

## Ultrasound Beyond the Walls of the Emergency Department: UC Irvine School of Medicine

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Medicine is a dynamic field that is continuously advancing, and in much the same way, so too is medical education. Evidence of some of these advancements and adjustments within medical education is the implementation of ultrasound to medical school core curriculums. In the past, ultrasound education has traditionally been a skill that is learned after medical school. However, within the past few years, several medical universities have adapted a medical curriculum that has included ultrasound education as part of the foundational curriculum. One of these universities includes the University of California, Irvine. As part of its adaptive curriculum, it has included its ultrasound curriculum as a teaching and research method both within their local community and internationally.

Although this new endeavor has been well-received, and studies have shown that ultrasound can be effectively learned in medical school, most medical students have had limited capability to use these newly acquired skills<sup>1</sup>. In an effort to provide students the forum to use their newly developed ultrasound skills, UC Irvine has presented students with the opportunity to practice ultrasound abroad in areas where imaging modalities are needed most.

Recently, the UC Irvine School of Medicine was fortunate to receive financial support from private donors to send students abroad for ultrasound research and teaching projects in underserved areas internationally. With this funding, students were able to develop ultrasound research projects and teaching curriculums during the academic year, and execute them during their summer. The goal of sending students abroad was multifocal: to allow students to see unique pathology, to disseminate teaching skills, and to hone already learned ultrasound skills. Projects locations included working with non-governmental organizations in Panama, Romania, India, Tanzania, Australia, China and others countries. The projects that were designed by these students included, but were not limited to, research on imaging cerebral malaria, teaching local midwives to use ultrasound within Panamanian villages, scanning for renal disease in migrate farm workers in Nicaragua and several others.

Upon returning from their international endeavors, these medical students reported with an overwhelmingly positive response for their opportunity to travel, teach, and



**Figure 1.** University of California Irvine medical students training students at the Romanian Medical University.



**Figure 2.** University of California Irvine medical students teaching the parteras, the midwives of the local Panamanian community, to use prenatal ultrasound.

research abroad. In a follow up study done at the conclusion of the summer, the students were asked to rate their clinical experiences from their international studies. Students were asked to subjectively rate their ultrasound experiences on a scale with a score of 1 being strongly disagree and 5 being strongly agree. The data was overwhelmingly favorable as students averaged a response of 4.6 when asked if they felt they made a positive impact on the program they worked with. When asked about inclination to do further international medical trips, students averaged a response of 5. When asked if they are more likely to recommend



**Figure 3.** University of California Irvine medical students teaching ultrasound in Australia to medical students at the University of New England.

ultrasound to a peer, they averaged a response of 4.85 and responded 4.8 when asked if their experience made them realize the usefulness of ultrasound in a clinical environment.

Overall, international ultrasound-focused opportunities provide an outlet for medical students to practice and apply newly acquired ultrasound skills under physician supervision. Our study has shown that UC Irvine medical students felt that their international experiences were a positive influence on developing their ultrasound skills and training, and that future resources and endeavors were highly encouraged and well received.

Ultrasound has become a culture at UC Irvine. However, what sets this medical education experience apart from any other is the unique ability to integrate and apply these freshly founded skills earlier in our medical careers with the support of both the faculty and local community. By encouraging students to continue to pursue their interests within ultrasound as both researchers and teachers, we allow more opportunities to better train and expose our future physicians to a broad variety of cultures, pathology, and medicine.

#### REFERENCES:

1. N Afonso, D Amponsah, J Yang, et al. Adding new tools to the black bag--introduction of ultrasound into the physical diagnosis course. *J Gen Intern Med.* 2010;25.11:1248-1252.