COSECSA CONFERENCE
KAMPALA
28TH NOVEMBER - 6TH DECEMBER 2019 KAMPALA SERENA HOTEL

Theme: Access to Safe Surgical Care A Universal Perspective

COSECSA Conference Handbook
2019
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MINISTER OF HEALTH

On behalf of the Government of the Republic of Uganda, the Ministry of Health and on my own behalf, I take this opportunity to welcome our foreign participants, guests and all of you to Uganda. I hope you have so far enjoyed your travel and stay and I do wish you a further happier stay during the COSECSCA Conference with the theme “Access to Safe Surgical Care”.

As a country, we are privileged to host this International Conference on surgical care, at a time when various initiatives are emerging at national, continental and global level to improve access to safe surgical care.

It is of utmost importance that; as clinicians, researchers, political decision-makers and society in general, we unite with clear well-defined strategies in order to improve access to surgical care through training and early diagnosis of surgical cases. Countries are encouraged to initiate training programs to be implemented and run properly, while also giving priority to patient care, research and innovation.

We are sure that the substantial agenda items presented to us by the Conference’s Organizing Committee offer a constructive platform for the sharing of knowledge based on research and evidence in order for us to achieve progress together in terms of holistic evidence-based interventions in health matters.

I thank you all for coming and wish you a pleasant time in Uganda.

For God and My Country

Dr. Jane Ruth Aceng
Minister of Health
AMBASSADOR OF IRELAND

It is an honour for me to represent the Government of Ireland and be part of the 2019 COSECSA AGM and Graduation Ceremony here in Kampala. In addition to being an important annual milestone in the COSECSA calendar, 2019 is also a very special year for both Ireland and COSECSA. It is a time of great celebration as it marks 20 years of the COSECSA partnership, and 25 years of Ireland’s development programme in Uganda.

Ireland has long been a partner to Uganda in the area of health and this partnership goes back several decades to our missionaries who travelled here to provide vital health services as nurses, midwives, and of course as surgeons. Today, health remains a key component of our development programme in Uganda as we continue to work with Government in partnership towards Sustainable Development Goal 3, ‘Better Health for All’. Similarly, the partnership between the Royal College of Surgeons of Ireland and COSECSA is one that the Government of Ireland has proudly supported since 2007 – it is a wonderful example of collaboration and growth between professional bodies and I am delighted to note that many Irish surgeons have travelled to Kampala to support this year’s examinations.

For too long, surgery has been referred to as ‘the neglected stepchild’ of global health. However, I am happy to say that surgery is increasingly acknowledged and valued as a key component of any effective health system, as we strive to achieve universal healthcare. Perhaps the oversight was due to the very nature of surgery and our own human nature – surgery or the role of a surgeon is not something we typically consider in our daily lives. It is only in the event of our own specific need or that of a loved one, that we truly appreciate and value the technical skill and expertise of surgeons that save lives daily. In policy and in decision-making, we should always be guided by evidence. The increasing burden of non-communicable diseases in both Ireland and Africa, is a clear signal that demands for surgery will continue to increase. Together, we must do all we can to ensure equity in access to surgery. By producing more surgeons to serve more people in the region, COSECSA is a key agent to promote such equity.

As the largest single contributor to the surgical workforce in the East, Central and Southern Africa region, COSECSA has supported 600 trainees across 14 member countries. Research gathered has shown that 80% will continue to work in their home country and that each COSECSA-trained surgeon performs between 300 and 400 major surgeries a year – the impact of which we must continue to celebrate and value.

Finally, I would like to acknowledge and applaud the commitment and leadership of the Government of Uganda and the Ministry of Health to this important event. Over the past few months, the Embassy of Ireland has liaised closely with the COSECSA committee here in Kampala and I know they have been working extremely hard to ensure the success of this year’s graduation and we are delighted to support their efforts.

Congratulations again to all the team and indeed to all the hard-working fellows and members who sit exams this year - I look forward to joining you all at the graduation ceremony on December 4th.

William Carlos
Ambassador of Ireland
It is my sincere pleasure to invite you to attend The College of Surgeons of East Central and Southern Africa (COSECSA) Examinations, Graduation Ceremony and Scientific Conference, to be held from December 2nd to the 7th, 2019, in Kampala, Uganda. COSECSA will be celebrating 20 years since inauguration and the COSECSA December meeting remains the premier annual surgical meeting for Fellows, Members, Trainees and a large number of Local and International surgical friends of COSECSA.

A very warm welcome for all our visiting fellow surgeons, with whose support, COSECSA has grown to a level where, at this December meeting, COSECSA will be examining the highest number of surgical candidates so far, numbering just under 200. This has been possible because with your support COSECSA, in 20 years has a presence in 20 Countries, 14 of which are member countries with 6 Satellite countries. COSECSA has 685 registered trainees in 17 countries with 346 Fellows, qualified after taking the COSECSA Examination.

Upto 70% of the 120 accredited hospitals, 90 of which are active training centers are located in the RURAL locations and it is with great pleasure to note that we have many hospitals where the Fellows of COSECSA, who qualified in the earlier years are now Trainers who are training COSECSA trainees at these RURAL COSECSA accredited hospitals. This will enable COSECSA to achieve its vision which is to improve access to the desperately needed surgical care, by training the TRUE General Surgeon for RURAL Africa.

This meeting will be preceded by a number of pre-conference workshops, and a vibrant graduation ceremony followed by the scientific conference on Thursday and Friday.

Prof. Pankaj G Jani
Department of Surgery, University of Nairobi, Vice Chair Board G4 Alliance
President COSECSA
On behalf of the Association of Surgeons of Uganda (ASOU), it is my pleasure to take this opportunity to welcome all of you to Kampala for this year’s COSECSA Annual General Meeting Graduation ceremony and the Scientific Conference. These events will be preceded by preconference workshops and Examinations for membership, (MCS) and Fellowship, (FCS).

This year (2019) we celebrate 20 years of the existence of this great College. For many who may not know, much of the work that set up the College was done here in Uganda. Over the years, the College has expanded into 14 different countries with 8 different super specialist training programs. This is a great achievement worth celebrating.

As COSECSA, our 2019 AGM is very special as we shall be electing the next team who will lead COSECSA. This is coming on the back of our exponential growth, a growth that needs to be properly managed. As a member, it is your responsibility to come and be part of this elective process. Let’s together determine the future leaders of our College.

As the ASOU President I would sincerely hope that you will be able not just to attend this conference but also to enjoy the legendary hospitality that Ugandans are known for. I would also like to encourage you to take time and visit our country and enjoy the unmatched beauty that Uganda offers. We are the PEARL OF AFRICA and we take great pride in our being gifted by nature. So please plug into our tourist program and get an experience that will live with you for ever.

Dr John Sekabira  
President of the Association of Surgeons of Uganda (ASOU)
LETTERS OF WELCOME

THE CHAIR/ COSECSCA ORGANIZING COMMITTEE

The day has dawned when COSECSCA-ASEA-ASOU in Uganda welcomes you with the usual Ugandan hospitality. It has been twelve months of hard work by all the surgeons in Uganda to make this dream week come true. As we recall when our predecessors came together and began in a humble way, the Association of Surgeons of East Africa; it was Fellowship, work, sharing of knowledge and relaxation. It was so affectionate that surgeons hosted colleagues in their homes. Times have changed and the activities have become more academic yet still social and this has seen the birth of our College without walls and the award of Fellowships.

We thank all our partners who have seen us grow. Your financial contributions and moral support has made COSECSCA become what it is now.

I am indebted to the Organizing Committee who spent sleepless nights, knocked at several doors to make this meeting a success. I thank all people of good will in their individual and collective capacities, including surgeons, the companies, organizations and the hoteliers who opened your doors when we needed you most.

Our events consultants, Brandsmadetolast-Africa for walking the rough road with us, thank you so much.

I am grateful to the Government of Uganda through the office of the Prime Minister’s Office and the Ministry of Health for their support and guidance.

To all who have come to celebrate 20 COSECSCA70 ASEA, welcome to Uganda the Pearl of Africa, Feel at Kampala.

For God and My country

Dr. Fualal Jane Odubu
Chair, Organizing Committee, 20cosecsa70asea 2019
THE CHAIR/ COSECSA SCIENTIFIC COMMITTEE

Dear Colleagues and Friends,

On behalf of the Scientific Programme Committee, we are thrilled to welcome you to the 2019 COSECSA Conference. “Access to safe surgical care: On the path to Universal Health care” is the theme of this year’s Conference. We have developed a Programme with an aim to create a conference that will be somewhat different content-wise. A significant part of the emphasis will be on Cancer, Surgery and the Law, Surgical Education, Emergency Surgery and Trauma, Global Health, Advances and Controversies in Surgery, Surgery and the Media. In the programme, we have incorporated talks, as well as pressing issues (“hot topics”) on the global agenda in the presentation formats. The topics from differing expert perspectives will present a variety of opinions and engage the audience in a meaningful discourse.

We are all well aware of the importance of building and promoting the network of participants by making meetings more accessible and encouraging interaction between participants. We will facilitate discussions between renowned leaders in the different fields of Surgery, their peers and with young researchers and practitioners in their respective fields. We strive for collaboration between health practitioners and colleagues.

Now it is your turn – be part, participate, share ideas and your experiences. Do not hesitate – we are open to hear and consider any idea, whichever that may be for the advancement of healthcare and education in the region.

And do not forget that Kampala is an experience by itself: a non-stop city with leading entertainment options. The weather in Kampala is usually relatively comfortable.

Thank you to my Scientific Programme Committee for all your hard work and of course the entire team, sponsors and valued supporters.

We promise you an awesome experience.

You are welcome to the pearl of Africa,

Prof. Moses Galukande - M.Med, FCS (ECSA), MSc, Ph.D.
Chair I COSECSA 2019 Scientific Programme Committee
ABOUT COSECSA

The College of Surgeons of East, Central and Southern Africa is the second largest surgical training body in sub Saharan Africa. COSECSA was established in 1999 to advance education, training, examination standards, research and practice in surgical care by increasing the number of appropriately trained, well qualified surgeons and surgically trained general medical officers.

WHAT IS COSECSA

The College of Surgeons of East, Central and Southern Africa (COSECSA) is non-profit making professional body that fosters postgraduate education in surgery and provides surgical training throughout the East, Central and Southern Africa region. The College delivers a common surgical training programme with a common examination and an internationally recognized surgical qualification in its Membership programme in Basic Surgery and Fellowship Programme in Orthopedics; Pediatric orthopedics; ENT; Urology; Pediatric Surgery; Neurosurgery; Cardiothoracic; Plastic Surgery and General Surgery.

The College currently operates in 14 countries in the Sub-Saharan region: Burundi, Ethiopia, Kenya, Malawi, Mozambique, Namibia, South Sudan, Rwanda, Tanzania, Uganda, Zambia, Zimbabwe, Sudan and Botswana.

Our primary objective is to advance education, training, standards, research & practice in surgical care in this region. COSECSA shapes and leads the training of surgeons in the Sub-Saharan region. We deliver a common surgical training programme with a common examination and an internationally recognised surgical qualification. Admission to the College is open to all registered medical practitioners who comply with the professional requirements. (Email: info@cosecsa.org, Website: www.cosecsa.org)

OUR VISION

To be a leading organisation in surgical training, standards and research, in our region and beyond. This Vision is focused on positioning COSECSA as a world-class surgical training and research institution.

OUR MISSION

To increase accessibility of surgical services, especially to African rural populations by standardising and widening access to surgical training, skills and knowledge.

OUR MANDATE

1. To promote the honour and dignity of the surgical profession and patients by ensuring that the highest ethical standards in the training and practice of surgery are maintained throughout the region.
2. To promote and encourage postgraduate education, training and research in surgery which is relevant to the region and is focused in increase the number of surgeons and surgically trained health professionals.
3. To advance the science and practice of surgery in the region.
PROGRAMME INFORMATION

PROGRAMME
The handbook contains the Programme at a Glance showing the sessions’ title, date, time, and venue. The detailed Programme and the poster schedule are available via the conference website programme page and the conference app.


POSTERS
To locate a particular poster, look at the poster number on the poster schedule then follow the signs in the poster display in the Exhibition Area to find the poster. Posters will be displayed in four sessions.

POSTER SESSION ONE (Wednesday December 4) | POSTER SESSION TWO (Thursday December 5)
POSTER SESSION THREE (Friday December 06)

THERE WILL BE A DEDICATED POSTER VIEWING TIME FOR EACH SESSION

Along with the indicated poster viewing time for each poster session, poster presenters are encouraged to be present at their posters during refreshment breaks in order to answer questions and engage in discussion.

ABSTRACT PUBLICATION
The electronic abstract publication is available via the conference website programme page and the conference app. It contains all the abstracts that will be presented as oral and poster presentations as well as abstracts from any of the invited speakers. Abstracts are listed alphabetically by the corresponding author.

LANGUAGES
Only English will be used at all meetings and during presentations.

INSTRUCTIONS FOR SPEAKERS
Please deliver your presentation to the venue you are presenting in after you have registered. Be sure to deliver it at least 1 hour before your presentation time. If you are presenting, Please DO NOT arrive at the time of presentation and expect to give it to the technician at that time.

INSTRUCTIONS FOR POSTER PRESENTERS
The poster schedule is available via the Conference Website programme page and conference app. Refer to the poster schedule for your presentation day and poster venue. Please put your poster at the designated area 1 hour before the allocated time. Posters must be once your poster session time ceases as indicated on the Programme.

MINI WORKSHOPS
You will find people from different departments and fields attending together, and you may find non-academics such as journalists or people in business attending too. These have a specific, action-oriented purpose, and aim to generate some concrete answers to current problems in the field with an opportunity to learn new skills and to familiarize yourself with a topic you don’t know well.
# Programme at a Glance

**November 28**<sup>th</sup> **2019**  ARRIVAL OF SECRETARIAT AND ECC

**November 28**<sup>th</sup> **2019**  Arrivals:  COUNCIL, WORKSHOP FACILITATORS AND PARTICIPANTS

**Time:**  8.00- 5.00pm

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Venue</th>
<th>Persons Responsible</th>
</tr>
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<tbody>
<tr>
<td>November 29</td>
<td>Workshops</td>
<td>Mulago Specialized Hospital</td>
<td>Secretariat/ CR</td>
</tr>
</tbody>
</table>
| November 30   | Workshops  
Council Meeting       | Mulago Specialized Hospital  
Specialized Women & Neonatal Hospital | CR/ Chair Scientific Committee Secretariat |
| December 1    | Council Meeting  
Examiner Seminar         | Specialized Women & Neonatal Hospital      | ECC/ CR/ Secretariat                     |
| December 2    | Membership Examinations         | Mulago Specialized Hospital  
Block A                                   | ECC/ CR/ Secretariat                     |
| December 3    | Fellowship Examinations         | Mulago specialized Hospital  
Block A                                   | ECC/CR/ Secretariat                     |
| December 4    | PLENARY, RDTF ORATION Graduation | Serena Kampala Hotel                      | CR/CHAIR/MC/ECC                          |
| December 5 & 6| Scientific Presentations        | Serena Kampala Hotel                      | CR/CHAIR/MC/ECC                          |

**Key:**  
- **CR** - Country Representative  
- **ECC** - Exams and Credential Committee  
- **MC** - Master of Ceremonies
## PRE CONFERENCE WORKSHOPS | NOV 25<sup>th</sup> – DEC 01<sup>st</sup>

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Venue</th>
<th>Facilitators</th>
<th>Contact persons</th>
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</thead>
<tbody>
<tr>
<td>Nov 25 – 29</td>
<td>8:00 – 5:00pm</td>
<td>Reconstructive Surgery Level III</td>
<td>Mulago Super Specialized Hospital</td>
<td>Second Chance MS. Rose Alenyo MR. GW Galiwango</td>
<td>MS. Rose Alenyo</td>
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<tr>
<td>Nov 29 – Dec 1</td>
<td>9:00 – 5:00pm</td>
<td>Basic principles of fracture management for Operating Room Personnel [ORP] Basic Principles of Fracture management</td>
<td>Hotel Africana</td>
<td>Dr. John Ekure</td>
<td>Dr John Ekure</td>
</tr>
<tr>
<td>Nov 29</td>
<td>8:30 – 3:00pm</td>
<td>The role of Imaging in Diagnostics and Intervention in Urology</td>
<td>6A – Transplant Unit Mulago Super Specialized Hospital</td>
<td>Uganda Urology Team MR. Watya Stephen</td>
<td>MR. Frank Asiimwe</td>
</tr>
<tr>
<td>Nov 29</td>
<td>9:00 – 3:00pm</td>
<td>Radiosurgical procedures in Neuro Surgery</td>
<td>Mulago Super Specialized Hospital</td>
<td>Ravi Suman Senior consultant Neurosurgeon Yashoda Hospital Hyderabad India</td>
<td>MR Oscar Obiga</td>
</tr>
<tr>
<td>Nov 30</td>
<td>9:00 – 3:00pm</td>
<td>Endoscopic approaches to the ventricle</td>
<td>Mulago Super Specialized</td>
<td>Cure Neurosurgical team Mbale Uganda</td>
<td>MR Oscar Obiga</td>
</tr>
<tr>
<td>Dec 01</td>
<td>9:00 – 2:00pm</td>
<td>Neonatal Surgical Emergency</td>
<td>Surgical Skills Lab School of Medicine Block</td>
<td>British Association of Paediatric Surgeons MS. Phyllis Kisa Mr John Sekabira Mr Kokila Lako</td>
<td>MR. Nasser Kakembo</td>
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### Poster Session One | Wednesday 4th December 2019

<table>
<thead>
<tr>
<th>Poster No</th>
<th>Submitting Author</th>
<th>Poster Title</th>
<th>Country</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Sakshie Alreja</td>
<td>Improving Teamwork and Communication using the Surgical Safety Checklist: A Quasi-Experimental Evaluation in the Lake Zone of Tanzania</td>
<td>United States</td>
</tr>
<tr>
<td>2</td>
<td>Carol Maina</td>
<td>Surgical emergency services; delays and outcomes at a teaching hospital, Uganda</td>
<td>Uganda</td>
</tr>
<tr>
<td>3</td>
<td>Billy Haonga</td>
<td>Inadequate soft-tissue coverage results in high complication rates and poor long-term quality of life following severe open tibia fractures in Tanzania</td>
<td>Tanzania</td>
</tr>
<tr>
<td>4</td>
<td>Aaron Edward Wange</td>
<td>Trauma interns of poor access of emergency and essential surgical care (EEs), aim of assessment is to determine surgical capacity at government hospitals in Eastern Uganda to understand Trauma</td>
<td>Kenya</td>
</tr>
<tr>
<td>5</td>
<td>Sumayiya Nanteza</td>
<td>Determinants and Immediate Treatment Outcomes of Children with Wilms’ Tumour in Uganda: A Cohort study</td>
<td>Uganda</td>
</tr>
<tr>
<td>6</td>
<td>Taylor Wurdemann</td>
<td>Risk Factors Associated with Surgical Site Infections, Post-Operative Sepsis and Maternal Sepsis in Tanzania’s Lake Zone Region: A longitudinal quasi-experimental study</td>
<td>United States</td>
</tr>
<tr>
<td>7</td>
<td>Gerald Ekwen</td>
<td>Implementing safe surgery/Use of Modified WHO safety Checklist at JJ Dossen Memorial Hospital: Process, Drivers and Outcomes of a quality improvement initiative</td>
<td>Cameroon</td>
</tr>
<tr>
<td>8</td>
<td>Billy Haonga</td>
<td>Impact of Prostheses on Quality of Life and Functional Status of Lower Limb Amputees in Tanzania</td>
<td>Cameroon</td>
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<tr>
<td>9</td>
<td>Rovine Naluymbazi</td>
<td>Postoperative mortality and associated factors among children with intestinal obstruction in Mulago National Referral Hospital</td>
<td>Uganda</td>
</tr>
<tr>
<td>10</td>
<td>Ronald Kiweewa</td>
<td>Association between Serum Bicarbonate and Injury Severity among Major Trauma patients in a Tertiary Hospital in Sub Saharan Africa; a prospective observational study</td>
<td>Uganda</td>
</tr>
<tr>
<td>11</td>
<td>Francis Basimbe</td>
<td>Operation hernia and COSECSA (college of surgeons of East, Central and Southern Africa) model for training and competence assessment in hernia surgery</td>
<td>Uganda</td>
</tr>
<tr>
<td>12</td>
<td>Daniel Ogwal</td>
<td>Perioperative documentation as a predictor of occurrence of adverse events in Mulago national referral hospital, a prospective and retrospective study</td>
<td>Uganda</td>
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</tbody>
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### Poster Session Two | Thursday 5th December 2019

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<thead>
<tr>
<th>Poster No</th>
<th>Submitting Author</th>
<th>Poster Title</th>
<th>Country</th>
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<tbody>
<tr>
<td>1</td>
<td>Perry Travis</td>
<td>Outcomes in Fournier’s Gangrene Using Skin and Soft Tissue Sparing Flap Preservation Surgery for Wound Closure: An Alternative Approach to Wide Radical Debridement</td>
<td>United States</td>
</tr>
<tr>
<td>2</td>
<td>Mungazi Simbarashe</td>
<td>Prevalence of Helicobacter pylori in asymptomatic patients at surgical outpatient department: Harare hospitals Type of study: A cross sectional study</td>
<td>Zimbabwe</td>
</tr>
<tr>
<td>3</td>
<td>Anthony Maina</td>
<td>Management of Open Pelvic Fractures: a Case Series</td>
<td>Kenya</td>
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<tr>
<td>4</td>
<td>Dieudonne Lemfuka</td>
<td>A Review of Sign Nail Surgery done By General Surgeons in a Rural Low Volume Sub-Saharan Setting</td>
<td>Gabon</td>
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<td>Poster No</td>
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<td>Country</td>
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<tr>
<td>5</td>
<td>Bake Jacques</td>
<td>Neonatal Surgery in a Low Resource Setting, HEAL Africa Tertiary Hospital,</td>
<td>Democratic Republic of Congo</td>
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<td>North Kivu Province, Eastern Democratic Republic of Congo</td>
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<tr>
<td>6</td>
<td>Chatterjee Pritha</td>
<td>Improving surgical quality in low and middle income countries: Why do some</td>
<td>United States</td>
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<td>health facilities perform better than others? A longitudinal, mixed methods</td>
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<td></td>
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<td>study in Tanzania</td>
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<td>7</td>
<td>Felix Oyania</td>
<td>The hidden mortality of congenital anomalies in Uganda</td>
<td>Uganda</td>
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<td>8</td>
<td>Medard Kakule</td>
<td>Success of Surgical Correction of Cleft Palate performed in remote areas of</td>
<td>Democratic Republic of Congo</td>
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<td>Kabuyaya</td>
<td>Democratic Republic of Congo</td>
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<tr>
<td>9</td>
<td>Vanessa Msosa</td>
<td>Colostomy reversal camp at Kamuzu central hospital, Lillongwe, Malawi</td>
<td>Malawi</td>
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<tr>
<td>10</td>
<td>Idi Marcel Ehanga</td>
<td>Challenges of Glioblastoma Multiforme management in low income countries</td>
<td>Uganda</td>
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</tbody>
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**Poster Session Three | Friday 6th December 2019 | 8:00am – 11.30am**

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<tr>
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<th>Poster Title</th>
<th>Country</th>
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<tbody>
<tr>
<td>1</td>
<td>Hellar Augustino</td>
<td>A team based approach to introduce and sustain use of the WHO Surgical Safety</td>
<td>Tanzania</td>
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<td></td>
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<td>Checklist in remote settings in Tanzania</td>
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<tr>
<td>2</td>
<td>Sherif Youmna</td>
<td>Abdominal Heterotaxy Syndrome A Case Report</td>
<td>United States</td>
</tr>
<tr>
<td>3</td>
<td>Joseph Mbuga</td>
<td>Use of an osteocutaneous free fibula for reconstruction of a 3 dimension</td>
<td>Uganda</td>
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<td></td>
<td></td>
<td>post noma orbitomaxillary defect - A case report, CoRSU Hospital Uganda</td>
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<td>4</td>
<td>Peter Kayima</td>
<td>Operative volume and surgical case distribution in Uganda’s public sector: a</td>
<td>Uganda</td>
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<td>stratified randomized evaluation of nationwide surgical capacity</td>
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<tr>
<td>5</td>
<td>Fan Kaiyang</td>
<td>Towards a national implementation of Trauma Team Training in Kenya</td>
<td>Canada</td>
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<tr>
<td>6</td>
<td>Kabongo Kizito</td>
<td>Case report: Cold abscess of the thigh</td>
<td>Egypt</td>
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<tr>
<td>7</td>
<td>Abahuju Egide</td>
<td>Understanding barriers to behavior change after implementation of the Non-</td>
<td>Egypt</td>
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<td>Technical Skills for Surgery (NOTSS) course</td>
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<tr>
<td>8</td>
<td>Gander Amy</td>
<td>Changing nutritional status of paediatric surgical patients throughout the</td>
<td>Zambia</td>
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<td></td>
<td></td>
<td>inpatient admission; a pilot study</td>
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<tr>
<td>9</td>
<td>Kenneth Nyombi</td>
<td>Patterns of acetabular fractures in Kampala, Uganda</td>
<td>Rwanda</td>
</tr>
<tr>
<td>10</td>
<td>Andrew Huang</td>
<td>Pearls and Pitfalls of Oncoplastic Techniques for Giant Fibroadenomas</td>
<td>Uganda</td>
</tr>
<tr>
<td>11</td>
<td>Lekuya Hervé</td>
<td>A Supraclavicular ALK-Positive Anaplastic Large-Cell Lymphoma Initially</td>
<td>Uganda</td>
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<td></td>
<td>Monka</td>
<td>Misdiagnosed and Yet Successfully Treated with Wide Excision and Adjuvant</td>
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<td></td>
<td></td>
<td>Chemotherapy: A Case Report</td>
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<tr>
<td>12</td>
<td>Franck Sikakulya</td>
<td>Management of Subcutaneous Emphysema in Low Income Setting Eastern of DR</td>
<td>Uganda</td>
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<td></td>
<td></td>
<td>Congo: Rare Complication of Inhalation Foreign Body Type Peanut. Case Report</td>
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<tr>
<td>13</td>
<td>Steven Staffa</td>
<td>Examining the Relationship between Surgical Safety Checklist Adherence and</td>
<td>United states</td>
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<td>Development of Surgical Site Infections, Sepsis, and Maternal Sepsis in the</td>
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<td>Lake Zone of Tanzania</td>
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</tbody>
</table>
EXCITING EARLY MORNING SESSIONS

THURSDAY, DECEMBER 05 | 7:15 – 7:55AM

• Global Health Workers Crisis for Surgeons
• Difficult Conversations with Patients
  • Specimen Repositories
• Pathology Errors: How to Prevent them
• The National Surgery Anesthesia & Obstetric Plan
• A Surgical Career; Is Work life balance doable?

FRIDAY, DECEMBER 06 | 7:15 – 7:55AM

• Burn out; signs and How to overcome
• Close and Personal: How to make money, save it and safely invest: a career Surgeon’s Struggle in SSA
  • What should a surgical curriculum for a Surgical discipline look like? Avoiding the Pitfalls
  • How to grow a fulfilling Surgical Career?
• Safe Medical Circumcision for HIV Prevention; Does it work? The Uganda Story
  • Global Health, What it is Challenges and Opportunities

You’re all Invited not to miss the exciting discussions during the early morning sessions!
<table>
<thead>
<tr>
<th>No</th>
<th>Title of the Mini workshop</th>
<th>Lead Facilitator</th>
<th>Scheduled day</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Neglected Surgical Diseases: Session I</td>
<td>Patrick Mwai</td>
<td>December 05</td>
<td>9:15 – 11:00am</td>
</tr>
<tr>
<td></td>
<td>Neglected Surgical Diseases: Session II</td>
<td>Pankaj Pani</td>
<td>December 05</td>
<td>11:30 – 1:00pm</td>
</tr>
<tr>
<td>2</td>
<td>Fundamentals Surgical Research (FSR): Session I</td>
<td>Jennifer Rickard</td>
<td>December 05</td>
<td>10:00 – 11:00</td>
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<tr>
<td></td>
<td>Fundamentals Surgical Research (FSR): Session II</td>
<td>Jennifer Rickard</td>
<td>December 05</td>
<td>11:30 – 1:00pm</td>
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<tr>
<td></td>
<td>Fundamentals Surgical Research (FSR): Session III</td>
<td>Jennifer Rickard</td>
<td>December 05</td>
<td>3:00 – 4:15pm</td>
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<tr>
<td></td>
<td>Fundamentals Surgical Research (FSR): Session IV</td>
<td>Jennifer Rickard</td>
<td>December 05</td>
<td>4:30 – 5:15pm</td>
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<tr>
<td>3</td>
<td>Anaesthesia &amp; Surgery: Task shifting, when the ideal is a tall</td>
<td>Cephas Mijumbi</td>
<td>December 05</td>
<td>10:00 – 11:00</td>
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<td>4</td>
<td>WASH</td>
<td>TBN</td>
<td>December 05</td>
<td>11:30 – 1:00pm</td>
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<td>5</td>
<td>Forensic Medicine &amp; Surgery: When you are accused of negligence</td>
<td>Sylvester Onzivua, Jeff Kiryabwire</td>
<td>December 05</td>
<td>3:00 – 4:15pm</td>
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<tr>
<td>6</td>
<td>Breast Health</td>
<td>Adelaida Mghase, Jennifer Blenkinsop, Tuhaise Gamuakama</td>
<td>December 05</td>
<td>4:30 – 5:15pm</td>
</tr>
<tr>
<td>7</td>
<td>Self-care, Retirement and personal Development: Strategies</td>
<td>Samuel Luboga</td>
<td>December 06</td>
<td>10:00 – 11:00</td>
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<td>and Actions</td>
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<td>8</td>
<td>Safe Surgery Study</td>
<td>Alidina Shehnaz, Kelly Lauren, Faktor Kara</td>
<td>December 06</td>
<td>10:00 – 11:00</td>
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<tr>
<td>9</td>
<td>MCS and FCS: How to prepare for these Exams – Curriculum</td>
<td>Russ White, Josepht Jombwe, Joel Kiryabwire</td>
<td>December 06</td>
<td>10:00 – 11:00</td>
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<td>10</td>
<td>Ethics in Global Surgery</td>
<td>Abdullah Saleh</td>
<td>December 06</td>
<td>11:30 – 12:00</td>
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<tr>
<td>11</td>
<td>Sub specialty training in India: Opportunities, Challenges and</td>
<td>Emmanuel Elobu, Olivia Kituuka, Kintu Luwaga, Rachael Ayikoru</td>
<td>December 06</td>
<td>3:00 – 4:15pm</td>
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<td></td>
<td>Outcomes</td>
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</table>
**WEDNESDAY | 4 DECEMBER**  
**Venue:** Serena Hotel, Victoria Main Hall  
**Time:** 8:00am – 7:00pm

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Person Responsible</th>
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<tbody>
<tr>
<td>8.00-9.00</td>
<td><strong>Morning Hours</strong> AGM</td>
<td>Country Coordinator/Country representative Uganda/Arusha Secretariat</td>
</tr>
<tr>
<td>9.30-9.40</td>
<td>Opening Remarks</td>
<td>Host Chair</td>
</tr>
<tr>
<td>9.40-9.45</td>
<td>Welcome remarks</td>
<td>President ASOU</td>
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<tr>
<td>9.45-9.50</td>
<td>Welcome remarks</td>
<td>President COSECSCA</td>
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<tr>
<td>9.50 - 10.10</td>
<td>The Female Voice in Anesthesia &amp; Surgery: Panel</td>
<td>Agnetta Odera Stacy</td>
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<td><em>Ellen O’Sullivan:</em> Anaesthesia</td>
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<td><em>Camilla Carroll:</em> RCSI</td>
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<td><em>Phyllis Kisa:</em> Paediatric Urologist</td>
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<td><em>Kieran Ryan:</em> RCSI Surgical Affairs</td>
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<tr>
<td>10.10-11.00</td>
<td>Women in Academic Surgery Panel discussion</td>
<td>Girma Tefera</td>
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<td>Dr. Barbara Bass and Dr. Mumba Kaja</td>
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<td>Dr. Sharon Stein and Dr. Faith Muchemwa</td>
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<tr>
<td>11.00</td>
<td>Housekeeping announcements</td>
<td>Master of Ceremony</td>
</tr>
<tr>
<td>11.00-11.30</td>
<td><strong>TEA BREAK, EXHIBITIONS, SPONSOR POSTERS AND POSTER SESSION ONE (Posters 1-12)</strong></td>
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</tr>
<tr>
<td>11.30-11.45</td>
<td>No more needless deaths. Action to deliver a surgical service for every child in COSECSCA region</td>
<td>MR. Gareth Wood KidsOR</td>
</tr>
<tr>
<td>11.45-12.30</td>
<td>Rahima Dawood, Travelling Fellow Oration Boot Camp, a Flying start to career in Surgery</td>
<td>MR. Watson Angus</td>
</tr>
<tr>
<td>12.25-2.30</td>
<td>Housekeeping announcements</td>
<td>Master of Ceremony</td>
</tr>
<tr>
<td>12.30-2.00</td>
<td><strong>LUNCH, EXHIBITIONS, SPONSOR POSTERS AND CONTINUATION OF POSTER SESSION ONE (Posters 1-12)</strong></td>
<td>Master of Ceremony</td>
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<tr>
<td>2.00-2.15</td>
<td>Guests Assemble in Victoria Hall</td>
<td>Master of Ceremony</td>
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<tr>
<td>2.15-2.30</td>
<td>Graduation Procession</td>
<td>Master of Ceremony</td>
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<tr>
<td>2.30-5.00</td>
<td>Graduation Ceremony</td>
<td>Registrar/ECC Chair</td>
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<tr>
<td>5.00 - 5.15</td>
<td>Sponsors’ messages: Coca Cola &amp; Lifebox Foundation</td>
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<tr>
<td>5.30-7.00</td>
<td><strong>COCKTAIL COURTESY OF KIDSOR</strong></td>
<td>J Sekabira/ C Kilyewala</td>
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## SOCIAL EVENTS

<table>
<thead>
<tr>
<th>Dates</th>
<th>Events</th>
<th>Sponsor</th>
<th>Venue</th>
<th>Responsible</th>
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<tbody>
<tr>
<td>Nov 30 –</td>
<td>Accompanying Guest Program</td>
<td>CR/CC/Medics</td>
<td>Not Applicable</td>
<td>Dr Cathy Kilyewala</td>
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<tr>
<td>Dec 07</td>
<td><strong>Site Seeing</strong></td>
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<td></td>
<td>KAMPALA Bulange, Kasubi Tombs, Museum, Independence monument, Lake</td>
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<td>Victoria, etc JINJA; Source of the Nile, Mabira Forest walk, ENTEBBE</td>
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<td></td>
<td>: UWEC, Botanical garden, lake Victoria shores</td>
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<tr>
<td>Dec 03</td>
<td>Dinner for ACS Scholars (Invite only)</td>
<td>SKYZ MARRIOT</td>
<td>ACS/AWS Organizing</td>
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<td>Cocktail for President/Examiners (Invite only)</td>
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<td>Ambassador of Ireland Resident Committee</td>
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<td></td>
<td>BBQ for students [invites only]</td>
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<td>Hilton Garden Inn</td>
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<tr>
<td>Dec 04</td>
<td>Graduation Cocktail – All participants invited</td>
<td>SODS OR</td>
<td>TBD</td>
<td>Organizing</td>
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<td>Committee</td>
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<tr>
<td>Dec 05</td>
<td>Presidents dinner (Invite only)</td>
<td>SKYZ MARRIOT</td>
<td>TBD</td>
<td>Organizing</td>
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<td>Organizing</td>
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<td>Committee</td>
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<tr>
<td>Dec 05</td>
<td>BBQ and Closing Dance</td>
<td>TBD</td>
<td>TBD</td>
<td>Organizing</td>
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<td></td>
<td>(FOR ALL at 10USD per head)</td>
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<td>Committee</td>
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</table>
SOCIAL PROGRAMME & POSTER SESSIONS

WELCOME RECEPTION & POSTER SESSION ONE
The Welcome reception will take place in the Serena Hotel. After the opening day of the Conference, this function promises a true Ugandan welcome and the opportunity to reconnect with colleagues from around the World.
Attendance is open to all registered and participants and accompanying persons and does not require any additional purchase.

POSTER SESSIONS
Wednesday, 4 November | Thursday, 5 November | Friday, 6 November 2019
Join the presenters of the Poster sessions in the Poster and Exhibition area. Visit the posters, discuss the content, and the opportunity to network and find possible collaborators.
Attendance is open to all registered and participants and accompanying persons and does not require any additional purchase.

GRADUATION COCKTAIL
The first COSECSA Conference Cocktail will be held in the Serena Hotel. This promises better networking! This special evening will be a celebration of authentic Ugandan culture with enthralling entertainment and delicious food in an iconic Kampala setting.
The recommended dress for the evening is semi-formal or traditional.

PLEASE NOTE that the BBQ and Closing dance not included in the registration fees or the accompanying person. Attendance requires the purchase of additional ticket at $10 each person. Please ensure that you have your ticket with you as it will be required for admission to the BBQ and Closing dance.

ACCOMPANYING PERSON PACKAGE
Saturday November 30 – Saturday December 07
A warm welcome to all of the accompanying persons travelling with COSECSA 2019 participants. We hope you will enjoy your visit to Kampala City.
Accompanying persons are invited to attend the Welcome reception. They are also welcome to purchase a ticket to attend the Conference Cocktail and Dinner.

