REPORT on the first

International Cambridge Anastomosis Workshop

and the preceding

TRAIN THE TRAINERS COURSE

Sunday 6th to Wednesday 9th September 2015

held at

University of Zimbabwe, College of Health Sciences, Department of Surgery
at Parirenyatwa General Hospital

In collaboration with the WHO GIEESC programme

Course Conveners

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Project Director for the HPS Grant
President of the International Federation of Surgical Colleges
Honorary Surgical Advisor to the Tropical Health & Education Trust
Programme Director for International Development & Past President  ASGBI

Generously sponsored by
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Introduction

This report is the first of six International Anastomosis Workshops to be undertaken by the Association of Surgeons of Great Britain and Ireland (ASGBI) in partnership with the College of Surgeons of East Central and Southern Africa (COSECSA) following a successful application for a two year Health Partnership Scheme (HPS) Grant from the Tropical Health and Education Trust (THET), funded by the Department for International Development (DFID) UK in February 2015. The goal is to increase the number of surgeons competent to undertake anastomotic surgery in order to achieve better outcomes across the East Central and Southern Africa (ECSA) Region.

Justification

In sub-Saharan Africa (s-SA) 3% of the world's healthcare workers battle to combat 24% of the global burden of disease. All countries in the ECSA Region have a critical shortage of healthcare workers. There is currently only one surgeon per 200,000 population; but only 1 surgeon per 2.5 million population in rural areas which is far below WHO recommendations. Patients are suffering and dying unnecessarily simply due to a lack of adequately trained surgical providers.

Unfortunately the current standard of emergency intra-abdominal surgery in many hospitals across the Region is poor and often with high mortality and high post-operative complication rates which are essentially due to inadequate surgical training, poor (if any) supervision, deficient resources and poor infrastructure.

The previous Large Paired Institutional Partnership Grant, which supported, amongst other things 6 Management of Surgical Emergencies Courses, trained 111 trainers, 146 trainees and 382 theatre nurses over a two and a half year period; all of whom were recommended to COSECSA for Accreditation in their respective fields. The feedback and evaluation was very positive. However, a number of trainees suggested that they would have appreciated more time being allocated to intra-abdominal anastomoses in order to enhance their techniques.

The majority of acute intra-abdominal emergencies are due to sepsis, perforation, obstruction or trauma and often require an anastomosis involving blood vessels, intestine or the urinary tract, as indeed do elective procedures relating to intra-abdominal cancer and in particular colorectal
cancer. Sound anastomotic techniques are thus an important lifesaving aspect of intra-abdominal surgery and require specific training to ensure satisfactory outcomes.

There is therefore a distinct need to develop a Workshop specifically designed to address this issue, especially as there are none currently available in the COSECSA Region.

ASGBI has a long history of introducing surgical training courses and workshops to both East and West Africa. So far 72 have been undertaken successfully and these include courses relating to Basic Surgical Skills, the Management of Surgical Emergencies, Colorectal Surgery, “Train the Trainers” and Theatre Nurse Training.

All have evolved over the years such that assessment, monitoring and evaluation are now very much to the fore and this to ensure that they are fit for purpose i.e. that the Courses impact upon the trainees such that their standard of surgery and level of care have been enhanced. We have learned from trainee feedback and evaluation during the current grants and the Courses have evolved accordingly. Success has been due to a highly committed Faculty of UK and local trainers.

A separate Anastomosis Workshop will be a useful and welcome addition to COSECSA’s academic programme. In fact all countries of the ECSA-Health Community (HC) subscribe to a common policy of increasing surgical capacity and safe surgery.

It so happens that a colleague, Mr Clive Quick, from Addenbrookes Hospital, Cambridge acquired the idea of developing an Anastomosis Workshop from Professor Harold Ellis in 1982. He was immediately aware that such a course would be invaluable to all surgical trainees. Even in those days, trainees were lucky if they were actually taught anastomotic techniques. So an opportunity to learn and make harmless mistakes in a lab seemed a good idea. He, and his partner at Addenbrookes, Mr Bill Everett, planned more or less the Workshop that is being undertaken today. They first ran a pilot at Addenbrookes for 10 participants using fresh animal material. It was such a success that they have run it every year since 1983. It soon became clear that the trainees wanted to do practical work under supervision.

As regards success, the rapid rate of improvement in technique and in confidence shown by each participant is very evident during each Workshop and satisfactory feedback has been obtained. In 33 years over 600 trainees have successfully completed the Cambridge Course.
Three years ago a DVD of the Workshop was made and this is very useful to show the exercises taught.

**Project Description**

This project will introduce a newly adapted Workshop which covers intra-abdominal anastomoses involving blood vessels, intestines and the urinary tract. It will be based on the Cambridge Anastomosis Workshop (vs). However, it will be held for three and not five days and will **only** include anastomoses that are relevant to the African setting, especially at District Hospital level. All procedures will be “open” i.e. not laparoscopic. A Train the Trainers (TTT) Course will be held the day before and this to achieve sustainability of the Workshop.

A Theatre Nurse Training Course focussing on intra-abdominal anastomoses, as well as general theatre and recovery procedures, will be undertaken in parallel to the above in order to obtain competent assistance at Surgery which, it is hoped, will result in more satisfactory outcomes.

The aim is to hold 6 Workshops over a two year period from April 2015 at sites across the Region to be agreed with COSECSA. It is hoped to train 36 local trainers (across the 6 centres) who will be capable of undertaking similar workshops in the future, 72 trainees who will have their knowledge and experience of anastomotic techniques enhanced such that they will be able to undertake this aspect of surgery more competently and 72 theatre nurses who will be more confident and capable of assisting such procedures.

It is intended that the visiting Faculty will include four surgeons and one theatre nurse. For the first Course, in Harare, Mr Grant Spencer, Partner, Medical Meat Supplies and a very experienced technician, would also attend to give advice concerning the acquisition of the animal material at the local slaughterhouse. The majority of the equipment required for the Workshop has been purchased through the HPS Grant. There are some disposable items which will be bought locally. It is planned that each Workshop will have at least 6 trainers but no more than 12 trainees who will work in pairs with a theatre nurse assistant.
The visiting Faculty met, either in person or by teleconference, on a number of occasions to plan the Workshop and in particular which anastomoses should be included and over what time span.

Fliers were designed for the Train the Trainers Course (TTT) and the Anastomosis Workshop and despatched to Dr. Matthew Wazara, local lead, for onward transmission to prospective trainers and trainees who might be accepted onto the Workshop. The relevant registration, attendance, previous experience, assessment, feedback and evaluation forms were designed for use during the Workshop.
The TTT programme was similar in format to that of the BSS Course except that presentations would be interspersed with either Role Play and Critiquing or showing anastomotic techniques on the DVD. Having theatre nurses assisting the trainees during the anastomosis exercises should hopefully result in better relations in Theatre between Surgeons and Scrub Nurses.

It was agreed that for the first Workshop, at least, one of Mr Grant Spencer’s (Med Meat) colleagues would accompany us to Harare to demonstrate the pig dissection and teach local technicians. In the end, due to unforeseen circumstances, Grant attended himself.

It was agreed that the pelvic simulator, designed by Clive Quick, was fit for purpose as was the solder material for the ureteric stents.

It was agreed that the six countries that we should visit over the two year period of the HPS Grant would be Zimbabwe, Tanzania, Malawi, Ethiopia, Rwanda and Uganda.

Ethicon, part of the Johnson & Johnson family of companies, awarded an educational grant for the sutures and stapling devices for which we were very grateful. When the first tranche of grant money arrived from THET, 60 DVD sets with accompanying manuals were purchased at a very reasonable price from Cambridge University Press and these being for the trainers.

The programme for the one day TTT Course and the three day Anastomosis Workshop was finalised as was the kit required to undertake the Workshop.

**Itinerary and Accommodation**

The Faculty flew from London Heathrow to Johannesburg and onwards to Harare with SAA. There were some concerns with regard to the Airline and we shall take this into account for future Workshops. Flight comfort, while adhering to budgetry constraints, is important when the Faculty arrive at a Workshop venue and go straight into a rigorous training schedule.

We stayed at the Bronte Hotel which was recommended and within budget. Some of the Faculty had stayed there before on a previous visit to Harare. The rooms were extremely good as was the local restaurant. The hotel is approximately a mile or so from the Parirenyatwa General Hospital. Transport was arranged each day to take us back and forth. This fitted with the Convener’s duty of care to the Faculty to ensure reasonable accommodation as Workshop visits are certainly not a holiday!
Acknowledgements

I should like to thank the UK Department for International Development (DFID) and the Tropical Health and Education Trust (THET) for awarding the Association of Surgeons of Great Britain and Ireland and the College of Surgeons of East, Central and Southern Africa (COSECSA) an HPS Grant to undertake a total of 18 surgical training workshops across the Region. These comprise 6 Train the Trainer Courses, 6 Theatre Nurse Training Courses and 6 International Anastomosis Workshops. I should also like to thank Johnson & Johnson Professional Export for awarding an Educational Grant to provide sutures and stapling devices for the Anastomosis Workshop; Limbs & Things for contributing in a number of ways to the success of the project, to Tim Beacon and his team at Medical Aid Overseas Ltd for sourcing the instruments for the Workshop, and Cambridge University Press for providing the DVD’s and accompanying manuals at a very reasonable price. Also Mr Grant Spencer, Partner, Medical Meat Supplies for his advice and support regarding the abattoir material required to run the Workshop.

