



ASX:EMV

VALUE IN THE VINES

Point-of-Care electromagnetic imaging to revolutionise stroke diagnosis and monitoring



NOVEMBER 2022

ASX:EMV

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OVERVIEW

EMVision is an innovative medical device company developing world first electromagnetic portable brain scanner products to address significant unmet needs



- ▶ **Founded in 2017**
- ▶ **Experienced team (including key ex-Nanosonics leaders)**
- ▶ **“Zero to one” technology**
- ▶ **Best-in-breed partnerships and clinical collaborations**
- ▶ **Significant non-dilutive grant funding**
- ▶ **Multi-billion-dollar market opportunity**

CAPITAL STRUCTURE

Headquarters:
4.01, 65 Epping Road, Macquarie Park
Sydney, Australia

ASX TICKER: EMV

Share Price (14 th November 2022)	\$1.81
Shares on issue	77.63m
Total Options on issue	3.55m
Performance Rights	6m
Market Capitalization	\$140.5m
Enterprise Value	\$135.6m
Cash Balance (30 September)	\$4.9m
Grant inflows + R&D rebate (CY Q4 2022)*	\$8.2m
Remaining non-dilutive grant funding	\$8m

www.emvision.com.au

- Secured \$20m in non-dilutive funding since inception
- \$8m ongoing non-dilutive staged grant funding available
- Modest historical cash burn (<~\$1.9m / qtr.)
- Multi-centre clinical trials capital efficient at anticipated <\$4m
- Founders, Management and Directors closely aligned to shareholders, holding approximately 20% of shares on issue



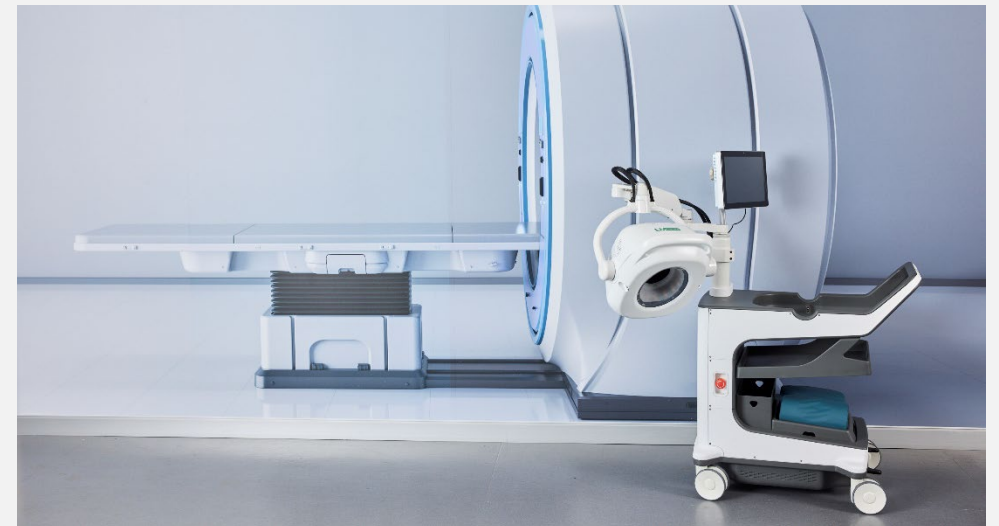
*See ASX release titled 'EMVision backed by NSW Medical Devices Fund with \$2.5m Grant' for further information on non-dilutive funding in-flows anticipated in CY Q4 2022.

EMVISION IS CREATING WORLD FIRST PORTABLE BRAIN SCANNERS

Neuroimaging as is
accessible today.



EMV 1st Gen,
Neuroimaging
anywhere.



