5G: Short Communications: Surgical Education

**Location:** Helvetia 2, 1st Floor, Swissotel
**Date:** Monday 27th August
**Time:** 1600-1730 hrs

**5G1 (2215)**
Pioneering a near-peer surgical teaching programme in the UK

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**Background:** Studies have shown that graduates are less confident with surgical competencies than medical competencies. Other research has shown that junior doctors can play a significant and influential role in teaching and encouraging medical students to pursue surgical careers. We hypothesized that near-peer teaching run by foundation year 1 (FY1) doctors can benefit both learners and teachers. The student will develop confidence in core skills outlined in the Royal College of Surgeons of England (RCS) undergraduate curriculum, and the educator will gain essential teaching experience whilst consolidating their surgical practice.

**Method:** We developed a pilot teaching programme from the undergraduate curriculum of the RCS and delivered it to 14 medical school finalists from the University of Cambridge. It comprised of small group tutorials, bedside teaching and formative assessments. The teachers completed a reflection of their experiences.

**Results:** Identical questionnaires using the Likert scale with each response ranged 1-9 were completed before and after the programme, assessing the confidence of the students in performing core surgical examinations and their interest in surgery as a career. The Student’s t-test was used to compare the before and after responses of the students.

Valid responses were received from 12/14 students (86%). Student-reported confidence in performing surgical examinations, presenting examination findings, and planning initial management showed statistically significant improvement upon completion of the programme (p<0.001). Furthermore, 50% of the students showed increased likelihood to pursue a career in surgery. The two teachers reported that the programme increased their confidence in teaching and consolidation of their surgical knowledge.

**Conclusion:** We identified benefits of the near-peer teaching style. Firstly, doctors who have recently graduated can identify and relate closely to the educational needs of the students. Secondly, the combination of theory and bedside teachings consolidates learning through practice. We plan to deliver this programme to a larger student cohort in the region to validate our findings.

**Take-home message:** A structured, near-peer teaching program can supplement the surgical training of the medical student whilst developing teaching skills and surgical competencies for the junior doctor.

**5G2 (634)**
Respect Matters - RACS Building Respect Improving Patient Safety Action Plan

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**Background:** In 2015, the Royal Australasian College of Surgeons (RACS) came under intense media scrutiny related to a culture of bullying, discrimination and sexual harassment by surgeons, accompanied by poor standards of surgical education and opaque complaints processes. After an open external advisory group review, public apology and acceptance of 42 recommendations led to the ‘Building Respect, Improving Patient Safety’ action plan.

**Method:** The Action Plan developed eight goals, five around culture and leadership, two about surgical education and one for complaints. Media, engagement of surgeons and trainees, memoranda with health departments, hospitals and medical schools, diversity and inclusion were espoused, mandated training about professional behaviours and education, training in leadership and centralised transparent complaints system have ensued.

**Results:** After two years, 84% of surgeons had done mandated on-line training around an operation room scenario about bullying and discrimination. A similar proportion had done the compulsory one-day course about surgical education (or had documented recent equivalent training). Leadership training is underway. One day training in building respect, speaking up, talking to colleagues about poor behaviours and making complaints if required has been a major effort. Complaints have increased in number and complexity.

This is about cultural change in the broader health system as well as surgeons reflecting on their own roles, especially about leadership within teams and role-modelling, all to improve patient care. It is also about collaboration in the health care system, as the issues are widespread within healthcare. The emergent #MeToo campaign reminds all about pervasive aspects of sexual harassment. Recent regulatory accreditation review of RACS has noted the important work in leading change. The works are ongoing and evaluation is established.

**Conclusion:** RACS has started work which has been noted by other colleges and health care systems worldwide; evaluation will enable measurement of positive change; surgeons and other healthcare workers will have safe workplaces, and patient care will be improved, meaning better quality outcomes and patient safety. Surgical...
Background: Surgical training has become more challenging in the UK with the reduction in training time and the reduced training opportunities, making every training opportunity precious. This PhD study aims to address this curriculum challenge by enhancing surgical training and assessment in the surgical training environment.

Method: Using a design-based approach a two-step design was created. Step One involved creating an online, standalone, Cognitive Hazard Training module. It uses videos of real operations to mentally train candidates to recognise, anticipate and avoid hazards during the operation. An online example of this Module was created for laparoscopic cholecystectomy.

The second design step was a Reflective Formative Assessment. The trainee and supervisor reviewed the trainee’s video-recording of a supervised-operation which involved reassessing the trainee’s performance to enhance feedback and reflection.