A special thank you to Dr. Matthew Wazara who was Local Lead Surgeon at the Parirenyatwa General Hospital, Mrs Neriser Sibanda, Manager, Lucid Events for all her considerable hard work in making sure that all local facilities were on hand and in the right place at the right time and Mr Joel Mugota, Senior Technician from the Zimbabwe University Surgical Department for his helpful assistance. I should also like to thank Jane Gilbert, Project Manager and Mr Ashkan Sepehr, Finance Manager for the Grant for their assistance, patience and fantastic support.

Finally I owe immense gratitude to the Faculty who worked extremely hard in preparing for and running the Workshop and demonstrated enormous commitment to the principles of Surgical Training in Africa by showing exemplary teamwork, stamina and comradeship. One member, Paul Gartell, who was unable to attend on this occasion, has nonetheless contributed enormously by producing all the graphics with regard to the assessment process and I thank him very much for all the hard work involved.
Visiting UK Faculty

The Co-Conveners:-
Mr Robert Lane
Mr Clive Quick

Other members of Faculty:
Mr Russell Lock
Sister Judy Mewburn
Mr Grant Spencer

Bob Lane, Russell Lock and Clive Quick with three of the trainees
Train the Trainers Course
Harare, Sunday 6th September 2015

6 Trainers

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<td>General Surgery</td>
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<tr>
<td>Patrick Dhliwayo</td>
<td>Chitungwiza Central Hospital</td>
<td>General Surgery</td>
<td>Consultant/ Clinical Director</td>
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<td>Menard Machokoto</td>
<td>Parirenyatwa General Hospital</td>
<td>General Surgery</td>
<td>Specialist</td>
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<td>Chris Samkange *</td>
<td>Parirenyatwa General Hospital</td>
<td>Urology</td>
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<td>Mordecai Sachikonye</td>
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<td>Taurai Zimunhu</td>
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*Chris Samkange stood in for the Head of Dept. Tonderayi Mangwiro.*
Programme

Welcome & Registration

Background lecture on the *History of the Cambridge Anastomosis Workshop* – Clive Quick

**Introduction** including Leadership & Teamwork – Bob Lane

The Art of Lecturing – Bob Lane

**Refreshment Break**

Assessment process, monitoring and evaluation – Bob Lane

Structure of the Workshop – Clive Quick

Role Play & Critiquing - Faculty

**Lunch**

Group Photograph

Run through relevant sections of the DVDs – Clive Quick

**Refreshment Break**

WHO Safe Surgery Saves Lives Checklist – Bob Lane

**Feedback and Closure**
Welcome and Registration

Six trainers registered; five either from Parirenyatwa General Hospital or Harare Central Hospital and the remaining one from Chitungwiza Central Hospital just south of Harare. Four were general surgeons, one a urologist and the other a paediatric surgeon. They were chosen because of their interest in becoming a trainer for this Workshop and also for their professed commitment in continuing in this role. Their previous training experience was also taken into account. All were welcomed and introductions made.

History of the Cambridge Anastomosis Workshop – Clive Quick

Clive explored the need for such a Workshop and referred to the first such event which took place in Cambridge in 1983. Several sites later and with over 550 trainees having completed the Workshop, it is as popular now as it ever was. Feedback has resulted in a number of
modifications over the years and all to good effect. Much, if not all, of the success of this Workshop is due to Clive and it is a privilege to be partnering him at this Workshop in Harare.

Introduction including Leadership and Teamwork – Bob Lane

The aim of this TTT Course is to introduce the basic concepts of how to run a successful Anastomosis Workshop. Our objective is to do this in a systematic way which is easy to understand and put into practice and will enable the participant to become a competent trainer.

The background as to why such a TTT Course was deemed necessary was discussed and furthermore that it is not intended to be an opportunity to update one’s specialty knowledge but rather to learn specifically how to run the Anastomosis Workshop.

The programme for the day was presented and the all-inclusive contents of the USB Flash Drive, for both the TTT Course and the Anastomosis Workshop, were alluded to.

A brief mention was made of the Health Partnership Scheme and the Grant awarded by the Tropical Health and Education Trust on behalf of the British Government.

The advantage of any Course or Workshop is that a large number of participants can be trained at the same time to the same standard despite their previous level of training or experience.

The maximum number of trainees on the Workshop should be no more than 12 and if less should be an even number. They are divided into pairs. They all should have attended a Basic Surgical Skills Course (BSSC) and the ideal time to attend this Anastomosis Workshop is during the 1st year of a Post Graduate Residency Programme or during the 1st or 2nd year of the MCS Programme. The time table allows for three days of activity.

A successful team requires effective leadership. Various aspects were discussed as to what makes a convincing team. The duties of Faculty were emphasized and in particular attending on time and for all three days of the Workshop, timekeeping during the Workshop, assisting and running the exercises and undertaking the assessment process (v.i).
The Art of Lecturing – Bob Lane

This lecture was born out of many years of experience of listening to some terrible lectures and presentations; many at prestigious international meetings!

This presentation covered the basic principles and the many facets of becoming a successful lecturer / presenter and in particular how to overcome unforeseen events. The advice is pertinent to a small group discussion just as much as to a large international audience.

The Assessment Process – Bob Lane

The principles and the reasons for undertaking assessment were outlined in detail. Outcomes are vital for justifying our Grant and all feasible means are used to achieve this.

Thus all trainees undergo assessment throughout the Workshop which includes pre and post Workshop MCQs and Confidence levels, Formative Assessment for non-technical skills, such as communication, decision making, team work and enthusiasm, as well as technical skills. Subjective feedback and evaluation is undertaken by the trainees at the end of each day.

These are important aspects for without thorough feedback and evaluation we shall never know whether this international version of the Cambridge Workshop is fit for purpose.

The aim is for the 6 trainers to be divided into 2 groups to assess the trainee’s performance as described above. This is vital to identify the struggling trainee who requires mentoring and this occasionally has to be undertaken during refreshment breaks.

Assessment scores, based on Global Rating Scales, are discussed each evening in the debriefing sessions.

Structure of the Workshop – Clive Quick

The background to the development of the Workshop was eloquently expounded by Clive who also explained the objectives from both the trainers and trainees perspective. He then described the content and principles underlying anastomotic techniques before outlining the particular anastomoses undertaken during the Workshop.
As there were only six trainers they remained as such for the exercises. From previous Courses we have found that group dynamics with a slightly larger number actually work better.

1. Russell undertook the first session with **knot tying** as an example of how the problem of a “difficult trainee” is dealt with. Possible causes were discussed and the group, in turn, went through the procedures for managing such a situation.

   The concepts of individual and then group praise and criticism were introduced and applied. Amidst some jollity the points were well made and accepted.

   This was a positive outcome.

2. Clive undertook the second session. He demonstrated an alternative technique of using a surgical needle holder which involves holding it in the palm of the hand rather than placing finger and thumb through the rings. The main difficulty lies in stabilising the needle holder whilst releasing the ratchet to grasp and let go of the needle.

   The standard TTT techniques were employed – demonstrating silently, talking through whilst performing the technique, getting the trainer to comment whilst the demonstrator performs and finally getting the trainer to perform whilst commenting.

   This difficult technique proved a worthwhile model of training in this Workshop.

   The key points were easy to demonstrate and describe and when followed accurately, could (eventually) be reproduced by all trainers. It is recommended that this scenario be repeated in future Courses.

   These are but two examples of Role Play during which the other trainers critique performance. This activity is very important and brings out a lot of non-technical skills such as decision making, judgement and communication.
Lunch

Run through of the relevant sections of the DVDs. – Clive Quick

It must be pointed out that there are four DVDs covering the whole course together with some additional procedures not taught on the Workshop and each trainer is given a set together with a manual. Clive highlighted the important aspects and demonstrated certain tricks of the trade which he has picked up over many years of demonstrating intra-abdominal anastomoses. The trainers were allowed plenty of time to ask questions and this session was well received.

WHO Safe Surgery Saves Lives Checklist – Bob Lane

This engendered a lot of discussion, as is often the case, but in the end there was general acceptance that the arguments for such a Checklist do make sense and have a place in the operating theatre.

Thereafter the Convener summarised the day and finished with the trainers completing the feedback and evaluation forms.
The trainers rated the TTT Course from 0 – 10 where 0 = useless and 10 = excellent and scored an average score of 8.7 with a median and mode of 8.

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It was very gratifying that 100% of the trainers were either satisfied or very satisfied with the TTT Course.
Feedback from trainers in response to the day’s activities

What went well?

“DVDs are excellent. Very informative and imparts knowledge to others”

“All very good except unfamiliar topic on Safe Surgery Lecture” (WHO)

“The process was interactive with flexibility in presentation allowing issues to be addressed as we proceeded”

“Particularly enjoyed the presentation on the Art of Lecturing”

“Role Playing, demonstrations and lectures”

What could we have done better?

“Hands on session of some anastomoses for trainers before supervising the trainees especially for proceeding outside our normal routine operations”

“Shorten the time for lectures”

“Number of Faculty could have been increased”

“More time on the DVD”

“Sunday is not a convenient day for most of us in Zimbabwe. Sunday is the only family day”

Other comments

“The presenters gave their all. Their passion was obvious and motivating”

“Very useful and committed Faculty”

“Very good sessions”

“Thank you for choosing Zim for the inaugural Workshop”
Train the Trainers Course Evaluation by Faculty

What went well?

