Ultrasound OSCE: Standardized Assessment of Ultrasound Proficiency in Undergraduate Medical Education

Vijay Shimoga[1], Juliana Wilson DO MPH[1,2]

[1] University of Colorado School of Medicine
[2] Department of Emergency Medicine, University of Colorado

In recent years, point-of-care ultrasound (POCUS) has become an increasingly popular tool used by physicians at the bedside. This has prompted the creation of ultrasound training courses, now a widely popular and fast-growing facet of preclinical medical education designed to train medical students to effectively utilize ultrasound in the care for their future patients. Although a number of undergraduate medical institutions now teach their students how to practice POCUS through various curricula, standardized methods of assessing students' proficiency in using ultrasound have yet to be developed. To address this unmet need, an "Ultrasound OSCE" was developed to give medical students the opportunity to utilize POCUS in the care of simulated patients in order to evaluate their proficiency. Students performed POCUS maneuvers to assess standardized patients with pleural effusion and abdominal free fluid, and in each case, were evaluated on a number of parameters including probe selection, ability to obtain a diagnostic-quality imaging window, and utilize their findings to determine the most appropriate next step in clinical decision making. A pilot of this assessment showed a roughly normal distribution of scores among students with a mean score of 4.94 out of 11 for the pleural effusion assessment and 7.59 out of 11 for the abdominal free fluid assessment, suggesting success in some areas and room for improvement in others. A majority of students (79% and 90% in each of the two assessments respectively) received partial or full credit on the technical portions of the assessment, but many also missed points simply for failure to perform basic draping and positioning techniques. These results highlight a successful method of assessing medical students' proficiency in performing POCUS maneuvers, highlighting specific areas of improvement for students and offering curriculum efficacy insight for educators. Development of this assessment protocol provides an example for how other institutions may consider adopting similar approaches to better evaluate students, identify areas for improvement, and strengthen the caliber of ultrasound education at the medical student level.