



AI-backed Cardiology Support

**Artificial Intelligence proven to enhance  
detection of structural heart disease**

**ASX:EIQ**

Company Presentation 16 October 2023



**AI with heart**



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# Corporate Snapshot

494,404,375

Shares on issue



A\$0.20

Share Price (13.10.2023)



Jul '22

Oct'23

A\$98.9

Market Capitalisation



FIRST REVENUES  
ACHIEVED MAY 2023

A\$3,081,004

Cash (30.09.2023)



R+D rebate c. \$1M  
expected prior to year  
end calendar 2023

NIL

Long Term Debt



## SHAREHOLDER BREAKDOWN

47%

Board of Directors  
& Top 20

53%

Other  
Shareholders

## BOARD OF DIRECTORS



Andrew Grover  
Executive Chair



Steven Formica  
Non-Exec Director



Steven Picton  
Non-Exec Director




Simon Tolhurst  
Non-Exec Director



Jessamyn Lyons  
Company Secretary



The background is a dark blue gradient. In the center, there is a faint, glowing wireframe heart shape. A thick, dark blue pulse line, resembling an ECG, runs horizontally across the lower half of the image, passing behind the heart. The text is centered and reads: 

**Echo IQ** uses the power of  
**artificial intelligence** and data science  
to **improve detection**  
of structural **heart disease.**

# The Problem



30%<sup>1</sup>

of all deaths worldwide  
attributed to  
cardiovascular disease



1 in 2<sup>2</sup>

people with heart valve  
disease don't know  
they've got it



2 yrs<sup>3</sup>

mortality rate for certain  
forms of untreated  
structural heart disease

- structural heart disease is common
- it is becoming more prevalent
- left untreated, it has high rates of mortality
- lack of treatment has a large impact on the healthcare system

# Diagnosing Structural Heart Disease



## TRANS-THORACIC ECHOCARDIOGRAM

- > Most widely used tool in the diagnosis of structural heart disease, with more than 30M “echo’s” performed in the US each year alone
- > Images of the heart captured using ultrasound (soundwaves), with scanning equipment easily accessible in developed countries

## DIAGNOSTIC CHALLENGES

- > Many conditions share similar symptoms and features and cardiologists are frequently looking for multiple conditions at once
- > This can lead to conditions being overlooked or underestimated in their severity, with patients missing out on effective treatments
- > Certain conditions see women even more likely to be misdiagnosed than men<sup>4</sup>



In a recent clinical study, Echo IQ's EchoSolv<sup>TM</sup> technology was shown to accurately identify **100%** of patients with severe aortic stenosis, a leading form of structural heart disease.

This represents a **72%** improvement versus human-only diagnosis.

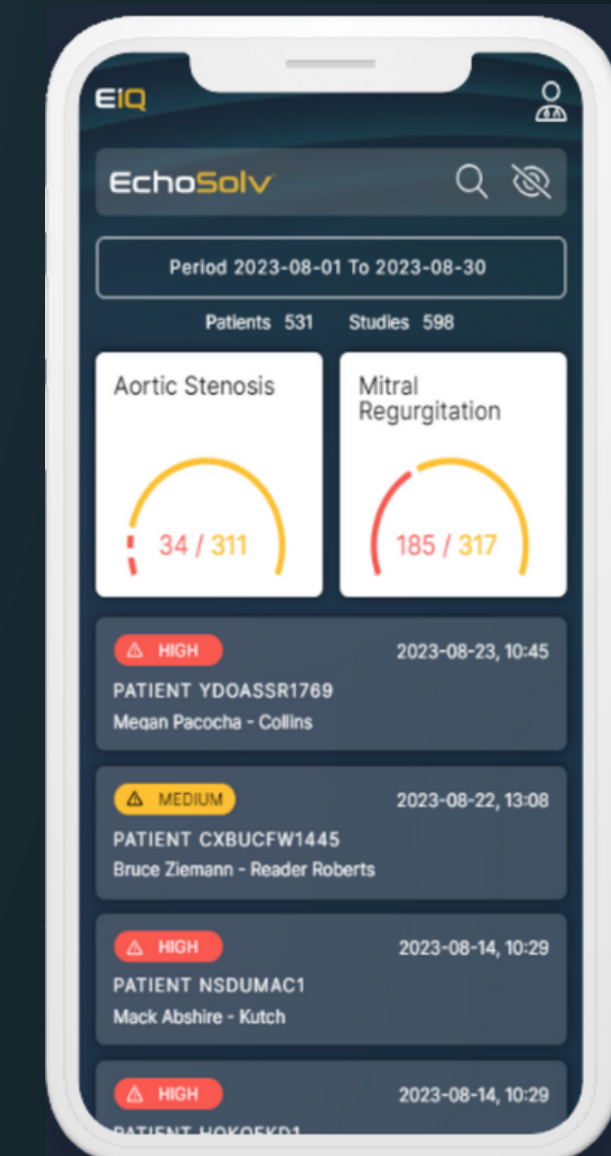
*Refer to ASX announcement dated 19 April 2023*



