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## Evaluating the Feasibility of Using a Tele-Mentoring Model in Performing a Two-Point Deep Vein Thrombosis (DVT) Ultrasound Scan with Novice Sonographers

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# Evaluating the Feasibility of Using a Tele-Mentoring Model in Performing a Two-Point Deep Venous Thrombosis (DVT) Ultrasound Scan with Novice Sonographers

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## Abstract

The use of ultrasound (US) imaging as a bedside diagnostic tool has become widely accepted in emergency departments across the globe. The adoption of clinical ultrasound (CUS) is still fragmented, and this discrepancy is most notable in rural healthcare facilities. This is a feasibility evaluation of a low-cost tele-mentoring model to guide non-proficient operators through two-point compression US evaluating bilateral lower extremities for deep venous thrombosis (DVT). A convenience sample consisting of six first year medical students were enrolled into the study. Using a two-way zoom video and audio call, the guiding physician (off-site) directed the participant through the DVT exams by providing instructions on patient positioning, probe placement, image optimization, and venous compression. The exams were evaluated by two ultrasound fellowship trained third-party emergency medicine physicians to validate if the archived images were diagnostic (Yes/No); to grade (1-5 score) the image quality using the reporting guidelines established by the American College of Emergency Physicians. Six participants were enrolled into the study with all participants reporting the instructions from the guiding physician were easy to understand, with a mean score of 9.9/10. All participants felt their US examination had high diagnostic value, and their experience with the tele-mentoring session improved their US skills, with means of 9/10 and 9.7/10, respectively. External validating physician 1 scored 50% of the exams as diagnostic with a mean image quality rating of 3.5/5. External validating physician 2 scored 83% of the exams as diagnostic with a mean image quality rating of 3.6/5. The use of CUS in clinical practice requires training and continued education that may not be practical in some rural areas of medicine. Data from this study was able to provide valuable insight on the role of a tele-mentoring model for CUS in rural emergency departments.

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