BRINGING IMAGING TO WHERE STROKE OCCURS WILL SAVE LIVES



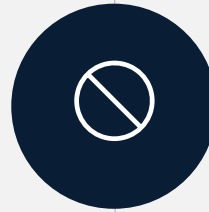
THE PROBLEM

- 1 in 4 adults will have a stroke in their lifetime
- 2 out of 3 strokes result in permanent disability
- 34% of total global healthcare expenditure is spent on stroke
- The average healthcare cost of stroke per person in the United States is USD \$140,048



TIME IS BRAIN

Every 10 minutes can SAVE up to 20 MILLION brain cells



CURRENT

TRADITIONAL IMAGING TOOLS

- Mainstay imaging techniques, CT and MRI, produce excellent images but are for the most part large, **stationary and complex machines** that require specialist operators, **limiting their point-of-care accessibility.**
- Whether a new acute stroke or a complication of an existing stroke, **urgent brain imaging is required** before the correct triage, treatment or intervention decision can be made.



SOLUTION

EMVISION POINT-OF-CARE

- EMVision's product portfolio of **portable, light weight, affordable and easy to use brain scanners** fills this unmet need for point-of-care brain imaging wherever the patient is.

- ✓ **Faster diagnosis, faster treatment**
- ✓ **Better monitoring**
- ✓ **Less disability**
- ✓ **Improved quality of life**
- ✓ **Significant healthcare & insurer savings**



GEN 1

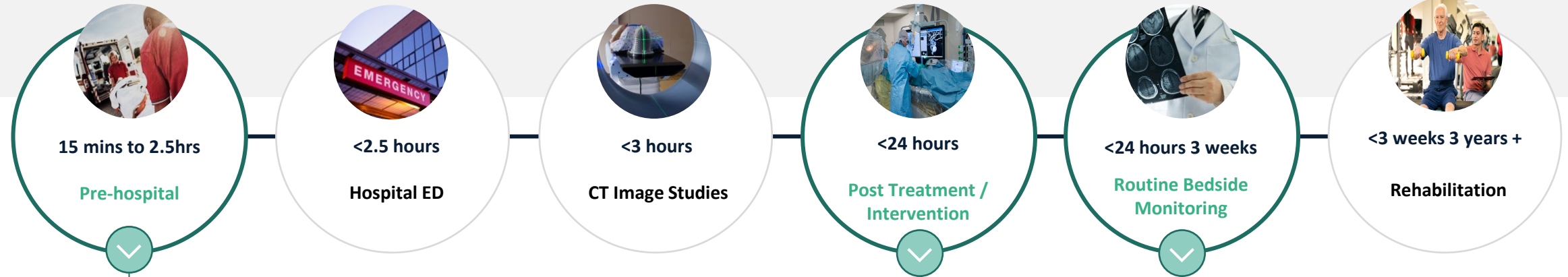


GEN 2

OVERVIEW OF 1ST GEN AND 2ND GEN CLINICAL VALUE

UNMET NEED FOR PRE-HOSPITAL AND BEDSIDE IMAGING ACROSS THE ENTIRE PATIENT JOURNEY

A typical stroke patient journey & timeline in an urban setting



2nd GEN



Potential clinical use cases

- **Reliably distinguish between haemorrhagic stroke versus ischaemic stroke.** Open the door to in-field tPA opportunity
- **Reliably segment LVOs & potential ECR candidates - to assist decision making on transfer** to clot retrieval center versus local stroke unit or hospital

- **Ischemia present**
- **Blood present**
- **Undetermined (wait until CT)**

1st GEN



Potential clinical use cases

- Monitor response to therapy or surgical intervention & complications
- Detect secondary bleeding earlier – routine brain scan to assess haemorrhagic transformation of ischaemic stroke
- Monitoring for post stroke oedema to allow earlier clinical detection and intervention
- Monitoring response to reperfusion therapy including restoration of blood flow and complications
- Front line decision support where there is no access to CT (e.g. rural) - inform patient transfer decision making
- Assist in the earlier identification of perioperative stroke

