



ASX Release

EMvision Medical Devices Ltd
ACN 620 388 230
Level 10, 12 Creek Street,
Brisbane Qld 4000
02 8667 5337
contact@emvision.com.au

INTERNATIONAL STROKE CONFERENCE NEW ORLEANS PRESENTATION

EMVision Medical Devices Limited (ASX:EMV) (“EMVision” or the “Company”), a medical device company focused on the development and commercialisation of medical imaging technology, is pleased to provide a copy of the presentation on the EMVision technology, pilot clinical study and the Australian Stroke Alliance collaboration, titled “Electromagnetic (EM) Portable Imaging For Stroke” which has been presented at the International Stroke Conference, New Orleans February 2022.

Stroke neurologist and Australian Stroke Alliance clinical expert Dr Angela Dos Santos gave the presentation.

Please refer to ASX announcement titled “Clinical Trial Data Drives Confidence for Expanded Clinical Studies” released on 30 November 2021 for further details on the pilot clinical study.

Authorised for release by the Board of the Company.

[ENDS]

For further information, media or investor enquiries, please contact:

Andrew Keys
Investor Relations
+61 400 400 380
andrew.keys@keysthomas.com

Sling & Stone
Media and Communications
emvision@slingstone.com
02 8073 5390

Scott Kirkland
Executive Director
+61 2 8667 5337
skirkland@emvision.com.au

About EMVision Medical Devices

EMVision Medical Devices Limited is focused on the development and commercialisation of medical imaging technology. The Company is developing and seeking to commercialise a potentially cost effective, portable, medical imaging device using electromagnetic microwave imaging for diagnosis and monitoring of stroke and other medical applications. The technology is the result of over 10 years of development by researchers at the University of Queensland. The team of approximately 20 researchers is led by co-inventor Professor Amin Abbosh, who is considered a global leader in electromagnetic microwave imaging. EMVision’s Chief Scientific Officer is Professor Stuart Crozier, who is a co-inventor and is globally renowned for creating technology central to most MRI machines manufactured since 1997. EMVision’s CEO, Dr Ron Weinberger, is the Former Executive Director and CEO of Nanosonics’ (ASX:NAN), a \$2 billion market cap healthcare company. Dr Weinberger has over 25-years’ experience developing and commercialising medical devices. During his time at Nanosonics, Dr Weinberger co-developed the company’s platform technology and launched their breakthrough product ‘Tropon’ globally, which would go on to become the gold standard for infection prevention. Dr Weinberger was instrumental in transforming Nanosonics from a research and development company to one of Australia’s leading medical device commercialisation success stories.

Forward-looking Statements

This release may contain certain forward-looking statements with respect to matters including but not limited to the financial condition, results of operations and business of EMVision and certain of the plans and objectives of EMVision with respect to these items. These forward-looking statements are not historical facts but rather are based on EMVision's current expectations, estimates and projections about the industry in which EMVision operates, and its beliefs and assumptions. Words such as "anticipates," "expects," "intends," "plans," "believes," "seeks," "estimates", "guidance" and similar expressions are intended to identify forward looking statements and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those risks or uncertainties inherent in the process of developing technology and in the endeavour of building a business around such products and services. These statements are not guarantees of future performance and are subject to known and unknown risks, uncertainties and other factors, some of which are beyond the control of EMVision, are difficult to predict and could cause actual results to differ materially from those expressed or forecasted in the forward looking statements. EMVision cautions shareholders and prospective shareholders not to place undue reliance on these forward-looking statements, which reflect the view of EMVision only as of the date of this release. The forward-looking statements made in this announcement relate only to events as of the date on which the statements are made. EMVision will not undertake any obligation to release publicly any revisions or updates to these forward-looking statements to reflect events, circumstances or unanticipated events occurring after the date of this announcement except as required by law or by any appropriate regulatory authority.

DISCLAIMER

Investment in EMVision Medical Devices Ltd (“EMVision”) is subject to investment risk, including possible loss of income and capital invested. EMVision does not guarantee any particular rate of return or performance, nor does it guarantee the repayment of capital.

