

# TRANSFORMING STROKE CARE WITH AI



Jeff Wyrzten, Chief Marketing Officer, Brainomix

**An Oxford-based company has developed cutting-edge, AI-enabled software solutions that are helping hospitals and networks improve access to life-changing stroke treatments**



Brainomix, an Oxford-based company, are helping to transform the way that stroke care is managed in the UK and beyond. The company, which began as a spin-out from the University of Oxford, specialises in the creation of artificial intelligence (AI)-powered software solutions to unlock the potential of life-saving treatments. Its flagship product, the Brainomix 360 Stroke platform, helps doctors interpret brain scans, and facilitates faster, more confident treatment decisions for patients with suspected stroke.

Stroke is a devastating disease affecting more than 100,000 people each year in the UK, and is a leading cause of death and disability. Most strokes are ischaemic, which means they are caused by a blood clot blocking a vessel in the brain. About one in five people who have an ischaemic stroke can be helped by either a clot-busting drug delivered intravenously (called thrombolysis) or by having the clot mechanically

removed using a special device (called mechanical thrombectomy). Thrombectomy is a life-changing treatment which can reduce disability and prevent or limit long-term care needs in patients with the most severe strokes due to blockage of a large blood vessel supplying the brain, and was specifically called out in the NHS Long Term Plan as a key focus area.

A brain scan of the patient can help diagnose the type of stroke and determine the best treatment to be given to each patient, but interpreting the brain scans is a complex challenge often requiring specialist expertise. Most patients will be assessed by less specialist doctors when they arrive at a hospital – meaning that not all patients get the right treatment when they need it. The Brainomix 360 Stroke platform addresses this challenge by supporting both non-specialist and specialist doctors in the diagnosis and decision-making for doctors seeing a stroke patient, with an aim towards

enabling more patients to receive the right treatment, in the right, at the right time.

Brainomix was awarded an NHS AI in Health and Care Award in September 2020, which enabled the company to deploy its stroke AI software across five stroke networks in the NHS. Health Innovation Oxford & Thames Valley (formerly the Oxford Academic Health Science Network) were appointed by the Accelerated Access Collaborative to independently evaluate the impact of Brainomix 360 Stroke on stroke patient care in 24 hospitals.

The three-year assessment included individual patient data from nearly 70,000 stroke patients, and an interim report published in July 2023 showed that the average mechanical thrombectomy rate in hospitals utilizing Brainomix 360 Stroke was 55% higher than the national average (5.7% vs 3.6%). This uplift in thrombectomy reflects hundreds more patients receiving life-changing treatment that likely

helped minimize or even avoid long-term disability.

**Professor Gary Ford CBE**, FMedSci, Chief Executive of the Health Innovation Oxford & Thames Valley and a Consultant Stroke Physician at Oxford University Hospitals, said: "Harnessing AI imaging technology within stroke networks has the potential to transform outcomes for many more stroke patients. We have worked with Brainomix and our NHS partners to ensure widespread adoption of e-Stroke and the evaluation is providing more evidence to support further spread."

**Dr George Harston**, Chief Medical & Innovation Officer at

thrombectomy, ensuring access to life-changing treatment for more patients across the country. Feedback from NHS colleagues reported that the software is helping them to deliver a more efficient and effective stroke service for their patients. We look forward to seeing more results as they come out, building on the largest real-world and independent evaluation of a stroke AI imaging platform."

This latest data builds on a growing body of evidence showing the impact of Brainomix 360 Stroke, including a study from the Royal Berkshire Hospital which showed that the implementation of Brainomix 360 Stroke reduced the door-in-

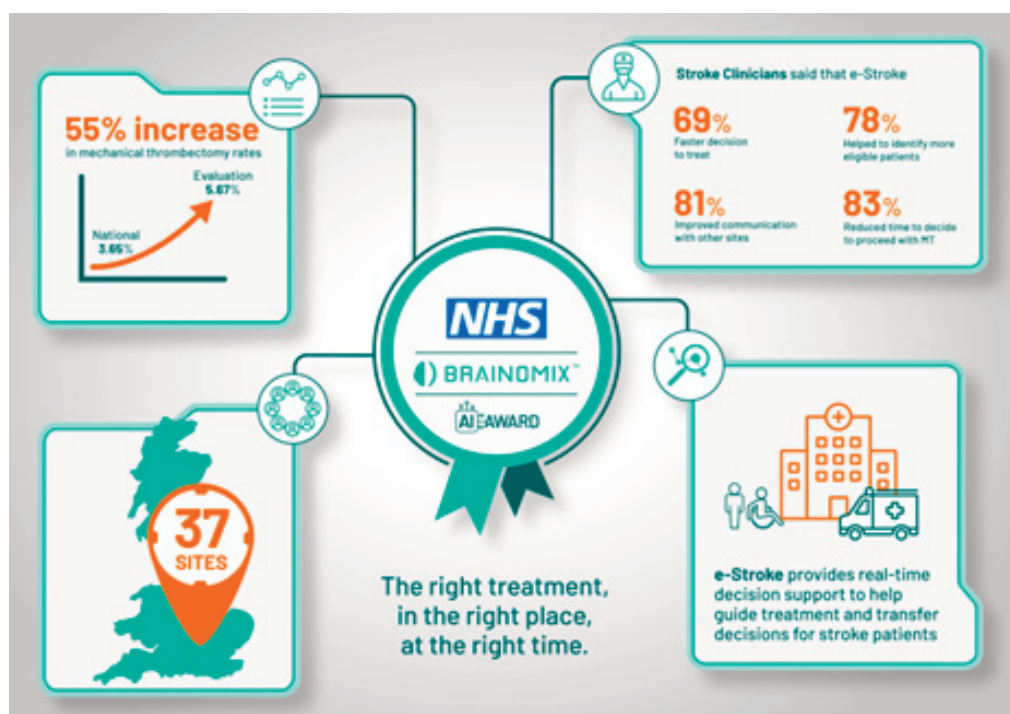
they showcased the impact of Brainomix technology on stroke care in the UK in a December 2022 article.

