Abstract Submissions for The ICOSET Conference 2022

Abstract Status: Submitted

111 Abstracts at this status

Submission ID:	23162	**Submission Date:**	28/11/2021 17:47:59
Submission By:	Mr Cho Ee Ng		

Abstract Title

Systematic review of different methods to collect undergraduate student evaluation of teaching for clinical skill training through clinical skills laboratories in last 10 years

Co-Authors Cho Ee Ng, Sharon Ka Po Tam, Cathy Carr

Background/Introduction: Simulation for practical skills training during medical school is common. In particular, when it is not appropriate for student doctors to learn through patient exposure, the use of clinical skills laboratories provides a safe environment to allow the student to be familiar with the procedure. However, there is variability when it comes to the students' evaluations of the standard of teaching making it challenging for educators to adapt to their needs.

Aims/Objectives: The aim of this review was to evaluate how is clinical skills training being evaluated and to identify features that are generalisable for undergraduate procedure training.

Method: A systematic review of the literature was conducted to examine different methods used to collect undergraduate medical student evaluation on clinical skill training through clinical skills laboratories. The search was performed using Medline, Pubmed and Embase databases to identify relevant reviews, surveys and experiments that used the keywords "undergraduate medical student", "feedback", "evaluation of teaching", and "quality of teaching", published between January 2009 - January 2019. Publications on evaluating students' performance, postgraduate medical training and other healthcare professionals were excluded. The articles were screened by title, then abstracts before final selected articles were appraised in detail to be included for review and outcomes

Results: Three articles met the inclusion criteria, including two experimental studies and one review. These studies were heterogeneous in design and methodology. They featured a wide range of evaluation techniques: 5-point Likert scale, student test-scores and satisfaction questionnaires.

Discussion/Conclusion: Pedagogy for undergraduate training is different to postgraduate training hence should be reviewed separately but there is limited literature on the subject. The consensus is that medical educators should focus on the effectiveness of teaching, achievement of learning objectives, reflection on methods used to support goals, and accountability to stakeholders, including student academic scores, student perception and satisfaction.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	23303	**Submission Date:**	04/12/2021 11:46:41
Submission By:	Mr Raveen Lasantha Jayasuriya		

Abstract Title

Designing a transition programme: from higher surgical training to consultant pratice

Co-Authors R Jayasuriya, P Renwick, J Tomlinson

Background/Introduction: Higher surgical training in UK deaneries focuses on delivery of clinical knowledge to pass FRCS exams, technical skills to fulfil CCT requirements, and clinical preparedness.

Aims/Objectives: To explore the themes around non-clinical preparedness for consultant practice. Identifying deficiencies in training will inform development of new training objectives.

Method: Mixed qualitative and quantitative methods, approaching stakeholders at different stages of competence.

Results: No orthopaedic transition to consultant course being delivered in the UK. Specialities which currently have dedicated courses include paediatrics and ophthalmology. Reviewing the course content for the existing courses demonstrated a wide array of topics.

Semi structured interviews with recently appointed consultants (<5 years), explored what nonclinical skills and knowledge they felt were necessary to be an excellent new consultant. The strong theme which emerged was the lack of preparedness for understanding NHS structure, how a job plan is designed, how to procure specialist equipment, handling complaints and human factors.

The strongest themes emerging from these interviews informed the development of a live interactive survey undertaken by senior trainers in the region. Detailed exploration of when they perceive current trainees to gain this experience compared to the ideal timing of developing these skills and knowledge demonstrated a clear disparity.

The same interactive survey was undertaken by post FRCS trainees. Open questioning of perceived challenges provided few responses and limited variability, which is likely a reflection of unknown unknowns. Once given themes to discuss a similar trend of when these skills and knowledge are currently acquired and ideally ought to be delivered were similar to the senior trainer cohort.

Discussion/Conclusion: This mixed methods approach identified key topics to cover in trauma and orthopaedic transition to consultant course.

Differences in trainees' perceived needs and those identified by consultants pose a

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Poster Only: ☐

Submission ID:	23567	**Submission Date:**	08/12/2021 12:11:00
Submission By:	Dr Hannah James		

Abstract Title

Hip fracture surgery performed by cadaveric simulation-trained versus standard-trained residents: a pragmatic multicentre randomised controlled trial

Co-Authors Hannah K James, Giles TR Pattison, James Griffin, Joanne D Fisher, Damian R Griffin

Background/Introduction: The early surgical learning curve for hip fracture procedures occurs on real patients. High-fidelity simulation training for orthopaedic residents using human cadavers might safeguard patients and improve outcomes from surgery.

Aims/Objectives: Evaluate if cadaveric simulation training for orthopaedic residents yields superior radiographic and clinical outcomes in patients undergoing surgery for hip fracture.

Method: This pragmatic, multicentre, parallel-group randomised controlled trial was performed at nine National Health Service hospitals in the UK. Orthopaedic residents in their third-to-fifth postgraduate year were randomly assigned (1:1) to intensive cadaveric training (intervention) or standard residency training (control). Primary outcomes were implant position on first post-implantation radiograph (tip-apex distance for Dynamic Hip Screw (DHS), leg-length discrepancy for hemiarthroplasty), analysed per-protocol by training received. Secondary clinical outcomes were procedure time, length of hospital stay, post-operative complication rate and 12-month mortality. Procedure-specific

Results: 28 resident participants were randomised, 14 received the intervention and 14 received standard training. 24 (86%) completed follow-up. 317 DHS and 239 hemiarthroplasty procedures were performed on real patients during 10 months follow-up.

There were superior implant positions in patients of the cadaveric-trained group for DHS as measured by tip-apex distance =25mm, p<0.001, OR 17.93 (95%CI 3.54-90.71) and for hemiarthroplasty as measured by leg-length discrepancy =10mm, p=0.004, OR 6.19 (95%CI 1.80-21.31). For DHS, there was less intraoperative radiation use, p=0.007, OR 0.19 (95%CI 0.05-0.33) and for hemiarthroplasty there was a lower blood transfusion requirement, p=0.007, OR 4.43 (95%CI 1.52-12.95) in patients of cadaveric-trained surgeons. No between-group differences were observed for secondary clinical outcomes for either procedure.

Discussion/Conclusion: Cadaveric simulation training of orthopaedic residents for hip fracture surgery leads to clinically meaningful real-world improvements in implant position and lower post-operative blood transfusion requirement in hemiarthroplasty.

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Poster Only: ☐

Submission ID:	24690	**Submission Date:**	03/01/2022 12:54:57
Submission By:	Mr Connor Thorn		

Abstract Title

The Utility of 3D Models for Surgical Training and Education: Feedback from 106 Cases

Co-Authors

Jonathan Davis, Jack Dann, Jim Ballard, C Lockhart, Andrew Crone, Daniel Crawford , Alexander Aarvold

Background/Introduction:

3D models are an emerging tool to aid complex surgical cases. There may be additional benefits in simulation, communication, education, and training in a surgical setting, yet data on this is scarce. This comprehensive surgeon feedback study provides an analysis for the use of 3D models in education and training.

Aims/Objectives:

To assess the utility of 3D models for surgeon-to-surgeon communication, pre-operative planning, and trainee communication and education.

Method:

3D models for complex surgical cases in NHS hospitals were delivered alongside a surgeon feedback survey. The survey on the model's utility had been designed alongside the university data analytical team. Aside from any clinical benefits reported, specific feedback was captured on the model's use for surgical training.

Results:

There were 107 models used, by 63 surgeons across multiple surgical specialties, for complex surgical cases between May 2020 and March 2021, for which a feedback survey was completed. The models were reported to have benefits in all peri-operative areas. Specific benefits were reported on pre-operative planning (92.4%), surgeon-to-surgeon communication (92.6%), trainee communication and education

Discussion/Conclusion:

Whilst 3D models have been shown to have clinical benefits in complex surgery, this study provides novel feedback on their additional benefit to surgical training. The use of these models benefitted communication between surgeons and were a helpful tool to optimise the education of trainees. With more widespread use and optimisation of costs, the use of 3D models could become the standard for unusual and complex surgical cases allowing a novel and effective tool in the education of surgical trainees and students.

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Poster Only: ☐

Submission ID:	24787	**Submission Date:**	04/01/2022 16:11:40
Submission By:	Miss Rachel Eleanor Falconer		

Abstract Title

Simulation for all? A national pilot of home-based simulation to address current inequalities in access

Co-Authors Ms Catriona Semple, Professor Kenneth Walker, Professor Jennifer Cleland and Professor Angus Watson

Background/Introduction: Surgical simulation can help trainees attain competency in a range of operative procedures, particularly when taught using a distributed schedule of practice with expert feedback. Simulation aims to reduce harm from early learning curve errors as well as helping to maintain surgical skills outside the theatre environment. This is particularly important given ongoing disruption to routine teaching and training resulting from the COVID-19 pandemic. However, access to regular simulation is often limited by inadequate funding and access to facilities.

Aims/Objectives: To evaluate engagement with a national pilot programme of home-based technical skills simulation for junior vascular trainees and provide recommendations improvement.

Method: A national pilot of home-based simulation was designed to help address existing inequalities and delivered to ST3 vascular trainees. Thematic analysis of participant interviews was used to evaluated motivators and barriers to engagement.

Results: The VASIMULATION programme demonstrated that regular technical skills simulation can be successful delivered using portable kit boxes, novel 3-D hydrogel models, online tutorials and trainee-recorded videos for feedback. However, there were several barriers to participation, which included limited opportunities for regular practice due to clinical workload, a perceived lack of support for simulation from senior colleagues and an unwillingness to “fail”.

Discussion/Conclusion: Low cost strategies which facilitate regular access to simulation-based training must be explored in order to ensure equality of access for all trainees, particularly given the current challenges to training posed by COVID-19.

Recommendations for improving engagement with regular, self-directed simulation in future include: the provision of protected time (for both trainees and trainers) and/or formal certification of simulation modules, flexibility in the timing of simulation to maximise transferability of skills to the real-world environment, teaching on educational theories relevant to simulation to help promote true psychological safety among

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Poster Only: ☐

Submission ID:	24885	**Submission Date:**	08/01/2022 19:22:08
Submission By:	Mr Tahir Khaleeq		

Abstract Title

ESTABLISHMENT OF VIRTUAL FRACTURE CLINIC IN PRINCESS ROYAL HOSPITAL TELFORD ; EXPERIENCE AND RECOMMENDATIONS DURING THE FIRST 9 MONTHS, Tahir Khaleeq

Co-Authors Patrick Lancaster, Usman Ahmed

Background/Introduction: Virtual fracture clinics (VFC) have been shown to be a safe and cost-effective way of managing outpatient referrals to the orthopaedic department. During the coronavirus pandemic there has been a push to reduce unnecessary patient contact whilst maintaining patient safety.

Aims/Objectives: The objective of this project was to implement a rapid strategy that would allow management of trauma referrals in a socially distanced way by reducing clinic traffic without compromising patient safety.

Method: A protocol was developed by the clinical team on how to manage common musculoskeletal presentations to A&E prior to COVID as part of routine service development. Patients broadly triaged into 4 categories; discharge with advice, referral to VFC, referral to face to face clinic or discussion with on call team. The first 9 months of data were analysed to assess types of injury seen and outcomes.

Results: In total 2489 patients were referred to VFC from internal and external sources. 734 patients were discharged without follow-up and 182 patients were discharged to physiotherapy. 3 patients required admission. Regarding follow-ups, 431 patients had a virtual follow-up while 1036 of patients required further face to face follow up. 87 patients were triaged into subspecialty clinics. 37 patients were referred inappropriately.

Discussion/Conclusion: BOA guidelines suggest all patients need to be reviewed within 72 hours of their orthopaedic injury. Implementation of a VFC allows this target to be achieved and at the same time reduce patient contact. Almost half the patients were discharged following VFC review, the remaining patients were appropriately followed up. This is especially relevant in the current pandemic where reducing unnecessary trips to hospital will benefit the patient as well as make the most of the resources available.

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Poster Only: ☐

Submission ID:	24886	**Submission Date:**	08/01/2022 19:24:35
Submission By:	Mr Tahir Khaleeq		

Abstract Title

Making An Effective Ward Round Model In The Department Of Trauma And Orthopaedic Surgery For University Hospitals Of Birmingham Trust., Tahir Khaleeq

Co-Authors Ning Lo, Justin King, Alice Turner, Elizabeth Howland, TIm Graham

Background/Introduction: Ward rounds in hospitals are crucial for decision-making in the context of patient treatment processes.

Aims/Objectives: Improve the standard of ward rounds with a review of care and planning.

Method: 6 key elements were established using the Modern ward rounds report by the Royal College of Physicians and Nursing. This includes daily ward rounds which will be multidisciplinary, documented clearly and handed over to relevant staff; consisting of a board, bedside ward round and debrief; using Prompts in the form of REMIND mnemonic : R = Respect form, E = Electronic Prescribing, M = Mental Capacity, mobility status, I = Investigations, N = Nutrition and Hydration, NBM status, D=DVT assessment and Thromboprophylaxis; with practices being audited.

Results: After running a successful pilot in Respiratory in August 2021 the quality improvement project (QIP) was introduced in Trauma and Orthopaedic surgery.

88 patients were included in the initial audit prior to implementation and 91 in the re-audit. There was a 85% improvement seen in completion of respect and dementia forms with a 90 % improvement in electronic prescribing. There was an 75% improvement in documentation of mobility status, investigations performed and NBM status. Fluid prescription, DVT assessment and LMWH prescription also improved by 85%.