1ST GEN

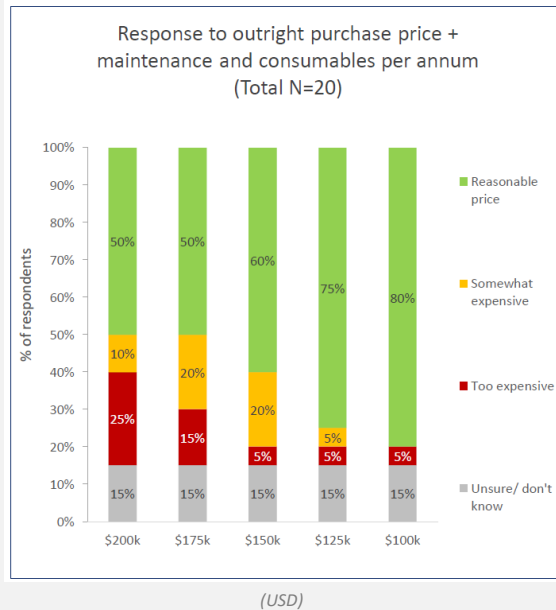
**DETECT CLINICALLY SIGNIFICANT CHANGES,
AT THE BEDSIDE, WHEN TIME MATTERS.**

- A portable, cost-effective, non-ionizing and safe brain scanner
- Capable of rapidly producing quality images of biological tissue to provide game-changing insights for clinicians by the bedside
- Single operator, trained healthcare professional, no radiographer required
- Rapid insights, targeting <5 minutes from scan to images
- Pursuing FDA De Novo pathway
- **Next steps: multi-site trial and regulatory approvals process**



POSITIVE MARKET FEEDBACK – 1ST GEN PORTABLE BRAIN SCANNER

- 20 US based stroke specialists, with involvement in purchasing processes, surveyed by IDR Medical. The upper proposed Gen 1 purchase price ranges were considered reasonable by 50% of the sample, and only 1 respondent did not accept any of the prices presented.



ENCOURAGING HEALTH ECONOMIC ASSESSMENT

Estimated Gen 1 potential financial benefits to a public hospital in Australia¹

Reduction in Transportation Costs	\$120,000
More efficient CT/MRI Utilization	\$150,000
Improvement in Endovascular Clot Retrieval Resource Utilization	\$90,000
Reduction in Length of Stay	\$78,000

Estimated Annual Total Financial Benefit of one device (excluding annual cost of imaging system) **\$438,000**



Research & Modelling conducted by;

¹Mid-range budget impact estimates for an Australian Public Hospital in AUD.

The savings estimated is from an Australian public hospital budget impact perspective and does not include post discharge patient outcomes related savings. Investors are cautioned that this study summary dated August 2021 is based on a number of assumptions, which are subject to change and may cause actual results to differ materially from those forecast. Investors should not place undue reliance on these results. The study is not indicative of the proposed unit pricing of EMVision's devices.

2ND GEN

ULTRA LIGHT WEIGHT DEVICE FOR STANDARD ROAD AND AIR AMBULANCES

- Lightweight scalable imaging solution with telemedicine capabilities, tablet operated.
- Designed to assist with remote diagnosis
- Portable, in ambulances and carried into the home of a patient – helps with immediate diagnosis and treatment
- Leveraging knowhow from 1st Gen, 2nd Gen R&D and product development running in parallel
- FDA 510(k) Pathway (anticipated to leverage Gen 1 approvals)
- **Next steps: advanced prototype fabrication and testing**



