

AI-enhanced Cardiac MRI Reporting delivering **40% more** precise measurements

Key benefits

Automated Precision

Achieves up to 40% higher precision than manual analysis, delivering faster, more consistent cardiac MRI measurements.

Clinician Control

All contours remain visible and editable, keeping clinicians in full control of every result with transparent AI support.

Proven Accuracy

Validated across multi-centre datasets with reproducibility that surpasses expert inter-observer variability.

How it works

ICMR Pro uses convolutional neural networks trained on over 700,000 cine images and 60,000 expert segmentations to identify cardiac structures and generate precise volumetric and functional measurements. Built on over a decade of quantitative CMR research at University College London, it reflects true clinical practice.

All contours remain fully visible and editable, allowing clinicians to verify, adjust, and approve every result. Processing runs locally through a secure web-based platform, delivering rapid, reproducible outputs with no patient data transmitted beyond the institution.

Clinician Expertise

Created by global leaders in cardiac MRI and validated across international centres, ICMR Pro unites decades of clinical experience with advanced AI precision.

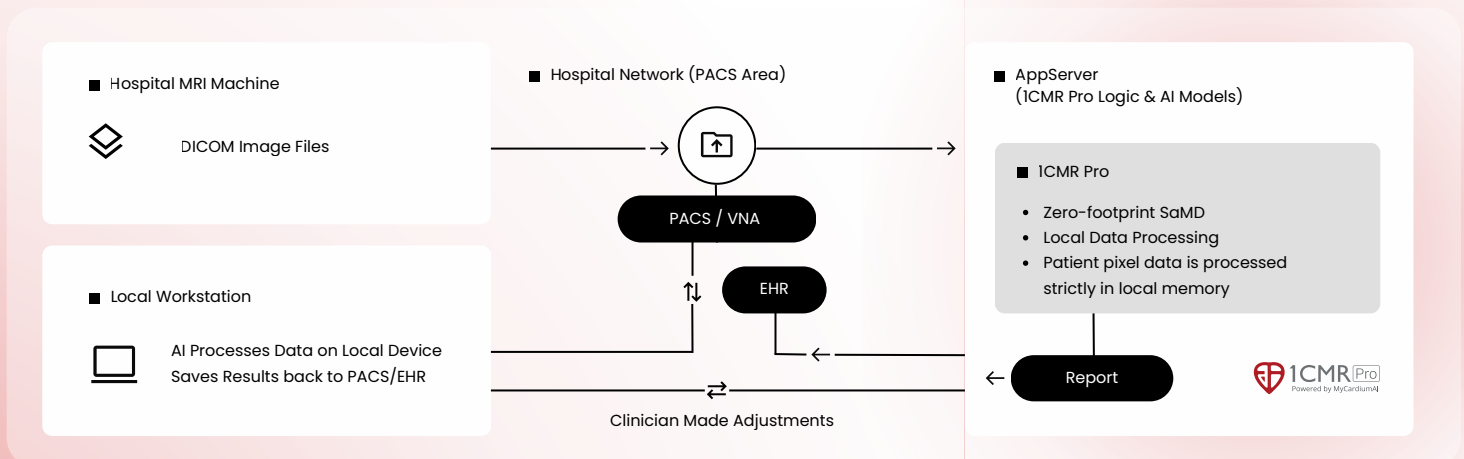
- Developed at Barts Health & UCL, embedding deep academic rigor into every algorithm.
- Built by clinicians for clinicians to ensure an intuitive, expert-driven workflow.
- Trained on ~2,000 pathological cases to guarantee robustness in diseased hearts.

Why ICMR Pro?

Built by the world's leading CMR specialists, ICMR Pro brings advanced AI into everyday cardiac MRI practice. Developed at University College London, it delivers regulatory-grade automation that enhances diagnostic precision, reproducibility, and efficiency across clinical and research environments.

Every element has been designed with clinical oversight in mind. Transparent, editable contours and validated performance data ensure AI outputs remain explainable, auditable, and trusted. Enabling faster workflows without compromising accuracy.

For more information email partnership@mycardium.com



Validation Data

How is the AI in ICMR Pro trained and validated?

The AI in ICMR Pro was developed at University College London using convolutional neural networks trained on cine CMR images. Models were designed for precision and generalisability across scanners and pathologies, with visible and editable contours ensuring full clinician oversight. Validation confirmed high accuracy and precision compared with human experts and other approved software.

- 700,000 cine images and 60,000 expert segmentations
- 1,923 patients across nine cardiac diseases and health
- Multi-vendor data from Siemens, Philips, and GE scanners
- Human-in-the-loop with editable, explainable contours
- Platform validated on hold-out datasets and repeat scans
- AI exceeded human performance for accuracy and precision

How diverse is the training set?

The training dataset reflects real-world clinical diversity, combining multiple institutions, scanner types, and disease groups. Recruitment spanned highly diverse populations in the UK, Europe, and Australia, ensuring the model performs reliably across demographic and imaging variations.

- Approximately 700,000 cine images and 60,000 segmentations from 1,923 patients
- Vendors and models included Siemens (Aera, Prisma, Avanto, Trio, Skyra, Biograph mMR, Verio), Philips (Achieva, Intera), GE (Signa Explorer)
- Cohort reflects real-world clinical practice with common co-morbidities
- Multi-centre recruitment including East London, other UK regions, Australia, and Italy
- US validation cohort enriched for ethnic diversity
- No validation performed on 0.5 T MRI

40% ICMR Pro software boosts precision by 40% and matches or exceeds human accuracy in 14 variables.

Davies et al. Journal of Cardiovascular Magnetic Resonance (2022) 24:16
<https://doi.org/10.1186/s12968-022-00846-4>

What measurements are supported?

ICMR Pro provides automated quantification of left and right ventricular volumes and function, as well as atrial areas and strain parameters. Papillary muscle inclusion can be adjusted (rounded or trabeculated), and end-diastolic and end-systolic phases can be set automatically or manually.

- LV and RV EDV, ESV, SV, EF
- LV mass
- LA and RA areas
- Global longitudinal shortening (GLSh)
- Mitral annular plane systolic excursion (MAPSE) and tricuspid annular plane systolic excursion (TAPSE)
- Adjustable papillary muscle inclusion options
- Manual or automated selection of end-diastolic and end-systolic phases

What independent evidence supports its performance?

Performance has been independently validated and published in peer-reviewed literature. The ICMR Pro algorithms achieved superior reproducibility, accuracy, and efficiency compared with both clinicians and other approved CMR software.

- Published validation in Journal of Cardiovascular Magnetic Resonance¹
- Dice accuracy about 0.90 versus 0.89 for expert readers

Is ICMR Pro fully compliant with the EU AI Act?

ICMR Pro has been developed with the provisions of the EU AI Act fully considered. MyCardium AI was the first company in the UK to contract with its notified body (BSI) to undertake separate AI audit elements for medical devices covered by the Act.

All medical devices regulated under the EU Medical Device Regulation (MDR) fall into the High-Risk category of the EU AI Act, due to their potential for patient impact.

ICMR Pro has been formally audited and reviewed against these High-Risk criteria and were found to be fully compliant.