TOURS & SITE SEEING
KAMPALA: Bulange (Palace), Kasubi Tombs, the Museum, Independence monument, Lake Victoria, etc
JINJA: Source of the Nile, Mabira Forest walk, etc
ENTEBBE: Uganda Wildlife Education Center (UWEC), Botanical garden, Lake Victoria shores
For more information, please visit the Registration | Transfers Desk in the Hotel foyer.
GENERAL CONFERENCE INFORMATION

ACCESS CONTROL
Each conference participant will be issued a name tag upon registration, at the REGISTRATION | CONFERENCE INFORMATION DESK in the Registration Area. The name tag provides access to all conference venues, refreshment breaks, and meals. Only one name tag will be issued so please ensure that you have yours with you every day. *Lost or forgotten can be reprinted for a fee.*

CERTIFICATE OF ATTENDANCE
Participants that attend the conference will be sent an electronic Certificate of Attendance via email once the conference has concluded.

CONFERENCE PROCEEDINGS
They are also available via the conference App. Slides will not be distributed. *If you would like a speaker’s slides, please approach them directly.*

CONFERENCE STAFF
The Conference Organizers are ASOU and Brandstolast and the team is wearing “How Can I Help” badges. They will gladly assist with enquiries and directions, around the Serena Hotel at the Registration.

MEALS, REFRESHMENTS, DIETARY REQUIREMENTS
Registration includes lunch and refreshments Wednesday through Friday. Lunch will be buffet with informal seating and standing areas. Refreshments (tea, coffee, and light snacks) will be served mid morning and in the mid evening.

MEDICAL ASSISTANCE
For Medical emergencies, call The Hotel Reception

PRAYER ROOM
A prayer room will be available (Check at the Registration Desk for details).

REGISTRATION
Located at the main entrance of the Serena Hotel foyer.
*Hours of Operation:* Wednesday 7:30 – 5:30 | Thursday 7:00 – 5:30 | Friday 7:00 – 5:30

WI-FI
Wi-Fi will be available in all session venues. Look for signs around the venue with the network name and password.
**Thursday | 5th December 2019**

### Concurrent Sessions

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<tr>
<th>Measuring Room 1</th>
<th>Meeting Room 2</th>
<th>Meeting Room 3</th>
<th>Meeting Room 4</th>
<th>Meeting Room 5</th>
<th>Meeting Room 6</th>
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</thead>
<tbody>
<tr>
<td>Venue: Victoria Main Hall</td>
<td>Venue: VIP Room</td>
<td>Venue: Katonga</td>
<td>Venue: Kyoga</td>
<td>Venue: Nile</td>
<td>Venue: Achwa</td>
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**Early Morning Sessions**
7:15-7:55 am

**EMS 1**
Global Health workforce crisis
Francis Omaswa (Discussant)
Josephat Jombwe (Chair)

**EMS 2**
Difficult Conversations with Patients;
Tips (Expert Panel)
When death is imminent or when a significant error happens
Chair: I Kakande
Discussants: Bekele A, Medin Kawuma,

**EMS 3**
Specimen Repositories
Should Surgeons care; Opportunities, Challenges & the way forward (Roundtable)
Chair: M Joloba
Discussants: Ogendo S, Sentongo R

**EMS 4**
Pathology Errors:
How to Prevent them
When a report is wrong or when a poor specimen was submitted (Roundtable)
Chair: R Lukande
Discussants: Kaggwa S, Nungu S

**EMS 5**
The National Surgery Anesthesia & Obstetric Plan (Expert Panel)
Chair: J Sekabira
Discussants: Lipnick M, Byamugisha J, Kasumba M, Olaro C

**EMS 6**
A Surgical Career; Is Work life balance doable?
Chair: Dan Namuguzi
Discussants: Jackie Mabweijano, Didas Mugisa, B Sekitoleko

**8:00 – 9:00 am**

**Plenary:** Victoria Main Hall

**Session Chair:** Dr Frank Asiimwe

**Keynote Speaker:** Dr Olive Kobusingye

**Keynote title:** Trauma in the region; Where we are coming from and What does the future look like?

**Sponsor’s Messages:** Vivo Energy

**9:15-9:30 am**

**RCSI/COSECSA Research Grants Winners**
(9:15 – 10:15)

- Dr Simba Kaja Ndola
  Teaching Hospital, Zambia
- Dr Mugisha Ntityonz Nkoronko
  Arusha Lutheran Medical Centre, Tanzania
- Dr Precious Gamuchirai
  Mutamangwenge, Harare Central Hospital, Zimbabwe
- Dr Emmanuel Wafala Wekesa
  Tenwek Hospital, Kenya

**Living donor liver transplantation in patients weighing ≥100 kg: Low graft weight and obesity do not impact outcomes.**
Nayeem Mohammed Abdun

**Health related quality of life of children with intestinal stomas, a cross-sectional study at Mulago hospital.**
Lokale Hans

**An Anecdotal Study of Hemafuse™, a Device for Intraoperative Auto-transfusion, to Augment the Donor Blood Supply in Kenya.**
Goodwin Tim

**Nutritional intake in Rwandan acute care surgery patients.**
Rickard Jennifer

**Mini Workshop 1**

**Neglected Surgical Diseases:**
Session I
Patrick Mwai
9.15 - 11:00 am
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<tr>
<td>9:45-10.00 am</td>
<td>Tanzania</td>
<td>A comparison between banana leaf dressing and Vaseline gauze dressing for split-thickness skin graft donor sites at a Ugandan hospital. Kekisa Naomi Leah</td>
<td>Use testing of surgical headlights for resource-constrained settings: Identification of a low-cost, high quality Life box Light for use in resource constrained settings. Starr Nichole</td>
<td>Outcomes of Surgery Patients with infection at Tertiary Hospital in Kigali, Rwanda, Prospective study. Cyuzuzo Thierry</td>
<td>Composition of incomes and preferences for rural job postings in anesthesia providers in Uganda. Law Tyler</td>
<td>NSD</td>
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<tr>
<td>10 -10.15 am</td>
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<td>Making the case for simple urinary diversion in the management of complex urethral strictures in low resource centers. Chalwe Mumba</td>
<td>Nationwide Scale – Up of a Context – Specific Trauma Training Course in Congo (DRC), Ebanga Idi Marcel</td>
<td>Mini Workshop 2 Fundamentals Surgical Research (FSR) SESSION 1: Medical and surgical research today Moderators: Joe Sakran &amp; Robert Riviello</td>
<td>Mini Workshop 3 Anaesthesia &amp; Surgery: Task shifting, when the ideal is a tall order Cephass Mijumbi (10-11am)</td>
<td>NSD</td>
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<tr>
<td>10.30-10.45</td>
<td>Predictors of Long-term Quality of Life after SIGN Intramedullary Nailing of Diaphyseal Femur Fractures in Tanzania. Karimjee Taha</td>
<td>The role of H. pylori infection in adults presenting with spontaneous gastroduodenal perforation at University Teaching Hospital, Lusaka, Zambia. Bwanga Alick</td>
<td>The Effect of Burn Mechanism on Pediatric Mortality in Malawi: A Propensity Weighted Analysis. Sincavage John</td>
<td>FSR Anaesthesia and Surgery</td>
<td>NSD</td>
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<td>10.45 -11.00</td>
<td>DISCUSSION</td>
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### Thursday 5th December 2019

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<tr>
<td>11.00-11.30</td>
<td>REFRESHMENT BREAK, POSTER SESSION TWO (Posters 13-23) &amp; EXHIBITIONS</td>
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<td>Sponsor’s Messages:</td>
<td>Yashoda Hospital</td>
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<td>11.30-11.45</td>
<td>Combined Magnesium/Polylethylene Glycol Facilitates the Neuroprotective Effects of Magnesium in Traumatic Brain Injury at a Reduced Magnesium Dose. Busingye Diana</td>
<td>Surgical management of pterochanteric femur fractures in Tenwek hospital, Kenya. Lunar Atuo Joyce</td>
<td>Thyroid Surgical Camps in a resource constrained setting, an Endocrine Surgery Capacity Building Model. Residents perceptions and experience. Kilyewala Cathy</td>
<td>Mini Workshop 2 Fundamentals Surgical Research (FSR)</td>
<td>Mini Workshop 1 Neglected Surgical Diseases: Session II</td>
<td>Mini Workshop 4 Advocacy in WASH (ACOG) 11:30 – 1:00pm</td>
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<tr>
<td>11.45-12.00</td>
<td>Proximal femur geometry in adult Kenyan population and its implication in Orthopaedic surgery. Nilson Mouti</td>
<td>Rotterdarn CT score as a predictor for early deaths in patients with traumatic brain injury at Nsambya hospital, Uganda. Begumya Mary Kiconco</td>
<td>Arthroscopic repair of labraligamentous lesions and tightening of all glenohumeral ligaments in patients with frank capsular laxity: Minimum 2- years fellow up. Yanmis Ibrahim</td>
<td>FSR</td>
<td>NSD</td>
<td>WASH</td>
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<tr>
<td>12.15-12.30</td>
<td>Paediatric abdominal trauma in a national referral hospital. Nimanya Stella</td>
<td>Epidemiology of trauma related brought in dead patients in the casualty department at Kamuzu Central Hospital, Lilongwe, Malawi. Mulima Gift</td>
<td>Is Latajet procedure solution for recurrent shoulder dislocation treatment? Outcome and Experiences. Mrita Felix</td>
<td>FSR</td>
<td>NSD</td>
<td>WASH</td>
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<tr>
<td>Concurrent Sessions</td>
<td>Meeting Room 1</td>
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<td>Venue: Victoria Main Hall</td>
<td><strong>OP 6:</strong> Prevalence and risk factors of Acute Kidney Injury in polytrauma patients at Muhimbili Orthopedic Institute, Dar-es-salaam. Muhamedhussein Mohamed</td>
<td><strong>OP 22:</strong> In-Home Interpersonal Violence: Sex based Incidence and Outcomes in Malawi. Purcell Laura</td>
<td><strong>OP 35:</strong> The Role of the University of Cape Town in the Training and Retention of Surgeons in Sub-Saharan Africa. Chu Kathryn</td>
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<td><strong>LUNCH BREAK, CONTINUATION OF POSTER SESSION TWO (Posters 13-23), EXHIBITIONS &amp; SPONSORS</strong></td>
<td>1:00-2:00</td>
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<td>3.15-3.30pm</td>
<td>Global Surgery: Surveying unmet pediatric urological needs in low and middle income countries. Kisa Phyllis</td>
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<td>Plastic surgery within global surgery: The incidence of plastic surgery cases in a rural Gabonese hospital. Lemfuka Dieudonne</td>
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<td>A team based approach to introduce and sustain use of the WHO Surgical Safety Checklist in remote settings in Tanzania. Hellar Augustino</td>
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<td>Mini Workshop 2: Fundamentals Surgical Research (FSR)</td>
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<td>Moderators: Sudha Jayaraman &amp; Hari Nathan</td>
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<td>Pediatric surgical data bases a quality improvement tool: Establishment, Outcomes, and Lessons learned over 9 years in Mulago Hospital. Kakembo Nasser (3:00 – 3:15)</td>
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<td>Liver Transplants Balachandran Menon (3:15 – 3:30)</td>
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<td>Education &amp; Training R. Chandrasekar (3:30 -3:40)</td>
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<td>Understanding the Role of Partnerships Mr. Bitature (3:40 -3:55)</td>
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<td>3.30-3.45pm</td>
<td>Intensive Care Unit Bed Utilization in a Resource Poor Setting in Sub-Saharan Africa. Wong Abby</td>
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<td>How to develop a successful hypothesis and specific aims Tom Weiser</td>
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<td>Biostats and Biases. Jennifer Rickard</td>
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<td>How to overcome common barriers and challenges doing research in the COSECSA region Ahmed Kiswezi</td>
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<td>Funding opportunities for COSECSA researchers Jean Claude Byiringiro</td>
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<td>Panel discussion</td>
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<td>3.45-4.00pm</td>
<td>Mortality for pediatric surgical patients at Mulago National Referral hospital, Kampala, Uganda. Massenga Alicia</td>
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<td>Baseline nutritional status of paediatric surgical patients in Malawi. Gander Amy</td>
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<td>Surgical informed consent at Kamuzu central hospital: a quantitative study. Nandi Biplab</td>
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<td>DISCUSSION</td>
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<td>4.15-4.30pm</td>
<td>REFRESHMENT BREAK, POSTER SESSION TWO, EXHIBITIONS &amp; SPONSORS</td>
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Thursday | 5th December 2019
### Concurrent Sessions

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<tr>
<th>Time</th>
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</table>
| 4.30-4.45| Achwa Venue            | Burden, Outcomes, and Economic Benefit of Neonatal Surgery in Uganda: Results of a Five-Year Follow-up Study. **Ullrich Sarah**  
Quality of life, prevalence of depressive symptoms and factors associated with prolonged indwelling urinary catheterization at Mulago national hospital. **Adakun Moses**  
The Operative Case Load of Basic Surgical Trainees in East, Central and Southern Africa. **O’Flynn Eric**  
Mini Workshop 7 Fundamentals Surgical Research (FSR) **SESSION 4: Presenting your ideas and research**  
Moderators: Josh Mamman & Jean Claude Byiringiro  
Writing abstracts for scientific meetings. **Hari Nathan**  
How to deliver an effective research presentation **Jennifer Rickard**  
Scientific writing and peer review/How do I get my manuscript published? Tips and tricks. **Sudha Jayaraman** |
|          | VIP Room Session Chair: Agneta Cathy and Emmanuel Kalemera |                                                                           |
|          | Katonga Venue          |                                                                          |
|          | Kyoga Venue            |                                                                          |
|          | Nile Venue             |                                                                          |
| 4.45-5.00| VIP Room Session Chair: Agneta Cathy and Emmanuel Kalemera | Pilot ing pull-through Procedure for Hirschsprung’s disease with spontaneous stoma closure, short-term outcomes in Mbarara Regional Referral Hospital in western Uganda: A case series. **Oyania Felix**  
Anatomical types and surgical outcomes of hypospadias in children at Mbarara regional referral hospital (MRRH). **Situma Martin**  
A WhatsApp Mobile Health Platform to Support Fracture Management by Non-Orthopedic Surgeons in South Africa. **Chu Kathryn** |
|          |                       |                                                                          |
| 5.00-5.15| DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION | DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION DISCUSSION |
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Program Director’s Meeting – Prof Russ White (5:00 -6:30pm)
## Concurrent Sessions

**Friday | 6th December 2019**

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<th>Meeting Room 1</th>
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### Early Morning Sessions 7:15-7:55am

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<tr>
<td>Burn out; signs and How to overcome</td>
<td>Close and Personal How to make money, save it and safely invest: a career Surgeon’s Struggle in SSA (Round Table)</td>
<td>What should a surgical curriculum for a Surgical discipline look like? Avoiding the Pitfalls (Expert Panel)</td>
<td>How to grow a fulfilling Surgical Career? (Roundtable)</td>
<td>Safe Medical Circumcision for HIV Prevention; Does it work? The Uganda Story (Expert Panel)</td>
<td>Global Health, What it is Challenges and Opportunities</td>
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<td>Chair: Noeline Nakasujja Discussants: Mark Kasumba and Joel Kiryabwire</td>
<td>Chair: Pankaj Jani Discussants: Patrick Sekimpi, Olivia Kituuka, Patrick Kyamanywa</td>
<td>Chair: Charles Ibingira Discussants: Russ White and Annette Nakimuli</td>
<td>Chair: Josephat Jombwe Discussants: Lane R, and Muguti G</td>
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<td>Chair: Abdullah Saleh Discussants: Doruk Ozgediz and Jackie Mabweliiano</td>
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### Plenary: Victoria Main Hall 8:00 - 9:00am

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<tr>
<td>Session Chair: Dr D Birabwa-Male</td>
<td>Session Chairs: Dr Jaffer Balyejuusa and Ronald Mbiine</td>
<td>Session Chairs: Faith Muchemwa and Mark Kasumba</td>
<td>Session Chair: Dr Herman Musiitwa</td>
<td>Session Chairs: Dr S Ogendo and Emmanuel Elobu</td>
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### 9:15-9:30 Survival and Functional Outcomes at Discharge following Traumatic Brain Injury in Children versus Adults in a Resource-poor Setting. Reiss Rachel

- Inequities in breast cancer treatment in sub-Saharan Africa: findings from a prospective multi-country observational study. Galukande Moses
- Surgical Infections at a Tertiary Referral Hospital in Rwanda. Rickard Jennifer
- Cushing’s syndrome, interesting disease of diverse presentation. Experience at endocrine surgery unit Mulago National Referral Hospital. Odubu Fualal Jane
- Cost Analysis of the Development and Maintenance of a Hospital-based Trauma Surveillance Registry. Emily Nip


- A prospective cohort analysis of gut microbial co-metabolism in Rural African and Alaska Native people at high and low risk for colorectal cancer. Ocvirk Soren
- Burn unit infection prevention and control practices: A situational Analysis of the Practices at a Central Indian Hospital. Asaba Mugisha Irene
- Monitoring delivery of surgical services at the District Level in Malawi, Tanzania and Zambia. Clarke Morgane
- Referral forms as a tool to improve surgical services provision: a need to improve completeness and clarity. Juma Juma
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<td>10.15-10.30</td>
<td>Data quality strengthening intervention as part of the Safe Surgery 2020 multi-component intervention in Tanzania. Strader Christopher</td>
<td>Participatory action research to design a surgical training &amp; supervision intervention for district level hospitals in Malawi, Tanzania and Zambia. Grace Le</td>
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### Friday | 6th December 2019

#### Concurrent Sessions

| 10:30-10:45 | Experience and outcome of Arthroscopic Anterior cruciate ligament (ACL) reconstruction in Tanzania. **Mrita Felix** |
| 10.45: -11.00 | DISCUSSION |
| 11.00-11.30 | REFRESHMENT BREAK, POSTER SESSION THREE (Posters 24 – 36), EXHIBITIONS & SPONSORS |
| 11.30-11.45 | The surgical workforce are our frontline advocates: observations from the leadership, management and advocacy course in Kenya. **Stanley Mwenda Aruyaru** |
| 11.45-12.00 | Group Forum (WGF) Improving Surgical Systems Beyond Patient Management in Malawi – Prospective Observational Study. **Mwapasa Gerald** |
| 12.15-12.30pm | Nationwide Scale-Up of a Context-Specific Trauma Training Course in Uganda. **Mwanguzi Peter** |
| 12.30-12.45 | DISCUSSION |
| 12.45-2.15 | REFRESHMENT BREAK, POSTER SESSION THREE (Posters 24 – 36), EXHIBITIONS & SPONSORS |

#### Session Chair Assignments

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#### Mini Workshop 10

**Ethics in Global Surgery**

**Abdullah Saleh**

**(11:30 – 12:45)**

**A Comparison of the Surgical Management and Outcomes of Patients with Ileal Perforation at a Malawian Tertiary Referral Center.**

**Kayange Linda**

**Ethics in Global Surgery**

**Prevalence, Risk Factors and Bacterial Susceptibility of Surgical Site Infections following Abdominal Surgeries at Kampala International University Teaching Hospital, Uganda. A Cross sectional study.**

**Samuel Bona Ariho**

**Ethics in Global Surgery**

**A Retrospective Review of Peptic Ulcer Perforations in Harare, Zimbabwe.**

**Mlambo Busisiwe**

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**COSECSA 2019 HANDBOOK**

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<tr>
<th>Time</th>
<th>Session Title</th>
<th>Venue</th>
<th>Session Chairs</th>
<th>Keynote Speaker</th>
<th>Poster Session Three</th>
<th>Refreshments</th>
<th>Sponsorship</th>
<th>Discussion</th>
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<tr>
<td>2.15-2.55</td>
<td>Plenary: National Health Insurance - Will it be a game changer for Access to Surgical Care</td>
<td>Katonga Hall</td>
<td>Steven Ogendo</td>
<td>Ekwaro A. Obuku</td>
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<td>3.00-3.15</td>
<td>Bridging study of humanities and medical education/practice. Berhea Ataklitte</td>
<td>Achwa</td>
<td>Stephen Ogendo and Michael Oketcho</td>
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<td>3.15-3.30</td>
<td>Virtual mentorship for surgery - a promising approach to extend learning in resource-limited settings. Tibyehabwa Leopold</td>
<td>VIP Room</td>
<td>Arlene Muzira and Gabriel Okumu</td>
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<td>3.45-4.00</td>
<td>The use of e-learning and electronic surgical logbooks amongst COSECSA surgical trainees: an East, Central and Southern African Analysis. Mangaonga Deirdre</td>
<td>Mulago hospital</td>
<td>Namugga Martha</td>
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<td>4:30-5:30</td>
<td>CLOSING CEREMONY PLENARY - KATONGA HALL</td>
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**POSTER PRESENTATIONS | COSESCA 2019**

**POSTER 1 | COSESCA 2019**

Improving Teamwork and Communication using the Surgical Safety Checklist: A Quasi-Experimental Evaluation in the Lake Zone of Tanzania

Sakshie Alreja
Program in Global Surgery and Social Change, Harvard Medical School, United States of America
Email: sakshie.alreja@hms.harvard.edu

**Background:** Research shows that surgical complications are reduced when using the Surgical Safety Checklist (SSC). Some evidence suggests that this is achieved through SSC prompts that encourage teamwork and communication in the operating room. We hypothesized that SSC implementation within a leadership and clinical training program accompanied by regular mentorship as part of the Safe Surgery 2020 initiative in Tanzania’s Lake Zone Region will improve teamwork and communication in the OR and reduce complication rates.

**Methods:** We designed and conducted a longitudinal, quasi-experimental evaluation of SSC implementation in 20 health facilities in Tanzania’s Lake Zone region. Pre and post adherence of 8 teamwork and communication items on the SSC were collected over three months through direct observation in the OR by 25 trained Tanzanian medical data collectors. We used difference-in-difference analyses to identify change in adherence of 8 teamwork and communication indicators. Multivariable logistic regression analysis was applied to identify relationships between adherence to teamwork and communication items on the SSC and outcomes of surgical site infections and sepsis. We conducted 108 interviews with surgical team members to understand their experience with SSC implementation and discovered key themes emerging from these interviews.

**Results:** The Surgical Safety Checklist was implemented in 1,237 surgical procedures pre-intervention and 1,475 surgeries post-intervention. Intervention hospitals showed 48.9% improvement in adherence to team and communication indicators compared to only 11.2% for control hospitals (p<0.001). High adherence to teamwork/communication was associated with significantly lower rates of maternal sepsis (3.6% vs 1.5%; p=0.011). Through our interviews, we identified greater improvement in SSC implementation through continued team cohesion and collaboration.

**Conclusions:** The link between SSC and surgical quality and safety appears to work primarily through improvement of teamwork and communication indicators. Future implementation efforts should prioritize these areas.

**POSTER 2 | COSESCA 2019**

Surgical emergency services; delays and outcomes at a teaching hospital, Uganda

*Maina Carol1, Timothy Makumbi1, Jacqueline Mabweijano2, Bangirana Alexander2.*
1. Makerere University College of Health Sciences, Department of Surgery, Kampala, UGANDA.
2. Mulago Hospital, Department of Surgery, Accident and Emergency Unit, P.O. Box 37392, Kampala, UGANDA.
Email: shi.maina@gmail.com

**Objective:** To describe factors causing delays in the management of surgical emergencies in MNRH A&E department and determine 72 hours’ morbidity and mortality.

**Methods:** A cross-sectional descriptive study of 316 participants. The study population included all patients with the surgical emergency condition who attended MNRH A&E Department during the study period. Timeline interval noted time to specialist review; time to intervention; total waiting time and the 72 hours’ post-intervention outcome. Special consideration on patients with ASA 4 and ASA 5.

**Results:** In 37.1% of patients the age range was between 20-29 years with a minority of 50-59 years (4.8%) with a preponderance of males (82%) to females (18%). In 53.2% of the patients presented within one hour of onset of symptoms while 6.6% were within 72 hours. Majority of the patients were ASA 1 score with minority ASA 5 score. In 60.1% of patients were from low socioeconomic status with 2.3% from high status. The mean time to specialist review was 6.9 hours, p-value<0.000 while to surgical intervention was 12.8 hours, p-value<0.000. Total waiting time was 12.10 hours, p-value<0.000. In patients with ASA 4 and ASA 5, 57.1% experienced a delay in time to specialist review of up to 4.7 hours, p<0.00, with 33.3% experiencing a delay to time to surgical intervention of up to 6.9 hours p-value<0.00.
Total waiting time showed delays to be 45.5% of up to 7.2 hours, p<0.00.

Factors associated with delays; lack of medical supplies 87.7%, delayed investigation results 86.5%, financial constraints 83.5%, unavailability of personnel 78%; surgeons being most affected. Other factors included age group (p<0.019), day of admission (p>0.347), and socioeconomic status (p>0.825).

The majority of patients had moderate (31.3%) to severe (29.1%) complications and 5.7% having death as an outcome. Waiting time had no much influence on the outcome of the patients, but was greatly influenced by social economic status p<0.03, age group p>0.096, and ASA status score p<0.03.

**Conclusion:** Surgical emergency services were delayed in patients mainly because of lack of medical supplies. Delayed interventions were associated with poor outcomes.

**POSTER 3 | COSESCA 2019**

Inadequate soft-tissue coverage results in high complication rates and poor long-term quality of life following severe open tibia fractures in Tanzania

Billy Haonga
Muhimbili Orthopaedics Institute, TANZANIA
Email: bhanga@gmail.com

**Background:** Orthopaedic surgeons in low- and middle-income countries (LMICs) regularly encounter lower extremity fractures complicated by large soft-tissue defects. Managing these injuries is challenging for surgeons in low resource settings, and long-term quality of life (QoL) for these patients in LMICs is unclear. This study investigates the QoL, surgical complications, and longitudinal outcomes in patients with Gustilo-Anderson Classification Type IIIB open tibia fractures.

**Methods:** Patients with IIIB open tibia fractures unsuitable for primary closure were enrolled in a prospective cohort study at an orthopedic institute in Tanzania from December 2015 to March 2017. Patients completed follow up at 2, 6, 12, 26, and 52-week time points, and they returned for QoL interviews at 2.5 years. The primary outcome was defined as reoperation for deep infection or nonunion and whether or not the subjects underwent unplanned surgery. Secondary outcomes measured included EuroQoL-5D score index. Each patient in the IIIB cohort participated in interviews to identify themes relating to their QoL.

**Results:** There were 10 patients with IIIB open tibia fractures enrolled in the cohort study, and there were 8 who completed 1-year follow-up. The average age was 34.8±7.1 years. Road traffic accidents were the primary cause of all fractures (87.5%), and all were treated by external fixation. No patients in this cohort received soft-tissue (flap) coverage of the wound. Most patients in the cohort (87.5%) experienced a primary event, all due to infected nonunions. None of the patients returned to work at 6 weeks, 3 months or 6 months. Patients reported poor EQ-5D scores at 1-year (0.756 ± 0.1). Six patients participated in semi-structured interviews at 2.5 years. Interviewees reported ongoing medical complications (6), loss of employment (6), reduced income (5), difficulties with transportation (5), inability to support their family (4), difficulty with activities of daily living (4), loss of social network and support (4), significant pain (3), poor emotional/mental well-being (3), and significant loss of property (2) related to their injury.

**Conclusion:** This study demonstrates that patients in LMICs with IIIB open tibia fractures experience remarkably poor QoL and high complication rates without appropriate soft-tissue coverage. In addition, patients reported severe socioeconomic effects as a result of their injuries and resultant complications. This data illustrates the need for resources and training to build capacity for extremity soft-tissue reconstruction in LMICs.

**POSTER 4 | COSESCA 2019**

Trauma in terms of poor access of emergency and essential surgical care (EESc), aim of assessment is to determine surgical capacity at government hospitals in Eastern Uganda to understand Trauma

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**Background:** Orthopaedics surgery in low- and middle-income countries (LMICs) regularly encounter lower extremity fractures complicated by large soft-tissue defects. Managing these injuries is challenging for surgeons in low resource settings, and long-term quality of life (QoL) for these patients in LMICs is unclear. This study investigates the QoL, surgical complications, and longitudinal outcomes in patients with Gustilo-Anderson Classification Type IIIB open tibia fractures.

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**Conclusion:** This study demonstrates that patients in LMICs with IIIB open tibia fractures experience remarkably poor QoL and high complication rates without appropriate soft-tissue coverage. In addition, patients reported severe socioeconomic effects as a result of their injuries and resultant complications. This data illustrates the need for resources and training to build capacity for extremity soft-tissue reconstruction in LMICs.
Background: Poor access to emergency and essential surgical care (EESC) access leads to significant mobility and mortality in sub Saharan Africa. The aim of this assessment was to determine surgical capacity at a government district hospital in Eastern Uganda to understand Trauma care delivery in the region and identify opportunities for Systems strengthening.

Methods: We used SSRG and World Health Organisation Surgical Assessment Tools to assess capacity. In addition, we used geospatial technology to determine whether regions with the highest trauma burden were close to facilities with adequate capacity. We calculated means for continuous variables and proportions for categorical variables.

Results: In terms of general characteristics, the hospital had 85 beds serving a population of 30,000 within a 20km radius. In terms of infrastructure, the hospital had consistent running water, consistent electricity and/or generator. However, there was no blood bank. The health facilities were staffed by 0.38 qualified surgeons, 1.88 general doctors (including obstetrics), 0.88 staff capable of providing anesthesia, and 7.8 paramedics/midwives. Basic supplies such as gloves, needles, sutures, and gauze were mostly available. The regional hospital had an ambulance; however, patients were required to pay for the ambulance and fuel.

Conclusion: District hospitals in Eastern Uganda face gaps in infrastructure, human resource, and emergency medical transport. Improved investments in trauma training at the district level, and strengthening the system-level organisation of emergency medical services in the region could avert preventable death and disability.

POSTER 5 | COSESCA 2019
Determinants and Immediate treatment outcomes of Children with Wilms’ Tumour in Uganda: A Cohort study
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Background: Wilms’ tumour is the most common primary malignant tumour of the kidney among children; most are diagnosed between one and five years with the peak incidence at age three. The two most important current prognostic factors continue to be the histology and the stage of the tumour. At Uganda Cancer Institute (UCI), Wilms’ tumour is the commonest solid childhood tumour with an average of about thirty cases per year. Despite the effort to improve treatment of these children, the lack of knowledge on the overall immediate treatment outcomes and their determinants and hence strategies to improve the outcome are also unknown. The aim of the study was to determine the immediate treatment outcomes and their determinants of children with Wilms’ tumour treated in Uganda.

Methods: Cohort study design with retrospective and prospective arms was conducted at Uganda Cancer Institute, Mulago Hospital. Quantitative methods were used to collect data by the aid of a structured case report form.

Results: 133 patients were recruited and analysed. The age at presentation was mostly between two to four years (43.6%). There was a slight female predominance (1: 1.2). Children mostly presented with abdominal swelling (75.9%). 18.8% of the patients had unfavourable histological sub types. 73.7% of patients had advanced disease at the time of presentation. With preoperative therapy, 37.6% of the patients were good responders to chemotherapy. Only 76 children underwent surgery. Stage at presentation (P= 0.003) and hypertension (P<0.001) were found to be determinants of immediate treatment outcomes of preoperative chemotherapy. Stage at presentation (P=0.001) and presence of local invasion and metastases (P< 0.001) were found to determine immediate treatment outcome of surgery.

Conclusion: Hypertension, presence of metastases and stages were determinants of immediate treatment outcome.

POSTER 6 | COSESCA 2019
Risk Factors Associated with Surgical Site Infections, Post-Operative Sepsis and Maternal Sepsis in Tanzania’s Lake Zone Region: A longitudinal quasi-experimental study
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Background: Surgical site infections (SSI), sepsis, and maternal sepsis are preventable infections often resulting from surgery that are targets for morbidity and mortality reduction in low and lower-middle income countries. For example, a 2018 study in Lancet showed that SSIs are 2.5 times more likely in low Human Development Index (HDI) countries versus high HDI countries. Understanding the risk factors associated with these complications can aid quality improvement projects in low-and middle-income countries.

Methods: Within the Safe Surgery 2020 initiative, we conducted a quasi-randomized surgical quality improvement study in Tanzania on the risk factors associated with SSI, sepsis, and maternal sepsis in 2019. Every surgical and obstetric patient presenting to 20 hospitals over 3 months was prospectively observed for development of postoperative SSI/sepsis or post-delivery maternal sepsis by Tanzanian medical data collectors. We used univariate analysis to determine the risk of SSI, sepsis, and maternal sepsis.

Results: There were significant differences in SSI, sepsis, and maternal sepsis rate based on wound class, with complications more likely in higher wound classes (p<0.001, p<0.01, p<0.05). Patients with SSI or sepsis were 2.5 times more likely to have a contaminated or dirty wound class. Patients with caesarian section were 6.4 times more likely to have contaminated wounds. The relative risk of SSI and maternal sepsis in patients without vaginal cleansing prior to caesarian section was 2.63 (p<0.05) and 5.88 (p<0.01), respectively. There was no difference in ASA class or age for events. There was also no difference in gender for the SSI or sepsis cohort.

Conclusions: Factors leading to SSI, sepsis, and maternal sepsis are complex, requiring in depth study to develop effective interventions for improvement. In this study, we showed that higher wound class and lack of vaginal cleansing had appreciable effects on the development of complications in Tanzania’s Lake Zone.

POSTER 7 | COSESCA 2019
Implementing safe surgery/Use of Modified WHO safety Checklist at JJ Dossen Memorial Hospital: Process, Drivers and Outcomes of a quality improvement initiative
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Background: Post war surgical Mortality and Morbidity was high due to limited skilled staff and non-standardized surgical practices at JJ Dossen Memorial Hospital, South East Liberia.

To improve on patient’s safety, we implemented several Quality improvement projects. One of them was the use of the WHO safety Checklist to improve on safety in the operation room. The checklist has been proven to improve communication and reduce perioperative mortality by 30%. Unfortunately, it was never used at JJ Dossen Hospital. In this abstract we describe the process, drivers and preliminary outcome of this project.

Methods: We reviewed the Processes involved in effective implementation/Use of the WHO surgical Safety through direct observation and Chart review between November 2018 and April 2019. Drivers where identified and Outcome data reviewed.

Results: 402 Patients underwent surgery between the Month of November 2018 and May 2019. We observed an increased use of the WHO safety Checklist, Increased communication and reduction on adverse events in the Operating room. Compliance was highest at the sign in 99.7% (0-100%) and lowest at Sign out (0-48%).

Process involved (PDSA): Training of Anesthetist on QI, Baseline assessment, Planning with stakeholders, WHO surgical safety Checklist training for OR staff, Ward Nurses and Doctors. Followed by a Launching event, Implementation, Data collection and tracking using the commcare APP and power BI

Drivers Identified: A strong support system and logistic* (Administration), SOA (Surgeon, Obstetrician and Anesthetist) Leadership and involvement, Staff training on surgical safety, OR staff ownership, Interactive leadership and respect of
opinion, Involvement of Non specialized Surgical Docs and a data assistant

Conclusion: Preliminary analysis showed: increased utilization of the safety checklist, improved communication, No wrong site surgery. There is need to strengthen the drivers and improve data capturing.

POSTER 8 | COSESCA 2019
Impact of Prostheses on Quality of Life and Functional Status of Lower Limb Amputees in Tanzania
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Background: Lower extremity amputation following traumatic injury causes significant morbidity and economic hardship in Low- and Middle-Income Countries (LMICs). Prosthetic limbs can improve functional status and are standard of care in developed countries, but remain underutilized in LMICs due to lack of funding, availability and training. This prospective study aimed to quantify the impact that prosthetic device provision using a low-cost mechanical knee would have on quality-of-life and functional status of lower extremity amputees in Tanzania.

Methods: Adult patients at least 6 months’ status-post unilateral above knee amputation, without prior prosthetic device use, were enrolled from 2016 to 2018 at a tertiary orthopaedic center in Tanzania and fitted with the AllTerrain knee prosthesis (Legworks; Buffalo, NY). Baseline demographics, quality of life, and function were recorded on enrollment prior to prosthesis fitting. Patients were additionally queried on pre-injury quality of life (QoL) and function. Follow up was at 1, 6, and 12 months post fitting; QoL was assessed via EQ5D score, function via PLUS-M score and 2 minute walk test (2MWT), and estimated household income and employment status via questionnaire.

Results: 38 patients (82% male, mean age of 45 years) were fitted with prostheses. The most common etiologies for amputation were trauma (42%), diabetes (25%) and vasculopathy (17%). QoL was significantly lower at the time of prosthesis fitting as compared to pre-injury (0.58 vs. 0.94, p<0.001). Following prosthetic fitting, QoL increased linearly with return to pre-injury baseline by 12 months (1 mo = 0.84; 6 mo = 0.89; 12 mo = 0.97, p<0.01). PLUS-M function was similarly decreased at time of fitting compared to preinjury (32.0 vs 58.4, p<0.001), but improved over time with return to pre-injury state by 12 months (1 mo = 38.9; 6 mo = 45.9; 12 mo = 54.2, p<0.005). 2MWT improved over time despite initial decline following fitting (pre-fitting: 66.7m; 1 mo: 55.8m; 6 mo: 85.4m; 12 mo: 77.7m, p=0.047). Household income at the time of prosthetic fitting was 38% lower than pre-injury income (p<0.001); only 22% of amputees were formally employed at time of fitting, as compared to 93% pre-injury (p<0.001). There was no significant improvement in income or employment status post-fitting, although 33% of patients were formally employed at 12 months (p=0.18).

Conclusion: Lower extremity amputees in Tanzania without access to prostheses experience poor quality of life, functional decline, and significant financial impact. We show that provision of prostheses improves many of these parameters, and in the case of quality of life and functional status, may approximate the pre-injury state. Increasing availability and funding of prosthetic devices presents an opportunity to markedly improve QoL in LMICs. Further work is needed to evaluate the cost-effectiveness of this intervention.