MORE LIVES COULD BE SAVED WITH OUR SCALABLE AND LIGHTWEIGHT 2nd GEN BRAIN IMAGING SOLUTION

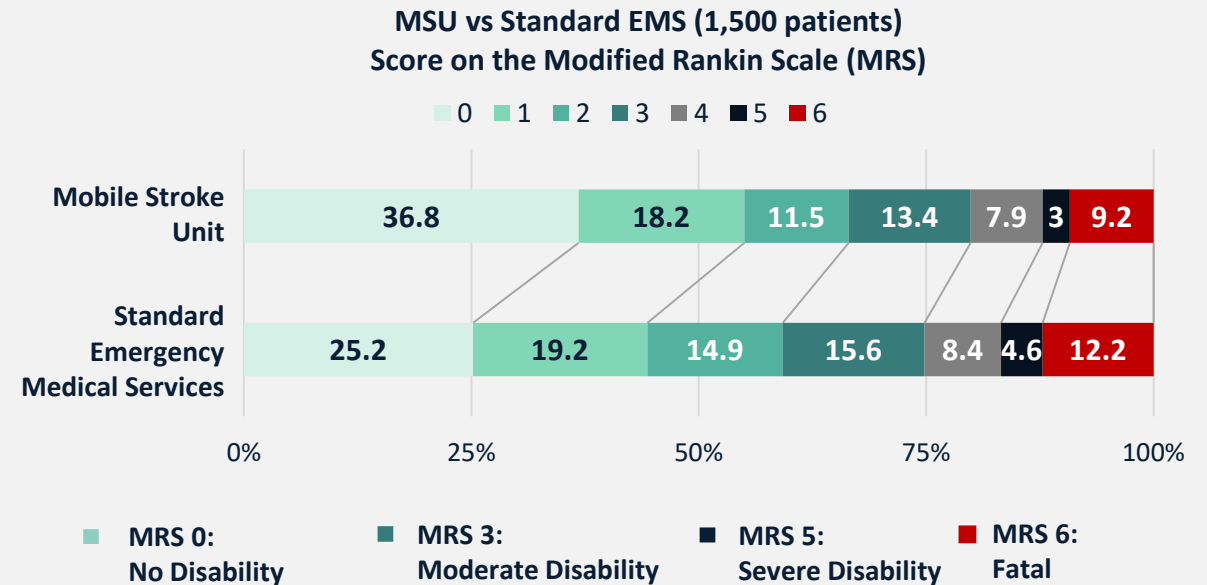
- Mobile Stroke Units (MSU) essentially bring the stroke unit to the patient, providing faster diagnosis and treatment, improving disability outcomes
- However, the model is resource intensive (including radiographer) and requires an expensive specialised vehicle (\$1.5m+) and thus is not generalisable for scale-up
- EMV 2nd Gen offers a scalable solution that is portable, ultra lightweight and telemedicine enabled, deployable by trained paramedics in any road or air ambulance
- EMV is partnering with the Australian Stroke Alliance (ASA) to develop and validate the Gen 2 to transform pre-hospital stroke care



A Mobile Stroke Unit (MSU)



Inside a multi-million-dollar MSU today



UNIQUE TECHNOLOGY PLATFORM

- Safe, portable, fast and accessible imaging modality
- IP portfolio spans software, hardware and multiple indications
- Successful proof-of-principle study completed with 50 confirmed stroke patients at Brisbane’s Princess Alexandra hospital
- Algorithms refined in this study and observed to accurately classify stroke type (98%) and localise quadrant of stroke (78%)
- EMVision’s technology has been published in:

