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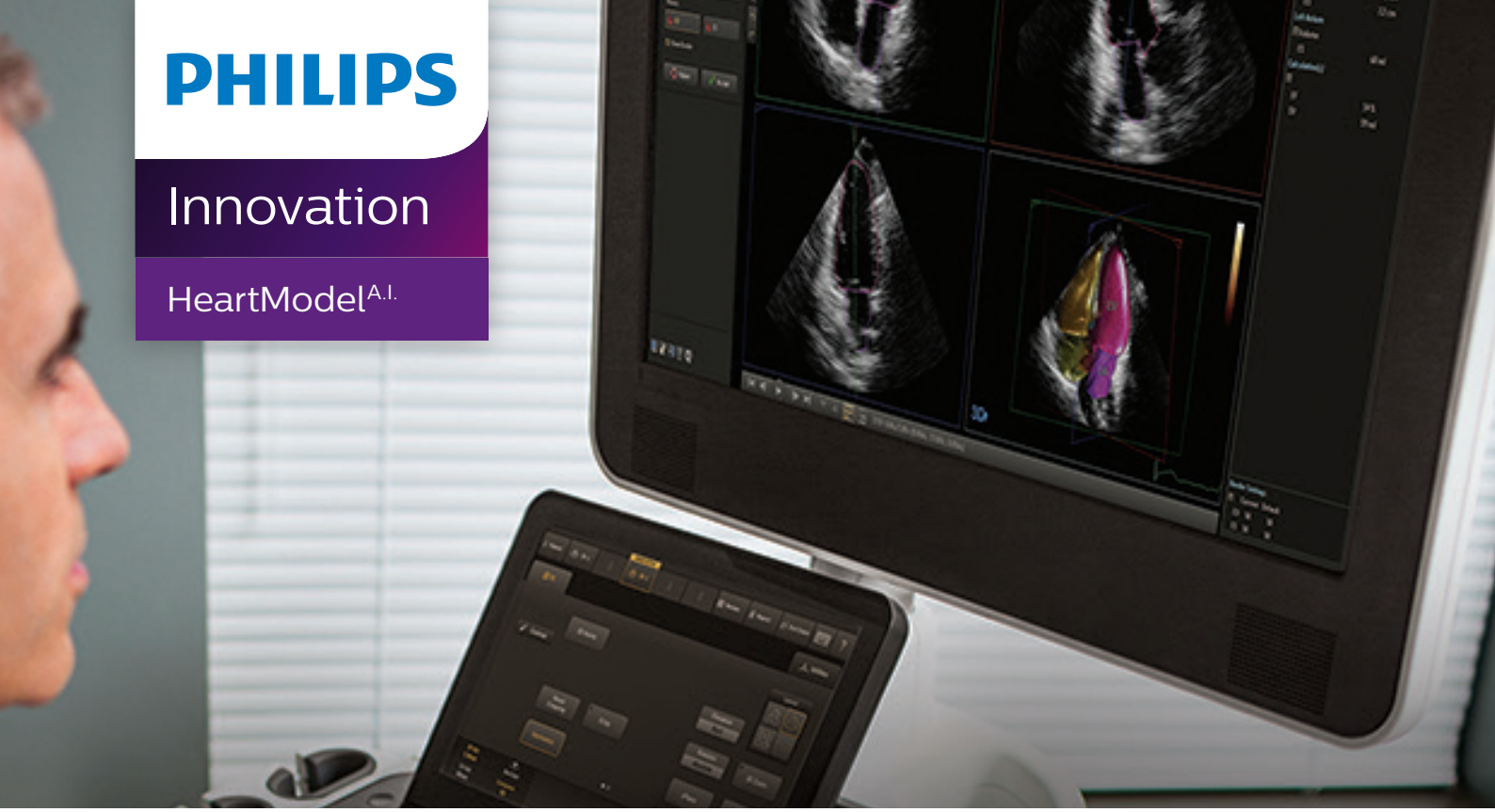
Innovation

HeartModel[A.I.]



Taking the complexity out of cardiac ultrasounds

Advanced and easy-to-use 3D tool that helps clinicians turn images into confident diagnoses

Need
Examining cardiac chambers using 2D ultrasound can lead to variability in results that can affect diagnostic confidence. Many 3D exams are overly complex and time consuming.

Solution
HeartModel[A.I.] is an intelligent software tool available on Philips' EPIQ 7 ultrasound system that delivers 3D images and critical cardiac measurements in seconds.

