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TECHNOLOGY

A68

REMOTE SIMULATION IN CARDIOTHORACIC SURGERY

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Background and aim: Simulation is integral to the recovery of surgical training in the UK after the COVID pandemic. Physical constraints on traditional simulation training can affect access. We sought to understand if cardiac and thoracic simulation training remotely is feasible and effective. It has been demonstrated in other settings and has potential in the surgical setting [1].

Methods: We completed simulation training sessions using the Teams and Zoom online platforms with single one on one and group simulation training sessions covering Video-assisted-thoracoscopic-surgery wedge resections and lobectomy as well as coronary anastomosis.

Results: We had 15 participants in the thoracic arm and 5 participants over 4 sessions in the cardiac arm. All participants found the remote simulation training useful and improved their confidence in surgical skill. We did not have any technical connection difficulties during sessions but challenges for simulation in this format included standardizing the equipment and setup pre-sessions. Participants found in 89% of cases that feedback on performance was superior to face to face simulation and/or surgical theatre experience.

Conclusion: Remote simulation is feasible and effective in cardiothoracic surgery in our pilot study. Further studies are needed to better clarify who this resource should be targeted at included experience of trainees and level of competence.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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DESIGN

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SUSTAIN AND SPREAD: A STANDARDIZED SOLUTION FOR HIGH QUALITY SIMULATION

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Background and aim: The past three years during Covid19 have brought significant changes to our simulation service, including a change of specialist extended faculty. As we began to resume our standard service, and new faculty members joined the team, it became apparent that we had been heavily reliant on individual faculty memory and had lost some organizational memory. This impacted the efficiency and quality of the service, as well as the experience for the new staff members. Therefore, we decided to evaluate all our courses to identify opportunities that would improve the overall service and help integrate new faculty.

Activity: We initially used a scoping exercise based on the System Engineering Initiative in Patient Safety (SEIPS) framework [1] to evaluate all our courses looking at course design, scenario design, evaluation tools and course delivery to highlight themes for service improvement. Potential service improvement ideas were prioritized taking into consideration the Hierarchy of Intervention Effectiveness to ensure improvements were mixed across the person and system-focused levels [2].

Findings: The SEIPS scoping exercise highlighted inconsistency in course design, delivery and evaluation. As a team we set about designing a standardized approach that could be applied to both established and new courses, aiming to enable course resilience and retain valuable knowledge and documentation.

We have designed and embedded standardization in all aspects of course design, delivery and evaluation:

- SEIPS based scenario design proforma
- Course introduction with a human factors workshop
- Incivility workshop
- Technical teaching aid for debriefing
- Human factors teaching tools
- Pre- and post-course evaluation

Anonymized feedback from faculty was used to assess the impact of the standardized course design. This standardized approach has supported existing and new faculty to develop and run high quality courses; created a shared understanding of teaching content and delivery, and has had a positive impact on the consistency of course quality.

Conclusion: By scoping and exploring our service we illuminated gaps within our organizational memory and were able to strengthen these by designing a series of innovative documents, proformas, teaching aides and evaluation. This standardized approach helps to enable consistent high quality, support new faculty, whilst still allowing for flexibility and adaptations when delivering courses.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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EDUCATION

A70

NOVEL HIGH-FIDELITY SURGICAL SIMULATION EDUCATIONAL PROGRAM (SSEP) – A SYSTEMS-BASED APPROACH FOR ENHANCED PATIENT SAFETY

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Background and aim: Increased pressures within the NHS, shortened learning hours and disruptions caused by the COVID-19 pandemic has significantly impacted surgical training. Current courses focus on single training levels, but errors occur through systemwide failures [1]. We developed a SSEP targeting cross specialty and team-based patient management, focused on clinical knowledge and skills, cognitive simulation, leadership and human factors based upon real life events to optimize training in a system that lacks time and exposure.

Methods: A six-month pilot program was designed with monthly sessions, attended by surgical nurses, junior doctors and consultants, covering common surgical scenarios mapped to the ISCP curriculum [2], and topics highlighted through local clinical governance. Immersive interactive sessions were delivered by a dedicated consultant led education team to provide a mixed reality environment for each simulated scenario. Faculty encompassed emergency, anaesthetic and surgical consultants to facilitate realistic multidisciplinary team working. The professional identity and grade of participants were maintained during each simulation to ensure sessions were representative of real-life events with a clear mutual goal to improve knowledge and skills to transpose into safer patient care at all levels of seniority. Sessions combined simulated scenarios with structured teaching, clear learning objectives, detailed peer feedback and opportunity for juniors to complete work-based assessments with consultants. Senior trainees benefited from participation in the design and delivery of sessions providing opportunities to strengthen their leadership skills. We recorded participants pre- and post-simulation confidence, and knowledge, were measured using 5-point Likert scale feedback forms, and multiple-choice questionnaire (MCQ) paper respectively.

Results: Two-paired T analysis showed statistically significant improvements in participant confidence across all 4 simulations (Table 1-70). Participants also received statistically significant higher scores in the post-simulation MCQ test compared with their pre-simulation scores (4.07 ± 0.53 , 4.43 ± 0.26 , $p = 0.02$, $n = 14$) at the 95% confidence interval. Limitations included variable attendance due to service needs and strikes.

Conclusion: Our SSEP is an effective strategy for the improvement of trainees' confidence and knowledge in managing challenging surgical scenarios, which actively contributes to the development of skills for clinical practice. Evaluation of long-term knowledge retention is necessary. Our ambition is to develop the program as a quality improvement project (QIP) that implements learning from

significant events and demonstrate improved outcomes in these domains. We endeavour to embed this simulation training across the region.

Ethics statement: Authors confirm that all relevant ethical standards for research conduct and dissemination have been met. The submitting author confirms that relevant ethical approval was granted, if applicable.

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EDUCATION

A71

EVALUATION OF A CO-PRODUCED SIMULATION BASED PERINATAL MENTAL HEALTH PROGRAMME

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Background and aim: NHS England's Long-Term Plan for Mental Health highlights need to develop PNMH services and train staff ensuring service user involvement [1]. Women experiencing PNMH disorders often initially present to non-specialist healthcare professionals (NSHCP), meaning that they need specific training in assessment and management of PNMH disorders. A co-produced and co-facilitated simulation-based training programme in perinatal mental health was developed in 2019 by Sussex Partnership Specialist Perinatal Service in conjunction with University Hospital's Sussex Simulation team.

Primary Aim: Evaluate self-reported changes in confidence and competence of learners attending perinatal mental-health (PNMH) simulation training across multiple domains relating to assessment and management of PNMH problems. **Secondary Aims:** Evaluate impact of service user co-facilitation on PNMH simulation training; Assess whether participant demographics reflect training's target professional groups.

Methods: Service User Consultants (SUCs) were employed as faculty members and trained in simulation facilitation alongside professional faculty. Scenarios were developed in a multidisciplinary workshop, and aligned to the Health Education England (HEE) Competency framework in PNMH. Courses were co-facilitated by a Perinatal Psychiatrist and SUC. Data on participants' confidence and knowledge across the competency framework domains was collated using a survey monkey questionnaire, pre and post-course.

Results: 242 responses were collected from participants from more than ten different staff groups e.g. junior doctors, (18%), health visitors (17%) & midwives (26%). Participant confidence improved significantly across all training domains. 93.5% of participants graded contribution of SUCs either useful or very-useful. 99.2% found the simulation training useful or very-useful, with all participants agreeing their future practice would consequently change.

Conclusion: The simulation-based training programme increased confidence and understanding of NSHCPs from