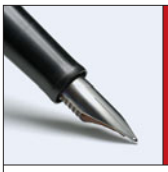

LETTER FROM THE EDITOR-IN-CHIEF

The Time for Urgent Care Clinicians to Embrace Bedside Ultrasound is Here

Ultrasound captured me from the start. It happened during a night shift on my emergency medicine clerkship at Hurley Hospital in Flint, MI. I remember picking up a phased array probe for the first time and the astonishment I felt when that beating heart appeared in black and white on the screen when I pressed the probe against the patient's gel-laden chest. I had seen ultrasound images online before, but this was different. I was watching someone's heart contract while they talked to me. I kept asking him more questions and half listening as I meandered clumsily across his abdomen in search of his gallbladder and spleen.

I didn't really examine why I was so enthralled by the images of his viscera at that moment. I just knew it was deeply satisfying to watch the vital organs, which were regularly hard at work in the background, on center stage in real-time. However, as I went through my residency training and began to learn to use point-of-care ultrasound (POCUS) for more specific clinical indications (and how to hold the probe properly), it became clear why scanning patients felt so good: it added limitless objective data to something which is inherently subjective—clinically assessing patients. POCUS proponents commonly say that "ultrasound is an extension of the physical exam." However, this is a tremendous understatement. In reality, ultrasound expands the potential of the physical exam exponentially.

Since the dawn of medicine, it has been a defining desire of physicians to get more abundant, reliable, meaningful objective data from our patients. And doctors have historically taken extreme measures for this information. Hippocrates, for instance, famously would taste his patients' urine as a method of diagnosing diabetes. Many centuries later, the French physician René Laennec, inspired by the same hunger for data, developed the first stethoscope. It was merely a wooden tube that could be placed between the clinician's ear and the patient's chest, but it revolutionized the physical exam. A century later, William Roentgen's discovery of the medical application of x-rays allowed clinicians to see inside living patients for the first time without an incision. X-ray, however, had limitations and risk. Both physicians and patients were ready for ultrasound. And through improvements in technology over recent decades, ultrasound machines have moved to the bedside.

In November 2018, *JUCM*[1] published an introduction to POCUS written by James Hicks, MD. In his article, Dr. Hicks made a compelling case for the appropriateness and value of POCUS in urgent care centers, citing improved patient experience, increasing portability, and affordability in addition to the wealth of useful clinical data provided. However, despite the many benefits of POCUS which exist, UCs and clinicians have generally been slow to invest in ultrasound for use at the bedside. The reasons generally come down to finances and politics.

It is true that UCs operate on tight budgets and thin margins and that ultrasound machines remain relatively costly (anywhere from about $2,000 to up to $200,000 for full function, radiology department quality models). It is also true that territorial disputes can erupt when non-radiologists experiment with performing, interpreting, and billing for imaging studies. POCUS, however, is a tool that our physician forebearers would have made sacrifices to the gods for and, unfortunately, we have mostly failed to access its enormous potential in UC because of some red tape and logistical barriers.

Parallels can be found in the story of telemedicine in UC. Prior to COVID-19, relatively few UCs invested in telemedicine because these services were largely not reimbursed equitably. Despite lack of reimbursement, however, the use of telemedical services always has made practical sense for the management of many acute issues. Now, since H.R. 6074[2] passed earlier this year, telehealth services have begun to be reimbursed by nearly all payers. Many UCs who had steered away from telemedicine previously had to scramble to get a telehealth infrastructure up and running. Conversely, UCs who had already incorporated telemedicine into their service lines were well positioned to pivot when in-center volumes plummeted.

Similarly, while there may not currently be a strong "business case" for POCUS in UC today, its practical clinical value is

undeniable. Even within this current pandemic, POCUS has again demonstrated power and versatility in the bedside assessment of patients with suspected COVID-19. Investigators studying the use of ultrasound have already identified characteristic findings in patients with coronavirus infection: scattered B-lines and peripheral consolidations, to name a few.[3] In fact, in some cases, these lung findings on ultrasound have even been found to be present before PCR viral testing is reliably positive.[4]

Given the sensitivity of POCUS for COVID-19, perhaps then it would be more practical when patients show up for drive-through testing to have them roll down their car window and face away from us so we can scan their backs instead of swab their noses. Such a protocol may sound unusual, but scanning the lungs can be done from behind the patient, requires no supply chain of test cartridges, offers immediate results, and does not aerosolize the virus. And in a crisis, solutions must not be judged by their orthodoxy, but by their safety and efficacy.

Who knows what the next unforeseen events to drive changes in legislation for reimbursement in favor of POCUS will be? When they do occur, those UCs and providers who had already invested the time and money in acquiring and mastering POCUS will be well positioned to finally capitalize on the use of this amazing tool that Hippocrates would drool over.

We are devoting most of this issue to the review of this topic.

For those of you already using POCUS in your centers, congratulations for being at the vanguard of acute care medicine. And for those of you still waiting for the right time, it's now. ■

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