**O53 CAN GOOGLE GLASS BE A SURGICAL TRAINING TOOL?**

S Bola, G Brighton
Torbay Hospital

**Introduction:** Limitations to working hours have left juniors with concerns for the quality of their training (Working Time Directive Taskforce Report). For ENT surgery in particular, training can be difficult with many procedures having limited views. This also provides difficulty for the trainer in giving intra-operative feedback without disturbing the flow of the training surgeon. We believe there is a requirement for a better training and assessment tool. Study Design: Google Glass for training and research was approved by the hospital. ENT surgery recordings were stored onto the education hard drive and provided a surgeons view and narrative to the procedure which could be manipulated to needs of the trainee (slowed/ repeated or zoomed in). A second set of recordings are being done whilst a trainee operates. The trainer sits in the adjacent room watching the procedure live on a visual hand piece. Pilot Data After introducing this training tool, 95% of surveyed ENT trainees (n=19) said they would welcome it for the use of assessment and 100% would be interested in a surgical database of procedures done in the deanery. Forward plan There is a clear role for Google Glass in surgery: 1.Tool for self assessment. 2.Evidence for Annual Review of Competence Progress. 3.Consultant support -Video conferencing to other consultants at different sites in cases of unusual anatomy or difficult cases. How does this benefit the public? 1.Improves safety of trainee operating alone for the first time. 2.In emergency cases where a senior is not available, it provides communication between the junior and senior surgeon.

**Take-home message:**
The restriction to working hours has affected the quality of surgical training. Google glass provides a tool to increase local surgical exposure and gives the trainer confidence to allow the trainee to operate.

**O54 “THIEL” CADAVERS: THE HOLY GRAIL OF SURGICAL SIMULATION?**

M YIASEMIDOU (1,2), D GLASSMAN (2), J TOMLINSON (2), D ROBERTS(1), D MISKOVIC(1)
(1) Health Education Yorkshire and the Humber, School of Surgery (2) University of Leeds

**Introduction:** To date, there is plethora of evidence about the usefulness of simulators in surgical training. Human cadavers can be ideal for this purpose; however preservation with formalin alters tissue properties significantly. In contrast, the preservation method developed by Thiel promises lifelike tissue characteristics and joint flexibility. Aim: To assess expert opinion about the suitability of “Thiel” cadavers for surgical simulation.

**Method:** 18 experts of 10 different surgical specialties were invited to a “Thiel” cadaver simulation day. They were asked to answer an initial questionnaire based on previous experience with cadaveric dissection and a second questionnaire, at the end of the event, based on their experience with “Thiel” cadavers.

**Result:** There was a significant improvement in opinion on how similar cadaveric tissue feels and looks to live tissue (p-value 0.001 in both cases). The participants had a positive opinion about the use of “Thiel” cadavers for simulation and on the feasibility of identifying anatomical landmarks. The surgeons did not identify ethical constraints in using cadavers. The day also convinced the experts about the cost effectiveness of cadaveric simulation (p-value 0.016). Finally, the smell of the Thiel cadavers was less objectionable than expected (p value 0.012). All organs and tissues were scored as realistic or very realistic with the exceptions of the brain and the orbit.

**Conclusion:** This study establishes a wide, multispecialty consensus that “Thiel” cadavers have great potential as an educational tool for surgery. However, they may not be ideal for neurosurgery and orbital surgery.

**Take-home message:**
“Thiel” cadavers have great potential as an educational tool for surgery.

**O55 STARSURGUK: IMPROVING MEDICAL STUDENT’S PERCEPTIONS OF SURGICAL ACADEMIA THROUGH PARTICIPATION IN A COLLABORATIVE, MULTI-CENTRE, NATIONAL COHORT STUDY**

C Khatri, JCD Glasbey, S Chapman, M Kelly, D Nepogodiev, A Bhangu, JEF Fitzgerald
STARSurg Collaborative

**Introduction:** Medical students can struggle to engage in high-quality research outside of formal programmes. STARSurg is the world’s first student-led research collaborative network in surgery.
Its first national study in 2013 (STARSurgUK), recruited 253 students across 110 hospital centres. This parallel study assessed the educational baseline and impact of participation.

**Method:** Practical experience gained through STARSurgUK participation was supplemented with educational interventions including a 1-day training meeting at the Royal College of Surgeons of England, e-learning modules, and YouTube educational videos. A pre-post, self-reported, non-mandatory electronic survey assessed collaborators understanding and perceptions of academia, research, audit and the collaborative research model. Likert scales were utilised to compare data prior to and following participation in STARSurgUK. Paired differences were assessed using Wilcoxon signed rank tests (a=0.05).

**Result:** 92 paired responses (36%) were received (M:F 58:42; median age=23; surgical career aspirations=62%). Participation led to increased confidence in key generic academic activities including collecting data in a clinical setting (p<0.001), presentation of scientific results (p<0.013) and communication with research governance bodies (p<0.001). Collaborators also described an increased familiarity with study design (p=0.001). A majority of collaborators (98%) disclosed no previous interaction with trainee-led research collaborative networks. 95% were more likely to engage further following participation in STARSurgUK. Perceptions of academic careers remained unchanged.