Discussion/Conclusion: A successful Pilot in Respiratory and Trauma and Orthopaedic Surgery shows the feasbility of the QIP in other departments. However Education should also include Consultant and nurses. We are overcoming this but establishing a virtual module that can be made mandatory for induction of junior doctors, consultants and nurses

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Poster Only: ☐

Submission ID:	25014	**Submission Date:**	14/01/2022 16:20:11
Submission By:	Dr Lucie J Wright		

Abstract Title

The Operating Theatre as a Classroom: A Scoping Review of the Operative Learning Environment

Co-Authors Lucie Wright

Background/Introduction: The Clinical Learning Environment is the social, cultural and physical space where education takes place in the clinical arena. Surgical training predominantly takes place in the operating theatre – an environment that is subject to many competing pressures. Threats to surgical training are well documented: it is therefore vital that we understand the environment in which surgical education is being delivered so that it can be fully optimised.

Aims/Objectives: To map literature examining the clinical learning environment of the operating theatre.

Method: This scoping review is framed by the methodology originally described by Arksey and O'Malley and modified by Levac. A literature search was performed (MEDLINE, CINAHL and PsychINFO) and, through an iterative process, the papers meeting the criteria were reviewed, coded and mapped. A thematic analysis was then performed.

Results: 19 papers were identified that specifically examined the Operative Learning Environment (OLE) for surgical trainees. Many researchers have made use of validated questionnaires to 'measure' the clinical learning environment in the operating theatre. Features of the OLE can include: factors relating to the operating theatre, interpersonal factors and trainee-specific factors.

Recurrent sub-themes included:
Operating theatre: extreme temperatures, noise and time limitations all contribute to a sometimes challenging learning environment.

Interpersonal: the dynamic between trainee and trainer was pivotal and complex. Cognitive dissonance can exist between them with points of divergence including: expectations of roles, perception of quality of training and the effectiveness of the feedback process. "Bookending" with pre- and post-operative supportive learning events were cited as important features of a positive learning environment.

Gender & Seniority: both these factors appear to influence the perception of the

Discussion/Conclusion: By better understanding the OLE the finite time available for surgical training can be optimised, thereby making it better for everyone – trainees, trainers and patients alike.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	25071	**Submission Date:**	18/01/2022 04:10:37
Submission By:	Miss Rebecca Anne Fisher		

Abstract Title

'The woman who has it all': A qualitative study of motherhood in UK surgical training

Co-Authors Rebecca A Fisher, Susan Smith

Background/Introduction: Surgical training has a reputation of not being family friendly, which is an issue for recruitment and retention of female surgeons who wish to have children during training.

Aims/Objectives: We aimed to learn more about how mothers manage to complete training despite significant pressures.

Method: In this qualitative phenomenological study we interviewed 11 female senior trainees and junior consultant surgeons in the UK, and conducted a thematic analysis of their challenges and solutions, impact on professional identity, and possible systemic solutions.

Results: Several significant challenges were found, which often involved the difficulty finding childcare that was flexible enough to support surgical shifts. Most participants relied on their partner and family for childcare, as the unpredictable nature of operating meant leaving work on time created tension with trainers. For those who hadn't moved near family, childcare was a significant financial burden, which meant for some they couldn't afford to restart training in another specialty. Many found that parenthood honed their time management, and created good contrast with work life.
Lack of a two-way conversation with Training Programme Directors was a significant stressor, creating conflict during annual assessments. Participants described a shift in professional identity away from a 'rising star' persona to someone with changed priorities needing to defend their life balance. Lack of local knowledge regarding occupational health and maternity pay meant trainees rely on informal networking to have safe working conditions and correct pay during the maternity period. Most cited a single conversation with a supportive supervisor that prevented them leaving the profession.

Discussion/Conclusion: This study shows that balancing motherhood and surgery in the UK is feasible, but interventions in deaneries and training organisations could lead us to a future where they are better supported. Normalising motherhood is needed to normalise modern family structures, and is essential for gender equity.

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Poster Only: ☐

Submission ID:	25074	**Submission Date:**	18/01/2022 12:30:31
Submission By:	Dr Joanna Aldoori		

Abstract Title

The Theatre Training Checklist (TTC): A toolkit to improve training within the operating theatre

Co-Authors Mr M Peter, Mr D O'Regan, Mr A Robson

Background/Introduction: The operating theatre is a crucial learning environment for many different trainees (nurses, operating department practitioners [ODPs], anaesthetists, surgeons, etc.) Equity of access is essential to achieve their individual training requirements. Traditionally, opportunities within a theatre list are informally discussed between trainers and trainees at some point during the list. Furthermore, there is currently limited discussion between different members of the full team.

Aims/Objectives: The Theatre Training Checklist (TTC) is a simple framework that aims to facilitate coordination of training for all team members.

Method: The TTC was devised as an extension of the World Health Organisation Checklist. It consists of four stages: Trainer/Trainee discussion before theatre brief regarding training goals for the list, formal identification of all trainees within the theatre brief, explanation to the team of what each trainee will undertake, followed by use of theatre debrief to reprise whether training goals were met. The TTC was piloted and outcomes were measured using an anonymised structured questionnaire from across the entire team.

Results: 27 staff participated, including 7 trainees. Participants reflected the entire theatre team including: nurses, ODPs, anaesthetic and surgical care practitioners, surgical trainees, consultant anaesthetists and surgeons. Individuals' understanding of trainees' objectives improved as a result of the TTC (25/27, 92.6%) along with perceived improved theatre list efficiency (18/27, 66.6%). All trainees agreed that the checklist improved achievement of their training objectives. Qualitative feedback included: "This is a great way to identify what students and trainees want to achieve in theatre and how we can work together to overcome any difficulties".

Discussion/Conclusion: Initial data suggests the checklist qualitatively improves training. The TTC could improve future workforce training within the operating department, ensuring coordination of training and enabling high functioning of the theatre team. The TTC Toolkit is available for use and consists of the checklist tool and an instructional video.

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Poster Only: ☐

Submission ID:	25177	**Submission Date:**	19/01/2022 20:00:46
Submission By:	Mr Conor Sheahan		

Abstract Title

Irish Surgical Societies - A “Virtual Beacon” for Interest in Surgery During the Covid 19 Pandemic.

Co-Authors Conor. R. Sheahan1, Israa Hussein1, Reem. Al Shimali1, Alyssa. Clark1, Rachel. NiFhearaigh1, Prof. Camilla. Carroll1,2 [1] The Royal college of Surgeons in Ireland (RCSI), Dublin, Ireland [2] Trinity College Dublin School of Medicine, Dublin, Ireland

Background/Introduction: The Covid19 Pandemic has negatively impacted the delivery of surgical education and training to medical students and surgical trainees in Ireland.

Aims/Objectives: We sought to investigate the role that the student-run surgical society (SRSS) might play in facilitating surgical education during government mandated closure of in-person third level education. We utilised a validated online questionnaire composed of 25 questions. It was distributed to all 7 medical schools in Ireland via email and social media.

Method: Raising awareness of the “Life of a Surgeon” early in the medical student journey through SRSS engagement positively influences students' attitudes towards surgery as a career choice. This nurturing of the “surgical pipeline” will ultimately benefit patients.

Results: We received 164 responses to the questionnaire. 68% of responses came from RCSI and UCD. The top 5 surgical specialties which interested students were neurosurgery (23.2%), general surgery (16.5%) plastic surgery (14.6%), cardiothoracics (12.2%) and orthopaedics (11.0%). Student preference was for trainee delivered talks 61.6% (n=101). Speaker events (63.4%, n=104), conferences (22.0%, n=36), and social media posts (8.5%, n=14) were rated as the top 3 most beneficial engagements.

Discussion/Conclusion: Medical student patient contact was significantly reduced over the past 24 months. This has resulted in limiting student exposure to clinical surgical education in a hospital setting. Compounding the trend towards reducing undergraduate clinical surgical teaching in the modern medical school curriculum. This study suggests that medical students are interested in the lived experience of surgeons in training and the SRSS positively exposes students to a wide range of surgical specialities.

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Poster Only: ☐

Submission ID:	25193	**Submission Date:**	21/01/2022 08:15:53
Submission By:	Mr Adarsh P Shah		

Abstract Title

Scotland’s Improving Surgical Training (IST) pilot: a tale of two cultural webs

Co-Authors Adarsh P Shah, Jennifer Cleland, Lorraine Hawick, Kenneth G Walker, Kim Walker

Background/Introduction: “Improving Surgical Training” (IST) was proposed as a means to rebalance tensions between service and training, the loss of the surgical “firm”, and the trainee-trainer relationship due to duty hour regulations and the move to shift working. As with any curricular reform, understanding the context and mechanisms of change linked to introducing IST is critical.

Aims/Objectives: This qualitative study aimed to explore trainee, trainer, and key stakeholder views of IST in Scotland, a context where IST was implemented on a nationwide basis. We were particularly interested in exploring perceptions of organisational and departmental support for IST as these are known to underpin successful change.

Method: Interviews were carried out with core surgical trainees (n=46) and trainers (n=25) across Scotland, and UK-wide stakeholders (n=16) involved in IST. After transcription, initial analysis was inductive (data-driven). This analysis indicated many explicit and implicit issues/factors which seemed to be acting as barriers or facilitators to the implementation of IST. To illuminate these further, we carried out a secondary analysis using Johnson’s cultural web (Johnson, 1988) which organised the data into six inter-related elements described below.

Results: The values and beliefs at the core of the cultural web e.g., the importance of IST recommendations (daytime training, enhanced supervision) were widely held. However, the data indicated that how IST was enacted was different across localities. How this played out related to Organisational Structures (e.g., geographical set-up), Symbols (e.g., rota design and structures), Power Structures (e.g., relationships with hospital management), the Control System (e.g., consultant job plans), Rituals and Routines (e.g., feedback cultures) and Stories (e.g., historical [local] training culture).

Discussion/Conclusion: Quality of patient care and patient outcomes are the product of service delivery and training. Making explicit the elements of organisational culture(s) that pervade efforts to implement IST can help inform future change and influence the quality of patient care.

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Poster Only: ☐

Submission ID:	25195	**Submission Date:**	21/01/2022 09:06:38
Submission By:	Ms Amalie Asmind Rosendal		

Abstract Title

The use of Technical and Non-technical Learning Objectives in Simulation Based Surgical Training: A Scoping Review

Co-Authors Amalie Asmind Rosendal, Sigurd Beier Sloth, MD, Magnus Bie, RN, Jan Duedal Rölfing, MD, PhD & Rune Dall Jensen, MSc, PhD

Background/Introduction: It is well-established that simulation-based surgical training (SBST) enhances patient safety, as it allows the surgeon to practice deliberately and refine surgical skills prior to patient interaction. The skills needed to deliver care to patients are multifaceted and include both technical and non-technical skills. Research shows that these skills should be seen as intertwined. However, most literature investigates the skills as separable even though they are inseparable in the operating room (OR), which may hamper transfer to the OR.

Aims/Objectives: This scoping review aims to identify published literature on the use of both technical and non-technical learning objectives in SBST and investigate how the two learning objectives are related.

Method: Using search terms such as surgery, training, assessment, and simulation the present study searched four databases for simulation-based studies on surgical skills training. Inclusion criteria comprised empirical studies on surgical training addressing both technical and non-technical learning objectives.

Results: In total, 3092 articles on SBST published between 1981 and 2021 were identified. Of these 102 met inclusion criteria and were included for further analysis.
During our analysis, an emphasis on technical skills training in published literature was identified, neglecting training of non-technical skills as well as the integration of technical and non-technical skills in SBST. Only 31 of the included articles addressed the relationship between technical and non-technical skills. These articles mainly focused on the effect of non-technical skills on technical skills.

Discussion/Conclusion: Recent years have shown an increase in publications addressing the importance of non-technical surgical skills and integration of technical and non-technical skills. The present study investigates whether such integration might improve learning outcomes and increase transferability to the OR, ultimately improving patient care. Articles included in the present study suggest that improvement and integration of non-technical and technical skills enhances technical performance and technical skills acquisition.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	25224	**Submission Date:**	22/01/2022 20:10:13
Submission By:	Ms Sophie Howles		

Abstract Title

Examining attitudes towards the reporting of incidents of sexual assault and harassment amongst UK surgeons and surgical trainees

Co-Authors Ms Sophie Howles, Ms Deepa Bose

Background/Introduction: ‘Sexual assault in surgery: a painful truth’ (Fleming S and Fisher R 2021) highlights the issue of sexual assault within surgery, and since its publication many surgical trainees and consultants in the UK have spoken openly about their experience of sexual harassment and assault. The authors of this paper emphasize the importance of reporting incidents and on the need for ongoing and massive cultural change within our speciality.

Aims/Objectives: The aim of this questionnaire study was to examine the attitudes towards the reporting of incidents of sexual harassment and assault within the surgery, and to identify potential blocks to reporting. Based on these results, we hope to make recommendations to improve the mechanisms for reporting these incidents, and for seeking help and support.

Method: We ran an anonymised questionnaire study, seeking responses from UK surgeon and surgical trainees of any age, grade or speciality. Respondents were asked to give demographic details and answer some questions about their own experiences. Questions regarding knowledge of reporting mechanisms, confidence with reporting and potential blocks to reporting were asked using a 5 point Likert scale.

Results: Preliminary data supports existing evidence that sexual harassment and assault affect a significant number of surgeons during their careers. Most respondents felt a degree of responsibility for reporting these incidents but lack of knowledge about of reporting mechanisms, potential impact on career and lack of anonymity all play a part in reporting decisions. Within the white space 'open' questions, many participants highlighted the need for significant cultural change within our speciality.

Discussion/Conclusion: Further discussion is needed to explore ways in which better support can be provided to enable the safe reporting of incidents of sexual harassment and assault.