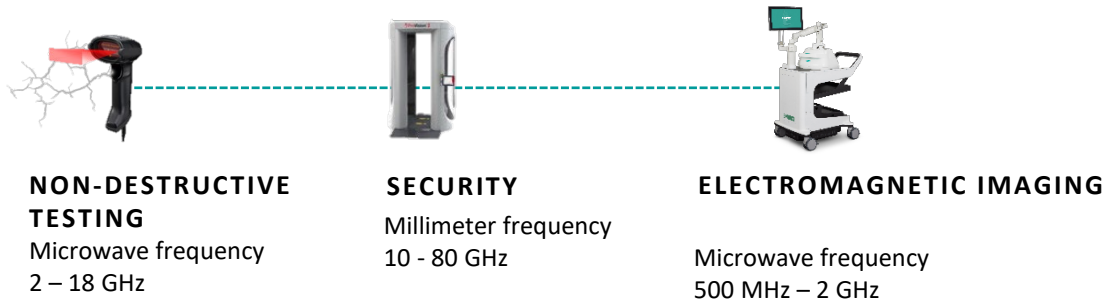


source: <https://doi.org/10.3389/fneur.2021.765412>



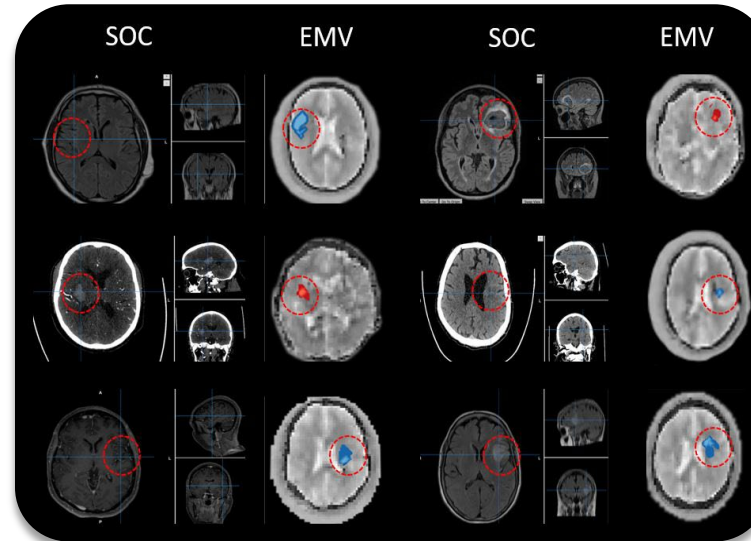
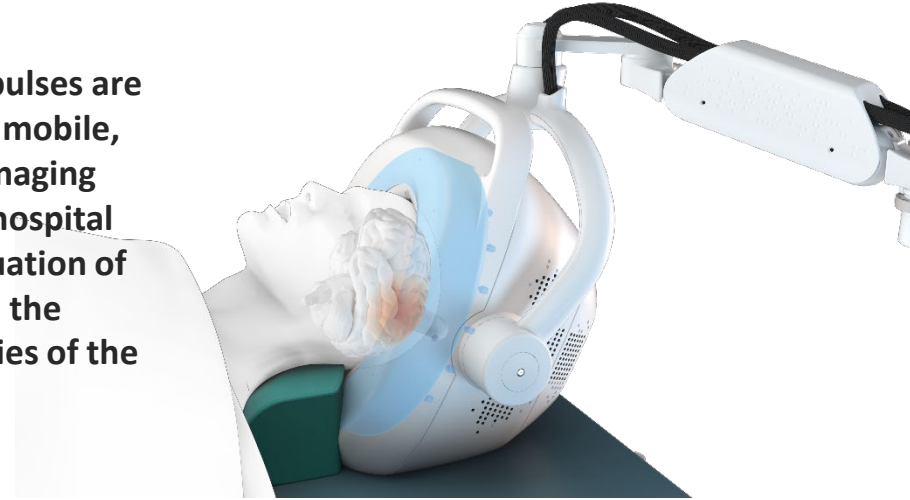
source: https://doi.org/10.1161/str.53.suppl_1.129

SHARED UNDERLYING PRINCIPLES



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Low energy electromagnetic pulses are used to provide a mobile, and rapid neuroimaging modality for pre-hospital and bedside evaluation of patients based on the dielectric properties of the tissue.



Patient examples from pilot study.

SOC = Standard of Care imaging (CT or MRI)

EMV = EMVision technology.

In these patient examples pathologies highlighted blue were classified as ischemic stroke and those highlighted red were classified as hemorrhagic stroke.

Please refer to the Company’s ASX announcement titled “EMVision Reports Very Encouraging Pilot Clinical Trial Data” released on 28th October 2020 and “Clinical Trial Data Drives Further Confidence for Expanded Studies” released 30th May 2021 for further details on the study. The algorithms may be subject to further refinement and investors should note there is no guarantee the algorithms will replicate the same level of accuracy on larger data sets without further refinement, or at all.

CLINICAL TRIAL ROADMAP – GEN 1

▶ LOCATION

- Site 1** - Liverpool Hospital
- Site 2** - Royal Melbourne Hospital
- Site 3** - Princess Alexandra Hospital

Sites will be activated in a staggered manner, commencing with Liverpool Hospital.

