

# Improving skills in performing basic echocardiography and focused assessment with sonography in trauma (FAST) among medical officers in emergency department

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## ABSTRACT

**Introduction:** Ultrasound is a diagnostic tool that physicians in emergency departments (ED) frequently utilize in their clinical practice to increase the accuracy of their diagnosis, especially during resuscitation of critically ill patients. Ultrasound has become a crucial component of emergency care that can improve patients' outcomes. Thus, emergency ultrasound training is necessary to ensure medical officers can continue to be proficient in performing bedside critical care ultrasound, correctly interpreting images, formulate provisional diagnosis and initiate appropriate treatment. The objective of this study is to determine efficacy of training sessions by evaluating medical officers' skills and competency when performing bedside ultrasound. **Materials and Methods:** This is prospective, interventional study whereby participants' baseline skills in performing bedside ultrasound were evaluated. They were required to perform basic echocardiography and FAST scan on patients. A set of checklists were used to determine their performance ensuring vital steps are performed correctly in pre-test assessment. Then, they were approached individually or in small groups to undergo bedside training in ultrasound. During this training, important points when performing ultrasound were highlighted to ensure correct techniques are practiced. Following this session, their skills were reevaluated in post- test assessment phase. **Results:** Total of 24 participants enrolled in this study. The total mean pre- and post-test score were  $19.38 \pm 5.11$  and  $31.38 \pm 3.99$ , respectively. There was significant improvement in total mean score for ultrasound skills (Echo + FAST) with mean change score of +12.00 (effect size,  $d = 2.76$ ,  $p < 0.001$ ). **Conclusion:** The ultrasound training is effective in improving skills in performing basic echocardiography and FAST scan among medical officers in ED. Regular training programs can be conducted to enhance clinicians' diagnostic confidence which ultimately can improve patient's outcome.