POSTER 9 | COSESCA 2019
Postoperative mortality and associated factors among children with intestinal obstruction in Mulago National Referral Hospital
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Background: Intestinal obstruction (IO) is a common paediatric surgical emergency worldwide. The incidence of IO is 1 in 2000 live births in newborns and 1 in 5000 in children greater than 2 years of age. The leading cause of intestinal obstruction among children living in high and low middle-income countries is intussusception followed by obstructed hernia. In Uganda the exact prevalence of IO in the paediatric population has not been studied. Mortality due to intestinal obstruction is likely to increase once there is delayed intervention. The study was set out to determine the outcomes of children with intestinal obstruction and factors associated with postoperative mortality at Mulago
National Referral Hospital

Methods: This study was a prospective cohort study. It included 74 children with intestinal obstruction who were followed up for 2 weeks post discharge. Outcome variable included mortality. Data was collected using a semi structured questionnaire, cleaned and entered in Epidata version 3.1 and analyzed using STATA version 14.0. Bivariate and multivariate logistic regression was used to assess association. The factors associated with mortality were computed and expressed as a ratio.

Results: Of the 74 study participants, 17(24.6%) died, 5(6.7%) were lost to follow up. The factors associated with mortality included age <12 months were 5.317 times more likely to die compared to other age groups and children who had gut perforation were 16.96 times more likely to die post operatively compared with those who did not have.

Conclusion and recommendation: Mortality due to intestinal obstruction was high 24.6%. Being <12 months and having gut perforation at surgery is associated with increased likelihood of dying post-surgery. Gut perforation is associated with high mortality thus need to have senior medical personnel at the time of operation and manage these patients in HDU or ICU postoperatively. Need to encourage attendants to seek for medical help immediately and continuous medical education for the primary doctors.

POSTER 10 | COSESCA 2019
Association between Serum Bicarbonate and Injury Severity among Major Trauma patients in a Tertiary Hospital in Sub Saharan Africa; a prospective observational study
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Background: While majority of injury related deaths results from the ‘lethal triad’ (hypothermia, acidosis and coagulopathy), injury scoring tools, such as the Kampala Trauma Score-II(KTS-II), do not use acid base parameters such as serum bicarbonate to stratify injury thus failing to detect other lethal acid base derangements which contribute to occult tissue hypoxia and death.

Methods: An observational prospective study involving major trauma patients admitted to Mulago Hospital between February and May, 2018. Data on sociodemographic characteristics, clinical characteristics, serum bicarbonate levels, KTS-II, and outcomes of major trauma (death, surgery, ICU admission) were collected and entered into Epidata version 3.1. Analysis was conducted using STATA version 14.1. Descriptive analysis involved obtaining means and medians for continuous variables and proportions and percentages for categorical variables. Predictors of mortality were assessed using logistic regression and odds ratios were reported alongside their corresponding 95% CI and level of significance set at alpha 0.05.

Results: Out of 2750 trauma patients, 135 had major trauma. Male: female was 15.9:1. Venous blood samples were drawn from 68 participants for measurement of bicarbonate (Normal range 22-29mmol/L). Mean initial bicarbonate value was 16.7(median 18) and the mean follow up (day 3) value was 22.3(median 22). Most participants 78(57.8%) had a KTS of 6 and 6.4% had a KTS of <4. Among the participants, 70(51.9%) had had ICU admission and 83(61.9%) had emergency surgery done. Eighty (80) participants (77.7%) had an accident as the cause of their injury and most had at least a craniocerebral injury. The overall mortality was 29.6%. For the association between bicarbonate and KTS, the AUC for the ROC plotted was 0.6500.

Conclusion: There was a fairly strong association between Serum HCO3 and KTS and thus venous serum bicarbonate levels may be considered as an alternative marker of injury severity.

POSTER 11 | COSESCA 2019
Operation hernia and COSECSA (college of surgeons of East, Central and Southern Africa) model for training and competence assessment in hernia surgery
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Background: This paper reports a successful 3 year COSECSA and Operation Hernia collaboration in the delivery of Hernia Surgery training. The training model was designed by Operation Hernia (OH) and employs competence assessment. OH is a UK medical charity that has been engaged in Hernia training for 14 years. In 2016, at a meeting in Geneva, the Executive of COSECSA approved OH Surgeons as trainers of COSECSA Trainees in Hernia Surgery. St Francis Hospital in Nsambya, Uganda was chosen as the Hernia Training Centre. Since 2016, OH, in collaboration with Prof Kakande, has delivered 3 Hernia Training Courses in Kampala, Uganda, with very successful outcomes. The training model has been used successfully, by Operation Hernia in training courses in Rwanda. The aim of this paper is to publicise the successful outcome of the Operation Hernia / COSECSA Hernia Training Model and to increase access to the course by surgical residents from other COSECSA countries. The training model is easily transferrable to training in other surgical procedures.

Methods: Participants were selected by Prof Kakande’s Team, from postgraduate applicants in Uganda. The course comprises a day of lectures on relevant subjects in hernia surgery and 5 days of intensive hands-on apprenticeship in theatres. Residents complete a pre-course survey of their surgical skills, which provides trainers with valuable information. They also provide extensive and valuable feedback. Trainers are limited to training a maximum of 3 trainees to ensure maximum efficiency of training. Hernia surgery is deconstructed into its various stages to facilitate learning and enable competency assessment. Progression along the stages depends on satisfactory competence assessment by trainers. Residents are taught low tension mesh and non-mesh repair. Ongoing feedback and reflection sessions are built into the training sessions. At the end of training, the competence of residents is assessed using the UK Intercollegiate Surgical Skills assessment instrument.

Results: Twenty-eight residents have been trained; 10, 9 and 9 in 2016, 2017 and 2018 respectively. Only 7 out of the 28 residents had experience of mesh hernia repair. Although the pre course survey showed that 26 of the 28 residents had experience of hernia training, the majority were assessed as not competent, at the start of the hands-on sessions. Concern is raised about residents whose survey showed no formal training in hernia repair but who had performed hernia operations. At the conclusion of the training, however, all residents were assessed as competent to perform hernia repair with supervision. 24 of the 28 (86%) residents were assessed as capable of performing mesh hernia repair independently or with minimal/occasional assistance. The feedback from the lectures and hands on training were outstanding.

Conclusion: The Operation Hernia and COSECSA training model is a proven, effective scheme for competence based training of surgical residents in Hernia surgery. It should be adopted widely in all COSECSA countries.

POSTER 12 | COSESCA 2019
Perioperative documentation as a predictor of occurrence of adverse events in Mulago National Referral Hospital: A prospective and retrospective study
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Background: National Patient Safety Agency stated that communication problems contributed majorly in Patient Safety Incidents. Consistent perioperative documentation is vital to recommend guidelines for safe management of surgical patients, medico-legal reasons, audit and research purposes. However, a substantial knowledge gap exists on the extent of adherence to perioperative documentation in health settings in Uganda. We, therefore, set out to determine the magnitude of in-completed perioperative documentation and its associated occurrence of adverse events in Mulago National Referral Hospital.

Methods: The study involved both retrospective and prospective arms. Retrospective arm involved review of randomly selected patients’ files. In the Prospective arm, there was consecutive recruitment of patients and follow up of documentation in their files till discharge. Data extraction tool was developed from WHO Surgical Safety Checklist, Royal College of Surgeons of England, pretested, coded and used to collect data. Data was analysed using STATA version 14. Bivariate logistic regression model used to test for the association between occurrence of adverse events and percentage of completed documentation.
Results: A total of 358 patient files were studied. None of the files had complete documentation. 59.5% of files had completion ranging from 50 to 75% with an overall average of 50.5%. Completion of documentation was found to be associated with occurrence of adverse events OR (95%CI): 0.96(0.91-0.99), P value <0.05. Commonest adverse events found were; Death (3.4%), unplanned return to operating room (3.9%), surgical site infection (4.2%), spent more than 24hrs in Accident & Emergency (17.3%), prolonged hospital stay of >10days (22.6%).

Conclusion: There is total lack of complete perioperative documentation. Yet any unit increase in the percentage completion of documentation on average was found to reduce the chances of occurrence of adverse events by 4%.

POSTER 13 | COSESCA 2019
Outcomes in Fournier’s Gangrene using Skin and Soft tissue sparing Flap preservation surgery for Wound Closure: An alternative approach to wide radical debridement
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Introduction: Fournier’s gangrene (FG) remains a forbidding necrotizing soft tissue infection (NSTI) that necessitates early recognition, prompt surgical excision, and goal-directed antibiotic therapy. Traditionally, surgical management has included wide radical excision for sepsis control, but this management often leaves large, morbid wounds that require complex wound coverage, prolonged hospitalizations, and/or delayed healing. The purpose of this case series is to report the outcomes of FG using a surrogate approach of concurrent debridement of spared skin and soft tissue, negative pressure wound therapy (NPWT), and serial delayed primary closure (DPC).

Methods: A retrospective review of 17 consecutive patients with FG treated with concurrent skin and soft tissue sparing surgery, NPWT, and serial DPC at Miami Valley Hospital Regional Adult Burn and Wound Center (Dayton, OH) between 2008 and 2018 was conducted. Patients were included if the following were noted: clinical suspicion of FG based on genital and perineal cellulitis, fever, leukocytosis, and confirmation of tissue necrosis upon surgical exploration. Patients not treated with skin sparing surgical debridement or wounds with an inability to maintain a NPWT dressing seal were excluded.

Results: The mean number of total surgeries including simultaneous debridement and reconstruction was 5.5. The average intensive care unit and hospital length of stay was 3.2 and 18.9 days, respectively. The average number of days from initial consult to wound closure was 24.3. The need for colostomy and skin grafts were nearly eliminated with this surrogate approach. Using this reproducible technique, DPC was achieved in 100% of patients. Only 11.8% (2/17) required split-thickness skin grafting as part of wound closure. The majority (9/17; 52.9%) were partially managed as an outpatient during wound closure. During staged DPC, the mean number of outpatient management days was 16.0. There were no mortalities in this series of patients.

Conclusions: To the best of the authors’ knowledge, this is the largest case series reported in the literature using skin and soft tissue sparing surgery for wound closure of a FG NSTI.

POSTER 14 | COSESCA 2019
Prevalence of Helicobacter pylori in asymptomatic patients at surgical outpatient department in Central hospitals in Harare: A cross sectional study
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Background: Helicobacter pylori infection is present in more than 50% of the world’s population. The estimated lifetime risk of peptic ulcer disease is 20 percent and of gastric cancer is 1–2 percent.

Methods: A cross sectional study was done at two Central hospitals in Harare, Zimbabwe, with the objective being
to estimate the prevalence of Helicobacter pylori infection in asymptomatic individuals. Other objectives were to determine the association of the Helicobacter pylori infection with potential risk factors. Four hundred and fifty patients visiting the outpatient surgical clinics for other complaints other than upper gastrointestinal symptoms were recruited in the study. Drops of whole blood were obtained by fingertip puncture from each patient. The onsite H. pylori Combo Rapid Test was used to confirm the presence or absence of antibodies against Helicobacter pylori. A questionnaire was used to record the socio-demographics of the participants.

**Results:** Three hundred patients, 186 males (62%) and 114 females (38%) participated. The prevalence of Helicobacter pylori infection was 67.7 percent (203/300). The prevalence of H pylori infection was significantly correlated with increasing age (p=0.012), sharing of a bed with siblings during childhood (p=0.013) and the mode of sanitation methods (p=0.023). There was no association found between H pylori infection and other risk factors such as; gender, level of education, employment status or number of rooms in a house.

**Conclusion:** H. pylori infection prevalence was significantly associated with increasing age, sharing of a bed with siblings during childhood and the mode of sanitation used. Clinicians and the public have to be aware of the important role of H. pylori in upper gastrointestinal disease. Use of better sanitation methods, appropriate hygiene, avoidance of overcrowding amongst other measures should be encouraged as a means to reduce the acquisition and transmission of H pylori.

**POSTER 15 | COSESCA 2019**
**Management of Open Pelvic Fractures: A Case Series**
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**Introduction:** Open pelvic fractures pose a daunting task to an Orthopaedic surgeon. They need timely intervention with a multidisciplinary approach to avert catastrophic outcomes. In literature, there is a dearth of publications from developing (resource limited set-ups) countries on how to manage open pelvic fractures and their outcomes. The aim of the study was to describe the results of management of Open pelvic fractures at Nakuru County Teaching and Referral Hospital, Kenya and AIC Kijabe Hospital, Kenya.

**Methods:** It’s a retrospective review of prospectively collated data between 2013 and 2019. All the 5 patients, with an average age of 42 years, were followed up for at least 6 months after surgery and had open pelvic fractures secondary to trauma from road traffic accidents. There were 3 male patients and 2 female patients. The Majeed Score was the clinical outcome measuring tool. Radiographically, plain x-rays were used to assess radiologic union.

**Results:** All patients were able to progress to independent ambulation and had good and excellent Majeed scores. There was no recurrent infection. There was 1 screw breakage.

**Conclusion:** Timely, multidisciplinary intervention is key in attaining good outcomes in patients with open pelvic fractures.

**POSTER 16 | COSESCA 2019**
**A review of Sign Nail Surgery done by General Surgeons in a rural low volume sub-Saharan setting**
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**Background:** Across the globe, Surgical Implant Generation Network (SIGN) intramedullary nails are being used to provide excellent fracture care, but most of these implants are being placed by orthopaedic surgeons. At Bongolo Hospital in Gabon, SIGN nails have been exclusively placed by general surgeons, as there are no orthopaedic surgeons nearby. The aim of this study was to evaluate the outcomes of patients treated with SIGN nails placed by general surgeons at our hospital, in rural central Africa. Our hypothesis is that patients with lower extremity long bone fractures achieve acceptable outcomes when SIGN Nail implants are used by general surgeons, even at low volume centers.
Methods: Data was reviewed from the SIGN database and the local hospital operative database to identify the total number SIGN nails implanted from October 2011 to January 2019. Along with available demographic information, we reviewed the anatomic location of fracture (femur vs tibia), type of fractures (closed vs open), time of reduction, method of reduction (closed vs open) and any associated complication, including revision, removal, implant breakage, deformity rotation and infection.

Results: About 1800 cases are performed annually at our Hospital, of which approximately 10% are orthopedic. 110 SIGN nails were placed in 103 patients, 80 males and 23 females. Two patients had bilateral fractures, and one patient had concomitant, unilateral tibia and femur fractures, meaning a total of 106 fractures treated. Taking into account only the 70 patients who had follow-up, 87% of them reported painless weight bearing.

Conclusion: Data extraction from the SIGN online surgical database may be difficult if original data was not fastidiously inputted, and reliable study data may require very thorough review of each individual case and comments. The ease of the SIGN system means that surgeons without formal orthopedic training can use SIGN implants with reasonable patient outcomes.

POSTER 17 | COSESCA 2019
Neonatal Surgery in a Low Resource Setting, HEAL Africa Tertiary Hospital, North Kivu Province, Eastern Democratic Republic of Congo
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Background: HEAL Africa Hospital is a tertiary referral hospital located in Goma, the provincial capital of North Kivu Province, Eastern Democratic Republic of Congo. It is serving urban and rural patients, but has no qualified paediatric surgeon. Neonatal surgery is being performed by general surgeons and surgical residents; however, it has a dedicated Neonatal Unit established by Global Strategies, a USA-based organization.

Methods: A retrospective review of neonatal surgical admissions and their outcomes was conducted between January 2016 and December 2018. Data was collected from the neonatal admission and discharge register.

Results: The neonatal department of HEAL Africa Hospital is a training center for neonatal nurses in the region, training twelve nurses per year. It has a capacity of twelve beds, with two pediatricians, three residents and eight nurses. Of 1,210 neonatal admissions in the study period, there were 72 cases (5.95%) potentially requiring surgery. Of these cases 77.77% were referred from outside HEAL Africa Hospital. Fifty one were males and 21 females, a sex ratio M : F of 2.4:1. The mean age at presentation was 5 days. The most common diagnoses were myelomeningocele / meningocele (23.61%) and anorectal malformations (16.66%). Only 54.16% had surgery. The overall mortality was 40.27%. The mean length of stay was 6.95 days.

Conclusion: The neonatal mortality rate with surgical conditions is high. There is a great need for trained pediatric surgeons with neonatal surgery experience in North Kivu and throughout the Democratic Republic of Congo. Advances are needed in neonatal intensive care, surgical materials and techniques.

POSTER 18 | COSESCA 2019
Improving surgical quality in low and middle income countries: Why do some health facilities perform better than others? A longitudinal, mixed methods study in Tanzania
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Background: Evidence on uptake of surgical quality improvement interventions in LMICs is limited. Safe Surgery 2020 (SS2020) is a multicomponent intervention to improve surgical quality in ten facilities in Mara and Kagera. We studied the experiences of higher and lower performing facilities to identify potential factors distinguishing higher performers.

Methods: We used quantitative methods to identify higher (n=3) and lower (n=3) performing sites based on the improvement of 14 surgical safety and surgical culture (teamwork and communication) indicators. Based on in-depth interviews with 4 surgical providers in each facility at 1, 6 and 12 months (n = 72), we used the constant comparative method of qualitative analysis to identify themes that differentiated the experiences of higher performing facilities.

Results: As smaller facilities with collaborative relationships and strong quality cultures, higher performers had favourable baseline characteristics. As the intervention progressed all facilities evolved along two interacting pathways: organizational culture and learning. Key themes distinguishing evolving organizational culture for higher performers included 1) collaborative teams, 2) engaged leadership, and 3) resilience in learning from mistakes and embracing change. Salient themes in their organizational learning included 1) strong learning structures under learning oriented leaders who nurtured collective learning and took dissenters along, and 2) evolved learning processes from clear identification of knowledge gaps, strong knowledge translation mechanisms, and extensive data use for monitoring. Higher performers capitalized SS2020 to improve surgical ecosystems holistically on surgical safety practices, as well as cultural aspects of teamwork and communication. Lower performers prioritized overhauling safety practices and had only begun initiating change on cultural aspects. Thus, while also evolving, lower performers were behind higher performers on the change continuum.

Conclusion: Effective interventions should begin with contextual assessment and then be tailored to allow facilities to evolve along organizational culture and learning according to situational needs.

POSTER 19 | COSESCA 2019
The hidden mortality of congenital anomalies in Uganda
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Background: The true incidence of congenital anomalies in sub-Saharan Africa is unknown. Existing data estimates rely upon patient presentation to health facilities. This project aims to examine perceptions of congenital anomalies in Uganda that may alter surgical care-seeking behavior and subsequent estimate of disease burden.

Methods: Interviews regarding beliefs surrounding congenital anomalies were conducted with 198 Ugandans in September 2018 – May 2019. Of these, 91 were family members of a child with a congenital anomaly. Responses from community members versus affected family members were compared using Fisher’s exact, Cochran-Mantel-Haenszel, and t-tests. P ≤ 0.05 was considered significant.

Results: Eighteen tribes and 40 districts were represented. Of all respondents, 100% (n=198) assumed that seeking surgical care for an anomaly would send a family into poverty, 43% (n=84) believed fathers would abandon the child, and 26% (n=51) thought the child should be left to die. Causes of anomalies were believed to be contraceptive methods (48%, n=95), witchcraft (17%, n=34) or drugs and alcohol (10%, n=19). Of participants who had a child with an anomaly,
32 (35%) were advised to seek care from traditional healers, 25 (28%) were advised to allow the child to die, and the median distance traveled to the hospital was 95 kilometers (Q1=65km, Q3=300km). When comparing families with affected children to community members, families were more likely to have lower income (p<0.001) and believe anomalies can be successfully treated (p=0.007), but thought that allowing the child to die was best for the family (32% versus 9%, p<0.0001).

**Conclusion:** Misconceptions regarding congenital anomalies are common in Uganda, and families face significant financial and social pressures when deciding to seek surgical care. These data suggest that many patients with congenital anomalies may die and never reach a health facility to be counted, contributing to a hidden mortality.

**POSTER 20 | COSESCA 2019**

**Success of Surgical Correction of Cleft Palate performed in remote areas of Democratic Republic of Congo**

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**Background:** In Democratic Republic of Congo (DRC), as in many low and middle income countries, there are poor national statistics related to incidence of cleft palate. Therefore, there are many patients of all ages who have an unrepaired cleft lip or palate in the country, particularly in rural areas, and the majority of our provinces do not have cleft services. Many hospitals in DRC are unfunded and some are even lacking basic essentials such as reliable electricity and running water. As there are no facilities for orthodontic treatment and speech therapy, the aim of this study is to determine the surgical outcomes of patients with cleft lip or palate, operated on in remote areas.

**Methods:** A retrospective study was conducted on 47 patients operated on for cleft palate by a single surgeon on outreach and at HEAL Africa hospital (HAH) from January 2018 to December 2019. All patients provided consent to participate in the study. Patients with severe pre-operative malnutrition, cardiac congenital malformation and clotting profile issues were excluded.

**Results:** A total of 47 patients presenting with cleft palate were studied. Median age at admission was 10 years, and the range was 1 to 33 years. There were slightly more males (52%) than females. 11% of patients had a family history of cleft lip or palate. 77% of patients had simultaneous cleft lip and cleft palate. The cleft palate involving soft and hard palate (Veau type II) was most common (41%). 96% of patients had satisfactory outcomes and 4% had developed palatal fistula. The type of cleft palate is not associated with early post-operative complications (p=0.34> 0.05).

**Conclusions:** In the remote areas there are many patients with unrepaired cleft palate. Outreach surgery campaigns are an efficient, safe and cost-effective method to treat these large numbers.

**POSTER 21 | COSESCA 2019**

**Colostomy reversal camp at Kamuzu Central Hospital, Lillongwe, Malawi**

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**Introduction:** An end colostomy is a potentially life-saving surgical intervention, but postoperative ostomy management is challenging in resource-limited settings. Socioeconomic, health system, and surgical capacity barriers may delay colostomy reversal. A surgery camp model for addressing the burden of unreversed colostomies has not previously been undertaken in Malawi.

**Methods:** The surgery department at Kamuzu Central Hospital (KCH) carried out a two-day surgical camp in partnership with Access Health Africa (AHA) to reduce the burden of reversible colostomies and train KCH surgery residents in
stapled end-to-end anastomosis (EEA). New, standardized preoperative and postoperative order sets for colostomy reversal were developed and implemented. Patient records were retrospectively reviewed, and a descriptive analysis performed.

**Results:** During the colostomy camp, 13 patients underwent colostomy reversal via exploratory laparotomy. Twelve patients were male and median age was 41 (IQR 27 – 51). Patients lived with their colostomies an additional 4.3 ± 6.6 months after they were clinically ready for reversal. Sigmoid volvulus was the most common indication for Hartmann’s procedure (62%). One major complication was reported, a return to theatre for suspected anastomotic leak with no adverse findings. Patients were discharged 5.3 ± 2.8 days after surgery. Operating theatre staff successfully prepared for increased surgical volume, and standard pre- and postoperative order sets remain in use. Distribution of administrative responsibility and communication between visiting and host teams were noted as targets for improvement.

**Conclusion and Recommendations:** Given the clinical, educational, and organizational success of the two-day surgery camp, a second, expanded effort is anticipated. Goals include inclusion of ileostomy patients, advanced notification in district facilities and clinics, and additional administrative support with case allocation, supply acquisition, and personnel coordination.

**POSTER 22 | COSESCA 2019**

**Clinical Presentation, Management and Outcomes of Spine Trauma at Kijabe Hospital (oSTaK Study)** *Morris Kitua¹*, Chelsea Shikuku¹, Chege Mwangi¹

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**Introduction:** Spine trauma is a leading cause of disability among trauma patients worldwide. Early diagnosis and appropriate management remain core contributors in determining functional outcome. The aim for the study was to collect data from patients with spinal trauma who were managed surgically at a tertiary hospital to understand the clinical presentation, management and outcomes in our population.

**Methods:** Retrospective study of adult spine trauma patients presenting to AIC Kijabe Hospital between Jan 2017 and Jan 2019. The data was subjected to descriptive statistical analysis.

**Results:** A total of 24 patients were treated during the study period. All 24 patients had surgical decompression and instrumented fusion. Majority of our patients were male (86.7%) aged less than 40 years (67%), Mechanism of injury was mostly road traffic collision (60%) and fall from height (40%). Patterns of injury were mostly thoracolumbar (60%) and cervical (40%). Majority of patients had a pre-operative ASIA (American Spine Injury Association) score of C-E (56.5%). Time from injury to surgery ranged from 18 hours to 12 months, with majority receiving surgical care within 2 weeks of injury (62.5%), only 6% had surgery within 24 hours. More than 50% of patients showed an improvement in their ASIA score post-operatively.

**Discussion:** Despite a very small minority of patients receiving surgical intervention within 24 hours after injury, majority of the patients showed an improvement in their neurological function post-operatively.

**Conclusion:** Late presentation of spine trauma can have good outcomes with appropriate care. The authors would like to expand the study to assess patient reported outcomes in future.

**POSTER 23 | COSESCA 2019**

**Challenges in Glioblastoma Multiforme management in low income countries** *Ehanga Idi Marcel¹, G.V. Ramdas GiduGu²*

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**Background:** GBM (WHO grade IV) is known to be a highly aggressive and generally lethal brain tumor despite aggressive treatment. Occurs, especially in elderly population who already have multiple comorbidities and tend to do worse than the nonelderly patients. Surgery and radiotherapy in combination with classical alkylating agents such as
temozolomide offer little hope to escape a poor prognosis. For these reasons, enormous efforts are currently devoted to refine in vivo and in vitro models with the specific goal of finding new molecular aberrant pathways, suitable to be targeted by a variety of therapeutic approaches, including novel pharmaceutical formulations and immunotherapy strategies. But the treatment to ensure prolonged survival while maintaining quality of life has always been challenging, as glioblastoma occurs mostly in elderly population who already have multiple comorbidities. This was to specifically focus on providing a broad overview on the incidence and challenges regarding GBM management in low income countries.

**Methods:** This is a retrospective presentation of a case of a 45 – year – old female who was evaluated for history of progressive severe headache and giddiness since 1 year, forgetfulness, disorientation since 6 months and seizures since 2 months. MRI done and was found to have multifocal glioblastoma. Despite emergent surgery, she did not survive despite a short period of remission of 1 month after surgery with lack of adjuvant treatment.

**Results:** The lack of adequate facilities like radiotherapy and chemotherapy and the ignorance of patients the outcomes remain bad. In developing countries and all around development and availability of ancillary facilities are essential to be able to take care of ailments and offering tertiary care. Whenever feasible, combined modality with surgery, radiation, and chemotherapy should be instituted; however, temozolomide alone may be the reasonable alternative, especially if MGMT promoter methylation is present. GBM in conditions where treatment is multimodal, in spite of excellent surgical treatment lack of facilities like radiotherapy and chemotherapy and the outcomes remain bad in low resource countries where is the unavailability of treatment due poverty and also many cases are not diagnosed on time or not at all.

**Conclusions** Governments and partner organizations like WHO should provide resources or facilities to these patients in advanced parts of the world as well as encourage neurological and neurosurgical training in Africa whereas based on statistics, one neurosurgeon takes care of about 5 million populations since in western countries the same situation is a neurosurgeon for about 200,000 populations.

**POSTER 24 | COSESCA 2019**

A team based approach to introduce and sustain use of the WHO Surgical Safety Checklist in remote settings in Tanzania

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**Introduction:** Millions of patients worldwide suffer disability and death after surgical complications. Such complications can be reduced by the use of the WHO Surgical Safety Checklist (SSC), a simple tool for teamwork and communication thus ensuring patient safety. Introducing and sustaining the use of the checklist is challenging. We present a team-based approach employed in a low-resource setting in Tanzania, which resulted in high checklist utilization and compliance rates.

**Methods:** We reviewed data from facility registers supplemented by direct observation by mentors to evaluate use of the WHO SSC across 40 facilities in two regions of Tanzania from January 2018 - June 2019. We analyzed the self-reported monthly data including total number of major surgeries performed and proportion of surgeries where the checklist was used. We also analyzed the use of the SSC by reviewing completion rates of the SSC in a randomly-selected patient files during mentorship visits between June 2018 and June 2019.

**Results:** The average self-reported checklist utilization rate was 87.4% (23,014 out of 26,321 major surgeries). SSC utilization increased from 0% at baseline in January 2018 to 98% in June 2019. The proportion of checklists that were completely and correctly filled out between the mentor visits fluctuated but consistently remained above 80%; the gain was significantly greater at health centers than hospitals (p<0.05). Health centers self-reported a higher checklist utilization rate then hospitals i.e. 99.4% vs 68.8% (p<0.05).
Conclusion and Recommendation: We found that SSC implementation is feasible even in lower resource settings. The SSC utilization rates in these facilities were fairly high. We attribute this to the team-based approach employed and the ongoing regular mentorship. We recommend use of this approach to scale-up checklist use in other regions in the country as recommended in the national surgical obstetric and anesthesia plan (NSOAP).

POSTER 25 | COSESCA 2019
Abdominal Heterotaxy Syndrome: A Case Report
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Background: Heterotaxy syndrome (HS) is a disorder of embryonic development resulting in anomalous thoracoabdominal organ determination of the left-right axis. The clinical manifestations of HS include cardiac and extracardiac abnormalities. The extracardiac manifestations include asplenia/polysplenia, midline liver, extrahepatic biliary atresia and hypoplasia, pancreatic abnormalities, esophageal atresia, hiatal and diaphragmatic hernias, right-sided stomach, bowel atresia, and malrotation of the intestine. Extracardiac manifestations contribute significantly to the morbidity and mortality and occur in approximately 66% of heterotaxy patient.

Methods: We present a case report with images of intestinal obstruction secondary to abdominal heterotaxy which required re-operation. We performed a literature review using pubmed and the key term HS. 789 findings were narrowed down to 89 articles concerning visceral manifestations of HS in humans excluding articles on genetics and vascular malformations.

Results: A 3-year-5-month male presented with 3 days of bilious emesis, abdominal pain, distension, and obstipation. Abdominal x-ray showed a right-sided stomach. Intraoperatively, patient was found to have a right-sided stomach, midline liver, left sided gallbladder, adhesive bands causing a duodo-jejunal junction, and internal herniation of small bowel behind the duodenum. The small bowel was reduced, and large bowel was pexed to the right. The patient represented post-op day 14 with bilious emesis and weight loss. At re-operation a right-sided spleen and tail of pancreas, a left-sided duodenal jejunal junction, a broad small bowel mesentery with a shortened large bowel were noted and tissue around the duodenum that was presumed to be an annular pancreas. A duodeno-jejunostomy was performed bypassing this tissue, and the foreshortened colon was placed with the cecum in the right upper quadrant. At two-months follow-up he is doing well.

Conclusion: Heterotaxy is a rare condition with a spectrum of presentations and anatomical variations. They can be challenging cases, especially to those not experienced with congenital bowel malpositions.

POSTER 26 | COSESCA 2019
Use of an osteocutaneous free fibula for reconstruction of a 3-dimension post noma orbitomaxillary defect - A case report
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Introduction: Surgical management of defects caused by noma is a serious reconstructive challenge for the entire managing team and patient as well. The defects are usually composite involving multiple facial structures moreover associated with gross scarring and disfigurement. Such complications like TMJ ankyloses may make anesthesia complicated and may even compromise surgical outcomes.

Results: In this case report we describe a 14-year-old male who presented to our facility with a complex facial defect involving the right cheek with loss of nasal septum, right maxilla with associated palatal fistula, absent anterior wall of the orbital floor, absent upper right incisors, canine and premolar teeth with resultant gross facial disfigurement, nasal speech, spillage of feeds through the nose, recurrent flu like symptoms and foul smell. This followed a necrotizing
soft tissue infection which he suffered at the age of 5 years. Staged reconstruction was planned using a free fibula osteocutaneous flap as the first stage for cheek, orbital floor, maxilla and palatal fistula reconstruction. The objective of cheek reconstruction, orbital floor support, palate reconstruction and alveolar margin restoration were achieved.

**Conclusion:** We successfully restored the form and function of the maxilla in the first stage of reconstruction and provided adequate but less bulky skeletal and soft tissue for subsequent nasal correction and insertion of dental implants at a later stage.

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**POSTER 27 | COSESCA 2019**

Operative volume and surgical case distribution in Uganda’s public sector: a stratified randomized evaluation of nationwide surgical capacity

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**Introduction:** The majority of Ugandans seek healthcare from public facilities, but relatively little is known about operative volume, distribution of cases, or capacity of the public sector to deliver essential surgical services in Uganda.

**Methods:** A standardized mixed-methods surgical assessment and retrospective operative logbook review were completed at 16 randomly selected public hospitals serving 64% of Uganda’s population.

**Results:** A total of 3014 operations were recorded, annualizing to a surgical volume of 36,670 cases/year or 145 operations/100,000 people/year. Absolute surgical volume was greater at regional referral than general hospitals (p < 0.001); but, relative surgical volume/catchment population was greater at the general versus regional level (p = 0.03). Most patients undergoing operations were women (78.3%) with a mean age of 27 years. The overall case distribution was 69% obstetrics/gynecology, 23.7% general surgery, 4% orthopedics, and 3.3% other subspecialties. Cesarean sections were the most common operation (56%). Monthly operative volume was strongly predicted by number of surgical, anesthetic, and obstetric physician providers (β=10.72, p = 0.005, R2 = 0.94) when controlling for confounders. Notably, operative volume was not correlated with availability of electricity, oxygen, light source, suction, blood, instruments, suture, gloves, intravenous fluid, or antibiotics.

**Conclusion:** An understanding of operative case volume and distribution is essential in facilitating targeted interventions to strengthen surgical capacity. These data suggest that surgical workforce is the critical driver of operative volume in the Ugandan public sector. Investment in the surgical workforce is imperative to ensure access to safe, timely, and affordable surgical and anaesthesia care.

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**POSTER 28 | COSESCA 2019**

Towards a national implementation of Trauma Team Training in Kenya

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**Background:** The Trauma Team Training (TTT) Course was developed in 1997 by the Canadian Network for International Surgery (CNIS) in collaboration with the Injury Control Center (ICC) Uganda to address the increasing trauma burden in Low- and Middle-Income Countries (LMICs). TTT is comprised of a Provider’s and Instructor’s curriculum focusing on a
team-based approach to trauma care. TTT has since become an effective low-cost resource to teach multidisciplinary trauma teams in under-resourced centres, and were vital to trauma system development in Ethiopia, Guyana, Tanzania, and Uganda. Based on its success to date, we propose a model to implement the TTT Course throughout Kenya and its 47 counties.

**Methods:** A needs assessment was performed in consultation with local stakeholders and Canadian partners. The Kenyan Ministry of Health provided funding and recruited participants, CNIS supported by ICC Tanzania provided instructional expertise, the WHO, University of Alberta, and McGill University provided additional funding support, and the Kenya Red Cross Society provided training equipment. The three-day course includes lectures, simulation learning and team exercises to teach competencies in seven core trauma skills. The Providers’ Curriculum trains Clinical Officers, Orthopaedic Officers, Anesthesia Officers, and Nurses in developing effective and competent trauma management capacities in resource-limited settings. The Instructor’s Curriculum provides teachers with technical and instructional expertise to sustain TTT Courses to first-line health providers.

**Results:** 2 Provider Courses in 2 counties (Uasin Gichu, Nairobi) and one Instructor (Machakos) course were held, with 47 providers and 22 instructors trained. The providers course saw participation from 4 counties (Kericho, Uasin Gichu, Nakuru, Nairobi) and over 10 facilities, while the instructor course saw participation from 4 counties (Nairobi, Kiambu, Machakos, Makueni) and over 15 facilities.

**Conclusion:** TTT saw success particularly through its engagement of local stakeholders and has potential to build domestic capacity for trauma care in Kenya.

**POSTER 29 | COSESCA 2019**

**Case report: Cold abscess of the thigh**

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**Introduction:** Tuberculosis (TB) affects a significant number of patients in the world. It mostly affects the pulmonary with the musculoskeletal being 1-5% of all cases. The TB disease burden has been composited by the advent of human immunodeficiency virus/Acquired immunodeficiency syndrome (HIV/AIDS). Primary intramuscular TB in the right medial thigh compartment with no underlying bone or joint lesion is rare. We herein report a rare and unusual presentation of Tuberculosis; non-pulmonary and non-osteoarthritic. The case consolidates and demonstrates the role of surgery in the management of extrapulmonary, extraskeletal tuberculosis that presented as a huge right thigh cold abscess in immunocompromised patient.

**Clinical findings:** A 47-year-old woman presented with a nine months’ history of a painless huge right thigh swelling. She had no constitutional symptoms and the rest of the history was unremarkable even though she was seropositive for HIV and on antiretroviral drugs for 10 years. The general condition was good and the local examination showed a huge fusiform soft smooth tumour in the antero-medial region of the right thigh estimated 35x25cm. The tumour was non tender and non-pulsatile and she had no lymphadenopathy. The diagnosis of extrapulmonary Tuberculosis (EPTB) was established by GeneXpert and histology.

**Intervention:** The huge right thigh cold abscess containing 3000ml of non-foul smelling pus traversed the right thigh muscles, and was treated by surgical excision plus six months of anti-tuberculosis therapy.

**Outcomes:** Postoperatively, the wound healed and the patient still remained asymptomatic for pulmonary, bone and joint tuberculosis. Furthermore, at nine-month follow-up, the patient showed no evidence of active Tuberculosis disease.

**Conclusion:** We demonstrated non-pulmonary and non-osteoarthritic presentation of EPTB in HIV/AIDS. Primary intramuscular TB is rare, and the tuberculous cold abscess was treated by surgical excision plus anti-tuberculous drugs.

