

Customer Interview

Implementing EchoGo® Heart Failure: An Interview with Dr. Andres Schuster

University Hospitals Harrington
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Q1. What motivated you to incorporate EchoGo® Heart Failure with AI into your diagnostic workflow?

I wanted us to incorporate AI because I knew it was the future of diagnostics and could help improve efficiency and consistency across our system. In working with our ventures group, we found EchoGo® Heart Failure from Ultrasonics, saw they were FDA approved, and felt that their system could help improve the diagnosis of patients with heart failure with preserved ejection fraction (HFpEF), especially for patients where the echo shows normal filling pressures at rest or when diastology analysis is indeterminate or not feasible.

Also, it was important to not disrupt the workflow of our sonographers and physician readers. We were initially concerned that study turnaround time may affect the way we report. However, we have found that turnaround time on average is about 10-15 minutes. Our goal is to make sure that once the reader is opening the study on Syngo, the result from Ultrasonics is already there.

Dr. Andres Schuster

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University Hospitals Harrington Heart & Vascular Institute is based in Cleveland, Ohio with more than 40 regional sites.

University Hospitals Cleveland Medical Center is a tertiary and quaternary academic medical campus affiliated with Case Western Reserve University School of Medicine.

Devices mentioned refer to EchoGo® Heart Failure 2.0 and EchoGo® Amyloidosis 1.0

Dr. Schuster is not financially compensated by Ultrasonics for this publication, and the content is an accurate presentation of his personal opinion of the EchoGo Heart Failure® device. Refer to the product IFU before use for important safety information. ADS1133969495.

Automated Workflow



All patients indicated for an echocardiogram with LVEF \geq 50%

► Echocardiograms sent via secure VPN to Ultromics



Echocardiograms analyzed by EchoGo® Heart Failure

► Patients positive for HFpEF returned via secure VPN to UH



Patients positive for HFpEF returned within 10–15 mins of echo completion

Q2. What are your thoughts on the opportunity to improve patient outcomes through earlier diagnosis?

In terms of the population with HFpEF, one type of patient that stands out is the patient with shortness of breath that has multiple office visits with the pulmonologist and the cardiologist, both trying to find the cause. In particular, patients with significant obesity can be very challenging to diagnose. It is important to have the diagnosis of HFpEF to trigger treatments that are now approved and can decrease readmissions or hospitalizations for patients. We may even see in the future that mortality is reduced with treatment. If you're missing these patients, or you're still thinking that the disease is pulmonary and not cardiac, and the echo is not giving you the answers, you are going to miss the opportunity to treat these patients earlier and decrease the cost involved with hospitalizations and readmissions.

Q3. What were the keys to success in implementing an AI platform like EchoGo® Heart Failure?

Teamwork. It was critical to have all the resources that we needed, starting with my Echo manager working by my side. Another important partner was the IT group who worked through and implemented all the technical requirements. It was also essential to include heart failure cardiologists in the project. They acted as quality control to make sure the data was used properly. We worked with them to phrase the analysis so that everyone treating patients with shortness of breath, including primary care physicians, knew what to do with a positive result. Finally, it was paramount to have the support of cardiovascular and finance leadership to make this happen.

We found that early engagement with the team from Ultromics was critically important for success. The Ultromics team was instrumental in helping me design the clinical workflow architecture. They have the expertise to overcome any technical obstacles and make sure that the connection is working, that information is transferred the right way, and that reports come back in a timely manner.

Q4. For other medical systems who have multiple sites of service, what advice do you have for them on how to implement AI like EchoGo® Heart Failure?

We found it effective to implement by starting small and growing over time. We started at our main campus in Cleveland. As a smaller group, it was easier to get feedback and make sure everyone was comfortable with the implementation. Early on, we participated in weekly project calls with the Ultromics team and talked through and addressed any bottlenecks that we identified.