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Poster Only: ☐

Submission ID:	25232	**Submission Date:**	24/01/2022 10:08:36
Submission By:	Miss Rebecca Skov		

Abstract Title

Simulation-based education of endovascular assistants reduces stress and improves team performance during real-life endovascular aortic repair

Co-Authors

Rebecca Andrea Conradsen Skov, Jonathan Lawaetz, Lars Konge, Lise Westerlin, Eske Kvanner Aasvang, Christian Sylvest Meyhoff, Katja Vogt, Tomas Ohrlander, Timothy Andrew Resch, Jonas Peter Eiberg

Background/Introduction:

Endovascular procedures have become commonplace in vascular surgery. This development calls for new training strategies for future specialists. Most simulation-based educational (SBE) programs have a monodisciplinary focus on physicians, although successful surgery is a multidisciplinary team effort. Mental stress impairs the learning process and surgical performance, and heart rate variability (HRV) can be measured as a proxy for both mental and physical stress.

Aims/Objectives:

This study aims to assess how SBE of endovascular nurse assistants (EVA) affects team performance and HRV during endovascular aneurysm repair (EVAR).

Method:

Prospective interventional study where EVAR-inexperienced EVAs followed a focused SBE EVAR program. During real-life EVAR-procedures, HRV was continuously recorded with a wireless ECG patch, and multidisciplinary team performance was assessed with the Imperial College Error CAPture (ICECAP) tool, before and after the SBE program, allowing each EVA to serve as their own control. Eight EVAs with experience in lower limb endovascular procedures, but not EVAR, were invited to participate.

Results:

Seven participants completed the study. In five out of seven EVAs, HRV-derived stress levels during real-time EVAR procedures were lower after SBE compared to before SBE. Mean HRV increased from 24 msec to 35 msec ($p < .001$), indicating stress level reduction. Before SBE, the mean number of errors/hour was 7.3 (SD ±1.8) compared to 3.6 (SD ±2.7) after SBE. Most errors were categorized as technical (58 %) and communicative (23 %).

Discussion/Conclusion:

SBE of EVAs improves team performance and lowers mental stress during EVAR procedures. In this small study, we suggest HRV derived mental stress and ICECAP as proxies of SBE effectiveness in real-case EVAR procedures. This SBE program, as well as live ICECAP observations and ECG patches, was well-accepted by EVAs and the entire team.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	25233	**Submission Date:**	24/01/2022 10:34:39
Submission By:	Mr Conor Toale		

Abstract Title

Examining the Reliability of Workplace-Based Assessments of Operative Competence in Core Surgical Training in Ireland

Co-Authors C Toale, M Morris, D O'Keeffe, F Boland, DM Ryan, DM Nally, DO Kavanagh

Background/Introduction: Competency-based training programmes require reliable summative assessment methods.

Aims/Objectives: Aim: To assess the reliability of the Supervised Structured Assessment of Operative Performance (SSAOP) tool in determining the operative competence of core surgical trainees in Ireland. Objectives: 1. To determine the reliability coefficient of a single SSAOP assessment in determining a trainee's operative competence in three common surgical procedures; laparoscopic appendicectomy, open inguinal hernia repair, and excision of a skin or subcutaneous lesion. 2. Determine the reliability of the SSAOP tool across all procedural assessments. 3. Calculate the number of observations required to achieve reliable assessments of performance in the three named procedures and across all submitted procedures.

Method: SSAOP scores from April 2016 to February 2021 were analysed. Reliability analyses for assessment the above named procedures were compared to those across all submitted procedural assessments. Generalizability and decision studies determined the number of assessments and observers needed to achieve a reliability coefficient (G) of =0.7 and =0.8 (appropriate for low- and high-stakes assessment respectively).

Results: A total of 2,294 SSAOP assessments were analysed. The global Overall Performance rating was more reliable than the Total Checklist score of summed items. G =0.70 is achieved using a single assessor observing a minimum of 3 laparoscopic appendicectomy cases, and 5 skin or subcutaneous lesion excision assessments. G =0.70 cannot be achieved for inguinal hernia repair assessments or for assessments across larger groups of procedures. G=0.8 can only be attained using multiple assessors observing multiple cases of the same index procedure.

Discussion/Conclusion: Operative competence should be assessed on a procedure-specific basis. Multiple assessors observing multiple cases are required to summatively assess procedure-specific competence in trainees. Assessing overall competence across procedures is not feasible in practice. Trainers and trainees should focus on repeated assessments observing index procedures suitable for a given trainee’s stage of training.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	25234	**Submission Date:**	24/01/2022 10:47:29
Submission By:	Mr Conor Toale		

Abstract Title

Are measures of fundamental psychomotor ability associated with the future operative performance of surgical trainees?

Co-Authors C Toale, M Morris, E Doherty, DM Ryan, OJ Traynor, DO Kavanagh

Background/Introduction: Assessments of visuospatial, psychomotor and perceptual ability highly correlate with simulated operative performance, and may contribute positively to a reliable trainee selection model.

Aims/Objectives: Aim: This study seeks to investigate the association between baseline measurements of technical ability and future operative performance as measured through both in-theatre and simulation-based assessments.

Method: Core surgical trainees in the Republic of Ireland recruited from 2016 – 2019 participated in validated assessments of fundamental technical ability; Pictorial Surface Orientation (PicSOr) testing of perceptual ability, 'paper-based' visuospatial aptitude assessments, and manual dexterity testing using a grooved pegboard. Operative performance was assessed using the in-theatre Supervised Structured Assessment of Operative Performance (SSAOP) tool, and Operative Surgical Skill (OSS) assessments (multi-station simulation-based assessments) performed over a 2-year core training period. SSAOP assessments were scored using a 15-point checklist and a global 5-point Operative Performance score. Univariate (Pearson) correlations and multiple linear regression were used to explore the association between fundamental ability and

Results: A total of 242 trainees completed baseline technical ability assessments from 2016 - 2019. Performance scores in simulated assessments were available for 172 trainees. Trainees completed a total of 2,085 workplace-based (SSAOP) assessments. Aggregated fundamental ability scores strongly correlated with performance in all submitted SSAOP assessments using the Total Checklist score ($B = 0.75$, $t(168) = 3.17$, $p = 0.002$) and weakly correlated with Overall Performance scores ($B = 0.04$, $t(168) = 3.16$, $p = 0.002$) , independent of operative experience and centile scores. Fundamental ability scores were also predictive of OSS assessment scores on multivariate analysis ($B = 0.219$, $t(168) = 2.22$, $p = 0.03$).

Discussion/Conclusion: Fundamental technical ability is associated with future performance scores in both in-theatre workplace-based assessments of operative skill and simulation-based assessments of operative performance.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	25318	**Submission Date:**	24/01/2022 16:45:03
Submission By:	Dr Sukhpreet Gahunia		

Abstract Title

Delivering Human Factors and Non-Technical Skills Training Using Interactive Online Platforms in the COVID-19 Era

Co-Authors S Gahunia, G Nolan, G Hardman, A Kausar, J Ward, N Khwaja

Background/Introduction: Human factors (HF) and non-technical skills (NTS) training is an integral part of surgical curricula. It has taken on increased relevance during the COVID-19 pandemic as trainees have been working in unfamiliar environments with varying teams, in a time of significant stress which could impact wellbeing. With many professional development courses and teaching sessions cancelled, we sought to implement an online HF/NTS course for surgical trainees.

Aims/Objectives: To evaluate the impact and effectiveness of an interactive HF/NTS course delivered to Core Surgical Trainees during the COVID-19 pandemic.

Method: A 1-day HF/NTS course was conducted online, using the Zoom platform, to Core Surgical Trainees in the North West. The course consisted of interactive lectures, small group teaching sessions, and self-directed learning with written reflections. Pre- and post-course surveys were administered, evaluating the participants' awareness, knowledge and skills using a 5-part Likert scale, along with a multiple-choice

Results: Participants' self-rating of awareness and knowledge for both HF and patient safety increased by between 10-20%. There was a significant increase in the mean post-course test score from 7.54 (SD± 1.7) to 8.65 (SD± 1.2) out of 10 ($p<0.0001$). The course overall was rated relevant and useful (weighted averages 4.4 and 4.5 respectively).

Discussion/Conclusion: To our knowledge, this is the first time a video conferencing platform has been used to deliver a live HF/NTS course. This study provides evidence supporting the use of such interactive online platforms in postgraduate surgical education. Training and professional development must continue, despite the ongoing pressures from COVID-19. Furthermore, HF/NTS training is essential in ensuring a safe and productive environment for patients and colleagues alike. The earlier this is introduced into the surgical curriculum, the more it will become ingrained in our practice.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26517	**Submission Date:**	27/01/2022 13:58:47
Submission By:	Mr Leander De Mol		

Abstract Title

Using an application to measure trainees' procedural knowledge before chest tube insertion

Co-Authors

Leander De Mol, Joris Vangeneugden, Liesbeth Desender, Isabelle Van Herzeele, Lars Konge, Wouter Willaert

Background/Introduction:

Educational assessments must be validated prior to their implementation. Touch Surgery™(Digital Surgery LTD, London, UK) is a medical simulation application, offering users a learn and test mode to improve and test procedural knowledge.

Aims/Objectives:

Our goal was to collect validity evidence for the chest tube insertion (CTI) test mode using Messick's contemporary framework.

Method:

Novice, intermediate and experienced participants provided informed consent and demographic information. After familiarization, the CTI test mode, consisting of multiple-choice questions, was completed. The resulting percentage score was recorded. Validity evidence was collected from four sources: content, response process, relation to other variables, and consequences. Intermediate and experienced participants completed a post-test questionnaire assessing perceived realism, relevance, and utility of the assessment. Response process was ensured by providing all users with identical familiarization and instructions. Mean scores of the three groups

Results:

Twenty-five medical students, 11 junior surgical residents, and 19 experienced surgeons participated. Content evidence was collected by an experienced surgeon in CTI and was based on published guidelines and existing literature. Furthermore, most respondents rated the simulation as realistic, and suitable to assess cognitive skills. Novices scored significantly lower (55.9±7.5) than intermediate (80.6±4.4) ($p<0.001$) and experienced participants (82.3±5.3) ($p<0.001$). There was no significant difference between intermediate and experienced participants ($p=0.75$).
Consequences evidence showed that a pass/fail score of 71% resulted in one false positive (novice that passed) and no false negatives (experienced that failed).

Discussion/Conclusion:

The implementation of this application in surgical curricula was positively reviewed. The CTI test mode presents a robust validity argument and can be implemented in surgical curricula to assess learners' cognitive skills prior to hands-on simulation practice. Future investigation concerning internal structure (i.e. reliability) of the assessment is advised.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26610	**Submission Date:**	27/01/2022 21:18:04
Submission By:	Mr Emudiaga Jonathan Ewan Emanuwa		

Abstract Title

CoSMoS (Consultation Skills that Matter for Surgeons) – a novel, blended, helical consultation skills programme for surgical trainees; 2022 pilot.

Co-Authors

Emanuwa EJE (Presenting Author), Walker KG, Mozolowski K, Hotonu S, Wilson J, Thomson R (on behalf of the RCSEd CoSMoS working group)

Background/Introduction:

Surgery has moved from a paternalistic clinician-led decision making approach to informed consent centred around Shared Decision Making (SDM). SDM has several patient benefits including better understanding of options and less decision regret. SDM is a priority for NHS Scotland as part of the Realistic Medicine Strategy. There is however a lack of longitudinal training in consultation skills for surgeons, including SDM

Aims/Objectives:

We convened key stakeholders and experts to devise, develop and pilot a longitudinal communication skills training program that aligns with both the recent surgical curricular changes and the Scottish Core and General Surgical simulation strategies. We aim to offer this to other UK surgical training programmes.

Method:

We have drawn on experience from the Royal College of Surgeons of Edinburgh ICONS (Informed Consent) course to develop a consultation skills programme. We will offer a helical sequence of 4 modules across 4 years (ST2-5).

Module 1 orientates trainees in the rationale behind SDM, equips trainees with SDM tools (e.g., the “3-talk model”), and introduces concepts such as risk communication. The module comprises five elements: (i) pre-course podcast (ii) a face-to-face training day (lectures and simulated patient encounters) (iii) remote video-assisted-debrief of a real consultation (iv) video-conference recap.

Results:

The first module has recently been piloted with the Scottish Core Surgical Trainees (CT2). We will present feedback being gathered in January and February.

Discussion/Conclusion:

Here we present the pilot of a blended, helical consultation skills training package that is evidence-based, constructively aligned, and can be embedded into surgical and non-surgical training programmes. For the first time, remote video-assisted debrief forms part of a skills programme for surgeons in the UK. A deeper qualitative study is underway.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26623	**Submission Date:**	27/01/2022 23:48:04
Submission By:	Miss Danielle Rachael Clyde		

Abstract Title

Changes to the Improving Surgical Training Scottish pilot simulation strategy 3 years in

Co-Authors Clyde D, Rose A, Willey K, Yalamarthi S, Vella M, Hogg ME and Walker KG

Background/Introduction: The Improving Surgical Training (IST) pilot was introduced in 2018 in response to high levels of dissatisfaction reported amongst surgical trainees in the UK.

The Scottish pilot differs from England insofar as it:
• includes all CST posts in the country

Aims/Objectives: Since implementation, the simulation strategy has been subjected to continuous, step-wise reviews, both planned and pandemic-induced. Here we describe the review of June 2021 and the resulting reforms to the programme.

Method: Continuous appraisal was conducted by a review group composed of simulation experts, surgical trainers, programme directors, deanery staff and trainee representatives. The group reviewed feedback collated from regional teaching, GMC surveys, preliminary ISCP statistics, and early qualitative data collected by an

Results: The data reported improvements in quantitative outcomes including; trainee engagement and satisfaction, MRCS pass rate, trainee retention and recruitment to relevant ST3 posts. Amongst headlines, 94% of CT1 trainees in 2019 (n=48) completed the take-home laparoscopy programme, compared with 26% in earlier versions (n=27). Non-technical skills sessions were also rated as highly as technical, by trainees.

