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### TRANSFORMATIVE POINT-OF-CARE IMAGING



#### ADDRESSING ACCESSABILITY

2/3<sup>rds</sup> of the world does not have access to diagnostic imaging.

#### **LOW-COST HARDWARE**

Energy emitted from a scan is **less than 1%** of energy emitted from a mobile phone.

#### **PLATFORM MODALITY**

Applications across the entire body, targeting time sensitive neurological disorders first.

### BRINGING IMAGING TO WHERE STROKE OCCURS WILL SAVE LIVES



STROKE IS A GLOBAL SOCIETAL & HEALTH ECONOMIC BURDEN







#### 1<sup>ST</sup> GENERATION DEVICE

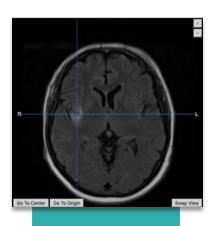
Detect clinically significant changes, at the bedside, when time matters, before clinical symptoms present.



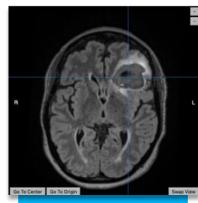
#### 2<sup>nd</sup> GENERATION DEVICE

Ultra light weight device embedded in standard road and air ambulances to deliver pre-hospital stroke care to patients regardless of location.

#### WHAT CLINCIANS NEED TO KNOW...







**BLEED** (HAEMORRHAGIC)

ACUTE ISCHAEMIC STROKE PATIENTS CAN BENEFIT FROM CLOT DISSOLVING DRUGS (tPA) IF GIVEN WITHIN HOURS, BUT THESE DRUGS WORSEN BLEEDING IF THE STROKE IS DUE TO A HAEMORRHAGE. THE ABILITY TO DISTINGUISH STROKE TYPE AT THE POINT OF CARE IS ONE OF THE POTENTIAL UTILITIES OF



### BRINGING IMAGING BEDSIDE

#### TODAY'S CHALLENGES

Transport of patients from ICU to radiology can increase the risks of complications, with adverse events occurring in as many as 71% of in-hospital transports.

Transporting unwell patients is also associated with <u>complex logistical challenges</u> which can require multiple staff members, the transport of monitors, oxygen tanks etc., and ties up resources.

CT and MRI resources are **under intense pressure** in hospitals and in rural and remote areas access to high end imaging can be limited. In 2005, 87% of the 5.7 million stroke deaths worldwide occurred in low and middle-income countries where 80% of the population live in rural areas.

In many instances, by the time the patient is transported to the radiology department, it may be too late for the clinical question that needed answering

#### BRINGING IMAGING TO THE PATIENT

EMVision's aim is not to replace CT or MRI, but rather to function much like ultrasound does, by providing clinically valuable information to healthcare workers, wherever the patient is, to intervene earlier and make critical decisions earlier, when time matters, and where a higher resolution MRI or CT may not be accessible, practical or affordable.

# EMVISION'S PILOT CLINICAL TRIAL

STUDY DESIGN

#### PILOT CLINICAL TRIAL

- The single-site study, at the Princess Alexandra Hospital (PAH) in Brisbane, of patients with diagnosed ischaemic or haemorrhagic stroke, is the first clinical study for EMVision's novel imaging technology.
- Patients were scanned with EMVision's prototype device at close proximity to their standard of care imaging (CT and/or MRI).
- No intervention or modification to the standard of care of hospital-based treatment of stroke was done as part of this study.