Stroke AI imaging tools are now becoming a standard of care across the UK, including the East of England Integrated Stroke Delivery Networks (ISDNs) North and South, who announced that the Brainomix 360 Stroke platform had been rolled out across all 16 of the regional stroke centres as part of the ISDN's mission of bringing together specialists from all part of the stroke pathway to ensure that more people who experience a stroke receive high-quality specialist care, from pre-hospital, though to early

supported discharge, community specialist stroke-skilled rehabilitation and life after stroke.

**Dr Paul Guyler**, Clinical Director for the East of England ISDNs, and Consultant in Stroke Medicine at Southend University Hospital, commented: "The procurement and deployment of Brainomix and networked AI across the East of England allows our consultants to access scans and images remotely and securely, meaning that stroke centres can immediately discuss stroke patients together, delivering more consistent treatment decisions and faster patient transfers – particularly to Cambridge University Hospitals NHS Foundation Trust as the main comprehensive stroke centre and hub for the region. This will enable more patients to get the right treatment, in the right place, at the right time, to help save lives and prevent people from severe disability."

Brainomix have firmly established themselves as market leaders in the UK and rest of Europe, with more than 350 sites across 30 countries, and more than 1.5M scans processed since introducing its technology to the market in 2016. At the Society of Vascular and Interventional Neurology (SVIN) Conference in Miami in November 2023, the company launched its Brainomix 360 platform in the US following a series of FDA clearances.

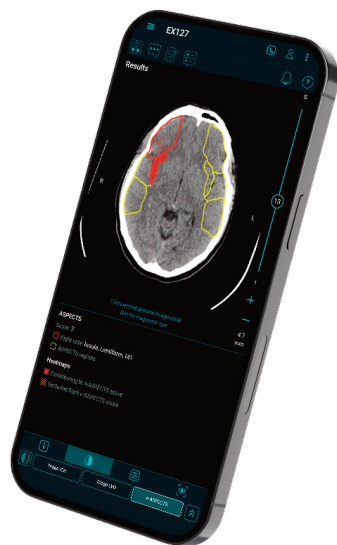


Brainomix and Consultant Stroke Physician at Oxford University Hospitals, commented: "The NHS AI Award enabled us to deploy Brainomix 360 Stroke across a range of urban and rural NHS hospital networks, and to have the impact of the AI technology on stroke patient care independently evaluated. The results are very impressive, with Brainomix 360 Stroke sites achieving much higher rates of

door-out (DIDO) time – a key metric in stroke care – from 140 minutes down to 79 minutes, an improvement of over 1 hour. More significantly, the study also found that more patients achieved functional independence (defined as mRS 0-2) following the adoption of Brainomix 360 Stroke, trebling from 16% to 48% of patients – a result which even caught the attention of *The Times* when



**Dr Waleed Brinjikji**, Professor of Radiology and Neurosurgery at the Mayo Clinic in Rochester, Minnesota, delivered a keynote presentation at SVIN, highlighting his experience with the Brainomix: “We have been collaborating with the Brainomix team around numerous research projects over the past couple of years, including a recent study that validated the performance of their e-ASPECTS module. The results showed that the accuracy of ASPECTS scoring by physicians improved across disciplines and levels of



experience, which makes the e-ASPECTS module a powerful tool for clinicians across the US who are managing stroke patients.”

**Dr Michalis Papadakis**, co-founder and CEO of Brainomix, also spoke about the importance of the US launch: “We are delighted to have the opportunity to introduce our Brainomix 360 platform to more and more US stroke networks, and to showcase the extensive validation of our technology, a good portion of which was

conducted in the US at such institutions as the Mayo Clinic, Emory University, Mount Sinai in New York, and UCLA. As a spin-out from the University of Oxford, we have a longstanding heritage of scientific and academic excellence, which has allowed us to achieve broad success in the UK and across Europe, including national-level deployments of Brainomix 360 across Hungary and Wales, as well as wide-ranging roll-outs in England, Poland, Sweden, Italy and Spain.” ■