

TECHNOLOGICAL INNOVATIONS IN ONLINE POCUS EDUCATION: ASSESSING COMPETENCY THROUGH VIRTUAL TOOLS

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Abstract

Point-of-Care Ultrasound (POCUS) education requires assessment of competency through skills demonstration, including image review by trained professionals.

There is a massive educational discrepancy amongst ultrasound users worldwide. In North America, and many other countries, including Australia and New Zealand, a sonographer or ultrasound technologist is a healthcare professional tasked with acquiring diagnostic ultrasound images that are sent to radiologists for diagnostic interpretation.

This has historically limited other healthcare practitioners from utilizing POCUS. Presently, many other specialties are seeing the value in diagnostic ultrasound and since ultrasound technology is now easily accessible and inexpensive, individuals can purchase equipment, acquire images, and make diagnostic interpretations of these images with zero educational requirements!

Many medical schools have incorporated aspects of POCUS into their curriculum, but there are limitations in lack of trained faculty and supporting resources and on curricular changes.

We built an interdisciplinary team with expertise in online learning design and ultrasound education, who developed an innovative curriculum, grounded in the learning theory of Communities of Practice, to create scalable apprenticeship models and sustainable mentorship opportunities in the on-going assessment of scanning skills at various learning levels.

Our education model features stackable, scaffolded, fully online, asynchronous coursework that culminates in live scanning either in clinic, in person, and/or through virtual collaboration platforms, such as Zoom. As a culminating step, our summative assessment is conducted using our proprietary web-application, POCUS PRO, which allows learners to upload scans of various POCUS protocols for expert review and feedback. This level of assessment ensures hands-on skills are demonstrable and encourages ongoing scan review as the learner solidifies their scanning skills by incorporating POCUS into their clinical practice.

Currently there are no certification requirements, nor educational requirements for certification for POCUS use in medical settings. Our educational model positively impacts patient care, by creating a pathway to competency that ensures skills acquisition is uniformly demonstrated by learners. We are actively advocating for requirements that include this type of education and on-going scan review, to demonstrate skills competency prior to both implementation in a clinical environment and certification.

Technology allows us to augment curricula with limited changes in overall program structure. By incorporating this technology as a resource, we can create sustained models for learning and work towards competent use in the clinical setting through on-going mentorship and feedback into residency/internship.

Our presentation will include data from a recent pilot project, implementing the first phases of our curriculum model at a large U.S.-based medical school. Through this project, we assess the impact of online learning resources on first and second-year medical students prior to their Clinical Skills Labs which instruct on POCUS use. We anticipate showing that our technological innovations enhance student confidence in their ability to participate in labs, perform POCUS scans and utilize these skills throughout the remainder of their medical school journey. Additionally, our presentation will include interactive components to bring attendees through a recreation of the learner journey!

References (maximum three)

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