- Venue was satisfactory and facilities excellent.
- The features shown on the DVDs were kept to an acceptable limit to allow for as much interaction as possible. All were well received.
- The Breakout Sessions on the difficult trainee and teaching a new skill were very popular and allow for non-technical skills such as communication, decision making, leadership to come to the fore.
- The concept of the WHO Safe Surgery Saves Lives Checklist was new to the trainers and this generated initial reservations but after discussion all saw the sense of having such a Checklist.
- Nerisa Sibanda, specialist medical event organiser, made sure that the refreshments and general kit were available on time and Joel Mugota (Senior Technician, Dept. of Surgery) and his colleague ensured the AV ran efficiently.

What could we have done better?

- It would not be practicable to embark on an actual anastomosis during the TTT Course but they were demonstrated on the DVDs during the afternoon. Furthermore, each trainer was given a set of DVDs together with the manual so they would have access to that on the evening of the TTT. Also all anastomoses are demonstrated prior to each exercise during the workshop.
- Presentations should be kept shorter which will allow more time for discussion.
- A request from the trainers for more visiting faculty is not possible simply for budgetary reasons.
- Possibly emphasize more the role of the trainer and in particular with regard to time keeping.
Recommendations for the future

- Advertise earlier and in particular on the COSECSA website.
- Maybe design a poster similar to that for previous Courses.
- Keep in touch with trainers *after* the Workshop to see if further help or advice is required.
- Reinforce the fact that the TTT is **not** an opportunity for trainers to increase their knowledge but to learn how to train others.
MEDICAL MEAT SUPPLIES

ASGBI. Animal Tissue for Surgical Skills development in Africa

Report of visit.

Remit
To provide assistance to the ASGBI faculty in sourcing, preparing and presenting Animal tissue models for courses in Zimbabwe. To explore the potential of a local “African Continent” supplier to further courses in the region. To assist in securing supply for future courses.

Findings
Arrangements had been put in place prior to my arrival for a visit to the Commercial Abattoir premises of Colcom Ltd in Harare. Accompanied by the Technician from the Zimbabwe University Surgical Department Mr Joel Mugota and Mr Russell Lock (UK Faculty).

The premises are large and of an equivalent standard to large Pig processing facilities in the UK and EEC. Welfare and processing standards appear to be of a high standard.

The company was happy to assist in providing material for the local University Hospital. I believe there are also other sites which have been used by the department as well.

The general concept of supplying animal by products (offal) for surgical training was new to the operators of the plant. General convention is that a whole animal is supplied.

This is wasteful and expensive for the items required on this course.

There are some courses however that require carcass tissue but generally it was accepted that offal alone can be supplied in future. This will greatly reduce costs for future events at this venue.
Evisceration of the animals requires a skill set that currently does not exist at the Abattoir or the University. I believe that given some support Mr Mugota will be able to develop in this role. I have offered my support in mentoring him in this.

I believe that the Abattoir operators will not be willing to invest in the training and development to provide the specialised samples in the short term as it will probably not be commercially viable for them.

Preparation of the samples at the venue was acceptable however a small investment in some plastic containers that can be sealed would greatly assist the technician. This will enable the samples to be treated with saline solution to clean and help preserve the tissue. This greatly assists odour control and bench time in especially warm environments.

Conclusions

Suppliers willing to help supply the Animal materials in Harare are in place.

Mr Mugota is welcome by the suppliers to have access to the plants to develop his skill set.

I will offer ongoing mentorship to Mr Mugota.

I will produce an evisceration guide, in due course, to act as a reference guide. This can then be used as a template to educate and establish a supplier chain in each country.

Maybe a technician with developed skill sets can source the material in each venue locality.

Dialogue should be entered into with new venue Countries to ascertain the possibility of import of specialist prepared Animal Tissue for the courses, especially in the short term.

I do not believe my attendance in each new Country will be cost effective or on balance be productive for on-going supply.

Grant Spencer
Partner
Medical Meat Supplies
Grant Spencer (right) with his team!

Procuring the animal material
International Cambridge Anastomosis Workshop
Monday 7th – Wednesday 9th September 2015 - 12 Trainees

<table>
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<td>Shelton Chivanga</td>
<td>Gen Surgery</td>
<td>Parirenyatwa</td>
<td>Registrar – 3 years in post</td>
</tr>
<tr>
<td>Zuva Faranisi</td>
<td>Urology</td>
<td>Harare Central</td>
<td>Registrar – 4 years in post</td>
</tr>
<tr>
<td>Farai Mahomva</td>
<td>Gen Surgery</td>
<td>Harare Central</td>
<td>Junior Registrar - 1 year in post</td>
</tr>
<tr>
<td>Tinashe Mando</td>
<td>Gen Surgery</td>
<td>United Bulawayo</td>
<td>Registrar – 2 years in post</td>
</tr>
<tr>
<td>Robert Mangwiro</td>
<td>Orthopaedics</td>
<td>Harare Central</td>
<td>SHO – 2 years in post</td>
</tr>
<tr>
<td>Edmore Maraidza</td>
<td>Gen Surgery</td>
<td>Harare Central</td>
<td>Registrar – 2 years in post</td>
</tr>
<tr>
<td>Dennis Mazingi</td>
<td>Gen Surgery (Paed)</td>
<td>Parirenyatwa</td>
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<tr>
<td>Mbusi Mlalazi</td>
<td>Gen Surgery</td>
<td>Harare Central</td>
<td>Registrar – 1 year in post</td>
</tr>
<tr>
<td>Emmanuel Mucheni</td>
<td>Gen Surgery</td>
<td>Mpilo Hospital</td>
<td>Junior Registrar (HMO) -2 yrs in post</td>
</tr>
<tr>
<td>Kudzayi Munanzvi</td>
<td>Paediatric Surgery</td>
<td>Harare Central</td>
<td>SHO – 5 years in post</td>
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<tr>
<td>Allan Ngulube</td>
<td>Gen Surgery</td>
<td>Parirenyatwa</td>
<td>Registrar – 4 years in post</td>
</tr>
<tr>
<td>Maphios Siamuchembutu</td>
<td>Gen Surgery</td>
<td>Parirenyatwa</td>
<td>Junior Registrar - 8 months in post</td>
</tr>
</tbody>
</table>

The 12 trainees were paired with a colleague of their choice and then colour coded red or yellow. This was evident from their identification badges which they wore at all times. The trainers were also colour coded either red or yellow and mentored their group of 6 accordingly.
**Introduction**

**Workshop objectives**

To learn safe and reliable anastomoses techniques in bowel, vascular and urological surgery in a friendly and supportive environment led by an experienced team from the UK.

**Assessment**

All trainees underwent assessment throughout the Workshop which included pre experience information, pre and post Workshop MCQs and confidence levels, formative assessment for non-technical and technical skills utilising global rating scales and finally summative assessment and feedback.

A Certificate was awarded to those participants who satisfied the trainers with regard to their knowledge and competence. It was therefore essential that each participant was punctual, attended every day of the Workshop and actively participated throughout.
**PRE-Workshop Experience Form**

**International Cambridge Anastomosis Workshop**

We aim to provide maximum benefit from this workshop and should be grateful if you could provide information about how many of these procedures you have performed yourself (with or without senior help) in the last two years.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>None</th>
<th>1 - 5</th>
<th>6 -10</th>
<th>11 - 15</th>
<th>&gt;15</th>
</tr>
</thead>
<tbody>
<tr>
<td>SMALL BOWEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End to end anastomosis</td>
<td>8%</td>
<td>58%</td>
<td></td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>End to side anastomosis</td>
<td>50%</td>
<td>25%</td>
<td>8%</td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Side to side anastomosis</td>
<td>67%</td>
<td>17%</td>
<td></td>
<td>17%</td>
<td></td>
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<tr>
<td>Hand closure of bowel end</td>
<td>58%</td>
<td>25%</td>
<td>8%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Side to end anastomosis to colon (right Hemicolecetomy)</td>
<td>67%</td>
<td>17%</td>
<td>8%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>End to end right Hemicolecetomy</td>
<td>58%</td>
<td>25%</td>
<td>8%</td>
<td>8%</td>
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<td>STOMACH</td>
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<tr>
<td>Pyloroplasty</td>
<td>83%</td>
<td>8%</td>
<td>8%</td>
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<tr>
<td>Gastroenterostomy</td>
<td>67%</td>
<td>17%</td>
<td>8%</td>
<td>8%</td>
<td></td>
</tr>
<tr>
<td>Polya type gastrectomy</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Procedure</td>
<td>None</td>
<td>1 - 5</td>
<td>6 -10</td>
<td>11 - 15</td>
<td>&gt;15</td>
</tr>
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</tr>
<tr>
<td>With a valve</td>
<td>100%</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Without a valve</td>
<td>100%</td>
<td></td>
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<tr>
<td><strong>LARGE BOWEL</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colorectal anastomosis</td>
<td>58%</td>
<td>33%</td>
<td>8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>ARTERIAL</strong></td>
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<td></td>
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<tr>
<td>Closure of arteriotomy</td>
<td>83%</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patch Graft</td>
<td>92%</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End to end grafting</td>
<td>92%</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>UROLOGICAL ANASTOMOSES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>End to end ureteric anastomosis</td>
<td>75%</td>
<td>25%</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Reimplantation of ureter</td>
<td>92%</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladder hitch procedures for shortened ureter</td>
<td>92%</td>
<td>8%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bladder closure</td>
<td>42%</td>
<td>25%</td>
<td>8%</td>
<td>8%</td>
<td>17%</td>
</tr>
<tr>
<td><strong>Overall %</strong></td>
<td>71%</td>
<td>18%</td>
<td>3%</td>
<td>1%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Sorting out the instruments prior to the Workshop
Workshop Programme from Monday 7\textsuperscript{th} to 9\textsuperscript{th} September

The Workshop ran from 8-5.30 each day with breaks at convenient times for refreshments.