## SCIENTIFICALLY-PROVEN AI

For enhancing diagnosis of structural heart disease

EchoSolv™ removes the labour intensiveness, user-dependency and unconscious bias in diagnosis which can lead to greater accuracy compared to traditional methods.



### Patient triage on-the-go

Assessments available wherever you are, on any device



### Real-time alerts

Tailored alerts to reduce missed patients



### Rapid results

In under 3 seconds per patient



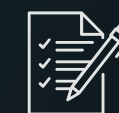
### AI Phenotyper

Unique AS risk assessment using AI and proprietary research



### View 360

Wide view of heart health for better decision-making



### Guideline detection

Aligned to local regulatory standards and frameworks



# Current Solution Set

## LEADING CAUSES OF HEART VALVE DISEASE

Severe **Aortic Stenosis** occurs when the aortic valve stiffens and fails to open and close properly. It has a 2-year mortality rate of 50% when left untreated.<sup>5</sup> Timely intervention is critical, but rests on early and accurate diagnosis. Replacement valves have been proven to be highly effective at extending life expectancy.

**Mitral Regurgitation** sees blood leak back into the left atrium of the heart due to poor mitral valve operation. Its prevalence is expected to double by 2030.<sup>6</sup> Treatment (via surgical repair or insertion of Mitra-Clip) relies on timely and accurate diagnosis of disease progression.



### Aortic Stenosis

Severe AS Guidelines ✓  
Severe AS AI Phenotype\* ✓

### Mitral Regurgitation

Chronic MR Guidelines ✓

*\*Pending FDA Clearance*

# EchoSolv™ Product Pipeline

Echo IQ has a clear near-term roadmap for whole-of-structural-heart solutions.

## Diastolic Dysfunction

Guidelines Tool (Nov'23)

Affects 20-30% of adult population<sup>7</sup>

## Pulmonary Hypertension

Guidelines Tool (Nov'23)

Affects 10% of adults over 65, drug therapy treatment<sup>8</sup>

## Mitral Stenosis

Guidelines Tool (Jan'24)

Rare but manageable with drug therapies

## Left Ventricular Mass (Dec '23)

## Aortic Stenosis

Severe AS Guidelines ✓

Severe AS AI Phenotype ✓

## Left Atrial Volume

Indicator for multiple conditions

## Mitral Regurgitation

Chronic MR Guidelines ✓

## Heart Failure

Guidelines Tool (Nov'23)

Causes > 10% of **all** deaths<sup>9</sup>

● Available now

● Available Nov 23 - Jan 24



## Our Competitive MOAT



### BACKED BY CARDIAC BIG DATA

- > Exclusive AI access to National Echo Database of Australia (NEDA) echo measurement data (world's largest)
- > Mortality-linked data an added differentiator
- > Trained on more than 200M datapoints



### CLINICALLY VALIDATED

- > US study demonstrated 100% accuracy in detection of AHA defined severe aortic stenosis
- > Australian study showed significant increase in accuracy of detection vs human-only diagnosis



