Aim: The Harefield educational team has therefore created a PICC line insertion course delivered by a multi-disciplinary faculty. This course aimed to increase understanding and confidence of PICC insertion.
Method: Using Miller's pyramid of clinical competence, the course was structured to provide learners with the knowledge and understanding of the procedure through interactive lectures and demonstrations, before progressing to hands-on practise in the workshops using high-fidelity models to increase dexterity and confidence [1]. Five editions of the course were delivered over 16 months with a total of 65 participants. Pre- and post-course questionnaires were conducted to assess the course's effectiveness in achieving its purposes.
Results: The results have shown the achievement of all the course objectives such as increased understanding of indications, relevant anatomy, equipment uses, complications and their management relating to the procedure. With increased confidence in the theoretical and practical aspects of PICC insertions, we hope the course attendees will have better performances in practicing the procedure, thus reaching the highest level of clinical competence on Miller's pyramid.
Implications for practice: As soon as face-to-face teaching will be allowed again, the PICC insertion course will be resumed as proven well-received and effective.

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121 THE RAPID INFUSER CHALLENGE: APPLYING GAMIFICATION TO IMPROVE PERFORMANCE

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10.54531/TXRK1878

Background: Major haemorrhage causes systemic shock with resultant coagulopathy. The Belmont Rapid Infuser© (BRI) is one example of a rapid infuser device to deliver intravenous fluids and blood products to patients as part of emergency resuscitation. We are a simulation team based in a busy trauma unit and anecdotally our staff did not feel confident in using our BRI.
Aims: We aimed to quantify how confident our nursing staff were in using the BRI, before and after delivering a simulated patient scenario asking them to transfuse blood products using the BRI. We also aimed to quantify whether a simulated scenario could reduce the time taken to use the BRI. We aimed to create an enjoyable environment and use aspects of gamification[2] within the training.
Method: A self-evaluation questionnaire was circulated to establish pre-scenario confidence. Candidates observed a demonstration of the set-up and use of the BRI. Candidates were read a scenario brief and asked to use the BRI to infuse 500 ml of simulated blood product at 200 ml/minute. Once they had completed the scenario, their time was recorded, they were asked to again self-evaluate their confidence and were invited to attend again at a later date to 'compete' against their previous time.
Results: Pre-scenario data confirmed what was suspected; there was a wide variation in confidence in using the BRI across the sample. Early data suggest that the simulation was able to significantly increase staff confidence in safely using the BRI and repeated attempts led to a significant reduction in time to safely transfuse.
Implications for practice: Positive participant feedback included recommendations for further hands-on deliberate practice. We hope the training can be expanded to also include members of the medical team. Further research is needed to explore the use of gamification to support simulation-based medical education within urgent care.

16 EXPLORING THE BENEFITS OF TEACHING ULTRASOUND-GUIDED VASCULAR ACCESS TO PAEDIATRICIANS

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10.54531/FRSW1996

Background: Paediatric vascular access can be notoriously difficult due to small vessels and patient cooperation. Studies have shown ultrasound (US) guided technique to be a more successful method in experienced hands, especially in children with difficult access [1]. US-guided vascular access is well established within adult medicine; however, at present there is no standardized practice in paediatrics with many clinicians not gaining any US experience, unless undertaking acute sub- specialist placements [2]. In some cases, children are transferred to tertiary centres where there is more US expertise [2]. To enable the best patient care within their local setting, US skills should be routinely taught to all paediatricians.
Aim: To date, there have been no studies exploring the experience and significance of US-guided vascular access training amongst district general hospital (DGH)-based UK paediatricians. We aimed to evaluate this within our DGH.
Methods: Small-group US vascular access simulation sessions were led by our accredited and experienced paediatric advanced nurse practitioner (ANP). Participants learned to map veins and practiced US cannulation technique on the gelatinous 'phantom' model. A questionnaire asked attendees to evaluate confidence levels before and after sessions, and open-space for qualitative comments.
Results: Thirty-eight paediatricians attended sessions; of whom, 75% had never conducted US vascular access and 96% did not feel confident. Following sessions, 100% of participants felt significantly more confident and would attempt this on real patients (Figure 1). Qualitative comments showed that they valued sessions: 'good opportunity to practice vein mapping and cannulation on gel model'. All participants felt that this should be taught routinely within paediatric training. Five participants used this new skill in real patients, following the sessions.