Benefits

- Saves time for clinicians
- Learns and adapts: draws from a large anatomical database in order to adapt to different morphologies in patient hearts to deliver consistent and reliable results

Cardiovascular diseases are the number one cause of death globally.[1] To deliver an accurate diagnosis, clinicians often use 2D ultrasound to measure the heart's left chambers. But these exams can underestimate results because of image foreshortening and incomplete data. While 3D techniques can overcome this issue, many are cumbersome and tedious.

Philips HeartModel[A.I.] is a 3D tool that enables fast exam times, seamless workflow and broad applicability. It automatically detects, segments, and quantifies left ventricle (LV) and left atrium (LA) from live 3D images.

HeartModel[A.I.] provides
time savings of up to 82%
compared to 3D manual measurements, with no user interaction necessary[2]

Cardiovascular diseases kill around 18 million people each year, equal to an **estimated 31% of all deaths worldwide**.[3]

High blood pressure, high cholesterol, and smoking are key heart disease risk factors for heart disease. About half of Americans have at least one of these three risk factors.[4]

People with cardiovascular disease or who are at high cardiovascular risk need **early detection and management**.[1]

Complete 3D heart measurements in seconds

Chronic disease populations are growing, requiring the need to effectively and efficiently collect and analyze heart measurements in order to manage and better plan therapy for more patients in less time.

HeartModel[A.I.] is an intuitive 3D tool that helps simplify this complicated exam and make it accessible for everyday clinical practice. It helps clinicians to quickly, easily and confidently assess disease states, determine treatment, and guide related therapies.

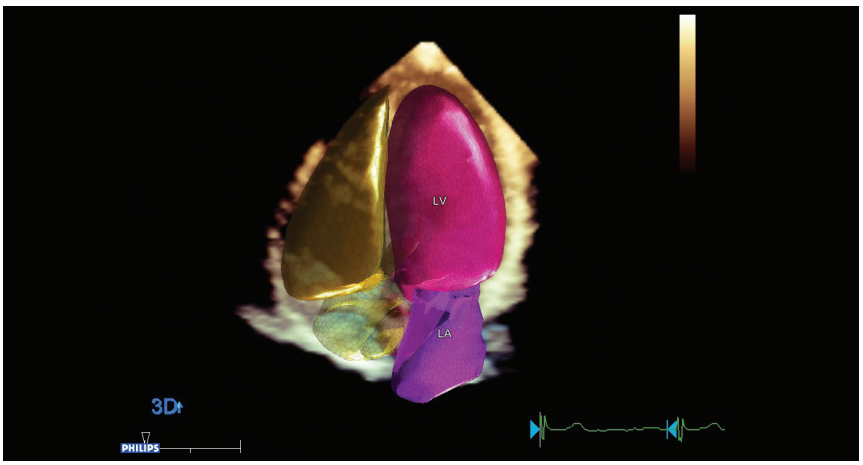
In only a few seconds, the application can quickly measure reproducible ejection fraction (EF), which is the amount of blood that is pumped (or ejected) out of the heart's ventricles with each contraction, which helps the clinician determine how a patient's heart is functioning. HeartModel[A.I.] offers easy and fast 3D images of the heart, and is one of the only tools that can simultaneously calculate left ventricle (LV) and left atrium (LA) volumes from a single volume loop, equal to the period of time it takes for one heartbeat.

Designed for experts and novices alike

The tool is also simple to use. It couples sophisticated algorithms that adapt to a wide variety of heart sizes and shapes with an intuitive workflow and user interface that makes images quick and simple to visualize and edit by experts and novices alike.

HeartModel[A.I.] is an example of how Philips is driving innovation in the cardiology space to help clinicians make decisions early, quickly and confidently. It is part of a suite of tools and technologies available on Philips' EPIQ 7 ultrasound system.

This technology is designed to help address some of the most critical strains on overburdened hospitals and healthcare systems challenged to provide higher quality care at a lower cost.



Provides **63% time savings** when minor edits are required[2]

Learn more
www.philips.com/healthcare/resources/feature-detail/ultrasound-heartmodel

1. World Health Organisation, Cardiovascular disease: www.who.int/cardiovascular_diseases/en/
2. White paper: Automated transthoracic three-dimensional echocardiographic quantification of the left heart chambers; Diego Medvedofsky MD, Ivan Salgo MD, Lynn Weinert BSc, Victor Mor-Avi PhD, Roberto M. Lang MD University of Chicago Medical Center, Chicago, Illinois, USA
3. http://www.who.int/mediacentre/factsheets/fs317/en/
4. Centers for Disease Control and Prevention, Heart Disease Facts: https://www.cdc.gov/heartdisease/facts.htm, accessed February 12, 2018

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