



18 November 2024

Companies Announcements Office
ASX Limited
10th Floor, 20 Bridge Street
SYDNEY NSW 2000

INVESTEE CORTICAL DYNAMICS PRESENTATION

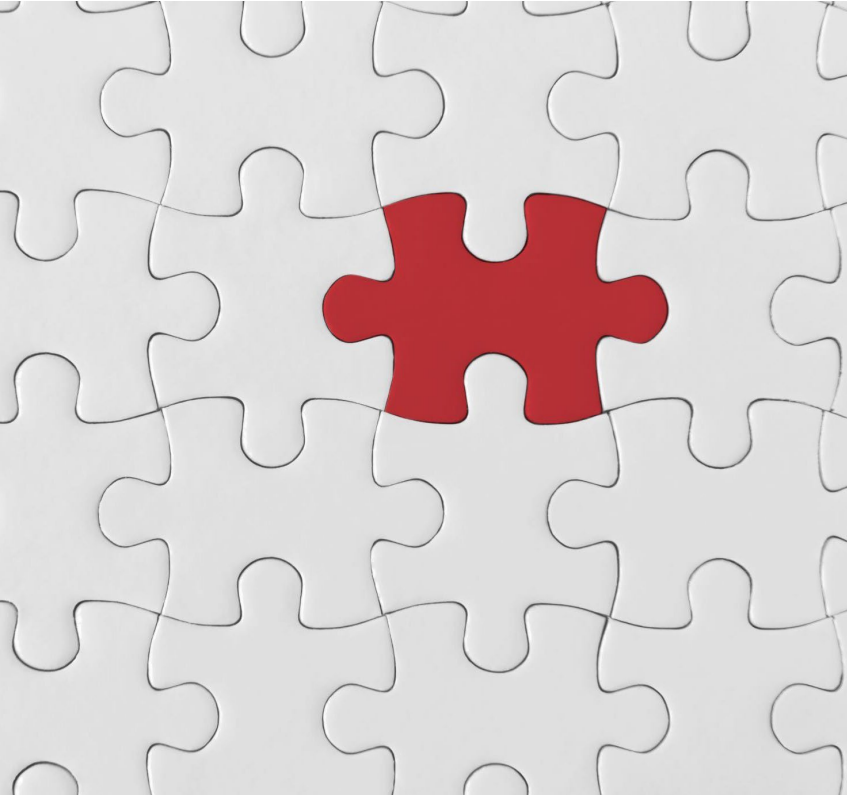
Attached is a presentation by investee Cortical Dynamics at the Health Innovation Frontier Forum on 18th November 2024. This event will showcase the intersection between technology, health and community.

David Breeze (Director) authorised the release of this announcement to the market.

Yours faithfully

A handwritten signature in black ink, appearing to read "D. Breeze", enclosed within a thin black rectangular border.

David Breeze
Chairman



ADVANCED MEDICAL BRAIN MONITORING

CORDYAN™
ADVANCED BRAIN ANALYTICS

BARM™
BRAIN ANAESTHESIA RESPONSE MONITOR

CORTICAL DYNAMICS

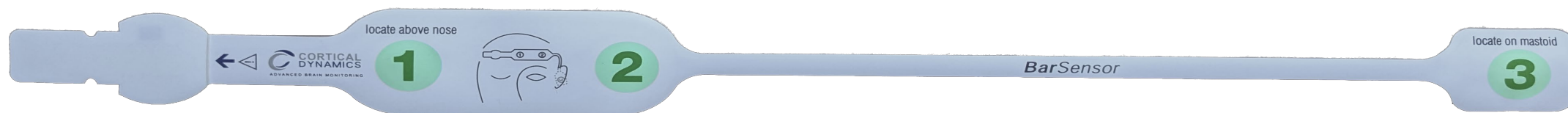
Cortical Dynamics Ltd is an independent Australian Perth based neurotechnology startup developing innovative brain monitoring technologies and AI based Apps that address a global market exceeding 200 million operations per year where general anaesthetics, analgesics and opioids are administered in the operating room.