Results: Design feasibility was tested in the Northern Deanery training environment and the feasibility study was complemented by a theatre observation study to capture the details of the complex surgical training environment. The feasibility of this two-step design was tested with 2 experts, 32 trainees and 15 trainers. Trainee and trainer qualitative feedback was collected, via semi-structured interviews. Users’ feedback along with multiple additional data from the operation-recordings and video-review session were analysed and triangulated to improve the design and establish the feasibility and role of this style of video-review in the current surgical training. Observational data was also collected during live surgery in theatre to identify any factors affecting safety and training.

Conclusion: This PhD study has developed a novel approach to enhance surgical training, which has been tested and has received overwhelming support from both supervisors and their trainees. Cognitive Hazards Training steepened the learning curve and increased adherence to safety. The videoed operations were found to be an excellent teaching tool, which enhanced feedback and reflection. It increased trainees’ confidence and competence by tailoring the training to their individual needs. The success of this work forms the foundation for future development and testing of this new approach to surgical skills training in the UK.
Using task-level feedback with achievable objectives to improve clinical competence

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Background: Task-level feedback ensures that students understand whether they are able to complete a task successfully, or not. The aim of task-level feedback is to evoke self-regulated learning for improvement purposes, especially when linked to achievable targets. The objective of this study is to test this notion in a workplace-based assessment system that aims to develop students’ exodontia skills over time.

Method: Clinical supervisors graded 28,280 dental extractions, performed by fourth and fifth year dental students, rotating through the Department Maxillo-oral and Facial Surgery of the University of Pretoria (2014-2016), according to assistance received. Independent completion of a procedure was quantified as “one” while a procedure completed with physical intervention of a supervisor was quantified as “zero”. Students received task-level feedback quarterly regarding their independence ratios. Based on 2014 data the Department set fourth and fifth year students minimum targets of 80% and 90% independence, respectively, as from 2015. These targets constituted a challenging yet achievable objective. The aim of the feedback was to increase the number of students that could achieve these targets. Only very low performing students were subjected to targeted intervention. Remaining students were left on their own to achieve improvement.

Results: The proportion of 2014 BChD IV students (n=42) who achieved 80% independence increased from 60% at mid-year to 81% at the end of the year. For the 2015 and 2016 cohorts (n=51 and n=62) the improvements were 67% to 86% and 56% to 97%, respectively. The proportion of 2014 BChD V students (n=58) who achieved 90% independence increased from 40% at mid-year to 48% at the end of the year. For the 2015 and 2016 cohorts (n=37 and n=51) these improvements were 57% to 65% and 82% to 88%, respectively.

Conclusion: The introduction of minimum targets in 2015/16 coincided with considerable increases in independent practice milestone achievements earlier in the year when compared to 2014 baseline data, especially in year five.

Task-level feedback should be accompanied by achievable objectives to facilitate improvement in clinical competence over time. Students should receive stronger encouragement to achieve independence targets.

The value of Crew Resource Management training in surgical departments

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Background: Crew Resource Management (CRM) courses for surgical departments are becoming popular in various formats. However, the quality and effects of such trainings for patient care have not been well established. We aimed to explore CRM trainers’ views on the current state of the CRM training.

Method: We conducted semi-structured interviews, in combination with a short questionnaire study among trainers of various CRM courses for the healthcare market in Netherlands.

Results: Across all training programs, three parts can be identified: didactics, simulation-exercises, and feedback or debriefing. We found large differences in the simulation-exercise formats in part related to the background of the trainer, which could be medical, educational, or aviation, or a combination. Nearly all trainers agreed that national standards for CRM training lack, but disagreed about their envisioned content.

Respondents agreed that reducing complications and mortality is possible, but measurable improvement may take up to 15 years to achieve. All estimated that nationally implemented CRM is cost effective. It would take about three years to get investment costs returned. Most highly valued components of medical CRM were considered teamwork and (de)briefings.

The market of CRM training is increasing and the courses are extremely divers. Trainers are concerned about the effect of the diversity in medical CRM on its quality. One solution could be national standards for CRM training and accredited trainers, to ensure quality, but leaving room to tailor CRM training locally. International comparisons are possible, but suffer from differences across medical CRM markets and differences in national cultures regarding education, operative care and CRM.

Conclusion: CRM training offered commercially varies hugely. Establishing CRM standards would be one step in the direction to assure quality. Eventually CRM should become integrated in the culture of the operating theatre, at the benefit of patients, healthcare professionals and trainees. Healthcare professionals and CRM-trainers should collaboratively ensure that CRM reaches its potential.