

Ultrasound Education in the COVID-19 Era

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Medical education, including instruction in point-of-care ultrasound (POCUS), has been severely disrupted by the COVID-19 pandemic. Many of those in

ultrasound education rely heavily on in-person, hands-on instruction and have had to completely change their approach in response to the need for social distancing. Programs across the country are adapting and adopting new forms of ultrasound education using alternative platforms.

Ultrasound education is an essential part of emergency medicine (EM) residency training. Most programs rely on structured ultrasound rotations involving hands-on teaching and feedback on clinical scans.¹ For example, at the San Antonio Military Medical Center interns go through a month-long rotation with either fellow or faculty feedback on training scans as well as weekly Quality Assurance sessions. Many programs also include a competency assessment either during intern year or prior to graduation. This ensures that graduates finish residency with confidence in their POCUS skills.²

Teaching a procedure through a virtual platform requires an innovative approach. An instructor attempting to provide traditional instruction might need two or more cameras to show surface anatomy and the ultrasound screen. This can be difficult if the instructor is alone or if the cameras are not available. Fortunately, there are multiple other options available.

Ultrasound board cases translate well to a virtual format and can provide good practice. Many ultrasound program directors have archives of pathologic images that can be used for this purpose. Other images and cases are available for educational use through online resources such as the POCUS Atlas.³ Cases can be presented in an ABEM oral format. Alternatively, learners can each take turns interpreting images. An element of feedback can be incorporated by including recent images and discussing the quality of images.

Traditional lectures can be translated to a virtual format as well. Many platforms have a chat function where the audience can post their questions. Programs such as Poll Everywhere™ allow for polling of the audience during the lecture to increase audience engagement. Lectures are also available from previous national conferences, including AAEM. AAEM Online is available through your AAEM membership. Over the next several months, lectures which would have been presented at

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the 2020 AAEM Scientific Assembly will be available through this portal.

This is an opportune time to conduct a virtual journal club. Consider sending out two to three articles for students to read prior to a set meeting time and organize a journal club debate. The students split into two groups and argue for or against a statement such as “POCUS use for the evaluation of an abscess.” Prior to the meeting, have the groups decide amongst themselves their main points and the evidence to back up their standpoint. This format encourages the learners to read the articles in depth and encourages discussion. Alternatively, consider a journal club scavenger hunt. Break the students into small groups and write a short list of searches that you want the students to find prior to the meeting time. For example, “find an article which shows that EM performed TVUS decreases ED visit time.” Depending on how big your group is you may want the students to find everything or one topic on the list. During the meeting have the students perform a short summary and analysis of the articles they found.

Regardless of the approach, the next few months will require us to use new and innovative teaching methods for teaching what is ultimately a procedural skill. Making full use of online platforms will allow those in ultrasound education to continue to train EM fellows and residents to the full extent of our abilities during this challenging time.

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References:

1. Amini, R., Adhikari, S., & Fiorello, A. (2014). Ultrasound competency assessment in emergency medicine residency programs. *Academic Emergency Medicine*, 21(7), 799-801.
2. Ahern, M., Mallin, M. P., Weitzel, S., Madsen, T., & Hunt, P. (2010). Variability in ultrasound education among emergency medicine residencies. *Western Journal of Emergency Medicine*, 11(4), 314.
3. <http://www.thepocusatlas.com/>