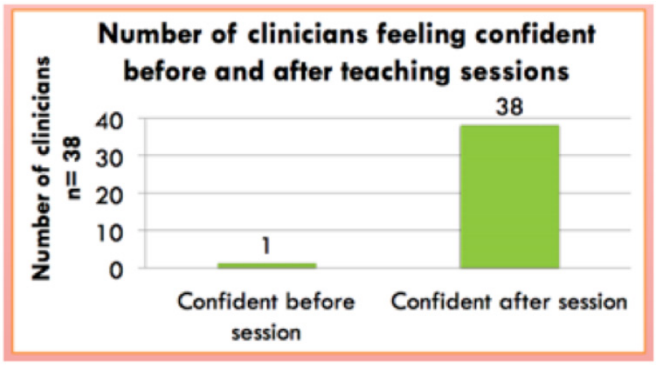

Figure one: Confidence level pre and post sessions n=38

Figure 1: Confidence level pre- and post-sessions, n = 38

Implications for practice: This study demonstrates the effectiveness and usefulness of delivering US-guided vascular access training to DGH paediatricians. It enabled improved self-reported confidence, which translated into improved patient care in real-life scenarios. Following its success, we intend on running this as an ongoing session. For clinicians wanting to utilize their skill on real patients, this will be supervised by our ANP. We recommend that all UK paediatricians train in US vascular access to enable optimal care for paediatric patients in all hospital settings. However, further research in a larger cohort of participants is required. We also recognize the variability in available expertise and equipment in all units to undertake the training. The importance and role of US-guided paediatric vascular access are still lacking in recognition and demands wider acceptance.

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17 IMPROVING RESUS HANDOVER FOR CRITICALLY UNWELL AND INJURED PATIENTS

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10.54531/HHMT2433

Background: During a single patient journey from admission to hospital discharge, multiple clinical handovers may occur between health professionals from different specialist inpatient teams and between staff at shift changes. Each handover carries a degree of risk for the patient. It is well recognized that poor communication during handovers has resulted in a significant proportion of preventable deaths [1]. The World Health Organisation (WHO) has therefore included clinical handover in the 2020 Global Patient Safety Action Plan as one of the key areas of patient care that requires robust processes and policy to ensure and improve patient safety [2]. Although handover involves risk, it is a vital part of patient care. It is often the primary source of information for health professionals taking over patient care. However, handover in resus could often feel stressful and chaotic with multiple distractions and variability in the information conveyed. It was also apparent that staff from both ED and SAS were not satisfied with the handover process. During debrief sessions, handover was often mentioned as an area of practice that required change.
Aim: The aim of our quality improvement (QI) project was to improve the handover process between Scottish Ambulance Service (SAS) staff and Emergency Department (ED) staff for critically unwell and injured patients arriving into resus. In addition, we aimed to improve communication and staff satisfaction with the handover process.
Methods: By utilizing QI tools such as the model for improvement, process mapping and driver diagrams, change ideas were identified and trialled using inter-professional simulation as part of PDSA (Plan, Do, Study, Act) cycles. This project involved engagement with ED and SAS staff members via online surveys, simulation sessions and staff education.
Results: We increased staff satisfaction with the handover process from 24% to 88% and no adverse events relating to our changes were reported.
Implication for practice: From the information gathered during PDSA cycles, a new standard operating procedure (SOP) for handover in resus was created.

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176 DOES HIGH-QUALITY LEARNING NEED HIGH-FIDELITY SIMULATION? EXPERIENCE FROM OBSTETRIC THEATRES PREPARING FOR THE FIRST WAVE OF COVID-19

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10.54531/UYUL7558

Background: In early 2020, medical teams globally faced the challenge of preparing for an unprecedented clinical situation. As well as the predicated scale and severity of the COVID-19 pandemic clinical teams were generally inexperienced in dealing with an infectious agent of this nature. Simulation, particularly high-fidelity, plays an important role in preparing for novel, high-stakes situations. However, at this time, all clinical departments were simultaneously occupied with such preparation. This placed unprecedented demand on resource-dependant, high-fidelity simulation. Here we share our use of multiple simulation modalities, ranging from low- to high-fidelity, to prepare our multi-disciplinary obstetric theatre team for the arrival of the COVID-19 pandemic.
Aim: The aim of the study was to prepare the local team to manage COVID obstetric patients within the theatre environment, particularly in the context of obstetric emergencies. This preparation must take the form of both institutional learning (the creation of a standardized protocol specifically adapted for obstetric theatres) and individual learning (familiarity by individual team members with guidelines and their roles within them).
Method: Multiple modalities of simulation were utilized (Table 1), ranging from 'talk-through' – table-top discussion utilizing paper prompts, such as a map of the theatre complex (Figure 1) – to high-fidelity *in situ* simulation. Whilst only a single high-fidelity simulation was performed, the other modalities were employed numerous times.

Table 1:

Table 1. Simulation modalities

Modality	Site	Roles	Timescale	Equipment
Talk-through	Off site	No assigned roles	Non-real time	Tabletop. Simple paper prompts, including guidelines and map of theatre complex
Walk-Through	In-situ	No assigned roles	Non-real time	No simulated patient, equipment identified but not used
Low-fidelity	In-situ	Assigned roles	Non-real time	Low-fidelity mannequin Equipment present but only some items used
High-fidelity	In-situ	Assigned roles	Real-time	Live simulated patient, equipment, including PPE, used as in real clinical practice