This presentation is not an offer or invitation for the purchase of or a recommendation of securities. It does not take into account the investment objectives, financial situation and particular needs of the investor. Before making any investment in EMVision, the investor or prospective investor should consider whether such an investment is appropriate to their particular investment needs, objectives and financial circumstances and consult an investment advisor if necessary.

This presentation may contain forward-looking statements regarding the potential of the Company’s projects and interests and the development and potential of the company’s research and development and imaging devices under development. Any statement describing a goal, expectation, intention or belief of the company is a forward-looking statement and should be considered an at-risk statement. Such statements are subject to certain risks and uncertainties, particularly those inherent in the process of developing and commercialising novel devices that are safe and effective for use and the financing of such activities. There is no guarantee that the Company’s research and development projects and interests (where applicable) will receive regulatory approvals or prove to be commercially successful in the future. Actual results of further research could differ from those projected or detailed in this presentation. As a result, you are cautioned not to rely on forward-looking statements. Consideration should be given to these and other risks concerning research and development programs referred to in this presentation.



Electromagnetic portable brain imaging for stroke



Dr Angela Dos Santos on behalf of the the Australian Stroke Alliance and EMVision Medical Devices Ltd (www.emvision.com.au).



Disclosures

No personal disclosures

The Australian Stroke Alliance is funded by the Australian Federal Government through the Frontier Health and Medical Research Future Fund Initiative



The Australian Stroke Alliance was founded in 2019 and in 2021, after securing AU\$40 million in funding through the Federal Frontier Health and Medical Research Future Fund initiative, brought together over 30 partners with a goal of reducing the health and stroke inequity experienced by rural, remote and First Nations Australians.

Through this once-in-a-generation opportunity, our partner EMVision Medical Devices Ltd is aiming to provide portable, non-ionizing, rapid neuroimaging for prehospital and bedside evaluation of stroke.



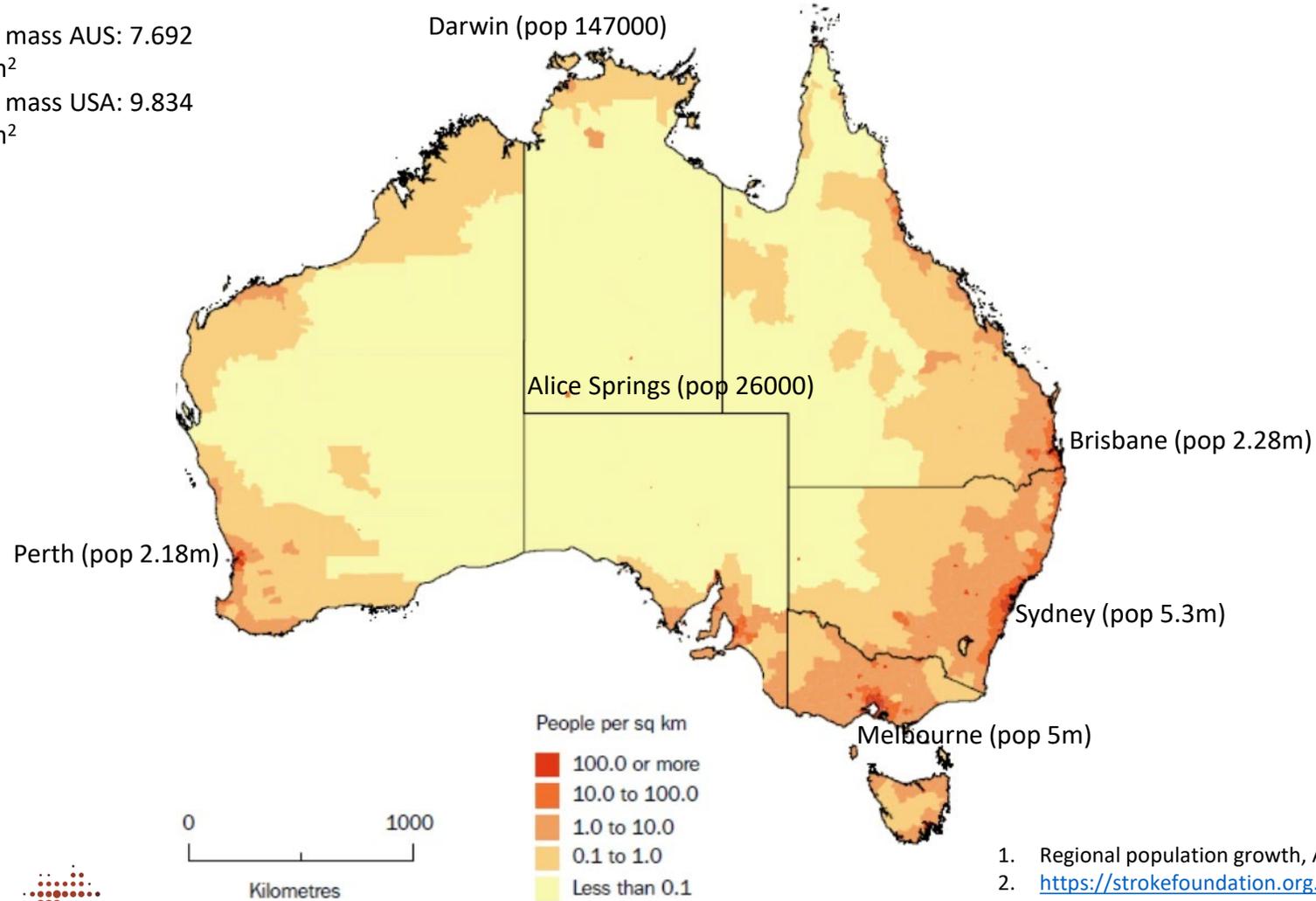
We acknowledge the Traditional Custodians of Country throughout Australia and recognise their continuing connection to land, waters and sky. We pay our respects to their Elders, past, present and emerging. We are committed to working together to address the health inequities within our Aboriginal and Torres Strait Islander communities. The Uluru Statement from the Heart is a fundamental driver of our research, education program, and commitment to equity and access.