The review guided developments in response to changes to the national Core Surgery curriculum, including;
• Courses
- Continuation of 4-day Surgical Bootcamp and Basic Surgery Cadaver Skills (BaSiCS) course.
- Amalgamation of “Managing Surgical Crises” and “CoSMoS (Consultation Skills that Matter for Surgeons)” courses into year 2 ‘Booster Camp’.
• Monthly Training
- Revisions to blended online and face-to-face teaching sessions.
• Deliberate Practice

Discussion/Conclusion: The IST pilot programme has been a success in improving overall experience of early surgical training in Scotland. A 2021 review process enabled improvements to the overall design. Further quantitative and qualitative evaluation studies will report later this year.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26624	**Submission Date:**	28/01/2022 02:33:05
Submission By:	Dr Robert Sinyard		

Abstract Title

Exploring the Benefits of Peer-Led Surgical Coaching for Coaches: A Mixed Methods Study

Co-Authors

Robert D Sinyard MD, MBA, Eilidh G M Gunn MBChB MRCSEd, Steven Yule PHD, Douglas S. Smink MD, MPH

Background/Introduction:

Peer-led coaching programs for surgeons have demonstrated promise for continued professional development, including facilitating technical, non-technical, and teaching skill improvement as well as enhanced surgeon wellbeing. Although coaching is directed at the coachee-learner, understanding the benefit of serving as a coach is

Aims/Objectives:

This study aimed to enhance the understanding of benefits of peer surgical coaching specifically for the coach.

Method:

Using a convergent mixed methods study design, we recruited surgeons who, in 2021, participated in a coaching program in Boston, MA, USA to complete a targeted survey and semi-structured interviews.

Results:

Of the 14 participating coaches, 11 (78.6%) believed their participation resulted in significant change to their own practice. 6 (42.9%) coaches perceived that they benefited technically, 8 (57.1%) non-technically, and 10 (71.4%) as a teacher. 11 (78.6%) coaches found the program professionally fulfilling. 11 (78.6%) also thought the program benefited both coaches and coachees equally, whereas 3 (21.4%) believed the coachee accrued the majority of benefit. Coaches gave peer coaching a Net Promoter Score (NPS) of 29 (scale: -100 to 100); the entire program had a NPS of 36. Qualitatively, surgeons reported more value than anticipated from coaching, primarily due to observation of variance in approach, technique, and communication skills. They also believed that coaching stands to benefit patients and surgeons more than existing continuing medical education efforts.

Discussion/Conclusion:

Findings from this study suggest that coaches find peer coaching to be both professionally fulfilling and clinically impactful to their own practice. Existing and future programs should promote both coach and coachee professional development in order to maximize surgeon engagement.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26627	**Submission Date:**	28/01/2022 10:46:17
Submission By:	Ms Greta McLaclan		

Abstract Title

We Stand on the Shoulders of Giants, it’s Time We Know Their Names

Co-Authors O Ellis, S Dey, G McLachln

Background/Introduction: Diversity in medicine improves outcomes for patients. Whilst anatomical names are not role models, they do reflect a system that has long been dominated by white men to the exclusion of all other forms of diversity, and could contribute to the feeling of ‘other’ often experienced by minorities within surgery. There has been discourse around eponymous names in anatomy but no research has looked at the demographic and geographic locations of these names.

Aims/Objectives: The aim of this research was to examine eponymous names of human anatomy and analyse how diverse the names used are and therefore how reflective of a modern surgical community they are

Method: : In a retrospective cohort study, the most common eponymous names were cross referenced with those used in an anatomy textbook and audited with regard to: name, date discovered, gender, ethnicity, nationality, university and area of the human body

Results: 176 eponymous names were examined. 99% were male, and 69% were confirmed white male. 22% originated in Germany, 12.5% in France and 91% from Europe. Musculoskeletal, abdominal, neurological anatomical and surgical landmarks were most likely to have gained an eponymous name. Interestingly six male names are assigned to parts of the female reproductive system and only two to the male reproductive system.

Discussion/Conclusion: Conclusion: The eponymous anatomical names that are still taught to medical students and surgical trainees, do not reflect the demographic diversity that now makes up these fields. We would suggest a change to these names to better reflect our cultural mix and to promote diversity within medicine and surgery, which will then ultimately benefit our patients.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26628	**Submission Date:**	28/01/2022 11:31:05
Submission By:	Dr Abdullatif Aydin		

Abstract Title

The role of simulation-based surgical training: The SIMULATE international randomised controlled trial

Co-Authors

Abdullatif AYDIN, Kamran AHMED, Takashige ABE, Nicholas RAISON, Mieke VAN HEMELRIJCK, Hashim U. AHMED, Furhan MUKHTAR, Ahmed AL-JABIR, Oliver BRUNCKHORST, Nobuo SHINOHARA, Wei ZHU, Guohua ZENG, John P.

Background/Introduction:

Simulation-based surgical training is hypothesised to enhance progression along the initial phase of the learning curve. Residents can acquire skills outside of the operating room (OR), without endangering patient safety. However, to date, the transferability of simulation to the OR has been limited to small-scale studies conducted with medical students.

Aims/Objectives:

The aim of this multicentre randomised controlled trial (ISCRTN 12260261) is to evaluate the effectiveness of simulation training, compared to conventional training in terms of proficiency and patient outcomes.

Method:

94 trainees were recruited, with 0-10 experience and no prior exposure to simulation in ureterorenoscopy, selected as index procedure. Participants were randomised to simulation or conventional training, as is current standard globally, and followed for 25 procedures or over 18 months. Primary outcome was number of procedures required to achieve proficiency, defined as achieving a score of =28 on the OSATS scale, over 3 consecutive operations. Surgical complications were evaluated as a key secondary outcome.

Results:

A total of 1140 cases were performed by 65 participants where proficiency was achieved in 21 simulation and 18 conventional participants over a median of 8 and 9 procedures, respectively (HR: 1.41 [95% CI 0.72-2.75]). More participants reached proficiency in the simulation arm in flexible ureterorenoscopy, requiring fewer number of procedures (HR 0.89 [95% CI 0.39-2.02]). Significant differences were observed in overall comparison of OSATS scores between groups (mean difference 1.42 [95% CI 0.91-1.92]; p<0.001), with fewer total complications (15 vs 37; p=0.003) and ureteric injuries (3 vs 9; p<0.001) in the simulation group.

Discussion/Conclusion:

Simulation-based training demonstrated higher overall proficiency scores than conventional training. Fewer procedures were required to achieve proficiency in the complex form of the index procedure with fewer serious complications overall.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26633	**Submission Date:**	28/01/2022 14:18:23
Submission By:	Miss Fiona Margaret Kerray		

Abstract Title

Systematic Analysis of Human Factors in a National Surgical Adverse Events Database to Inform Future Training Needs

Co-Authors

Fiona Kerray, Rosie Darwood, Rachel Bell, Keith Jones, Andrew Garnham, Andrew Tambyraja, Steven Yule

Background/Introduction:

Approximately half of all adverse events related to surgical care may be preventable. Errors are most often related to erroneous interactions between people and the systems and environments within which they work, that is Human Factors Science/Ergonomics (HFE). Retrospective analyses of events frequently identify communication, teamwork and equipment failures as significant factors. There is limited data detailing surgeons' first-hand perception of cause of error.

Confidential Reporting System for Surgery (CORESS) invites case reports regarding near-miss or adverse events. Members from the CORESS advisory board review the

Aims/Objectives:

This paper aims to (i) establish surgeons' perceptions of the involvement of HFE in adverse events, (ii) identify which HFE knowledge areas are most frequently cited as causative factors, and (iii) classify surgical adverse events using a human factors framework.

Method:

A retrospective analysis of 132 CORESS reports was performed.

Results:

Between March 2011 and summer 2021, 72 CORESS reports described a post-operative adverse event. Thirty five percent related to general surgery. The most frequent Clavien-Dindo score was IIIb (44%); eight (11%) cases resulted in death. There was no significant change in reported severity score over time.
Of the five HFE domains: Psychology was noted in all reports; People and Systems in 70 (97%); Work Environment in 24 (33%); Anatomy and Physiology in 4 (5%); and Methods and Tools in 4 (5%). Within Psychology, behavioural safety, situation awareness and attention were the most frequently occurring knowledge areas.

Discussion/Conclusion:

These data demonstrate that surgeons' perceptions of common causative factors are in keeping with current HFE literature. These data support the development of a targeted HFE curriculum for surgical trainees which would optimise performance, and improve surgeon wellbeing and patient safety.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26637	**Submission Date:**	28/01/2022 16:39:51
Submission By:	Dr Gilles Soenens		

Abstract Title

Surgeon’s leadership style and team behaviour in the hybrid operating room

Co-Authors Gilles Soenens, Benoit Marchand, Bart Doyen, Isabelle Van Herzeele, Peter Vlerick

Background/Introduction: Leadership is recognized as a key component to successful team functioning in high-risk industries. The ‘full range of leadership’ theory is a dominant approach in work- and organizational psychology to assess and develop leadership in organizations and work teams. This framework distinguishes three leadership styles: transformational (change- and relational-oriented), transactional (task-focused) and passive. Few studies have examined the effect of leadership on team behaviour in surgery and/or fluctuations during surgery.

Aims/Objectives: This study examines the relationship between leadership styles (transformational, transactional and/or passive) and team behaviour (speaking up, knowledge sharing, collaboration) in the hybrid operating room via video coding. Secondly, possible fluctuations in surgeon’s leadership style and team behaviour within operative phases

Method: A single-centre study using video footage, obtained via a medical data recording system, was conducted and included patients planned for everyday endovascular procedures.

Results: In total, 22 procedures were included (47 hours of recording). Transformational leadership positively correlates with speaking up, knowledge sharing and collaboration between team members on operative phase level in the hybrid operating room. Further, a passive leader correlates positively with speaking up.
Moreover, both leadership style and team behaviour clearly fluctuate during a procedure, with similar patterns across different types of endovascular procedures. Video coding is a useful, reliable method to observe team behaviour and leadership in a non-invasive and unobtrusive manner during endovascular procedures. Finally, analyses were performed at an operative phase level, in contrast to the overall procedure level commonly used in leadership literature. This granular investigation revealed important fluctuations and significant correlations at this seldom studied micro level.

Discussion/Conclusion: This study reveals that surgeons’ transformational leadership enhances team behavior, especially during the most complex operative phases. Thus, suggesting that encouraging surgeons to learn and actively implement a transformational leadership style is meaningful to ameliorate patient safety and team performance.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26641	**Submission Date:**	28/01/2022 19:10:24
Submission By:	Dr Vashist Motkur		

Abstract Title

Tackling barriers to undergraduate surgical education during COVID-19 with an online OSCE series

Co-Authors Vashist Motkur, Aniket Bharadwaj, Nimalesh Yogarajah

Background/Introduction: Restrictions due to the Coronavirus 2019 pandemic impacted medical student teaching significantly. Lectures and seminars on online platforms have become more common in medical education. Teaching via clinical scenarios in mock Objective Structured Clinical Examinations (OSCEs), however, requires greater interaction between participants. The authors developed a Surgical OSCE-Focussed Teaching (SOFT) series to trial using an online platform to teach medical students in their first clinical year via clinical scenarios.

Aims/Objectives: Our aim was to assess the acceptability of our SOFT series as an adjunct or replacement to in-person teaching. This project contributes to the growing literature around online teaching formats, with the wider goal of developing more resilient methods of training undergraduate medical students. The Coronavirus 2019 pandemic has highlighted the importance of finding ways to maintain students' professional development, despite disruptions to medical education, to produce clinically competent foundation doctors.

Method: SOFT involved six surgical-themed OSCE stations conducted online in breakout rooms with one near-peer facilitator and three students rotating the roles of doctor, patient and examiner. Feedback was obtained in the form of quantitative Likert item responses and qualitative free text.

Results: A majority of participants agreed that SOFT was more efficient (65%) and more accessible (68%) than in-person teaching. Fewer participants agreed that interactivity with tutors (44%) and communication with peers (33%) was easier than in-person teaching. Subjective feedback mentioned that assessment of an unwell patient and prescribing were less suited to the online format, and therefore the series should not

Discussion/Conclusion: Online OSCE teaching in the format described above is a potential alternative to in-person teaching for some clinical topics. However, there are still issues with ease of discussion and communication in this format. It may be valuable to reassess the acceptability of these sessions after another year of the pandemic and growing use of online teaching.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26643	**Submission Date:**	28/01/2022 19:22:11
Submission By:	Miss Mina Ip		

Abstract Title

Augmenting surgical training through technology

Co-Authors Mina Ip, Ryan Kerstein

Background/Introduction:

Surgery is a skill of art – the more you practise, the better you get. Training opportunities, especially certain emergency or complex procedures are hard to come by. With countless elective procedures having been delayed and cancelled due to the pandemic, even more so. The lack of access to operations negatively impacts surgical training.
Our Trust is taking advantage of recent technology advances by trialling “smart glasses” and “smart headsets” for telementoring: the trainer can visualise the procedure and give guidance at a distance, wherever Wi-Fi is available. This can also connect multiple trainees to watch and learn from the surgery directly from the operating surgeon’s visual perspective. Intraoperative videos can be recorded to create a surgical library and

Aims/Objectives:

1. To assess the ease of use and implementation of “smart glasses” and “smart headset” in theatre.
2. To improve surgical training through remote proctoring and develop a high-quality surgical video library and therefore improve patient outcomes and quality of care.
3. To utilise technology and innovation in surgical training so trainees can increase surgical experience without limitations of time and space – also benefits LTFT trainees, those isolating, on maternity leave etc.

Method:

Structured feedback and assessment on the impact of technology on surgical trainees in performing index procedures.

Results:

Our experience in enhancing surgical training through technology has been a success with trainees reporting improved surgical skills and confidence.

