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EMVISION
INVESTOR PRESENTATION

February 2019



MEDICAL IMAGING INNOVATION

- + Medical imaging has completely transformed modern healthcare
- + Major advancements in imaging only come around every few decades
- + Portability is becoming a critical issue for imaging
- + **Electromagnetic (EM) viewed as next generation imaging technology;**
 - Fast, safe and cost effective
 - Powerful and functional imaging capabilities in real-time
 - Ability to produce images in three dimensions
 - EM waves similar to those mobile phones use to transmit voice/data

XRAY



1895

ULTRASOUND



1950's

CT



1960's

MRI + PET



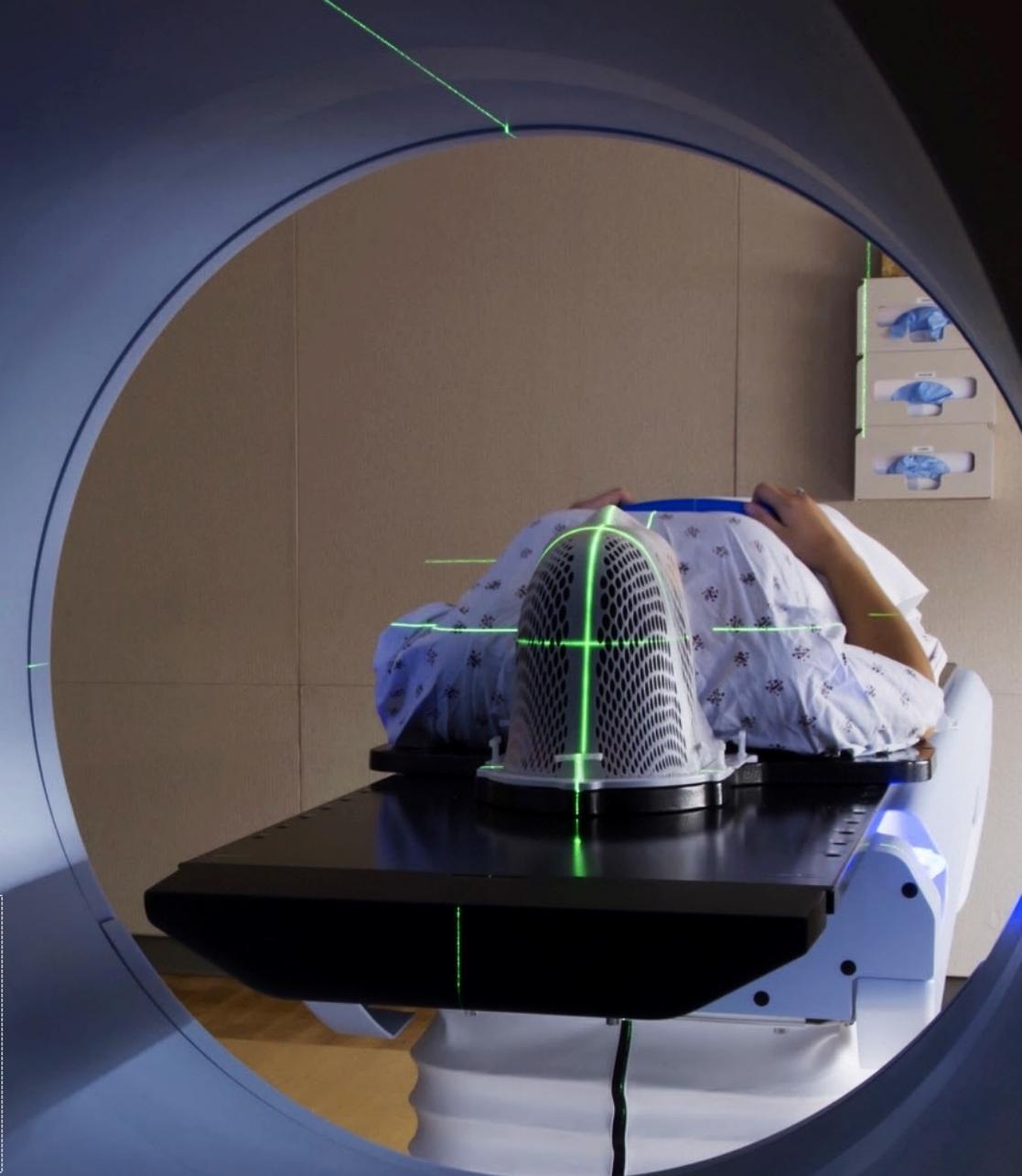
1980's

ELECTROMAGNETIC
ENERGY MICROWAVE
FREQUENCY



2020

EMVISION





MEDICAL IMAGING DEVICES USING ELECTROMAGNETIC MICROWAVE TECHNOLOGY



Lead product in development is designed to be a portable, safe and cost effective brain scanner to rapidly diagnose and monitor stroke and traumatic brain injury



