Home AI Device to Triage Patients with Cardiovascular Disease

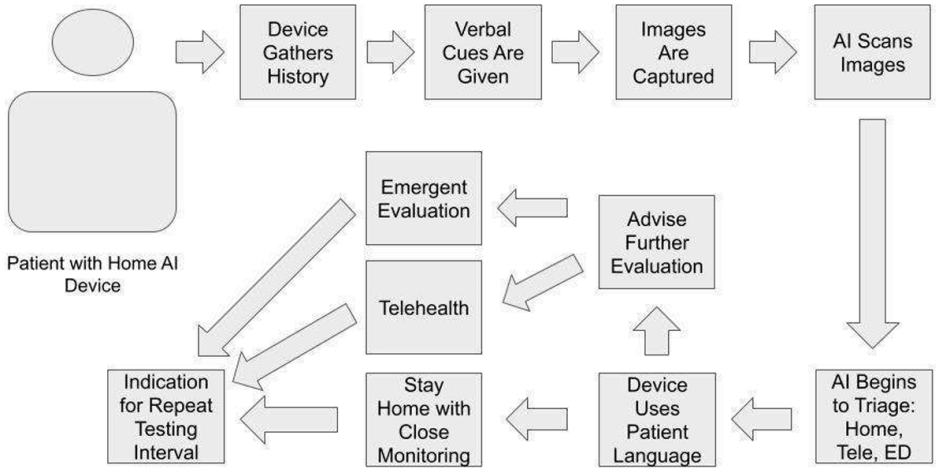
G. N. Garrison *
East Tennessee State University, Quillen College of Medicine, Department of Internal Medicine, VA Bldg. 1, Box 70622, Johnson City, TN 37614-0622, USA

Abstract

Across the globe, cardiovascular disease is the leading cause of death; yet, many of these deaths are preventable with timely intervention. AI-powered ultrasound has been discovered to assist in diagnosis, but patients are still required to be evaluated in person. This project proposes an AI-powered device with ultrasound capabilities to use at home with the goal of improving patient outcomes.

Initially, the device gathers pertinent history, then it gives the patient clear verbal cues to move the ultrasound. The device integrates imaging, interpretation of the images, and symptoms to triage and recommend the patient to stay home, use telehealth, or seek emergent evaluation. If it is a normal scan and history is unconcerning, the AI advises the patient to stay home and continue the current treatment plan. However, if the integration concludes an adjustment to treatment would be beneficial, patient-friendly language is used to communicate the recommendation. The device is connected to a network of telehealth cardiologists and is equipped with available emergent services in the nearby area. The recommendation is given and the patient ultimately decides how to proceed based on the information provided. At the end, a date is given as the suggested interval for repeat testing. Due to its accessibility and ease of use, the interval is shorter than a regular cardiology follow-up, allowing patients to have closer monitoring. Furthermore, the device is always available for the patient at any desired time.

The primary objective of this project is to decrease the frequency of unnecessary in-person visits, while also improving early detection of cardiac abnormalities. Implementation of the device allows patients to have closer monitoring without increasing the burden on local healthcare systems. By utilizing modern AI to triage, patients are better informed to decide whether to stay home or pursue further evaluation through telehealth or emergent medical services.



Keywords

AI, Cardiology, Telehealth, Homecare, Ultrasound.