Discussion/Conclusion:

Telementoring through smart glasses and headsets is a welcomed addition to our Trust’s surgical trainees. Whilst the surgical resources generated through the smart devices cannot be considered a complete replacement in surgical experience on real patients, it is undoubtedly a fantastic resource for surgical trainees to increase surgical exposure, improve surgical skills and build confidence in surgical management of patients, therefore improving patient care.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26649	**Submission Date:**	29/01/2022 04:41:44
Submission By:	Professor Stephen Adrian Tobin		

Abstract Title

Implementation of Entrustable Professional Activities for Final Year Medical Students : Evaluation

Co-Authors

Prof Stephen Tobin, Professor of Clinical Education & Associate Dean, Dr Jenny McDonald, Senior Lecturer & Portfolio Lead; Dr Caroline Joyce, Lecturer & Assessment team ; all from School of Medicine, Western Sydney University, Sydney, NSW, Australia

Background/Introduction:

This School of Medicine has an immersive clinical program: to provide more structure, facilitate feedback and develop progressive assessment, Entrustable Professional Activities (EPAs) have been used since 2020. As most of final year students have worked in paid pre-intern 'Assistants-in-Medicine' (AiMs) roles, during 2020-2022, it was/is imperative to track their progress. Myprogress (York,UK) software and

Aims/Objectives:

Planned evaluation included student and faculty education about the EPA concept, the need for feedback, taking action and allowing for entrustability and related supervision levels. We were especially interested in feedback themes and the possibility of this programmatic approach replacing summative OSCE exams.

Method:

Evaluation has included EPA numbers, quality of clinical descriptions, feedback narratives and relation to clinical term reports for AiMs and those continuing as students. Iterative faculty development has been required.

Results:

Over 90% students have been well engaged. The mean frequency of EPAs was 2.4/week. As such preparation for their intern (HMO1) year is well documented. Almost all remediation students were found in the non-engaged group. Feedback narratives included specific actions and strategic advice. A shift to 'independence' has been demonstrated. Provision of support and information has been essential.

Discussion/Conclusion:

Each cohort of students has required specific education about EPAs, feedback and making changes towards the next occasion of the EPA. Monitoring with planned student reviews has mapped extent of progress, allowed audit and troubleshooting. This programmatic assessment approach is likely to replace summative OSCEs (not used in 2020-21) in 2022. The approach used by our School of Medicine has been shared with and critiqued by other medical assessment leads. The EPAs are based on the regular clinical tasks of junior doctors. Ultimately, this work is all about better performance of the tasks of patient care. It is entirely applicable for prevocational and surgical training programs.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26694	**Submission Date:**	29/01/2022 14:54:52
Submission By:	Miss Laiba Rahman		

Abstract Title

SURGEONS' ENGAGEMENT IN CRITICAL REFLECTION ON THEIR EDUCATIONAL PRACTICE

Co-Authors

1. Laiba Rahman, MBChB student. 2. Alison Ledger, Associate Professor (Clinical Education Scholarship). School of Medicine, University of Leeds.

Background/Introduction:

Changes in the medical education and surgical landscape demand a greater level of educational sophistication and commitment from surgical educators. However, current work pressures limit time and energy for educational development and reflection. This is concerning, as the provision of excellent education and training and the delivery of high-quality patient care are deemed to be inextricably linked.

Aims/Objectives:

The aim of this study was to explore surgeons' attitudes to teaching and education in surgery and their engagement in critical reflection on their educational practice. Surgeons' motivations and barriers to reflecting were probed, to develop recommendations for supporting surgeons to become scholarly educators.

Method:

Surgical core trainees, registrars and consultants who contribute to the education of others were invited to take part in this qualitative, exploratory study. Online individual interviews were conducted with nine surgeons representing a range of surgical specialties and training grades and with varying educational experiences. Interviews were recorded, transcribed and interpreted using reflexive thematic analysis.

Results:

Five themes were developed: 1) teaching is important and valuable in surgery, 2) the current system does not support educational excellence in surgery, 3) service pressures are perceived as a barrier to teaching and developing as educators, 4) critical reflection on educational practice is mostly informal and 5) motivation to reflect and develop as educators comes from wanting to strive for excellence.

Discussion/Conclusion:

Surgeons want to strive for excellence in all aspects of their profession. We must develop systems and structures which recognise and reward teaching excellence and support surgeons to achieve educational excellence as well as clinical and research excellence. Improvements are needed to encourage surgeons to seek feedback on their educational practice, educate surgeons about available support and resources, address the artificial conflict between training and service, promote leadership in surgical education, and create communities of practice for shared learning and improving care.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26695	**Submission Date:**	29/01/2022 15:33:23
Submission By:	Mr Alexander Brian Crichton		

Abstract Title

Innovating surgical education: The West Midlands Post-Graduate Virtual Learning Environment

Co-Authors Alexander Crichton, Tahir Khaleeq, Andrew Garnham, Tim Graham, Usman Ahmed

Background/Introduction: Surgical training has been severely impacted by the COVID-19 pandemic, with significant reductions in elective and emergency operating. Similarly, the delivery of regional education has been challenged due to social distancing, which could impact the care of patients. Learning Management Systems (LMS) have commonly been used in undergraduate education. In May 2020, the West Midlands developed a combined LMS and web conferencing platform to enhance surgical education: The Post-Graduate Virtual Learning Environment (PGVLE).

Aims/Objectives: The aim of this study was to evaluate the surgical trainee experience of using the PGVLE in the delivery of surgical education programs.

Method: Between May 2020 and November 2021, 10 surgical specialties used the PGVLE to deliver regional education. Five point Likert scales (5=excellent, 1=unsatisfactory) were used to assess surgical trainees' experiences of the PGVLE. Specialties' use of the PGVLE as an information repository and for managing their education programs was also analysed. Data from users was gained with their consent as an agreement in the terms and conditions of the PGVLE.

Results: Across the 10 surgical specialties, 146 training days were delivered, with 15,299 data points generated by surgical trainees' experiences of their education programs. The combined pan-specialty mean good/excellent rating for education delivered was 94% (90%-100%). The PGVLE platform good/excellent rating was 82% (42%-92%). Across the specialties, 628 resources were uploaded to the PGVLE for trainees and 24,637 minutes of lectures were recorded. 80% of specialties used the inbuilt PGVLE automated attendance systems for managing their education programs.

Discussion/Conclusion: The use of the PGVLE has resulted in the delivery of consistent and high-quality education on a regional scale across the majority of surgical specialties within the West Midlands. Patients will clearly benefit from better educated surgeons and so the drive to spread the PGVLE to other regions across the four nations should be greatly encouraged.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26732	**Submission Date:**	29/01/2022 20:47:33
Submission By:	Dr Gilles Soenens		

Abstract Title

Evaluating performance of peripheral endovascular interventions: A Delphi consensus

Co-Authors

Gilles Soenens, Lauren Gordon, Bart Doyen, Juliana Sunavsky, Mark Wheatcroft, Charles de Mestral, Vanessa Palter, Teodor Grantcharov, Isabelle Van Herzeele

Background/Introduction:

Comprehensive operative capture systems such as the Operating Room Black Box (ORBB) allow for detailed performance assessment by continuously recording and synchronizing multiple intraoperative data sources. Additionally, tools for endovascular performance assessment are necessary, especially because surgical training is shifting

Aims/Objectives:

This study aimed to develop step, error and event frameworks to evaluate technical performance in in peripheral endovascular procedures.

Method:

A modified Delphi consensus was used to create evaluation frameworks for steps, errors and events in iliaco-femoro-popliteal endovascular interventions. International experts from different specialities were identified, based on scientific track record. In an initial open-ended survey round, experts volunteered a comprehensive list of steps, errors and events. In subsequent Delphi rounds, items were presented to rate on a 5-point Likert scale and repeated until consensus was reached with a pre-defined threshold (Cronbach's alpha > 0.7). The items in the final frameworks achieved agreement (response: 4 or 5) from >70% of experts.

Results:

28 of 98 invited proceduralists formed the expert panel, consisting of 3 Angiologists, 7 Interventional Radiologists, 5 Cardiologists and 13 Vascular Surgeons. Most (93%) performed more than 500 PVI procedures, of which >100 in the last year (86%). Consensus criteria were met following the third Delphi round (Cronbach's alpha; a-steps = 0.79; a-errors = 0.90; a-events = 0.90). There were 15 steps (agreement 73-100%), 26 errors (agreement 73-100%) and 18 events (agreement 73-100%) in the final frameworks.

Discussion/Conclusion:

An evaluation tool for the procedural steps, errors and events in iliaco-femoro-popliteal endovascular procedures which can be applied to recording platforms such as the ORBB was developed using a Delphi consensus. After validation of the framework, it may help to identify hazardous steps, common errors and events. Thus, promoting surgical mastery by providing proceduralists (both trainees and consultants) with detailed, actionable feedback on technical performance.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26736	**Submission Date:**	29/01/2022 21:53:43
Submission By:	Mr Ian Rudd		

Abstract Title

The Influence of Legal Events involving Reflective Practice on the Views of Surgeons

Co-Authors Rudd, Ian

Background/Introduction: Reflective practice (RP) is considered essential for development by allowing professionals to ‘make meaning of complex situations and enabling learning from experience’. The high-profile case of Dr Bawa-Garba, a medical trainee convicted of gross negligence manslaughter caused considerable disquiet in the medical and surgical community. Much of this concern focused on the alleged uses of Bawa-Garba’s

Aims/Objectives: To investigate the repercussions of the Bawa-Garba case on RP in the surgical community and what might be needed to safeguard RP.

Method: A qualitative study, based on a social constructivist ontological worldview, employing phenomenological principles. A literature review was undertaken and interviews conducted on a one-to-one basis, using an interview guide and a semi-structured pattern allowing for iterative refinement. Audio recordings with subsequent transcription and thematic analysis were carried out.

Results: Three trainee surgeons and three surgical educators were interviewed. Five themes were identified and explored: ‘The impact of the Bawa-Garba case’; ’The meaning of RP in surgery’; ‘Surgeons value true RP’; ‘How do surgeons learn to reflect?’; ‘‘Sharing and assessing RP’.

Discussion/Conclusion: Surgeons place a high value on RP. RP did not actually play an important role in the Bawa-Garba case but, nonetheless, the case has had an adverse effect on the sharing of RP. I conclude that RP can be safeguarded by:
1. Ensuring that RP is clearly and tightly defined;
2. Moving on from technical or narrative reflection towards a deeper reflection;
3. Encouraging surgeons to reflect on what goes well, as well as what goes badly;
4. Reducing the role of the online Intercollegiate Surgical Curriculum Programme in RP;
5. Ensuring that the use of RP for assessment is an holistic, transparent and well-planned process;
6. Recognising how difficult RP can be, and giving it the commensurate level of

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Poster Only: ☐

Submission ID:	26746	**Submission Date:**	30/01/2022 00:40:30
Submission By:	Miss Kohila Vani Sigamoney		

Abstract Title

Closing the training gap: A novel games-based trauma teaching format for Foundation trainees.

Co-Authors

Kohila Vani Sigamoney (presenting author), Antonia Hoyle (first author), Lee Hoggett, Sophie Rogers, Ronnie Davies.

Background/Introduction:

There is currently a paucity of trauma training for UK Foundation doctors (FY). Established postgraduate trauma courses are only open to FY2+ trainees, and attendance opportunities have been reduced further during the SARS-CoV-2 pandemic, leaving a lacuna where trainees are managing trauma patients within the trauma team, despite little formal training. We sought to address this gap with a novel Playful Environment Trauma Education (PETE) session for Foundation trainees.

Aims/Objectives:

To assess the impact of the PETE session for Foundation trainees.

Method:

A 3-hour games-based trauma teaching session was delivered to 54 FY1 trainees across 3 hospital sites. Knowledge acquisition was measured via pre- and post-session multiple choice questionnaire (MCQ). Qualitative measurement of learner experience was conducted via session evaluation and self-assessments.

Results:

Learners demonstrated a significant improvement in MCQ scores ($p<0.0001$). Confidence in managing trauma patients increased from “not very confident” to “somewhat confident” ($p<0.00001$). Learners found the use of games “very useful” to the session, and the session “very useful” for their future practice. 54% the of learners preferred multimodal learning styles.

Discussion/Conclusion:

Trauma care for patients is undergoing a period of sustained improvement, spurred by the deficiencies highlighted by National Confidential Enquiry into Patient Outcome and Death (NCEPOD) and Royal College of Surgeons/British Orthopaedic Association (RCS/BOA) reports. Improving patient care relies on improving clinician education and training, but trauma education opportunities for junior members of the trauma team are currently very limited. We demonstrate that there is a role and appetite for trauma teaching provision within the FY1 curriculum. Effective trauma teaching can be provided with limited resources, faculty and time within the existing Foundation teaching programme, using a novel games-based approach. PETE may help close the gap in existing trauma training for Foundation doctors, improving trainees’ knowledge and confidence to provide patient care before undertaking established trauma courses.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26750	**Submission Date:**	30/01/2022 07:17:37
Submission By:	Miss Eilidh Georgia Merle Gunn		

Abstract Title

Audible Bleeding, The Vascular Surgery Podcast: Promoting an open global vascular educational network through collaboration with the Rouleaux Club

Co-Authors

Eilidh G M Gunn , Adam Johnson, Rachael Forsythe, Leanna Erete, Andrew Tambyraja, Sharif Ellozy, Rouleaux Club, and Audible Bleeding - corresponding author email: (e.g.m.gunn@sms.ed.ac.uk)

Background/Introduction:

Podcasts have emerged as a popular online media format for medical education. In 2018, the Audible Bleeding podcast was launched in the United States of America (USA) to provide informative and educational material for the global vascular surgery community. In February 2021, Audible Bleeding partnered with the Rouleaux Club, the society for vascular trainees in the United Kingdom (UK), to create an innovative series, interviewing dynamic and inspirational vascular surgeons practising in the UK.

Aims/Objectives:

This study aimed to quantify the impact the Audible Bleeding podcast and Rouleaux Club collaboration series has had as a novel source of Free Open-Access Medical education (FOAM).