Result of over 10 years' research and development into microwave imaging for biomedical applications at the University of Queensland



Significant opportunity to change the medical imaging paradigm by **bringing imaging to the patient**

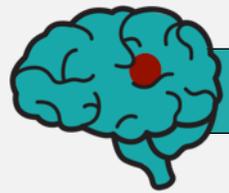


Active research and development program targeting potential **adjacent applications of electromagnetic microwave imaging**

PRODUCT PIPELINE

BRAIN SCANNER

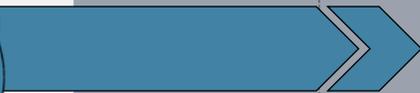
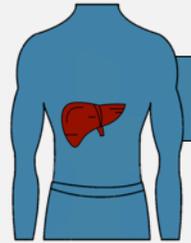
Identify and monitor stroke and traumatic brain injury



H1 2019

TORSO SCANNER

Identify the severity and monitor the progression of liver disease



H1 2019

Device Discovery & Concept Preclinical Research & Prototype Healthy Human Trials Ethics Clearance Pilot Clinical Trial Pivotal Clinical Trial Regulatory Clearance & Commercialisation

H2 2019

2020



Calendar Year

1ST APPLICATION

STROKE & TRAUMATIC BRAIN INJURY





STROKE

Stroke is the second leading cause of death world wide with **1 in 6 people** having a stroke in their lifetime ¹



1.9 million neurons are lost every minute during a stroke² with potential for permanent disability or death. Different treatments are required for Ischemic (clots) and Hemorrhagic (Bleeds)



Identifying and treating stroke (and recurrent strokes) therefore **becomes time critical**



The yearly economic impact of stroke is **AU\$5 billion in Australia alone**³



TRAUMATIC BRAIN INJURY

Traumatic Brain Injury (TBI) is the most frequent cause of death and disability worldwide ⁴



Motor vehicle accidents, assaults and sporting injuries are the most common cause, with an increasing number of elderly also injured and killed as a result of **fall-related TBIs**



Imaging required to rapidly determine patients with minor head injuries who can be safely discharged versus those who need admission or neurosurgical opinion



Each year TBI's cost the world economy upwards of **US\$400 billion (\$A530 billion)**⁵



ISSUES WITH CURRENT BRAIN IMAGING TECHNOLOGY

01

NO POINT-OF-CARE

There is significant unmet clinical need for point of care tools to triage stroke and brain injury patients prior to treatment and monitor them after treatment

02

STATIONARY & EXPENSIVE

Current CT and MRI machines are predominately stationary, complex and expensive. In addition, CT produces ionizing radiation which can increase risk of cancer and is unsafe for regular monitoring

03

TIME TO TREATMENT

Despite recent advances in life-saving treatments for stroke (including novel thrombolytic (clot-dissolving) agents and clot retrieval), only a small portion of patients qualify because they are not diagnosed early enough

EMVISION'S BRAIN SCANNER

The Company aims to develop a clinical device that delivers these features

FUNCTION



Provides reliable identification of blood within the brain to facilitate rapid clinical decision making

PORTABLE



Compact, portable scanner able to provide high quality diagnostic information to identify and monitor stroke and traumatic brain injury

SAFE



No warming effects. Eliminates patient (and operator) exposure to harmful ionising radiation allowing for frequent scanning



COST-EFFECTIVE



Factoring in both cost differential and life years gained, the scanner is expected to provide significant benefits to the health care system at a fraction of the cost of mainstay imaging modalities such as CT and MRI

RAPID



Fast set-up and scanning saves significant time for patients undergoing neurologic assessment whilst improving clinical workflow

CLINICAL APPLICATIONS

Bringing stroke and traumatic brain injury decision support and monitoring to the patient



IN-FIELD

Future versions of the device are expected to provide rapid stroke and TBI decision support in ambulances



Patients having a severe stroke could be identified and transported directly to specialist hospitals for intervention



TRIAGE + EMERGENCY

Identify stroke and traumatic brain injuries in emergency rooms along with rural and remote locations



