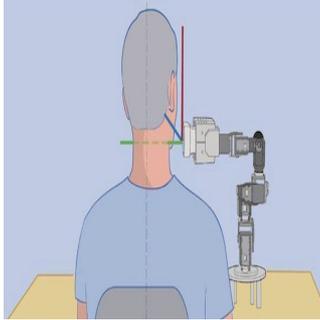


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## Robotic-Assisted Ultrasound Imaging



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New tele-robotic medicine innovations are becoming virtual assistants to the physicians and hospitals providing ultrasound evaluations.

Two Mount Sinai research studies, published in the August issue of the *Journal of the American College of Cardiology- Imaging*, describe how the latest developments in tele-robotic technology are bridging geographical divides.

One study, conducted by Partho P. Sengupta, MD, of Icahn School of Medicine at Mount Sinai and his team of researchers, documents how a Germany-based personal computer was used to carry out a trans-Atlantic ultrasound examination via a lightweight, small robotic arm with built-in imaging technology on a person located in the US city of Boston. It only took four minutes to examine the carotid neck artery, with advanced experts and early trainees on robotic ultrasound able to operate this innovative technology.

In the second study, Kurt Boman, MD, of Umeå University in Sweden in collaboration with Mount Sinai, describes the benefits of a cardiologist's video e-consultation for heart failure patients who reside in rural areas far from hospitals. In this randomised trial (where both the remote and the robotic exams were conducted on the same day of a patient's visit to their local Primary Healthcare Center located in excess of 100 miles from the hospital), a remote robot-assisted echocardiogram test had a significant impact on the reduction of waiting times faced by these patients. Often they would wait nearly four months to be assessed, whereas with the new technology, this was lowered to less than one month. With the patient's waiting time for specialist consultation also lowered from 86 to 12 days, 95 percent of remote consult patients rated the remote consultation as a superior strategy.

Jagat Narula, MD, PhD, who serves as the Director of the Cardiovascular Imaging Center and Associate Dean of Global Research at Icahn School of Medicine at Mount Sinai and is senior author of both research studies, commented that patient-friendly technology is at one's doorstep, "the two studies give us a glimpse of what to expect in the near future".

Co-author of the accompanying editorials Sherif F. Nagueh, MD, Medical Director of the Echocardiography Laboratory at the Methodist DeBakey Heart and Vascular Center in Houston, Texas, and Dr. Sengupta, Director of Cardiac Ultrasound Research at Icahn School of Medicine at Mount Sinai and Chair of the New Technology Task Force at the American Society of Echocardiography, both agree. According to them, "tele-robotic ultrasound examinations conducted via standard internet are possible," and the possibilities for the future use of remote imaging could offer improvements in healthcare efficiency, overall access, delivery and cost. Virtual robotic, on-demand ultrasound could be used in a wide variety of clinical setting collaborations, including within dangerous locations such as war zones.

[Source and image credit: Mount Sinai Medical Centre](#)

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