Method:

Metrics were collected from streaming services and responses from a listener survey between July 2020 and October 2021. Impact was measured in terms of listener base, national and international reach.

Results:

Over the first 3-years, Audible Bleeding has published almost 150 episodes with over 250,000 unique downloads. Key topics of the Rouleaux Club series were vascular trauma surgery, management of aortic graft infection, altitude and extreme medicine, device safety, quality improvement, human factors and non-technical skills. The 7 Rouleaux Club collaboration episodes were downloaded over 12,000 times by listeners from over 30 countries. In the first 30 days after publication, the median total downloads per episode were 1136 (IQR 1090-1149) and UK specific downloads were 143 (IQR 118-164). In addition, the UK listenership increased for the regular monthly review episodes after initiating this collaboration.

Discussion/Conclusion:

The first Audible Bleeding international collaborative series with the Rouleaux Club has been well received, resulting in an increased UK listener base, and a broad global reach across training levels. Audible Bleeding delivers shared learning of knowledge and expertise to a global audience in a novel, in an easily accessible format and encourages the development of an international vascular surgery community.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID: 26753 **Submission Date:** 30/01/2022 09:58:43
Submission By: Miss Rachel Jayne Scurrah

Abstract Title

Awareness of Non-Technical Skills for Surgeons (NOTSS) and confidence in teaching non-technical skills among Consultant Surgeons - A questionnaire study

Co-Authors M Carr, D W Hamilton

Background/Introduction: Non-technical skills (NTS) encompass social and cognitive skills which are vital for safe and effective patient care. The Non-Technical Skills for Surgeons (NOTSS) framework was introduced 15 years ago. However, not all Consultant Surgeons have received formal NTS training and there is variable delivery of NTS training to surgical trainees.

Aims/Objectives: Aims: Explore knowledge of NTS among Consultant Surgeons, as well as their experiences of NTS training and approaches to teaching NTS.
Benefit to patients: NTS failures underpin the majority of adverse outcomes in healthcare. Therefore, ensuring all surgeons develop and maintain effective NTS is crucial. Identifying gaps in knowledge and exploring training experiences of Consultant Surgeons will facilitate the development of more effective NTS training and reduce risk.

Method: Questionnaires were distributed via Google Forms to Otolaryngology Consultants in the North-East of England. All responses were anonymous.

Results: Most respondents (13/14, 93%) were aware of NOTSS but only 4/14 (29%) had attended a NOTSS course. The majority (9/14, 64%) reported being familiar with key domains of NTS, but fewer (6/14, 43%) were able to recall 2 or more domains. Most (12/14, 86%) reported no knowledge of NTS rating tools. Only 2/14 (14%) agreed or strongly agreed that they ‘have a good understanding of NTS’. Similarly, only 3/14 (21%) Consultants agreed or strongly agreed that they are confident in teaching NTS. All respondents either agreed or strongly agreed that NTS are relevant to their day-to-day work and 13/14 (93%) agreed or strongly agreed that they wished to improve their NTS. Reflection, case-based discussion and leading by example are methods used to teach NTS to trainees.

Discussion/Conclusion: Limited knowledge of NTS and a lack of confidence among Consultant Surgeons may inhibit adequate and effective NTS development in trainees. Inadequate NTS training for surgeons at all levels is a risk to patient safety.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26767	**Submission Date:**	30/01/2022 11:44:38
Submission By:	Dr Emma Elizabeth Howie		

Abstract Title

Surgical Sabermetrics: Providing surgeons with the feedback we need to enhance performance and improve safety

Co-Authors

Olivia Ambler, Eilidh Gunn, Roger Dias, Stephen Wigmore, Richard Skipworth, Steven Yule

Background/Introduction:

Surgery is a high-performance field. Surgeons need high fidelity, quality, objective, and timely feedback, free from bias and judgement, regarding performance, in order to enhance it, and optimise patient safety. Performance is influenced by many factors, including non-technical, technical skills, and cognitive load(CL). Current methods, including Non-technical Skills for Surgeons(NOTSS)are valid but imperfect tools.This has led to the rise of Surgical Sabermetrics, defined as“the advanced analytics of digitally recorded surgical training and operative procedures to enhance insight, support professional development and optimise clinical, and safety outcomes”. However, we do not know which sabermetric tools are most suitable.

Aims/Objectives:

The aim of this study was to conduct a scoping review to identify the current technological methods of obtaining digital data to measure NOTSS and discuss their future use in surgery. This study aimed to identify current technological surgical performance measurement tools against the following criteria of acceptability:(i)non-obstructive,(ii)cause no interruption/barrier to

Method:

A scoping review was conducted as per PRISMA guidelines.

Results:

In this review, we identified 71 papers that met inclusion criteria of automated, technological measurements of NOTSS or CL from 2010. Sabermetrics benefits surgeons, trainees and patients. Providing trainees with effective, individualised, data-based feedback aids in achieving training goals and progression. Objectively measuring CL acts as a proxy for performance, detecting when individuals or teams become overloaded, presenting a risk to patient safety. Real-time, automated measurements provide opportunities to prevent error due to overload, with the potential to avoid Never Events and reduce morbidity and mortality.
Additionally, audio-visual technology such as the OR Black Box?enhance safety measures
whilst aiding theatre turnover, efficiency and preventing patient cancellation.

Discussion/Conclusion:

With appropriate technology selection, Surgical Sabermetrics can provide objective, automatically captured, digital data, reducing bias and providing the feedback needed for performance optimisation, personalised surgical training and enhanced wellbeing for

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Poster Only: ☐

Submission ID:	26789	**Submission Date:**	30/01/2022 11:55:58
Submission By:	Dr Jonathan Lawaetz		

Abstract Title

Identifying the implementation gap in simulation-based education in vascular surgery in Europe

Co-Authors

Jonathan Lawaetz, Gilles Soenens, Jonas Eiberg, Isabelle Van Herzeele, Salome Weiss, Lars Konge, Konstantinos Stavroulakis, Craig Nesbitt, Nuno Dias, Ramon Vila, Flavia Gentile, Leizl Joy Nayahangan, and the “VASSIM Collaborators”.

Background/Introduction:

The need for simulation-based education (SBE) in vascular surgery has been increasingly advocated over recent years, in parallel with a shift to endovascular surgery and work-hour restrictions. A European needs assessment from 2018 identified and prioritised a list of technical procedures to guide the future SBE development in vascular surgical training; however, a follow-up on the implementation of specified

Aims/Objectives:

To assess the current state of specialty training in vascular surgery in Europe, along with the availability of SBE recommended in the 2018 needs assessment and identify facilitators and barriers to implementation of SBE.

Method:

Content experts in (endo)vascular surgery and medical education developed a three-round survey to translate the 2018 needs assessment list into action. In round one, the availability of SBE and a list of facilitators and barriers to SBE implementation was requested. Facilitators and barriers were grouped and scored on a 1-5 Likert scale in the second round. Round three ranked the top-15 facilitators and the top-15 barriers in order of importance.

Results:

Participants were 148 key opinion leaders based on their positions in the European Society of Vascular Surgery and the Union Européenne des Médecins Spécialistes. The top three SBE procedures defined in the 2018 needs assessment seem to be implemented to an acceptable degree. Cost of equipment, lack of a structured curriculum, and dedicated faculty time are the main SBE implementation barriers. Availability of good quality simulation equipment embedded in structured SBE programs coordinated by a dedicated person would facilitate implementation.

Discussion/Conclusion:

The use of SBE is widespread, but the need for systematic and structured SBE programs in vascular surgical training with compulsory participation and certification remains. This study guides a more systematic implementation of SBE in vascular surgical training, which may enhance patient safety by increasing trainees’ skill levels before real-patient surgery.

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Poster Only: ☐

Submission ID:	26790	**Submission Date:**	30/01/2022 11:56:19
Submission By:	Ms Cristina Croitoru		

Abstract Title

“Common Bleeps”- Preparing for the first Surgical Job as an FY1 -Regional Teaching Course

Co-Authors Sami Mustafa, Jason Nicoletti, Cristina Croitoru

Background/Introduction: The Pandemic has disrupted the medical education limiting students presence on surgical wards and their exposure to common scenarios.

Aims/Objectives: The urgency for novel adaptation has accelerated the development of the online learning environment preparing Foundation Doctors (FY1) for their first surgical placement.

Method: A two-day course aimed at final year medical students was devised by surgical trainees in Northern Ireland drawing on their lived experiences. It featured common bleeps and scenarios for every surgical speciality in the region. The course comprised five sessions per day, it was delivered on a virtual platform and was fully interactive. Students from other years were also welcomed and 130 medical students attended.

Results: 118 feedback questionnaires were completed. 60% of students attended both days. Before the course only 14% felt confident about starting FY1, compared with 71% afterwards. 5% of students felt they would require more training. 79% of students became more interested in pursuing a career in a surgical speciality. 92% found the course beneficial and would recommend it to future final year students.

Discussion/Conclusion: Synchronous Distance Education in medical universities has had several benefits like flexibility of time, location and cost. There is a potential to add to and complement traditional techniques like interpersonal contact and clinical exposure enhancing self-confidence. The course may have a place for demonstrating practical procedures, simulating clinical scenarios and sharing knowledge from junior surgeons in the long term as well as adapting to the current adverse environment.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26801	**Submission Date:**	30/01/2022 12:01:31
Submission By:	Mr Joyce Thekkudan		

Abstract Title

Simulated Training for Improved Response to intra-operative Emergencies (STIRE)

Co-Authors

Joyce Thekkudan, K Kutywayo, Amal Bose, Manoj Purohit, Ali Z Khan, S Rathinam, T M F Chowdhry

Background/Introduction:

Intra-operative Life-threatening emergencies (ILTE) in cardiothoracic theatres are not uncommon. ILTE can have catastrophic outcomes if not dealt with in a timely manner. Preparedness to deal with them varies across units. Examples of ILTE, include Difficulties with airway access, major intra-operative haemorrhage (especially during minimal access surgery), cardiac arrest on induction of anaesthesia, sudden loss of cardiopulmonary bypass(CPB) and sudden deterioration following discontinuation of CPB.

Cardiac surgery Advance Life Support (CALS) protocol, now accepted as the standard

Aims/Objectives:

Develop a standardised protocol to deal with ILTEs, allocate a clear role to each theatre team member, establish an escalation pathway and request assistance (including a 2nd Consultant).

Method:

Our centres arrange regular training sessions. The sessions start with presentations on causes and management of ILTE. A team of volunteer participants is then requested to respond to a mock emergency scenario on a dummy. A trained team would then re-enact the scenario. After revisiting the protocol, all attendees are divided into teams to practice the simulated scenarios. These sessions are held on a regular basis to ensure wide coverage amongst staff.

Results:

Benefits to patients: Outcomes following ILTE, depends on the skills of the surgeon and the expertise of the supporting team. It is anticipated that regular simulated training in ILTE will improve response time, team working and translate to improved patient outcome.

Discussion/Conclusion:

From our experience, simulated training to deal with ILTE helps improve preparedness to deal emergencies. It is expected that this will translate to improved patient outcomes when they do occur.

Each surgical specialty should have its own simulated training session, where theatre

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26843	**Submission Date:**	30/01/2022 12:35:48
Submission By:	Mr James Edward Tomlinson		

Abstract Title

“Who am I now?” How can bootcamps help trainees to develop their professional identity?

Co-Authors Chris Lewis, Vivek Balachander, Paul Renwick, James Tomlinson

Background/Introduction: The role of surgical bootcamps is well established, with the aim of supporting trainees at times of career transitions. Trainees experience liminality during transition phases and have to grapple with uncertainty of both professional and personal identity. Bootcamps generally focus on technical skills as a way to help trainees through this stage.

Aims/Objectives: To pilot a new style of bootcamp with primary focus on non-technical skills. leadership and professional identity. It was hypothesised that by openly discussing the personal and professional challenges, trainees would feel able to settle into their new role more easily.

Method: Sessions predominantly focused on non-technical skills, leadership and professional identity as a registrar. Sessions were led and delivered wherever possible, with senior faculty excluded to reduce the effect of authority gradients and power dynamics.

A mixed methods evaluation was performed with immediate quantitative feedback and semi-structured interviews at 3 weeks and 3 months post bootcamp. 12 hours of interviews were transcribed verbatim, anonymised and analysed thematically using

Results: Trainees were overwhelmingly positive about the bootcamp, with 100% of describing all sessions as very relevant to their role. Self-rated knowledge increased in all domains. Themes identified included benchmarking against peers, establishing credibility and sense of belonging in their new community. Bootcamp made participants feel valued ‘They are invested in me and my future’.

Attendees described behaviour change driven by this training (Kirkpatrick level 3), reflecting on and modifying their behaviours to lead teams more effectively, engaging

Discussion/Conclusion: Bootcamps exploring the personal and professional challenges at times of transition can have a significant positive impact on participants. Wider evaluation is needed to explore their large scale feasibility.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26846	**Submission Date:**	30/01/2022 13:04:17
Submission By:	Mrs Rebecca Hart		

Abstract Title

Return To Training: Supporting Orthopaedic Trainees

Co-Authors

Rebecca Hart, Ruth Richardson, Zoe Little, Sarah Siddiqui, Matthew Solan, Shirley Chan

Background/Introduction:

At any one time approximately 10% of the UK junior doctor workforce (~5000 doctors) take time out of training. Following the Bawa Gaba case, and with trainees shielding during the COVID pandemic, the need for better management of trainees' return to work (RTW) has never been more important.

Aims/Objectives:

The authors designed a course for returning trauma and orthopaedic (T&O) registrars, with the intention of improving confidence, aptitude and patient safety. This was the first T&O specific course of its kind in the UK. We assessed its outcomes.

Method:

The pilot face-to-face course ran in the Kent, Surrey and Sussex deanery, consisting of peer and consultant-led clinical updates, forum discussions and coaching. Subsequent courses have run virtually, facilitating the attendance of delegates nationally across the UK. Pre-course and post-course surveys assessed expectations about RTW, value of the course and impact on participants.