Our Brain Anaesthesia Response Monitor or BARM™ was specifically developed with leading anaesthesiologists worldwide to solve problems associated with anaesthetic and analgesic delivery in the operating theatre and the negative associated interoperative and post- operative consequences which are not widely known. We plan to take our products to the ICU and ER in due course.

Our generation 1 tech BARM™ is FDA(510k),CE,TGA and Korean MFDS approved. We are finalising development of our gen 2 BARM™ in preparation for clinical trials, regulatory approvals and commercial rollout in 2026

BARM™

THE G2 SYSTEM M



BARM™ is a non-Invasive Class IIb Medical Brain Monitor for use by anaesthetists administering general anaesthesia to patients in the operating theatre

BARM™

CD BAR sensors collect and conduct electrical signals (EEG) from a patients' forehead and mastoid to the **BARM™** Data Acquisition Module which processes the EEG and then feeds the data to the display Monitor as waveforms, indexes and graphs where they are interpreted by the anaesthesiologist

HOW IT WORKS-SIMPLE AND INTUITIVE

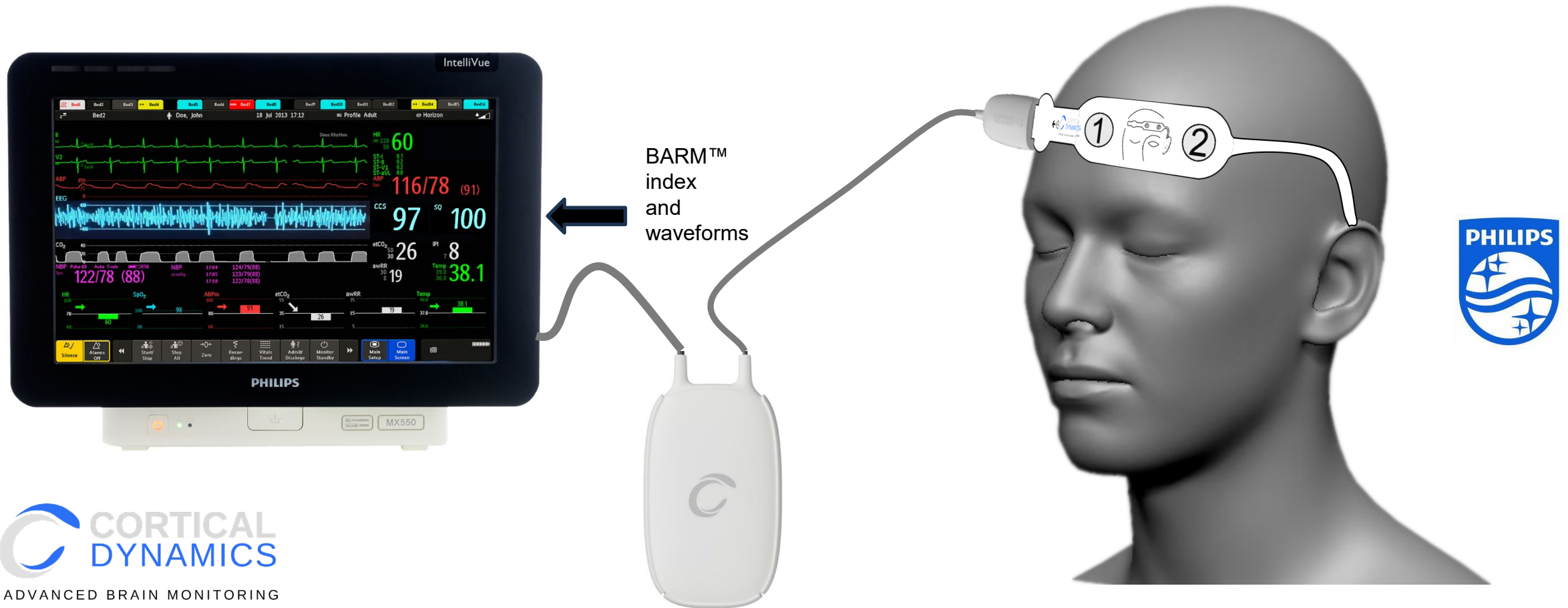
BARM™ G2 stand-alone system



**CORTICAL
DYNAMICS**
ADVANCED BRAIN MONITORING

BARM™

Philips “IntelliVue” monitor “Plug and Play” version



BARM™ Sedation Index



Overdosing and underdosing have serious intraoperative and post operative ramifications