**Conclusion:** This collaborative study empowered students to engage in surgical academia and promoted integration into trainee-led research networks. Collaborators reported increased confidence in core academic principles and skills. The educational merit of participating in multi-centre collaborative studies warrants further attention.

**Take-home message:**
STARSurg is the world’s first student-led research collaborative network in surgery. Participation empowered students with core skills for surgical academia and promoted integration into postgraduate research networks.

**O56   GENERAL SURGERY STILL COMPRISSES A SIGNIFICANT PROPORTION OF WORKLOAD EVEN FOR THOSE SUBSPECIALISED**
CA Fleming (1), Z Khan (1), GJ Fulton (1, 2), EJ Andrews (1, 3), HP Redmond (1, 4), MA Corrigan (1, 4)
(1) Department of General Surgery, Cork University Hospital, Ireland; (2) Department of Vascular Surgery, Cork University Hospital, Ireland; (3) Department of Colorectal Surgery, Cork University Hospital, Ireland; (4) Breast Cancer Research Centre, Cork University Hospital, Ireland

**Background:** The splintering of general surgery (GS) into subspecialties in the past decade has brought into question the relevance of a continued emphasis on traditional general surgical training. With the majority of higher surgical trainees now expressing a clear preference to subspecialise, this study sought to determine the changes in general surgical practice in a specialist centre over the past decade.

**Method:** A retrospective review of surgical admissions at Cork University Hospital was performed at three individual time points during the evolution of centralisation: 2002, 2007 & 2012. Basic demographic details of both elective & emergency admissions were tabulated & analysed.

**Result:** 11,288 surgical admissions were recorded (2002:2773, 2007:3498 & 2012:5017), showing an increase of 81% over the total ten year period. Average length of stay reduced significantly in both elective (3.62 to 2.58 bed days) & emergency admissions (7.36 to 5.65, p=0.026). While growth in overall service provision was seen, the practice of general emergency surgery versus specialty relevant emergency surgery showed no statistically significant change in practice from 2002-2012 (p=0.87). While emergency surgery steadily increased, elective general surgery dropped from 27% to 18% of elective workload during study duration. Appendicectomy was the most common emergency surgery procedure performed in all 3 comparative years.

**Conclusion:** General surgical emergency work continues to constitute a major part of the specialists practice. The results emphasise the importance of general surgical training even for those trainees committed to sub specialisation.

**Take-home message:**
General surgery still comprises a significant proportion of workload even for those subspecialised.

**O57   WARD-BASED VERSUS TEAM-BASED SURGICAL JUNIOR DOCTORS: WHERE DO THE DIFFERENCES LIE?**
B Oremule, S Brodie, S Ravi
Blackpool Teaching Hospitals NHS Foundation Trust

**Introduction:** The traditional model of patient care on general surgical wards involves a team-based (TB) approach. An alternative ward-based (WB) approach involves ward-resident junior
doctors. Evidence suggests that this alternate model of working may have positive implications on patient post-operative outcomes.

**Method:** A retrospective analysis of our departmental database was conducted. The TB system was employed from August to December 2013 and a WB system employed from December 2013 to April 2014. The number of doctors, hours worked, on-call commitments and all other aspects of patient care remained unchanged. The primary outcome measure was all-cause in hospital mortality. Secondary measures comprised: incidence of myocardial infarction, pulmonary embolism, deep vein thrombosis, acute kidney injury and wound infection. Nursing staff and senior members of the surgical completed a questionnaire on the change.

**Result:** During the study, 494 patients passed through the surgical wards (TB = 241, WB = 253). There was no difference in all-cause mortality at 30 days (TB=51, WB=60; p=0.52) or in-hospital mortality (TB=48, WB=35; p=0.23). Of the secondary outcomes, we found no difference in the number of DVT (p=1.00), MI (p=0.21), PE (p=0.49), AKI (p=0.47) or wound infections (p=0.76). The questionnaire revealed a 100% preference for the TB system amongst junior and senior surgical staff and a 100% preference for WB amongst nursing staff.

**Conclusion:** Patient safety outcomes are similar in the WB and TB systems. Junior doctors and senior surgical team members find TB a better system for the provision of training and feedback on trainee progress.

**Take-home message:**
Patient safety outcomes are similar in the ward-based and team-based systems. Local ideology on the balance between the provision of training for junior doctors and their provision of services should be considered when deciding which system to employ.

**HAS THE BATCHelor OF SURGERY LEFT MEDICAL SCHOOL? A THEMATIC ANALYSIS**

**O58 M Lee, TM Drake, TAM Malik, T OConnor, A Daoub, R Chebbout**
University of Sheffield

**Introduction:** Over recent years the undergraduate curriculum has shifted focus from traditional specialties such as surgery. Eighty percent of Foundation Year doctors undertake a job within a surgical specialty. This study sought to qualitatively explore student perceptions of undergraduate surgical teaching within UK medical schools.