Results:

21 participants (15 female) attended. Response rates were 100% and 57% for the pre- and post-course surveys respectively. Grade of training on return ranged from ST3 to ST8; 13 trainees returned less than full time. Main areas of concern were colleague perception (43%), reduced confidence (67%), clinical knowledge (62%), operative skill fade (62%), and frustrations with managing work-life balance (48%). 78% of respondents felt the course improved their confidence. All respondents agreed or strongly agreed that sharing concerns and hearing about peer experience was valuable and would recommend the course to peers.

Discussion/Conclusion:

There has been an overwhelmingly positive response to the support offered on our course with all attendees more confident about RTW. It is vital to adequately support trainees on their RTW in order to ensure patient safety and safeguard the mental health and wellbeing of our workforce.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26847	**Submission Date:**	30/01/2022 13:14:41
Submission By:	Mr Joseph Brennan		

Abstract Title

The Virtual Trauma and Orthopaedic Meeting Educational Series

Co-Authors J. Brennan, A. Hall, and E. Baird

Background/Introduction: The Virtual Trauma and Orthopaedic Meeting (VTM) was an online monthly educational meeting aimed at junior doctors and medical students which ran over six months.

Aims/Objectives: Following responses to a preliminary questionnaire we set the primary aim of the VTM to give attendees an insight into the formulation of management plans for common cases seen in Trauma and Orthopaedics (T&O).

Method: Each VTM lasted 90 minutes and followed a similar structure. During the first 15 minutes T&O registrars delivered teaching relevant to the theme of the VTM. The next 45 minutes consisted of case based discussions presented by registrars, with management plans formulated by consultants. Finally the remaining 30 minutes were split between multiple choice questions to solidify attendees learning, and an opportunity for attendees to ask the Consultants any questions they may have from the VTM.

Results: Of the 132 attendees the mean age was 25.7 (SD 4.45). 59.5% were male, and 40.5% female. Attendees consisted mostly of junior doctors (50.5%) and medical students (37.4%). The most common medical schools represented by attendees were International (18.3%), Edinburgh (16.8%), Newcastle (11.5%), and Exeter (6.82%). The mean rating across all VTMs was 9.00/10 (SD 1.06), further supported by qualitative analysis. 97.7% of attendees either strongly agreed or agreed that they enjoyed the VTM, 96.9% developed their knowledge of T&O, and 93.9% reported the VTMs to benefit their clinical practice. Overall there was a statistically significant improvement in attendees' knowledge of T&O conditions, management plans, and their ability to interpret imaging ($p = <0.05$).

Discussion/Conclusion: Our VTM educated and inspired future T&O surgeons, and we recommend that it is widely adopted as a novel teaching method.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID: 26848 **Submission Date:** 30/01/2022 13:45:49
Submission By: Mr James Edward Tomlinson

Abstract Title

Mental skills - the next key surgical skill?

Co-Authors Tim Boddice, Thomas Harrington-Vogt,Chris Lewis, Shekhar Biyani, Helen Church, James TomlinsonHelen Church

Background/Introduction: Specific psychological processes allow an individual to remain focussed, and deal with unwanted emotions in stressful situations, whilst framing a situation towards understanding and planning. Training in these mental skills (Psychological Skills Training) involves the systematic development and application of techniques to enhance those psychological attributes which promote performance and wellbeing. Such techniques are commonly used in sport to aid performance. Similar techniques have more recently been shown to help foundation trainees, optimising feelings of confidence and readiness in stressful situations.

Aims/Objectives: To assess attitudes to mental skills training in surgical trainees and faculty.

Method: A novel pilot survey on mental skills training was developed with ethical approvals. Usability and functionality was evaluated before survey distribution to trainees and faculty attending two surgical bootcamps. The 17-question survey was distributed electronically with voluntary participation.

Results: Prior awareness of mental skills training was greater among trainers; 75% of urology, and 71% of orthopaedic trainers. Only 30% of urology, and 47% of orthopaedic, trainees had prior awareness. The majority of respondents felt mental skills training could improve patient outcomes - 23/30 urology trainees, 10/11 urology trainers, 17/19 orthopaedic trainees, and 5/7 orthopaedic trainers.
Only 7% of all respondents believed mental skills could not be taught. Nearly all respondents wanted more training in this area, with most agreeing early years surgical training was the ideal time to introduce such concepts. Just 33% of those surveyed described themselves as confident in using some form of these skills in their practice.

Discussion/Conclusion: Trainers and trainees are highly receptive to the concept of mental skills training, believing it can improve surgical outcomes. Most respondents to this pilot survey felt they needed further training in this area. Further studies are now warranted to pilot the teaching of these skills more widely, and to assess their impact on surgical outcomes.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26854	**Submission Date:**	30/01/2022 14:39:08
Submission By:	Miss Lynette Jane Spalding		

Abstract Title

Emotional Intelligence as part of a Leadership Curriculum

Co-Authors Lynette Spalding, Muhilan Kanagarathnam

Background/Introduction:

Emotional intelligence (EQ) is defined as the capacity to be aware of, control, and express one's emotions, and to handle interpersonal relationships judiciously and empathetically. Unlike intelligence quotient (IQ), EQ can be improved with training and reflection, leading to personal benefits such as increased wellbeing and improved decision making, team benefits such as increased leadership ability and team performance, and organisational benefits such as reduced staff turnover.

Aims/Objectives:

We aimed to introduce EQ training into our leadership curriculum for trainees.
Our objective was to facilitate trainees to explore the inherent and learned traits that influence our interaction with others by introducing a number of theories and concepts that individuals could then explore further when a particular school of thought resonated with them.

Method:

A session entitled 'Improving Self' was included during a one day leadership course for trainees, as part of a wider leadership curriculum. Subjects covered included emotional intelligence, personality types, wellbeing, resilience, mentoring & coaching and imposter syndrome. The session was interactive with facilitated discussions of issues relevant to each group.

Results:

This session has been delivered to nearly 100 trainees, with the majority reporting that they understood the concepts discussed and their learning needs were met.
Anonymised feedback included "a really beneficial topic to include in such a day to grow effective and rounded leaders"

Discussion/Conclusion:

Whilst developing clinical and surgical skills is vital during training, there are there are multiple non technical skills that impact on performance, safety and ultimately improved patient outcomes. The importance of maintaining ones own wellbeing and performance can also not be underestimated. Introducing EQ training will allow trainees to develop both personally and professionally with benefits to the individual, the team and most importantly the patient.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26858	**Submission Date:**	30/01/2022 15:13:35
Submission By:	Mr Andrew Keenlyside		

Abstract Title

The impact of exposure to affective images on simulated surgical performance: A Randomised Controlled Study of Medical Students

Co-Authors

Andrew Keenlyside 1, Beatrice Rae 1, Paul Brennan 2, Mark A Hughes 2. 1 - School of Medicine, University of Dundee, Ninewells Hospital and Medical School, Dundee. 2 - Department of Clinical Neurosciences, Royal Infirmary of Edinburgh, BioQuarter,

Background/Introduction:

Exposure to stressors prior to surgery can negatively impact surgical performance. The Royal College of Surgeons of Edinburgh considers the management of stress an essential non-technical skill for safe practice. The effects of lone or repeat exposure to affective visual stimuli on performance is not well understood.

Aims/Objectives:

To investigate the impact of exposure to negative, positive and neutral affective visual images on subsequent simulated surgical performance by medical students.

Method:

A single centre randomised controlled study of 30 medical students was conducted. All participants completed 8 iterations of a standardised peg-threading task using a laparoscopic simulator (eoSim, eoSurgical Ltd UK). Prior to each of the first three attempts, all participants viewed a neutral image for 5 seconds. They were then randomised into exposure to either positive, negative, or neutral visual stimuli (sourced from the Open Affective Standardized Image Set – OASIS - database) before completion of each of their next 5 attempts. Instrument tracking software (SurgTrac, eoSurgical Ltd, UK) was used to collect performance metrics (time, instrument smoothness, instrument acceleration) for each trial.

Results:

Positive stimuli recipients showed more rapid improvement in time to complete task, distance travelled by instruments, speed, acceleration, and motion smoothness compared to the negative stimuli group and control group. Negative stimuli groups showed slower improvements in time to complete than controls.

Discussion/Conclusion:

Exposure to positive stimuli shows a variety of non-statistically significant performance benefits over exposure to negative or control stimuli. Negative stimuli may be harmful to simulated surgical performance.

The impact of stress is complex and personal. Performing under stress is an intrinsic part of being a surgeon but stress during training may hinder learning. Appreciating how different forms of stress alter performance is important for surgical training and downstream independent practise. We have illustrated the complex impact of affective

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Poster Only: ☐

Submission ID:	26859	**Submission Date:**	30/01/2022 15:25:51
Submission By:	Mr Pedram Panahi		

Abstract Title

The perceived influence of COVID-19 on core surgical training in the United Kingdom

Co-Authors

Pedram Panahi (Presenting author), Pushpa Veeralakshmanan (Presenting author), Shaikh Sanjid Seraj, Jonathan Unsworth-White

Background/Introduction:

Surgical training has been affected by COVID-19 from the early stages of the pandemic with ramifications for ongoing and future patient care.

Aims/Objectives:

Here, we aim to conduct a detailed investigation of the perceived impact of COVID-19 on core surgical trainees and their surgical career progression in the United Kingdom.

Method:

An online survey was piloted and subsequently devised using Google Forms. The survey was distributed to core surgical trainees across the United Kingdom; it considered demographics, impact on commonly assessed portfolio domains, academia and personal wellbeing.

Results:

75 trainees responded, 35 were in the first year and 40 in the second year of their surgical training programme. There was a median number of 10 days (Interquartile range 0-30) of redeployment and 2 days (Interquartile range 0-14) of sick leave due to confirmed/suspected COVID-19. A drop was observed in respondents' global perception of their portfolio quality and 42 respondents (56%) felt that operative experience was the most adversely impacted portfolio domain. The least impacted domains were the ability to deliver teaching and work on leadership/management qualities.

15 respondents (20%) had planned to complete an additional postgraduate qualification and were prevented from doing so owing to the pandemic. Several courses (Median 2; Interquartile range 1-3) and conferences (Median 2; Interquartile range 1-2) were cancelled. All 75 respondents had been exposed to virtual teaching as a result of the pandemic. 63 respondents (84%) felt more stressed as a result of the pandemic and 44 respondents (59%) indicated that they have lost confidence as a surgeon due to the pandemic.

Discussion/Conclusion:

Amongst the respondents, a marked negative impact was observed in several domains affecting both surgical training and career progression. In order to maintain optimal patient care, these factors need to be addressed in surgical training schemes as the pandemic continues.

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Poster Only: ☐

Submission ID:	26861	**Submission Date:**	30/01/2022 15:33:20
Submission By:	Dr Jan Sher Khan		

Abstract Title

Incorporation of formal Basic Surgical skills session into the surgical blocks for 4th year medical students-impact on skills acquisition and interest in surgical career

Co-Authors Jan Sher Khan, Bushra Riaz, Nikola Henderson

Background/Introduction: Basic surgical skills being cornerstone of surgical domain and practice, we felt need to make it regular part of the four weeks surgical block for 4th year students of Dundee School of Medicine.

Aims/Objectives: Make this session formal part of the surgical block and analyse its impact on the students' perception of acquisition of skills and interest in surgery.

Method: Two hours session was organized in the clinical skills centre at the beginning of each block, starting from Sep, 2021. Core trainee level fellows in general surgery were the tutors for these sessions. All the basic skills like safe handling of surgical instruments, simple interrupted and continuous suturing, sub-cuticular suturing and instrumental and hand knot tying were demonstrated and then the students were let to do hands on practice of these skills. Also one to one assistance and supervision was provided to help the students learn and master these basic skills. Students' feedback was obtained using structured online forms.

Results: 42 students in four blocks have so far attended the session. 100% of the students agreed that it was an appropriate idea to introduce this course. 58% students rated the overall event as excellent while 42% as very good and no one rated as poor. More than 90% of the students thought that introduction of this session has increased their confidence in performing surgical skills and is useful for their surgical block, especially the theatre sessions. In terms of having an impact on interest in surgery as a career, 64% responded as positive, 14% as negative and 21% were not sure of that.

Discussion/Conclusion: Making basic surgical skills sessions as regular part of medical students teaching not only improves their confidence in performing these skills but also is having impact on interest of students in surgery as a subject and as a career.

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Poster Only: ☐

Submission ID:	26864	**Submission Date:**	30/01/2022 15:58:35
Submission By:	Dr Timothy Griffiths		

Abstract Title

Low-fidelity extended reality in medical education - a case study during the Covid-19 pandemic in the UK

Co-Authors Glen Davies, Michael Farfan Arango, Shireen McKenzie

Background/Introduction: We were tasked by our tutor to create a low fidelity digital innovation that would enhance knowledge acquisition, when engaging with online teaching. As pandemic restrictions prohibited face to face teaching and continues to do so there is a need for low cost solutions that allow for practical based sessions to continue under social distancing restrictions.

Aims/Objectives: As final-year medical students, we tutored third-year peers at the University of Leeds for four weeks in early 2021 as part of their placement during social distancing restrictions in the pandemic.

Method: Utilising virtual reality headsets as camera mounts worn by the teacher, we created a virtual teaching session simulating a doctor-patient interaction. This maintains safe social distancing for students and brought a virtual clinic style session to the students who could interact with a virtual patient.

Results: Feedback was positive; students praised the novel solution to social distancing. Qualitative evidence demonstrated a clearly positive response from the students in the session and on recorded feedback sheets. It aligned with their desired outcomes for teaching sessions and filled an area of learning they felt was lacking due to pandemic restrictions on placement attendance and face to face interaction.