- awareness / early onset of dementia
- medico –legal

CS INDEX ranges from 100- 0

100 fully awake and alert
0 heavily overdosed

Under GA patients should kept be in the 60-40 range

BARM™

BARM™ G2 Combining physiological brain analysis with AI enhancements

EEG
collection

AI artifact
filtering

Filtered EEG

Cortical
Dynamics
Physiological
Model

Features
Extracted

AI
machine
learning
calibration

Sedation
Index
generated

Display of
Index on
monitor

BARM™ operates in
real time

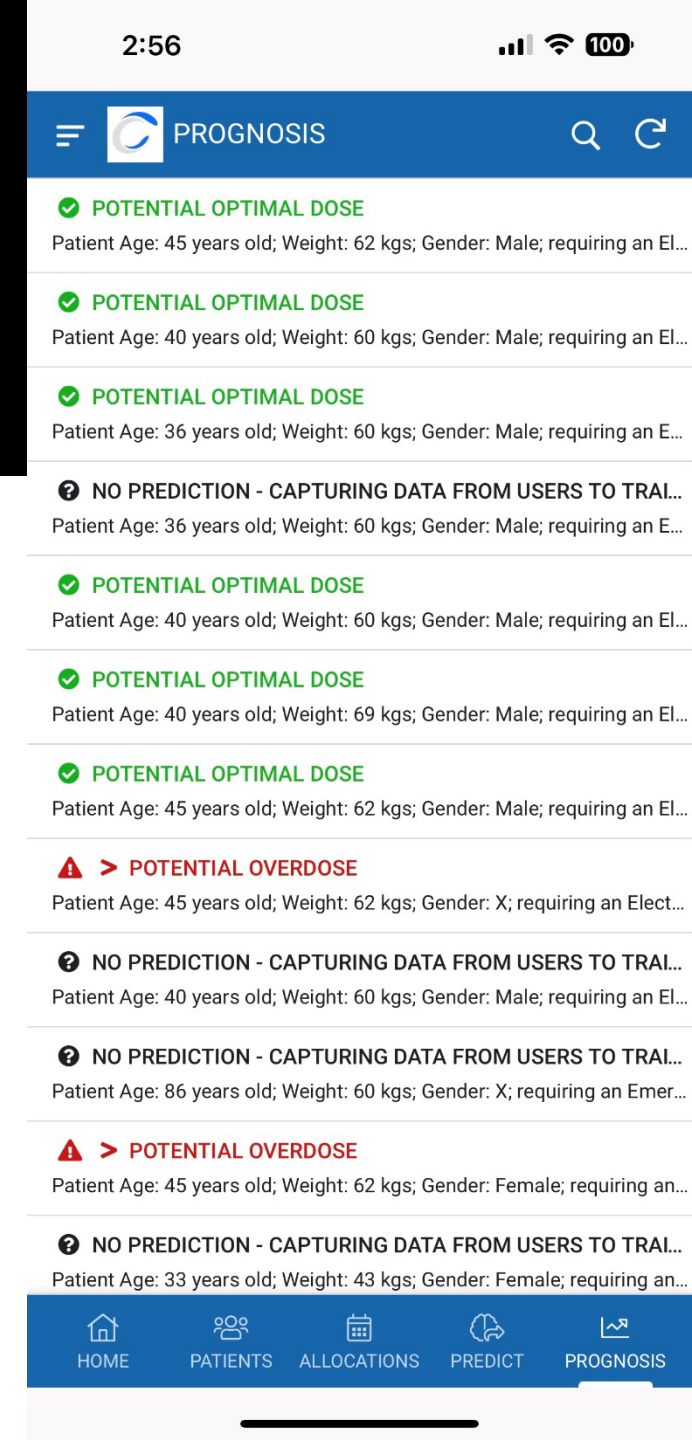
CORDYAN™

AI based predictive App that will allow clinicians to optimise drug delivery to patients and more



The Cortical Dynamics Analytics CORDYAN™ App will be uploaded to BARM™, an external tablet or other handheld device.