Stroke in Australia

- One stroke occurs every 19 minutes.
- 24% of first ever stroke occur in peoples aged 54 years and under
- It is estimated that in 2020, the cost of stroke was \$6.2 billion in direct financial impact, and a further \$26.0 billion in mortality and lost wellbeing.

Population density of Australia

Total land mass AUS: 7.692 million km²
Total land mass USA: 9.834 million km²



Approximately 7 million people live in rural and remote Australia

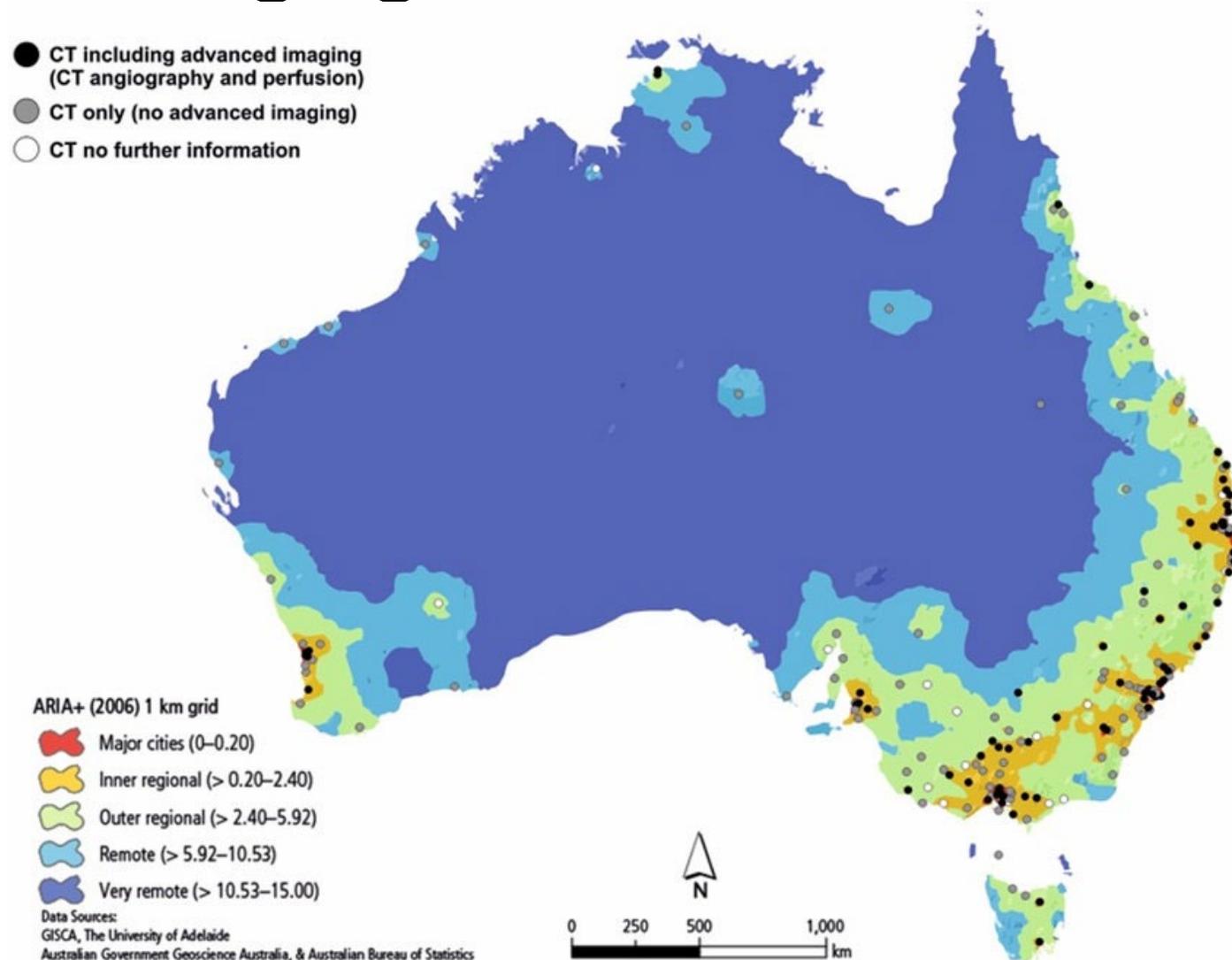
Those living in rural and remote Australia are 17% more likely to suffer a stroke.

Have limited access to stroke unit care

Significantly impacts Australia's First Nations communities

1. Regional population growth, Australia (3218.0)
2. <https://strokefoundation.org.au/en/About-Stroke/Learn/facts-and-figures>
3. Australian Institute of Health and Welfare 2018. *Australia's health 2018*. Australia's health series no. 16. AUS 221. Canberra: AIHW.
4. Walter *et al.* *Vessel Plus* 2021;5:26

Access to imaging in Australia



The solution

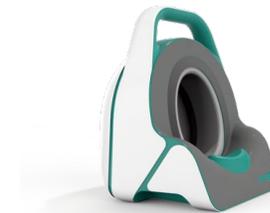
The development of portable brain scanners, taken to the patient, either by road or air, combined with telehealth support to diagnose and treat acute stroke.