\textbf{Monday}

\textbf{Morning} \hspace{2cm} \textbf{INTRODUCTION}

\textbf{Basic Principles}

- Knotting
- Using a needle holder
Suturing

**SMALL BOWEL**

End-to-end anastomosis

- With rotation
- Without rotation

Side-to-side anastomosis

**LUNCH BREAK**

**Afternoon**  
**SMALL BOWEL TO COLON** (R hemicolectomy)

Hand closure of bowel end

Side-to-end SB to colon (use proximal sb)

**OESOPHAGUS**

Gastro-oesophageal anastomosis demonstration on DVD

**Tuesday**

**Morning**  
**STOMACH**

Pyloroplasty

Gastroenterostomy

Polya-type gastrectomy

**LUNCH BREAK**
Afternoon  

COLORECTAL

Anatomical approaches to colonic surgery
Colorectal anastomosis using pelvic simulator (hand sewn).

STAPLING DEMONSTRATION

Principles
Low rectal

Wednesday

Morning  

ARTERIAL

Principles of arterial technique
Closure of arteriotomy
Patch graft
End-to-end grafting using artery / prosthesis

LUNCH BREAK

Afternoon  

UROLOGICAL ANASTOMOSES

Principles
End-to-end ureteric anastomosis
Reimplantation of ureter
Procedures for shortened ureter – bladder hitch
Bladder closure

Feedback, Evaluation and Certificate Presentation
Workshop Report

Monday 7th September

The tables and chairs were aligned so that two surgical trainees could be one side and a theatre scrub nurse the other. There was also space for additional chairs along the back of the room. Joel and his team were very attentive to our needs. They manned the AV equipment throughout. The tables were placed so that as much light was available as possible. The disposable items had been purchased by Neriser and were waiting for us on the first morning. There was plenty of plastic sheeting to cover the tables and rubbish bags and sharps bins.

The first exercises were revising basic principles included knotting, using a needle holder and suturing. These exercises are as in the Basic Surgical Skills Course and yet some trainees still had problems in tying a reef knot, especially by hand. The tying jigs were brought out from the UK as was all the suture material. The experience of the trainees was quite variable; there were some in their 4th year residency and others who were SHO's. The skin suturing exercise went well. The skin pads were also bought out from the UK and will remain in the Department when we leave. All participants were assessed during this fundamental part of the Workshop and the trainers were happy that their knot tying was satisfactory.

Whilst the knot tying and suturing was taking place, Grant, with able assistants Russell and Joel, went to the slaughterhouse to source, prepare and present the animal tissue models for the Workshop. There is a full report on their experiences on page 18-19.

After the tea break small bowel anastomoses were demonstrated on the DVD and then were undertaken by each trainee working in pairs with the theatre nurse assisting. This worked extremely well. The exercise began with an end-to-end anastomosis with rotation and then without rotation. Finally a side-to-side anastomosis was undertaken and all anastomoses were checked, often on both the inside and the outside. On occasions they were also tested by clamping either side and injecting water to apply gentle pressure. On the whole these anastomoses were undertaken very well. Ample opportunity was available to ask questions and also for the trainers to make various points regarding technique.
After lunch a **small bowel to right colon anastomosis** was demonstrated on the DVD utilising a side-to-end small bowel to colon anastomosis. This technique is useful to learn especially when the diameters of the terminal ileum and large bowel are unequal, as often may be the case.

After the tea break a **gastro-oesophageal anastomosis** was demonstrated on the DVD but was not undertaken by the trainees as it was thought that such anastomoses were unlikely to be performed outside Specialist Units.

At the end of the day a brief summary of what had been undertaken was delivered by Clive who reiterated the important points to take home. Each participant has a manual to keep. Feedback forms for the day’s activities were completed and returned to the Convenor.

After the trainees left the trainers sat down with the visiting Faculty and discussed each trainee in turn. One or two of the more inexperienced trainees were initially slow but picked up towards the end. The trainers did not identify any individual who was borderline and that was very satisfactory. However, what was somewhat disappointing was that there were only 3 trainers in the morning and two in the afternoon and this for seemingly good reasons and beyond our control. Fortunately, the three that we had were excellent and really entered into the spirit of the Workshop.

It was particularly pleasing that the nurses and trainees responded very well to each other’s role. Six nurses were with us today whilst the other six were with Judy undergoing other aspects of theatre nursing. The groups will swap over tomorrow and then both will be accommodated on the third and final day of the Workshop.

It was pointed out to the trainers, and this for future reference, that ideally the trainees should not be on call the night before or during the Course. The reason is simple and that is that if they are up all night they cannot get the most out of the Workshop the following day. The trainers agreed that this was reasonable in principle but there may well be situations where all the trainees cannot be off duty for 3 nights. However, they took the point on board.

It was emphasized, again, that the trainers must make a commitment to not only attend the TTT day but also all three days of the Workshop. This occasion is a pilot and so we are all learning. Commitment and team work by trainers is essential for the sustainability of the Workshop.

One or two lights in the Workshop room went out during the day and Joel was going to see if something could be done about this for the next two days.
It was agreed by the visiting Faculty that we ought to provide a flow chart and this will be provided in future.

The instrument list will be reviewed because we probably do not need as many instruments as I had originally anticipated. The same could also be said for the number of sutures we brought with us. These are important points because in future the Workshop will be self-sufficient with kit already here in Harare.

*Demonstrating the rationale of extra mucosal suturing*
Overseeing a small bowel anastomosis

**Tuesday 8th September**

The trainees turned up on time which was very impressive. The trainers together with the visiting Faculty laid out all the kit on each table for the day.

We began with pyloroplasty which was shown on the DVD and then undertaken in pairs with a scrub nurse, then gastroenterostomy and finally a polya-type gastrectomy. The DVD is really excellent in that multiple views are obtained and Clive is a past master at describing the techniques and also explaining why he adopts one technique as opposed to another. There is often discussion about the suture material and types of suturing especially for non-rotation techniques.
The above went on all morning and this allowed for all trainees to participate. Some were quicker than others but nonetheless they can just repeat the anastomosis or at least part of it. Many questions were asked and many questions answered and by lunch time we in the visiting Faculty were very impressed with progress. The trainers, who this morning were Matthew, Taurai, Mordecai and Menard were very pleased also, especially with regard to those who were somewhat slow yesterday. Confidence seemed to be building up amongst the trainees.

After lunch we approached colorectal anastomoses. This involved a talk on the anatomy and in particular the vasculature of the large bowel and, in diagrammatic form, the various operations that are performed on the large bowel. Thereafter a colorectal anastomosis was demonstrated on the DVD and then undertaken using the pelvic simulator; designed and commissioned by Clive. Essentially, it is a “flower pot” arrangement with a hole in the bottom through which the rectum is passed. The perineum and perianal fat with overlying skin are wedged up against the entry into the “pelvis”; this to make the whole procedure look more lifelike. A colorectal anastomosis was then undertaken. Emphasis was again made on the diameters of the bowel to be anastomosed, the distance apart that the sutures should be inserted and the suture material. Again the anastomoses were checked by cross clamping above and below the anastomosis and then injecting water to expand the anastomosis to look for leaks. There were surprisingly few.

After tea Russell and Bob, a double act that has been working together for some 17 years in Africa, undertook a colorectal anastomosis using a stapling instrument. The reason that we do not include this technique for every trainee is simply because of the cost of the staplers and also the weight of having to carry them out from the UK. The technique was explained in detail, step by step. In the UK stapling is particularly useful for low colorectal anastomoses simply because they are easier to undertake than a hand sutured one. However, it was acknowledged that in Zimbabwe not many very low colorectal anastomoses would be undertaken outside Specialist Centres. There is no real advantage, apart from speed, of undertaking this technique higher in the bowel. There are one or two exceptions such as a very sick patient in whom an anastomosis has to be performed quickly or where a number of anastomoses have to be undertaken during the same operation. It was explained that a stapling technique is merely a means of joining two ends of bowel together. It does not infer that the leak rate is necessarily less nor the local recurrence rate if one is operating for cancer. All sorts of benefits have been proposed for using a stapling technique in the abdomen but, except in certain circumstances mentioned above, none of them really hold water!
At the end of the day, the trainees were really ensconced in the Workshop and seemed to be enjoying the experience.

The three trainers this afternoon were Taurai, Mordecai and Menard with Matthew taking on the role of Local Lead. All performed their duties extremely well. All exercises were marked and essentially there were no trainees who were borderline. The theatre nurses again seemed to be enjoying themselves enormously and one wonders why this sort of experience has not been undertaken before. The trainees completed their feedback forms for the day.

*Polya Gastrectomy being undertaken*
Completed colorectal anastomosis utilising the pelvic simulator
**Wednesday 9th September**

The third and final day of the Workshop began on time with exercises relating to arteriovenous system in the abdomen.

The principles of arterial technique were explained and shown on the DVD by Clive who is, amongst other things, a very experienced arterial surgeon. The differences between an arterial suturing technique and an intestinal one were emphasized. Also the fundamental characteristic of blood flow through a vessel was stressed in respect to suturing techniques. Closure of an arteriotomy was shown on the DVD and then undertaken. The placement of each stitch was examined very carefully by the trainers and Faculty. The distance between each suture was emphasized and also that a suture should be at right angles to the wound margin and the same distance away on either side. The arteries provided by Grant were ideal which made the exercises much easier. If the aorta is particularly thick walled then it is difficult to get the sutures placed accurately. Thereafter a patch graft was demonstrated, again on the DVD; and undertaken by all the trainees. In fact closure of arteriotomy and patch graft are part of the BSS Course which every trainee on this Workshop should have undertaken beforehand. Nonetheless, and because they do not undertake much in the way of arterial work, repeating the exercises was worthwhile.