The App will be used initially in the OR conjunctionally with BARM™ to predict optimal drug dosages based on patient medical history and comparative data, calculate ESG footprint of drugs used, monitor patients post operatively, track TIVA versus inhalation protocols, provide insights into economic usage and wastage of drugs and more



ERAS (enhanced recovery after surgery) is a multimodal perioperative care pathway designed to achieve early recovery for patients undergoing major surgery focusing on the sparing use of opioids and analgesics

BARM™

PATIENT OUTCOMES



AND HOSPITAL COSTS



Opioid-sparing techniques are key components to ERAS program. Many patients trace their first exposure to opioids to use during during interoperative and post operative pain relief. ERAS programs can reduce patients 'consumption and reliance on opioids by 60%.

BARM™ has an important role to play as a part of an ERAS program

**2019 -Saint Mary's Hospital, Trinity Health Of New England, in Waterbury, Connecticut
USA- Case Study**

Saint Mary's Hospital (SMH) implementing an ERAS program improved their outcomes in nearly all surgical specialties, including shortening length of stay (LOS) by 30% to 50%, with similar reductions in complications and decreased readmissions. Compared to standard care, ERAS protocols produced cost savings of up to US\$7,129 per patient.

Improved Clinical Outcomes and a US\$2.25 Million Financial Impact

In July 2018, SMH analysed the impact of the first three years of their ERAS program with the following findings:

A two-day decrease in the average LOS resulted in increased revenue of US\$750,000 (an increased revenue of nearly US\$5,000 per patient)

Many patients were discharged after 2.3 days. For each one-day decrease in LOS, SMH revenue per patient rose by US\$2,406.

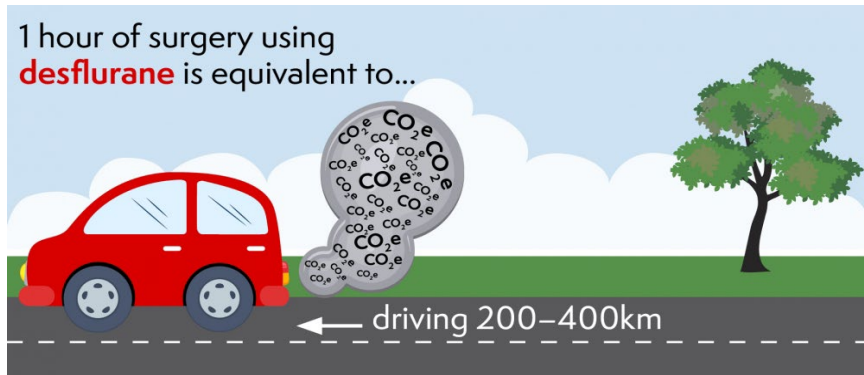
SMH rate of SSI has dropped from a statistically acceptable rate of 15% in 2014 to less than 2%, resulting in a US\$1.5 million savings

The combined financial impact of ERAS program (cost savings plus increased revenue) was US\$2.25 million in its first three years.

ESG

In the USA, the health care sector is responsible for 8.5 percent of the country's greenhouse gas emissions and increasing of which anaesthesia plays a big part. In other 1st world countries, the range is between 3.5-10%

350 million surgeries are performed globally each year



Volatile anaesthetics (inhalation) are greenhouse gases that increase the carbon footprint of healthcare. Modelling studies indicate that TIVA (total intravenous anaesthesia) is 20 x less carbon intensive than volatile anaesthesia, with equivalent quality of care.

