CAMRIN
Brainomix Stroke AI

NHS
Cheshire and Merseyside

IMPLEMENTING AI ACROSS CHESHIRE AND MERSEYSIDE

CAMRIN stroke AI

In March 2020 The Walton Centre was the first Trusts to go live with the Brainomix Artificial Intelligence (AI) solution that quickly identifies any trauma to the head so that reporting and decision making can be made in a reduced time frame for suspected stroke patient. A further five Trusts were then fast followers in early 2020.

Results

- First Network to implement a AI solution.
- Collaborative AI implemented in 6 Trusts serving a population of 2.5 million.
- Over 23,000 suspected stroke patients from April 2020 to April 2023 screened across six hospitals identifying 756 patients with a brain bleed and 782 patients with a large vessel occlusion for potential treatment.

PROBLEM STATEMENT

Identification and selection of patients for treatment requires specialist radiological image interpretation in real-time, which is not readily available in many hospitals where expertise and resource challenges exist.

Image sharing between hospitals was slow, inefficient and impacting the time to make treatments decisions in what is a highly time sensitive clinical pathway where every single minute counts. We deployed AI technology to transform image interpretation by front line physicians, facilitating patient diagnosis and speeding up decision making in this time critical condition. This resulted in more patients receiving treatment and improved outcomes.

Suspected Stroke
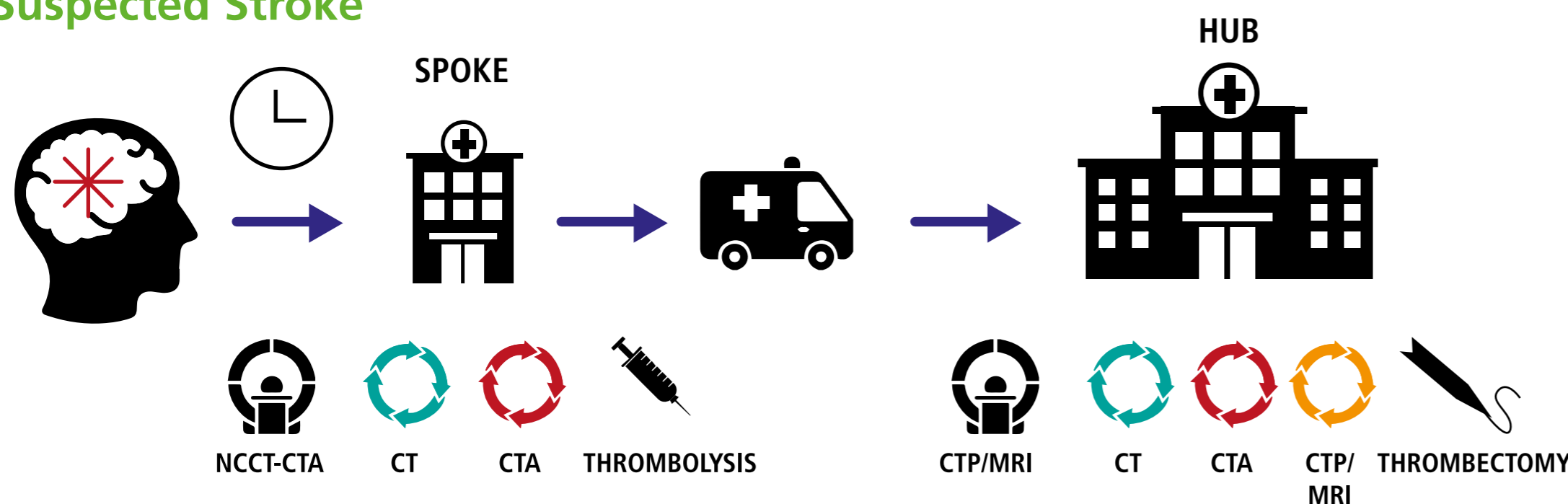
Deployment of the e-Stroke Suite enables both non-specialist spokes (PSCs) and specialist hubs (CSCs) to make faster, more accurate and more confident decisions.

APPROACH

Working with the key stakeholders to deliver the activities required in the project plan to ensure an effective delivery of AI into the region.

The key stakeholders involved:

- CAMRIN Programme Lead, Digital Programme Manager, Clinical Scientist
- Clinical and Operational Leads from each of the six C&M Trusts Stroke network
- IT Leads from each of the six C&M Trusts
- Clinical Safety Officer from Liverpool University Teaching Hospital
- IG Leads from each of the six C&M Trusts
- Brainomix Team

As one of the earliest adopters of the technology, the CAMRIN project paved the way for the Secretary of State acknowledging the use of stroke AI as an exemplar NHS digital healthcare project with real world impact. The project will now be extended into NHS Wales at a national level allowing patients to be transferred and treated within CAMRIN, showcasing cross-border collaboration between NHS England and NHS Wales.

www.gov.uk/government/news/artificial-intelligence-revolutionising-nhs-stroke-care

BENEFITS

Early-stage analysis of the technology, which received funding from the first round of the government's AI in Health and Care Awards, shows it can reduce the time between presenting with a stroke and treatment by more than 60 minutes, and is associated with a tripling in the number of stroke patients recovering with no or only slight disability - defined as achieving functional independence – from 16% to 48%.

OVERVIEW

Stroke is a highly time sensitive clinical pathway where 1 minute of delay results in a patient irretrievably losing 2 million neurons per minute and for every 15 minutes of delay, stroke survivors may lose up to 1 month of healthy life.

Within CAMRIN we digitally transformed the stroke pathway by incorporating stroke artificial intelligence (AI) technology, from the UK vendor Brainomix, with groundbreaking benefits for patients. Aiming to reduce our Door-In-Door-Out time for patients treated with life saving mechanical thrombectomy and increased post stroke patients achieving functional independence at three months

The technology automatically analyses within 1-2 minutes the key brain biomarkers enabling the early identification of stroke patients eligible for lifesaving treatment. The technology is designed as a clinical decision support tool so our clinicians can make the right decision, every time, based on more accessible clinical data. The platform facilitates scans to be instantaneously shared across multiple hospitals within our stroke network.

Brainomix was deployed at 6 trusts across Cheshire and Merseyside: Wirral University Teaching Hospital NHS Foundation Trust, Countess of Chester NHS Foundation Trust, The Walton Centre NHS Foundation Trust, St Helens and Knowsley Teaching Hospital NHS Trust and what was formerly the Royal Liverpool and Broadgreen University Hospital NHS Trust and Aintree University Hospital NHS Foundation Trust as one of the earliest stroke AI connected networks in the UK. Importantly, this project will now further enable cross border patient referrals from NHS Wales into CAMRIN for treatment and is being showcased a national and international exemplar.

> " Our familiarity with the Brainomix system makes it a significant practical and operational benefit if implemented across the stroke centres in North Wales along with better PACS system links. The clinicians here are now well used to the outputs and markers identified by the Brainomix technology on NCCT, CTA and becoming more so with CTP. We remain in regular communication with the Brainomix team since go-live as the system is regularly updated allowing us to make the most of the features available. "

Dr. Sacha Niven, Deputy Medical Director
Consultant Interventional Neuroradiologist
The Walton Centre NHS Foundation Trust

FOR MORE INFORMATION

If you would like more information on this CAMRIN case study; please contact:
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