After the tea break we undertook end-to-end grafting using artery and / or prostheses. The principles were again emphasized. By now the suturing technique by the trainees was really very good and there were only one or two who had to be made to re-do their anastomosis.

As with all these exercises we ask the trainees to excise the anastomosis and turn it inside out so one can view the inner aspect. This is especially important for learning arterial techniques.

After lunch we moved on to the urological anastomoses. These exercises were led by Clive and Russell; the latter with a long experience of urology having been trained, as all Faculty were, in the days when, in the UK, General Surgeons were General Surgeons! The principles of urological anastomoses were discussed and with special regard to the type of suture, stenting and techniques to avoid urinary leak. Bowel, arterial and urological anastomoses have to be undertaken in their own domain; they all involve different approaches.

An end-to-end ureteric anastomosis was demonstrated on the DVD and then undertaken by the trainees. We used solder for stenting which is a very useful and repeatable model. Thereafter,
reimplantation of a ureter into the bladder was demonstrated and the important aspects of the technique emphasized.

After tea break procedures for a shortened ureter were discussed and demonstrated on the DVD and this involved a bladder hitch manoeuvre. Bladder and ureteric trauma is common and these procedures need to be learned at an early stage in the trainee’s career.

Finally, bladder closure was demonstrated by Russell and again the technique was emphasized.

All the urological anastomoses and techniques were performed well.

At the end of this, the final day, the trainees filled out the daily feedback form, the overall Workshop evaluation form, the post Workshop Confidence form and completed post Workshop MCQs. Afterwards the trainers and visiting Faculty discussed each trainee in turn and it was agreed that all had satisfactorily completed the Workshop to a high standard. This was very rewarding for the trainers and the Faculty and bodes well for the future.

Certificates of Satisfactory Completion were handed to the three trainers who had been present during the whole Workshop. I must emphasize that Dr. Matthew Wazara had completed an Anastomosis Workshop in Cambridge in 2014. Unfortunately, he could not be with us on the Sunday or Monday of this Workshop for very valid reasons but he was present on Tuesday and Wednesday when he formed part of the Faculty as well as being a trainer and Local Lead.

All the 12 trainees who had satisfactorily completed the Workshop received a Certificate.

The trainers also completed their evaluation of the Anastomosis Workshop. The Workshop dispersed at 5.30pm having thanked Joel and his team for their great support especially with regard to the AV and also to Neriser Sibanda and her team for organising the local disposables and all the refreshments which were very good and furthermore on time. Without Joel and Neriser the Workshop would not have been such a success.
Matthew awarding certificates
Anastomosis Workshop

Neriser and her “team”
Trainers evaluation of the
International Cambridge Anastomosis Workshop

The trainers rated the Workshop from $0 – 10$ where $0 =$ useless and $10 =$ excellent and scored an average and median of $9$.  

All were requested to answer the following questions:

1. In the light of the last 3 days how prepared are you to become a trainer for the International Cambridge Anastomosis Workshop?

   All were very prepared to become a trainer now.

2. Do you have any suggestions to improve your training ability with reference to the International Cambridge Anastomosis Workshop?

   - Would be ideal to train another group within six months.
   - Provide training manuals to trainees a day or so before the Workshop.

3. Please give your suggestions to improve the content or delivery of the International Cambridge Anastomosis Workshop material.

   - Possibly include repair of tendons.
   - Diagrams in the manual are simple and straightforward to follow but possibly add colour to some of them would be an advantage.
   - In future include oesophageal anastomosis.

4. Please comment on any OTHER aspect of the Workshop.

   - Everyone agreed that the trainers and trainees clearly learned a lot and this whilst enjoying the Workshop at the same time.
   - Fantastic Workshop which I believe makes surgery safer.
   - This Course was very satisfactory.
**Trainees overall evaluation of the**

**International Cambridge Anastomosis Workshop**

The Workshop was rated from 0 – 10 and the average, median and mode was 9.

All were requested to answer the following questions:

1. **Have you found the Workshop useful?**
   All 12 trainees found the Workshop useful.

2. **Which part of the Workshop did you find most useful?**
   All anastomoses (5), vascular anastomoses (4), bowel anastomoses and ureteric reimplantation (2 each), all practicals, basic surgical techniques i.e. palming, hitch stitch, Connell suture, outline of basic principles at the beginning of each section (1 each).

3. **Which part of the Workshop did you find least helpful?**
   None (7), the urologic exercises (2), oesophageal anastomosis demonstration, the DVD showing the anatomy of the colon and stapling anastomosis (1 each).

4. **How would you improve the Workshop, i.e. what would you like added to or removed from the Workshop?**
   Suggestions to add were: tendon repair (3), Access to DVD’s prior to Workshop (2 each), more stapling techniques, use of crushing and non-crushing clamps, division of mesentery, more frequent Workshops of shorter duration, clinical scenarios illustrating various indications for where techniques should be used, choledochoenterostomies and more stapling examples (1 each).
5. Any other comments?

- Nil (4)
- Excellent Workshop (3)
- Well-structured Workshop
- All credit to staff
- Videos very well done. Allow trainees to have access to them?
- Hold in venue outside town to avoid many distractions.
- Faculty extremely friendly and helpful
- Off the cuff remarks about their own experiences and practices were very helpful and informative.
- Liked being randomly paired and gained valuable insight accordingly
- Extremely helpful and useful.

Anastomosis Workshop Evaluation by Faculty

What went well?

- The venue was satisfactory although a little cramped at times. This would have been eased if we had taken some of the excess chairs out of the room.

- Time keeping was excellent and all the presentations and exercises went well. The Faculty and the Trainers worked together very harmoniously.

- The DVDs were excellent and saved much time. There is really no alternative when one is taking a “travelling” Workshop to 6 centres throughout the Region. To demonstrate each anastomosis would require an overhead camera or far more space than we had to allow 12 trainees and 6 nurses to adequately view the anastomosis being demonstrated.

- The pre and post Workshop confidence forms were a very useful addition that will add to the Cambridge course back home.
Having nurses as first assistant was a great innovation suggested by Judy. This made the training much more realistic and the nurses enjoyed the experience enormously. This brought out many non-technical skills as well as technical ones.

The animal material was superb and all credit to Grant, Russell and Joel.

Joel and his colleague were excellent in all their support.

The instruments and sutures etc. were plentiful in number.

Having 12 trainees was ideal and all had adequate supervision.

All trainees found the Workshop successful and this is very gratifying.

The assessment process went well and the trainers were very perceptive.

The forms required for feedback, evaluation etc. were suitably designed.

The MCQs were unambiguous and well tackled.

The Graphs and Bar Charts were impressively designed by Paul Gartell and will be used in future.

What could we have done better?

Insist that trainees must have already undertaken a Basic Surgical Skills Course. This would have dealt with the request from several trainees and one trainer that tendon repair should be included.

There were a number of requests suggesting that all trainees should undertake a gastro-oesophageal and a stapling anastomosis. As I have already alluded to in the write up of daily activities during the Workshop, it would not be impossible for each pair to undertake a gastro-oesophageal anastomosis. We shall look into this. However, with regard to each pair undertaking a stapled anastomosis this would be quite costly. The
staplers are not cheap. We had also initially thought that the trainees were highly unlikely to undertake these procedures in their practice; at least outside of a Specialist Centre. However, we shall review our decision for future Workshops.

**Recommendations for the future**

- Advertise the TTT and the Workshop at least two to three months ahead of time.

- Design a poster as suggested for the TTT Course.

- Obtain contact details *early* so we can send trainees relevant information concerning the Workshop ahead of time.

- A suggestion has been made that, if possible, we should add some colour to the diagrams in the manual. This may not be quite as easy as it seems because the manuals have all been printed! However, we shall look at this for the long term future.

- The question of training a local technician to dissect the animal material is a possibility and Joel would be keen to become involved. Grant has agreed to act as mentor and this bodes well for the future. The alternative would be to get the material sent out from Grant in the UK but this will depend upon cost etc.

- It was suggested that a flow chart would be of great assistance and this will be designed for the next Workshop.

- We need to ensure that the trainees understand what they have to do when completing the feedback and evaluation forms. For instance, feedback does *not* just depend upon the practical exercises but also the demonstrations, presentations etc. Furthermore, all questions on the forms must be answered including the comments.
Matthew assessing the evaluation reports

Assessment

It is important for the HPS Grant that we continue to monitor outcomes as accurately as possible. In order to do this we plan to send each trainee a questionnaire six months after the Workshop in order to ascertain how attending the Workshop has impacted upon their surgical practice and in particular with regard to intra-abdominal anastomoses. As this will be a subjective report it is also planned that a separate objective report be obtained from the trainees’ Consultant/Trainer.
The other reason why assessment is so important, especially in the context of running a new Workshop in Africa, is because it is part of a learning process; it ensures a set standard is achieved, it indicates whether any part of the Workshop is deficient or is not required, it motivates trainees and finally measures effectiveness of training which may change slightly from one Workshop to another but the standards of each Workshop should remain the same. This benchmarking is important for obtaining sustainability in the long term.

**MCQs**

Pre and Post MCQs reveal the current level of knowledge prior to the Workshop and that acquired during the Workshop. The MCQs themselves are designed to avoid ambiguity in all aspects and are marked and evaluated by Faculty.