Saves significant time for patients undergoing neurologic assessment and minimises treatment delays



BED SIDE MONITORING

Monitor victims of stroke and TBI at their bedside in hospital wards while recovering



Eliminates the need to move the patient for following up scanning and detects the onset of subsequent strokes

TECHNOLOGY OVERVIEW

Array of antennas send pulses of low-power electromagnetic waves into the head



Waves penetrate tissue in a non-ionizing and harmless manner and get scattered based on the electrical properties of tissue



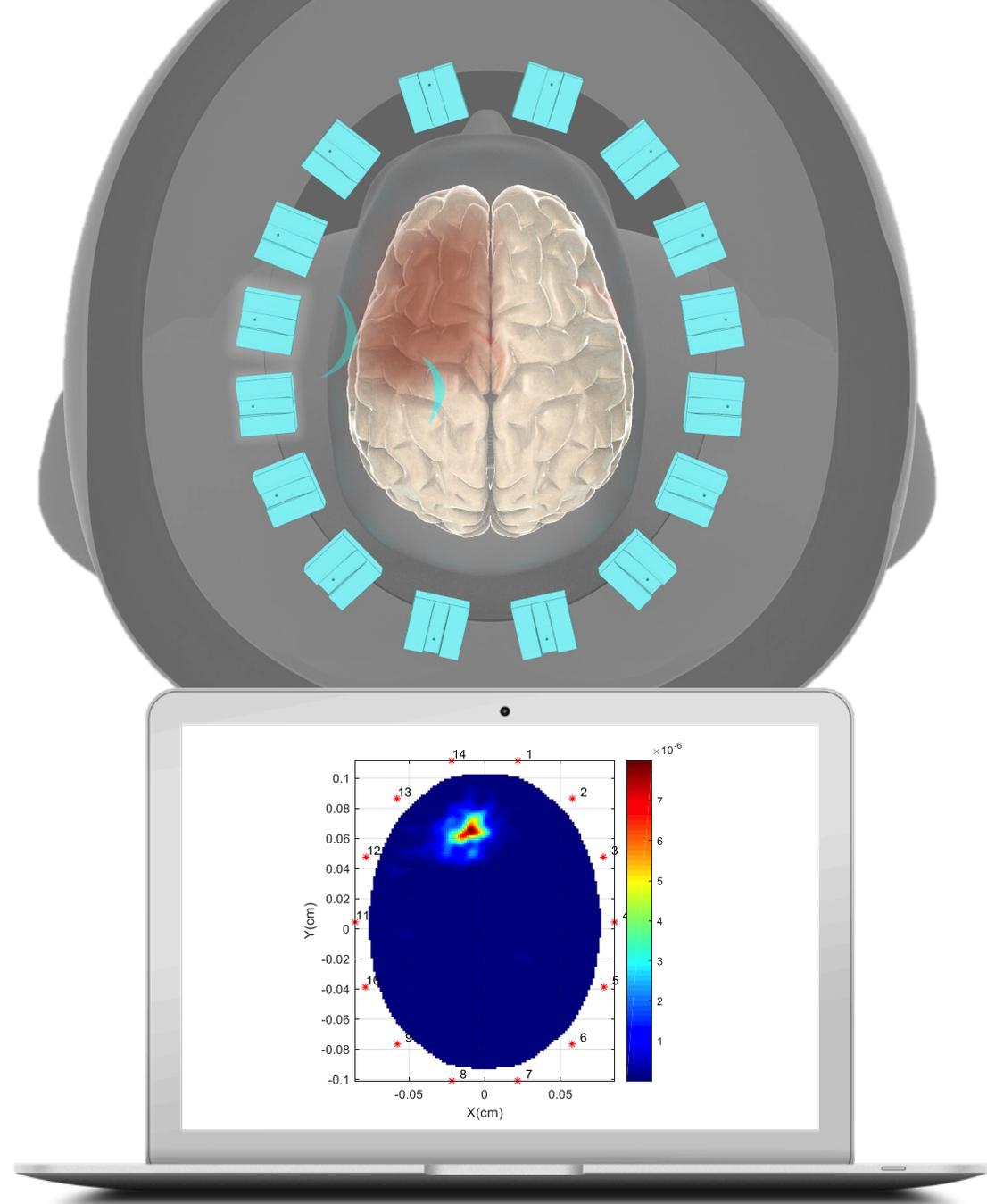
Sensors in the helmet detect these interactions to identify and locate unhealthy tissue



Novel multi-algorithmic AI reconstructs the image



3D images of the brain are displayed on a standard laptop or tablet



DEVELOPMENT PARTNERS

Awarded \$2.6M CRC-P non-dilutive cash grant from the Australian Government and secured key academic, clinical and industry partners to assist in advancing the brain scanner program.

