GM Connected Health City
Developing a learning system for stroke in Greater Manchester

Workstream 1: Stroke Mimics

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What are we trying to do?
The aim of this workstream is to:
- Reduce the number of stroke mimics (also known as false-positives) entering and progressing through the stroke pathway.

Why is it important?
To deliver high-quality care, it is of paramount importance that the right patients go to the right place at the right time to receive the right care from the right specialists. The NICE guidance on acute adult stroke states that "all people with suspected stroke should be admitted directly to a specialist stroke unit following initial assessment, either from the community or from the A&E department". In Greater Manchester (GM), specialist stroke units or HASUs (Hyper Acute Stroke Units) are located in three hospitals across the region, providing clot-busting treatments and teams of specialist staff. This centralised pathways means that patients with a suspected stroke should now be taken by ambulance to a HASU, rather than their local hospital, for treatment.

Currently, paramedics determine whether patients have a suspected stroke and therefore whether or not they need to be transported to a HASU. They do this assessment using the Face-Arm-Speech-Time (FAST) test. However, in a recent GM study, a substantial proportion of the patients being taken to a HASU were found to be stroke mimics. Mimics have a direct impact on workload and use of resources in the HASUs, diverting them away from acute stroke patients. This also increases risks for non-stroke patients, as essential treatment for other conditions may be delayed. As many areas of England are now moving towards a centralised pathway for acute stroke, this is likely to be a problem replicated nationwide.

How will we do it?
We will link historical ambulance data from NWAS (North West Ambulance Service) with data from Salford Royal NHS Foundation Trust, Central Manchester University Hospitals NHS Foundation Trust and University Hospitals of South Manchester, to identify both false-positive (stroke mimics) and false-negative (missed strokes) rates, and to explore how such situations may arise. Using this information as a foundation, changes will then be implemented and tested iteratively and their impact on the false-positive and false-negative rates monitored. Such changes may, for example, include enhanced paramedic learning through feedback, paramedic access to urgent telephone advice or development of a decision support system.

What data sources will we need?
- NWAS data
- EPR data from Salford Royal NHS Foundation Trust, Central Manchester University Hospitals NHS Foundation Trust and University Hospitals of South Manchester

Who are the collaborating organisations?

- Salford Royal NHS Foundation Trust
- Central Manchester University Hospitals Foundation Trust
- University Hospital of South Manchester
- Greater Manchester Stroke Operational Delivery Network (ODN)
- University of Manchester/Manchester Academic Health Sciences Centre
- North West Ambulance Service (NWAS) NHS Trust