

Emergency ultrasound: A stethoscope extension?

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Over the past 15 years, bedside ultrasound has become an essential tool in many Canadian emergency departments (EDs). In 1999, a group of dedicated ED sonographers through the Canadian Association of Emergency Physicians outlined their support and guidelines for the use of ED targeted ultrasound. More recently, ultrasound knowledge and skills have become an integral part of training in Canadian emergency medicine residency programs.

As a medical student, I was excited to learn to use the stethoscope. Listening to different heart murmurs and lung sounds made me feel like I was one step closer to becoming a real doctor. Now, as an emergency medicine resident, I am pursuing any opportunity to develop my ultrasound skills and to apply these skills to my clinical practice. Although some believe there are very limited indications for the use of ultrasound in the emergency setting, I believe in expanding and maximizing the use of this tool. Beyond the obvious use of ultrasound for focused assessment with sonography for trauma exams or central venous catheter insertions, I have had great success using it for other, less widely recognized applications. These include, pneumothorax assessment, peripheral intravenous line insertion, lumbar puncture and soft tissue applications, such as abscess detection and foreign body localization and removal. Because the use of bedside ultrasound in the ED is an emerging skill, there is little published in the emergency medicine literature to guide our practice. In theory, patient care could be improved with little risk of harm. Research into the expanded applications of this tool should be encouraged and supported in EDs across the country.

Despite growing interest in and evidence of the benefits of ED ultrasound, some issues have yet to be resolved. The machines are relatively expensive. For ultrasound to attain widespread use, thus becoming a standard of care, it must

be available in all EDs. Beyond having a machine available, physicians must also be properly trained. With limited physician and financial resources, many departments see this as an insurmountable barrier. The financial burden is relatively larger for smaller sites, making purchasing an even greater hurdle. I suggest, however, that as more residents and staff become trained, more will be available to train others. Along with training individual physicians, EDs must also adopt standards for quality assurance, continuing education and equipment maintenance for use of ultrasound.

In their 2006 position paper on portable ultrasound in EDs,¹ the Canadian Association of Radiologists' state that there is a "growing body of evidence demonstrating the potential harm of misdiagnosis as a result of portable ultrasound exams performed by inexperienced operators who have a substandard level of training." I believe it is up to us to prove this unreferenced statement wrong. Using thrombolytics for acute myocardial infarction and performing procedural sedation were topics of controversy not long ago. There will always be overlap in our scope of practice with other specialties. We need to be able to collaborate and decide what will be the best option for optimal patient care. If the radiologists were willing to be available 24 hours a day with real-time readings for all of our patients' ultrasound requirements, then perhaps emergency physician-directed ultrasound would be unnecessary. There is, however, substantial evidence that having immediate access to real-time ultrasound imaging and interpretation has improved patient outcomes in a number of clinical situations.²⁻⁵

Emergency physicians have evolved from being "casualty officers" to becoming specialists and consultants in emergency medicine. We possess a wide range of skills and knowledge, which allow us to provide care to undifferentiated, critically ill patients. We must expand our scope

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of practice as technology allows us to improve quality of care. Targeted bedside ultrasound examinations are within our scope of practice as consultants in emergency medicine. It is fast, available and, most importantly, it allows us to be better emergency physicians.

Competing interests: None declared.

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Deadline: Thursday, December 11, 2008

The Program Committee is accepting Innovations in Emergency Medicine Education (IEME) Exhibits for consideration of presentation at the 2009 Society for Academic Emergency Medicine (SAEM) Annual Meeting, May 14-19, 2009 in New Orleans. Submitters are invited to complete an application describing an innovative new educational methodology that they have designed, or an innovative educational application of an existing product. The exhibit should not be used to display a commercial product that is already available and being used in its intended application. Exhibits will be selected based on utility, originality, and applicability to the teaching setting. Commercial support of innovations is permitted but must be disclosed. The descriptions/abstracts of the selected IEME Exhibits will be published in the Abstracts Supplement of the May 2009 issue of *Academic Emergency Medicine* (AEM), the official journal of SAEM. However, if submitters have conducted a research project on or using the innovation, the project may be written up as a scientific abstract and submitted for scientific review in the appropriate subject category by the December 4 deadline.

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