These partners have also committed to provide a further \$910,000 in grant funds to EMvision.



Australian Government
Department of Industry,
Innovation and Science



**THE UNIVERSITY
OF QUEENSLAND**
AUSTRALIA



GE Healthcare

**Princess Alexandra
Hospital**
BRISBANE • AUSTRALIA

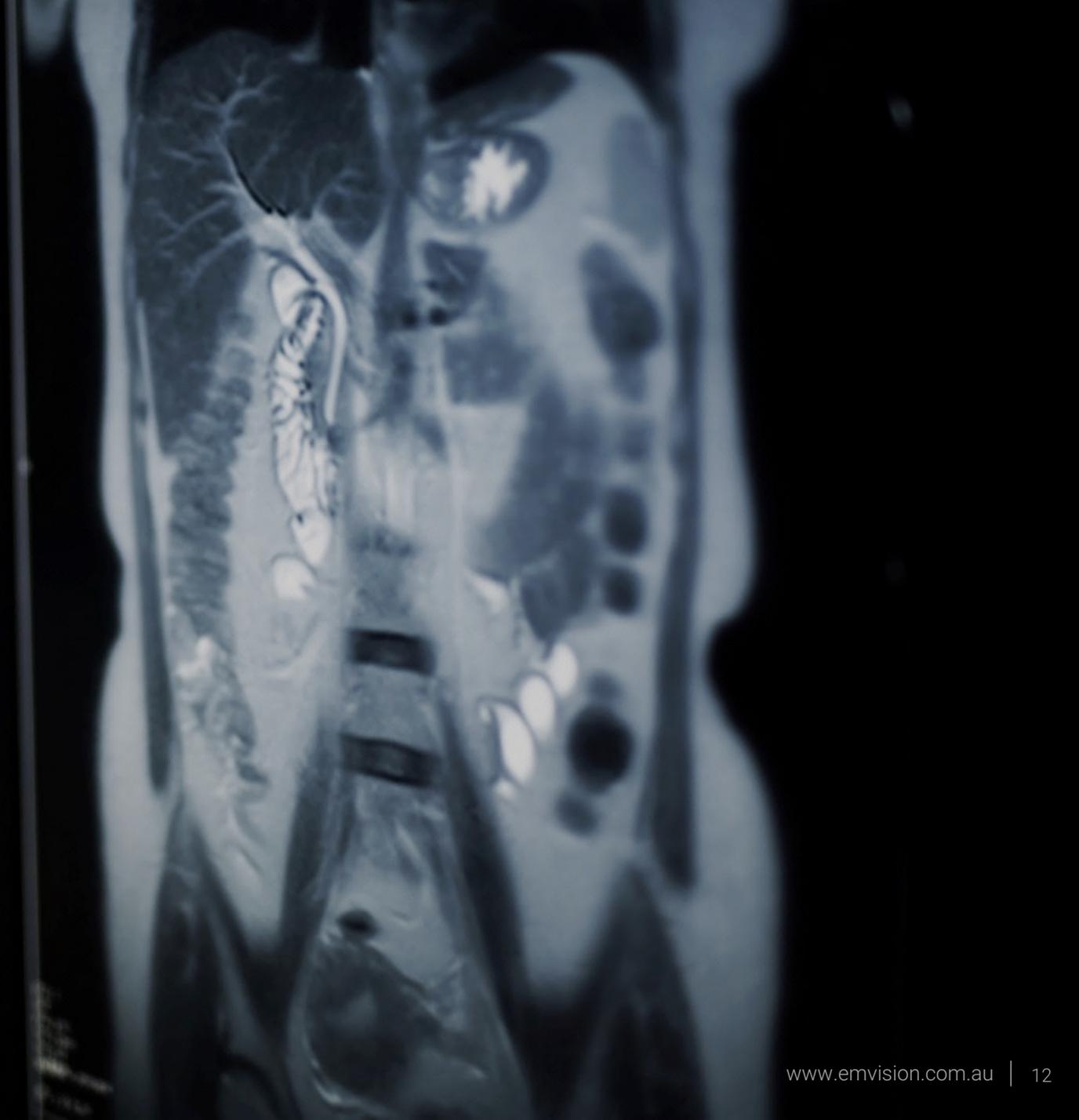


VECTOR NETWORK ANALYSER (VNA)

