Us2.ai to Deliver AI-Enabled Echocardiography Decision Support to Brigham and Women's Hospital's Cardiac Imaging Core Laboratory

FDA-cleared AI decision support to process full echo reports with zero clicks in under 2 minutes[1]

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SINGAPORE--(BUSINESS WIRE)--Us2.ai, a Singapore-based medtech firm backed by IHH Healthcare, Heal Partners and Sequoia India will provide AI software that assists in analyzing research echocardiograms or heart ultrasounds to Brigham and Women's Hospital's Cardiac Imaging Core Laboratory. Us2.ai's software platform aims to improve the speed and scalability of the Cardiovascular Imaging Core Laboratory (CICL), part of the Brigham and Women's Hospital (BWH) Division of Cardiovascular Medicine.

Heart disease remains the number one cause of death around the world. Echocardiography is an affordable, front-line tool used to diagnose and assess heart disease, but the process of acquiring, measuring, and analyzing the images is time-consuming. Groundbreaking machine learning technology from Us2.ai can reduce the time to process and interpret echocardiograms from 30 minutes to under 2 minutes, with zero variability and with accuracy comparable to expert clinicians.

"AI assisted echocardiography analysis allows for faster, more reproducible and accurate assessment of echocardiographic changes that occur in response to novel therapies being tested in clinical trial," said Dr. Scott Solomon, Director of the CICL at the Brigham and Professor of Medicine at Harvard Medical School. "We validated this in our own laboratory, and it has proven comparable to human sonographers for a vast number of echocardiographic measures. Combined with expert review and assessment of echocardiograms, this approach will allow us to get novel therapies to patients faster."

The paper cited by Dr. Solomon can be found at nature.com/articles/s41467-022-34245-1

After an echocardiographer acquires an echo study, the FDA and CE cleared Us2 software automatically analyzes all the heart chambers, using both 2D and Doppler views to create a full echo report with findings for heart structure and function. The fully automated cardiac measurements included in the software cover most standard measurements for adult transthoracic echocardiography recommended by the American and British Societies of Echocardiography and the European Association of Cardiovascular Imaging.

"Delivering this technology into clinical settings accelerates our mission to automate the fight against heart disease," said James Hare, CEO and co-founder of Us2.ai. "We are proud to work with Brigham and Women's Hospital to improve urgently needed productivity in echo analysis which ultimately helps doctors, hospital systems and patients."

Us2.v1 automated measurements include 2-dimensional (cardiac volumes, all 4 chambers of the heart), M-mode (e.g. tricuspid annular plane systolic excursion), spectral Doppler (blood flow across all valves, both PW and CW measurements) and tissue Doppler; thus covering the vast majority of standard measurements for adult transthoracic echocardiography recommended by the American Society of Echocardiography, European Association of Cardiovascular Imaging, and British Society of Echocardiography. Fully automated Us2.v1 measurements were shown to be completely interchangeable with expert human measurements. Furthermore, Us2.v1 measurements were completely reproducible for a given patient study, with image processing/analysis algorithm computation time of approximately two minutes per study.

About Us2.ai

Us2.ai uses machine learning to automate the fight against heart disease. The company's software tools improve clinical decision making and cardiovascular research for clinical trials using echocardiography, the safest and most common cardiac imaging modality. Us2.ai connects institutions and imaging labs around the world on a platform of ready to use automation tools across diverse patient and disease cohorts. Us2.ai is a fast-growing startup backed by IHH Healthcare, Heal Partners, Sequoia India and EDBI.

[1] Total time for interpretation of a study can depend on factors such as the preparation for uploading DICOMs.

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