Clinical Prototype
system used in
first trial



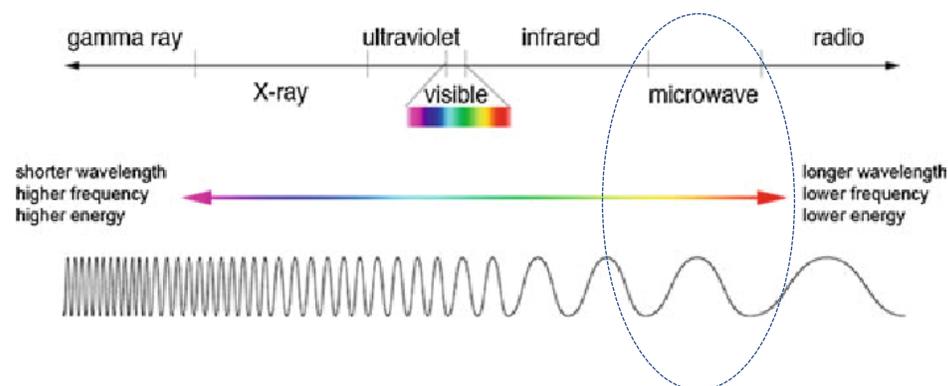
In-hospital
Brain Imaging



Pre-hospital
Brain Imaging

What is electromagnetic imaging

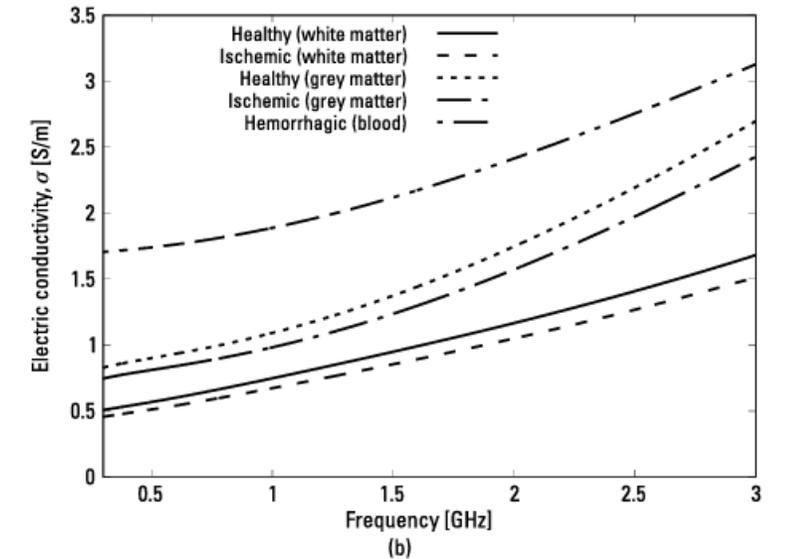
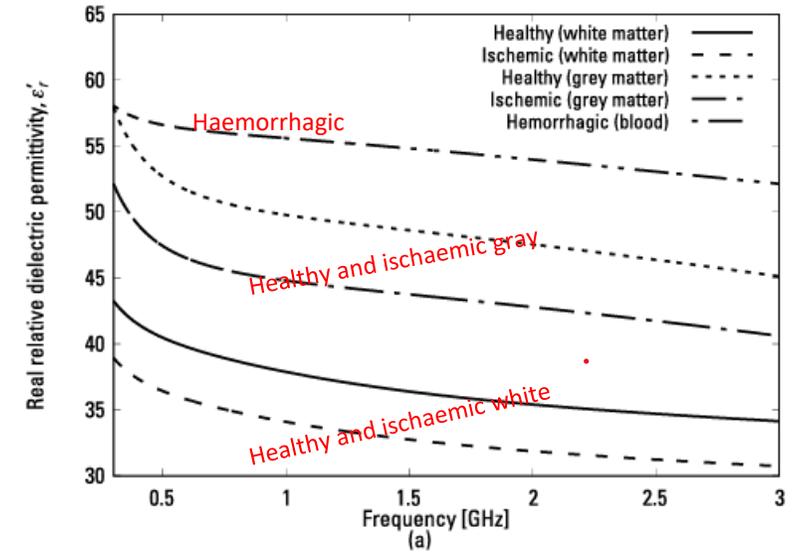
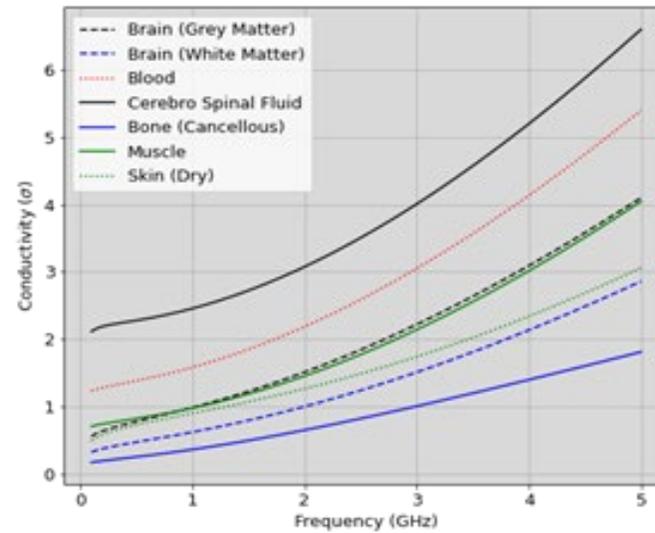
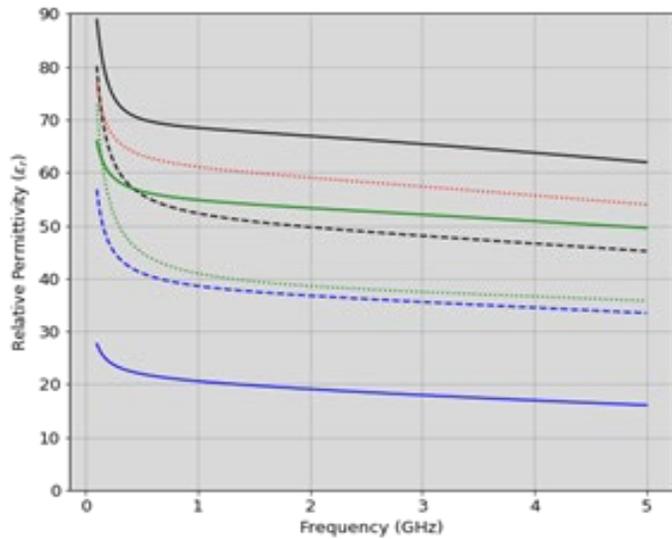
- Electromagnetic (EM) imaging transmits low energy electromagnetic waves.
- Images are obtained by processing signals from encircling transceiver antennae which emit and detect low energy signals in the microwave frequency spectrum between 0.5 and 2.0 GHz.
- It promises to provide portable, non-ionizing, rapid neuroimaging for stroke.