Discussion/Conclusion: We recommend the use of ‘first-person’ filming approaches to replicate low-fidelity simulation-based teaching. It can be utilised to bridge bed side teaching for students from homes into a simulated clinic environment and students took to it well with enthusiasm. Students wanting ‘OSCE style revision’ can utilise this method of teaching with tutors when face to face teaching is restricted. We are not aware at present of any other case reports utilising a similar intervention in the style we have described. It could be quickly and cheaply utilised in other healthcare settings.

All abstracts will be considered for both Oral and Poster presentation, but please tick here if you only wish to be considered for Poster Presentation.

Poster Only: ☐

Submission ID:	26871	**Submission Date:**	30/01/2022 16:38:04
Submission By:	Miss Lynette Jane Spalding		

Abstract Title

Supported Return to Training

Co-Authors Lynette Spalding

Background/Introduction:

At any one time around 10% of the 50,000 trainee doctors in England are taking time out of training. Trainees may take a period of time out of training for a number of reasons. These may be professional such as undertaking a research degree, personal such as parental leave or unplanned such as sick leave. Whatever the reason, the return to training can be challenging and daunting. There are many anecdotes about trainees returning to training to find they are on nights in a previously unknown unit for example.

Aims/Objectives:

Health Education England aimed to develop a programme that supported trainees returning to training - SuppoRTT.
A number of fellows with experience in returning to training were appointed to develop this programme.

Method:

A range of resources were developed to enable a bespoke package of support to be created to suit an individual trainees needs.
These resources included a period of supernumerary working, refresher courses and simulation training. Mentoring or professional coaching was also available.

Results:

Overall the SuppoRTT programme has been well received with much positive feedback. Each of the local Health Education England offices has a local process which includes formalised meetings between the trainee and their Training Programme Director/Educational Supervisor/Tutor before the leave (if planned), during the return period and afterwards.

Discussion/Conclusion:

The SuppoRTT programme has helped many trainees to transition back into training in a planned, safe and supported way, to the benefit of the trainee, their department and ultimately to patient care.
More education is required regarding the availability of this support to trainees in order to enhance their return to training experience.

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Poster Only: ☐

Submission ID:	27298	**Submission Date:**	30/01/2022 20:08:36
Submission By:	Mr Raveen Lasantha Jayasuriya		

Abstract Title

Transition from higher surgical trainee to consultant practice: a scoping review of non-clinical deficiencies in training

Co-Authors RL Jayasuriya, JE Tomlinson

Background/Introduction: Higher surgical training in many UK deaneries focus on delivery of clinical knowledge to pass FRCS exams, technical skills to fulfil CCT requirements, and clinical preparedness. The lack of good quality evidence to characterise the challenges of non-clinical skill and knowledge to ease the transition from higher surgical trainee to consultant surgical practice, makes it challenging to develop a well-structured intervention to address this gap.

Aims/Objectives: To identify the gap in the current literature, the methodologies adopted for characterisation, and analysis of inventions trialled to address the transition from surgical trainee to consultant surgeon.

Method: PRISMA-ScR structured scoping review of literature. Search terms were wider than the desired specific research question of surgery in the UK, to include other medical specialities, and overseas healthcare system training programmes, and focusing the gap analysis for translatable content and a sub analysis to highlight the paucity of literature in surgery.

Results: Databases interrogated: Medline, HMIC, Pubmed, Google Scholar. Papers: identified n= 434, screened n=276, eligible n=105, included n=50.

The majority of papers identified are of poor to moderate quality, but still providing some data for results synthesis. The better-quality papers included those adopting a mixed methods approach to both characterise the gap in training and utilised this to structure interventional programmes. A similar pattern was seen when reviewing articles

Discussion/Conclusion: This scoping review highlights the need for a mixed methods approach for characterising the gap in training for high surgical trauma and orthopaedic trainees making the transition to UK NHS consultant practice. This will most likely commence with a stakeholder analysis to identify who to target for qualitative semi-structured interview (most likely to be newly appointed consultants). The topic guide for such interviews would be informed by the deficiencies in training identified in this scoping review.

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Poster Only: ☐

Submission ID:	27299	**Submission Date:**	30/01/2022 20:11:57
Submission By:	Mr Anish Sanghrajka		

Abstract Title

Investigating trainers' and trainees' opinions on the trajectory of competency attainment in Trauma & Orthopaedics

Co-Authors Michael Pullinger, Sertaz-Niel Kang, Philip Johnston

Background/Introduction: Competency in specific trauma procedures is required by the completion of the intermediate stage of training in Trauma & Orthopaedics in the UK. An acceptable trajectory in the development of these competencies through training has not been defined, but this is important in assessing an individual trainee's development.

Aims/Objectives: The purpose of this study was to determine trainer and trainee expectations of the trajectory in the development in competencies for specific trauma procedures, to see whether there is adequate agreement for standardised benchmarks to be set.

Method: An electronic survey was designed, asking respondents to score their expectation of a trainee's competency (defined by Procedure Based Assessment level) for specific trauma procedures at levels ST4, ST6 and ST8.

Using the modified Dilman Tailored Design Method, 32 Educational Supervisors and 73

Results: 53 Trainees (response rate 72%) and 22 Trainers (69%) responded. There was strong agreement amongst both groups that trainees should be level 4 for all procedures at ST8. For ST6, there was general agreement amongst trainers for Level 4a for hemiarthoplasty and 4b for hip fixation. For all other procedures, expected competencies ranged between 3a and 4b. Greater variability was found for ST4, with spread between 2a and 4a for all procedures. Trainee's expectations were as widespread as trainers, but generally higher in terms of competency level.

Discussion/Conclusion: This study shows that there is significant and marked variation in trainers' and trainees' expectations of competence in trauma procedures at ST6 and ST4 levels. This variation has significant implications for the assessment of adequate progress in training at these levels. Whilst all agree that trainees should be fully competent at the end of their training, standards for satisfactory progression need to be agreed.

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Poster Only: ☐

Submission ID:	27336	**Submission Date:**	30/01/2022 22:26:31
Submission By:	Ms Nadine Paul		

Abstract Title

Evaluating the value of incorporating laparoscopic skills into basic surgical teaching courses for medical students and junior doctors

Co-Authors Kiyara Fernando, Jonathan Makanjuola

Background/Introduction: Basic surgical skills (BSS) are an essential component of a medical curriculum, and a cornerstone of practical training for juniors. Laparoscopy now is commonplace in most surgical specialties, yet junior trainees rarely have opportunities to practise it in a simulated setting.

Aims/Objectives: Laparoscopic skills were therefore incorporated into the BSS course run at Kings College Hospital, London, with a focus on developing confidence and basic proficiencies amongst juniors. Post-course feedback was used to evaluate the effectiveness of these teaching sessions, with the view to expand a similar course across the deanery.

Method: Five 2-hour sessions were delivered to groups, incorporating tasks from the European training in basic laparoscopic urological skills (E-BLUS) program utilising laparoscopic training boxes. Feedback was collected retrospectively using a digital platform.

Results: 63 feedback forms were received, most participants were Foundation Year One Doctors (28), and third year medical students (18). Prior to the course, 44 participants reported minimal or no prior experience in surgical skills. 25 considered themselves ‘not at all confident’ undertaking basic surgical procedures, and 48 reported none or very few opportunities to practice laparoscopic skills. Following the teaching session, 50 participants felt increased confidence, with all participants finding the course to be a useful learning tool, with skills complexity at an appropriate level. Qualitative comments cited more time on the laparoscopic skills trainer as an area for improvement, with suggestions for future sessions solely dedicated to building upon laparoscopy.

Discussion/Conclusion: Laparoscopic surgery is considered the frontier of modern surgery and has revolutionised clinical practice. This basic laparoscopic skills course increased trainee confidence and perception of improved skills, with the view to shorten the learning curve for more complex laparoscopic tasks. Basic competency can be acquired using simulators for trainees with no prior experience, making similar teaching courses

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Poster Only: ☐

Submission ID:	27952	**Submission Date:**	04/02/2022 16:02:13
Submission By:	Dr Akriti Nanda		

Abstract Title

A National Equality Diversity and Inclusivity Workshop

Co-Authors

Akriti Nanda, Sanah Ali, Catherine Lovegrove, ASiT EDI Working Group, Michael Okocha

Background/Introduction:

The 2021 Kennedy report highlighted the need for diversity and inclusion to be fundamental aspects of surgical training.

Aims/Objectives:

The Association of Surgeons in Training (ASIT) has created the first evidence-based workshop for surgical trainees to explain the impact of discrimination on patients and staff whilst exploring ally and active bystander concepts.

Method:

The workshop consisted of a short film and anonymised real-life cases. The film included extracts from the Kennedy report, ASIT's 50 Faces of Surgery series, experiences of discrimination, and explained the 2010-Equality Act in relation to surgical practice. The cases were based on themes of racism, sexism, Islamophobia, parental discrimination and LGBTQIA+ persons, focussing on the role of allyship and active bystander behaviours. Limiting group sizes encouraged participation and created an appropriate environment to discuss sensitive topics. The workshop was assessed using QR-coded short MCQ-style factual and feedback questions.

Results:

The authors ran multiple workshops for a total on 50 surgical trainees. 42% of learners had never had any training on topics of diversity and most were unaware of the Kennedy Report and protected characteristics. After the workshop, 93% felt confident to recognise situations where discrimination/bias play a role in healthcare settings (rose from 32% prior to workshop). After, almost all participants understood the responsibility of allyship and 93% left feeling they had a suitable strategy for scenarios involving discrimination (rose from 61%).
98% found the session beneficial in their role as a core trainee (rose from 58% who thought EDI teaching would be useful prior to the workshop).

Discussion/Conclusion:

This workshop educates and empowers learners to challenge acts of discrimination. All surgical trainees should be trained to understand the diverse population they serve and how to act as an ally for patients and their colleagues.

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Poster Only: ☐

Submission ID:	27963	**Submission Date:**	04/02/2022 18:11:56
Submission By:	Mr Andrew Keenlyside		

Abstract Title

A Decade of Undergraduate Surgical Teaching – A literature Review on Undergraduate Surgical Education in UK Medical Schools (2011 – 2021) and Analysis of the University of Dundee

Co-Authors

Andrew Keenlyside 1, Kismet Hossain-Ibrahim 1, Neil Harrison 1, Roderick McLeod 1, Gordon Hogg 1. 1 - School of Medicine, University of Dundee, Ninewells Hospital and Medical School, Dundee

Background/Introduction:

There exists a lack of consensus around the undergraduate curricula with extreme variation in teaching and clinical exposure by specialty and medical school.

Aims/Objectives:

This review discussed the current state of undergraduate surgical education in UK medical schools with a focus on changes over the previous decade (2011- 2021). An analysis of theatre etiquette and basic surgical skills (BSS) courses of the University of Dundee, undergraduate curriculum was also undertaken, with comparison to the literature.

Method:

A PubMed search using the quire “(undergraduate) AND (medicine) AND (Surgical) AND (teaching) AND (UK)” returned 155 publications. These were screened for relevance to yield the 100 publications discussed in this review. Analysis of Dundee student feedback (2016 – 2019) was carried out for BSS and theatre etiquette courses.

Results:

A wide variety of novel techniques including near peer assisted, short targeted basic surgical skills (BSS) courses and student opportunities, including mentorship and conferences has been found to be effective but are often limited within institutions.

Scrubbing, gowning, gloving, and suturing are all often taught briefly with little follow up and significant inconsistency between medical schools. These could be aided by the widespread adoption of simulation-based learning and non-technical skills teaching.

Discussion/Conclusion:

Consensus among the existing literature states an urgent need for reform of surgical education to ensure patient safety and graduate competency. Surgical Education remains highly varied between institutions, potential posing barriers to change and gives each programme unique shortfalls requiring both national standardisation and individualised review.

A high degree in confidence in the included practical skills was indicated by Dundee students following theatre etiquette and BSS courses.

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Poster Only: ☐

Submission ID: **Submission Date:**

Submission By: Mr Khan

Abstract Title

Evaluating Clinical Learning Environment for Postgraduate Trainees at a Tertiary Care Hospital

Co-Authors Qamar Riaz; Sadia Masood; Amir Shariff; Muhammad Rizwan Khan

Background/Introduction: The clinical learning environment (CLE) is the overlapping space between the clinical learning environment and the educational practices. Trainee perceptions of their CLE serves as the quality indicator of the academic practices of the programme.

Aims/Objectives: The purpose of the current study was to measure residents' perceptions regarding their CLE at Aga Khan University (AKU) using Postgraduate Hospital Educational Environment Measure (PHEEM) inventory, which is a validated tool for assessment of CLE.

Method: An all-inclusive, non probability sampling was employed for this cross sectional survey. An email explaining the purpose with a link to the online PHEEM inventory was sent to all postgraduate trainees enrolled in all 34 residency programmes at AKU. A consent was taken and ethical approval was obtained from IRB. Means with standard deviations, frequencies and percentages were calculated. One-way ANOVA was used to measure difference between gender, year of training and residency programmes. P-values of <0.05 was taken as significant.

Results: A total of 347 (69.4%) residents responded. The overall mean score was 107±21.4 indicating 'more positives than negatives but room for improvement'. The mean scores for the subdomains of Autonomy, Teaching, and Social support were found to be 33 ±7.24 (More positive perception), 42±8.9 (Moving in right direction) and 27±6.2 (More pros than cons) respectively. There was no difference in the CLE perceptions on the basis of gender. There were significant differences in the CLE scores on the basis of residency program with highest in Radiology (122.3±13.5) and lowest in Surgery (95.47 ±19.0), and according to year of residency training with highest in first year (111.3±17.8) and lowest scores in the final year (81.5±34.3).

Discussion/Conclusion: The results of CLE survey helped us identify the strengths and weaknesses of our programmes. Remedial measures addressing the areas identified through PHEEM can improve the quality of the CLE in the residency programmes.

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