**POSTER 30 | COSESCA 2019**

Understanding barriers to behavior change after implementation of the Non-Technical Skills for Surgery (NOTSS) course
Introduction: Non-technical skills like situation awareness, decision making, leadership, communication and team work can decrease medical errors and increase patient safety in the operating room. Non-technical skills courses for different health professions have been developed and taught all over the world. However, little is known about the impact on participants’ future behaviors in the operating room. The aim of this study was to assess how learners who took the Non-Technical Skills for Surgery (NOTSS) course integrated the non-technical skills in their surgical care practice one year after taking the course.

Methods: We conducted a qualitative study and interviewed NOTSS course participants in March 2018. We performed a purposeful sampling of 24 out of 120 people who took the course from surgery, anesthesia, and perioperative nursing. After providing consent, participants were invited to one-hour face-to-face interviews that were audio-recorded, translated from Kinyarwanda/French to English and transcribed. Two independent coders used a thematic analysis to extract major themes and codes.

Results: Four themes emerged from this study: 1) impact of working environment on NOTSS implementation, 2) behavior changes in the operative environment, 3) relationship between resources, and 4) impact of NOTSS on team dynamics. Participants felt that the course was relevant to their clinical practice. Application of NOTSS contributed to a cohesive working environment and improved operation workflows. Overall, this led to reduced stress to the team, improved team performance, and decreased rates of incorrect or poor patient care. High patient volume, lack of policies and guidelines, working with non-trained personnel and time limitations are the main factors compromising the implementation of non-technical skills.

Conclusion: This study describes implementation strategies, challenges, and behavior changes after implementation of NOTSS courses. NOTSS training for multidisciplinary teams in Rwandan district hospitals is being conducted to address some of the challenges identified in this study.

POSTER 31 | COSESCA 2019
Changing nutritional status of paediatric surgical patients throughout the inpatient admission; a pilot study
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Background: Poor nutritional status is a risk factor for poor surgical outcomes. This study aimed to determine the impact of a surgical admission on nutritional status, with a hypothesis that the additional metabolic demand from illness and surgical intervention would worsen the nutritional status of these patients.

Methods: An observational cross-sectional study of paediatric surgical patients, aged <16 years, at a government-funded tertiary hospital in Malawi, over a 7-week time period. Anthropometric data at admission and discharge was collected using World Health Organisation (WHO) standard measures for weight, height and mid-upper arm circumference (MUAC). Food intake, both prior to and during admission, was documented using a dietary questionnaire.

Results: Sixty-five participants had baseline anthropometric measurements at admission. 71% of guardians (41/65) supplemented the hospital food for their child, ranging from additional snacks to full meals. Only 11 participants (18%) had follow-up measurements on discharge. Six patients (55%) gained both weight and MUAC during their admission. Although 5 patients had lost weight, only 1 patient also had a decreased MUAC.
Conclusion: Due to logistical difficulties and poor record keeping, only a small number of participants had discharge measurements taken. However, contrary to our hypothesis, most of these patients’ nutritional status improved during their hospital admission. A follow-up study with larger number is required to confirm this unexpected finding.

POSTER 32 | COSESCA 2019
Patterns of Acetabular Fractures in Kampala, Uganda
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Background: This study aimed to review the epidemiological aspects of acetabular fractures treated at Mulago National Referral Hospital and Nsambya Hospital in Kampala, Uganda.

Methods: We obtained data for 45 patients who presented to Mulago and Nsambya Hospitals from November 2018 to March 2019 with a diagnosis of acetabular fracture. Age, sex, the cause of injury, computed tomography fracture classification, associated osseous and visceral injuries were analyzed.

Results: Males: (78.6%) predominated. The mean age at injury time was 40 years, and the most common cause of injury was road traffic crashes (91%). The most affected road user category were motorcycle passengers (73%). Injuries were mostly complex acetabular fractures (58%) in comparison to (42%) for simple fractures. Posterior wall fractures were the most common pattern (27%). Associated posterior hip dislocation occurred in 38% of cases. The incidence of post-traumatic sciatic nerve palsy that was present at the time of injury was 2%. There were no cases of reported mortality.

Conclusion: Acetabular fractures are relatively common injuries with motorcycle collision being the most common cause of injury. Posterior wall fracture was the most frequent pattern, and most of the patients were males. The incidence of post-traumatic sciatic nerve palsy was lower than that reported in literature.

POSTER 33 | COSESCA 2019
Pearls and Pitfalls of Oncoplastic techniques for Giant Fibroadenomas
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Background: Oncoplastic techniques for breast reconstruction are well suited for giant fibroadenomas, the excision of which without reconstruction can result in significant, residual, post-operative asymmetry and ptosis. However, the preoperative diagnosis of giant fibroadenomas can be difficult to make, especially attempting to distinguish between fibroadenomas and phylloides tumour.

Methods: A 17-year-old girl presented at a rural, mission hospital in Gabon in central Africa with a right breast giant fibroadenoma preoperatively diagnosed by core needle biopsy. The tumour appeared to replace nearly all normal breast tissue. We used an oncoplastic technique to enucleate the tumour and reconstruct the breast with a superior and inferior dermoglandular bipedicle Wise-pattern mastopexy.

Results: The patient recovered uneventfully and was pleased with her postoperative outcome. However, final pathology of the mass revealed the mass to be a low-grade, borderline, phylloides tumour.

Conclusion: Although standard inferior dermoglandular pedicle Wise-pattern mastopexies have been reported for use in oncoplastic reconstruction of giant fibroadenomas, the addition of a superior pedicle is not significantly more time consuming and potentially increases the viability of the nipple-areolar complex. However, the surgeon must be aware of potential changes in final pathology, as preoperative core needle biopsy may not make the diagnosis of phylloides tumour due to sampling error. Patients presenting with giant fibroadenoma should be counseled about the possibility of reconstruction, but also of difficulties in pathologic diagnosis, as this may change their treatment algorithm.
**Poster 34 | COSESCA 2019**

A Supraclavicular ALK-Positive Anaplastic Large-Cell Lymphoma Initially Misdiagnosed and yet successfully treated with wide excision and adjuvant Chemotherapy: A Case Report

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**Background:** ALK-positive Anaplastic Large-Cell Lymphomas (ALCL) are chemo-sensitive cancers; combination of histologic and immunophenotypic or genetic studies remains the main strategy to prevent their unnecessary surgical excision as they can mimic soft-tissues sarcomas in histology. In sub-Saharan Africa, however, availability and affordability of immunophenotypic studies, especially extended immunohistochemistry (IHC) tests, constitute major limitations for accurate diagnoses. The case presented herein is an example of a heavy surgical management resulting from an initially inaccurate diagnosis, but eventually treated successfully.

**Findings:**

A 15-year-old female patient presented with a 5-month history of a painless right supraclavicular mass. The initial biopsies had conflicting histology reports. In view of its rapid growth, it was first managed surgically, as a high-grade sarcoma stage T4N1M0: a wide “en bloc resection” with primary flap covering was done. Post-operative histology with an extended IHC from the widely resected tissue finally revealed an ALK-positive ALCL, which proved to be sensitive to chemotherapy. An adjuvant chemotherapy of six cycles of CHOP regimen followed with a good response; the patient became clinically stable, and all the investigations that were done, including a PET-CT scan, could not detect any residual active disease. She was still disease-free at 2 years after completion of chemotherapy.

**Conclusions:** Although cost-effective, combined histologic and immunophenotypic studies, especially extended IHC tests, can reduce the incidence of misdiagnosed large-cell lymphoma. As exemplified in this present case, obtaining appropriate and sufficient tissue from the tumor could possibly increase the chance of finding an accurate diagnosis.

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**Poster 35 | COSESCA 2019**

Management of Subcutaneous Emphysema in Low Income Setting Eastern of DR Congo: Rare Complication of Inhalation Foreign Body Type Peanut: A Case Report

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**Background:** Inhalation of Foreign Bodies (FBs) in airway tract remains a serious and fatal event if not managed properly in time and might be a key causer of chronic lung injuries. It is a leading cause of sudden death in old children. We are reporting the management of a 6-year-old girl with gross subcutaneous emphysema of face, neck, chest secondary to an unusual foreign body (peanut) in the airway tract.

**Case presentation:** A 6 years old girl who consulted our teaching hospital with symptomatology of pneumonia following inhalation of foreign body type peanut seven days earlier. During her hospitalization, she developed a gross subcutaneous emphysema which was managed using subclavicular subcutaneous incision for aspiration associated on antibiotics, oxygen therapy and chest physiotherapy. The condition resolved within fifteen days.

**Findings:** Crepitations in the left lung and absent breath sounds on the right side indicated a bronchopneumonia on that side; subcutaneous emphysema of the chest, neck and face.
**Conclusion:** The using of subclavicular subcutaneous incision for aspiration associated on antibiotics, oxygen and chest physiotherapy remains a solution to manage the subcutaneous emphysema to improve the health of children with this complications following inhalation of foreign body in low income setting. Bronchoscopy remains the good approach to remove and to prevent the complications of inhalator foreign body.

**POSTER 36 | COSESCA 2019**

Examining the Relationship between Surgical Safety Checklist Adherence and Development of Surgical Site Infections, Sepsis, and Maternal Sepsis in the Lake Zone of Tanzania

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**Background:** The Surgical Safety Checklist (SSC) is an observation tool containing 38 action items related to the safe practice of all phases of the episode of care. Adherence to the SSC is associated with reduced morbidity and mortality, improved safety attitudes and improved teamwork and communication. The aim of this study is to evaluate the relationship between adherence to the surgical safety checklist and the development of maternal sepsis, post-operative sepsis and surgical site infections (SSIs) in the Lake Zone of Tanzania.

**Methods:** Data was collected on SSC adherence and outcomes through observation of surgical procedures by trained medical data collectors in a pre- and post- intervention study in 10 intervention and 10 control facilities in the Lake Zone. The associations between SSC adherence and maternal sepsis, post-operative sepsis and SSI rates were evaluated by treating SSC adherence as a categorical variable based on tertiles defined as low, moderate and high adherence with comparisons performed using Chi-square or Fisher’s exact tests.

**Results:** Among 2,130 surgical cases observed in the pre- and post- intervention periods in both intervention and control regions, the maternal sepsis rate was 3.9%, the post-operative sepsis rate was 2.9%, and the SSI rate was 5.3%. The lowest SSC adherence tertile corresponded to an adherence rate of 0% to 12.4%, moderate adherence was 12.5% to 24.1% and high adherence was greater than 24.1%. Comparing low-moderate vs. high SSC adherence, maternal sepsis rates were higher in the low-moderate group (5.1% vs. 1.9%; P=0.004), the difference in sepsis rates was not statistically significant (3.4% vs. 1.5%; P=0.225).

**Conclusion:** We found significantly lower rates of maternal sepsis among cases in which high SSC adherence was observed. No statistically significant differences were seen in post-operative sepsis and SSI rates between cases with high versus low-moderate SSC adherence. Benefits of adherence to the SSC associated with improved surgical quality also reduced adverse outcomes in the Lake Zone of Tanzania.
Introduction: South Africa has the 11th highest gun related mortality in the world. However, around these deaths are many more patients who are injured. Gunshot related injury has been recognised as a highly costly healthcare problem by individual treating centres, however no ‘national picture’ has been examined in detail. Given the vast resource implications, this study sought to explore the burden of gunshot related orthopaedic injuries across South Africa.

Method: A network was established across South Africa and 37 orthopaedic units representing 9 provinces joined. A snapshot cohort study was conducted which ran over two weeks. Data was captured by the local orthopaedic teams. Patients were eligible if they had at least one acute gunshot related orthopaedic injury referred to the orthopaedic service. Patients who enrolled in the study were asked additional research questions around health-related quality of life and personal circumstances. Follow up was at 6-8 weeks after injury.

Results: Thirty-seven centres enrolled 135 patients over the study period. The Western Cape had the highest number of cases (52), followed by Gauteng (35) and KwaZulu-Natal (29). The median age of patients was 32.5 years and the overwhelming majority were male (89%). Forty-three percent of patients had been either shot or stabbed before. The femur was the most commonly affected bone (n=29). All but two of the femoral fractures were treated with surgery, whereas 12 of the 24 tibial fractures were treated without surgery. Most patients were discharged back to their community however 37% of patients didn’t return for routine clinical follow up and no outcome could be recorded.

Discussion: Gunshot related orthopaedic injuries amounts a major burden on healthcare resources across the country. The true burden is most likely grossly underestimated. There is significant variation is management of the gunshot related fractures. In comparison to other countries such as the United States, there is a greater tendency to non-operative treatment. However, challenges with follow up preclude determining effectiveness of these alternative treatment options.

Conclusion: The variation in treatment and uncertainty around outcome make more detailed clinical effectiveness research a major priority.
operative characteristics were drawn from medical records. At the follow-up visit, patients underwent a clinical exam and radiologic assessment and were assessed for quality of life via EQ-5D-5L, Knee injury and Osteoarthritis Outcome Score (KOOS) quality of life subscale, and Hip disability and Osteoarthritis Outcome Score (HOOS) quality of life subscale. We used Spearman's correlation coefficient followed by multivariate linear regression to test the association of the predictor variables with quality of life outcomes.

**Results:** 101 patients met inclusion criteria and agreed to return, with a mean follow-up of 63.8 (± 7.4) months. On bivariate analysis, a substantial negative correlation was seen between Visual Analogue Scale (VAS) pain and QoL subscales of KOOS, HOOS, and EQ-5D-5L with a mean rho of -0.64 (range: -0.59 to -0.72). Age was a negative predictor of long-term QoL (mean rho: -0.26), as were rotational deformity (mean rho: -0.24), limb length discrepancy (mean rho: -0.22) and angular malalignment (mean rho: -0.24) of the femur. Conversely, higher knee flexion (mean rho: +0.24), hip extension (mean rho: +0.30), internal rotation (mean rho: +0.223), and external rotation (mean rho: +0.21) were positive predictors of QoL. On multivariate linear regression, VAS pain correlated most strongly with all three quality of life indices; KOOS QoL (R2 = 49%), HOOS QoL (R2 = 35.6%), and EQ-5D-5L (R2 = 44%). Knee and hip range of motion, rotational deformity, limb length discrepancy and angular malalignment of femur were fairly correlated with long-term QoL on multivariate analysis (R2 range: 4.1% - 7.0%).

In patients treated with SIGN intramedullary nailing for diaphyseal femoral fractures, quality of life is strongly affected by overall pain. Pain is an important source of disability in this population. Less significant predictors include hip and knee range of motion and complications, including rotational deformity, limb length discrepancy, and angular malalignment of the femur. Limitations of this study include limited patient return for long-term follow-up; this was due to a number of reasons, including difficulty contacting patients and refusal to participate in the study. Additionally, sample size was limited for multivariate analysis. We provide novel data regarding predictors of long-term quality of life in patients treated with SIGN intramedullary nailing for diaphyseal femur fractures.

**Conclusion:** Appropriate management of pain may improve long-term quality of life in this population.

**OP 3 | COSESCA 2019**

**Combined Magnesium/Polyethylene Glycol Facilitates the Neuroprotective Effects of Magnesium in Traumatic Brain Injury at a Reduced Magnesium Dose**

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**Introduction:** While a number of studies have shown that free magnesium (Mg) decline is a feature of traumatic brain injury (TBI), poor central penetration of Mg has potentially limited clinical translation. This study examines whether polyethylene glycol (PEG) facilitates central penetration of Mg after TBI, increasing neuroprotection while simultaneously reducing the dose requirements for Mg.

**Methods:** Rats were exposed to diffuse TBI and administered intravenous MgCl₂ either alone (254 lmol/kg or 25.4 lmol/kg) or in combination with PEG (1 g/kg PEG) at 30-min post-injury. Vehicle-treated (saline or PEG) and sham animals served as controls. All animals were subsequently assessed for blood-brain barrier permeability and edema at 5 h, and functional outcome for 1-week post-injury.

**Results:** Optimal dose (254 lmol/kg) MgCl₂ or Mg PEG significantly improved all outcome parameters compared to vehicle or PEG controls. Intravenous administration of 10% MgCl₂ alone (25.4 lmol/kg) had no beneficial effect on any of the outcome parameters, whereas 10% Mg in PEG had the same beneficial effects as optimal dose Mg administration.

**Conclusion:** This study showed that polyethylene glycol facilitates central penetration of Mg following TBI, reducing the concentration of Mg required to confer neuroprotection while simultaneously reducing the risks associated with high peripheral Mg concentration.
Proximal femur geometry in adult Kenyan population and its implication in Orthopaedic surgery
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Background: Numerous orthopedic procedures are carried out on the proximal femur. For optimal hip function, these procedures must restore the anatomy of the proximal femur to near normal. There are currently no local studies that have described the normal anatomy of the proximal femur and its implications in orthopedic surgery. The aim of this study was to determine the neck-shaft angle, femoral neck ante version angle, femoral neck width and femoral head diameter in adult femora, compare the results with other studied populations and examine the implications of the same in operations on the proximal femur.

Methods: Femoral neck anteversion and neck-shaft angles were determined from digital photographs of 70 cadaveric femora. Femoral neck width and femoral head diameter were determined by measurement using a digital Vernier caliper. The dimensions of available implants were searched from local suppliers of the implants.

Results: Mean femoral neck-shaft angle was found to be 129.21º, while the mean femoral neck ante version angle was found to be 23.06º. Mean neck-shaft angle was found to be 128.67º on the left while on the right side, it was 129.03º. Mean femoral neck ante version angle was found to be 23.97º on the left side, and 23.03º on the right side. Mean femoral neck width was found to be 29.36mm, with mean width of the left side being 28.67mm and that of the right being 29.36mm. Mean femoral head diameter was 42.6mm, with mean diameter of the left side being 41.2mm and that of the right side being 42.6mm. The differences were not statistically significant.

Conclusion: The current study has shown that the femoral neck-shaft and anteversion angles in the Kenyan femora vary from those of other populations. The available implants have angles which may not be suitable for a significant proportion of the local population. It would be prudent to avail a range of implants with different angles to improve the choices available to the surgeon when faced with a patient who requires an operation on the proximal femur.
highlight the significant impact that falls from heights have on children, as the greatest mechanism for abdominal trauma. Prospective studies are recommended to further describe the specific organs injured in these patients.

**OP 6 | COSESCA 2019**

**Prevalence and risk factors of Acute Kidney Injury in polytrauma patients at Muhimbili Orthopedic Institute, Dar-es-salaam**

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**Background:** Polytrauma can lead to multi-organ dysfunction in addition to the local injuries. Acute kidney injury is one of the most common causes and contributors to the high morbidity and mortality. Prevalence of acute kidney injury in trauma patients is as high as 40.3%. Early detection and management leads to better outcomes.

**Methods:** A study was done from July 2018 to March 2019 among all adults with polytrauma who presented at the emergency department at MOI. The New Injury Severity Score (NISS) screening tool was used to identify polytrauma patients. The KDIGO criteria was used to identify patient with Acute Kidney Injury. Descriptive statistics were then obtained followed by hypothesis testing between variables. Logistic regression models were used to determine factors associated with acute kidney injury.

**Results:** More than half (56.4%) of the patients were between 26-40 years and 92.3% of the polytrauma patients were males. Almost 2/5th (38.5%) of the polytrauma patients had acute kidney injury – half of these had stage 1 AKI, 33.3% had stage 2 AKI and the remaining 16.7% had stage 3 AKI. On multivariate logistic regression, it was found that patients who were older than 45 years (OR 8.53, CI 1.65-43.89, P=0.01) and those patients with Systemic Inflammatory Response Syndrome (OR 21.83, CI 1.66-286.2, P=0.019) had higher risk of Acute Kidney Injury.

**Conclusion:** There is high prevalence of AKI among polytrauma patients. Elderly patients and those with SIRS were seen to have higher likelihood of AKI. Recommendations: A high index of suspicion is necessary to identify patients with AKI, who can have debilitating complications if not identified early. Special attention needs to be given to high risk groups, for example elderly patients and those with SIRS. More studies can be done to look at short and long-term outcomes of polytrauma patients who develop AKI.

**OP 7 | COSESCA 2019**

**Global Surgery: Surveying unmet pediatric urological needs in low and middle income countries**

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**Introduction:** World Health Organization estimates that over 90% of congenital malformations occur in Low and Middle Income Countries (LMICs). Surgical collaborations and short-term missions help address unmet needs in LMICs. Most literature describes programs addressing several pediatric surgical specialties. Although pediatric urologic conditions compose a substantial burden in LMICs with a paucity of providers to meet these needs, little is known about global engagement in pediatric urology. The study was aimed to describe the scope, challenges and recommendations for advancing pediatric urology in global health.

**Methods:** We reviewed databases (PUBMED, EMBASE and MEDLINE Ovid), reports and websites, surveys by Global Initiative for Children Surgery (GICS) and American Pediatric Surgical Association (APSA) and conducted a survey.
Results: 203 responses were reviewed from GICS, APSA and our own survey. 80% response from Canadian pediatric urologists urologists. 46% were involved in LMICs, 80% for less than 10 days. 30% cited complex pediatric urologic patients as most neglected, 10% reported main challenge as lack of specialist surgeons although infrastructure improvements were highest recommendation. KidsOR® had 1 of 8 centres request for urologic equipment.

Conclusion: Despite complex pediatric urology being perceived as most neglected, there isn’t much activity in this sphere of global surgery. There is a lot of uni-directional activity, mostly short surgical camps. there is poor communication between collaborators and our own survey surprisingly found that training of local surgeons was not listed as a priority.

OP 8 | COSESCA 2019
The Capacity of First-Level Hospitals to Perform Essential Surgical Operations in Cape Town, South Africa
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Background: The objective of this study was to describe the volume and proportion of six essential operations conducted at first-, second-, and third-level hospitals in Cape Town, South Africa.

Methods: The Cape Metro West health district in Cape Town, South Africa serves a population of around 2.1 million persons. There were seven government hospitals included in this study: three first-level, three second-level, and one third-level hospital. The number and volume of six essential operations: abscess drainage, appendectomy, hernia repair, cholecystectomy, emergency laparotomy, and lower limb amputation were described from April 1, 2015 to March 31, 2016.

Results: First-level hospitals performed 0.2% of the selected essential operations. The majority of these were performed at second-level hospitals (66.9%) while, third-level hospitals conducted close to a third (32.9%) of these procedures.

Conclusion: First-level hospitals performed very few of the selected essential operations. In contrast, third-level hospitals conducted a third of these procedures, which limits resources for more complex surgical conditions. Improving surgical capacity at lower level hospitals is urgently needed to expand surgical access. Understanding reasons for the lack of surgical capacity at first-level hospitals is paramount to developing strong surgical systems in low- and middle-income countries.

OP 9 | COSESCA 2019
Bowel function and factors that affect outcome in children six months after definitive surgery for Hirschsprung’s disease at Mulago hospital
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Introduction: Hirschsprung’s disease is associated with long-term morbidity after definitive surgery. Evidence from literature in other settings has shown that bowel function following definitive surgery is still poor with the most common complications being; constipation, incontinence and Hirschsprung’s associated enterocolitis. Such evidence lacks in our setting.

Methods: This was a retrospective review of children three to twelve years old following definitive surgery for Hirschsprung’s disease in the period between January 2012 and May 2018. The pediatric surgery database that runs from January 2012 to date was used to obtain patient contact information. Postoperative bowel functional outcomes were assessed using the Rintala Bowel Function Score. Patient factors, caretaker factors and clinical factors were analyzed and compared with abnormal bowel function at bivariate and multivariate level to determine association.
Results: There was a male: female ratio of 2.75:1. The main surgical technique used was the Swenson procedure. The bowel function outcomes were normal in 60% (27 participants) and abnormal in 40% (18 participants). The prevalence of constipation was 22.22% (10 participants), that of fecal incontinence was 20% (9 participants) and there were no cases of HAEC.

Conclusion: Abnormalities of bowel function after definitive surgery for Hirschsprung’s disease are common in patients operated in the study area (Mulago national referral hospital). The main complications are constipation and fecal incontinence.

OP 10 | COSESCA 2019
Mortality for pediatric surgical patients at Mulago National referral hospital, Kampala, in Uganda
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Introduction: Mortality for pediatric surgical conditions remains high in low- and middle- income countries where access to resources such as intensive care is limited. There are few studies that specifically investigate the factors contributing to pediatric surgical deaths. We conducted a study auditing the deaths on a pediatric surgical ward in Uganda to characterize which factors are most likely to contribute to inpatient mortality.

Methods: A retrospectively collected, ward-based database was reviewed for inpatient deaths from January 1 2018, to June 30, 2019. Cases were matched with those in the written death log. Descriptive statistics were performed as appropriate. We used existing Institutional Review Board approval for the data base.

Results: At total of 136 cases were identified in the database. The median age of patients was 4 (IQR = 1-21) days. The most common diagnosis was gastroschisis (36%) followed by jejunal atresia (10%) and intussusception (8%). Almost 37% of children who died had surgery. Sepsis was noted to be the most commonly as a contributing factor to death (73% of cases) followed by congenital anomalies (72% of cases) and electrolyte imbalance (41% of cases).

Conclusions: Mortality for pediatric surgical conditions, especially congenital anomalies, is high in Uganda. Further research is needed to better characterize deaths from pediatric surgical conditions in order to decrease mortality rates.

OP 11 | COSESCA 2019
Burden, Outcomes, and Economic Benefit of Neonatal Surgery in Uganda: Results of a Five-Year Follow-up Study
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Introduction: Ninety-four percent of congenital anomalies occur in low and middle-income countries (LMICs). In Uganda, only four pediatric surgeons and three pediatric anesthesiologists serve over 20 million children. This study estimates burden, outcomes, coverage and economic burden of neonatal surgical conditions in Uganda.

Methods: A prospectively collected database was reviewed for neonatal(age< 30 days) general surgical admissions
from January 1 2012, to May 31, 2017 at the only two sites with specialist pediatric surgical coverage. Outcomes were compared with high-income countries, and met and unmet need were estimated using disability-adjusted life years (DALYs). We estimated economic benefit using a value of a statistical life-year approach.

**Results:** A total of 1,177 neonatal admissions were identified. Mean age was 7 days and overall mortality was 36%. Mean distance travelled was 92 km. The most common conditions were anorectal malformations (18%), gastroschisis (17%), omphalocele (15%), and intestinal atresia (10%). Almost half of patients (49%) had surgery. Post-operative mortality was 24%. Mortality was significantly associated with surgery intervention ($p<0.001$) and age ($p<0.001$). Highest mortality conditions were gastroschisis (85%) and biliary atresia (80%). Gastroschisis (42%) and anorectal malformations (42%) had the greatest reduction in mortality with surgery. Met need was 3,531 DALYs/year and 140,220 DALYS were potentially avertable (unmet need). The current met need corresponds to a $2.9 million USD economic benefit to Uganda, with a potential additional benefit of $116 million USD if unmet need were fully addressed. Approximately 2.3% of the total need was met by the healthcare system.

**Conclusions:** Neonatal surgery improves survival for most conditions despite resource limitations such as lack of neonatal intensive care. A negligible proportion of the need for neonatal surgery is currently being met in Uganda, similar to estimates five years ago (3%). Current and potential economic benefit to Uganda appears substantial. More advocacy is needed to increase capacity for pediatric surgical care in Uganda and similarly resourced LMICs.

**OP 12 | COSESCA 2019**

**Piloting pull-through Procedure for Hirschsprung’s disease with spontaneous stoma closure, short-term outcomes in Mbarara Regional Referral Hospital in western Uganda: A case series**

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**Background:** Uganda like many developing countries, treatment of Hirschsprung’s disease treatment involves colostomy formation, pull-through, and colostomy closure which is appropriate and standard approach to allow decompression and contraction of dilated and thickened bowel and improving patient nutritional statues. However, this causes long duration of treatment, significant stoma morbidity, substantial costs, many hospital visits, and difficult social life. This was a pilot pull-through with spontaneous stoma closure to minimize morbidity and complications associated with stoma care and stoma closure.

**Methods:** Patients with diverting colostomy underwent Swenson’s Pull-through procedure with spontaneous stoma take down. Patients were kept nil per oral while initiating oral feeds as the child tolerated. They were followed in outpatient department after discharge at 2 weeks, 1 month, and 3 months and assessed for early postoperative and short-term complications. Patients with total colonic type, redo pull-through were excluded from the study. Parents were educated about signs and symptoms of postoperative enterocolitis, since this can result in rapid severe illness and death.

**Results:** Ten children were recruited, nine males and one female, all patients had rectosigmoid type. Participants had first anal dilatation at 2 weeks follow-up; average weight, hemoglobin, age at pull-through, age at colostomy formation, duration of surgery and length of stay on ward were 13.4kg (SD =5.6), 11.4 g/dl (SD =2.9), 11.4 months (SD=9.5), 27.9 months (SD =21.3), 197 minutes (SD = 37), 7.9 days (SD = 3.2) respectively. One child got frequent bowel movements and soiling (n= 1, 10%) at two weeks; one child had soiling (n=1, 10%) and two children experienced recurrent enterocolitis (n=2, 20%) at one month; recurrent enterocolitis persisted in 2 children (n=2, 20%) at 3 months.

**Conclusion:** Pull-through Procedure is safe without stool diversion in a resource limited setting under strict pre, intra and post-operative care.

**OP 13 | COSESCA 2019**

**Living donor liver transplantation in patients weighing ≥100 kg: Low graft weight and obesity do not impact outcomes**
Background: Living donor liver transplantation (LDLT) in obese patients raises concerns with regards to obtaining grafts of “adequate” graft-to-recipient weight ratio (GRWR) and the impact of obesity on the outcomes of LDLT.

Method: LDLT outcomes in patients weighing ≥100 kg were compared with those weighing <100 kg. Patients weighing ≥100 kg were divided into 3 categories based on the GRWR of the grafts they received. Groups 1, 2, and 3 included patients with GRWR ≥0.8%, between 0.65% and 0.8%, and <0.65%, respectively. The 56 (6.5%) adult liver transplants were performed in patients weighing 100 kg or more. Except for higher mean body mass index (35.8 versus 25.2 kg/m²; P value < 0.01) and grafts of lower GRWR in obese patients (0.74% versus 1.02%; P value < 0.01), all other parameters were similar between the 2 groups.

Result: Despite obesity and smaller grafts, the post-transplant outcomes such as day to normal bilirubin and international normalized ratio; infective, respiratory, and biliary complications; and hospital mortality were similar between the 2 groups. On comparing obese patients in the 3 GRWR categories, except for graft weight (985 versus 769 versus 646 g; P value < 0.01), all the pre-transplant parameters were comparable. There was no significant difference in terms of graft function, postoperative morbidity, and hospital mortality between patients with grafts of normal GRWR and those with grafts of low and very low GRWR.

Conclusion: Grafts of low GRWR give satisfactory results in obese patients undergoing LDLT and obesity does not adversely impact the outcome of LDLT.

OP 14 | COSESCA 2019
Taylor Spatial Frame: A Panacea for limb deformity correction? a good experience
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Introduction: Lower limb deformities have traditionally been managed via extensive dissection approaches due to limited implant choices with less than optimal outcomes especially in the presence of poor soft tissue cover. Moreover, if the bony deformity is in two or three dimensions, using the traditional plates and screws and nails, can be challenging; and associated with complications related to the extensive exposures and acute bony/soft tissue manipulations. Using the Taylor Spatial frame, significantly decreases these adverse outcomes; due to the minimal acute soft tissue/bone disruptions and the gradual, guided correction it accords the surgeon. This was aimed to describe the results of correction of lower limb deformities using the Taylor Spatial frame

Methods: It’s a retrospective review of prospectively collated data between 2017 and 2019. All the 12 patients, with an average age of 42 years, were followed up for at least 6 months and were all secondary to trauma except for 2 that were due to chronic osteomyelitis. The male-female ratio was 2:1. The Radiographically, plain x-rays were used to assess radiologic union and the amount of deformity corrected. In addition, ambulatory status was also used as an outcome measure.

Results: All but 1 patient were able to progress to independent ambulation and had bony union. There was no recurrent infection. The deformity correction was an average of 50.60/patient for angular deformity and an average of 21.50/patient for translational deformity.

Conclusion: The Taylor spatial frame provides the surgeon good control during bone deformity correction especially in complex deformities associated with soft tissue challenges. The drawback is the availability of the equipment/implants and the steep learning curve.

OP 15 | COSESCA 2019
A comparison between banana leaf dressing and Vaseline gauze dressing for split-thickness skin graft donor sites
Background: Split thickness skin grafts (SSG) are very commonly used in plastic surgery. Vaseline gauze dressing (VGD) is the commonest dressing used for SSG donor sites. Banana leaf dressing (BLD), also used in some centres, is known for its non-adherent, pain-free properties.

Methods: This study compared the use of BLD and VGD on SSG donor site wounds. Ease of dressing application and removal, were scored on a 1-10 scale. Pain scores were taken on postoperative days 3, 5, 7, 9 and 10 using the 0-10 Numerical Pain rating scale. On day 10, dressing change was done, percentage epithelialisation recorded and a swab taken for microbial culture. Average cost of each dressing was calculated.

Results: There was no significant difference between average postoperative pain scores for patients with either dressing (p=0.992). BLD Patients had less pain on dressing change (p=0.006). Both dressings were easy to apply; BLD was easier to remove (p=0.000). Wounds with BLD reepithelialised faster (p=0.0158). 40% of patients had no organism grown on microbial culture, 25% grew Staphylococcus aureus and 35% grew a myriad of insignificant organisms (p=0.482). BLD was 4 times cheaper than VGD (p=0.000).

Conclusion: Banana Leaf Dressing is therefore an effective and highly recommended dressing for SSG donor site.

OP 16 | COSESCA 2019
Making the case for simple urinary diversion in the management of complex urethral strictures in low resource centers
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Background: Urinary diversion is an aspect of reconstructive urology that can be used to to manage various urological conditions. Continent urinary diversions have historically been used to successfully manage posterior urethral strictures that have proven difficult to treat with urethroplasty alone. The Mitrofanoff appendicovesicostomy is not typically employed in the management of adult urethral stricture disease. The purpose of the report was to outline our experience with managing a complex urethral stricture after multiple failed urethroplasties.

Method This is a case report on a patient treated at our centre in Ndola teaching Hospital.

Results: The outcome in this case was complete day and night time continence and no reported complications at 5 months post operatively.

Conclusion: Simple continent urinary diversion can be a useful alternative to repeated attempts at urethral reconstruction in low resource settings.

OP 17 | COSESCA 2019
Investing in surgery: a value proposition for African leaders
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Introduction: “Invest in safe surgery and anaesthesia” is one of the five major global health priorities for world leaders, says Dr Richard Horton, Editor-in-chief of The Lancet during his keynote address at the 72nd World Health Assembly on 20th May 2019. This investment need is especially urgent in sub-Saharan Africa (SSA) where access to surgical care is strikingly limited thus leading to the highest mortality and morbidity from surgically preventable and treatable conditions in the world.

Results: Approximately 93% of the population of SSA lacks access to safe, affordable and timely surgical care, compared with less than 10% in high-income countries. Recent studies suggest that improving surgical care will contribute substantially to human capital for economic growth in SSA; however, this will require investments in surgical systems. Six SSA countries have adopted National Surgical, Obstetric and Anaesthesia Plans as policy means of intentionally and systematically scaling up surgical systems and the Southern African Development Community prioritized surgical care by passing a regional resolution. Several innovative affordable efforts to improve access to quality surgical care regionally, such as the East Central and Southern Africa Collegiate training of surgeons, obstetricians and anaesthesiologists are showing early success. In spite of the success that has been made, investments by African leaders to improve surgical systems on the continent has been inadequate.

Conclusions: African leaders have an ethical, social, and economic responsibility to invest in surgical care to increase individual, societal and national human capital needed to reduce the economic burden of surgical care thereby alleviating poverty and increasing economic growth on the continent.

OP 18 | COSESCA 2019
The role of H. pylori infection in adults presenting with spontaneous gastroduodenal perforation at University Teaching Hospital, Lusaka, Zambia
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Background: Gastroduodenal perforations contribute a significant proportion of surgical patients undergoing emergency laparotomy worldwide and is associated with high morbidity and mortality. The prevalence of H. pylori infection varies with geography, age, race, and socioeconomic status. This study was set out to explore the role of H. pylori infection in adults presenting with spontaneous gastroduodenal perforations.

Methods: A Cross-sectional study carried out in all patients 18 years or above presenting to the surgical department.

Results: A total of 60 patients who presented with an acute perforation in the stomach and/or duodenum identifiable at laparotomy were enrolled. 48 were males, and 12 were females. The median age was 40 years. There were 50 gastric perforations and 10 duodenal perforations. Histological examination with Warthin-Starry silver stain was found to have superior sensitivity of 65% to stool antigen test (55%) in the detection of H. pylori. The prevalence of H. pylori infection in adults presenting with gastroduodenal perforation at UTH was found to be 12% and the histological examination was more sensitive than stool antigen test in the detection of the infection. There was no association of H. pylori infection with sociodemographic characteristics of participants; site, size and histology of the gastroduodenal perforation.
Conclusion: H. pylori eradication therapy should be selectively administered in gastroduodenal perforation; all gastroduodenal perforations be subjected to histological examination for detection of H. pylori.

**OP 19 | COSESCA 2019**

Surgical Management of Pertrochanteric femur fractures in Tenwek Hospital, Kenya

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**Background:** Pertrochanteric hip fractures are traditionally described as osteoporotic fractures. 90% patients are above 65 years, 75% females. Incidence has bimodal distribution. Younger patients have high energy injury mechanism and elderly group are low energy injuries. As more middle aged patients continue to evolve as more active patients, the demographic intersection of these two groups has become more difficult to delineate requiring orthopedic surgeons to be well versed in their divergent approach to management and dynamics of care. Pertrochanteric femur fractures are among the most important public health problem in orthopedic care today. High morbidity, mortality and cost of surgical care is due to comorbidities, poor preoperative level of function, cognitive impairment, malnutrition, poor bone quality and Implant availability and selection and surgical technique. The study aims to evaluate our patient demographics and surgical management.