Dielectric properties, permittivity and conductivity

- Electromagnetic imaging (EMI) is based on characteristic and recognizable dielectric properties of tissues.
- The head contains many structures with different dielectric properties. Permitting localisation and characterisation of structures and pathology.
- The dielectric properties of tissues vary across the microwave frequency band
- To understand the dielectric properties, we use permittivity and conductivity.
- Typically tissues which have high water content will exhibit high permittivity, whereas conductivity increases for tissues with higher ionic salt content

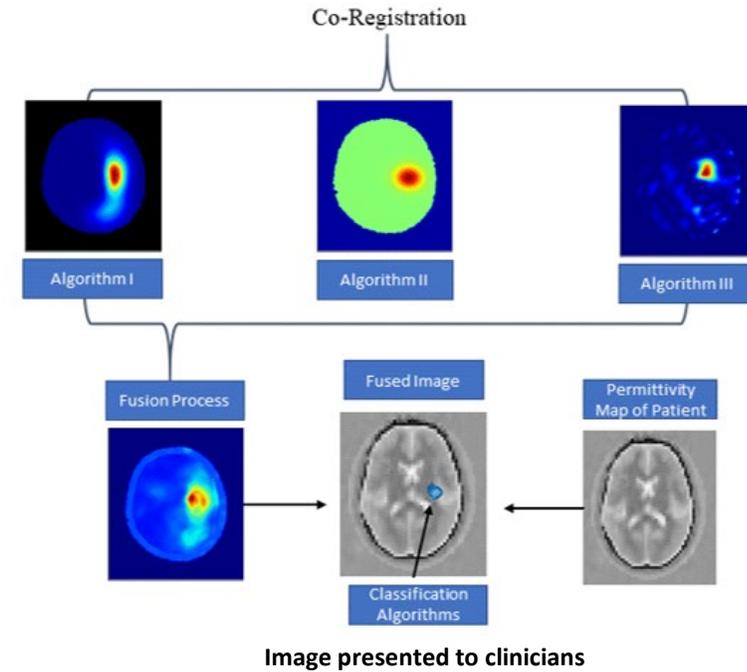
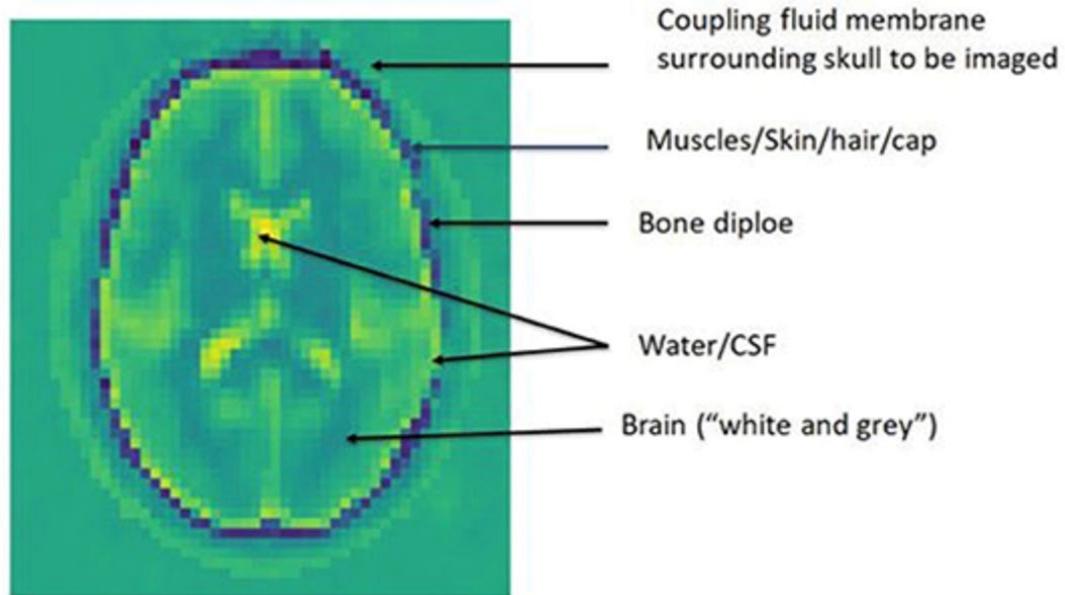
Permittivity and conductivity