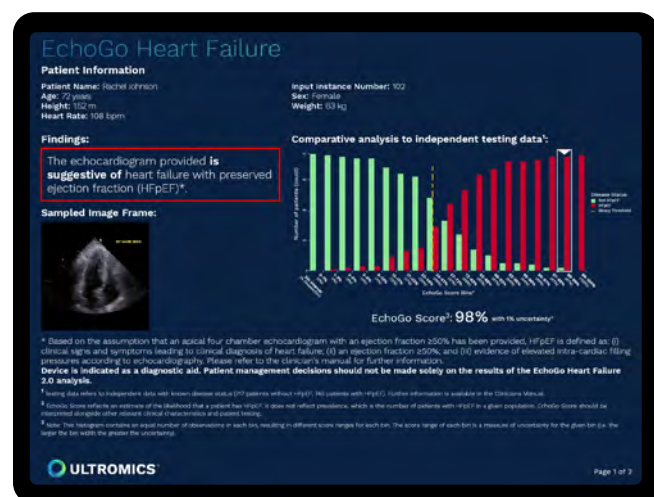
With the implementation in place, it is important to know what to do with the data clinically. We continue to work with our heart failure team on how to use EchoGo® Score on returned positive studies. We are planning to build a dashboard in Epic that will provide EchoGo® Heart Failure's analysis, lab results and any other relevant patient information from the chart. Our idea is that automating the process is going to decrease the chance of missing information, missing diagnoses, and missing treatments for patients with HFpEF. We view this as an important quality improvement initiative and can be extended across our medical system.

Q5. As you have implemented EchoGo® Heart Failure, has anything surprised you over the past year?

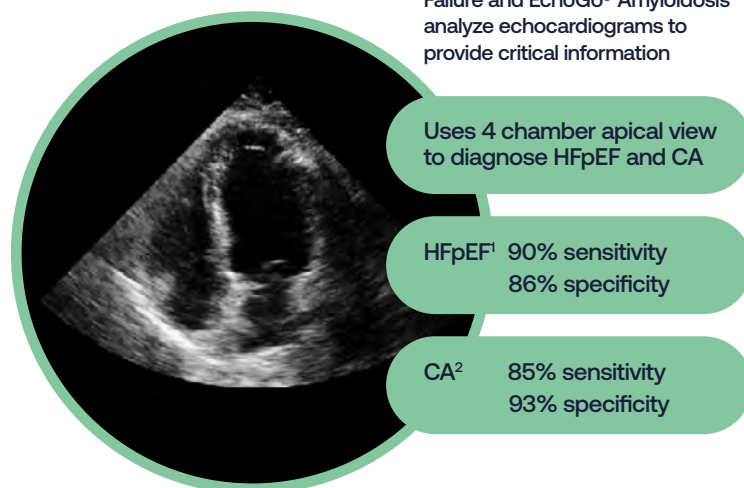
The performance and scalability of the AI still surprise me. Knowing that EchoGo® Heart Failure uses only one four-chamber apical view image for the analysis yet has very good sensitivity and specificity consistent with the published literature is amazing. I also find it exciting that the EchoGo® platform can support the integration of additional clinical solutions for other pathologies, leveraging the same technically and functionally proven foundation, but extending its use to different clinical areas or needs.

For example, EchoGo® Amyloidosis which was recently approved requires no additional implementation. This may help us diagnose other diseases in the future like hypertrophic cardiomyopathy, or other pathologies that may also benefit from the same type of analysis.

Positive study from EchoGo® Heart Failure with EchoGo® Score, which estimates the likelihood of HFpEF



Powered by AI, EchoGo® Heart Failure and EchoGo® Amyloidosis analyze echocardiograms to provide critical information



Q6. Can you talk a little bit about the importance of EchoGo® Amyloidosis that was recently FDA approved?

I think the EchoGo® Amyloidosis may be very important because we have data that suggests a significant number of patients with HFpEF can have underlying Cardiac Amyloidosis (CA). Literature suggests that CA is frequently underdiagnosed using our current tools. By the time you make a diagnosis, the patients have significant infiltrative disease and a worse prognosis. Even with treatment, ATTR patients may have a lower likelihood of responding to these new treatments. Having EchoGo® Amyloidosis approved can help increase the chance of detecting CA earlier and triggering the studies that are required to confirm or rule out the diagnosis

We had a couple of cases that we discussed with the heart failure team where we were not sure if the patients may have CA. One of them had a cardiac MRI, but it was inconclusive. The team was thinking about doing biopsies on the patients because there were other reasons to explain the degree of LVH that we saw on the echo. We decided to manually send their echocardiograms for analysis by Ultrasonics. Both patient cases came back positive and were subsequently confirmed positive with biopsy. This experience is why I think EchoGo® Amyloidosis is going to be very useful in helping find the disease and getting patients into the proper treatment as early as possible.

[1] Akerman, et al., JACC Adv. 2023;2:100452. (EchoGo® Heart Failure 2.0)

[2] Slivnick, Hawkes, et al., in press. (EchoGo® Amyloidosis 1.0)