

Creating Automated Data Flow between Ambulance Services and Hospitals

Hospitals are required to provide data to the National 'Sentinel Stroke National Audit Programme' (SSNAP) Audit – a quality improvement initiative to measure the quality of care that stroke patients receive across the whole care pathway up to 6 months post admission in England, Wales and Northern Ireland. This information allows hospitals to monitor their performance about the care delivered to patients.

An electronic system called CaptureStroke allows clinicians to record data related to patients with suspected strokes and tracks the patient's journey from initial ambulance pick up, to discharge, and on to hospital follow-up appointments and community care.

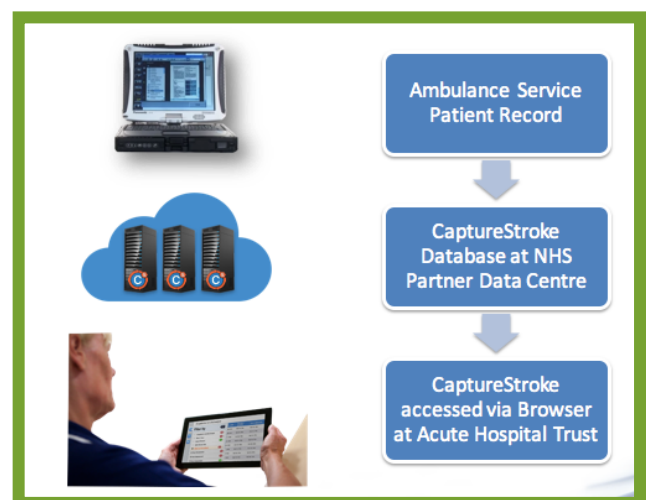
This requires both the ambulance service and the hospital to collect and record data about the patients they see. Both of these sets of data are held separately. Any information relating to admissions via the ambulance service are currently entered manually into CaptureStroke by a Stroke Audit Facilitator in the hospital setting using either paper based forms provided by the ambulance service at patient hand over, or by logging on remotely to ambulance service's patient record system via smart card access.

Silverlink Software Limited have partnered with the North East Ambulance Service (NEAS) to develop the 'Silverlink Ambulance Service Gateway' to enable the automatic flow of data between the ambulance service and the hospital for patients admitted with suspected stroke. This saves time and reduces the risk of duplication of data entry and re-keying errors that could impact on data quality and patient care.

The Case for Change

Historically, the NHS has been relatively successful collecting research data once a patient is in a hospital setting. However, valuable research data should also be collected earlier in a patient's pathway in the pre-hospital setting (for example, whilst in the care of the ambulance service) to give a complete picture of the patients care throughout the pathway. This is often a challenge due to time pressures in this environment.

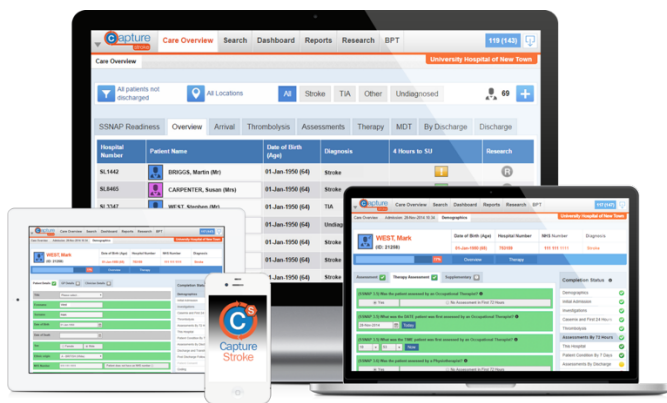
The aim of the project was to explore mechanisms to enable data collection that can be used for research in the pre-hospital setting and to be as unobtrusive to paramedics and patients as possible.



Data now follows the patient, seamlessly and securely over NHS N3, across the pathway.

Overview of Innovation

- A technical proof of concept was produced that allowed for the automated look up and retrieval of ambulance service data and the subsequent return of outcome data from the hospital, sent securely over the NHS N3 network.
- This included full documentation and specification, NHS England accredited Interoperability Toolkit (ITK) end points to allow the secure data transfer and the addition of the associated user interfaces to the CaptureStroke application.
- The solution provided identification and selection of the correct patient; and the appropriate data items collected in the ambulance at the point of care; to then automatically be sourced, presented and validated, before being stored in the CaptureStroke system.
- The solution was developed as a two-way process so the Ambulance Service could also receive outcome data back from the hospital setting to inform paramedic training and service improvement initiatives.



The solution allows data capture to take place at the point of care, in an easy and unobtrusive way

Progress to Date

Following the successful proof of concept and completion of the assurance process, the aim is to make the Ambulance Service Gateway available to all CaptureStroke users and extend its use to other pathways over the coming months. The team are working with the STPs to explore opportunities for roll out.

The Gateway has also been enhanced to include a new alerts and notifications capability to send e-mails, SMS or in-app alerts to all relevant parties.

Impact

- Based on the initial proof of concept, there has been a reduction of 75% in time spent to collate, review and input the current ambulance data items to the Stroke Audit compared to the existing manual process. For a typical Stroke Unit this could equate to a saving of 67.5 man days per year, based on an 8-hour day.
- Improved data quality to help inform patient care through the reduction in rekeying errors and minimisation of missed data items.
- For paramedics, less duplication of data entry and potential to receive outcome data to help inform future training and process improvement, and confirmation of diagnosis.
- For hospital staff, timely access to accurate data relating to the initial stages of a patient's condition from the point of ambulance pick up and before.
- For researchers, the ability to collect and retrieve accurate research data in the ambulatory setting.

Next Steps and Plans for the Future

- To continue the assurance process around the proof of concept so that it can be deployed for live operational use.
- To extend the Silverlink Ambulance Service Gateway system so that the automatic data flow would be for all patients delivered to a hospital by ambulance staff, not just for those with suspected stroke.
- To explore opportunities to offer this solution to other hospitals and ambulance services as the Silverlink Ambulance Service Gateway conforms to recognised health IT standards such as HL7 and ITK.

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