Creation of images- Prototype EMV scanner



Dielectric map





Australian
Stroke Alliance

EM VISION

Pilot study aim

- To assess the impact of stroke on electromagnetic scattering effects on the brain

Methods

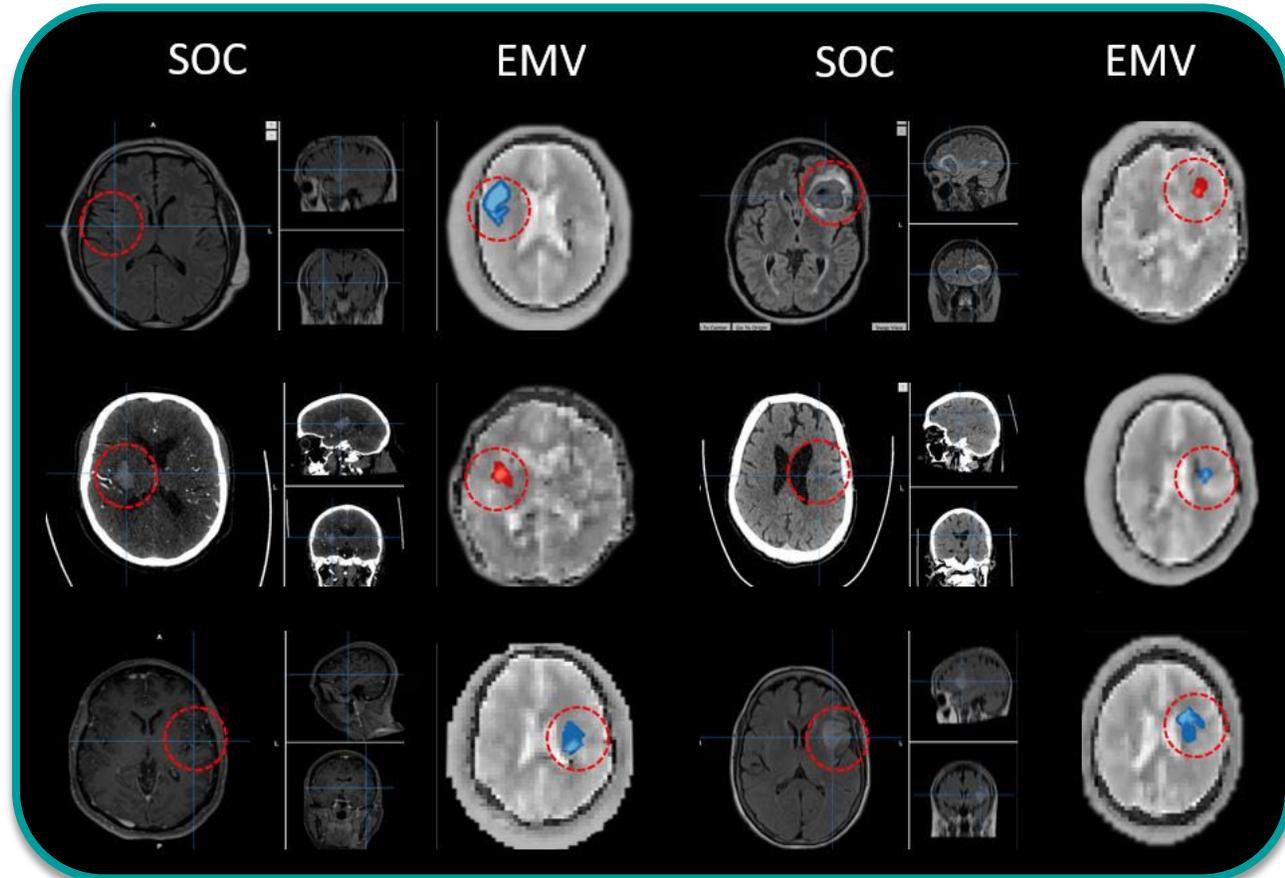
- Prospective, observational, open, non-interventional pilot study, conducted at the Princess Alexandra Hospital in Brisbane, QLD Australia.
- Patients with imaging-proven ischaemic (IS) or haemorrhagic (ICH) within preceding 48 hours were recruited.
- EMI was performed within 1-24 hours of diagnostic CT or MRI.