**Methods:** Retrospective descriptive study design. Period of study: three and half years from January 2014 and August 2017. Patient population: all in patients with pertrochanteric femur fractures in the Orthopedic department. Study population was 124 patients. 9 patients were excluded. All femoral neck and subtrochanteric femur fractures were excluded too. Data was sourced from hospital HMIS specifically operative reports and Inpatient records

**Results:** 133 patients were admitted in the study period. 124 patients included in the study, Male to female ratio 3.1:1. 56% of patients had surgery >7 days post injury. loss to follow up rate was 30% and thus we were unable to quantify our mortality rates after discharge. 41 patients (33%) had stable fracture patterns ,83 patients (66% ) had unstable fracture patterns

**Conclusion:** There is significant burden of Pertrochanteric femur fractures in our catchment. We note a shift in demographics with more males than females. Male patients represented a younger middle aged population with injuries associated with high energy mechanisms due to RTA. Time from injury to surgery was delayed mainly in patients who required medical stabilization due to pre-operative medical condition or multiple injuries but this did not significantly affect outcome

**OP 20 | COSESCA 2019**

Rotterdam CT score as a predictor for early deaths in patients with traumatic brain injury at Nsambya hospital, Uganda

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**Background:** Non-contrast CT plays a crucial role in the initial rapid assessment and triage of traumatic brain injured patients. The CT scan guides immediate management decisions such as surgical decompression and in prognostication on traumatic brain injured patients. The study was aimed at determining the ability of the Rotterdam CT Score as a predictor of early mortality for traumatic brain injured patients in Nsambya hospital.

**Methods:** This was a prospective cohort study of traumatic brain injured patients managed in Nsambya hospital. A total of one hundred and eight traumatic brain injury patients were consecutively recruited in the study from the Surgery department of Nsambya hospital from September 2017 to May 2018.

**Results:** The patients aged 20 to 29 years accounted for 38% of traumatic brain injuries followed by patients aged 30 to 39 years who accounted for 25.9 %. with only 11% being above 50 years. The age group 10 to 19 (5.5%) years
was the smallest number of cases affected by traumatic brain injury. Majority of patients were male, 81.4%, with a male to female ratio of 4.4:1. In 81%, the GCS was 13-15, 16% had a GCS of 9-12 and 11% had a GCS of 3-8. There were 6 deaths in the study. Compressed basal cisterns were the most frequent Rotterdam Score parameter among the dead. The outcome of each score was consistently better in the study than predicted by the Rotterdam score. The Rotterdam Score predicted a mortality of 11.11%. Mortality in the study was 5.56%. The AUROC for the overall Rotterdam score was 0.6863 (CI 0.479-0.897) meaning that the ability for the Rotterdam Score to predict which patients would have early mortality was poor.

Conclusion: The Rotterdam CT Score is a poor predictor for mortality of traumatic brain injury in the short term.

OP 21 | COSESCA 2019
Epidemiology of trauma related brought in dead patients in the casualty department at Kamuzu Central Hospital, Lilongwe, Malawi
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Background: The leading cause of mortality worldwide for children and adults is trauma. In Malawi, trauma patients are commonly brought in dead (BID). The incidence and epidemiology of BIDs is unknown in Malawi. We aimed at evaluating the incidence, sociodemographic and injury-related characteristics of patients BID to Kamuzu Central Hospital (KCH), an 800-bed tertiary referral hospital in Lilongwe, Malawi.

Methods: We retrospectively reviewed records of all BIDs in the trauma surveillance registry at KCH from January 2016 to December 2017. Patients BID taken to the mortuary by-passing casualty were not included. Descriptive statistics were used to evaluate the epidemiology of patients BID, and chi-squared statistics to compare those BID with those brought in alive.

Results: We reviewed 24,857 records, 404 (1.6%) were BID. Most BIDs were male, in both adults (87.3%, n= 267/304) and children (71.7%, n=43/60). The median ages were 34.5 (IQR 28.5 - 39) years in adults and 6.9 (IQR 3- 9.5) years in children. Most adult BID patients were unemployed (34.2 %, n=104) or small business owners or managers (14.5%, n=44). The common injury mechanisms in adults were road traffic related injuries (RTIs) (47.2%, n=142), assaults (19.3%, n=58) and suicide by hanging (11.3%, n=34). In children RTIs (44.1 %, n=26); 96.2% were pedestrians hit by cars, drowning (20.3%, n=12) and collapsed structures (18.6%, n=11) were common. In both groups most injuries occurred on roads (58.3%, n=232) or at home (24.1%, n=96). Reported alcohol intoxication at time of trauma was present in 3.5% (n=14), which was the same for patients presenting alive (1105/24299, 4.6%) p-value=0.3. The police (57.1 %, n=230) or privately-owned vehicles (23.1 %, n=93) brought most BID patients to KCH.

Conclusion: Efforts to reduce pre-hospital trauma mortality must focus on improving pre-hospital care, including training the police and community in basic life support, and improving resources towards pre-hospital trauma care. Further efforts to reduce BIDs must aim to decreased injuries on both the roads and at home.

OP 22 | COSESCA 2019
In-Home Interpersonal Violence: Sex based Incidence and Outcomes in Malawi
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Introduction: Despite the known effect of violence to human health, there has been a dearth of data on intimate partner and interpersonal violence in sub-Saharan Africa. We therefore sought to characterize patterns of sex-based risk of in-home interpersonal violence (IHIPV) in Malawi.

Methods: A retrospective analysis of prospectively collected data using the 2009–2017 Kamuzu Central Hospital (KCH) Trauma Registry was performed on patients who presented following IHIPV. Bivariate analysis was performed for covariates based on sex. A Poisson regression analysis was performed to estimate the risk of IHIPV and mortality based on sex.
Results: Following assault, 29,299 patients presented to KCH. Overall, women and men were more likely to be assaulted at home ($n = 4065, 69.6\%$) and on the road ($n = 9188, 40.4\%$), respectively, $p<0.001$. Of the assault cohort, $37.1\%$ ($n = 10,854$) were due to IHIPV. In the IHIPV cohort, $37.4\%$ ($n = 4,056$) were female. Women injured in IHIPV were less severely injured than men (Malawi Trauma Injury Severity Score: $7.0\pm2.6$ vs $10.4\pm2.7$, $p<0.001$). Women were more likely to be injured following slaps, punches, or kicks ($n = 950, 41.2\%$) versus men who were more often injured via an object (blunt object: $n = 1658, 40.0\%$; knife/sharp object: $n = 1532, 37.9\%$). Overall mortality was $1.8\%$ and $0.5\%$ for men and women following IHIPV ($p<0.001$), respectively. After controlling for covariates (age, alcohol use), the relative risk of IHIPV was $2.25x$ ($p<0.001$) higher for women, but men had a $3.3x$ ($p<0.001$) risk of mortality following IHIPV.

Conclusion: Interpersonal violence, including intimate partner violence, is a global problem. In Malawi, we show women are more likely to be victims of IHIPV. However, men are more likely to die after IHIPV. IHIPV is likely under-reported as only those injuries that necessitated a hospital visit are captured.

OP 23 | COSESCA 2019
Plastic surgery within global surgery: The incidence of plastic surgery cases in a rural Gabonese hospital
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Background: In the past five years, there has been increased interest in global surgery. Surgical disease in the developing world remains an unmet need, leading to significant morbidity and mortality. Conditions treated effectively by plastic and reconstructive procedures make a large proportion of the global surgical diseases, and disproportionately affect individuals at the lower end of the economic spectrum. About $11\%$ of worldwide disability-adjusted life years are due to surgically treatable diseases, such as burns, trauma, and congenital anomalies. Plastic surgery cases are often under-recognized at a first-level hospital in sub-Saharan Africa. This underlies the impact that plastic surgeons can have in the sub-Saharan African context, even at a rural hospital. The objective of this study was to review the operative case log for 2018 and determine the true incidence of plastic surgery cases and compare it to the previously categorized ratio of plastic surgery cases.

Methods: Bongolo Hospital is a rural hospital located in southern Gabon, Central Africa. It would be classified as a first-level hospital as defined by the World Bank in Essential Surgery. It hosts a general surgery residency, accredited by the COSESCA. Until recently, the surgical specialists working permanently at the hospital were general surgery trained, though the staff performs a wide scope of surgery inherently necessary to the function of a rural African hospital.

Results: There were 1718 cases in 2018, 27 cases (1.57\%) were originally classified as falling under plastic surgery. Upon review, 186 cases (10.82\%) fell under the purview of plastic surgery, of which 67 (3.89\%) minor and 119 (6.92\%) major surgery.

Conclusion: About 1 in 9 surgical cases at this first-level, rural, African hospital can be classified as plastic surgery. This underlies the impact that plastic surgeons can have in the sub-Saharan African context, even at smaller, rural hospitals.

OP 24 | COSESCA 2019
Is surgery attractive as a profession? Barriers and enablers to the retention of surgical staff in rural Malawi
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Background: Low- and middle-income countries (LMICs) are the worst affected by the lack of safe and affordable access to surgery. The significant unmet surgical need can be in part attributed to surgical workforce shortages.
that disproportionately affect rural areas of these countries. To combat this, Malawi has introduced a cadre of non-physician clinicians (NPCs) called clinical officers (COs) trained to the level of a BSc in Surgery. This study explored the barriers and enablers to their retention in rural district hospitals (DH), as perceived by BSc-trained COs in Malawi.

**Methods:** Qualitative interviews were conducted with 16 COs based at DHs during their BSc training (2015) and again with 15 of them after their graduation (2019). Data from both time points were analysed and compared using top-down thematic analysis approach.

**Results:** Of the 16 COs interviewed in 2015, 11 intended to take up a post at a DH following graduation; however, only 6 subsequently did so. The major barriers to remaining in a DH post as perceived by these COs were lack of promotion, a more attractive salary elsewhere; and unclear, stagnant career progression within surgery. For those who remained working in DH posts, the main enablers are a willingness to accept a low salary in favour of greater opportunities to engage in additional earning opportunities, the hope of promotional opportunities within the government system, and greater responsibility and recognition of their surgical knowledge and skills as a BSc-holder in DH.

**Conclusions:** The sustainability of this new cadre in Malawi is not assured and further work is required to develop and implement successful retention strategies which will require a multi-sector approach. This paper provides insights into barriers and enablers to retention of this newly-introduced BSc clinical officer cadre in DH. It has important lessons for policy makers in Malawi and other countries using NPCs to deliver essential surgery.

**OP 25 | COSESCA 2019**
**Socio-economic status of Paediatric Surgical patients in Malawi**
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**Background:** Low socioeconomic status (SES) is an independent risk factor for surgical outcomes, however limited data exists in low-income countries. This study aimed to define the SES of the paediatric surgery patient population at a tertiary hospital in Malawi.

**Methods:** An observational cross-sectional study on consecutive paediatric surgical patients, aged <16 years, at a government funded tertiary hospital in Malawi, over a 7 week period. SES data was collected using a questionnaire based on the Demographics and Health Survey (DHS), with comparison to national statistics from the DHS Malawi 2017.

**Results:** Sixty-five participants were recruited. Most children (85%) were from rural areas of Malawi. No children were orphans and 89% had two living parents. The majority of parents had not completed primary school (mothers 69%; fathers 43%); a lower proportion than that reported in the DHS Malawi. However, most were literate (mothers 55%; fathers 78%). Those living in urban areas had a higher level of educational attainment (p=0.008). 71% of families owned homes with the same owning some agricultural land. Only 60% had a protected well or borehole as their main source of drinking water and the vast majority (97%) used a pit latrine as their principle toilet facility. These indicators demonstrate low SES.

**Conclusion:** This baseline data for our paediatric surgery population suggests a low SES with a lower level of education, when compared to the general population in Malawi. Further work is needed to determine how these patients can be better supported so as to improve surgical outcomes.

**OP 26 | COSESCA 2019**
**Baseline nutritional status of paediatric surgical patients in Malawi**
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Background: Poor nutritional status in children can have significant impact on surgical outcomes. Limited data exists on nutrition in paediatric surgical patients in low income settings. This exploratory study aimed to determine the baseline nutritional status of paediatric surgical patients.

Methods: An observational cross-sectional study on paediatric surgical patients, aged <16 years, at a tertiary government-funded hospital in Malawi, over a 7 week time period. Anthropometric data was collected using World Health Organisation standard measures for weight, height and mid-upper arm circumference (MUAC). Food intake, both prior to and during admission, was documented using a dietary questionnaire.

Results: Sixty-five participants were recruited. MUAC demonstrated that 12/65 (18.5%) patients were acutely malnourished. Despite incomplete anthropometric data due to difficulties in data collection, we found 4/40 patients were underweight, 12/39 were stunted and no patients were wasted. No patients presented with oedema. Most participants were elective admissions (62%); mainly under orthopaedics (37%), general surgery (22%) and neurosurgery (20%). Mean inpatient stay was 18 days. Neurosurgery admissions had a high proportion of underweight (2/4) or stunted (5/12) patients. Pre-admission diet was high in carbohydrate and deficient in animal protein, fruit and vegetables. 71% of guardians supplemented hospital food, which ranged from additional snacks to full meals.

Conclusion: Our paediatric surgery population has a similar level of malnutrition to the Malawi population. A follow-up study with larger numbers is required to confirm this unexpected finding and to further understand the differences in nutritional status of patients admitted under different surgical specialties.

OP 27 | COSESCA 2019
Quality of life, prevalence of depressive symptoms and factors associated with prolonged indwelling urinary catheterization at Mulago national hospital
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Introduction: In the United States, 15% to 25% of hospitalized patients and 11% of home care patients have indwelling urinary catheters with their inappropriate use in acute care hospitals ranging from 21% to 63%. In Uganda, the magnitude of prolonged indwelling urinary catheterization (PIUC) following acute urine retention is not well documented. The focus of most urologists has been on the relief of symptoms with little/no attention given to the quality of life (QOL) and psychological impact of the catheter.

Objective: This study aimed to evaluate the QOL, prevalence of depressive symptoms and factors associated with PIUC in Mulago National Hospital (MNH).

Methods: This was a descriptive cross-sectional study conducted from January 9th 2019 to March 13th 2019. We recruited patients attending the Urology clinic in MNH with urinary catheters for more than 28 days from initial placement irrespective of the number of replacements. A demographics questionnaire, Catheter-related QOL instrument (score >50 considered good and < 50 considered poor) and the Patient Health Questionnaire-9 for assessing depressive symptoms (a score of moderate to severe 20-27 was equivalent to severe depressive symptoms) were administered by the principal investigator and 2 research assistants. The data was cleaned, entered in EpiData and exported to STATA and SPSS for analysis. A binary logistic regression was used. At bivariate level, a chi-square p-value of ≤0.2 was used to select variables to be considered for multivariate analysis and a p-value (≤0.05) was considered significant to determine the factors are associated with QOL of patients on PIUC.

Results: 145 patients were enrolled, they were all male with a mean age (SD) of 59±20 years and a median duration of catheterization of 12 (IQR:3-36) months. The majority of patients on PIUC had a poor QOL 100 (69%). The mean QOL of the study participants was 44.2 ± 10.5%, participants in the younger age group, the single marital status and
unemployed had worse scores on Catheter-related QOL instrument. There was a very high prevalence of depressive symptoms of 67.5% (constituted by those with moderately severe 50.3% and severe symptoms 17.2%) among patients on PIUC. There was a strong correlation with the patients’ duration of catheterization, type of urinary diversion and reason for PIUC.

Conclusion: Patients on PIUC had a poor QOL with a very high prevalence rate of depressive symptoms. Therefore, psychiatric services including counselling should be extended to the Urology department for proper holistic service delivery among the patients on PIUC.

OP 28 | COSESCA 2019
Anatomical types and surgical outcomes of hypospadias in children at Mbarara Regional Referral Hospital (MRRH)
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Background: Hypospadias is the most frequent congenital urological anomaly. If left untreated, males can face bothersome urinary symptoms, infertility, difficult sexual intercourse, and psychological problems. This study was aimed at determining the prevalence of the different anatomical types, describing surgical outcomes and factors associated with poor surgical outcome.

Methods: This was a retrospective study with a nested cross-sectional study of children under 15 years who underwent hypospadias correction surgery at Mbarara Regional Referral Hospital between January 2017 and December 2018. Patients were recruited from a generated list of hypospadias repair registry. Socio-demographic characteristics, physical examination and surgical outcome were assessed and recorded. Data was analyzed using STATA 13.0. Chi square testing was used to describe socio-demographic factors, clinical features and clinical outcomes.

Results: A total of 55 children were enrolled, of these the prevalence of glanular hypospadias was 18 (32.7%), distal was 19 (34.6%) and proximal was 18 (32.7%). While 11 (22%) had poor surgical outcome and 39 (78%) had good surgical outcome. Out of 11 complications identified, Urethrocutaneous fistulas were the most common - 7 (63.6%), followed by repair breakdowns - 3 (27.3%) and least common – peri-meatal stenosis 1 (9.1%). There were no factors that showed a statistical significance between factors and poor surgical outcome. There was a clinical significance showing proximal hypospadias as having a higher prevalence of poor surgical outcome (56.4%), however it was not statistically significant (p=0.258).

Conclusion: There was a uniform distribution in the anatomical types of hypospadias at MRRH. We recorded post-operative complications 22% with proximal hypospadias the most post-operative complications.

OP 29 | COSESCA 2019
Health related quality of life of children with intestinal stomas, a cross-sectional study at Mulago hospital
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Background: In Uganda, like elsewhere on the globe, hundreds of children end up receiving stomas as part of their surgical care. It is also of paramount importance to know the effect of any medical/surgical intervention on the children’s’ quality of life, as this fosters efforts towards improvement. However, no study has been conducted in our setting to evaluate the quality of life of children living with colostomies or ileostomies. The study was aimed at determining the health related quality of life of children aged 1-12 years with intestinal stomas at least one-month post-surgery at Mulago hospital.

Methods: This was a cross-sectional study with a mixed methods approach. 109 children were recruited from the paediatric surgical outpatient at the Mulago Hospital. Written informed consent and assent were obtained.
from caregivers and children older than 7 years. Quantitative methods were used to determine the HRQoL while qualitative data helped better understand the experiences of children with intestinal stomas. Consecutive enrollment was done. The health related quality of life of children with intestinal stomas was assessed using the Pediatric Inventory Quality of Life Questionnaire (Ped QLTM). Qualitative data was obtained by conducting in-depth interviews (IDI) with caretakers and older children.

Results: The study recruited 109 participants, 58.7% were males while 41.3% were females. The mean age was 54.98 months with the minimum being 12 months and maximum being 132 months. The HRQoL scores were good in 92.1% of the children while 7.9% had poor HRQoL scores. Children whose caregivers were either divorced or single were 5.63(1.120 - 28.242) times more likely to have a poor HRQoL compared to those whose caretakers were married P-value of 0.024. Qualitative component came up with the following themes; physical problems, physical disablement, physical and social activities, psychological effects, demanding family support and dietary support. The themes were in line with the aspects being studied in the quantitative arm of the study.

Conclusions: Though generally the global HRQoL of children at Mulago with stomas is good, there was a significant prevalence of poor HRQoL of children with stomas from single/divorced parents due to lack of resources

OP 30 | COSESCA 2019
Spectrum and Outcomes of Pioneer Liver, Complex Biliary and Pancreas Resections at Lubaga Hospital in Uganda
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Background: Liver surgeries, complex biliary and pancreatic resections were not routinely being done in Uganda and most patients who needed this service had to be referred abroad mainly to India and Nairobi/Kenya. After completing a fellowship training in hepatobiliary and liver transplant surgery from Medanta /India, the chief surgeon introduced this service in Lubaga hospital, We, therefore, report the first in country series of patients who underwent these complex surgeries and their outcomes.

Methods: This is a retrospective study. A total of 33 patients were admitted and underwent liver surgery, hepaticojejunostomies and whipples operations between November 2018 and September 2019. Four patients who underwent these surgeries but were referred to other hospitals before full recovery were excluded. Two patients with choledocholithiasis were also excluded, one underwent hepaticojejunostomy and the other choledocholithotomy. The remaining 27 patients with complete information in the files were included in this study.

Results: Abdominal pain was reported in 22 (81.4%) out of the 27 patients. 14 (51.8%) patients had Jaundice. Ten (37.0%) patients underwent whipple’s operation, nine (33.3%) patients mostly with unresectable tumors underwent hepaticojejunostomies. Six (22.2%) patients underwent liver resections and two (7.4%) had liver cyst deroofing. All the 26 (96.3%) patients were discharged alive except for one (3.7%) patient with unresectable type IV Klaskin tumor who underwent a palliative hepaticojejunostomy died of liver failure on postoperative day three. Out of the 27 surgeries, complete resection was possible in 18 (66.6 %). Vascular encasement of either one or a combination of any of the following: the main portal vein, superior mesenteric vein, common hepatic artery, superior mesenteric artery were the main reasons for unresectability. The average length of postoperative hospital stay was 10 days.

Conclusion: Complex liver, biliary and pancreas surgeries can safely be done in Uganda with comparably good outcomes

OP 31 | COSESCA 2019
Use testing of surgical headlights for resource-constrained settings: Identification of a low-cost, high quality Lifebox Light for use in resource constrained settings
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Introduction: Poor surgical lighting represents a major patient safety issue in low- and middle-income countries (LMICs), with 80% of surgeons in such environments reporting their current lighting is inadequate for performing safe operations, and 18% reporting knowledge of a patient harmed due to unsafe lighting. After evaluating a number of headlights against predetermined minimum specifications, we pilot tested five headlights in Ethiopia with a cohort of local surgeons.

Methods: We distributed five different headlights for testing amongst six Ethiopian surgeons from a range of specialties. Each surgeon tested three different headlights for one week each, and completed a logbook after every operation documenting lighting quality, mounting, comfort, battery, and ambient light characteristics, weekly qualitative interviews, and final head-to-head comparison testing. After ranking all lights, price points were revealed and surgeons ranked which lights they would purchase. Data were analyzed using Stata v15.1.

Results: Feedback from use during daily operations revealed that angle and battery life were rated fairly uniformly (82-100% and 82-97% ideal, respectively) across the five lights, while lighting quality (21-92%), spot size (0-100%), and comfort (53-100%) were highly variable. The least expensive but high-performing headlight was favored for purchase using out of pocket funds by 66% of surgeons; if given a budget, 50% of surgeons would still purchase this headlight while 80% would purchase the one with highest illumination intensity.

Conclusion: In pilot testing of surgical headlights for use in resource-constrained settings, we identified three that were highly rated across domains of lighting quality, field of illumination, and battery life. Due to the large price discrepancy between the least expensive of these lights and the others, and its high illumination quality, Lifebox will proceed with further testing and distribution of this candidate device as a means to address the lighting gap in these low resource settings.

OP 32 | COSESCA 2019
Thyroid Surgical Camps in a resource constrained setting, an Endocrine Surgery Capacity Building Model. Residents perceptions and experience
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Background: Endocrine Surgical services are continually lacking due to the alarming surgical disease burden and surgical workforce mismatch, and a lack of specialized training centers. The Yale-Mulago Hospital/Makerere University Endocrine Surgery collaboration set out to hold surgical outreaches among other strategies aiming at building capacity through training general surgery residents and fellows, and offering surgical care in resource constrained areas of Uganda. We evaluated the academic impact of these camps on the residents.

Methods: Using a standardized questionnaire, we interviewed local residents that attended the thyroid surgical camps. The objective was to assess the Residents’ academic benefits and experience; pre and post camp perceived clinical knowledge, surgical skills, level of supervision, confidence to carry out thyroid surgeries, challenges and recommendations to improve the learning experience for subsequent thyroid surgical camps.

Results: 12 residents attended the 3 surgical camps. We performed a total of 136 thyroid surgeries. A resident was 1st surgeon for 27% of the cases or else 1st assistant to a consultant, fellow or another resident. They rated their supervision at 95% at the camp compared to 62% during their routine training. Their exposure to thyroid surgeries, skill set and confidence more than doubled. From the satisfaction of knowledge acquired through camp tutorials they
felt very capable of passing on the skill sets to colleagues. The camp challenges cited included; limited time for camps for the patient turn-up, limited laboratory, radiology, anesthetic and surgical resources. They 100% recommended that surgical camps be a compulsory part of their residence program scheduled at least twice every year for the above benefits.

**Conclusion:** Thyroid surgical camps are pivotal in optimizing knowledge and skills transfer for residents and not only a means to reduce surgical disease burden in underserved populations. The role of Collaboration cannot be emphasized.

**OP 33 | COSESCA 2019**  
Arthroscopic repair of labraligamentous lesions and tightening of all glenohumeral ligaments in patients with frank capsular laxity: Minimum 2-years follow up  
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The purpose of this study was to analyze results of arthroscopic stabilization with labral repair and glenohumeral ligaments tightening in patients with labroligamentous lesions and frank capsular laxity.

**Methods:** A review of 70 patients (63 male and 7 female; mean age, 26.3 years) with labral tear and frank capsular laxity requiring arthroscopic labral repair and glenohumeral ligaments tightening was performed at a mean follow-up of 31 months (range, 25 to 48 months). All patients were evaluated by use of the Constant Score, American Shoulder and Elbow Surgeons score, and The Disabilities of the Arm, Shoulder and Hand (DASH) Score. Physical examination included range of motion, strength testing, and stability testing. Capsular laxity was evaluated with Drive Through Sign.

**Results:** Of the 70 patients, 2 (2.8%) had traumatic recurrent dislocation after repair. Of the patients, 68 (97.1%) were completely satisfied, 2 (2.9%) were unsatisfied. At final follow-up, the median scores were as follows: Constan score 97.8, ASES 98.9, The Disabilities of the Arm, Shoulder and Hand (DASH) Score 0.25. There were no differences in range of motion compared with the opposite extremity. There were no complications, and 2 patients had undergone reoperation because of traumatic redislocation.

**Conclusions:** Arthroscopic repair of labraligamentous lesions and tightening of all glenohumeral ligaments in patients with frank

**OP 34 | COSESCA 2019**  
Is Latajet procedure solution for recurrent shoulder dislocation treatment? Outcome and Experiences  
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**Background:** Recurrent shoulder dislocation is a common problem affecting patient in trauma opds, with high recurrence rate. There numerous surgical options for treating recurrent shoulder dislocation with un known outcome in our settings.

**Methods:** A retrospect study on was done to analyse the outcome of patient with recurrent shoulder dislocation undergone latjet procedure in Dar es salaam 2016-2019. Thirty patients with recurrent shoulder dislocation undergone latjet procedure were enrolled by convenient sampling,

**Results:** Excellent to good outcome occurred in 96%, 99% of patients return to their previous work/sport. Limited range of motion of shoulder occurred in one patient, recurrence rate was 4%. Infection occurred in only one patient

**Conclusion:** Latajet procedure is the solution for recurrent shoulder dislocation in resource limited, for patients with bony bankart or bankart lesions
The Role of the University of Cape Town in the Training and Retention of Surgeons in Sub-Saharan Africa

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Background: Sub-Saharan Africa (SSA) has a shortage of surgeon specialists. Many SSA countries lack specialty training programs but South Africa (SA), an upper middle-income country, has several post-graduate surgical training programs. The objective of this study was to describe perceived advantages and disadvantages of training non-SA SSA surgeons at the University of Cape Town (UCT) and the associated retention rates in the sub-continent.

Methods: This was a two-part cross-sectional survey administered via email between June 1, 2018 and March 1, 2019 to UCT 1) surgical residents and fellows who graduated between 2007-2017 and whose country of origin was in SSA but outside SA and 2) surgical division heads.

Results: Thirty out of 78 (38%) trainees responded, 83% (n=25) were male. Eighty percent (n=24) returned to their country of origin after training; 83% (n=22) worked in the public sector and 90% (n=27) in teaching hospitals. Seven out of ten surgical division heads responded. Reported advantages of SSA trainees included more junior staff (n=5, 71%) and the establishment of regional networks (n=4, 71%). Disadvantages included increased training load (n=2, 29%) and fewer cases for SA trainees (n=2, 29%).

Conclusion: Our results demonstrated that retention in the sub-continent of SSA surgeons that train in SA is high. SSA doctors can utilize SA post-graduate surgical training programs until their own countries increase training capacity. The majority of trainees returned to their countries of origin, utilizing their skills in the public and academic sectors, and contributing to the teaching of more trainees.

A team based approach to introduce and sustain use of the WHO Surgical Safety Checklist in remote settings in Tanzania

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Introduction: Millions of patients worldwide suffer disability and death after surgical complications. Such complications can be reduced by the use of the WHO Surgical Safety Checklist (SSC), a simple tool for teamwork and communication thus ensuring patient safety. Introducing and sustaining the use of the checklist is challenging. We present a team-based approach employed in a low-resource setting in Tanzania, which resulted in high checklist utilization and compliance rates.

Methods: We reviewed data from facility registers supplemented by direct observation by mentors to evaluate use of the WHO SSC across 40 facilities in two regions of Tanzania from January 2018 - June 2019. We analyzed the self-reported monthly data including total number of major surgeries performed and proportion of surgeries where the checklist was used. We also analyzed the use of the SSC by reviewing completion rates of the SSC in a randomly-selected patient files during mentorship visits between June 2018 and June 2019.

Results: The average self-reported checklist utilization rate was 87.4% (23,014 out of 26,321 major surgeries). SSC utilization increased from 0% at baseline in January 2018 to 98% in June 2019. The proportion of checklists that were
completely and correctly filled out between the mentor visits fluctuated but consistently remained above 80%; the gain was significantly greater at health centers than hospitals ($p<0.05$). Health centers self-reported a higher checklist utilization rate than hospitals i.e. 99.4% vs 68.8% ($p<0.05$).

**Conclusion and recommendations:** We found that SSC implementation is feasible even in lower resource settings. The SSC utilization rates in these facilities were fairly high. We attribute this to the team-based approach employed and the ongoing regular mentorship. We recommend use of this approach to scale-up checklist use in other regions in the country as recommended in the national surgical obstetric and anesthesia plan (NSOAP).

**OP 37 | COSESCA 2019**

**Intensive Care Unit bed utilization in a resource poor setting in sub-Saharan Africa**

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**Introduction:** In high-income countries, the intensive care unit (ICU) bed density is approximately 34 beds/100,000 population compared to countries in sub-Saharan Africa, like Malawi, with an ICU bed density of 0.1 beds/100,000 population. Based on a severe shortage of ICU beds within the context of a high burden of critical illness in sub-Saharan Africa, we hypothesize that the ICU bed utilization in Malawi will be high.

**Methods:** This study is a single-center, prospective observational study on ICU bed utilization at Kamuzu Central Hospital, a tertiary care center in Malawi from August 2016-May 2018. This is a 5-bed ICU with 5 mechanical ventilators. Patient demographics, diagnosis, and ICU length of stay were recorded. Variables used to evaluate ICU bed utilization include ICU length of stay, bed occupancy rates (average daily ICU census/number of ICU beds), bed turnover rates (total number of admissions/number of ICU beds) and turnover intervals (number of ICU bed days/total number of admissions – average ICU LOS).

**Results:** A total of 494 patients were admitted to the ICU during the study period. The mean age of patients admitted to the ICU was 30.2 ± 16.6 years ±. The majority of patients were female (n=264, 53.4%) with an average length of stay during the study period of 4.8 ± 6.0± days. Patients with admission diagnosis of traumatic brain injury had the longest length of stay (8.7 ± 6.8 days±) with a 49.5% ICU mortality (52 deaths per 105 TBI admissions). The bed occupancy rate per year was 74.7%. The bed turnover was calculated to 56.5 persons treated per bed per year. The average turnover interval, defined as the number of days for a vacant bed to be occupied by the successive patient admission, was 1.63 days.

**Conclusion:** Despite the known high burden of critical illness and a low ICU bed density, the bed occupancy rates, turn over days, and turnover interval reveal significant underutilization of the available ICU beds. This can be attributed to the lack of established protocols for admission and discharge. In addition, given the notable burden of head injured patients in the ICU and the resultant high mortality, a lack of brain death policy further impedes appropriate ICU utilization.

**OP 38 | COSESCA 2019**

**Applying a Quality Improvement Framework to increase Operating Room Efficiency in Tikur Anbessa Specialized Hospital, Ethiopia**

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Background: Operation room (OR) utilization rate is a metric commonly used to measure OR efficiency. Poor utilization rate, defined by industry benchmarks as <75% block utilization (minutes per 8-hour day utilized, excluding turnover times), indicate that staff and equipment are inefficiently used. This increases surgical waiting lists and results in limited access for even basic surgical interventions. In addition, poor OR utilization can decrease patient satisfaction by creating physical, medical, psychosocial and economic impact through repeated delays in surgery.

Methods: We measured OR utilization by direct observation of case start (patient in room), incision time, end time (patient out of room), and turnover times, as well as reasons for case delay or cancellation in the General Surgery and Gynecology ORs over a three-week period. Root-cause analysis and process mapping strategies were used to identify primary causes for OR inefficiencies. Data were analyzed using SPSS v.20.

Result: Over the study period, a total of 27 cases were scheduled in the gynecology OR; of those, 18 were operated and 12 (44.4%) were cancelled. Similarly, 30 cases were scheduled in the GI/General surgery OR; 21 were operated and 9 were cancelled (30%). The principle reasons for case cancellation were improper scheduling (42.8%) and unavailability of blood (28.6%). The OR table raw utilization of the two operation theaters was found to be 67.3%.

Conclusion: This baseline study illustrated that OR time utilization is low at 67.3%, as compared to the expected standard of >75%. A majority of these inefficiencies can be attributed to improper scheduling. Future quality improvement initiatives include changing case mix and master scheduling patterns, with the objective of maximizing OR efficiency and decreasing case cancellations.

OP 39 | COSESCA 2019
Surgical informed consent at Kamuzu central hospital: a quantitative study
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Background: Article 4 of the Malawi Medical Council Patient Charter states: ‘Every patient or guardian shall provide informed consent (IC) before any surgical or invasive procedure is carried, but such consent may be waived in case of emergency or in certain psychiatric cases.’ There is no gold standard for informed consent. Having a patient optimally informed results in them having more realistic expectations regarding the surgical procedure and its associated risks. However, what is optimally informed is hard to define and may vary between different cultures and education levels. There is a paucity of literature on IC in low income countries.

Method: With ethical approval we undertook a quantitative case note review of how often IC is obtained, and a structured interview to understand how IC is taken and patients’ experiences of it.

Results: Out of 118 cases, 89% had a consent form in the file, 87% signed by the patient/guardian, and 56% signed by a witness. 95% of patients stated they had given verbal consent, and 79% stated they knew they have the right to
IC before a surgical procedure. Diagnosis, procedure, alternatives, risks and benefits/prognosis was discussed in 90%, 63%, 28%, 42%, and 42% respectively. Only 9% had all 5 of these elements discussed. 92% stated they understood the information, and 69% were satisfied with the preoperative information given.

Conclusion: While in our population IC was taken most of the time, often the consent form was not completely filled, and it was rare for all elements of IC to be discussed. We plan a future qualitative in depth questionnaire to further understand what is expected of IC from our population.

OP 40 | COSESCA 2019
The Operative Case Load of Basic Surgical Trainees in East, Central and Southern Africa
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Background: Surgical training logbooks provide an important means by which surgical trainee experience can be assessed. This study examines the operative experience of COSECSA MCS basic surgical trainees through analysis of the operations this cohort recorded in their COSECSA electronic logbooks.

Methods: Records from four years of MCS training were analysed – from 1st January 2015 to 31st December 2018. Exclusion criteria are applied.

Results: 28,349 procedures are analysed, recorded by 136 trainees in 54 COSECSA accredited hospitals in 16 countries. Results include operative information such as levels of urgency, complexity and supervision, hospital information, patient demographics and outcomes.

Patients have a median age of 31 and significant majority (63.5%, n=18,060) are male. The most frequently recorded procedures were Wound - debridement / haematoma / delayed closure (6%, n = 1,685), followed by Hernia inguinal – adult (4%, n = 1,131) and Exploratory laparotomy (no other procedure) (4%, n = 1,038). 58% (n =16,422) of procedures were elective and 42% (n = 12,017) emergency. A higher rate of emergencies was recorded in public hospitals 46% (n = 10,965) than in private hospitals 26% (n = 1,553). Trainees performed 57% (n = 16,143) of the procedures recorded, and assisted in 43% (n = 12,296). A mortality rate of 1.9% was recorded.

Conclusions: This dataset is large, heterogeneous and multi-country and presents a more complete picture of basic surgical training operative experience in East, Central and Southern Africa than has previously been published. The data has implications for training, assessment and curricula.

OP 41 | COSESCA 2019
A WhatsApp Mobile Health Platform to Support Fracture Management by Non-Orthopedic Surgeons in South Africa
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Background: Traumatic fractures are common in sub-Saharan Africa, a region with a shortfall of orthopedic surgeons, and can result in morbidity if not appropriately managed. WhatsApp is an encrypted smartphone application and ubiquitous in sub-Saharan Africa. The objective of this study was to assess the use of WhatsApp as a mobile health platform to support fracture management by non-orthopedic surgeons in Cape Town, South Africa.

Methods: A WhatsApp Orthopedic Referral Group was created between non-orthopedic doctors from community
health clinics and the orthopedic team from a first-level hospital to manage traumatic fractures. Non-orthopedic doctors posted cases on the Orthopedic Referral Group and advice was provided by the orthopedic team. Traumatic fracture data from January 1- June 30, 2018 were analyzed and outcomes included response time, management advice, and treatment by facility level.