STUDY OBJECTIVE

#### PRIMARY END POINT ACHIEVED

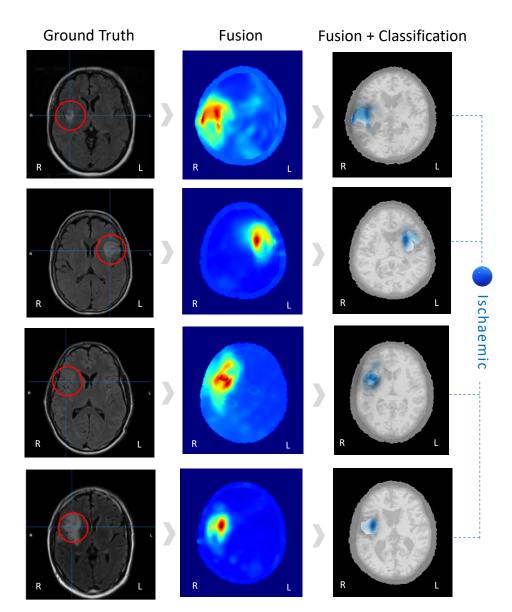
- The primary endpoint was the collection of a dataset of stroke patients which improves the understanding of stroke on electromagnetic scattering effects in the brain. This end point has been met, producing datasets that have enabled EMVision to advance its imaging algorithm and hardware development.
- The dataset enabled an observation of the correlation of EMVision scans with patients' "ground truth" CT and/or MRI scans.
- This is a data acquisition study and not intended to be an interventional study. Hence appropriate caution should be used in extrapolating these results to those of the general population at this stage of the development.

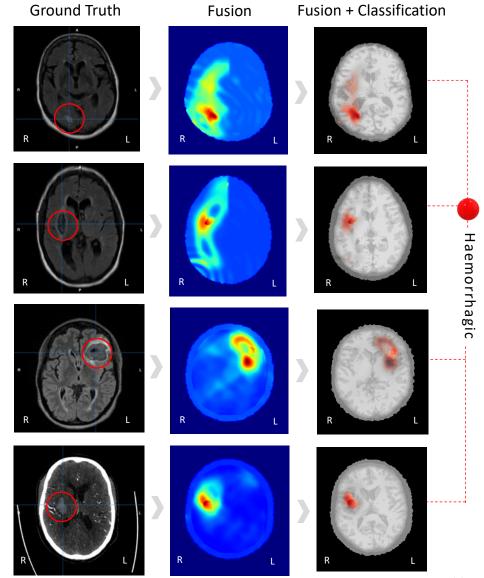
PATIENT COHORT

#### 30 STROKE PATIENTS ENROLLED

- The study enrolled and processed datasets from 30 patients (21 ischaemic and 9 haemorrhagic) representing the diversity of stroke in localisation, size and clinical severity.
- The mean age was 66.7
- Of the 30 patients, 19, (63.3%) had only a CT performed whereas 11, (36.7%) had CT/MRI performed.
- The mean NIHSS score was calculated as 5.2 which indicates mild severity.

### FUSION WITH CLASSIFIER - EXAMPLES





### STUDY OUTCOMES & UPCOMING MILESTONES



#### STROKE SUBTYPE **CLASSIFICATION**

Collect data from stroke patients, both ischaemic and haemorrhagic



### LOCALISATION IN CORRECT QUADRANT

Compare EMVision scans with ground truth CT and MRI images



#### **OPERATOR AND** PATIENT FEEDBACK

Despite being a prototype, positive feedback on non-invasive nature of device

**UPCOMING MILESTONES** CY Q4 2020

CY H1 2021

- FDA Feedback
- Outcome of Australian Stroke Alliance competitive MRFF Frontiers bid
- Further Strategic Hires

- Expanded clinical study preparation (Protocol, Site selection, Ethics)
- Next-Gen Product Development Updates
- Additional 20 patient dataset
- Commercial and Collaboration Updates
- Further FDA Engagement

A larger dataset will be required to draw conclusions on sensitivity/specificity for blood and ischemia. The algorithms may be subject to further refinement and investors should note there is no quarantee the algorithms will replicate the same level of accuracy on larger data sets without further refinement, or at all. Five datasets where pathologies were estimated to fall outside of the anticipated prototype hardware range were identified and accuracy figures presented here are with, and without, the 5 excluded datasets for completeness. The indicative milestone timetable is a guide of EMVision's intentions at the date of this presentation only.

