lip and cleft palate, curvature of the spine and disabilities stemming from polio, cerebral palsy, muscular dystrophy and other congenital abnormalities.

Each year the hospital serves approximately 8,000 children and performs approximately 2,500 surgeries each year. The hospital also operates mobile clinics that travel to remote regions to provide follow-up care and identify children who can be treated at the hospital.