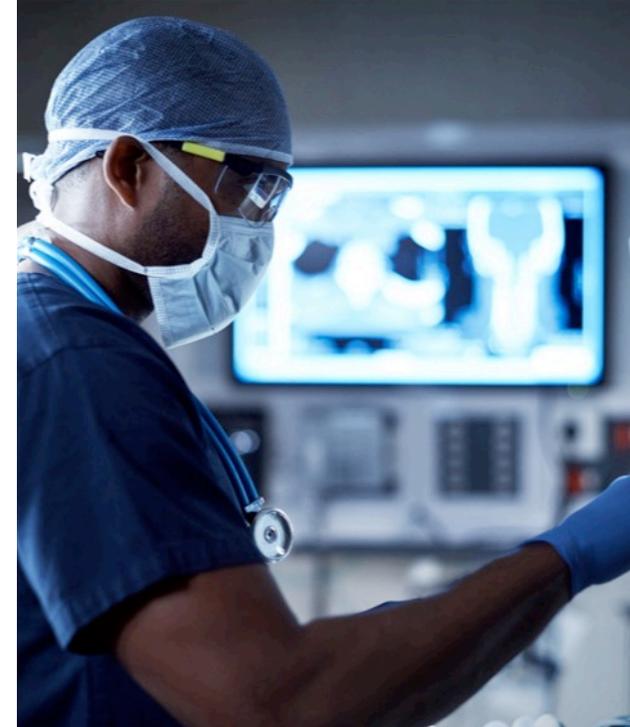
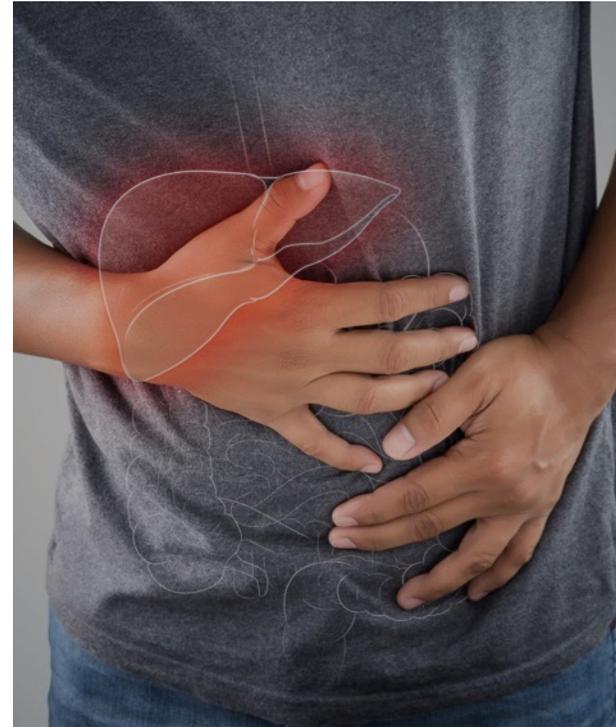
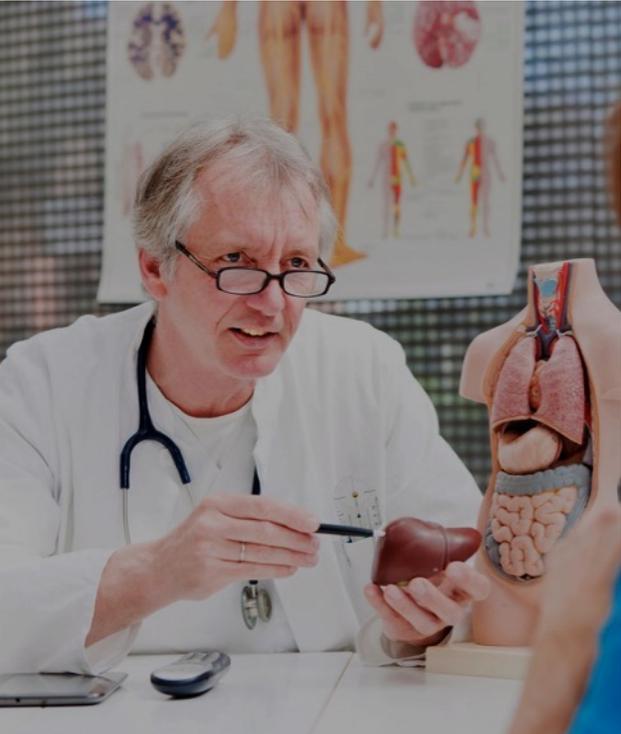
Allows for accurate measurement of the signals transmitted and received. Speed of measurement is critical, requiring a Network Analyser with fast measurement capability. Reducing measurement time is important for patients, clinicians and for screening throughput.