**Results:** 72 non-orthopedic doctors posted 731 cases of traumatic fractures to the 5-member orthopedic team. Six hundred and sixty-one (90%) cases were responded to within an hour. Three hundred and fifty-four (48%) were successfully treated by non-orthopedic doctors at community health centers, 288 (39%) were treated by the orthopedic team at the first-level hospital, and 89 (12%) were directly referred to an orthopedic subspecialist at a third-level hospital.

**Conclusion:** The WhatsApp Orthopedic Referral Group provided a free telementoring platform for non-orthopedic doctors to successfully manage traumatic fracture cases at community health centers. This type of mobile health platform can be applicable to other resource-limited settings if disease burden is high and specialists are scarce.

**OP 42 | COSESCA 2019**

An Anecdotal Study of Hemafuse™, a Device for Intraoperative Autotransfusion, to Augment the Donor Blood Supply in Kenya

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**Background:** Beginning October 2019, PEPFAR, the US Government’s program to fight HIV/AIDS worldwide, ended its funding of the Kenyan National Blood Transfusion Service (KNBTS). PEPFAR provided most of the funding for donor blood collection and testing according to the Health CS; future effects of the cut on KNBTS are unknown. Hospitals in Kenya face critical blood shortages. Emergency surgeries are particularly affected by this lack of blood. Autologous blood transfusion is effective during laparotomy cases and patient’s own blood maintains better red blood cell health. Sisu Global created the Hemafuse™ autologous transfusion system as an alternative to donor blood for cases of internal hemorrhage. Hemafuse™, a handheld device that salvages, filters, and recycles blood from hemoperitoneum, provides the same patient with blood for immediate transfusion during surgery.

**Method:** Hemafuse™ has been used at multiple Level 5 and 6 public hospitals, private, and mission hospitals across Kenya. In all cases Hemafuse™ intervened to stabilize patients with hemoperitoneum. Blood was salvaged from the patient using Hemafuse™ and then transfused to the same patient during or after surgery. Anecdotal evidence indicated pre-operative hemoglobin levels between 6.5-9 g/dL with 0.7-2.5L estimated blood loss. The estimated blood recovered by Hemafuse™ ranged from 250-800mL.

**Results:** Hemafuse™ provided blood where donor blood was delayed or unavailable, allowing surgeries to begin sooner than they might otherwise have commenced and translating to better transfusion outcomes for patients. In several cases surgeries were completed before donor blood arrived, allowing the donor blood to be sent back to the lab. Using Hemafuse™ resulted in hemodynamic stability without allogenic blood and no postoperative complications were observed. In these cases, autologous blood transfusion reduced the total amount of blood needed for transfusion.

**Conclusion:** These cases suggest the efficacy of a manual autologous blood device to provide blood for transfusion in hemoperitoneum surgeries.

**OP 43 | COSESCA 2019**

Reactive Oxygen prophylaxis to prevent infection in surgical procedures

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**Background:** Wound infection rates following surgery vary depending on the procedure and many other factors including surgical expertise. Surgical site infection (SSI) occurs in up to 40% of open abdominal operations. It can
double the length of time a patient stays in hospital, reduce quality of life, increase patient dissatisfaction and litigation and it may impair oncological outcomes. It is standard practice throughout the world to use antibiotic prophylaxis, usually single dose, around surgical procedures to reduce infection. However successful prophylaxis is threatened by antimicrobial resistance (AMR), a worldwide growing problem with a huge impact on human health. There are direct relationships between antimicrobial use and AMR. If RO gel can be shown to reduce SSI, this would have important implications for routine surgery worldwide as well as an impact on antibiotic use and AMR. Reactive Oxygen gel (RO) as a single application to the soft tissue during closure could reduce SSI and may support tissue healing. RO has a high level of antimicrobial activity against gram positive and gram negative bacteria. It has a mechanism of action that is different from other classes of antibiotics. In 6 years of laboratory testing and clinical use, resistance has not yet developed. RO has been shown in two previous observational studies to reduce infection rates in Caesarean section operations and in complex abdominal surgery by up to 60%.

Methods: A randomised controlled trial will be undertaken in centres in Africa to determine whether RO can significantly reduce SSI in patients undergoing surgical procedures. The primary outcome measure will be incidence of SSI within 30 days of the procedure, with secondary outcomes of microbiological clearance and resource utilisation, including antimicrobial use.

Conclusion: The results of this RCT could provide important data for the prevention of surgical infection.

OP 44 | COSESCA 2019
Outcomes of Surgery Patients with infection at Tertiary Hospital in Kigali, Rwanda, Prospective study
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Introduction: Infection is among the most common surgery-related conditions in low- and middle-income countries (LMICs). Patients who experience surgical infections have increased hospital length of stays, hospital cost and mortality rate. We aim to describe the complications and outcomes of surgical patients with infections operated at a tertiary referral hospital in Rwanda.

Methods: An interview-based study with chart review was performed on day one post-op to all surgical patients operated with suspicion of infections. Data were collected on patient demographics, clinical features and outcomes. Results were reported as frequencies and percentages. Logistic regression was used to determine the association between surgical site infections (SSI) and perioperative mortality.

Results: Over a period of 8 months, 105 acute care surgery patients were enrolled in the study. The most common diagnoses were soft tissue infection (n=22, 21%), abscess (n=18, 17%), and appendicitis (n=14, 13%). Most (n=100, 97%) patients underwent an operation. American Society of Anesthesiologists (ASA) score was III or IV in 30 (33%) patients. Overall, 49 (48%) patients had a complication. Thirty (29%) patients had a surgical site infection with the most common type of SSI being organ space (n=18, 17%), followed by superficial SSI (n=17, 16%), and deep incisional (n=13, 13%). Thirty-three (31%) patients required an unplanned reoperation. Perioperative mortality rate was 13% (n=14). Having a SSI was associated with a 4.2 increased odds of in-hospital mortality (95% confidence interval 1.29, 13.18, p-value 0.017)

Conclusion: Mortality and morbidity rate among surgical patients with infections is high and SSI is associated with increased risk of mortality. Infection prevention and control initiatives, and guidelines could be initiated at hospitals levels to decreases infections. Advocacy and community hygiene campaign to teach the role of early consultation and equipping the nearest health facilities could also reduce the burden of surgical complications.

OP 45 | COSESCA 2019
Nutritional intake in Rwandan acute care surgery patients
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Background: Nutrition is increasingly recognized as a key factor in the recovery of critically ill patients. Significant research has been ongoing to better understand the nutritional and biochemical basis behind the nutritional needs of cells, tissues, and organs in patients healing from surgery or trauma. While the literature begins to buttress the arguments for rigorous nutrition regimens in these populations it is also beginning to highlight the need to survey and understand the nutritional needs of patients in developing countries such as Rwanda.

Methods: Patients admitted to the acute care surgery ward at a tertiary referral hospital in Rwanda were surveyed about nutritional intake. Patients or caretakers were surveyed on nutritional intake from the preceding day. Patient caloric and protein intake was estimated based on reference standards from the USDA nutrient database. We report data as median and interquartile range (IQR). We then compared median calorie and protein intake with estimated standards for an average Rwandan adult assuming a standard mass of 60kg.

Results: We collected data on nutritional intake for 100 patient-days. Patients were nil per os on 14 patient days. Patients did not have food to eat on 15 patient days. Patient received nutritional support from outside contributions on most days (n=72). The hospital restaurant supplied food on 43 patient days.

The median daily caloric intake was 1280 kcal (IQR: 582, 1856). The median daily protein intake was 40.7 grams (IQR 21.2, 64.7). Assuming caloric needs of 25kcal/kg/day, and 1g/kg/day of protein needs, this is 85.3% the estimated daily caloric needs and 67.8% of protein needs. However, if there are higher energy needs for a surgical patient at 30-35kcal/kg/day and 1.2-1.5g/kg/day, the daily intake is 61-71% of caloric needs and 45.2-56.5% of daily protein needs.

Conclusions: This study serves as a baseline of nutrient intake for acute care surgical patients at a tertiary referral hospital in Rwanda. More emphasis and education should be placed on encouraging nutrition, especially protein supplementation, postoperatively.
**Conclusion:** At Tikur Anbessa, 96% of first daily operations were delayed. These delays cause a cascade of problems with throughput and may be leading to increased OR cancellation rate and patient dissatisfaction, as well as financial loss. We plan to introduce a quality improvement initiative, “The Golden Patient”, to optimize the logistics for first start patients the day prior to surgery, and hope study the impact of this intervention on reducing delays in the operating room.

**OP 47 | COSESCA 2019**

**Composition of incomes and preferences for rural job postings in anesthesia providers in Uganda**
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**Background:** Access to quality surgical care is an essential part of avoiding and overcoming disability and premature morbidity, yet five billion individuals lack access. This barrier is worsened in Uganda by a severe shortage of anesthesia providers; there are approximately 80, mostly urban, physician anesthesia providers for a population of nearly 40 million. This quantitative study explored what factors, financial and otherwise, contribute to employment decision-making amongst anesthesia providers in Uganda in order to provide evidence for applicable incentives to strengthen and expand the workforce.

**Methods:** This study included a remuneration survey and a discrete choice experiment (DCE) questionnaire. Physician anesthesiologists and non-physician anesthetic officers who are currently practicing anesthesia in Uganda were eligible for this study. The remuneration survey aimed to understand provider total income and income composition. The DCE aimed to assess provider employment preferences to work in a rural setting. Data were collected in person between May and June 2019.

**Results:** 49% of providers work more than one job. Anesthetic officers and rural providers on average work more hours per week than physicians and urban providers, but their total monthly income is much less. Physicians spend 55% of their time at the government job, despite that job providing about 30% of their total income. Physicians spent 21% of their time at a non-government job, which provided 44% of their total income. The DCE showed that providing quality of care and not being the sole provider were the most important factors (37% and 35% relative importance to other factors). The marginal utility of having a physician colleague (0.58) was greater than any individual factor, including a nearly double salary increase (0.54) or the ability to provide a wide scope of care (0.51).

**Conclusion:** The results of this study suggest that government salaries are insufficient as sole sources of income for both provider types. Providers appear willing to work in government health facilities, despite these jobs providing a smaller proportion of their salary. In order to recruit and retain anesthesia providers to rural areas, governing bodies should prioritize consistent resource availability, monetary incentives and hiring providers in pairs. Possible incentive packages optimizing utility values can be designed to improve attraction and retention of providers in rural areas, while potentially minimizing cost. Collaboration between anesthesia societies and government should be sought to explore the feasibility of potential packages.

**OP 48 | COSESCA 2019**

**Survival and Functional Outcomes at Discharge following Traumatic Brain Injury in Children versus Adults in a Resource-poor Setting**
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Introduction: Trauma is a leading cause of morbidity and mortality, especially in low-and-middle-income countries, including sub-Saharan Africa. Head injury is the main driver of trauma mortality in the pre- and in-hospital setting.

Methods: Data was prospectively collected on head injury patients at Malawi's Kamuzu Central Hospital from October 2016 through May 2017. Patients with history of head trauma and altered consciousness, and/or radiographic evidence of traumatic brain injury were included. Bivariate analysis and logistic regression were performed to determine odds of favorable functional outcomes and mortality after controlling for significant covariates.

Results: Of the 356 patients with TBI, 72 (20.2%) were children. Motor vehicle crashes (MVC) (n=144, 62.1%) and assaults (n=67, 28.8%) were the leading etiologies in adults compared to MVC (n=40, 55.6%) and falls (n=16, 22.2%) in children (p<0.001). Between the adult and pediatric cohorts, there was no statistical difference between number of patients intubated, neurosurgical intervention, or the presence of concomitant chest, abdomen, or pelvis injury. Adults had a lower median shock index than pediatric patients, 0.69 (IQR 0.57–0.82) versus 0.86 (IQR 0.61–1.02), respectively (p=0.02). There was no significant difference between adult and pediatric GCS on admission, 10.8±3.9 versus 10.9±3.5, respectively (p=0.8). On multivariable analysis, pediatric patients were more likely to have a favorable outcome defined by a Glasgow outcome score of good recovery or moderate disability (OR 3.70, 95% CI 1.22–11.17, p=0.02) and were less likely to die after TBI (OR 0.29, 95% CI 0.09–0.93, p=0.04).

Conclusion: We showed a survival advantage and better functional outcomes following TBI in children when compared to adults after controlling for covariates. This may be attributable to children having increased TBI resiliency or being prioritized in a resource-poor environment. Investments in neurosurgical and neuro-critical care are needed to improve mortality and outcomes for all ages in Malawi.

OP 49| COSESCA 2019
Clinical experience in the treatment of gluteal retractions/fibrosis in Uganda
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Background: Gluteal retractions/fibrosis were first described clinically in 1970. They are depressions or hollows on the buttock which have aesthetic and sometimes functional consequences. They cause restrictions in movement around the hip joints and may produce negative aesthetic and psychological effects. These include school dropouts because of embarrassing bodies, women not being able to wear certain clothes and failed adult relationships. Gluteal fibrosis results from inflammatory conditions usually caused by intramuscular injections like quinine, gentamicin and penicillins. They result from tissue fibrosis at either the level of the subcutaneous tissue, fascia or muscular fibres or the association of these levels. Despite the fact that the number of patients seeking treatment is increasing, very few clinicians are aware of the treatment methods of this problem. We seek to create awareness of this problem in our fraternity of how to treat this problem.

Methods: Between 2014 and 2017 a total of 12 patients underwent surgery for Gluteal fibrosis. All patients were females aged 15-43 years with a median age of 26 years.

Results: The surgical techniques involved selective lysis of the restrictive fibrous bends under Local anaesthesia, epidural block or general anaesthesia depending on the severity of the case. Fat grafting (Lipo-filling) was done using a modified Coleman’s procedure. All patients were satisfied with the outcome and would recommend to others.

Conclusion: Gluteal fibrosis is a pathological condition which has a significant aesthetic component. It has received very little attention from surgery until now but has become a more frequent complaint from patients. Successful treatment requires a thorough patient assessment and diagnosis of the specific type of defect. Proper treatment offers patients long lasting results.
Outcomes Following Surgical Release of Gluteal Fibrosis in Eastern Ugandan Children
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Background: Gluteal Fibrosis (GF) is a fibrotic infiltration of the gluteal muscles resulting in functionally-limiting contracture of the hips and is associated with injections of medications into the gluteal muscles. It has been reported in numerous countries throughout the world. This study assesses the 5-year post-operative range of motion (ROM) and functional outcomes for Ugandan children who underwent surgical release of GF.

Methods: A retrospective cohort study of children who underwent release of GF in 2013 at Kumi Hospital in Uganda. Functional outcomes, hip ROM, and scar satisfaction data were collected for all patients residing within 40 kilometers of the hospital.

Results: 118 children ages 4-16 at the time of surgery were treated with surgical release of GF in 2013 at Kumi Hospital. Of those 118, 89 were included in this study (79.5%). The remaining 29 were lost to follow-up or lived outside the study’s radius. Detailed pre-operative ROM and functional data was available for 53 of the 89 patients. In comparison with pre-operative assessment, all patients post-operatively reported ability to run normally (p < 0.001), sit upright in a chair (p < 0.001), sit while eating (p < 0.001), and attend the entire day of school (p < 0.001). Passive hip flexion (p < 0.001) improved when compared to pre-operative measurements. 85.2% (n=75) of patients reported satisfaction with scar appearance as “ok”, “good”, or “excellent”. 29.2% (n=26) of patients reported back or hip complaints.

Conclusions: Surgical release of GF resulted in statistically significant improvement in functional outcomes. Improved ability to use the toilet normally, sit upright in a chair, eat while sitting, and attend an entire day of school were especially notable. Passive hip flexion improved significantly. Patient satisfaction with scar appearance and symptoms was generally good to excellent. Overall, the 5-year post-operative outcomes suggest that surgical release of GF improves ROM and functional quality of life with sustained effect.

Social and Injury Factors Predict Loss to Follow-up after Surgical Management of Lower Extremity Fractures in Tanzania
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Background: Lower extremity fractures cause significant morbidity, mortality, and economic hardship in low- and middle-income countries (LMICs). Clinical follow-up is necessary to assess outcomes of surgical interventions. Loss to follow-up (LTFU) is an issue for prospective surgical research, particularly in LMICs. This study sought to identify factors that predict patient LTFU following adult tibia and femur shaft fractures in this context.

Methods: Data from two prior prospective clinical studies evaluating outcomes of lower extremity long-bone fractures conducted at a tertiary referral center in Tanzania were used for the study. Adult patients with operatively managed diaphyseal femur fractures were enrolled from July 2012 to July 2013 and open tibia shaft fractures from June 2015 to March 2017. Demographic, socioeconomic, injury, and treatment characteristics were compared between pooled cohorts of patients who did or did not complete study follow-up. A telephone survey was administered to patients who did not return to clinic.

Results: A total of 571 patients were included (331 femur, 240 tibia). The femur study was comprised of 331 adults with 59 patients (17.8%) LTFU, and the tibia study was comprised of 240 adults with 19 (7.9%) LTFU. Multivariate regression modeling demonstrated risk factors for LTFU including: OTA Classification type A/B fracture (3.6 Odds Ratio [OR], 95% CI 1.1 to 12.2, p = 0.039) and unemployment (4.1 OR, 95% CI 2.2 to 7.6, p <0.001). Among femur fracture patients, AO/OTA 32A/B-type fractures (3.8 Relative Risk [RR], 95% CI 1.0 - 15.0, p = 0.055), unemployment (2.1 RR, 95% CI 1.1 – 4.0, p = 0.033), and heavy labor (4.0 RR, 95% CI 1.2 – 13.4, p = 0.027) were associated with LTFU.
Among the tibia fracture cohort, any comorbid medical conditions (5.1 RR, 95% CI 2.0 – 12.9, p = 0.001), financially supporting 2 or fewer people (5.7 RR, 95% CI 1.3 - 24.5, p = 0.020), and delay from presentation to surgery >24 hours (5.0 RR, 95% CI 2.1 – 12.1, p = <0.001) were associated with LTFU. Commonly cited reasons for LTFU were distance from the hospital (49.1%), travel cost (46.3%), feeling well (25.9%), and fear of hospital debts (11.1%).

**Conclusion:** This study identifies factors that predict LTFU in a resource limited environment following lower extremity fractures. Patients with less severe injuries, lower socioeconomic status, poor overall health, and delayed presentation are less likely to return for 1-year follow-up. This information may be useful in developing strategies to recruit and retain patients for surgical outcome studies in LMICs.

**OP 52| COSESCA 2019**

**Data quality strengthening intervention as part of the Safe Surgery 2020 multi-component intervention in Tanzania**

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**Background:** Safe Surgery 2020 is a multi-component intervention aimed to improve surgical outcomes through surgical system strengthening. This includes improving data quality and management. Efforts to strengthen data in health systems supports the attainment of goals in sustainable development and global health.

**Methods:** A pre-post-cross-sectional analysis of patient records was conducted for patients meeting criteria of SSI, sepsis or maternal sepsis. Medical records were evaluated over a two-week period for i) file presence in medical records office and ii) completeness based on defined indicators in four documentation domains: a) SSI; b) sepsis; c) peri-operative; and d) clinical program. Files that documented data corresponding to pre-selected criteria within a specific domain were considered ‘complete’. Chi-square test was performed to assess for statistical difference between the pre- and post-intervention groups regarding file availability. Changes within domains were evaluated with t-test.

**Results:** There were 157 and 53 cases (of SSI, sepsis or maternal sepsis) identified at pre- and post-intervention periods, respectively. 68% of medical files were able to be located at pre-intervention assessment and 81% at post-intervention. The relationship was not statistically significant (p = 0.071). Evaluation of completeness among the files found across the four documentation domains for completeness revealed a 40% increase in completion for sepsis (95% CI -0.561, -0.274; p=0.001), 12% increase for SSI (95% CI -0.398, -0.047; p=0.014); 1.6% increase for perioperative (95% CI -0.128, 0.096; p=0.784); and a 3.3% decrease for clinical program (95% CI -0.068, 0.133; p=0.518).

**Conclusions:** The SS2020 data strengthening intervention is an effective tool for improving data completeness in the areas of sepsis and SSI. Improvement in the number of locatable patient files was observed post-intervention, but this difference was not statistically significant -- likely due to small sample size. Further study with a larger sample size is necessary to approach statistical significance.

**OP 53| COSESCA 2019**

**Experience and outcome of Arthroscopic Anterior cruciate ligament (ACL) reconstruction in Tanzania**

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**Background:** Anterior cruciate ligament tear is a common injury occurring in patients with severe injury in sports and falling accidents. previous in our setting these patient were treated by open ACL reconstruction of which their results were not reported. since 2016 in Tanzania we started doing arthroscopic ACL reconstruction.

**Methods:** a retrospective study was done to patient who had acl tear and undergone acl reconatruction, 150 patient were enrolled after conserted to be involved in a study, the patients were assessed on range of motion, return to previous state (sports or work), knee pain , instability , infection rate and revision surgery rate
**Results:** 95% of patient return to their pre-injury state, atrophy of quadriceps occurred in only 5% of patient, deep infection occurred in only 2 patients, fully range of motion occurred in 90% of patient. reoperation was done only 4 patients (2.5%)

**Conclusion:** Arthroscopic ACL Reconstruction had excellent outcome on patients with ACL tear.

**OP 54| COSESCA 2019**

**The surgical workforce are our frontline advocates: observations from the leadership, management and advocacy course in Kenya**

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**Background:** Surgery remains an underfunded critical segment of the health sector in Sub Saharan Africa. It is important that surgical health care workers are trained on prudent management of the scarce resources available to them to advance the delivery of surgical care. In addition, training surgical health care workers to be advocates for surgery would increase the voices that speak for surgery. We report on a Leadership, management and advocacy (LMA) program conducted in Kenya and the potential for scale up of such across COSECSA countries.

**Methods:** In 2016, surgical health care partners Johnson & Johnson, COSECSA, AMREF and G4 Alliance brought together a consultative forum to discuss developing a curriculum targeted to surgical healthcare personnel in Kenya. A Leadership, Management and Advocacy (LMA) curriculum was developed. The aim was to equip Surgical, Obstetric, Trauma and Anaesthesia practitioners with requisite leadership skills to enhance efficiency of surgical service delivery to improve access to surgery.

**Results:** The inaugural LMA class was conducted in October, 2018 in Nairobi. Participants included surgical, obstetric, trauma and anaesthesia practitioners from Public, Private and Non-governmental organizations across the country. Every institution was represented by a team of two participants. By the close of the training, teams had identified key areas of change that they would like to tackle in their institutions-Surgical Health Improvement Projects (SHIPs) for a year. The faculty were distributed as mentors to guide the participants in tackling their SHIPs. At the moment, all the SHIPs are ongoing with periodic progress reports being submitted.

**Conclusion:** The inaugural LMA course portends a great potential to teach management and leadership to surgical workforce while creating more advocates out of the existing workforce. This is a model that can be replicated across all COSECSA countries. It should be considered for inclusion as a part of the COSECSA curriculum.

**OP 55| COSESCA 2019**

**Group Forum (WGF) Improving Surgical Systems Beyond Patient Management in Malawi – Prospective Observational Study**

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**Introduction:** Access to surgery is a challenge for low-income countries like Malawi because of shortages of specialist surgeons, lack of supervision and monitoring of surgical service delivery especially in rural areas. District Hospital (DH) have been mainly working in isolation with minimal communication channel with important stakeholders on challenges they face.

**Methods:** A secure WhatsApp Group Forum (WGF) was established, March 2018, including all Surgeons and anaesthetists from Queen Elizabeth Central Hospital (QECH), Zomba Central Hospital (ZCH) and clinicians from 10 DHs referring patient to them. DH clinicians post information on patients for specialist opinion and feedback after referral. Apart from discussing patients, clinicians share obstacles to delivery of surgery to seek for solutions where possible.

**Results:** Since December 2018, there has been a spill-over effect with stakeholders like Ministry of Health (MoH)
Directorate of Clinical Services and Directorate Quality Improvement, Malawi Blood Transfusion Services (MBTS), Central Medical Stores Trust (CMST) joining the group and making notable influence in strengthening surgical systems. Raising alarms through the WGF has helped to speed up fixing non-functional operating theatres in certain hospitals enabling better working environment. Through discussions in the WGF, there has been an informed posting of surgical staff to DHs of greatest need. The WGF has enabled central and district hospitals to flag their needs for blood or surgical supplies, allowing MBTS and CMST respond more effectively to demand. This has helped management of the distribution of blood products, medical equipment and supplies to health facilities involved. DHs can communicate with nearby facilities when they have critical deficiencies and exchange supplies.

**Conclusion:** Utilization of WGF can be expanded beyond the primary care providers to monitor, supervise and support surgical services in both DHs and CHs. Lack of communication causes unnecessary delays in fixing challenges in delivery of surgery.

**OP 56 | COSESCA 2019**

**Nationwide Scale-Up of a Context-Specific Trauma Training Course in Uganda**

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**Introduction:** Trauma is a leading cause of morbidity and mortality worldwide, especially in low and middle income countries where over 90% of injury deaths occur. The Kampala Advanced Trauma Course (KATC) was developed in 2008 and has been delivered to interns rotating through surgery at Mulago Hospital in Kampala, Uganda since that time. In conjunction with local stakeholders, we developed an initiative to scale-up the KATC and create multiple training hubs throughout Uganda.

**Methods:** Strategically located training hubs in Kampala, Mbale, Mbarara and Gulu, which are all associated with teaching hospitals, were selected. Faculty members from each location were recruited to serve as lead instructors. A five day train-the trainer model was used where the KATC course is given over 2 days, a 1-day instructor course is given on the 3rd day, and the newly trained instructors teach the course to a new cohort of trainees on the final 2 days. The 5 day package was piloted with the lead instructors in Kampala in November 2018 and then expanded to Mbale in February 2019 and Mbarara in May 2019. A training is planned in Gulu for October 2019. Baseline demographic surveys were given to all participants.

**Results:** 109 providers, 26 or whom are now instructors, have been trained thus far through this scale-up effort. 106 participants completed the baseline demographic survey. 52% of participants were medical officers who in Uganda are physicians without specialized surgical training, 28% were nurses, and 9% were surgeons. 29% had finished their training within the past year, and a cumulative of 75% completed training within the past 5 years. 67% had not had any previous trauma training. Health facilities where participants work can be seen in Figure 1. 67% of participants worked at facilities where more than 40 patients present for evaluation of injuries each week.

**Conclusions:** Sustainable scale-up of training courses is essential for increasing capacity for trauma care in Uganda. This program has trained over 100 providers of multiple cadres in less than one calendar year and has established three training hubs. Further study is underway to evaluate how this training initiative effects the long-term practice patterns of participants.

**OP 57 | COSESCA 2019**

**Bridging study of humanities and medical education/practice**

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Health care providers often rediscover dark facets of their life at times when it is closely linked with the core of their carrier as the bridge between medicine and humanities . This short article is based on a quick review of the literature on humanities and medicine reflecting on the functional
specificity of the brain, and on how the humanities shaped the cultural history of mankind. The influence stretches from prehistoric Paleolithic civilization with cave paintings to the current abstractism and non-objective arts. The continuity of cultural values can be reflected through arts like the architecture; The Santa Maria del Fiore in Florence in Italy by Filippo Brunelleschini. Some argue that modern medicine is purely a science, while others find a good deal of art in the practice. Based on its inherent nature it is convincing that it is pure natural science with the art of delivery. Medical practice has transformed through the decades. Currently, it is highly dependent on technology, molecular reductionism and the focus on the pathology for cure rather than the care for the patient taking over as “the norm”. The influence of the humanities on medical doctors is enormous as seen in the lives of Theodor Billroth (prominent abdominal surgeon, amateur pianist and violinist) and Michael DeBakey (prominent cardiac surgeon, saxophonist) among many. It is essential to understand now how the brain works and how it relates to the study of humanities which can be beneficial in medical training and practice. Here it is important to understand the deferent brain models Humanities in medicine can contribute to medical training, medical institutions as an architectural product or interior design, as a therapy in all age groups. The study of any of the field of humanities is linked to better empathy and compassion as pillars of quality medical care. Health care practitioners have shown increased ability to visually describe aspects of illness in an expanded vision of reality, increased awareness of societal views of medical conditions, and achieved improvements in the doctor-patient relationship. Most importantly, the humanities arts help health workers cope with the workload with fatigue. It is hence logical to recommend the inclusion of the humanities in the medical training curriculum and medical practice.

**OP 58| COSESCA 2019**

**Virtual mentorship for surgery – a promising approach to extend learning in resource-limited settings**

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**Introduction:** Mentorship improves surgical skills for trained providers (Entezami et al, 2012), though face-to-face visits can be time and resource intensive. The Safe Surgery 2020 consortium explores the use of weekly virtual support, through Project ECHO, to mentor surgical teams on topics introduced in previous trainings. Mentors at Bugando Medical Center (BMC) and experts around the globe provided virtual mentorship to teams in 10 facilities in Tanzania’s Kagera and Mara regions.

**Methods:** The facilities were assessed by Assist International (AI), who also provided basic telementoring equipment. During mentorship sessions, mentors from BMC, Jhpiego, SPECT, WFSA, and AI presented didactic content, facilitate discussion, and answer questions. Surgical teams from each facility call in simultaneously and present real cases on selected topics. Surgical providers’ (mentees) perceptions of this approach were qualitatively analyzed using a questionnaire administered after sessions.

**Results:** 156 providers responded to the questionnaire between December 2018 and February 2019. 70% felt that the telementoring sessions were extremely or very relevant to their work, 24% said that the sessions were moderately or slightly relevant and only 6% rated the sessions not relevant or did not respond. In addition, 72% of providers found the sessions to be extremely or very valuable; 22% felt they were moderately or slightly valuable and 6% rated these sessions as not valuable or did not respond. 75% indicated they most enjoyed the sessions’ discussion and case presentation components. Appreciating the utility of these sessions, providers from additional facilities are now calling in voluntarily using cellphones. A total of 495 individuals have attended the sessions.

**Conclusion:** Our results show that virtual mentorship is relevant and very valuable to surgical providers. It complements face-to-face mentorship and multiplies classroom capacity, offering a flexible and efficient approach to
sustaining and extending the program’s learning gains.

**OP 59| COSESCA 2019**

Implementation of Capnography in Malawi: An international quality improvement programme
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**Introduction:** Capnography is an essential monitor for safe Anaesthesia in high income countries BUT is rarely available in low income countries. The Global Capnography project was set up in 2016 to introduce capnography in low income countries. The southern region of Malawi was chosen as the pilot site. The aim of this study was to quantify the capnography gap. To identify the training and education needs of the anaesthesia providers. To distribute 40 capnograph’s The follow-up assessed performance of the capnographs and whether it’s introduction improved the early recognition of critical airway events. This is the first project worldwide to do so.

**Methods:** In 2017 GCAP team travelled to southern Malawi and provided capnography training courses. The courses incorporated clinical scenarios with capnography waveform recognition and explained what action was needed to prevent patient harm. Waveform recognition including using THE CAPS & HATS system. 40 Capnographs donated by Med Tronic were given to 8 hospitals for use in their theatres and ICUs. In August 2017 G G Returned to conduct a six month follow-up study and conduct more training

**Results:** Only one capnogram in Malawi at the start of the project new sentence
Overall 97% and 100% Capnography gaps were identified in the theatres & ICUs respectively. Training courses improved knowledge. MCQ 15>18 (P<0.001)
The capnography equipment performed well and six months later 77% of Anaesthesia providers reported recognising 44 oesophageal intubations and 90% believed it had saved lives(57)
From Malawi evidence we estimate over 11,000 oesophageal Intubations occur per year in sub Saharan Africa. This significant patient safety risk could be mitigated by using capnography.
70,000 operating theatre in the world are without capnography.
For these reasons we believe this is one of the most important project in Anaesthesia safety in the last decade.
Capnographs used were appropriately robust and demonstrated ,with education, could change practice increasing patient safety.

**Conclusions:** The results support the development of an international project to help make global Capnography provision a reality so that, like pulse oximetry, it can be included in the WHO surgical safety checklist and improve patient safety worldwide. This study has shown it is feasible to provide a training package for Anaesthesia providers and successfully introduce capnography in low income country

**OP 60| COSESCA 2019**

The use of e-learning and electronic surgical logbooks amongst COSECSA surgical trainees: an East, Central and Southern African Analysis
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For these reasons we believe this is one of the most important project in Anaesthesia safety in the last decade.
Background: E-learning occupies a major role in the training of surgical residents worldwide. Since its foundation in 1999, COSECSA has placed importance on the integral role of delivering e-learning resources to a heterogeneous and vast training region. However, the face validity, learning value and accessibility of these e-resources remains to be described across low-middle income countries.

Method: A 29-point anonymous questionnaire was distributed to 625 surgical trainees and recent fellows of COSECSA in January 2019. Through multipoint Likert scales we surveyed internet accessibility, expenditure, quality feedback and usage trends for e-learning resources including operative videos, research databases, the e-logbook, clinical management and pharmaceutical references.

Result: Respondents were predominantly in general (49·6%) or orthopaedic (25·4%) surgery, with a median training duration of 3 years (IQR 2-5). The lion’s share owned an internet accessible device (96·6%) and had internet access in the home (95·7%) or workplace (89·5%). However, only a slim majority felt their internet accessibility satisfied their learning needs. Participants reported a median annual expenditure of $300 USD (IQR 100-500) on additional e-learning resources. While the majority (55·6-60·8%) perceived that e-learning resources had not achieved their full potential, many accessed these regularly (daily-weekly). Approximately 1 in 4 fully record their operative activity, with poor internet connectivity reported as the principle reason for underreporting. One third record their operations infrequently (>1 month duration). Despite its underutilisation, the majority (67·4%) reported the e-logbook as convenient to use. The highest motivational factor for logbook usage was its mandatory component (38·8%), followed by the ability to self-assess one’s operative exposure (24·7%).

Conclusion: Despite the provision of e-learning resources to surgical residents in low-middle income countries, connectivity may limit accessibility. Future focus on improving the quality of learning resources and offline access may motivate usage.

OP 61 | COSESCA 2019
Inequities in breast cancer treatment in sub-Saharan Africa: findings from a prospective multi-country observational study
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Background: Improving breast cancer survival in sub-Saharan Africa (SSA) is urgently needed, requiring early diagnosis and improved access to treatment. However, data on the types of and barriers to receiving breast cancer
therapy in this region are limited and have not been compared between different SSA countries and treatment settings.

Methods: In different health care settings across Uganda, Nigeria and Namibian sites of the prospective African Breast Cancer - Disparities in Outcomes cohort study, we assessed the percentage of newly diagnosed breast cancer patients who received treatment (systemic, surgery and/or radiotherapy) for cancer and their socio-demographic and clinical determinants. Treatment data were systematically extracted from medical records, as well as self-reported by women during 6-month follow-up interviews, and were used to generate a binary indicator of treatment received within 12months of diagnosis (yes/no), which was analysed via logistic regression.

Results: Of 1325 women, cancer treatment had not been initiated treatment within 1 year of diagnosis for 227 (17%) women and 185 (14%) of women with stage I–III disease. Untreated percentages were highest in two Nigerian regional hospitals where 38% of 314 women were not treated (32% among stage I–III). At a national referral hospital in Uganda, 18% of 430 women were not treated (15% among stage I–III). In contrast, at a cancer care centre in Windhoek, Namibia, where treatment is provided free to the patient, all non-black (100%) and almost all (98.7%) black women had initiated treatment. Percentages of untreated women were higher in women from lower socio-economic groups, women who believed in traditional medicine and, in Uganda, in HIV+ women. Self-reported treatment barriers confirmed treatment costs and treatment refusal as contributors to not receiving treatment.

Conclusions: Financial support to ensure treatment access and education of treatment benefits are needed to improve treatment access for breast cancer patients across sub-Saharan Africa, especially at regional treatment centres, for lower socio-economic groups, and for the HIV-positive woman with breast cancer.

A prospective cohort analysis of gut microbial co-metabolism in Rural African and Alaska Native people at high and low risk for colorectal cancer

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Background: Rural African (RA) people have a low incidence of colorectal cancer (CRC) (<5:100,000), whereas Alaska Native (AN) people have the world’s highest recorded risk (~91:100,000). Previous data supported the hypothesis that diet affected CRC risk through its effects on the colonic gut bacteria to produce tumor suppressive or -promoting metabolites. Here, we investigate whether changes in these metabolites may explain the difference in CRC risk of these two populations.

Methods: A cross-sectional, observational study assessed dietary intake from 21 RA and 32 AN healthy middle-aged volunteers prior to screening colonoscopy. Analysis of fecal microbiota composition by 16S rRNA gene sequencing and fecal/urinary metabolites by 1H-NMR spectroscopy was complemented with quantification of fecal short-chain fatty acids, bile acids and functional microbial genes.

Results: Adenomatous polyps were detected in 16 of 32 AN, but not found in RA participants. The AN diet contained higher proportions of fat and animal protein and less fiber. AN fecal microbiota showed a compositional predominance of gut bacteria involved in bile acid metabolism, low abundance of some species involved in
saccharolytic fermentation, but no significant reduction in butyrate-producing bacteria. Significantly lower levels of tumorsuppressive butyrate coincided with significantly higher concentrations of tumor-promoting deoxycholic acid in AN fecal samples. Microbial and metabolic CRC-associated markers were not significantly altered in AN participants with or without adenomatous polyps.

Conclusions: High rates of CRC in AN people may be explained by the combination of increased tumor susceptibility due to low-fiber, high-fat diet and exposure to carcinogens derived from diet or environment. In contrast, the RA diet may be a blueprint for efficient CRC risk reduction.