![Graph showing Pre-course and Post-course MCQ scores](image)

It was very rewarding that all **12** trainees improved their knowledge of anastomoses over the period of the Workshop.
The numbers above the bars refer to the number of preferences (215) with regard to all the exercises.

The bars speak for themselves. It really is impressive how the level of confidence improved after the Workshop.

Trainee exercise feedback bar charts

Trainee Feedback - Monday 7th September 2016
Small Bowel - End-to-end Anastomosis

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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Small Bowel - Side-to-side Anastomosis

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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Small Bowel - Hand closure

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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Trainee Feedback, Tuesday 8th September 2015

**Small Bowel - Side-to-end SB to colon**
- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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**Oesophagus - Gastro-oesophageal anastomosis**
- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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**Pyloroplasty**
- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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Trainee Feedback - *Wednesday 9th September 2015*

**Principles of arterial technique**

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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**Closure of arteriotomy**

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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**Arterial end-to-end graft**

- Subject matter covered
- Teaching method / lecture style
- Learning needs met?

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</table>
Principles of Urological anastomosis

End-to-end ureteric anastomosis

Reimplantation of ureter
Feedback provides information as to whether we need to alter the presentation or emphasize a particular subject or exercise. On the whole the results were satisfactory apart from "Principles of Stapling", "Stapled low rectal anastomoses" and "Gastro-oesophageal anastomosis" which were the 3 occasions when the exercises were only demonstrated and not undertaken by the trainees. We shall need to rethink this situation for future workshops.
Trainee Comments

- “Perhaps more specimens for one-on-one hands on”
- “Thumbs up for bringing in the nursing staff”
- “I would have wanted to practice the oesophago-gastric anastomosis in the lab”
- “Specific reference made of the evidence underlying many of the controversial areas would be useful, measuring specific outcomes e.g. anastomotic leak rates”
- “A pre basic anatomy and physiology is important for us to understand why the principles taught are important”
- “Otherwise excellent”.
- “Trainers were excellent – very non intimidating”
- “More time with the basic principles”
- “For the introduction I had also hoped to practice the left hand ties and the two hand ties”
- “Overall the Course is well organised and the learning environment is excellent”
- “Paediatric surgical procedures could be added and useful”
- “I did not quite understand the principles of stapling and what the indications are, also there was a demo as opposed to a practical as in other sessions”.
- “More time to practice for arterial sessions”
- “Good session, learnt beautiful techniques (arterial)”
- “It was excellently done, thanks for this session” (arterial)
- “I loved the session” (Urology)
Theatre Nurse Training Course  
Monday 7th - Wednesday 9th September 2016  
Sister Judy Mewburn

This Course was a first! Although the Cambridge Anastomosis Workshops have been run by Clive Quick for thirty years, nurses have never been included.

The idea was to train the nurses to work as first assistants to the surgeons whilst they were performing bowel, ureteric and arterial anastomoses. There was to be a combination of hands on training by me to include suturing of all types as well as infection control, theatre technique and safety precautions when working in theatres.

We had 12 nurses most of whom were quite senior and some had done some suturing before. 6 were from Harare Central Hospital, 7 from Parirenyatwa General Hospital and 1 from Chitungwiza Central Hospital.

All of the nurses and surgeons seemed to be very friendly together and all worked well as a team. This was a first for Africa and made me very happy to see.

The nurses were given a questionnaire on their skills before we started.

All answered yes to the following questions:-

- Can you prepare a patient for surgery?
- Can you drape a patient?
- Can you assist the surgeon doing?
- 1st Incision, control of haemorrhage?
- Retraction of tissue?
- Removal of artery forceps?
- Following in continuous suturing?
- Appropriate dressings?
- Informed handover?

The only question they answered no to was:- Can you close the wound?.

**Monday 7th September**

We spent the morning doing suturing:
Interrupted
Mattress
Subcuticular continuous
Continuous

All the sutures had been kindly donated by Ethicon and I should like to record my thanks to them. The nurses were really keen to perfect their skills and really applied themselves.

In the afternoon the nurses went into the main lecture room in groups of 6, dividing the afternoon in half so all had an opportunity to watch the videos and act as first assistants to the surgeons.

We covered theatre technique and safety and some infection control with the other 6 and then changed around.

**Tuesday 8th September**

I was unable to attend the Course because of acute food poisoning. The team were wonderful and looked after and taught the nurses, which they loved!

**Wednesday 9th September**

I was able to teach some anastomoses of the intestine and colon using facsimile tissue from Limbs and Things. The nurses again took it in turns to join the surgeons and act as first assistants.

The feedback was universally favourable. All the nurses felt that they had really learned new skills and that they now felt confident to assist the surgeon, to suture, to remove artery forceps and had a greater understanding of anastomotic techniques.
Undertaking suturing exercises

The theatre nurses receiving their certificates
I have left it until last to thank Clive for all the enormous amount of work he has put into the Anastomosis Workshop in the UK and also for his huge contribution to adapting that Course to make it fit for purpose in Africa. His single minded approach has been an example to us all.

Our accommodation at the Bronte Hotel was excellent as were the local travel arrangements and hospitality shown by Matthew and his colleagues.

The venue at the Department of Surgery was very good and it was a great help having Joel and his colleague to support the Course. Neriser and her team were very efficient. All the kit we required locally was present and correct. The refreshments were very good and, furthermore, always on time.

**The Train the Trainers Course** went according to plan and this because it is now well founded and we used the same format as with other Courses/Workshops. The emphasis must be on the trainers to attend for the one day TTT Course and then all the three days of the Anastomosis Workshop. Dipping in and out is not really acceptable. To this end it is important that adequate notification of the event is undertaken and this by posters, fliers, personal communication etc. We shall look into the question of whether we can send the DVDs and manual in plenty of time before the Course / Workshop. The feedback and evaluation by the trainers was very complimentary. The Faculty always enjoy the TTT Course partly because it engenders so much interaction especially with the WHO lecture but also with other important aspects.

**The Anastomosis Workshop.** The trainees were very keen to learn and performed well partly due to the excellent animal material dissected by Grant and his team. The trainees randomly picked their partners and this seemed to go well. I do think that it is important that the trainees are not on call the night before the Workshop or during it. I appreciate that this may not be possible for all the trainees but on the other hand it is foolish to assume that if they have been up all the night before then they are going to be able to give their full attention to the Workshop the following day. One way around this would be to reduce the number of participants from 12 to, say 10 or 8 or any even number. This hopefully would get round this problem. In addition this may also be advisable if there are not enough instruments or sutures for 12 participants. If either of both of these situations occur it might be worth considering having two Workshops a year with 6 participants in each.
Staplers are expensive and not essential to be included in the Workshop although highly desirable. Faculty felt that not many trainees will be undertaking low rectal anastomoses outside of a specialist centre and we have argued that they are not essential for anastomoses above the low rectum. We postulated the same argument that gastro-oesophageal anastomoses were unlikely to be undertaken outside of a specialist centre. Nonetheless, we felt it important to demonstrate these anastomoses so that the trainees were aware of them.

Faculty will look at the question of having one more member on board and this because the Project Director (Bob Lane) has to spend a lot of time on administrative details and this to ensure that all aspects of the Workshop run smoothly and is not always available to assist with demonstrating and undertaking assessment etc.

**Theatre Nurse Training Course.** This was an undoubted success. Having the theatre nurses assisting the trainees worked extremely well. Both the trainees and the nurses respected each other accordingly. It is relevant that since the Course the faculty of education of the East Central and Southern Africa College of Nursing (ECSACON) have examined the materials for the Course offered by the Association of Surgeons of Great Britain and Ireland (ASGBI) and are convinced that the Course adds value to what nurses are doing in supporting quality surgical services in the ECSA Region. This initiative is in line with the mandate of the college, therefore ECSACON is willing to collaborate with ASGBI to jointly train and certify the candidates who have gone through this important Course. This really is very rewarding for Judy has developed and nurtured this Course for a number of years and it is highly regarded.

Grant Spencer was vital in procuring the animal material. He is a professional and without an appropriately trained Faculty these activities could not be undertaken. Hence the reason for looking at other options; one of which is to despatch the animal material from the UK and we are investigating this possibility.

In a sense this Workshop was a pilot for it is the very first one that we have undertaken in sub-Saharan Africa. I believe that all aspects, the Train the Trainers Course, the Anastomosis Workshop and the Theatre Nurse Training Course are all fit for purpose and this achievement is in no small way due to Faculty who worked extremely hard to achieve this outcome.