2nd APPLICATION

IDENTIFYING & MONITORING LIVER DISEASE



LIVER DISEASE IS A LOOMING PUBLIC HEALTH THREAT



An estimated **1 in 4 people world wide** have Non-alcoholic fatty liver disease (NAFLD) ¹



NAFLD can evolve into **Non-alcoholic Steatohepatitis (NASH)**



NASH is a life threatening disease which can lead to liver cirrhosis and liver cancer



NASH is set to become the leading cause of liver transplants ²

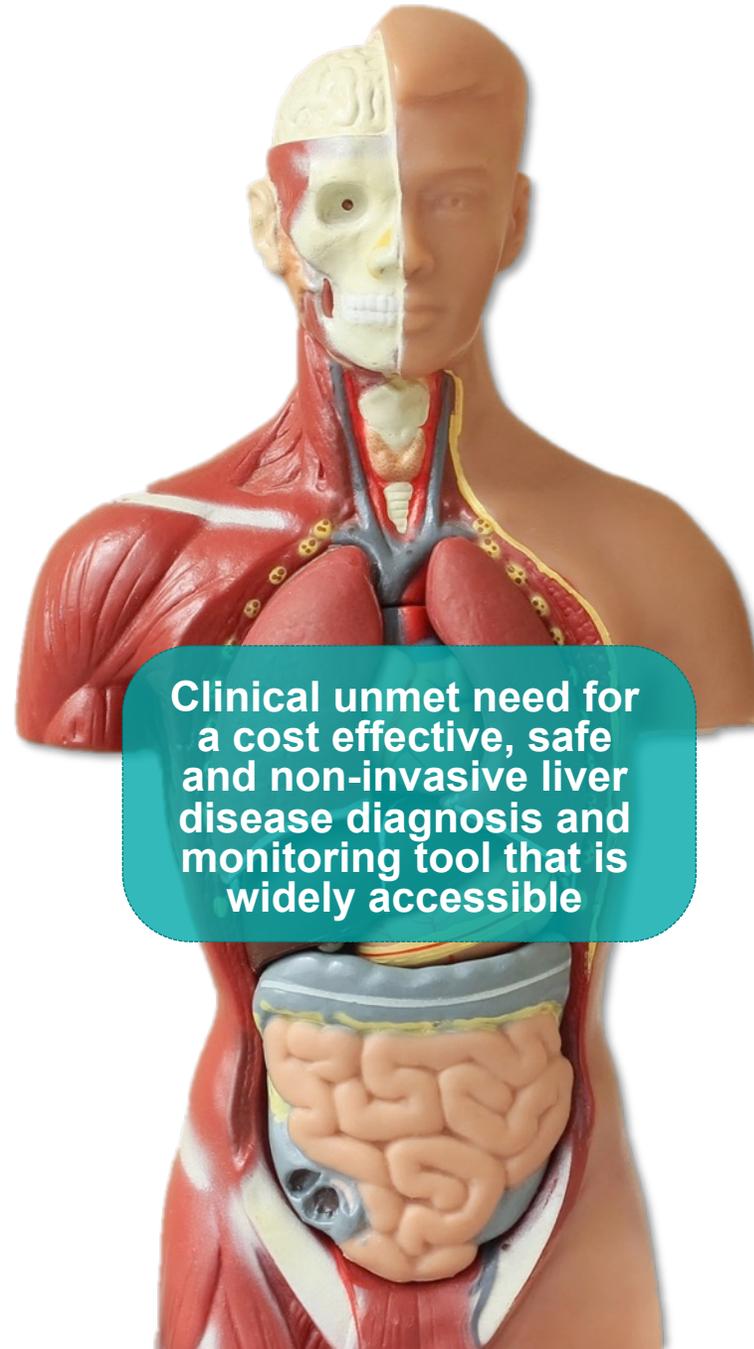
EVOLVING LANDSCAPE

TREATMENTS BEING DEVELOPED

Pharmaceutical industry have invested several billion dollars in developing therapeutics for nonalcoholic steatohepatitis (NASH)¹

Industry experts estimate the global market for these new drugs is US\$35 billion per year

