

- To develop a strategy for managing a return to anaesthesia following a period of absence
- To provide a blended content learning package aiming to ease SAT back into the clinical environment
- To rebuild confidence with/among the peers in a safe simulation environment
- To improve trainees' well-being and patient safety by familiarization with anaesthesia guidelines and emergency algorithms

**Method/design:** It has been agreed that the RTP syllabus must reflect all eight domains of the Irish Medical Council (IMC) domains of Good Professional Practice, as in the following: Patient Safety and Quality of Patient Care; Relating to Patients; Communication and Interpersonal Skills; Collaboration and Teamwork; Management (including Self-Management); Scholarship; Professionalism, and Clinical Skills [2]. This is to be achieved by providing a blended content support package consisting of online refresher lectures in core clinical areas (e.g. perioperative care, paediatric and obstetric anaesthesia, and intensive care medicine), lectures focussed on trainees' well-being and human resources matters, and face-to-face simulation sessions.

**Implementation:** The lectures have been recorded and embedded in the CAI e-learning platform. A list of simulation scenarios reflecting the most common anaesthesiology emergencies has been selected and tailored towards the needs of the destination training sites and experience level. A first course will take place prior to trainees recommencing their clinical role in July 2021. On successful evaluation, it is aimed to conduct the RTP every 6 months going forward.

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46

#### 'BORN TOO SOON' VIRTUAL SIMULATION FOR AMBULANCE SERVICES ON PREMATURE BABIES BORN UNEXPECTEDLY IN THE COMMUNITY

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**Background:** Premature infants are at risk of death or neurodevelopmental impairment unless prompt effective care is delivered [1]. When born unexpectedly in the community, this risk increases due to limited resources and expertise. In 2020, West Midlands Ambulance Service (WMAS) attended 3594 unplanned births, yet paramedics do not receive specific training for the management of premature infants. Simple and timely measures can significantly improve the outcome of these infants [2].

**Aim:** The aim of the study was to introduce a recurring virtual simulation workshop for WMAS on optimizing the initial care for vulnerable premature infants born unexpectedly in the community.

**Method/design:** Our local WMAS lead identified a training need through informal feedback from paramedics about the lack of training and confidence in dealing with premature births. Our workshop, designed to address this need, begins

with an overview of prematurity. A simulation session follows, demonstrating basic Neonatal Life Support skills using equipment available to pre-hospital teams, focussing on thermoregulation. It concludes with a question-and-answer session. To enhance pre-hospital thermal care, we also put forward a successful business case for heated gel mattresses to be introduced across the WMAS and incorporated training for its use in the workshop.

**Implementation outline:** Two virtual training workshops have been delivered so far. In 2020, seven paramedics attended, and two completed the feedback and found the session valuable. After advertising, a second workshop was delivered in March 2021. Over 330 WMAS personnel registered, 219 attended and 132 gave feedback. There were representatives of various grades from 16 hubs across the region. Before the session, 12.2% of participants reported feeling somewhat confident/confident attending unplanned premature births of infants <32 weeks' gestation. Following the session, this improved to 66.7% of participants. Attendees commented on how 'useful', 'fabulous' and 'fantastic' they found the session. The sharp rise in interest in this virtual workshop confirms the training need whilst the positive feedback highlights the effectiveness of the virtual simulation workshop. With enhanced technical support, we will improve the learning experience of participants in the future. This project also led to the successful introduction of heated gel mattresses which are now carried on every WMAS ambulance. We expect that with increased staff training and confidence, the incidence of babies admitted with hypothermia following an unexpected birth in the community will improve with time. Our vision is to expand this project to other regions to empower pre-hospital staff to support premature infants born unexpectedly in the community and improve outcomes.

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2. L'Herault J, Petroff L, Jeffrey J. The effectiveness of a thermal mattress in stabilizing and maintaining body temperature during the transport of very low-birth weight newborns. *Appl Nurs Res*. 2001;14(4):210–219.

62

#### THE ABCDE OF CONVERTING FULL PATIENT SIMULATION TO A VIRTUAL NON-TECHNICAL SKILLS SEMINAR

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**Background:** Due to the pandemic, our undergraduate programme of Interprofessional (IPE) Full Patient Simulation (FPS) 2020–2021 was converted to a virtual human factors seminar using student case scenario footage and a Non-Technical ABCDE Approach Observational Tool (Seale et al. 2020). The IPE FPS programme involves students (n = 960) from medicine, physiotherapy, nursing (adult, child fields) and midwifery with three strands of scenarios covering acute adult, paediatric and obstetric scenarios. To provide meaningful learning without the use of face-to-face simulation, the principles of active learning and directed observation in simulation were applied to create a live online seminar. Using recorded footage of inter-professional discipline students participating in scenarios and the observational tool provided the resources for students to learn about the non-technical skills (NTS) in clinical practice.