Methods

- Images were obtained by the encircling transceiver antennae contained in a 25lbs helmet.
- Localisation was assessed by determining whether fusion images resulted in target detection in the same quadrant as comparable CT or MRI.
- EM images were reconstructed by creating maps of the EM wave scattering arising from contrast in electrical parameters between IS or ICH and normal brain.
- A blinded clinician assessed agreement between regional abnormalities on EMI and CT or MRI scans.

Results



Examples of EMVision (EMV) Brain Scanner imaging vs. Standard-of-Care (SOC) imaging in 6 Patients. Blue indicates IS and red ICH. Accuracy = (Number of subjects with correct classification of Haemorrhagic and Ischemic by test method compared with reference standard) *100/(Number of subjects assessed)

- 50 patients, 37 IS and 13 ICH confirmed.
- Mean age 67.7 years (range 41-92), 57% were female.
- Mean NIHSS 5.9
- Mean time to routine imaging was 12.5 hrs (range 1-128) and to EMI 24 hrs (range 6-142).
- EMI algorithms differentiated ICH from IS with 98% accuracy and localised the stroke with 78% accuracy.

Limitations

- All patients included had a confirmed stroke, therefore early stroke assessment by the EMV scanner has not been captured in this study
- Small sample size prohibits meaningful statistical analysis; however, the study was not designed to assess the EMV scanner head-to-head against the gold standard (CT)

Conclusion

- In this early study, we show the ability of the modality to distinguish between IS and ICH and stroke location.
- Further developments may produce a valuable imaging tool to assist in prehospital and bedside stroke diagnosis and management.





Australian 
Stroke Alliance

EM VISION

The future

- A next generation device with advanced hardware and software is currently being manufactured
- Further clinical trials, with a larger patient population are being developed.
- Subject to the clinical trials, the technology will be trialled in the pre-hospital setting (road and air ambulances) to advance stroke care for all Australians, especially remote Australians.

Acknowledgements

- Co-author Dr Anna Balabanski
- Geoffrey A. Donnan, Stephen M. Davis, David Cook, Stuart Crozier, Konstanty Bialkowski, Francesca Langenberg, Andrew Bivard, Leonid Churilov, Lara Bishop, and Damien Easton on behalf of the Australian Stroke Alliance and EMVision Medical Devices Ltd (www.emvision.com.au).



Questions