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Lived experiences of men below 55 years with prostate cancer: a phenomenological study of men receiving treatment at Uganda cancer institute
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Background: Cancer of the prostate is globally the second commonest cancer among men. Its incidence in Uganda is rising and is currently reported at 5.2%. It is responsible for about 25% of cancer deaths among male Ugandans. The diagnosis and treatment of prostate cancer is associated with massive psychosocial effects on top of the biomedical implications both for the patient and the healthcare system. Understanding these implications from the patients’ perspective may help inform service planning and resource allocation. This study aimed to explore the lived experiences of men below 55 years of age with prostate cancer at Uganda Cancer Institute.

Methods: The study design was qualitative with a phenomenological approach based on social constructivism theory. Open ended questions were used to conduct in-depth interviews with purposively selected prostate cancer patients at Uganda Cancer Institute (UCI) until theoretical saturation was reached. Their care givers were also interviewed to aid triangulation. Thematic-content analysis of data was performed using Tesch’s eight steps.

Results: Twelve patients and eight care givers were interviewed. The recurrent themes were lack of information and unavailability of health workers, altered lives and/or state of doubt, sense of loneliness and lack of support groups. Two marriages were broken as a direct consequence of the experience with prostate cancer. Inconsistent information or complete lack of it and unacceptably long waiting times led to disillusionment and frustration with the health care system. None of the participants received any counseling.

Conclusion: The unmet needs from these experiences included psychosocial support, clarity of information and psychosexual support for treatment related side effects. Strengthening a holistic multidisciplinary approach and creation of support groups may help improve the experience with prostate cancer in Uganda.

OP 64| COSESCA 2019
A review of Oesophageal cancer seen at a tertiary hospital in Kampala Uganda
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Background: Cancer of the esophagus is the 8th most common cancer in Uganda. The incidence of this cancer has rapidly continued to increase especially in developing countries. The major risk factors include unhealthy lifestyle practices such as alcohol consumption, smoking, and chewing tobacco. Socio-demographic factors for this cancer have been identified but not studied systematically in St Francis Hospital Nsambya. Currently, the cancer is detected late and the possibility of cure is remote. Understanding of the socio demographic and etiological factors may suggest opportunities for its primary prevention and early detection of this cancer. The objective of the study was to determine the prevalence, socio demographic factors and histological type of oesophageal cancer among patients referred for upper GI endoscopy at St Francis Nsambya Hospital.

Methods: A retrospective cross sectional study was carried in endoscopy unit from St Francis Hospital Nsambya.
Where records of patients who has endoscopy done were retrieved; the socio-demographic, endoscopy findings were collected as well as the histology report of samples taken from the oesophagus. Data was analyzed with SPSS and the frequencies and percentages compared.

**Results:** The mean age of the participants was 60±13 years. The age groups in 50-59 and 60 – 69 age groups with 30% and 23% respectively had the bulk of the disease. The prevalence of oesophageal cancer at endoscopy unit in Nsambya is 13%. Male gender was the most at 64%. Squamous cell carcinoma was the predominant histological type of esophageal cancer in this study, accounting for 79% of cases while adenocarcinoma accounted for 20% and 1% for the mixture. The oesophageal cancer was more in lower and middle third with a 42% and 32% than in the upper third. Squamous cell carcinoma was more in the lower third, 173 (42%).

**Conclusion:** The prevalence of oesophageal cancer at endoscopy in Nsambya Hospital was 13%. Squamous cell carcinoma is the predominant histological type of oesophageal cancer seen at 64%. The commonest site of oesophageal cancer is the lower part with squamous cell carcinoma still high at this level than adenocarcinoma. Oesophageal cancer is common in male than female ratio 1:1.8, with age group 50 to 69 years old, the central and south western regions of Uganda being most affected.

**OP 65| COSESCA 2019**

**Participatory action research to design a surgical training & supervision intervention for district level hospitals in Malawi, Tanzania and Zambia**

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**Background:** In sub-Saharan Africa the main providers of surgical services for rural populations are district level hospitals (DLH). This implementation research study is from the baseline of a project scaling-up access to surgical and anaesthesia care in Malawi, Tanzania and Zambia. Participatory action research (PAR) was conducted to inform the design of a health workforce training and supervision intervention.

**Methods:** PAR consultations were held in the 3 partner countries July-November 2017 with teams from 67 district level and referral hospitals. Representatives included surgical and anaesthesia providers, theatre nurses, and hospital managers, and ministries of health representatives. Through semi-structured discussions, qualitative data were collected on participants’ perceptions and experiences of barriers to the provision of safe and timely surgical and anaesthesia care, challenges with referrals systems, and training and supervision needs for surgical teams. Data were compared for themes across the sites, and across surgical team cadres.

**Results:** All groups reported a lack of in-service training available to develop essential skills pre, intra and post-operative care, skills to manage common surgical cases, use and care of equipment, essential anaesthesia care including resuscitation skills, and infection prevention control. Very few participants had access to mentoring. Surgical providers at DLHs reported a demand for more feedback on surgical referrals. Participants prioritised training needs that could be addressed through regular in-service training and supervision visits from referral hospitals to DLHs over an intervention period of 24 months. These data were used by participants in an action-planning cycle to develop site-specific training plans for each research site.

**Conclusions:** Our findings suggest that an implementation research approach such as PAR, can improve the design of a user-focused country-specific intervention, and its acceptability. Further studies are needed to assess the effectiveness and sustainability of such interventions, and impact on surgical and anaesthesia care for rural
OP 66| COSESCA 2019
The surgical ecosystem in Ethiopia: Novel adaptation of a business framework to prioritize interventions for surgical infection reduction
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Introduction: Implementing successful quality improvement programs in surgery is challenging, not only due to multidisciplinary teams required for service delivery, but also because many other resources and practices make up the “surgical ecosystem”. In complex business organizations, one paradigm used to rank drivers of change is the “Burke-Litwin” model of: 1) external factors, 2) transformational factors 3) transactional factors and 4) individual and personal factors. We applied this model to eight hospitals in Ethiopia to address high rates of surgical infections, understand gaps and prioritize interventions.

Methods: During implementation of a surgical infection prevention program, we recorded field notes, initial process maps, and hospital action plans. Gaps in performance specifically identified by hospital staff were recorded and stratified by Burke-Litwin categories and subcategories, then summed across process measures. Each gap was scored equally. Data were analyzed using Stata version 15.1.

Results: There were large gaps in performance for every infection prevention area (range 24-82), greatest in surgical skin preparation (78) and sterilization (82), demonstrating that these processes comprise a large footprint within the surgical ecosystem. When gaps in infection prevention practices were fitted to the Burke-Litwin framework, the vast majority fell under Transactional Factors (293), followed by Transformational Factors (147), with the subcategory “Hospital mission, strategy & goals” (121) being the primary driver. Individual tasks, skills, and knowledge played a smaller role in the gaps identified.

Conclusion: In eight Ethiopian hospitals, a number of essential factors affect infection prevention practices, including overall hospital mission and strategy, resource allocation, and OR systems and protocols. Using the Burke-Litwin framework to understand where key weaknesses exist could be helpful to drive change in hospitals and improve the surgical “ecosystem”. Health systems must prioritize and invest in OR management and leadership to effect meaningful change in perioperative infection prevention practices.

OP 67| COSESCA 2019
Health-related quality of life and its associated factors after thyroidectomy at Mulago National Referral Hospital: a cross-sectional study
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Background: Anatomical disruption of the gland, along with its function in the body gives rise to metabolic effects after thyroidectomy, which may impact negatively on patients’ HRQoL. The objective of this study was to evaluate the health related quality of life and its associated factors; after thyroidectomy, at Mulago National Referral Hospital.

Methods: A cross sectional study involving participants recruited consecutively from the endocrine outpatients’ clinic at Mulago hospital. A short form 36 version 2(SF-36v2) was used to capture the health related quality of life information. Percentages, median, interquartile ranges were used to summarize data. Bivariate
and multivariate analysis were used to identify associations between age, level of education, gender, marital status, employment status, type of surgery, chronic illness, history of operation, use of medication, people at home and domains of HRQoL.

**Results:** Eighty participants were recruited between January 2019 to April 2019 with male: female of 1:12, median age of 46 (IQR 38-51). 63.75% had lobectomy and the commonest indication for surgery was unilateral nodular goiter. Good HRQoL was 100% with social functioning, but 100% poor with general health. Female gender (OR=16.37, p=0.033), type of surgery (near total, OR=59.11, p=0.009, total with OR=32.98, p=0.018), level of education (Alevel, OR=0.02, p=0.009; other tertiary OR=0.06, P=0.041) are associated with poor physical function. None were employed (OR=13.37, p=0.006), type of surgery (total, OR=22.64, p=0.013) are associated with poor role physical and type of surgery (near total, OR=3.69, p=0.024; total OR=16.4, p=0.001) was associated with more bodily pain. Type of surgery (total p=0.038), employment at present (none OR=6.35, p=0.005) were associated with poor role emotion. Age>46, OR=1.26 p=0.037, type of surgery OR=0.20, p=0.032, (near total) were associated with poor vitality.

**Conclusion and Recommendation:** Thyroidectomy lead to poor HRQoL (7 out of 8 SF – 36 domains) in the first year after surgery, save for social functioning. Predictors of HRQoL were mainly female gender, unemployment, and more complex modalities of thyroidectomy. HRQoL assessment should be done as a routine, more so in the first year after thyroidectomy. The need for another study to assess long term impact is needed.

**OP 68 | COSESCA 2019**

**Design and Implementation of a Pilot Pediatric Emergency Surgical Care Course for Rural Providers in Uganda**

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**Background:** Low-and-middle-income countries like Uganda, where four pediatric surgeons serve a population of 20 million children, face a severe shortage of pediatric surgeons. Most children with a surgical emergency are treated by non-specialist rural providers and will never meet a pediatric surgeon. Here we describe the design and implementation of a locally driven, pilot pediatric emergency surgical care course for rural providers to address this disparity. This is the first description of a such a course in the current literature.

**Methods:** The course was conducted in February and December 2018 at two separate sites in Uganda. Modules included perioperative management, neonatal emergencies, intestinal emergencies, urologic emergencies and trauma which were taught by both visiting faculty from the US but largely local Ugandan faculty. Attendees were surveyed about prior training, resource availability, which pediatric surgical conditions they manage, which conditions they are referring to other centers, as well as training and resource-related priorities. Participants in the second course also took pre and post-course knowledge-based tests and completed post-workshop evaluations.

**Results:** A total of 28 providers attended the courses. The providers represented multiple cadres, 25.0% of which were general surgeons and 51.8% of which were medical officers, who in Uganda are physicians without specialized surgical training. Mean time since the attendees completed training was 2.9+3.5 years. The majority (61.5%) of participants estimated that their centers perform less than 20 pediatric surgery cases monthly, and 27% estimated they performed more than 40 pediatric operations per month. Seventy-three percent of respondents reported that only non-physician anesthesia officers provide anesthesia for children. The most common procedures performed in participants’ current practice are hernia/hydrocele repair (25.4% adjusted rating), burns (15.3%) and laparotomy for intussusception (14.8%). Attendees were least comfortable managing cleft lip and palate (mean likert 1.4+1.0) and anorectal malformations (2.0+1.4), which they were also most likely to refer. The most significant challenges to delivering pediatric surgical care faced by participants were advanced diseased presentation (25.4 in the second course, participants’ scores on the knowledge tests improved significantly from pre (52.7%+18.0%) to post course (82.8%+13.7, p<0.0001). Attendees felt that the course material was highly adaptable (mean likert 4.8+0.5). On thematic analysis of workshop feedback, participants felt they would benefit from more hands-on training as part of future courses.
Conclusion: Non-specialist clinicians are essential to the pediatric surgical workforce in LMICs. Short, targeted training courses can increase provider knowledge about the management of surgical emergencies. Anecdotally, the course has spurred locally driven surgical outreach initiatives and increased referrals to specialized pediatric surgery centers. Further implementation studies are needed to evaluate the impact of the training.

OP 69 | COSESCA 2019
Pre-training Experience and Structure of Surgical Training at a Sub-Saharan African University
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Background: The common goal of surgical training is to provide effective, well-rounded surgeons who are capable of providing a safe and competent service that is relevant to the society within which they work. In recent years, the surgical workforce crisis has gained greater attention as a component of the global human resources in health problems in low- and middle-income countries. The purpose of this study was to: (1) describe the models for specialist surgical training in Uganda; (2) evaluate the pre-training experience of surgical trainees; (3) explore training models in the United States and Canada and areas of possible further inquiry and intervention for capacity-building efforts in surgery and perioperative care.

Methods: This was a cross-sectional descriptive study conducted at Makerere University, College of Health Sciences during 2011–2012. Participants were current and recently graduated surgical residents. Data were collected using a pretested structured questionnaire and were entered and analyzed using an excel Microsoft spread sheet. The Makerere University, College of Health Sciences Institutional Review Board approved the study.

Results: Of the 35 potential participants, 23 returned the questionnaires (65 %). Mean age of participants was 29 years with a male/female ratio of 3:1. All worked predominantly in general district hospitals. Pre-training procedures performed numbered 2,125 per participant, which is twice that done by their US and Canadian counterparts during their entire 5-year training period.

Conclusions: A rich pre-training experience exists in East Africa. This should be taken advantage of to enhance surgical specialist training at the institution and regional level.

OP 70 | COSESCA 2019
Orthopaedic syllabus for undergraduate medical students in Southern Africa: A consensus from local and international experts
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Background: Most patients with orthopaedic pathology in South Africa are treated by non-specialists. A curriculum to prepare undergraduate medical students for this should reflect the local pathology and offer feasible solutions. The aim of this study was to establish and prioritize an orthopaedic syllabus consisting of knowledge, clinical cases, and skills relevant to medical students in South Africa.

Methods: A modified Delphi consensus study was conducted, in form of three interactive iterative rounds of communication and the prioritization of items by experts from Africa, Europe and North America. For this, preferred priorities were selected but were limited to 50% of possible items. Percentage agreement of more than 75% was
defined as consensus on each of these items.

**Results:** Most of the 43 experts who participated were orthopaedic surgeons from seven different countries in Southern Africa, but 30% were general practitioners from Southern Africa or international educational experts. Experts prioritized cases like a multiple injured patient, a limping child and orthopaedic emergencies. The manipulation and immobilization of dislocations and fractures, were prioritized skills. The most important knowledge topics included orthopaedic infections, the treatment of common fractures and dislocations, red flags alerting to specialist referral, as well as back pain. Surgical skills for the treatment of urgent care conditions were included by some experts who saw a specific need in their clinical practice, but were ranked lower.

**Conclusion:** A wide geographic, academic, and expertise-specific footprint of experts informed this international syllabus through their various clinical and academic circumstances. Knowledge, skills and cases in orthopaedic trauma and infections were prioritized with the highest percentage agreement. Acute primary care for fractures and dislocations ranked high. Furthermore, the diagnosis and treatment of conditions not requiring specialist referral were prioritized. This syllabus can inform national curricula, not just in Southern Africa, and assist in the allocation of student contact times.

**OP 71| COSESCA 2019**

**Oesophageal atresia: A 7-year experience, challenges and outcomes at Mulago hospital**

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**Background:** Oesophageal atresia is a correctable congenital interruption of the oesophagus that may be suspected prenatally or diagnosed post-delivery. Outcome is based on the class of anomaly; or on whether prenatal or postnatal diagnosis is made. Those who undergo a successful repair do well with less than 5% overall mortality in the western world.

**Methods:** A review of prospective database of Paediatric surgical ward at a tertiary hospital was done of information in the period from 2012 to 2018.

**Results:** A total of 54 patients were admitted during this time at an average of 10 days of life and an average length of stay of 12 days. 32% had had corrective surgery, 29% recovered and were discharged home, 64% died, compared to less than 5% in the Western world, 3% absconded from hospital. Of the 14 patients operated on, only 4 died. 19 had aspiration pneumonia, 5 had pneumonitis from contrast, 13 recorded to be under-nourished.

**Conclusion:** Earlier patient identification and referral, timely surgery, and availability of Paediatric Intensive Care and neonatal anaesthesia services will go a long way in reducing our comparatively high mortality.

**OP 72| COSESCA 2019**

**Developing mentorship in a resource-limited context: A qualitative research study of the experiences and perceptions of surgical teams and mentors in Ethiopia**

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Background: Mentorship has traditionally been a teaching method for surgical trainees in academic institutions in high-income countries. However, little is known about the effectiveness of mentorship in low- and middle-income countries, particularly in the context of surgery. This study aims to explore the experiences of participants of Safe Surgery 2020’s mentorship program, part of a multicomponent intervention in Ethiopia to strengthen skills of providers in lower-level hospitals.

Methods: We used qualitative semi-structured interviews (n=28) with surgical team members, hospital leaders, mentors and key stakeholders at 5 rural Ethiopian hospitals that were part of the Safe Surgery 2020 initiative to collect information on their perceptions related to the facilitators and barriers to successful implementation of the mentorship program. We used the constant comparison method of analysis to identify salient themes related the facilitators and barriers.

Results: Respondents identified five facilitators: 1) highly committed and skilled mentors, 2) staff motivation to work with mentors to strengthen surgical services, 3) leadership support from hospital directors and the regional health bureau, 4) mentorship support tailored to facility-specific needs, and 5) mentoring outside formal mentor visits such as patient consultation via telephone. Barriers included 1) lack of nurse mentors, 2) lack of sufficient mentoring time and consistent scheduled visits, 3) expectations by mentees that exceed program capability such as acquisition of supplies and equipment, and 4) lack of compensation for mentors.

Conclusion: This study provides key lessons for the design of future surgical mentoring programs. First, there is a need for a multidisciplinary mentoring team to meet needs of all surgical team members. Second, mentorship requires sufficient time, resources, and coordination. Third, expectations of mentee teams should be discussed at the outset. Mentorship holds promise as a solution for strengthening surgical services in LMICs when designed with consideration to local context, conditions, and resources.

OP 73| COSESCA 2019
Development of an Operative Trauma Course in Uganda – Does Training Impact Resource Utilization?
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Introduction: More than 90% of injury-related deaths occur in low and middle-income countries, where 5 billion people lack access to surgical care. Trauma education efforts have focused on teaching initial resuscitation rather than operative skills. Impact evaluation of courses has been challenging. We developed a 3-day, cadaver-based course focused on operative techniques tailored to the low-resource setting and assessed its effect on resource utilization using an accessible mobile technology platform.

Methods: Three classes of second year surgical residents of the Makerere University School of Medicine in Kampala, Uganda participated in consecutive annual trainings from 2017-2019. Training consisted of 3 days of didactics and cadaveric dissection for a total of 20 hours of instruction (Figure 1). The course was developed and taught in conjunction with local faculty. Blinded pre- and post-course tests were administered. The most recent cohort of residents were given a tablet computer and asked to log cases they were involved in before and after the course. Residents were asked to record which resources were used during initial evaluation of the patient and the operative
techniques used if the patient was taken to theatre.

Results: 48 of 52 total participants completed the pre- and post-tests. Pooled mean pretest score was 56+10% and increased by 23% following course completion in the post test (79+9%). 18 residents participated in the tablet-based case log. 117 cases were logged. There was no statistically significant difference in patient demographics or injury severity pre- and post-course. Penetrating injuries were reported more frequently pre-course (40 to 21% p=0.039) and road traffic crashes (39 to 60%, p=0.039) were reported more frequently post-course. Head CT usage increased post-course (10 to 32%, p=0.004), there was no difference in the utilization of intubation or other imaging modalities, in the frequency of procedures performed or patient outcome. Of patients that underwent exploratory laparotomy (n=52), there was an increase in the rate of use of four-quadrant packing (3 to 22%, p = 0.04), and a decrease in the rates of direct liver repair (21 to 4%, p=0.09).

Conclusion: Participants demonstrated improvement in knowledge after the course. There was no substantial change in resource utilization, which is likely multifactorial, including inconsistent availability of necessary equipment and personnel. A change in select operative techniques was observed. This study demonstrates the feasibility of using mobile technology to assess surgical education interventions in a resource-limited setting. Additional research is planned to evaluate sustained changes in practice patterns and clinical outcomes after operative skills training.

OP 74| COSESCA 2019
Surgical Infections at a Tertiary Referral Hospital in Rwanda
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Background: There is a growing rate of antimicrobial resistance (AMR) globally, with high rates noted in low and middle income countries. The aim of this study was to compare community (CAI) and hospital acquired infections (HAI) and determine the rate of extended spectrum beta-lactamase (ESBL) production in patients at a referral hospital in Rwanda.

Methods: This was a prospective, observational study of acute care surgery patients with suspected infection. Culture and sensitivity testing were done using Kirby Bauer disc diffusion. CAI were defined as those sampled within 48 hours of hospital admission and HAI were sampled more than 48 hours after hospital admission. Using Chi squared analysis, we compared factors associated with CAI versus HAI.

Results: Over a 9 month time period, we collected 158 samples from 139 patients. The most common diagnoses were soft tissue infection (n=28, 20%), abscess (n=21, 15%), and appendicitis (n=19, 14%). Most (n=107, 68%) specimens were collected from surgical wounds.

Overall, 94 (59%) specimens collected were CAI and 64 (41%) were HAI. Of 157 samples, 103 (66%) were positive for culture growth, with no difference between CAI or HAI (60% vs 73%, pvalue=0.087). The most common organisms isolated were Escherichia coli (n=42, 42%), Staphylococcus aureus (n=20, 20%), and Klebsiella species (n=14, 14%). Of 40 E. coli isolates tested, 17 (43%) were resistant to ceftriaxone, with higher rates of resistance seen in HAI versus CAI isolates (75% vs 29%, p=0.006). Of 13 Klebsiella isolates, 9 (69%) were resistant to ceftriaxone, with no difference between HAI and CAI isolates (83% vs 57%, p=0.308). All S. aureus isolates were sensitive to vancomycin. Of 62 specimens tested for ESBL, 27 (44%) were ESBL producers. ESBL positive specimens were more common in the HAI isolates compared with CAI isolates (64% vs 30%, respectively, pvalue=0.008).
Conclusions: Rates of cephalosporin resistance and ESBL production are relatively high in Rwandan surgical patients with higher rates notes in HAI compared with CAIs. Infection prevention practices and antibiotic stewardship are critical to reduce infection rates with resistant organisms in a low resource setting.

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Burn unit infection prevention and control practices: A situational Analysis of the Practices at a Central Indian Hospital
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Background: Infection in the burn patient is a leading cause of morbidity and mortality and remains one of the most challenging concerns for the burn team. Prevention and control of Burn unit infection is of utmost importance. We aimed to identify burn unit infection prevention and control practices; implementation loopholes; infection sources and the sensitivity profiles of the center burn unit pathogens to locally available topical antimicrobials and systemic antibiotics.

Methods: The study was carried out at the Choithram hospital burn unit for a period of six weeks from October 2017 to November 2017. Observation and use of photography was used to demonstrate infection control practices. Microbiologic cultures of on-spot swabs and retrospective reviews of the microbiology laboratory data on sensitivity profiles of burn unit pathogens to topical and systemic antibiotics were done.

Results: PPE, hand hygiene, waste segregation, and regular ward cleaning were practiced. Bad practices were improper hand hygiene, messy floors during procedures. Burn wounds and dressing rooms were highly contaminated. Silver Sulfadiazine, and chlorhexidine showed 100% activity against all the pathogens. Betadine and honey showed none. Pseudomonas, Klebsiella and Staphylococcus aureus were common isolates and were highly resistant to broad-spectrum antibiotics except to Polymixin.

Conclusion: Infection prevention and control was up to standard as recommended by the WHO and CDC HICPAC guidelines. Non-adherence to recommended protocols was practiced but on a low scale. Multidrug resistant pathogens are endemic at this unit. Rational use of both systemic and topical antimicrobials is strongly recommended.

OP 76| COSESCA 2019
Thirty Day Outcome of Perforation Peritonitis at the University Teaching Hospitals, Lusaka, Zambia
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Background: Perforation peritonitis is a common surgical emergency seen by surgeons and remains a life threatening condition with high morbidity and mortality. The study aimed to determine the site of perforation, the post-operative outcomes of leak, wound dehiscence, re-laparotomy and mortality in relation to the site of perforation, and related the Physiological and Operative Severity Score for enumeration of Mortality and Morbidity (POSSUM) score to the outcome.

Methods: A prospective observational study conducted at the Department of Surgery of the University Teaching Hospitals (UTH), Lusaka from July 2018 to March, 2019. A total of 100 patients undergoing exploratory laparotomy for spontaneous perforation peritonitis were included. The morbidity and mortality risks were calculated using the POSSUM and P-POSSUM.

Results: Site of perforation: Gastric (n=49) followed by ileal (n=36), colonic (n=8), jejunal (n=3) duodenal (n=1), combined ileal and colonic (n=1), unidentified (n=1) and urinary bladder (n=1). The mean age was 37.24 (range 18 to 78 years). There were 77 males and 23 females. Thirty-six died (36% mortality rate) and morbidity rate was 17.19%.
Post-operative outcomes included leak 9%, wound dehiscence 3%, and re-laparotomy 17%. Thirty-four percent of patients needed admission to intensive care unit (ICU) and 85.29% was the ICU mortality rate. Hospital stay was 9.53±6.86 days. The most common cause of death was septic shock in nineteen (52.78%). The POSSUM score significantly predicted mortality (p=0.007). Overall, the POSSUM morbidity score was unable to significantly predict the morbidity; leak, wound dehiscence and re-laparotomy (p>0.05).

Conclusion: Gastric perforation was the leading cause of perforation peritonitis, with high morbidity and mortality at the UTH; followed by the ileum, colon, jejunum, duodenum and lastly, urinary bladder. The commonest postoperative outcome was re-laparotomy followed by leak and abdominal wound dehiscence. The commonest cause of mortality in perforation peritonitis was septic shock. The POSSUM score significantly predicted mortality in perforation peritonitis in patients at the UTH. However, it could not significantly predict the outcome of leak, wound dehiscence and re-laparotomy.

OP 77| COSESCA 2019
Vascularized fibula flap in the management of the bone loss following osteomyelitis in children
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Background: Vascularized fibula flap has been used in the management of bone defects that can follow long standing osteomyelitis, tumors, trauma. This study was carried out to evaluate the outcomes of this procedure in a cohort of children who presented with post-osteomyelitis bone loss.

Methods: The retrospective study covers the period between October 2013 and December 2016. Twenty-eight patients, most of them in the first decade of life, were enrolled. The bones involved were tibia (13), femur (7), radius (5) and humerus (3). The fibula was harvested with its proximal epiphysis in 5 cases, whereas in 17 cases the flap was osteocutaneous and osseous in 6 cases. The flap was stabilized mainly with external fixators, in a few cases with Kirschner’s wires or mini-plate.

Results: The follow-up period ranged from a minimum of 2 and half to a maximum of 6 years. Early (within 15 days from index operation) and delayed complications were observed. In 24 cases the graft integrated with the host bone in a period of 4 months on average. All grafts underwent a process of remarkable remodeling. Flap necrosis was observed in three cases, requiring its removal. In one case flap resorption was noted a few months after the procedure. The fibular flap with epiphysis had good functional outcomes with reconstruction of articular end. No major problems were observed in the donor site, except for a couple of foot drop that resolved spontaneously.

Conclusions: Reconstruction of segmental bone defects with vascularized fibula flap is a viable option that salvages and restores limb function. It can be safely used even in early childhood. The local conditions dictate what type of fibula flap should be harvested. When harvested with a skin island, bone loss and poor soft tissues envelope may be addressed concurrently. The procedure is long, costly and difficult but highly rewarding.

OP 78| COSESCA 2019
Prediction scores for adverse outcomes in patients with secondary peritonitis. qsofa versus sirs score
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Background: SIRS and qSOFA are two ancillary scoring tools that have been used globally, inside and outside of ICU to predict adverse outcomes of infections such as secondary peritonitis. Mulago hospital uses SIRS outside the ICU to identify patients with secondary peritonitis, who are at risk of adverse outcomes. The sepsis-3 task force recommends qSOFA as a better tool, however its performance in patients with secondary peritonitis in comparison to that of SIRS had never been evaluated in Mulago hospital, Uganda. The objective of the study was to compare the performance of qSOFA and SIRS scores in predicting adverse outcomes of secondary peritonitis in Mulago hospital, Uganda.
**Methods:** This was a prospective cohort study of patients with clinically confirmed secondary peritonitis, from March 2018 to January 2019 at the A&E, Mulago hospital. QSOFA and SIRS scores were generated preoperatively for each of the patient. After surgery, patients were followed up until discharge or death. In-hospital mortality and prolonged hospital stay were the primary and secondary adverse outcomes, respectively. Sensitivity, specificity, PPV, NPV and accuracy at 95% confidence interval were calculated for each of the scores using STATA v.13

**Results:** A total of 153 patients were enrolled. Of these, 151(M: F, 2.4:1) completed follow up and were analysed, 2 were excluded. Mortality rate was 11.9%. Forty (26.5%) patients had a prolonged hospital stay. QSOFA predicted in-hospital mortality with AUROC of 0.52 versus 0.62, for SIRS. Similarly, qSOFA predicted prolonged hospital stay with AUROC of 0.54 versus 0.57, for SIRS.

**Conclusion:** SIRS is superior to qSOFA in predicting both mortality and prolonged hospital stay among patients with secondary peritonitis. However, overall, both scores showed a poor discrimination for both adverse outcomes and therefore not ideal tools.

**OP 79| COSESCA 2019**

**Postoperative Sepsis Among HIV-Positive Patients with Acute Abdomen at Tertiary Hospital in Sub-Saharan Africa: A Prospective Study**

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**Background:** The incidence of HIV in Uganda as reported by UNAIDS (2012) was increased from 6.7% in 2004 to 7.6% to 2012. The main threat to HIV-infected patients following surgery is the development of sepsis. Inadequacy of surgical supplies and human resources further hastens and complicates the postoperative sepsis in HIV patients. The objective of the study was to determine incidence and risk factors associated with postoperative sepsis, among HIV seropositive with acute abdomen. A prospective study ran for a period of 11 months from October 2015 to April 2016 in Mulago Hospital in Kampala. Eligible patients were recruited and included.

**Methods:** Study variables included postoperative wound sepsis, type of surgery, and CD4 counts. Thirty-eight data were collected using a questionnaire then entered in the Epidata software 3.1 and analyzed by Stata software version.

**Results:** Sixty-two patients were recruited; of these, 42 were male, 37 were HIV-negative and 25 were HIV-positive. The proportion of patients with postoperative sepsis in the HIV positive group was 7 (28%) and in the HIV-negative group was 8 (21.6%). The number of patients discharged in HIV-positive group was 24 (96%) and in HIV-negative group was 35 (94.6%). Among the HIV-positive group was 1 out of 25 (4) % and HIV-negative was 2 out of 37 (5.4%). The overall postoperative sepsis incidence rate was 3 per 100 person days for under observation (95% CI 0.02–0.1), and the incidence rate ratio of HIV-positive patients and HIV-negative was 1.04 (95% CI 0.32–3.3; P = 0.47.

**Conclusion:** The limited health resource was associated with developing postoperative sepsis. There was a higher risk of positive operative sepsis among HIV-positive compared to HIV-negative patients undergoing surgery for acute abdominal conditions.

**OP 80| COSESCA 2019**

**A retrospective study on management of pressure sores grade III & IV in the plastic surgery department at Mulago National Referral hospital Kiruddu campus**

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**Background:** Pressure injury is soft tissue injuries resulting from unrelieved pressure over a body prominence. Pressure sores have a significant impact on both qualities of life and healthcare costs. Estimates of the proportion of people with chronic wounds over the past 10 years suggest that despite recent efforts, the number of persons with pressure injury has not improved. 

Objective: Management of pressure injury grade III & IV in the plastic, reconstructive and burn unit at Mulago National Referral Hospital Kiruddu.

**Methods:** Hospital based retrospective descriptive studies. Data was collected from fifteen patients’ case files and theatre operation register books as well as medical records, and outpatient book from Mulago National Referral Hospital- Kiruddu Campus.

**Results:** The most common anatomical site for pressure ulcers was both sacrum & trochanteric with 6 (40%) of the pressure injuries. Pressure injuries of grade III and IV accounted for 66.4% of the ulcers. Multi-layer dressing was the most common method used in wound care. Fasciocutaneous flaps were the most common surgical procedure performed (81.7%) for closure of pressure ulcers.

**Conclusion:** Majority of patients with pressure injuries had a mean age of 38 years. Most of the ulcers were located along bony prominence points of the sacrum and trochanteric. Most of the ulcers in this study were treated surgically.

**Recommendation:** For the pressure sores treated with surgical interventions the early outcome was good, however studies need to be done to determine long term outcomes.

**OP 81 | COSESCA 2019**

**Burn injury in epileptic patients: An experience in National Burns Center Mulago Hospital Kampala**

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**Background:** The objective of this study was to evaluate the incidence, types and severity of burn injuries, including sites involved, morbidities, and operative procedures, to prevent or reduce the frequency and morbidity of such injuries in epileptic patients.

**Methods:** This is a prospective study that was conducted at our Burns Centre between September 2015 and January 2018. The study included 61 patients who sustained burn injuries due to epileptic seizures admitted in our burns unit, accounting for 1% of all burn admissions. All patients or attendants were asked structured questionnaire and other information were derived from the patient medical records.

**Results:** Etiology of the burns injury were as follows: flame burns (41), and flame burns (21). Most of the burn surface area burnt is less than 20% (40 out of 61 patients). Most of the burns involved multiple areas and then upper limbs (20, 20 out of 61 patients). Fifty patients required surgical intervention whereas the remainder was conservatively managed. Most of the injuries occurred in the age group between 13-25 years. Injuries occurred almost equal in females and males (33 females, 29 males) and most patients are not on treatment for epilepsy or on irregular medication for epilepsy (54 out of 62).

**Conclusion:** The study revealed that most of our epileptic patients are not taking medication and are high risk of getting burns during cooking or handling fire because of the sudden and unpredictable attack of epileptic seizures. Health education about epilepsy and avail medication would go a long way in preventing the burns which results into severe injury and loss of body parts.

**OP 82 | COSESCA 2019**

**The Relationship between District General Hospital Capacity and Trends in Mortality in Patients Presenting with an Acute Abdomen in Malawi**

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Background: The burden of emergency general surgery conditions is high in sub-Saharan Africa. We examine the trends in mortality in patients presenting with an acute abdomen to a tertiary care facility in Malawi.

Methods: A retrospective analysis of the prospectively collected Kamuzu Central Hospital Acute Care Surgery database was performed from January 2014-July 2019. Demographic variables, admission diagnosis, transfer status, surgical intervention, and mortality outcomes were collected and stratified by year of admission and bivariate analysis was conducted.

Results: During the study, 3,840 patients presented with acute care surgical conditions. The majority of patients were transferred from district hospitals (2014: n=553, 80.4%; 2016: n=361, 88.9%; 2018: n=718, 70.3%). There was an increasing trend in the overall number of patients per year, from 689 to 1036 patients presenting in 2014 and 2018, respectively. An upwards trend in mortality occurred (2014: n=82; 11.9%, 2016: n=52; 12.8%, 2018: n=162, 15.7%) with most deaths occurring in patients transferred from a district hospital (n=478, 85.5%). Mortality trends are being driven by patients with preoperative diagnosis of peritonitis (2017: n=25, 26.9%; 2018: n=19, 21.2%) and bowel obstruction (2017: n=30, 14.7%; 2018: n=68, 22.6%).

Conclusion: The majority of patients with an acute abdomen presenting to KCH were transferred from a district hospital resulting in delays to surgical care and increased mortality. Based on the WHO recommendations, district hospitals should have the capacity to perform the Bellwether procedures. Our results indicate a lack of general surgical care capacity at the district hospital level and an inability to meet the recommended WHO minimum standards. District hospitals require significant resource investment to reduce transfers and patient mortality. Additionally, protocolization of the current transfer system is necessary to reduce delays to care that increase mortality risk.

OP 83 | COSESCA 2019
Pattern and Management of Prostate Cancer in Rwanda: A Multicenter Prospective Study
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Background: Prostate cancer remains a global health burden. Inadequate awareness, as well as insufficient diagnostic and management capacity, lead to its delayed presentation with associated morbidity and mortality in LMICs. This study describes the burden, characteristics and management options of prostate cancer (Pca) in Rwanda.

Method: This prospective descriptive study described demographic and clinical characteristics and estimated age-standardized incidence rate of Pca in Rwanda.

Results: The study enrolled 108 Rwandans whose biopsies were positive. Their mean age was 71.3 years (SD=8.5). Overall 99.07% (107/108) had lower urinary tract symptoms (LUTS); and 21.3% (23/108) had neurological impairment of lower limbs. Only 12.96 % (14/108) had a positive family history. The Mean symptoms duration was 12 months. Total PSA was >20 ng/ml in 85.05 % (91/107). The mean PSA was 100ng/ml; range 1.69-10000 ng/ml. In 37.6% (41/108) were metastatic; 26.85% (29/108) locally advanced; 18.52% (20/108) were localized and 16.67% (18/108) were not fully staged. Gleason score>8 was found in 74.07% (80/107). Among 67 patients treated, ADT was offered to 76.12% (51/67) as primary treatment and 14.92% (10/67) were on ADT while waiting for combining with curative radiotherapy; 8.96% (6/67) underwent radical Prostatectomy. Bilateral orchidectomy was offered to 54.1% (33/61) and medical ADT in 45.9% (28/61). Medical ADT included goserelin which follows bicalutamide in 53.57% (15/28); cyproterone acetate in 35.71% (10/28) and ketoconazole in 10.71% (3/28). The age-standardized incidence rate of Pca in Rwanda is estimated at 13.56 per 100000 men above 45 years.