**Method:** Final year students from 29 UK medical schools were surveyed on their undergraduate surgical experience. The survey included a free-text section. Comments were thematically analysed and coded into major and minor themes.

**Result:** A total of 80 free text comments were coded into five major themes; curriculum factors, teaching factors, environmental factors, perceived relevance and relationships. Short placements and the learning environment were frequently identified as barriers to effective learning. Teaching quality was negatively described, particularly the poor structure of placements. The desire for additional teaching on clinical anatomy alongside surgical placements was commonly expressed. Some reported no formal training in basic surgical skills such as suturing, but felt these were relevant to their foundation posts. Others felt procedural exposure was not relevant to their career. The relationship theme highlighted the importance of good mentorship and communication. Female respondents also reported exposure to sexism during surgical placements.

**Conclusion:** Undergraduate surgical teaching typically lacks quality and quantity, across specific domains. Urgent attention should be paid to the operating theatre learning environment, particularly with regards to anatomy. The themes explored in this study should be considered when designing undergraduate curricula.

**Take-home message:**
Key barriers exist to effective student engagement with surgery. These barriers need to be carefully addressed by future changes at both the surgeon and curriculum level.

**MAP OF SPECIALTY TRAINING (MASTR) – AUGMENTING THE UK SURGICAL TRAINING SYLLABUS**

**O59 J George**
Department of Cardiothoracic Surgery, Morriston Hospital, Swansea

**Introduction:** Current UK surgical training is competency-based delivered through the Intercollegiate Surgical Curriculum Programme syllabi. Trainees demonstrate competency in Knowledge, Clinical Skills, Technical Skills and Professional/Leadership Skills mainly through work-based assessments (WBA). However the Knowledge topics are undefined, linking of WBAs to the knowledge curriculum is subjective, and assessment is mainly via the FRCS examination. We describe a novel approach to UK surgical training to demonstrate competency in the knowledge
curriculum to trainer-set minimum national standards.

**Method:** A specialty-specific secure electronic learning portal has been developed. All ST curriculum topics are linked to educational content in a database, corresponding to curriculum modules, skill-type, training year and level of competence. A national editorial team of consultant surgeon-trainers (for each specialty syllabus) link available content (textbook chapters, journals, multimedia/online content) to each syllabus topic. Gaps in meeting syllabus requirements are identified in editorial cycles, content created (optionally by trainees), and linked to the syllabus. The linking process is peer-reviewed by the consultant editors. Trainees have personal accounts to access content across their personal devices. Quizzes will help track progress of learning, and linked to the surgical portfolio. Local teaching can be augmented by these syllabus-linked always-available resources meeting minimum national standards. A similar system for cardiothoracic training has been assessed to have very high satisfaction rates by trainees.

**Conclusion:** We propose the Map of Specialty Training (MASTR) system as a comprehensive support to the ISCP surgical curriculum, in ways not previously achieved in surgical education in the UK.

**Take-home message:**
A trainer-reviewed online database comprehensively linking surgical specialty training syllabi to educational resources is described. Trainees can demonstrate objective achievement of knowledge curriculum throughout training (not just during exams), local teaching can be augmented to national standards, trainees/trainers are more engaged in the curriculum.

**O60   VALIDATION OF TOUCH SURGERY, A SURGICAL COGNITIVE TASK TRAINER**
A N Bahsoun, K Sugand, M Mawkin, E Doganay, C Gupte
Imperial College London

**Introduction:** Touch surgery hosts over thirty simulated operations and is is designed to be open access thus is available free on smartphones and tablets. No validation studies have yet been conducted on similar platforms, especially for orthopaedic trauma. **Aim:** To test construct, face and content validation of Touch Surgery as a surgical training device.

**Method:** Group A (undergraduates; n=40) and group B (orthopaedic specialists; n=10) had one attempt on completing four modules which represented sequential steps of the operation. Participant scores were remotely downloaded and analysed on Statistical Package for the Social Sciences (SPSS). Construct validation was assessed by comparing app scores between the two groups. Face, content and acceptability validation was assessed using post-test questionnaires.

**Result:** Participant scores demonstrated significant skill difference and construct validity between both groups with group B (mean 75) outperforming group A (mean 49 p<0.05). Additionally, group A and group B scored means of 4.1 and 4.3 (on a 5 point Likert scale) for face and content validation respectively. Pre and post-test single best answer questionnaires also demonstrated that additional knowledge had been acquired after using the app.

**Conclusion:** The cognitive task simulator and multimedia application, Touch Surgery, demonstrated construct, face and content validation between novices and experts for intramedullary femoral nail insertion. This is a novel method to learn and practise operative decision-making and psychomotor skills without compromising patient safety. The cognitive task trainer has great potential for operative rehearsal, standardised learning and assessment in a controlled environment.

**Take-home message:**
The novel surgical training device, Touch Surgery, is a validated trainer with great potential and is free!