10 March 2026

Osteopore signs collaboration agreement with the National University Hospital to develop novel intra-operative guide for accurate placement of external ventricular drain in neurosurgery

Highlights

- **Osteopore signs research collaboration agreement with the National University Hospital (NUH) for the development of a novel ventricular catheter guide to enhance precision and patient safety in neurosurgery.**
- **The collaboration comprises two phases, with the first focused on the design and prototyping of the external ventricular drain (EVD) guide, while the second phase involves simulated testing of the EVD guide in dry bone models.**
- **The global market opportunity for a mechanical intra operative EVD guide is substantial, with an estimated 20,000–25,000 EVD procedures performed annually in the United States alone [1].**
- **As neuro navigation systems remain cost prohibitive for many healthcare settings worldwide, a capital-light, highly-scalable mechanically guided solution has the potential to improve precision, reduce complications globally.**

Australian-Singaporean regenerative medicine company **Osteopore Limited** (ASX: OSX; **Osteopore** or **Company**) – a global leader in 3D-printed biomimetic and bioresorbable implants has signed a research collaboration agreement with the National University Hospital

[1] Data published by the US Department of Health and Human Services, Centers for Diseases Control and Prevention. "Morbidity and Mortality Weekly Report", 11 April 2024.

(NUH) for the development a novel intra-operative surgical guide for external ventricular drain (EVD) placement to enhance precision and patient safety in neurosurgery.

The collaboration will be led by Adjunct Associate Professor Vincent Nga, who is the Head of Division and Senior Consultant of the Division of Neurosurgery at NUH. Beyond advanced neurosurgery training, Prof. Nga received the Academic Medicine Development Award 2014 and underwent 2 years of further training at Addenbrooke's Hospital, Cambridge, United Kingdom.

At Cambridge, he was trained in paediatric neurosurgery, neuro-oncology, neurovascular, neurotrauma and complex spinal surgery. In 2015, he was elected to the Fellowship of the Royal College of Surgeons of Edinburgh (Surgical Neurology). Subsequently, he completed a Clinical Fellowship in Paediatric Neurosurgery at the Hospital for Sick Children (SickKids), Toronto, Canada.

An EVD is a temporary catheter inserted into the brain's fluid spaces to drain excess cerebrospinal fluid (CSF) or blood, relieving dangerous pressure after stroke, trauma, or haemorrhage.

In well-resourced healthcare systems, EVDs are placed under neuro-navigation, which uses intra-operative navigation equipment and software systems. The acquisition of neuro-navigation equipment and systems is resource intensive, which limits its adoption in lower-resourced healthcare systems.

In those situations, EVD placement is typically performed using freehand techniques. However, manual EVD placement carries 25–40% misplacement rates[2]. Misplacement does not only

[2] Nawabi et al., Clinical Neurology and Neurosurgery, 2023. doi: https://doi.org/10.1016/j.clineuro.2023.107852

mean mal-positioning, but it also leads to EVD occlusion and increases the likelihood of new neurological problems. In a study published in 2025, mortality rates due to EVD complications were 28.9% at 30 days and 33.7% at 90 days [3].

Through this collaboration, Osteopore and Prof. Nga aim to develop an intra-operative surgical guide for precise EVD placement with the freehand technique. This EVD guide is highly scalable and empowers healthcare systems to improve patient outcomes in EVD placement while managing costs, directly addressing total cost of care in value-based care models.

The first phase of the collaboration comprises the design and prototyping of the EVD guide, ensuring that it meets the functional needs of the procedure.

The second phase involves simulated testing of the EVD guide in dry bone models, comparing the outcomes against those obtained under neuro-navigation.

Key terms:

- Period: 33 months, concluding 31 December 2028.
- Intellectual Property (IP) ownership: Foreground IP will be jointly owned by NUH and Osteopore.
- Licensing of foreground IP: Osteopore is granted the first right to negotiate for an exclusive worldwide license to foreground IP, with terms to be discussed at an appropriate time.

The global market opportunity for a mechanical intra-operative EVD guide is substantial, with an estimated 20,000–25,000 EVD procedures performed annually in the United States alone [4],

[3] Gu et al., Journal of Neurosurgery, 2025. doi: https://doi.org/10.3171/2024.8.JNS24915

[4] Data published by the US Department of Health and Human Services, Centers for Diseases Control and Prevention. "Morbidity and Mortality Weekly Report", 11 April 2024.

and the Asia Pacific region as the fastest-growing region [5]. As neuro-navigation systems remain cost-prohibitive for many healthcare settings worldwide, a capital-light, highly-scalable mechanically guided solution has the potential to improve precision, reduce complications globally.

Commenting on the co-development opportunity, CEO Dr Yujing Lim said:

"We are proud to partner with Prof. Nga and the National University Hospital in the development of this intra-operative surgical guide for precise EVD placement.

"This device has the potential to create better patient outcomes globally while directly addressing the total costs of care in value-based care models", said Dr Lim.

Commenting on the potential clinical impact of this intra-operative EVD guide, Prof. Nga said:

"Precise EVD placement is important for improved patient outcomes. I am delighted to embark on this research collaboration to co-develop this surgical guide with Osteopore, and look forward to its potential introduction to the neurosurgical community globally", said Prof. Nga.

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This announcement has been authorised for release to the ASX by the Board of Osteopore Limited.

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[5] https://www.grandviewresearch.com/industry-analysis/acute-external-ventricular-drain-market-report

About Osteopore Limited

Osteopore Ltd. is a global medical technology company founded in Singapore and listed in Australia that commercialises products designed to enable natural bone healing across multiple therapeutic areas. Osteopore's patented technology fabricates specific micro-structured scaffolds for bone regeneration through 3D printing and bioresorbable material.

Osteopore's patent-protected scaffolds are manufactured using a proprietary manufacturing technique with a polymer that naturally dissolves over time to only allow natural and healthy bone tissue, significantly reducing the post-surgery complications commonly associated with permanent bone implants. Our 3D printing technology is unique to Osteopore.

About the National University Hospital

The National University Hospital (NUH) is Singapore's leading university hospital. While the hospital at Kent Ridge received its first patients on 24 June 1985, our legacy started from 1905, the date of the founding of what is today the NUS Yong Loo Lin School of Medicine. NUH is the principal teaching hospital of the medical school.

Our unique identity as a university hospital is a key attraction for healthcare professionals who aspire to do more than practise tertiary medical care. We offer an environment where research and teaching are an integral part of medicine, and continue to shape medicine and transform care for the community we care for.

We are an academic medical centre with over 1,200 beds, serving more than one million patients a year with over 50 medical, surgical and dental specialties. NUH is the only public and not-for-profit hospital in Singapore to provide trusted care for adults, women and children under one roof, including the only paediatric kidney and liver transplant programme in the country.

The NUH is a key member of the National University Health System (NUHS), one of three public healthcare clusters in Singapore.

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