TIVA-based strategy is associated with a drastic reduction in the carbon footprint and carbon-related social cost of general anaesthesia

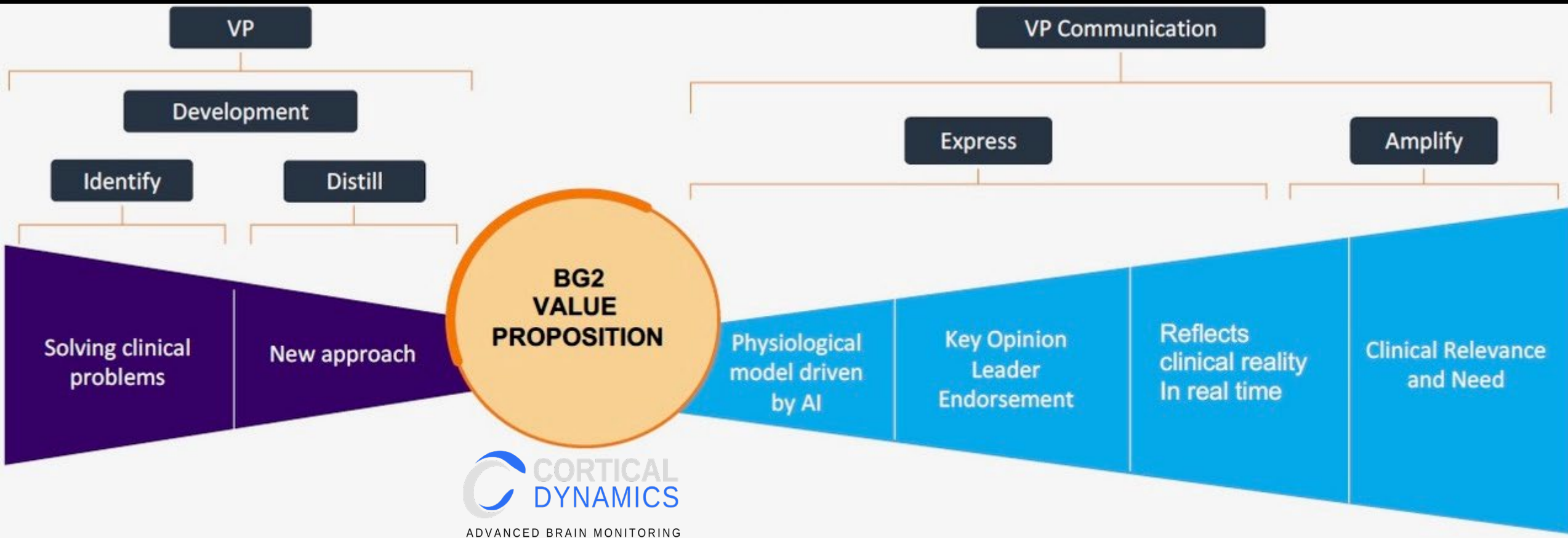
BARM™ and CORDYAN™ are ideally placed to be used in operations utilising TIVA. Real time monitoring, sensitivity to changing patient conditions, accurate predictive feedback and the potential to be used with pump delivery systems can play a big role in reducing a hospital's carbon footprint and associated costs



If nitrous oxide (laughing gas) is used as part of your anaesthetic, it significantly increases the environmental effect of your anaesthetic. Using 500ml of nitrous oxide every minute for a procedure lasting an hour will warm the atmosphere by an equivalent of 16kg CO₂. That is the same as driving a small car 106km.

Nitrous oxide is used in large volumes and remains in the atmosphere for 110 years, during which it continues to have a warming effect.

BARM™ Value Proposition



Key Opinion Leader
Feedback

Understanding the
shortcomings of current
offerings

Inventing a clinically
credible approach and
solution

Building a solution

Validated by trials
And regulatory approvals

What the market needs
and wants

BARM™

BETTER PATIENT OUTCOMES



BARM™ and CORDYAN™ will help clinicians to deliver better patient experiences and outcomes, contribute to reduced patient and hospital costs and play a vital role in reducing Co2 emissions

www.corticaldynamics.com



**AUSTRALIAN
TECHNOLOGIES
COMPETITION**
Advanced Manufacturing Winner 2016



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