The U.S. is spending \$5 billion annually in health-care costs related to the disease, which include chemotherapy, transplants, tests and hospitalisations ²



Clinical unmet need for a cost effective, safe and non-invasive liver disease diagnosis and monitoring tool that is widely accessible

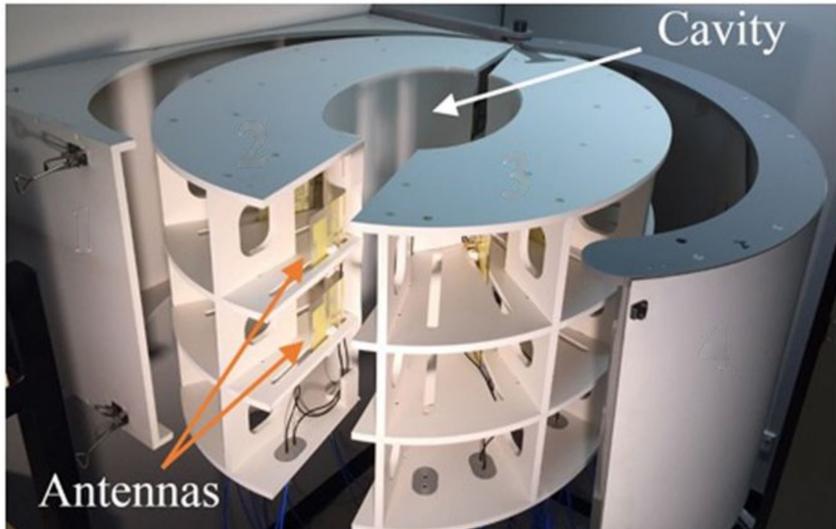
CHALLENGES WITH DIAGNOSIS AND MONITORING

CT, MRI and Ultrasound scans of the abdomen are subject to several limitations and can struggle to distinguish between NASH and NAFLD

Invasive biopsy is currently used to assess severity of NAFLD and NASH

Liver function blood tests have various limitations and are only a small part of overall patient evaluation

EMVISION TORSO SCANNER



Previous proof of concept pre-clinical torso scanner prototype developed at UQ seen above



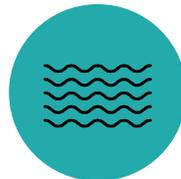
EMVision exploring the feasibility of a non-invasive and cost-effective Torso Scanner to identify the severity and monitor the progression of NAFLD and NASH



University of Queensland in partnership with EMvision received a **\$160,000 QLD Biomedical grant** for initial feasibility study to characterise dielectric properties of healthy and unhealthy liver tissue



This liver tissue collection commenced in December 2018, with analysis and finalisation of the data anticipated for H1' 2019. This dataset will inform healthy/unhealthy tissue detection algorithms.



A Torso Scanner system would utilise the core technology being developed for stroke imaging with custom algorithms and hardware (antennas and switching network)

A close-up photograph of a doctor in a white lab coat with a blue stethoscope around their neck. The doctor is holding a black tablet computer with both hands. The tablet screen displays a medical scan, likely an X-ray or CT scan of a human torso. The background is softly blurred, showing what appears to be a clinical setting with other people in white coats.

COMMERCIAL MODEL ADDRESSABLE MARKETS & CORPORATE TEAM



COMMERCIAL MODEL

Aiming to be underpinned by robust margins

DIRECT CHANNEL

Capital Sales

Equipment is sold upfront with customer purchasing consumables as required

Managed Equipment Service

Equipment provided to customers with EMvision responsible for maintenance

Rental

Customer rents equipment from EMvision and purchases consumables as required

DISTRIBUTOR CHANNEL

Distribution

Future distribution partners purchase equipment, consumables, accessories and spare parts from EMvision and on-sell to their network

KEY ADDRESSABLE MARKETS

North America +



48,000 Ambulances



6,000 Hospitals

Europe +



60,000 Ambulances



15,000 Hospitals

+ China



30,000 Hospitals

Australia +



5,200 Ambulances



1,300 Hospitals

SECONDARY MARKETS:

- Aged Care
- Rural / Remote
- Cruise Ships
- Military
- Sport
- Humanitarian

TEAM

Significant experience **developing and commercialising medical devices**



Dr Ron Weinberger
Chief Executive Officer

Former Exec Director / CEO of Nanosonics (ASX: NAN), \$1BN market cap company

20 yrs experience developing and commercialising medical devices



John Keep
Executive Chairman

Former CEO of Queensland Diagnostic Imaging (\$109M Trade sale to Mayne Pharma)