▶ PARTICIPANTS

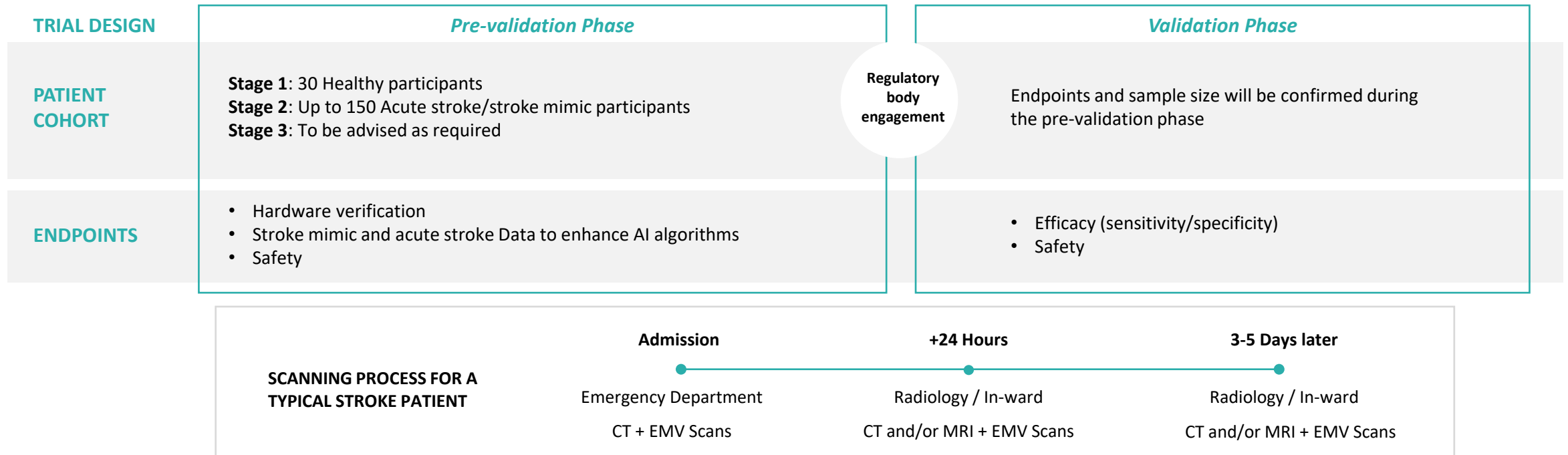
Presenting to emergency department with suspected stroke

▶ REPORTING

The Company expects to provide updates to the market as it reaches relevant milestones and endpoints throughout the clinical testing

▶ DURATION

Anticipated to be 12+ months



ATTRACTIVE REVENUE MODELS

- **Traditional Capex or innovative Opex pricing model offerings to provide buyer flexibility. Direct or distributor sales channels.**
- **Significant consumable opportunity (including replaceable coupling media alongside a disposable cap, single use per patient scan)**

Consumables



Coupling media



Disposable cap

MONTHLY SUBSCRIPTION MODEL (GEN 1)

- Target ~\$8,000 USD / month (subject to term)
- Delivery of the unit and training
- Consumables (subject to quota)
- Software upgrades
- Potential integration into PACS and EMR
- Access to cloud storage and viewing
- Routine maintenance included

CAPITAL EQUIPMENT & CONSUMABLES MODEL (GEN 1)

- Capital Equipment – Target: ~\$150,000 USD
- Consumables (disposable cap, coupling media)
- Maintenance & Service
- Software upgrades

ADDRESSABLE MARKET

TOTAL INSTALLED BASE OPPORTUNITY



1st GEN ADDRESSABLE MARKET

US.



10,200

1,600 PSC / CSC

GER, FR, UK



5,960

FIRST TARGETS

642 PSC / CSC

AU



545

93 PSC / CSC

ROW



86,000

PSC = Primary Stroke Centre CSC = Comprehensive Stroke Centre



2nd GEN ADDRESSABLE MARKET

US.



