

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.

