

## EDUCATION

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**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 ( $4.07 \pm 0.53$ ,  $4.43 \pm 0.26$ ,  $p = 0.02$ ,  $n = 14$ ) 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.

## REFERENCES

- Francis, R. Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry. Feb 2013. [www.official-documents.gov.uk/document/hc1213/hc09/0947/0947.pdf](http://www.official-documents.gov.uk/document/hc1213/hc09/0947/0947.pdf).
- Rimmer A. Simulation training to become part of surgical curriculum BMJ 2013; 347:f6706 doi:10.1136/bmj.f6706

## EDUCATION

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**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

**Table 1-A70:** Pooled two-paired T-Test analysis of participant self-rated confidence, in managing clinical scenarios and core topics, before and after participation in 4 high-fidelity simulated scenarios, at the 95% confidence interval (\*Significance  $\alpha = \leq 0.05$ ). *df* = difference

		N = No of participants	Mean	Variance	df	t Stat	T critical two-paired	Significance P (T<=t) two-tail
<b>Simulation 1: Sepsis and Anaphylaxis</b>	Pre-simulation	14	8.29	2.219	13	-2.687	2.160	0.002
	Post-simulation	14	9.00	1.538				
<b>Simulation 2: Post-operative anastomotic leak</b>	Pre-simulation	8	8.25	1.642	7	-2.376	2.365	0.024
	Post-simulation	8	8.88	1.267				
<b>Simulation 3: Acute Abdomen</b>	Pre-simulation	19	16.84	2.760	18	-3.693	1.734	0.002
	Post-simulation	19	18.26	2.760				
<b>Simulation 4: Post-operative PE and Cardiac arrest</b>	Pre-simulation	14	15.79	5.566	13	-4.387	2.160	0.000*
	Post-simulation	14	18.00	1.231				

across the PNMH care pathway, on a number of domains set by HEE PNMH competency framework. Participants were overwhelmingly in support of SUC involvement in the provision of valuable training which resembled real-life clinical encounters via scenarios.

## REFERENCES

1. NHS. Mental health [Internet]. NHS Long Term Plan. 2019. Available from: <https://www.longtermplan.nhs.uk/areas-of-work/mental-health/>

## EDUCATION

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### USING SIMULATION AS A METHOD OF ASSESSMENT IN FURTHER EDUCATION

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**Background and aim:** While the use of simulation-based education (SBE) is embedded within clinical courses delivered in higher education, its use within further education is extremely limited, leading to a perception that students may be at a disadvantage, particularly those from a neurodiverse background, where kinesthetic learning is their preferred style [1]. The same principles also apply to assessment. Supported through funding from the NCFE (originally known as the Northern Council for Further Education), a pilot project was developed with the following objectives:

- To transform the assessment methodology within further education (FE) via the use of immersive technologies
- To facilitate collaborative development of bespoke virtual reality (VR) scenarios incorporating course learning outcomes (T level and Care Certificate)
- For digital technology students to work jointly with industry in VR development
- To gain feedback from students, employers and other key stakeholders with regards to using immersive technology as a method of assessment.

## Activity:

*Scenario development*

Three prototype scenarios were developed in the iRIS platform to aid adherence to ASPIH and INACSL standards as well as collaboration across the development and project teams. The VR development was undertaken in Unity by digital students led by industry experts.

## Evaluation

The University of Huddersfield led on the evaluation of the project using a qualitative approach encompassing the three degrees of validity [2], using student and employer/stakeholder focus groups and 1:1 interviews both pre and post scenario testing. Discussions were transcribed and template analysis [3] applied.

**Findings:** While final evaluation is still ongoing, initial findings are as follows:

- iRIS proved to be an invaluable platform for scenario development across organizations greatly aiding communication and decision-making
- Both students and faculty need have reached a minimum competency with the VR equipment and environment prior to assessment
- Course learning outcomes can be readily incorporated into bespoke VR scenarios
- VR would be a suitable mode for assessment for some learning outcomes but not all
- The prototype scenarios provided adequate realism, face and construct validity for assessing the identified learning outcomes

**Conclusion:** VR simulation has the potential to be suitable and acceptable mode of delivery for assessment in health and social care. Funding applications have been submitted for phase two of the project which would include an impact study.

**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.

## REFERENCES

1. Flink P. Second Life and Virtual Learning: an Educational Alternative for Neurodiverse Students in College. *College student journal*. 2019;53(1):33-41.
2. Cohen L, Manion L, Morrison KRB. *Research methods in education*. 8th ed. London: Routledge; 2018.
3. King N, Brooks JM. *Strengths and Limitations of Template Analysis*. 55 City Road: SAGE Publications Ltd; 2017. p. 85.