### STRUCTURAL HEART SOLUTION

- > Current: aortic stenosis and mitral regurgitation
- > By Jan '24: heart failure + pulmonary hypertension



### REGULATORY APPROACH

- > Echo IQ pursuing FDA clearance for unique AI-phenotyper for aortic stenosis
- > This extends EchoSolv's commercial application



### USER EXPERIENCE

- > Proprietary cloud-based SaaS platform
- > Assessments almost instantly
- > Cardiologist's alerts
- > Multiple implementation models



# Proven clinical effectiveness

Beth Israel Deaconess  
Medical Center



EchoSolv™ identified 100% of the patients with guideline-defined severe aortic stenosis, equal to ~5% of the study population.

EchoSolv™ identified an additional cohort, similar in size, at high risk of mortality.

3 in 4 of the EchoSolv™ identified cases with AS had NOT received treatment.

*"EchoSolv™ worked extremely well to identify individuals with severe aortic stenosis, despite needing minimal data inputs. Using EchoSolv™ in clinical practice could make a huge difference in our ability to identify those individuals who need timely evaluation."*

*Prof. Jordan Strom. Harvard Medical School  
Principal Investigator*



EchoSolv™ identified 100% of the patients with guideline-defined severe aortic stenosis, equal to ~4% of the study population. This was a 72% increase on human-only identification.

Women were 66% less likely to have been accurately diagnosed than men. EchoSolv™ addresses this bias in diagnosis.

*"The EchoSolv™ platform is the first in the world to show improvement in severe AS identification compared with current clinical practice."*

*Prof. David Playford  
Chief Medical Advisor, Echo IQ*

*Refer to ASX Announcements dated 19 April 2023 and 1 December 2022*



# Rapid progress since acquisition

Q2 2022	Q3 2022	Q4 2022	Q1 2023	Q2 2023	Q3 2023
<b>FDA Strategy</b> <ul style="list-style-type: none"><li>+ Strategy defined</li><li>+ 510(k)</li><li>+ Consultants appointed</li></ul>	<b>Advisory Board</b> <ul style="list-style-type: none"><li>+ Leading international cardiology experts and influencers</li></ul>	<b>EchoSolv Launch</b> <ul style="list-style-type: none"><li>+ Platform for AS launched</li><li>+ AHA Guidelines</li></ul>	<b>US Team Established</b> <ul style="list-style-type: none"><li>+ President</li><li>+ Marketing</li><li>+ Business Development</li></ul>	<b>Maiden Revenues</b> <ul style="list-style-type: none"><li>+ AUS Private Hospital</li><li>+ AUS cardiology clinic</li></ul>	<b>New EchoSolv<sup>TM</sup> for MR</b> <ul style="list-style-type: none"><li>+ New solution introduced</li><li>+ Guideline-defined detection</li></ul>
<b>IP Protection</b> <ul style="list-style-type: none"><li>+ Patent lodged 2022</li><li>+ International extension 2023</li></ul>	<b>HeartX Accelerator</b> <ul style="list-style-type: none"><li>+ Selected as 1 of 5 winners</li><li>+ MedAxiom funding</li></ul>	<b>Clinical Validation</b> <ul style="list-style-type: none"><li>+ Beth Isreal Deaconess (Boston)</li><li>+ 100% disease detection</li></ul>	<b>Enhanced Clinical Validation</b> <ul style="list-style-type: none"><li>+ St. Vincent's x 2</li><li>+ 100% disease detection</li><li>+ 72% increase vs human-only diagnosis</li></ul>	<b>Partners/Distribution</b> <ul style="list-style-type: none"><li>+ Hydrix (AU)</li><li>+ MedAxion (USA)</li><li>+ Cassling (USA Mid-west)</li><li>+ StudyCast (Integration)</li></ul>	<b>Industry Visibility</b> <ul style="list-style-type: none"><li>+ 2 x Academic presentations @ Euro. Society of Cardiology</li><li>+ Prof. Geoff Strange on AS</li><li>+ Prof. David Playford on MR</li></ul>
					<b>Major Pilot (AU)</b> <ul style="list-style-type: none"><li>+ Advara HeartCare WA</li><li>+ Largest AU cardiology provider</li></ul>
					<b>New Product Pipeline</b> <ul style="list-style-type: none"><li>+ Total heart solution announced</li></ul>

Refer to ASX Announcements 2022-2023

Business acquired in 2021. In 2 years, Echo IQ has evolved from an algorithm to a revenue-generating business.