**Aim:** The aim of the study was to meet IPE graduate outcomes and to explore the significance of human factors in clinical practice.

**Method/design:** Prior to the online seminar, students were allocated into their scenario groups to prepare notes on the non-technical skills, with directive guidance from an observational tool using an ABCDE approach. Within the seminar, students worked collaboratively in small inter-professional groups to discuss their observations and prepare a presentation, guided by the debrief diamond structure of description, analysis and application [1]. Facilitators debriefed after each presentation on the NTS observed [2] to explore why they occurred, and reflect how this impacted on the assessment and management of the patient and what students could apply to their own practice.

**Implementation:** Evaluation of findings demonstrated achievement of the key 'take aways' associated with live simulation and attainment of learning outcomes (Figure 1). The ABCDE observational tool demonstrated good usability and enabled effective analysis. Students asked that it should be adapted to include the patient in the descriptors and faculty observed students were more critical in their analysis of their peers compared with face-to-face debriefs. The long-term aim is to incorporate virtual seminars into the IPE programme to complement the learning in the face-to-face FPS. Innovations in the FPS programme will include using the scenario footage and the observational tool for pre-simulation briefing material, and the tool for directed observation during live scenarios and additional structure to debriefs. The scenario and debrief footage and the observational tool will also be used for facilitator training.

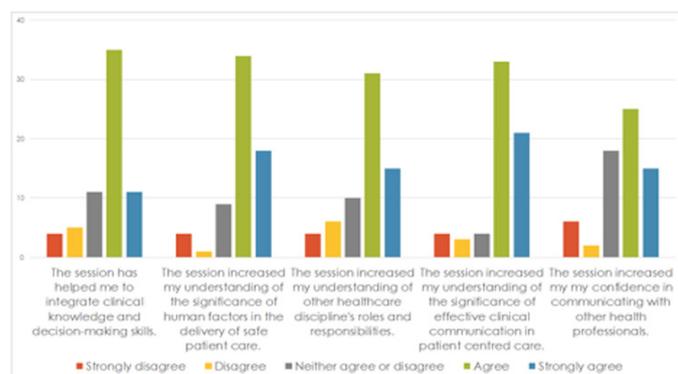


Figure 1:

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88

## STREAMING HIGH-FIDELITY ECMO SIMULATION FROM A MOVING AMBULANCE

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**Background:** The Trust needed to offer extra-corporeal membrane oxygenation (ECMO) [1] patient transport training in the form of high-fidelity multi-disciplinary simulation utilizing a moving ambulance. ECMO circuits and monitoring would be controlled using Chalice's Parallel Simulator [2]. The

simulation would be broadcast to the simulation centre for observation and debrief. We developed a simulation and AV streaming solution for this.

**Aim:** The aim of the study was to deliver high-fidelity ECMO simulation in a moving vehicle while simultaneously allowing candidates and faculty to watch the scenarios take place remotely.

**Method/design:** A custom video-over-IP system was used to run three camera feeds and a patient monitor output. A laptop captured this in a quad-view format and streamed it to a dedicated video streamer. This was then networked locally via a router with a secondary laptop which displayed the stream. The router was connected to a mobile 4G modem, allowing the secondary laptop to share this video stream via Microsoft Teams (MS Teams). In addition, a USB audio interface and microphones ensured intelligibility while the vehicle was in motion.

**Implementation:** Teaching groups were made up of 3-4 candidates from the ECMO team and 3-4 candidates from patient transport. Scenarios outlined a paediatric patient, currently on ECMO, being transferred to a specialist hospital in the region via ambulance. One or two candidates from each service would take part in the scenario and the remaining candidates would view the simulation in the centre debrief room. A technician in front of the ambulance controlled the simulator and monitored the streams. The lead ECMO specialist nurse spoke to the technician from the simulation centre via a mobile phone link. The role of a consultant was played by a member of the transport faculty on the ambulance. This allowed the faculty to oversee and prompt when necessary. Using MS Teams meant the stream could be shared with the debrief room at the centre, the control room, and with other interested parties outside of the centre. This created a unique learning experience where all candidates could see each scenario and play an active role in debrief when the ambulance returned to the centre. Successful delivery of this course will improve patient safety during potentially complex ECMO transfers. We hope to invite more remote participants via MS Teams to view the simulations and take part in the debrief, increasing learning opportunities for ECMO and transfer staff.

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63

## VIRTUAL COMMUNITY OUTREACH SIMULATION PROGRAMME

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**Background:** The community outreach programme paused during the global pandemic as schools were closed and we were unable to go into schools and colleges to use simulation-based training to educate and inspire young adults to consider a career in the National Health Service. Now that schools and colleges are open it is still difficult to go into schools and colleges due to COVID-19 restrictions. We needed a way to continue to reach out to these schools and colleges using simulation to educate and inspire young adults.