Finally, I am extremely grateful to Matthew for inviting us to Harare. I know that he will run these Courses on a regular basis. We shall keep in touch with all the trainers and trainees.
Appendix 1

Train the Trainers USB contents

In addition to the TTT Course Lectures, trainers also have access to following items, included on a USB Flash Drive:-

1. Relating to the Train the Trainers Course
   - Flier to advertise the Train the Trainers Course
   - Registration Form
   - Example of attendance form
   - Example of TTT Day specific feedback form
   - Example of overall TTT Workshop evaluation form
   - Example of Trainee Assessment form
   - Example of Certificates to be awarded

2. Relating to the Anastomosis Workshop
   - Flier to advertise the Workshop
   - Registration Form
   - Examples of Pre Workshop Experience form
   - Examples of Pre & Post Workshop Confidence form
   - Example of daily attendance form
   - Example of Workshop specific feedback form
   - Example of overall Workshop evaluation form
   - Example of MCQ’s
Appendix 2

Examples of forms
for
the Train the Trainers Course
and the
Anastomosis Workshop
Train the Trainer

A specific 1 day course
for future trainers undertaking
International Cambridge Anastomosis Workshops
Sunday 6th September 2015

Designed by Clive Quick and Robert Lane
On behalf of the Association of Surgeons of Great Britain and Ireland
and
The College of Surgeons of East, Central and Southern Africa
hosted by
THE SURGICAL SOCIETY OF ZIMBABWE
To be held at University of Zimbabwe, College of Health Sciences
Department of Surgery Laboratory

In addition to the one day course
Participants will be expected to attend the Workshop in its entirety on
Monday 7th, Tuesday 8th and Wednesday 9th September 2015

Course Directors
Clive Quick FRCS MS MA FDS Consultant General & Vascular Surgeon Cambridge UK
Robert Lane MS, FRCS Eng, FRCS Ed (ad.hom), FACS, FWACS (Hon), FCS (ECSA)
Programme Director for International Development & Past President ASGBI
Honorary Surgical Advisor to the Tropical Health & Education Trust
Director for HPS Grant (DFID.UK)

Generously sponsored by
Background

The Cambridge Anastomosis Workshop has been running successfully for over 30 years and has proven to be extremely popular. Four years ago it was decided to make a professional film of the Workshop and this was then formatted onto four DVDs. Each trainer will receive a free set of DVDs, a manual and a USB stick with all the Course lectures included.

Apart from shortening the Workshop by a day or so it also raised the possibility of running workshops outside Cambridge. Prior to filming the DVDs each anastomosis had to be demonstrated and filmed with an overhead camera, then projected on to screens around the laboratory. Whilst this was satisfactory the images were never as distinct as the professional version.

Knowing of the previous partnership to undertake surgical training courses between ASGBI and COSECSA it was agreed to put in an application for a further Health Partnership Scheme Grant from the Department for International Development (UK). A deciding factor was that many trainees on the Management of Surgical Emergency Courses had mentioned in their feedback that they would have liked to have had more exposure to intra-abdominal anastomoses had there been more time. This argument won the day and ASGBI/COSECSA were duly awarded their third HPS Grant to run six International Anastomosis Workshops (IAW) throughout the Region. The new Course is called the International Anastomosis Workshop to differentiate it from its Cambridge Partner. A Theatre Nurse Training Course will also run concurrently and the nurses will assist the surgical trainees in undertaking the anastomoses.

The aim of this TTT Course is to introduce basic concepts on how to run a successful IAW and also to discuss the implementation of the WHO Safe Surgery Saves Lives Checklist. The objective is to do this in a systematic manner which is easy to understand and put into practice and will enable the participant to become a competent trainer.

After Registration at 08.30 on Sunday 6th September there will be a general introduction followed by a number of short lectures covering the Art of Lecturing, the Assessment Process including feedback, monitoring and evaluation. After tea break there will be lecture on the Structure of the Workshop and this followed by exercises on Role Modelling and Critiquing.

After lunch the relevant sections of the DVD will be shown and discussed. After tea break there will be a lecture on the WHO Safe Surgery Saves Live Checklist.

The day will end with summary and feedback.

On Monday 7th, Tuesday 8th and Wednesday 9th September 2015 ALL Trainers will attend the Workshop and participate in the running of the exercises and take part in the assessment process. There will be 12 trainees and thus two trainers will be responsible for assisting and assessing four trainees.

This is an exciting new project which we hope you are going to enjoy enormously.

*** If interested please contact Dr Matthew Wazara (wazaram@yahoo.co.uk) as soon as possible as places are limited.
TRAIN THE TRAINERS COURSE

THE INTERNATIONAL CAMBRIDGE ANASTOMOSIS WORKSHOP

University of Zimbabwe, College of Health Sciences, Department of Surgery Laboratory, Harare

Sunday 6 – Wednesday 9 September 2015 inclusive

**Registration Form**

*Please complete in CAPITAL letters and write your email address carefully*

**NAME (Family name last please)**

Hospital

Specialty

Post Held

Post Grad Year (Years in Residency) if **not** Consultant or equivalent

BSS Course undertaken – please tick as appropriate  

Email

68
Please answer **ALL** questions on both sides **especially** the Course rating at the bottom of Page 2.

Please **tick (✓)** the number that *most* accurately reflects your opinion where
1 = very dissatisfied, 2 = dissatisfied, 3 = neutral, 4 = satisfied, 5 = very satisfied

**How satisfied are you with what you learned on these topics:**

History of the Cambridge Anastomosis Workshop

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The Art of Lecturing

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Assessment Process, Monitoring & Evaluation

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Structure of the Anastomosis Workshop

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Role Play & Critiquing

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Anastomosis Workshop DVD’s - overview

1  2  3  4  5

Safe Surgery Lecture (WHO)

1  2  3  4  5

What was very good?

What could have been better?

Other comments?

Finally.....

Please rate the TTT Course from 0 – 10  (0 = Useless, 10 = Excellent)............
Trainers Evaluation of the

THE INTERNATIONAL CAMBRIDGE ANASTOMOSIS WORKSHOP

Your responses are confidential - your name will not appear in any report or publication.

Name........................................................................................................................................

Please answer ALL questions especially No. 5.

1. In the light of the last 3 days how prepared are you to become a Trainer for the International Cambridge Anastomosis Workshop?

   Please tick appropriate answer:
   a). Very prepared................................................................................................................
   b). Will require exposure for 1 more course.................................................................
   c). Will require exposure for MORE than one course........


2. Do you have any suggestions to improve your training ability with reference to the International Cambridge Anastomosis Workshop?

3. Please give your suggestions to improve the content or delivery of the International Cambridge Anastomosis Workshop material.

4. Please comment on any OTHER aspect of the Workshop.

5. Please rate the Workshop from 0 – 10 (0 = Useless, 10 = Excellent)........
Example to be printed on Certificate paper.

The Association of Surgeons of Great Britain and Ireland

Certificate of Satisfactory Completion

for

The Train the Trainers Course
to run

THE INTERNATIONAL CAMBRIDGE ANASTOMOSIS WORKSHOP

Approved by the College of Surgeons of East, Central and Southern Africa

Held at

University of Zimbabwe, College of Health Sciences, Department of Surgery Laboratory, Harare, Zimbabwe

6th – 9th September 2015

Mr R H S Lane

President

Association of Surgeons of Great Britain and Ireland

Date

Sponsored by

ETHICON

UKAID

THET
International Cambridge Anastomosis Workshop

Sunday 6th (from 2.00pm for Registration)
Workshop runs Monday 7th, Tuesday 8th and Wednesday 9th
September 2015

Designed by Clive Quick and Robert Lane

On behalf of the Association of Surgeons of Great Britain and Ireland

and

The College of Surgeons of East, Central and Southern Africa

hosted by

THE SURGICAL SOCIETY OF ZIMBABWE

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Programme Director for International Development & Past President ASGBI
Honorary Surgical Advisor to the Tropical Health & Education Trust
Director for HPS Grant (DFID.UK):

Generously sponsored by
The International Cambridge Anastomosis Workshop is a practical hands-on 3-day intensive workshop covering a wide range of anastomoses – stomach, oesophagus, small and large bowel, blood vessels and urology. These are the fundamental techniques any surgeon must know. A leaking anastomosis usually kills the patient yet safe anastomoses can be reliably fashioned. In the workshop, you’ll have each technique explained, and then see it as a live demonstration or using the course DVD. Then you will carry out most procedures under close supervision. You can expect to carry out 10 or more anastomoses during the course and will have opportunities to test them and examine them from the inside. Faculty members are surgeons with many years of experience teaching practical surgical techniques.

The course is for Surgeons wishing to learn safe and reliable anastomosis techniques in bowel, vascular and urological surgery. You will feel more confident tackling elective and particularly emergency operations. After the course you will be a better, more critical surgeon than you were at the beginning and you’ll receive a certificate at the end. Gynaecologists have found that we cover the range of bowel, vascular and urological anastomoses they might need in their practice.

The course has run in the UK for 30+ years and has been widely praised by participants, both in immediate feedback and afterwards. It has been continually evaluated and been adapted as shown necessary and we teach only the most reliable techniques. Many people choose to come on the course by personal recommendation. We believe there is no other course like it.

A selection of feedback comments from recent courses in Cambridge, UK:

“Well organised, well supervised by all consultants”
“Invaluable surgical tips and principles”
“Great to work alongside experts”
“Fantastic course – really glad I did this, very helpful”
“The best course I have ever been on”
“A fantastic amount of hands on experience with very clear instructions”
“Well timed, paced and very clear presentations”
“Essential”
“Faculty members were fantastic and the method of teaching with the additional tips excellent”
“Excellent facilitators with so much experience - Mr Clive and his helpers are extremely patient”
“As a junior trainee, I think this set me up for the future”
“It was refreshing to attend a course that focuses so much on practical hands-on work”
“Fantastic course, loved every second of it – please keep it going”
Registration Form

Please complete in CAPITAL letters and write you email address carefully

NAME (Family name last please)..................................................................................................................

Hospital....................................................................................................................................................

Specialty...................................................................................................................................................

Post Held..................................................................................................................................................

Years in Post.............................................................................................................................................

Email........................................................................................................................................................
# Pre & Post Workshop Confidence Form

**International Cambridge Anastomosis Workshop**

**NAME**……………………… **Specialty**……………………… **Grade / Year**………..

*Your responses are confidential - your name will not appear in any report or publication.*

How confident do you feel in undertaking the following procedures?

Please indicate by entering the number (1 - 3) that most represents your level of confidence.

