

Almost 200 years later, are we living in the final days of the stethoscope?

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An editorial in this month's edition of *Global Heart* suggests the world of medicine could be experiencing its final days of the stethoscope, due to the rapid advent of point-of-care ultrasound devices that are becoming increasingly accurate, smaller to the point of being hand-held and less expensive as the years roll by. The editorial is by Professor Jagat Narula, Editor-in-Chief of *Global Heart* (Mount Sinai School of Medicine, New York, USA) and Associate Professor Bret Nelson, also of Mount Sinai School of Medicine, New York, USA.

Looking at the [stethoscope](#) (invented in 1816) and ultrasound (invented in the 1950s), with the the authors suggest that the stethoscope could soon be exiled to the archives of medical history. They say*: "At the time of this writing several manufacturers offer hand-held ultrasound machines slightly larger than a deck of cards, with technology and screens modelled after modern smartphones." As the minimum size of an ultrasound continued to decrease, concerns about smaller machines having inferior image quality compared to devices many times larger and more expensive were over time outweighed by evidence that rapid diagnostic decisions could be made with portable machines. Today, more than 20 medical specialties include use of point-of-care ultrasound as a core skill, and that mounting evidence suggests that compared with the stethoscope ultrasound technology can reduce complications, assist in emergency procedures and improve [diagnostic accuracy](#).

The authors say: "Thus, many experts have argued that ultrasound has become the stethoscope of the 21st century. Why then, do we not see ultrasound machines in the coat pocket of every clinician? Several factors play a role. The ultrasound machines are expensive, and even clinicians enamored with the promise of point-of-care ultrasound must make a financial decision weighing the increased diagnostic accuracy against increased cost. In addition, point-of-care

ultrasound is still a new field relative to traditional imaging. Many older clinicians completed training long before ultrasound use was part of standard practice for their specialty."

Additionally, while the cheapest available stethoscopes are literally disposable (though many can cost hundreds of dollars), the cost of the cheapest ultrasound devices is still several thousand dollars, making roll-out, especially in developing nations, much more difficult. Yet the authors believe all the evidence shows that ultrasound can diagnose heart, lung, and other problems with much more accuracy than the 200-year-old stethoscope.

The authors conclude*: "Certainly the stage is set for disruption; as LPs were replaced by cassettes, then CDs and .mp3s, so too might the stethoscope yield to ultrasound. Medical students will train with portable devices during their preclinical years, and witness living anatomy and physiology previously only available through simulation. Their mentors will increasingly use point-of-care ultrasound in clinical environments to diagnose illness and guide procedures. They will see more efficient use of comprehensive, consultative [ultrasound](#) as well-guided by focused sonography and not limited by physical examination alone. And as they take on leadership roles themselves they may realise an even broader potential of a technology we are only beginning to fully utilize. At that point will the "modern" stethoscope earn a careful cleaning, tagging, and white-glove placement in the vault next to the artifacts of Laënnec, Golding Bird, George Cammann, and David Littmann? Or, as some audiophiles still maintain the phonograph provides the truest sound, will some clinicians yet cling to the analog acoustics of the stethoscope?"

Provided by World Heart Federation

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