## MORE LIVES COULD BE SAVED WITH A LIGHTWEIGHT SCALABLE IMAGING SOLUTION

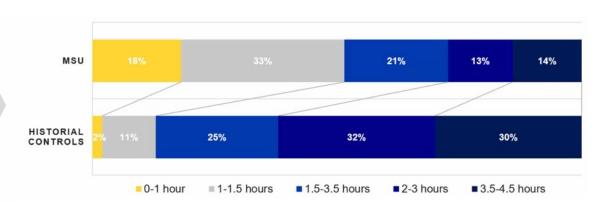
Nearly 10x more patients treated within the "golden hour" (first 60 minutes) with Melbourne Mobile Stroke Unit

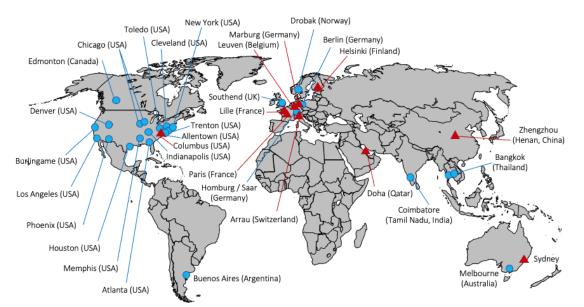
A Mobile Stroke Unit (MSU) is a custom-built specialist Ambulance vehicle that houses a ~500kg CT scanner, specialized personnel and carries stroke treatment drugs, including blood clot-dissolving medications.



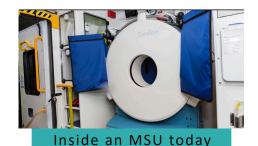
Sites with active mobile stroke units

Sites with MSU projects in planning or implementation state





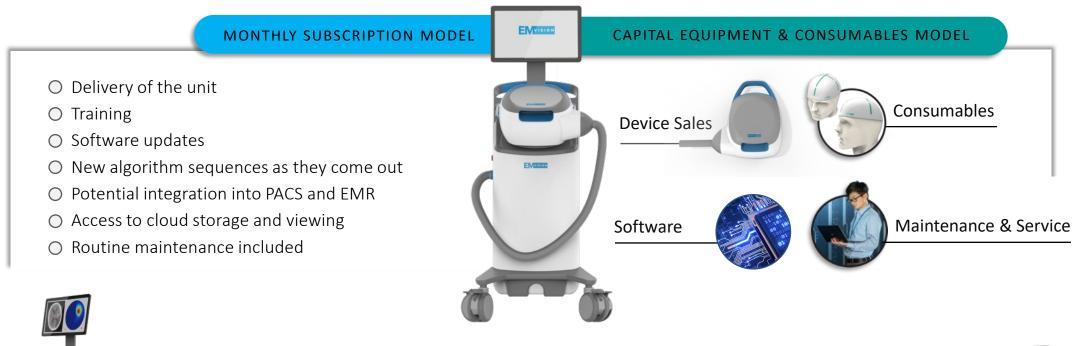






### FLEXIBLE & ATTRACTIVE REVENUE MODELS

Direct or Distributor







### **TEAM**

#### Significant experience developing and commercialising medical devices



Dr Ron Weinberger CEO & MD Former Nanosonics MD



John Keep Non-Executive Chairman Former CEO Queensland Diagnostic Imaging



**Scott Kirkland Executive Director** Co-Founder EMVision



**Prof Stuart Crozier** Co-inventor 2/3rd MRIs use Prof Crozier developed IP



**Robert Tiller** Head of Design Founder Tiller Design



Forough Khandan Head of Program Management Former Nanosonics Program Manager



**Geoff Pocock** Non-Executive Director Former Hazer MD



**Tony Keane** Non-Executive Director National Storage NED



**Dr Philip Dubois** Non-Executive Director Former CEO of Sonic Healthcare - Imaging



**Emma Waldon** Company Secretary Capital markets and corporate governance expert



Dr. Konstanty Bialkowski Head of Tech Development EM Imaging expert and Co-Inventor



**Ruth Cremin** Head of Quality & Regulatory Affairs Former Head of Regulatory at Nanosonics

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