



Dr. J. Christian Fox, M.D., R.D.M.S.

Assistant Clinical Professor of Medicine and Director of Emergency Ultrasound at the University of California, Irvine Medical Center



First Hand EXPERIENCE

SonoSite MicroMaxx™ in the ED: A New Standard of Emergency Care

Like most emergency physicians, Dr. Christian Fox knows how to cut to the chase.

“There are many, many patients that would not have lived had they gone to another emergency department,” he says. “Having ultrasound available at any time simply lowers the threshold for treating life-threatening conditions. You want answers, you want accuracy, and ultrasound gives you that.”

Dr. Fox is the Director of Emergency Ultrasound at the University of California, Irvine, where his colleagues use SonoSite systems to scan over half of the patients they see on any given day, totaling more than 5,000 scans per year.

“Ultrasound is now really integral to our care of the patient,” says Dr. Fox. “The doctors do the scanning themselves using portable, battery operated equipment, and we integrate the images instantly, in real time, into the clinical picture of the patient.”

Ultrasound has been used by radiologists for decades, but in recent years compact ultrasound systems like the SonoSite MicroMaxx have made it possible for emergency physicians to obtain high quality images in the ER, where space – and time – are at a premium.

“We aren’t doing the same kind of comprehensive scanning that they do in radiology,” Dr. Fox says. “[Emergency physicians] know

when to raise a white flag and ask for help when we’re in over our heads. Our kind of scanning is to quickly answer some very limited questions at the bedside, and leave the difficult cases to the specialists.”

Once an emergency physician is accustomed to using ultrasound images as an integral part of patient care, traditional physical exams can seem woefully inadequate. Dr. Fox comments, “There’s obvious low-hanging fruit all over the ER. We know when there’s probably a deep vein thrombosis or pericardial tamponade, but sometimes a patient is obese, their anatomy is so distorted, or you’re not seeing the things you’re used to seeing.” In those cases, he says, “ultrasound is invaluable.”

“There’s been no other advancement that has changed the way emergency medicine is practiced as much.”

Dr. Fox recalls that his department’s use of ultrasound grew as the doctors practiced and became comfortable with the equipment. “We started out with simple applications – procedure guidance, trauma, cardiac, aortic – where radiologists can’t provide immediate access even if they want to. Then we evolved a bit more, doing pelvic, deep vein thrombosis, [and] abdominal.”



In a busy ED, ultrasound is used for a diverse set of procedures. The best ultrasound systems, Dr. Fox says, are designed with this in mind. “We primarily use three types of transducers. The MicroMaxx has the Triple Transducer Connect feature, so all three probes are there...you just push a button. ”

Ultrasound gives doctors an instantaneous and noninvasive diagnostic view of a wide range of internal structures. This may reveal problems that a standard exam can’t, ranging from a ruptured bladder to a bulging

continued



SonoSite MicroMaxx
with an HFL38/13-6
MHz transducer.

L38e
38-mm
broadband
linear array



P17
17-mm
broadband
phased array



C60e
60-mm
broadband
curved array



ICT
11-mm
broadband
tightly
curved array



aorta. Even in a Level I trauma center and major research hospital like UCI, its emergency physicians use ultrasound as often in non-trauma as trauma patients.

According to Dr. Fox, ultrasound should be used in EDs of every size, even on patients who are simply going to be transported elsewhere. "We get calls all the time saying, 'we've got this guy who fell out of a tree, and we're sending him over. His vital signs are stable.' I'll ask what the FAST scan shows, and they'll say, 'oh, I didn't do one.' If they did, they would know whether it's positive

for blood, and then I can tell them to either rush him here as fast as they can or stabilize him there. And for Level II and III trauma centers, it's helpful to integrate [ultrasound] right into the workup of a trauma patient."

Emergency doctors think first and foremost about patient care; hospital administrators often think more about the bottom line. For both, Dr. Fox says, "It's a straightforward case. We turn over beds in the ER faster and we make better, more accurate decisions about patient care."

Medical Citations

- "Bedside ultrasound evaluation... should be immediately available 24 hours a day for ED patients." "Dedicated ultrasound equipment within the ED should be considered optimal for patient care."
ACEP Policy Statement, June 2001
- "Real-time US guidance for CVC insertion, with or without Doppler assistance, improves catheter insertion success rates, reduces the number of venipuncture attempts prior to successful placement, and reduces the number of complications associated with catheter insertion."
AHRQ Publication 01-E058, July 20, 2001.
- "The introduction of compact ultrasound system significantly increased bedside ultrasound use when compared with... when a cart-based system was available. Users rated the ease of use, portability, and user confidence of the compact ultrasound system significantly better."
Leech, Sierzenski, Gukhool, O'Connor. Annals of Emergency Medicine, Sept. 2005.

www.sonosite.com/emergencymedicine



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WORLDWIDE HEADQUARTERS

SonoSite, Inc., 21919 30th Drive SE, Bothell, WA 98021-3904
Tel: (425) 951-1200 or (877) 657-8050 Fax: (425) 951-6800
E-mail: admin@sonosite.com

INTERNATIONAL HEADQUARTERS

SonoSite Ltd., Alexander House, 40A Wilbury Way, Hitchin, Herts SG4 0AP, United Kingdom
Tel: +44 (0)1462 444800 Fax: +44 (0)1462 444801
E-mail: europa@sonosite.com

SonoSite Worldwide Offices

SonoSite Australasia Pty Ltd - Australia	1-300-663-516
- New Zealand	0-800-888-204
SonoSite KK - Japan	81-3-5304-5337
SonoSite SARL - France	31-1-69-18-96-30
SonoSite - Germany	49-(0) 91-31-97-79-29-0
SonoSite - India Liaison Office	91-124-402888
SonoSite Iberica SL - Spain	34-91-640-49-11
SonoSite Ltd - China - Shanghai	86-21-523-966-93
SonoSite Canada Inc. - Canada	1-888-554-5502