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The Effect of Display Size on Ultrasound Interpretation

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SKMC Class of 2022: SI/ME Abstract

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The Effect of Display Size on Ultrasound Interpretation

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Purpose: To assess how display size affects providers' abilities to accurately interpret ultrasound (U/S) videos. U/S has become essential for patient evaluation in the emergency setting. Although newer devices that are smaller in size and affordable place the technology within the pockets of practitioners, it is necessary to assess how smaller size may impact image quality.

Methods: The target learner population for this study includes all practitioners who perform point of care U/S. A prospective convenience sample of emergency providers were randomized to begin on either a phone-sized screen or a laptop-sized screen. Participants answered "Yes" or "No" in response to whether they identified free fluid, above and/or below the diaphragm on each of 50 unique right upper quadrant U/S videos, with 25 displayed per device. Researchers collected data on the speed of interpretation and participants' experiences.

Results and Conclusions: Prior to study initiation, 50% of participants felt display size would affect accuracy, 42.3% were unsure, and 7.7% felt it would not (n=52). The accuracy of interpretation for phone versus laptop display was 87.3% and 87.6%, respectively (p=0.84). Mean time spent with phone versus laptop display was 293s and 290s, respectively (p=0.66). Upon study completion, 48.1% of participants believed display size affected their ability to interpret the videos, 38.5% felt it did not, and 13.5% were unsure. The results of this study show no significant statistical difference in the accuracy of interpretation between screen sizes.