60,000

EUROPE



58,000

AU

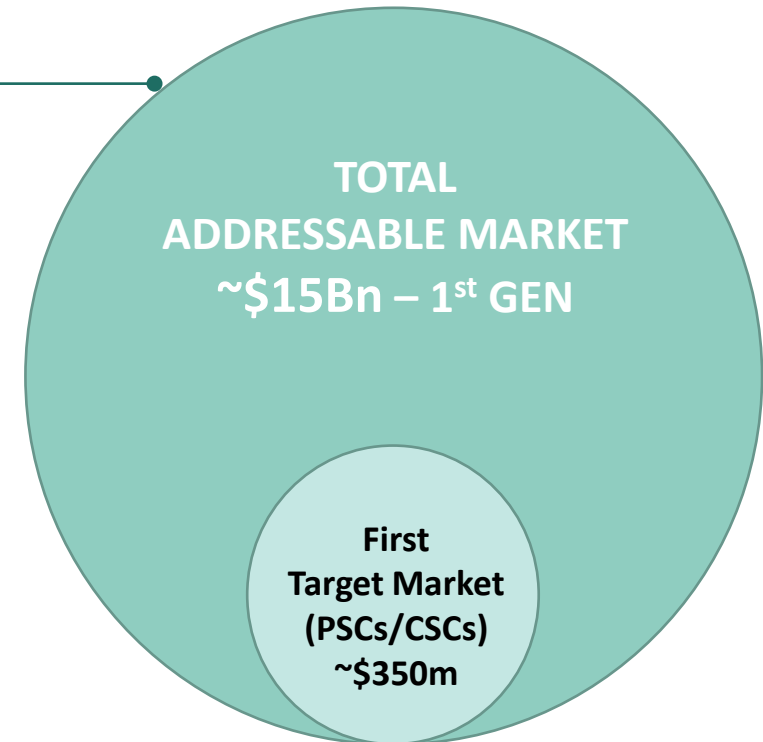


5,200

ROW



54,000



- 1st Gen deployment opportunities across stroke/neurology wards, ICUs, ED, cardiology, general wards
- First targets – tertiary stroke centers (PSC/CSC)
- 2nd Gen road/air ambulance market represents a further multi-billion dollar opportunity

EMV cautions investors that there are regulatory barriers and unique access challenges to each market and can be subject to varying rates of penetration. Estimates based on publicly available data. There are further regulatory hurdles to sell into ROW: China, India, Brazil, Mexico, South Korea, Spain, Italy and Canada.

SIGNIFICANT EXPERIENCE DEVELOPING AND COMMERCIALISING MEDICAL DEVICES

Team of 30 across Sydney and Brisbane, in R&D and product development



Dr. Ron Weinberger
CEO and Managing Director

Former Executive Director and CEO of Nanosonics (ASX:NAN). Over 20-years' experience developing and commercializing medical devices.



Scott Kirkland
Co-founder and Executive Director

Oversees corporate affairs, commercial strategy and business development efforts & manages the company's participation in grant programs



Professor Stuart Crozier
Chief Scientific Officer

Co-inventor of underlying technology. Advancements in MRI technology now central to 65% of all MRI machines.



Robert Tiller
Head of Design

Over 25 years in medical device product design and commercialization, previously CEO of Tiller Design, in collaboration with Nanosonics R&D team developed the Trophon EPR device



Forough Khandan
Head of Product Development

Previously Program Manager at Nanosonics (ASX:NAN)



Emma Waldon
Company Secretary

Corporate advisory, capital markets and corporate governance experience in Australia and the UK.



Dr. Konstanty Bialkowski
Head of Technology Development, Co-inventor of underlying technology

Research interests in near-field and passive radar systems, multiple element antenna systems, and wireless communications.



Dr. Merricc Edgar-Hughes
Head of Quality & Regulatory Affairs

Formerly Regulatory Affairs Manager (Global) at Nanosonics. Experience with multiple successful FDA, CE, TGA registrations

PARTNERS & COLLABORATORS

TRACK RECORD OF SECURING AND ONGOING ACCESS TO NON-DILUTIVE FUNDING PROVIDES GOOD FLEXIBILITY



Clinical Research Partnership

Access to neurology, radiology and critical care expertise, access to simulation rooms and hospital infrastructure, advancement of bedside processes as well as input into technology development.



Product Collaboration

Strategic OEM Agreement with Keysight Technologies (NYSE:KEYS) with exclusivity in the field of neuroimaging for the supply of the “fast sweep” feature in the VNA (core to the sensors inside EMV’s portable brain scanner).



Clinical Development & Validation, Non-dilutive funding

ASA providing clinical expertise and \$8M in non-dilutive funding to support clinical validation and deployment to transform pre-hospital stroke care



Inception Member

NVIDIA Inception nurtures dedicated and exceptional startups who are revolutionizing industries with advances in AI and data science.