1. **Not confident**
2. **Confident in some cases but would like more supervision**
3. **Fully confident in most cases**

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*Please fill in both sides of this sheet.*

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<td>End to side anastomosis</td>
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<tr>
<td>Side to side anastomosis</td>
<td></td>
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<tr>
<td>Hand closure of bowel end</td>
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<td>Side to end anastomosis to colon (right Hemicolecotmy)</td>
<td><img src="https://via.placeholder.com/150" alt="Image" /></td>
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<td>– Without a valve</td>
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<td><strong>ARTERIAL</strong></td>
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<td>Closure of arteriotomy</td>
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<td>Patch Graft</td>
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<td>End to end grafting</td>
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<tr>
<td><strong>UROLOGICAL ANASTOMOSES</strong></td>
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<tr>
<td>End to end ureteric anastomosis</td>
</tr>
<tr>
<td>Reimplantation of ureter</td>
</tr>
<tr>
<td>Bladder hitch procedures for shortened ureter</td>
</tr>
<tr>
<td>Bladder closure</td>
</tr>
</tbody>
</table>
EXAMPLE of Participants' Feedback Form - MONDAY 7 September 2015

Your responses are confidential - your name will not appear in any report or publication.

Name…………………………………………………….  Grade / Year…………………………………………

Please tick ✓ the number that most accurately reflects your opinion where

1= Poor    2 = Fair    3 = Good    4 = Very Good    5 = Excellent

Introduction to Basic Principles

<table>
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<td>Teaching method or lecture style</td>
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Small Bowel – End-to-end Anastomosis

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Small Bowel – Side-to-side Anastomosis

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Smallest Bowel – Hand closure

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Smallest Bowel – Side-to-end SB to colon

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Smallest Bowel – End-to-end colon

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<td>Teaching method or lecture</td>
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<td>Were your learning needs met</td>
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Oesophagus – Gastro-oesophageal anastomosis

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<tr>
<td>Were your learning needs met</td>
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Specific comments and suggestions about the exercises today:

Thank you for your feedback
OVERALL EVALUATION FORM
THE INTERNATIONAL CAMBRIDGE ANASTOMOSIS WORKSHOP

Your responses are confidential - your name will not appear in any report or publication.

Name.................................................................Specialty.................................................................

Post Held..........................................................Year of Training.................................................

Please answer **All** the questions **especially No. 6.**

1. Have you found the Workshop useful? (Please circle) YES  NO

2. Which part of the Workshop did you find **most** useful?
   ...................................................................................................................................................................

3. Which part of the Workshop did you find **least** helpful?
   ...................................................................................................................................................................

4. How would you improve the Workshop, i.e. what would you like added to or removed from the Workshop?
   ...................................................................................................................................................................

5. Any other comments
   ...................................................................................................................................................................

6. Please rate the Workshop from 0 – 10 (0 = useless, 10 excellent)..........
Appendix 3 – Course requirements

**INTERNATIONAL CAMBRIDGE ANASTOMOSIS WORKSHOP**

Instruments *per person* for Basic Principles exercises,
*per pair* for remainder and those for the demonstrator if required

<table>
<thead>
<tr>
<th>TOTAL</th>
<th>PER PERSON</th>
<th>PER PAIR (6)</th>
<th>DEMONSTRATOR</th>
<th>ITEM</th>
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</thead>
<tbody>
<tr>
<td>13</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>DeBakey Forceps for tissue dissection 150mm Atr. jaws</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>Metzenbaum Scissors 150mm curved</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>Lane Twin Anastomosis Clamps</td>
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<tr>
<td>13</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>Hayes Bowel Clamps</td>
</tr>
<tr>
<td>14</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>Doyen Bowel Clamps</td>
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<tr>
<td>14</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>Parker-Kerr Intestinal Clamps</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>Crile-Wood Needle holders</td>
</tr>
<tr>
<td>OR</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>Mayo-Hegar Needle Holder with joint 150mm</td>
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<tr>
<td>7</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>Mayo-Hegar Needle Holder with joint 250 mm</td>
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<tr>
<td>28</td>
<td>-</td>
<td>4</td>
<td>4</td>
<td>Babcock Tissue Forceps</td>
</tr>
<tr>
<td>7</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>Iris Fine pointed Scissors</td>
</tr>
<tr>
<td>6</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>Pott’s Scissors</td>
</tr>
<tr>
<td>TOTAL</td>
<td>PER PERSON</td>
<td>PER PAIR</td>
<td>DEMONSTRATOR</td>
<td>ITEM</td>
</tr>
<tr>
<td>-------</td>
<td>------------</td>
<td>----------</td>
<td>--------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td>13</td>
<td>1</td>
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<td>1</td>
<td>Mayo Scissors straight</td>
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<tr>
<td>7</td>
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<td>1</td>
<td>1</td>
<td>St. Marks Hospital dissecting forceps</td>
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<tr>
<td>12</td>
<td>1</td>
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<td>1</td>
<td>Scalpel handle No 3</td>
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<td>Dunhill Avery forceps</td>
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<td>28</td>
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<td>4</td>
<td>Mosquito forceps</td>
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<tr>
<td>13</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>Blalock Hook 11&quot;</td>
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</table>
### Sutures per Course

<table>
<thead>
<tr>
<th>Suture Code &amp; Name</th>
<th>BOXES REQUIRED</th>
<th>No of Sutures in each box</th>
<th>Total Sutures supplied</th>
<th>Number per pair</th>
</tr>
</thead>
<tbody>
<tr>
<td>W570 H 3-0 MERSILK RB 26mm ½ c</td>
<td>1</td>
<td>36</td>
<td>36</td>
<td>6</td>
</tr>
<tr>
<td>W9136 2-0 VICRYL RB 31mm ½ c</td>
<td>12</td>
<td>12</td>
<td>144</td>
<td>24</td>
</tr>
<tr>
<td>W9113 4-0 VICRYL RB 20mm ½ c</td>
<td>5</td>
<td>12</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>W8522 3-0 PROLENE RB 26mm ½ c double ended</td>
<td>5</td>
<td>12</td>
<td>60</td>
<td>10</td>
</tr>
<tr>
<td>W8761 4-0 PROLENE RB 20 mm ½c double ended</td>
<td>2</td>
<td>12</td>
<td>24</td>
<td>4</td>
</tr>
<tr>
<td>W9132 H 3-0 PDS11 RB 31mm ½c</td>
<td>4</td>
<td>36</td>
<td>144</td>
<td>8</td>
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</table>

### STAPLERS

<table>
<thead>
<tr>
<th>Stapler Code Number</th>
<th>Each box containing</th>
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<tbody>
<tr>
<td>NTLC 5S</td>
<td>2 Staplers</td>
</tr>
<tr>
<td>CDH 31 A</td>
<td>2 Staplers</td>
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</table>
# RE-USABLE ITEMS FOR THE ANASTOMOSIS WORKSHOP

<table>
<thead>
<tr>
<th>Item</th>
<th>Items for 1 Workshop</th>
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<tbody>
<tr>
<td>Suture pads</td>
<td>12</td>
</tr>
<tr>
<td>Knotting jigs</td>
<td>12</td>
</tr>
<tr>
<td>Tying material - large threat / cord</td>
<td>12</td>
</tr>
<tr>
<td>Cork Boards</td>
<td>6</td>
</tr>
<tr>
<td>Push Pins - 8 per board</td>
<td>48</td>
</tr>
<tr>
<td>Sharps bins</td>
<td>6</td>
</tr>
<tr>
<td>0.5 litre approx adjustable nozzle, trigger flower spray</td>
<td>2</td>
</tr>
<tr>
<td>50ml syringe with large needle</td>
<td>2</td>
</tr>
</tbody>
</table>
# DISPOSABLE ITEMS

<table>
<thead>
<tr>
<th>ITEMS to be obtained LOCALLY</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disposable Plastic aprons</td>
<td>2 Rolls</td>
</tr>
<tr>
<td>Disposable non-sterile</td>
<td>1 box of each</td>
</tr>
<tr>
<td>gloves (small, medium</td>
<td></td>
</tr>
<tr>
<td>and large)</td>
<td></td>
</tr>
<tr>
<td>If 1 box holds 200, then</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Large black disposable bags</td>
<td>12</td>
</tr>
<tr>
<td>for rubbish</td>
<td></td>
</tr>
<tr>
<td>Washing up brushes on</td>
<td>2</td>
</tr>
<tr>
<td>handles for cleaning</td>
<td></td>
</tr>
<tr>
<td>instruments</td>
<td></td>
</tr>
<tr>
<td>Washing up liquid</td>
<td>1 bottle</td>
</tr>
<tr>
<td>Soap for hand washing</td>
<td>as appropriate</td>
</tr>
<tr>
<td>Towels/paper or cloths to</td>
<td>6 pkts of of paper towels or as</td>
</tr>
<tr>
<td>dry hands</td>
<td>appropriate</td>
</tr>
<tr>
<td>J cloths/muslin cloths for</td>
<td>6</td>
</tr>
<tr>
<td>wiping down surfaces</td>
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<tr>
<td>Rolls of clean plastic</td>
<td>Appropriate to cover surfaces</td>
</tr>
<tr>
<td>sheeting to cover tables</td>
<td>accordingly</td>
</tr>
<tr>
<td>if course not in a facility</td>
<td></td>
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<tr>
<td>with “drainable surfaces”</td>
<td></td>
</tr>
<tr>
<td><em>ie an Anatomy Lab</em></td>
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**Items brought by Faculty**

Sharps Bins..............................................................6

February 2016