# Commercialisation Strategy

## CLINICAL VALIDATION & REGULATORY



✓ Clinical studies at St. Vincent's Hospitals (AU) and Beth Israel Deaconess Medical Center (US)

✓ FDA 510(K) pathway defined. Reader study underway for final application Q4 2023

✓ Multiple ESC late-breaking presentations and Open Heart publication of clinical findings

## COMMERCIAL PILOTS



✓ Pilot with Advora HeartCare, Australia's leading provider of cardiology services

✓ Pilot with Gold Coast Private Hospital converted to commercial SaaS agreement

## SAAS AGREEMENTS



✓ Agreements in place in Australian cardiology and hospital sectors

✓ Strong and growing pipeline of US customers in multiple sectors



# SaaS Revenue Model

 Pay-as-you-go

EchoSolv

## Per Study

Ideal for Echo labs and clinics with lower volumes

- ✓ Severe Aortic Stenosis Guidelines Detection
- ✓ Severe Aortic Stenosis AI Phenotype
- ✓ Mitral Regurgitation Guidelines Detection
- ✓ Real-time PACS Integration
- ✓ SMS and Email Alerts
- ✓ Data Export
- ✓ Unlimited Re-assessments for Each Study

 Enterprise

EchoSolv

## Fixed Monthly Fee

Unlimited assessments with predictable pricing

- ✓ Severe Aortic Stenosis Guidelines Detection
- ✓ Severe Aortic Stenosis AI Phenotype
- ✓ Mitral Regurgitation Guidelines Detection
- ✓ Real-time PACS Integration
- ✓ SMS and Email Alerts
- ✓ Data Export
- ✓ Unlimited Re-assessments for Each Study
- 
- + Unlimited Study Assessments
- + 12-month Retrospective Quality Audit

# Rapid Market Development

		MARKET		USAGE MODE		REVENUE MODEL		
		AUSTRALIA	UNITED STATES	REAL-TIME	QUALITY-AUDIT	MONTHLY SAAS	FEE PER SCAN	PROJECT FEE
PARTNER TYPE	Hospital	<div></div>		<div></div>	<div></div>	<div></div>		
	Cardiology Practice	<div></div>			<div></div>	<div></div>		
	PACS/Reporting	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	
	Distributor	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
	Valve Manufacturer	<div></div>	<div></div>		<div></div>			<div></div>
	Hardware Scanning	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>	<div></div>
		<div><div></div> Contracted + Announced</div> <div><div></div> Significant engagement</div>		Contracts in place in Australia including paid pilot with country's largest cardiology provider. Advanced engagement and pipeline in US.		EchoSolv seeing traction for real-time analysis and quality audit.		Multiple revenue models in place to support users with different scale, need and objectives.



# Structural Heart Solutions

## The Commercial View

### Conditions Treated with Mechanical Devices (eg. Valves)

- Aortic Stenosis
- Mitral Stenosis
- Mitral Regurgitation

1. Identify more patients
2. Triage and prioritisation
3. Hospital efficiency
4. Commercial collaboration

### Conditions Treated with Drug and Pharmaceutical Therapies

- Diastolic Dysfunction
- Heart Failure
- Pulmonary Hypertension

1. Identify more patients
2. New drug trials (patient selection)
3. Studies
4. Commercial collaboration

Indicator  
Solutions

- Left Atrial Volume
- Left Ventricular Mass

Indicator  
Solutions

● Available now

● Available Nov 23 - Jan 24

# Case Study:

## Potential Impact in Hospital Setting



Review Mode	Human-Only	AI + Automation	
Number of EchoCardiograms Assessed	9189	9189	
Number of Severe Aortic Stenosis cases detected	218	<b>376</b>	<b>+ 72%</b>
Hospital income from respective valve replacements *	US\$6.98M	<b>US\$9.84M</b>	<b>+ 41%</b>