Modern Manufacturing Initiative

Manufacturing Grant

\$5m non-dilutive federal manufacturing grant to establish first commercial production run



Commonwealth CRC-P Grant Program Collaborators

CRC-P grant supported an industry-led collaboration, including cash contribution from GE Healthcare, to develop and successfully test EMVision’s earlier proof of principle prototype device



NSW Medical Devices Fund backing

\$2.5m non-dilutive grant funding awarded in November 2022 to support EMVision’s multi-site clinical trials

STRONG SUPPORT FROM THE CLINICAL COMMUNITY



"It cannot be underestimated how important this cutting-edge technology could become for future stroke management."

Professor Geoffrey Donnan AO
Stroke neurologist
Co-chair Australian Stroke Alliance, Past-president of World Stroke Organization



"The concept of bringing imaging to the patient will dramatically reduce times to administer life saving interventions such as thrombolysis and thrombectomy."

Professor Stephen Davis AO
Stroke neurologist
Co-chair Australian Stroke Alliance, Past-president of World Stroke Organization



"Equitable healthcare for remote Australians needs to overcome the tyranny of distance. Portable brain imaging is a crucial next step in bringing critical care to patients sooner."

Dr Mardi Steere
Executive General Manager Medical and Retrieval Services, Royal Flying Doctor Service Central Operations



"We have seen the EMVision technology advancing us towards the realisation of a novel imaging technology that will assist medical practitioners in making critical decisions, and critical interventions earlier, when time matters."

Dr David Cook
Intensivist



"A new phase will see mobile and portable technology move to the patient. We need advanced solutions beside the patient at the time of stroke, so that treatments can be delivered without delay."

Professor Michael O'Sullivan
Stroke neurologist



"With so many Australians and in particular a large proportion of Aboriginal and Torres Strait Islander patients living vast distances from stroke imaging, EMVision holds promise in being able to reduce stroke care inequity."

Dr. Angela Dos Santos
Stroke neurologist
Mobile Stroke Unit Expert

SUMMARY AND OUTLOOK

- Team of medtech experts that have successfully done this before
- Strong support from the leading minds in stroke care
- Increasing demand globally for point-of-care imaging
- Multi-billion-dollar market opportunity in stroke care
- Technology has additional applications for unmet needs in traumatic injury and adjacencies
- Multiple non-dilutive funding sources provide flexibility to support commercialization

Key Catalysts

- Clinical trial data
- Commercial partnerships
- Regulatory submissions and outcomes
- 2nd Gen prototype fabrication and testing



THANK YOU



EM VISION
ASX:EMV

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HEADQUARTERS
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Macquarie Park
Sydney, Australia

APPENDIX



EXPERIENCED BOARD



John Keep
Non-Executive Chairman

As former CEO of Queensland Diagnostic Imaging, John grew the business to become the state's leading private imaging group and led the successful trade sale of the group



Dr. Ron Weinberger
CEO and Managing Director

Former Executive Director and CEO of Nanosonics' (ASX:NAN). Over 20-years' experience developing and commercializing medical devices.



Scott Kirkland
Executive Director

Co-founder of EMVision Medical Devices Ltd (ASX:EMV) Oversees EMVision's corporate affairs, commercial strategy and business development efforts.



Tony Keane
Non-Executive Director

A Director of National Storage Holdings Ltd (ASX:NSR) Previously held numerous roles with a major trading bank principally in business, corporate and institutional banking.



Geoff Pocock
Non-Executive Director

Over 20 years' experience in commercialisation, corporate finance and strategy
Currently Non-Executive Chairman of Argenica Therapeutics Ltd (ASX:AGN), and founder and former Managing Director of Hazer Group Limited (ASX:HZR)



Dr Philip Dubois
Non-Executive Director

Non-executive Director of Sonic Healthcare (ASX:SHL), and former CEO of their imaging division, and Executive Director from 2001 to 2020. Founder and former CEO and Chairman of Queensland X-Ray. Currently an Associate Professor of Radiology at the University of Queensland Medical School. Has served on numerous government and radiology group bodies

OUR HISTORY

