

IN PRACTICE

110

USING SIMULATION TO ASSESS SYSTEMS AND PROCESSES IN A NEW PAEDIATRIC UNIT

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Background: *In situ* simulation is an emerging tool used to test systems, improve patient safety outcomes and prepare staff working in new clinical environments [1,2]. Our department opened a new Paediatric Assessment Unit (PAU) in April 2021, which sees an average of 470 patients each month.

Aim: The aim of the study was to use simulated learning events (SLEs) to assess the effect of a new environment on performance, interpersonal skills and system-based practice. As part of the wider paediatric improvement plan, the simulation programme has been used to enhance teamwork and implement a change to maximize patient safety.

Method: Five multi-disciplinary SLEs based on paediatric and neonatal emergencies were held over a month following the opening of the new PAU. The simulations were low fidelity and *in situ*, using static models and facilitator feedback, and were held in the new PAU. Observations were displayed on tablets using the REALTi simulation app by iSimulate. A 'description, analysis, application' diamond debrief was held following each SLE, and feedback was collected via an online questionnaire. Latent strengths and safety errors were identified and shared with the wider working group to implement a change. Safety errors were then re-assessed at subsequent SLEs to demonstrate resolution.

Results: Ten latent errors were identified pertaining to the availability of equipment and medications; all were rectified within 2 weeks. Operational errors were also identified, including unfamiliarity with the new PAU location within the wider emergency team, leading to delayed attendance to the simulation. The time taken to attend the PAU by the anaesthetic team decreased by 69% once the emergency bleep message was amended with location instructions. We observed that, with each SLE, there were successive improvements in teamwork and operational behaviours. The teams were able to familiarize themselves with each other and the new working environment, consequently leading to reduced times on acquiring equipment for the emergency. There were a total of 20 participants from paediatric, anaesthetic and nursing backgrounds. Feedback was received from 55% of participants, of which all agreed or strongly agreed that the SLEs and debriefs contributed to their learning and helped develop their team-working and leadership skills.

Implications for practice: SLE is an effective tool for systems testing in a new clinical environment and helps to identify potential critical and non-critical safety risks. We will continue to develop our simulation programme to assess a variety of clinical environments and share learning from the latent strengths and errors with the multi-disciplinary team, to improve clinical processes, team working and patient safety outcomes.

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190

VIRTUAL WORK EXPERIENCE IN MEDICINE: WIDENING PARTICIPATION

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Background: The national lockdowns due to COVID-19 have caused significant disruption to schools and colleges. As well as interruption to their studies, pupils work-experience placements have been cancelled, particularly those based in healthcare. Despite this, the BMA continues to recommend all aspiring doctors undertake placements within healthcare to aid their application to medical school and give them an insight into being a doctor [1]. Additionally, for students from low-income families or those with no ties to healthcare, voluntary placements are often the only opportunity to learn about the various roles of doctors.

Aims: Creating a 'virtual work experience' using simulated video demonstrations in order for students to gain an understanding of what working as a doctor encompasses. This course was offered free of charge to help encourage students, particularly from low-income households.

Method: Invitation letters were sent to all public and private schools in Merseyside. Contact details and school information were obtained through the Office for Standards in Education, Children's Services and Skills (OFSTED) Government website. Students were asked to fill out a pre- and post-course questionnaire.

Results: Seventy-five schools and colleges were invited. A total of 326 students registered for the course and 220 participated in the virtual conference. All participants were from 18 schools and colleges. Students, where at least one parent had attended university, felt more confident in applying to medical school and securing a place, this was significantly higher when a parent was in the medical profession. Students from private or schools rated as above average by OFSTED felt that they were more likely to apply to medicine than those in schools who were rated average or below-average. Overall, students felt that they had an improved understanding of the different roles of doctors following the course and the simulated scenarios were most useful in encouraging them to apply to medicine.

Implication for practice: Up to 20% of secondary schools provide 80% of all applicants to medicine, with half of the schools in the UK not providing any applicants to medicine at all. The selection alliance 2019 report on widening participation in UK medical schools suggested that there continues to be a discrepancy in underprivileged students applying to study medicine with barriers including limitations to securing work-experience placements [2]. Virtual work experience and the use of simulation may be useful in providing work experience and encouraging those from low-income households to apply to medicine.

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