

## IN PRACTICE

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**ULTRASOUND-GUIDED VASCULAR ACCESS TRAINING USING VENOUS PHANTOMS: A WORKSHOP APPROACH FOR FOUNDATION DOCTORS**

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**Introduction:** Ultrasound-guided vascular access is a useful skill for foundation year (FY) doctors, however, FY doctors receive little instruction on how to use ultrasound (US) [1]. This study evaluated the utility of a 1.5-hour workshop using venous phantoms to train FY doctors to perform US-guided cannulation independently.

**Methods:** The course was advertised to all FY doctors at a single hospital site. The teaching was delivered by two anaesthetic core trainees. The focus of the session was on visualising venous structures using ultrasound. We used Butterfly IQ+ ultrasound probes (Butterfly Network Inc., Burlington, MA, USA) connected to iPads as monitors (Apple Inc., Cupertino, CA, USA) and VATA venous access phantoms (VATA Inc., Canby, OR, USA). Pre- and post-session questionnaires using 5-point Likert scales were taken using Google Forms. Statistical significance was calculated using the paired samples t-test.

**Results:** Eighteen participants attended across 3 sessions. Before the course, the mean confidence at attempting US-guided cannulation was 1.67 out of 5. After the course, the mean confidence rose to 4.56 out of 5 (increased by 2.89,  $p < 0.00001$ ). Free text comments showed that participants valued being taught the theory of cannulation by anaesthetic

trainees and enjoyed the opportunity to gain practical skills in a simulated environment using realistic phantoms.

**Discussion:** This study demonstrates that a 1.5-hour phantom simulation-based teaching session led to a significant improvement in FY doctors' confidence at attempting US-guided vascular access (e.g., cannulation) on the ward. The course could be rolled out on a Trust-wide basis to upskill the workforce.

**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. McKay GFM, Weerasinghe A. Can we successfully teach novice junior doctors basic interventional ultrasound in a single focused training session. *Postgraduate Medical Journal*. 2018;94(1111):259-262.

