

**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<sup>[1]</sup>. 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.

## REFERENCE

1. Miller GE. The assessment of clinical skills/competence/performance. *Acad Med.* 1990;65(9 Suppl):S63-S67. doi: 10.1097/00001888-199009000-00045.

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## THE RAPID INFUSER CHALLENGE: APPLYING GAMIFICATION TO IMPROVE PERFORMANCE

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**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<sup>2</sup> 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.

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

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**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<sup>[1]</sup>. 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<sup>[2]</sup>. In some cases, children are transferred to tertiary centres where there is more US expertise<sup>[2]</sup>. 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.

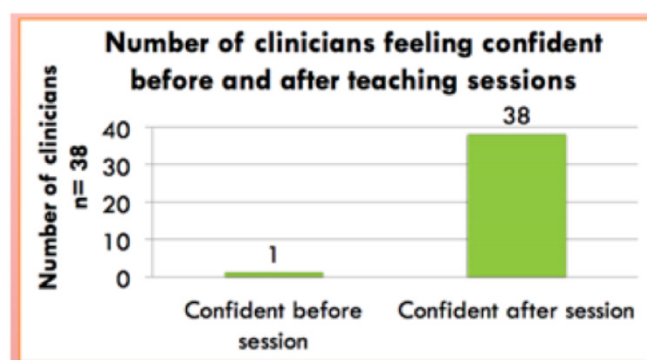


Figure one: Confidence level pre and post sessions n=38

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