Conclusion: Late presentation of patients with prostate cancer leads to the detection of mainly advanced and high grade tumors making the clinician short of treatment options. It is imperative to increase access to health care while raising awareness of Pca among the general population to tackle the mortality and morbidity associated with unnecessary delays.
Cushing’s syndrome, an interesting disease of diverse presentation: Experience at endocrine surgery unit Mulago National Referral Hospital

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Background: Cushing’s syndrome (CS) occurs rarely. The overall incidence world over is 1:1,000,000 population. Uganda with a population of about 40 million has an unknown incidence rate. This paper aims to observe some clinical features in our patients.

Methods: We looked at the 46 adrenal patient we have managed so far over a 16-year period since the establishment of endocrine wing of the Breast and Endocrine surgery unit of Mulago National Referral hospital. Fourteen patients had ACTH independent Cushing’s syndrome. The patients presented with typical and atypical clinical features; a suppressed ACTH level and loss of diurnal variation of cortisol. The youngest patient was nine years old. The clinical features at presentation, glycemic effects, hypertension and histology of the adrenal cortical lesion were reviewed in this paper. The striae and lightening of skin common in Cushing’s syndrome may or may not be apparent at all.

Result: We discuss the 14 patients and analyze their history, clinical findings, investigation, management and outcomes. Females were more affected than males [4:1], with more coming from the central region [6]. Hypertension [8] and glucose intolerance as one of the complications.

Conclusion: There is a need for vigilance in recognizing the disease early and having a high index of suspicion in patients who may not have the clinical signs to make a firm diagnosis. In an environment where nutrition is not checked well cushing’s syndrome in a child may be mistaken for obesity till the bones give way to back ache and invalidity.

Monitoring delivery of surgical services at the District Level in Malawi, Tanzania and Zambia

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Background: Surgical services require a range of complementary processes in place such as clinical guidelines, standard operating procedures, record keeping and performance review mechanisms (i.e. case reviews, morbidity and mortality reports, audits). These systems monitor activity, diagnose areas of concern and identify potential for improvement. The aim of this study was to examine current practices and identify gaps at district hospitals (DHs) in Malawi, Tanzania and Zambia.

Methods: We undertook a mixed-method study: a cross-sectional survey of 75 DHs in 2017: Malawi (22), Tanzania (30) and Zambia (23) and interviews with surgical team members from 32 facilities. Descriptive statistics were computed, and qualitative data were analysed using an inductive thematic analysis approach.

Results: Most DHs use multiple theatre registers to record surgical operations (40% in Tanzania and Zambia, 80% in Malawi). Monthly reports are compiled but seldom analysed by the surgical team. The majority of DHs do not have any external supervision from visiting surgeons in place, neither do the majority use surgical safety checklists. 73% of DHs in Tanzania conduct surgical case reviews, but less than half of DHs in Malawi and Zambia do so. Reports of surgical morbidity and mortality are compiled in 65% of Zambian DHs, decreasing to less than a third of DHs in Tanzania and Malawi. Surgical audits are performed in only 8% of DHs in Tanzania, 9% in Malawi and 30% in Zambia. Faith-based hospitals out-perform government hospitals in three of the five tracked measures.

Conclusions: The majority of DHs do not implement a number of processes which ultimately are recommended as essential to the provision of quality assured surgical services. Further research into the barriers and enablers of implementation at the district level may explain the variation in the use of measures between hospitals, and hospital...
types, within countries.

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**Eradicating Neglected Surgical Diseases (NSDs): Accelerating progress towards surgical equity**

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**Background:** Safe, affordable and timely surgical and anesthesia care, essential to reduce preventable death and disability, remains an unattainable luxury globally. We aimed to provide a proof of concept on national and county-level engagement towards the elimination of the backlog of NSDs-cleft lip and palate, cataract, hernia, obstetric fistula, neglected injury and clubfoot as a catalyst for surgical systems strengthening.

**Methods:** The pilot study was launched in February 2019 in conjunction with the Kenyan MOH and Meru County where Community Health Volunteers (CHVs) underwent a door to door campaign in targeted sub counties. Identified cases were referred to partner NGOs who undertook the treatment of NSDs while training local providers in cooperation with COSECSA.

**Results:** A prevalence of 30.7% (n= 3,748 NSDs) was reported from a total of 12,189 clients reached. Prevalence of NSDs include: hernia (7.63%), neglected injury (17.2%), cataract (10.2%), clubfoot (5.56%), fistula (0.6%), cleft (1.3%), others (8.1%). A second layer of screening undertaken by the County Health Management Team reached 1,063 clients. 232 surgeries were done at the county level while training local ophthalmologic surgeons (n=214 cataracts, 18 other eye conditions). The follow-up rate post-operatively was 60% with 90% reporting improved vision.

**Conclusion:** Strategies to scale up the NSD eradication efforts include; 1.) adoption of a common framework eliminating NSDs as a package within Universal Health Coverage, 2) generating country leadership and political will to systematically address these conditions through public health measures, 3) utilizing a primary care approach in case detection and referral of NSDs through empowering community health workers and volunteers, 4) technological innovation in digital health to assist in case detection, referral, and reporting, 5) coalition-building through multisectoral coordination mechanisms, and 6) resource-pooling (human resources, infrastructure, and systems processes) to leverage economies of scale.

**OP 87| COSESCA 2019**

**Pediatric surgical data bases a quality improvement tool: Establishment, Outcomes, and Lessons learned over 9 years in Mulago Hospital**

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**Introduction:** A computerized clinical database is a collection of organized clinical data created to store, retrieve, analyze and report meaning full information. In today’s data driven health care systems efficient access to clinical information aids decision making, clinical care, research, performance improvement and reporting. An electronic data base has become a more feasible and cost effective way of storing clinical data compared to previous paper-based registers. On this back ground a prospective clinical pediatric surgical data base was established. The aim was to measure the epidemiology, out come and burden of pediatric surgical conditions in Uganda in order to guide quality improvement strategies.

**Methods:** This data base was drafted in 2011 and initiated in January 2012. It started as an excel spread sheet and later was converted to a Microsoft access file. Safe guards in software and use of drop lists were developed. The most common 46 diagnoses and 50 operations were listed rather than the thousands in the traditional diagnostic and procedure codes Data entry is done at the end of an admission/ outcome by a contracted clerk and was expanded 2 years later to 3 other regional referral hospital in Uganda. Permission was obtained from Mulago Hospital REC and patient confidentiality is ensured for the protected health information. Periodic audits by faculty ensured accuracy. Data access requests are put in place for team members interested in using the database.
Results: This database covers over 6000 prospectively collected entries. Our limited diagnostic and procedure codes captured over 90% of patients. Four dissertations for Masters of Medicine thesis have been accomplished with information extracted from database. Ten publications in peer reviewed journals have been produced jointly by the local and international faculty. We are able to quantify and map met and unmet needs for surgical conditions for children. This allowed us to successfully advocate for greater resources to support training, infrastructure and service delivery.

Conclusion: A Prospective database is a cost effective quality improvement tool that enables advocacy for local teams as well as children and their families. This has led directly to increased resources in high priority areas of pediatric surgical capacity building in Uganda.

OP 88| COSESCA 2019
Association between Serum Bicarbonate and Injury Severity among Major Trauma patients in a Tertiary Hospital in Sub Saharan Africa; a prospective observational study
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Background: While majority of injury related deaths results from the ‘lethal triad’ (hypothermia, acidosis and coagulopathy), injury scoring tools, such as the Kampala Trauma Score-II (KTS-II), do not use acid base parameters such as serum bicarbonate to stratify injury thus failing to detect other lethal acid base derangements which contribute to occult tissue hypoxia and death.

Methods: An observational prospective study involving major trauma patients admitted to Mulago Hospital between February and May, 2018. Data on sociodemographic characteristics, clinical characteristics, serum bicarbonate levels, KTS-II, and outcomes of major trauma (death, surgery, ICU admission) were collected and entered into Epidata version 3.1. Analysis was conducted using STATA version 14.1. Descriptive analysis involved obtaining means and medians for continuous variables and proportions and percentages for categorical variables. Predictors of mortality were assessed using logistic regression and odds ratios were reported alongside their corresponding 95% CI and level of significance set at alpha 0.05.

Results: Out of 2750 trauma patients, 135 had major trauma. Male: female was 15.9:1. Venous blood samples were drawn from 68 participants for measurement of bicarbonate (Normal range 22-29mmol/L). Mean initial bicarbonate value was 16.7 (median 18) and the mean follow up (day 3) value was 22.3 (median 22). Most participants 78(57.8%) had a KTS of 6 and 6.4% had a KTS of <4. Among the participants, 70(51.9%) had ICU admission and 83(61.9%) had emergency surgery done. Eighty (80) participants (77.7%) had an accident as the cause of their injury and most had at least a cranio-cerebral injury. The overall mortality was 29.6%. For the association between bicarbonate and KTS, the AUC for the ROC plotted was 0.6500.

Conclusion: There was a fairly strong association between Serum HCO3 and KTS and thus venous serum bicarbonate levels may be considered as an alternative marker of injury severity.

OP 89| COSESCA 2019
Nationwide Scale-Up of a Context-Specific Trauma Training Course in Uganda
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Introduction: Trauma is a leading cause of morbidity and mortality worldwide, especially in low and middle income countries where over 90% of injury deaths occur. The Kampala Advanced Trauma Course (KATC) was developed in 2008 and has been delivered to interns rotating through surgery at Mulago Hospital in Kampala, Uganda since that time. In conjunction with local stakeholders, we developed an initiative to scale-up the KATC and create multiple training hubs throughout Uganda.
Methods: Strategically located training hubs in Kampala, Mbale, Mbarara and Gulu, which are all associated with teaching hospitals, were selected. Faculty members from each location were recruited to serve as lead instructors. A five day train-the-trainer model was used where the KATC course is given over 2 days, a 1-day instructor course is given on the 3rd day, and the newly trained instructors teach the course to a new cohort of trainees on the final 2 days. The 5 day package was piloted with the lead instructors in Kampala in November 2018 and then expanded to Mbale in February 2019 and Mbarara in May 2019. A training is planned in Gulu for October 2019. Baseline demographic surveys were given to all participants.

Results: 109 providers, 26 of whom are now instructors, have been trained thus far through this scale-up effort. 106 participants completed the baseline demographic survey. 52% of participants were medical officers who in Uganda are physicians without specialized surgical training, 28% were nurses, and 9% were surgeons. 29% had finished their training within the past year, and a cumulative of 75% completed training within the past 5 years. 67% had not had any previous trauma training. Health facilities where participants work can be seen in Figure 1. 67% of participants worked at facilities where more than 40 patients present for evaluation of injuries each week.

Conclusions: Sustainable scale-up of training courses is essential for increasing capacity for trauma care in Uganda. This program has trained over 100 providers of multiple cadres in less than one calendar year and has established three training hubs. Further study is underway to evaluate how this training initiative effects the long-term practice patterns of participants.

OP 90| COSESAC 2019
Profile of Thyroid Cancer patients seen at Ugandan Tertiary Hospital 2008-2018
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Background: Thyroid cancer has gained importance today as it ranks among the world’s top ten cancers in general and among the top five in women. The global incidence rate and the prevalence are increasing. Several centres report a changing disease profile but the disease remains understudied in developing countries including Uganda. This study aimed to describe trends, associated factors and outcomes of thyroid cancer in Uganda as seen at Mulago National Referral Hospital, the largest in Uganda.

Methods: It is a descriptive cross-sectional study of patients managed on Mulago’s Endocrine surgery ward from 2008 to 2018, done from May to September 2019.

568 case files of thyroid patients were retrieved and 87 (15.3%) confirmed cases of thyroid cancer were analysed.

Results: The mean age was 46 (+16.2) years. The majority 68 (78.2%) were female, majorly from the central region of Uganda. Over 50% had no formal education. The major complaints were neck swelling (62.8%) and difficulty in breathing (9.3%), while key presentations from overall assessment were neck mass (42.5%), pressure symptoms (40.2%) and pain/tenderness (3.4%). 5.7% had history of smoking while 4.6% had history of radiation exposure to the neck. 3.4% had positive family history of thyroid cancer, 3.4% had documented exposure to food goitrogens, and no patient had regular consumption of non-iodised salt. From Histopathology 70% had Papillary Thyroid Cancer, 23.4% had Follicular Thyroid Cancer, while hurthle cell and poorly differentiated were each 2.2%. Medullary thyroid cancer was 1.1% and others 1.1%. 13.8% had initially used some traditional therapy. 67.8% received operative treatment, with 48.3% of them demonstrating enlarged lymphnodes. Those not operated were largely managed palliatively. Only 2.3% received radio-active iodine ablation therapy. Of those traceable 71.1% were alive. 45.5% of those alive have disease, while 55.5% are disease free. The overall 5year survival rate is 65.2%.

Conclusion: Thyroid cancer is increasing in Uganda, commonly affecting the younger population. There was no dominant identifiable risk factor. The papillary subtype is outstanding. Adjuvant Radio Active Iodine (RAI) therapy is very much under-utilised and our survival rate is lower than for centres with complete treatment regimens.
A pioneer case of splenorenal shunt surgery following Extra Hepatic Portal Vein Obstruction with Portal Biliopathy in Uganda; A Case Report

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Background: Extrahepatic portal vein obstruction (EHPVO) is thought to arise following an infective episode in early neonatal life or it may follow a prothrombotic state. Variceal bleeding in extrahepatic portal vein obstruction can be a major cause of morbidity and mortality and is managed by either endoscopic obliteration in combination with a beta blocker like propranolol or by portosystemic shunt surgery. Multiple sessions are required for endoscopic obliteration and the patient has to be on beta blockers for life while total shunt surgery offers a one-time lasting solution to resolving the portal hypertension and the upper GI bleeding.

Methods: We report a 21-year-old male who presented with 8-year history of intermittent jaundice, one-day history of hematemesis and malaena stools, an upper GI endoscopy done showed grade IV esophageal varices with portal hypertensive gastropathy, both abdominal ultrasound scan and triphasic CT scan showed features of cavernoma formation, splenomegaly compressing on the left kidney, multiple collaterals with non-cirrhotic liver. He had a total bilirubin of 2.1 and direct bilirubin of 1.3, alkaline phosphatase of 98U/L and gamma glutamyl transferase of 103 U/L. A diagnosis of EHPVO with portal biliopathy was made.

Results: He underwent proximal splenorenal shunt surgery with splenectomy, abdominal Doppler scan done on postoperative day (POD) 7 showed shunt patency. He fully recovered and was discharged on POD 20. To the best of our knowledge, this is the first case of this nature managed by shunt surgery in Uganda.

Conclusion: we therefore encourage physicians in our setting to have a high index of suspicion whenever managing young adults who present with upper GI bleeding and imaging studies demonstrating a non-cirrhotic liver. Shunt surgery in EHPVO offers a one-time lasting solution to the common fatal symptom of upper GI bleeding.

Cost Analysis of the Development and Maintenance of a Hospital-based Trauma Surveillance Registry

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Introduction: Trauma is a leading cause of morbidity and mortality globally, with a disproportionate burden affecting low- and middle-income countries (LMIC). Trauma registries are essential to determine the impact of trauma mechanisms and outcomes in LMIC to enable hospital and healthcare systems to optimize care and allocate resources.

Methods: A retrospective database analysis of prospectively collected data in the Kamuzu Central Hospital (KCH) Trauma Registry from 2018 – 2019 was performed. Activity-based costing, a bottom-up cost analysis methodology, was utilized to determine the unit cost per patient registered after systematically analyzing the cost of set-up and maintenance of the KCH Trauma Registry. Costing was divided into startup and recurrent expenditures.

Results: During the study period, 12,616 patients were included in the KCH Trauma Registry. Startup costs for the trauma registry are estimated at $1250. This includes $1100 for database management (REDCap database manager and data clerk computers), $70 for initial data clerk training, and $80 for other equipment. Recurrent costs occurring in 2018, included personnel, technology, supply, and facility costs. Five data clerks, one data manager, and a project manager are required for 24/7 data collection, data integrity, and database maintenance, with an estimated cost of $30,015 per year. Yearly recurrent data clerk training costs are $136. Internet and facility costs for a data clerk office
and secure record storage are $2022 per year. Supplies for completion of trauma intake forms (binders, paper, pens) are $1295 annually. The total cost of a trauma registry at a tertiary hospital in Malawi is $33,468, which costs $2.65 per patient registered in the database in 2018.

Discussion: Trauma registries are necessary for the assessment of the local trauma burden and injury pattern but require significant financial, time, and personnel investment. Valid and accurate data can inform effective public health policy.

Referral forms as a tool to improve surgical services provision: a need to improve completeness and clarity
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Introduction: Evidence shows that the majority of health facilities are not fully prepared to provide surgical services and that the level of preparedness differs from one facility to another i.e. one could be lacking in skills and the other lacks supplies. Hence, facilities tend to refer cases which they lack capacity to operate on. The routine practice is to refer such cases with referral forms which, when filled completely and appropriately, will lead to the identification of the gaps in Surgical Services provision.

The objectives of the study was to determine the practice in filling referral forms at the referring health facilities.

Methods: we collected data on surgical referrals in six referral hospitals in northern Tanzania; five regional referral hospitals and one zonal referral hospital. At the regional referral hospitals all general surgery and obstetrics and gynaecology departments were involved. At the zonal referral hospitals, general surgery, orthopedic and obstetrics and gynecology department were involved in the study. We started data collection from March 2018.

Results: There were 2,260 referrals. 2004 (88.7%) had referral forms. 1427 (63.1%) were immediately referred, 789 (34.9%) initially admitted but did not go through theatre and 44 (1.9%) went through theatre. Categories of referrals were obstetrics and gynaecology 970 (42.9%), general surgery 784(34.7%) and 314 (13.9%) were orthopedic conditions. Most 1012 (44.8%) of the referrals were from district hospitals. Referral forms were incomplete, 500(24.9%) did not report the referring healthcare providers, 595(29.7%) did not report the management offered at the referring hospital, and 940 (46.9%) did not report specific reasons for referral.

Conclusion: A substantial proportion of referral forms filled at referring health facilities are incomplete and lack clarity on the reasons for referrals. Lack of this information may lead to ineffective referrals and is a missed opportunity to identify gaps in delivering surgical services. Training and advocacy of proper filling of referral forms is important to get specific information that will pave ways for making informed interventions to improve surgical services provision.

South-south electives within COSECSA; assessing demand and barriers
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Introduction: Surgical education has evolved with the advent of institutions like The College of Surgeons of East, Central, and Southern Africa (COSECSA) which span 14 member countries. This has opened avenues for surgical trainees to receive education outside their native countries. The experiences of the authors led to development of interest in how other trainees perceived the possibility of regional surgical education. The objective of this study was...
to show the experiences, benefit and need for electives for trainees within the COSECSA region.

**Methods:** An electronic survey was sent out to COSECSA trainees. Data is still being collected via Survey Monkey.

**Results:** At present, 87 surveys have been completed, with 50% male and 49% female. 93% agreed to formal incorporation of regional surgical education for COSECSA trainees, and 79%, 14% and 24% cited finance, registration, and time off work respectively as reasons preventing them from travelling to other COSECSA countries. Reasons for travel included workshops 45%, conference 37%, and observer-ships 14%.

**Conclusions:** The preliminary results show support for regional training/electives as part of the surgical training program in COSECSA. Barriers include registration, finance and time. The final complete dataset will reflect the trainees desires regarding expansion of their surgical learning field and this will hopefully influence and optimize surgical training in low resource settings of most of the COSECSA countries. COSECSA executive as leaders of the organization can advocate ease of registration across countries and rally donors to support such ventures.

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**A Comparison of the Surgical Management and Outcomes of Patients with Ileal Perforation at a Malawian Tertiary Referral Center**

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**Background:** Ileal perforation is a common surgical emergency, especially in typhoid endemic regions like sub-Saharan Africa. As there is a paucity of data on outcomes for each surgical option [primary repair (PR), small bowel resection and anastomosis (SBR), or diverting ostomy (DO)], there is no standardized recommendation. The aim of this study was to characterize outcomes of different surgical interventions for ileal perforation.

**Method:** A prospective cohort study of patients presenting with ileal perforation at a tertiary hospital in Malawi from February to July, 2019 was performed. Descriptive analysis of demographics, symptoms, duration of symptoms, and severity of illness was performed based on operation type.

**Results:** Of the 58 patients with ileal perforation, 44 (75.8%) were male with a mean age of 26.1 years. PR, SBR, and DO were performed in 19 (32.8%), 6 (10.3%), and 32 (55.2%) patients, respectively. There was no statistical difference in preoperative characteristics such as blood pressure, pulse rate and urine output between the cohorts. Patients who received PR and DO were more likely to have generalized peritonitis on exam (n=13, 68.4% vs n=29, 90.6%, p=0.03) and feculent intraabdominal contamination intraoperatively (n=7, 36.8% vs n=25, 80.7%, p<0.001). Patients who underwent SBR who were more likely to be non-peritonitic on exam (n=3, 50%) with clear abdominal fluid (n=4, 66.7%) intraoperatively. There was no statistical difference in wound infections, dehiscence, return to the operating room, or mortality between the cohorts.

**Conclusion:** This analysis demonstrates the varied surgical approaches to ileal perforation and aims to optimize surgical management based on clinical presentation in a resource-poor setting. It is evident that a significant number of patients undergoing PR and DO had generalized peritonitis on examination and feculent fluid contamination. A larger sample is required to characterize the outcomes based on surgical intervention performed.

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**Prevalence, Risk Factors and Bacterial Susceptibility of Surgical Site Infections following Abdominal Surgeries at Kampala International University Teaching Hospital, Uganda: A Cross sectional study**

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Background: Surgical site infection (SSIs) is a global burden that contributes towards morbidity and mortality of patients undergoing abdominal surgeries. There is paucity of data on SSIs in resource constrained Uganda to guide antibiotic protocols. The objective of the study was to determine the prevalence of SSIs, risk factors, common causative bacteria and their susceptibility patterns amongst patients undergoing abdominal surgeries at Kampala International University Teaching Hospital (KIUTH), Uganda.

Methods: Cross-sectional study involving culture and sensitivity of pus swabs from surgical sites of consented consecutive patients. Laboratory tests were performed at the United States Army Research Laboratory on Infectious Diseases (USAMRIID). Data was analyzed using SPSS 20.0. Chi-square and binary logistic regression analyses were performed at 95% confidence interval, regarding p<0.05 as significant to determine risk factors for SSIs. Ethical Clearance was obtained from Mbarara University Science and Technology Ethical review committee (IRB N0. 02/01-17).

Results: Of the 138 patients, 17.4% (n=24) developed SSIs. The risk factors for SSIs were comorbidity with diabetes mellitus (29.2%), cancer without enrollment for anti-cancer treatment (25%), pre-operative white blood cell count >11.0x10^9cells/L (50%), and HB <14.0g/dl (75%), American Society of Anesthesiologists (ASA) score ≥II (91.6%), surgery involving entry into the peritoneum. The bacteria responsible for SSIs were P. aeruginosa (33.3%) followed by E.Coli (25%), S.aureus (12.5%), Methicillin Resistant S.Aureus (8.3%), K. pneumonae (8.3%) and Proteus species (4.2%) in that order. These isolates demonstrated multiple drug resistance to gentamycin, amoxicillin-clavulanic acid, ceftriaxone, and ciprofloxacin.

Conclusions: The prevalence of SSIs in the present study was higher than previously reported. Diabates, cancer, anaemia, high ASA score, intra-peritoneal surgery and clean contaminated wounds were major risks. P. aeruginosa, E.Coli, S. aureus, MRSA, and K. pneumonae were the leading cause of SSIs. These bacteria demonstrated multiple drug resistance. There is need to prevent SSIs with more emphasis on control of pre-operative comorbidities. These findings are valuable to guide antibiotics prescription protocols amongst surgical patients in our setting. Further studies should be tailored towards understanding the molecular basis underlying such multiple drug resistance.

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A Retrospective Review of Peptic Ulcer Perforations in Harare, Zimbabwe
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Background: The limited literature on peptic ulcer perforation in Africa depicts a disease where young adults are most at risk, with smoking and alcohol being significant risk factors for perforation. This is in contrast to Western literature where the disease largely affects elderly patients with co-morbidities taking non-steroidal anti-inflammatory drugs (NSAIDS). Several clinical prediction models (CPMs) exist for triage and risk stratification of these patients but none has been validated in our setting.

The objective of the study was to identify risk factors associated with mortality from perforated peptic ulcer disease (PUD) and to determine which CPM most accurately predicts mortality from peptic ulcer perforation in Harare, Zimbabwe.

Methods: We retrospectively reviewed records of patients at Parirenyatwa Hospital in whom a diagnosis of
perforated PUD was made between 1 January 2017 and 15 September 2018. A data collection tool was used to abstract putative risk factors for mortality and information pertinent to all categories of selected CPMs. Receiver Operator Characteristic curves for each of the CPMs were compared to determine the best predictor of mortality. The main outcome was 30 day mortality.

**Results:** 105 patients were included with median age 36 years. M : F ratio was 23:3. NSAID use, alcohol and smoking were reported in 21.8%, 63.4% and 56.3% of patients respectively. Factors associated with mortality were presence of 1 or more co-morbidities (OR:3.7, p=0.022); Ulcer size >2cm (OR 8.1, p=0.000) and raised serum creatinine (OR 11.4, p=0.000).

AUC of the selected CPMs were: Mannheim Peritonitis Index Score 77.4% (95%CI 65.7- 89.1); Boey Score 75.9% (95%CI 63.5 – 88.4); Pulp Score 72.3% (95%CI 59.0 – 85.7) and Jabalpur Score 70.8% (95%CI 58.6 – 82.9).

**Conclusions:** Multiple co-morbidities, large ulcer size and raised serum creatinine were associated with higher risk of mortality. The Mannheim Peritonitis Index Score most accurately predicts mortality from perforated PUD in Harare.

**OP 98| COSESCA 2019**

**Challenges in Glioblastoma Multiforme management in low income countries**

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**Background:** GBM (WHO grade IV) is known to be a highly aggressive and generally lethal brain tumor despite aggressive treatment. Occurs, especially in elderly population who already have multiple comorbidities and tend to do worse than the nonelderly patients. Surgery and radiotherapy in combination with classical alkylating agents such as temozolomide offer little hope to escape a poor prognosis. For these reasons, enormous efforts are currently devoted to refine in vivo and in vitro models with the specific goal of finding new molecular aberrant pathways, suitable to be targeted by a variety of therapeutic approaches, including novel pharmaceutical formulations and immunotherapy strategies. But the treatment to ensure prolonged survival while maintaining quality of life has always been challenging, as glioblastoma occurs mostly in elderly population who already have multiple comorbidities. In this study, we will specifically focus on providing a broad overview on the incidence and challenges regarding GBM management in low income countries.

**Methods:** This is a retrospective presentation of a case of a 45 – year – old female who was evaluated for history of progressive severe headache and giddiness since 1 year, forgetfulness, disorientation since 6 months and seizures since 2 months. MRI done and was found to have multifocal glioblastoma. Despite emergent surgery, she did not survive despite a short period of remission of 1 month after surgery with lack of adjuvant treatment.

**Results:** The lack of adequate facilities like radiotherapy and chemotherapy and the ignorance of patients the outcomes remain bad.

**Conclusions:** In developing countries and all around development and availability of ancillary facilities are essential to be able to take care of ailments and offering tertiary care. Whenever feasible, combined modality with surgery, radiation, and chemotherapy should be instituted; however, temozolomide alone may be the reasonable alternative, especially if MGMT promoter methylation is present. GBM in conditions where treatment is multimodal, inspite of excellent surgical treatment lack of facilities like radiotherapy and chemotherapy and the outcomes remain bad in low resource countries where is the unavailability of treatment due poverty and also many cases are not diagnosed on time or not at all. Governments and partner organizations like WHO should provide resources or facilities to these patients in advanced parts of the world as well as encourage neurological and neurosurgical training in Africa whereas based on statistics, one neurosurgeon takes care of about 5 million populations since in western countries the same situation is a neurosurgeon for about 200,000 populations.

**OP 99| COSESCA 2019**

**Epidemiology of intentional panga injuries in South Western Uganda**

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Introduction: Globally trauma has become a pandemic. A diversity of weaponry is used to inflict either unintentional or intentional injuries. Though currently emphasis is directed towards weapons of mass destruction, home-based tools like pangas (machetes) have led to unimaginable morbidity and mortality across the Ugandan frontier in during the horrific genocide in neighboring Rwanda. Pangas (machetes) are multipurpose household tools for agricultural purposes predominantly and are readily acquired unrestrictedly by anybody in SSA. Intentional panga associated injuries are endemic in many African communities in variable magnitude but with peak levels in some sub-regions like the Kigezi region to prompt a public health concern. The aim of the study was to access the epidemiology of intentional panga associated injuries among emergency patients attending Kabale Hospital.

Methods: We conducted a cross-sectional study with mixed methods – both qualitatively and quantitatively. The study was done at Kabale Hospital emergency unit. Data was collected using a questionnaire that was administered upon consent from the injured. Ethical clearance was attained from the medical superintendent’s office. Qualitative data on panga injuries in the entire Kigezi (Kabale) sub-region was sought from key informants and this was supplemented by a phone-in radio talk show on Voice of Kigezi (VoK) FM. All radio callers’ submission were recorded and analyzed thematically.

Results: A total of 788 patients were studied. Out of these, 125 had panga related injuries (15.9%) with the M: F 4:1. The total number of injuries sustained was 251 and distributed as Head (36.3%), limbs (40%) and Torso (20.7%). Fifty percent were mixed (multiple) while the rest were isolated injuries. The majority of injured (66.8%) came from KMC and Ndorwa East constituencies and 84.4% occurred at night. The certainty of the assailant was traceable by 61.5%. Injuries were inflicted by a village mate or relative who happened at most to be a brother. Factors related to injury included domestic violence, robberies, debt settlements land disparities, and social lifestyles - “Smoking” and alcohol of either party.

Qualitatively data analysis associated panga injuries to ease of accessibility and cultural ties to pangas; lack of legislative measures on culturally acceptable weapons, delayed and unfair judicial rules; and drug abuse amidst unemployment among the youth.

Conclusions: Intentional Panga related injuries are highly prevalent among the South Western Ugandan population. Injuries mostly involve the limbs of young men from the administrative Kabale municipality area and often occur at night. Factors associated with the risk for these injuries include domestic violence, land disputes, absence of legislation onto culturally acceptable weapons, drug abuse and delayed or unfair judicial hearing among a population with high unemployment.

OP 100 | COSESCA 2019
The Effect of Burn Mechanism on Pediatric Mortality in Malawi: A Propensity Weighted Analysis
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Background: The burden of global trauma disproportionately affects low- and middle-income countries, with a high incidence in children. Thermal injury represents a severe form of trauma and is associated with remarkable morbidity and mortality. Some predictors of burn mortality are well-described (age, % total body surface area (%TBSA), inhalation injury). However, burn mechanism as a predictor of mortality is not well-delineated.

Methods: A retrospective analysis of the prospectively collected Kamuzu Central Hospital (KCH) Burn Unit Database from May 2011 to August 2019 was performed. Pediatric patients (≤12 years) with flame and scald burns were included. Bivariate analyses by burn mechanism was conducted. Standardized estimates were adjusted using
inverse-probability of treatment weights (IPTW) to account for confounding and inverse-probability of censoring weights to account for censoring. A logistic regression to determine odds of mortality based on burn mechanism was performed.

**Results:** Of the 2364 patients who presented during the study, 1794 (75.9%) were pediatric patients. Of these, 488 (27.2%) were injured via flame and 1280 (71.3%) via scald burns. Males represented 47.2% of flame (n=230) and 59.2% of scald burns (n=755), respectively (p<0.001.) Flame burn patients were older (4.7±3.1 vs 2.7±2.3 years, p<0.001) with greater %TBSA burns (17.8 [IQR 10–28] vs 12 [IQR 7–20], p<0.001). Surgery was performed for 42.2% (n=206) and 19.9% (n=140) of the flame and scald burn cohorts, respectively (p<0.001.) Flame burns had 2.6x greater odds of mortality compared to scald burns (p<0.001) when controlling for sex, %TBSA, age, time to presentation, and operative intervention.

**Conclusion:** Flame burns resulted in a nearly 3-fold increase in odds of mortality compared to scald burns in our pediatric cohort, emphasizing that flame and scald burns may differ in inflammatory response, metabolic dysfunction, and outcomes. Future efforts may utilize these differences to develop mechanism-specific treatments to improve clinical outcomes.

**OP 101| COSESCA 2019**

**When the ideal is a tall order - Task Shifting in Anaesthesia and Surgery**

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Workforce numbers in surgery and anaesthesia are dismal in LMICs with 0.7 specialists (surgeons, anaesthesiologists and obstetricians) for every 100,000 of the population in LICs compared to 5.5 in low MICs, 22.6 in upper MICs and 56.9 in HICs. With over 80% of the world's population living in LMICs, timely and safe surgical care delivery remains a tremendous challenge. As an example, Uganda has 0.18 physician-anaesthesia providers for 100,000 compared to 17.96 in HICs. The most cited associated factors include high cost of training, limited training capacity, poor remuneration, low popularity of disciplines, lack of desire to work in rural areas and emigration.

Among many temporizing strategies put forward to mitigate the magnitude of this burden, task shifting has been key. According to WHO, specific tasks are moved, where appropriate, from highly qualified health workers to health workers with shorter training and fewer qualifications in order to make more efficient use of the available human resources for health. Despite the success of task shifting in many areas, it remains marred with several challenges such as lack of regulation, unclear career pathways, inadequate training and safety concerns.

A case study of task shifting in anaesthesia is the “Every Second Matters” (ESM) Ketamine project that was conducted in Kenya. Non-anaesthesia clinicians were trained for five days to administer ketamine for emergency and life-improving surgeries when no anaesthetist was available. While it was implemented as a solution to a problem, it raises some pertinent questions on task shifting in general. Where should we set the boundaries of task shifting? Does the severe shortage of healthcare providers justify the potential high risk of unsafe anaesthesia and surgery in inadequately trained hands? What is the role of professional associations and health ministries?

**OP 102| COSESCA 2019**

**Breast Reconstruction by LD flap post mastectomy at Mulago Referral Hospital**

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**Background:** Breast cancer is the most commonly occurring cancer in women globally. The treatment may leave the patient with highly visible scars, a missing breast, and deformity or asymmetry of the breasts. This may cause psychological stress as the patient is confronted with the disease on a daily basis, even after being considered cured in a medical sense. There is increasing evidence that patients undergoing breast reconstructive surgery (BRS) attain a more positive body image, have less intrusive thoughts about cancer recurrence and subsequently higher quality of life. The LDF may be used in immediate reconstruction or delayed, breast reconstruction in a combination or alone as an Autologous flap. The objective of the study was to determine the most frequently used breast reconstruction
technique post mastectomy at Mulago National Referral Hospital- Kiruddu Campus during the period of July 2018 to June 2019.

**Methods:** Hospital-based retrospective descriptive studies. Data was collected from patient’s case files, theatre operation registers, medical records, and outpatient books of Mulago National Referral Hospital- Kiruddu Campus and the result of the histology. All patients’ recorded, irrespective of their co-morbidities, performance status, breast cancer stage, histological type, grade and treatment modalities were included.

**Results:** Six patients were enrolled with an average age of 52 years. Most of the patients underwent breast reconstruction surgery employing the latissimus dorsi flap and only one using TRAM. Almost all patients underwent neo adjuvant chemotherapy with the exception of one. Latissimus dorsi pedicle flap was commonly used in Mulago National Referral Hospital- Kiruddu Campus and was associated with minor complications.

**Conclusion:** The LDF is a reliable means for soft tissue coverage providing form and function during breast reconstruction with acceptable perioperative and long-term morbidities. However, there is need for sensitization of patients on breast reconstructive surgery and a prospective study to investigate various outcomes.

**OP 104| COSESCA 2019**

**The prevalence of lower limb deep vein thrombosis and associated factors among breast cancer patients on chemotherapy at Uganda cancer institute**

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**Background:** Cancer and its treatments are well recognized risk factors for venous thromboembolism. The most common malignancies associated with thrombosis are breast, colon and lung cancers as this reflects the prevalence of these malignancies in the general population. Deep vein thrombosis accounts for about two thirds of all venous thrombotic events and can progress to pulmonary embolism in 50% of the cases when left untreated. Pulmonary embolism is very fatal in cancer patients. Breast cancer is among the most prevalent cancer in the world and hence accounts for a significant proportion of VTE events.

**Methods:** This was a descriptive cross-sectional study done at Uganda Cancer Institute, Kampala-Uganda from November 2018 to April 2019. Consecutive sampling method was used, eligible participants were identified, consented, and a clinical assessment done. Doppler ultrasound scanning of the lower limbs was performed to detect evidence of DVT.

**Results:** A total of 98 breast cancer patients were recruited and 96.9% were females. The average age of participants was 48 years. Less than half of the patients had comorbidities with 26.5% hypertensive, while 10.2% diabetic. The prevalence of DVT was found to be 6% with majority in the distal veins of the legs. Lower limb edema, age of more than 60 years, and diabetes were found to be significant factors at bivariate analysis. At multivariate analysis, the odds of occurrence of DVT in those with lower limb edema was 20 times as high than in those without lower limb edema [(p<0.001), 95% CI 2.17,186.62].

**Conclusion:** Deep vein thrombosis was found to be a major concern among breast cancer patients on chemotherapy and it was strongly associated with lower limb edema, thus clinicians should consider anticoagulation therapy in all breast cancer patients with lower limb edema or perform routine Doppler ultrasound scan in breast cancer patients on chemotherapy.

**OP 103| COSESCA 2019**

**Lymphoedema Management**

Jennifer Blenkinsop