\*Extrapolated figures derived using detection rates from St. Vincent's Study (as reported in ASX announcement dated April 19), combined with assumed industry replacement valve costings of \$32,000 and a 43% surgical non-suitability rate



# Scientific Advisory Board

- > Comprises a team of globally recognised experts in cardiovascular medicine, echocardiography, sonography, applied artificial intelligence and public health
- > More than 1,200 peer-reviewed publications
- > Former Presidents and Chairs, Am. College of Cardiology and Am. Society of Echocardiography
- > Includes a TedMed Speaker and NASA's lead scientist in ultrasound
- > Includes a member of the team that performed the world's first transcatheter aortic valve replacement using the transapical approach



Prof. Huon H. Gray

CBE MD  
Former National Clinical Director  
CVD, NHS England, Am. College  
Cardiology Chair (International  
Council)



Partho Sengupta

MD MBBS FACC FASE  
Henry Rutgers Professor of  
Cardiology. Chief of Division, Robert  
Wood Johnson Medical School



James Thomas

MD FACC FASE FESC  
Former President Am. Society of  
Echocardiography, Director, Center  
Heart Valve Disease



David Ouyang

MD FACC FASE  
Cedars Sinai Medical Center,  
Los Angeles



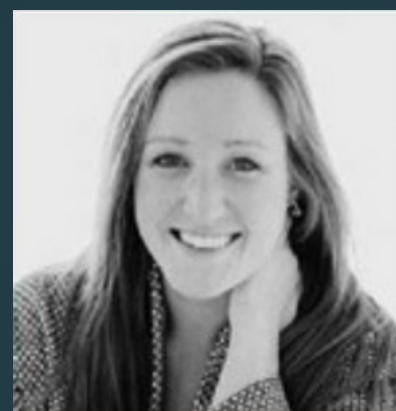
Hashim Khan

MD FACC  
San Diego Cardiac Center



Jordan Strom

MD Msc FACC FASE  
Beth Israel Deaconess, Boston,  
Harvard University



Madeleine Jankowski

BS ACS RDCS FASE  
Advanced cardiac  
sonographer, Northwestern  
University



Michael Mack

MD MACC  
Editor JACC, Director Baylor  
Scott & White, Cardiovascular  
Governance



Greg Scalia

MBBS MSc FRACP FCSANZ  
FACC FASE  
Wesley Hospital, QLD

# 510k FDA clearance pathway

Securing FDA clearance in US market becomes a material revenue accelerator

Allows cardiologists to pursue undiagnosed patients and tap revenue from insurance and public health rebate channels (similar to Medicare).

## Q4 2022

### Pre-submission meeting

- + Acceptance of predicate
- + Reader Study recommended

## Q1 2023

### Reader Study Set-Up

- + Study design accepted by FDA
- + Sites identified

## Q2/3 2023

### Reader Study runs

- + Study commenced and majority completed
- + Final stage before submission

## Q4 2023

### 510k submission

- + Anticipated Q4
- + 66% reader completion

## Q1 2024

### 510k clearance

- + Anticipated Q1 2024

Reimbursement opportunities available post-FDA clearance



# Investment Highlights

- 1 Echo IQ is now revenue generating with paying customers in professional healthcare segments
- 2 Strong sales pipeline in the US and Australia with new contracts imminent
- 3 EchoSolv<sup>TM</sup> advances from single disease solution to complete structural heart decision support tool for cardiology
- 4 Competitive moat underpinned by exclusive access to world's leading echocardiographic measurement database linked to mortality
- 5 Clearly defined and highly progressed FDA 510(k) pathway for maiden AI-backed phenotype indicator, with clearance anticipated in Q1 2024

# References

1. [https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-\(cvds\)](https://www.who.int/news-room/fact-sheets/detail/cardiovascular-diseases-(cvds))
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**AI** with heart

[www.echoiq.ai](http://www.echoiq.ai)

