Methods: Candidates were chosen from the region on a first-come, first-serve basis, amongst medical students, foundation doctors, and core surgical trainees. Interactive workshops in the morning were based around theatre etiquette, surgical instruments, suturing, as well as assessing unwell surgical patients. These were followed by high-fidelity surgical scenarios, whereby the candidates were expected to reach a diagnosis, devise an initial management plan, and prepare their patient for theatre. The afternoon consisted of the same candidates carrying out the procedure required for their patient in a theatre setting with senior support available. Medical meat was used for the practical skills component and props, such as a Boyle's machine were used to simulate the theatre environment. The faculty also played the roles of theatre staff, including an anaesthetist, a scrub-nurse, a floater, and a runner. A high-definition audio-visual system streamed the simulation to the other candidates in the debriefing room. Each scenario was followed by a structured debriefing discussing technical and non-technical objectives, facilitated by surgical consultants. Pre- and post-course questionnaires were completed.

Results: Post-course, all candidates (n=8) provided scores for specific questions. An average of their response for each question, marked out of 10, is presented in Table1.

Conclusion: It is vital to ensure that early exposure to surgical specialities is not disrupted as that is significantly detrimental for tomorrows' surgeons. Based off evaluation, our course was highly successful in achieving the goals described previously. The variety of candidates at different stages in their surgical career, sharing similar positive opinions about this course further highlights its suitability for all. We endeavour to run more of these courses in the United Kingdom and abroad to ensure that medical undergraduates, as well as surgically inclined junior doctors can develop key surgical competencies and thus are well equipped when caring for surgical patients.

Table 1: Survey results from 8 participants out of 10 points

TABLE 1

General statisfaction	10
Usefulness for doctors starting surgical rotations	10
Scenario appropriateness	9.57
Course structure satisfaction	9.85
How likely are you to recommend this course	9.85
Usefulness and fidelity	10

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EVALUATION AND DEVELOPMENT OF THE NOTTINGHAM NEUROSURGICAL SIMULATOR

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Introduction: The success of the biannual 'QMC Craniotomy Simulator Course' [1] led to the development of the permanent Nottingham Neurosurgical Simulator and teaching programme, to provide regular in-house simulation opportunities for neurosurgical trainees and rotational junior doctors. The intention was to emulate training in the aviation industry by providing early exposure to basic neurosurgical procedures in a safe and controlled environment, in preparation for the transition to performing these on patients. The simulator comprises the ROWENA (Realistic Operative Workstation for Educating Neurosurgical Apprentices) simulation model [2] alongside surgical equipment identical to that used within the department. We have evaluated the impact of delivering monthly teaching sessions over the course of 3 years and will also present the anticipated future direction for this programme.

Methods: 35 teaching sessions have been delivered since 2019, totalling 75 hours of teaching, and 260 training man-hours. 16 sessions have been attended by trainee or registrar grade doctors, and 24 by junior doctors. The simulator can also be used for independent practice, of which 5 hours have been formally logged. The most popular and commonly delivered teaching topics have been patient positioning and 3-point headrest use (n=9) and insertion of intracranial pressure monitors (n=12) in addition to creation of burr holes (n=15) and craniotomies (n=7) using a variety of different drills. A dedicated session on ward-based procedures for incoming junior doctors has recently been implemented as part of the mandatory induction training.

Results: Feedback collected has consistently demonstrated an increase in self-reported confidence in performing a procedure following simulation teaching. 23 clinicians have achieved formal accreditation in safe use of the 3-point headrest as assessed by a senior consultant and accreditation in ultrasound-guided insertion of external ventricular drains will soon be offered. Assessment using the MOSATS (Modified Objective Structured Assessment of Technical Skills) tool [3] is currently being introduced to objectively track progress of attendees over time.

Conclusion: We have shown that regular neurosurgical simulation teaching improves the confidence of trainees and is suitable for accreditation of key procedural elements. We hope to further show that this is also reflected by objective improvement in skill as assessed using the MOSATS tool. We intend to develop the programme further by designing a prescribed curriculum and formative assessment process for both early years trainees and junior doctors.

Conflict of interest: Mr Ashpole is the inventor of the ROWENA simulation system.

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