Over 30 yrs senior executive leadership and M&A experience



Scott Kirkland
Executive Director

Co-founder of EMvision Medical Devices Ltd

Experienced corporate affairs, capital markets and technology sales executive



Prof Stuart Crozier
Clinical Development Advisor

Co-inventor of underlying technology

Globally renowned for MRI advancements (70% installed hold Stuart's patents)



Robert Tiller
Product Design & Development Executive

CEO and Founder of Tiller Design (product developer for ResMed and Nanosonics)

25 yrs experience in medical device design, development and commercialisation



Geoff Pocock
Non-Executive Director

Former Managing Director / Co-Founder of Hazer Group (ASX: HZR)

20 yrs experience commercialising emerging technologies and capital markets



Tony Keane
Non-Executive Director

Over 30 years finance experience in business, corporate and institutional banking

Advisory Board and NED roles including ASX 200 company National Storage REIT (ASX:NSR)



Ryan Laws
Non-Executive Director

Co-founder of EMvision Medical Devices Ltd

Experienced corporate advisor & investor



Emma Waldon
Company Secretary

Chartered Accountant

Diverse capital markets & corporate governance experience



Prof Amin Abbosh
Chief Inventor

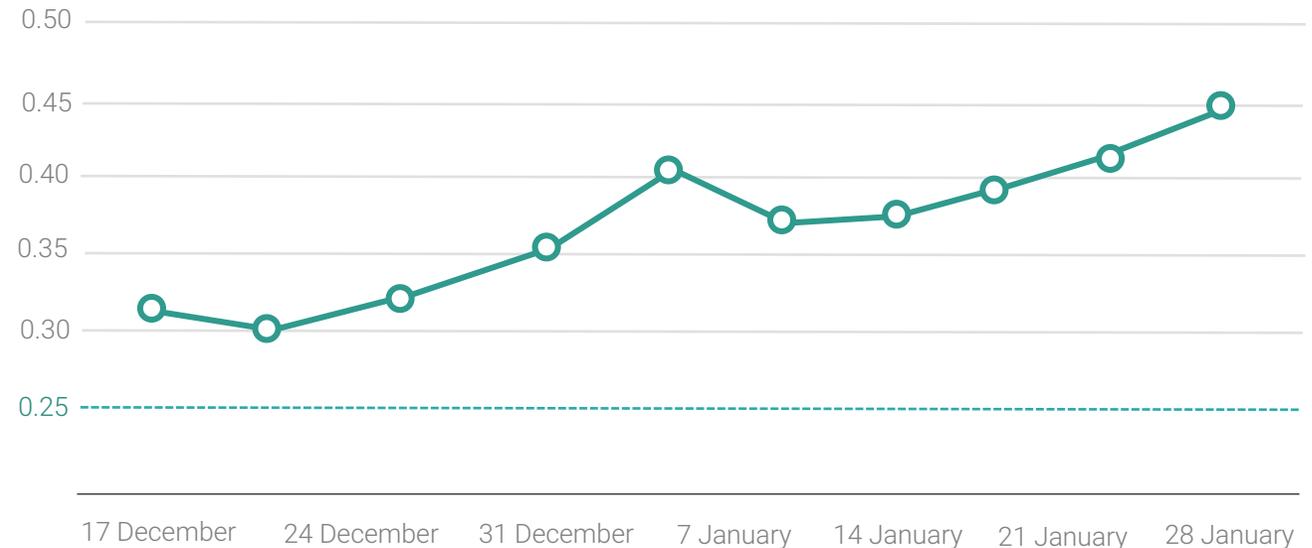
Co-inventor of underlying technology

World leader in electromagnetic imaging systems with over 400 peer reviewed publications

CAPITAL STRUCTURE

Current Cash Balance ¹	\$5.84m
Shares on issue	57.5m
Total Options on issue ²	7.5m
Performance Rights ³	6m
Market Cap @ \$0.45c*	25.8m
EV @ \$0.45c*	\$20m

ASX: EMV share price since \$0.25 IPO



1 - Cash balance @ 31st December 2018 | 2 - Options strike price \$0.35 expiring 31st December, 2021. Option incentives held by executive management, directors, advisors & key contractors. | 3 - All performance rights are held by UniQuest and will vest on particular milestones over time - further details in prospectus | * Closing price Friday 1st Feb 2019

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GET IN TOUCH



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