

Site Name: Russells Hall Hospital (RHH)

The TASC Principle: Using measurement and structured quality improvement methodology to understand and reduce variation in the acute stroke pathway, strengthen multidisciplinary working, increase thrombolysis rates and reduce delays in diagnosis and treatment.

The Challenge

At the start of the TASC programme, Russells Hall Hospital (RHH) was experiencing inconsistent performance across its acute stroke pathway, with thrombolysis rates historically lower than ambition and variation in pathway delivery. While some improvements had begun prior to the programme, there remained limited understanding of where delays were occurring and why patients were not consistently progressing through the pathway quickly enough.

Analysis highlighted variation and delay across multiple stages of the pathway, including in the transition from imaging to treatment, alongside differences between in-hours and out-of-hours performance. It also identified a cohort of patients arriving within a viable treatment window who were not thrombolysed, indicating missed opportunities to deliver treatment.

However, this analysis also revealed significant issues with data quality. High volumes of duplicate patient records, missing data fields, and inconsistent time recording, particularly around stroke onset and arrival times, were affecting the reliability of SSNAP returns and limiting confidence in performance reporting. In some cases, data errors produced extreme or unrealistic values, with one data point showing 38 million minutes between stroke onset and hospital arrival (*Figure 1*), making it harder to accurately interpret pathway performance.

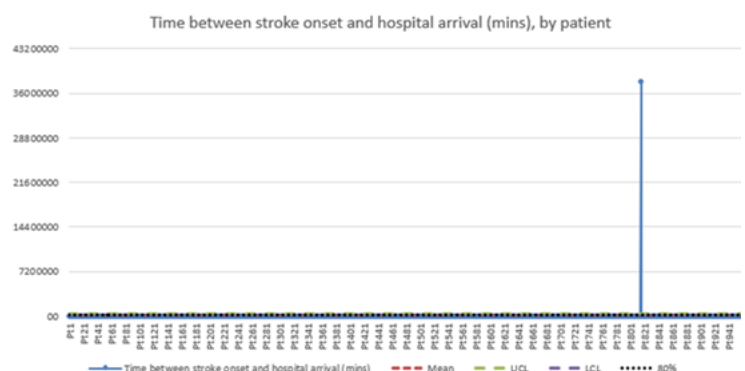


Figure 1: SPC chart showing a large astronomical data error point, which affected aggregated SSNAP performance metrics

Several system-level challenges influenced this performance. These included variability in training and stroke awareness within the Emergency Department (ED), workforce constraints, limited access to ringfenced beds, and wider capacity pressures across rehabilitation and community pathways. Root cause analysis also highlighted gaps in workforce planning and the lack of embedded stroke training within ED processes and induction.

Importantly, improvement efforts prior to TASC had focused largely on performance metrics rather than developing a shared, end-to-end understanding of the pathway using time series data. This created a need to move from reactive, metric-driven changes to a more structured, measurement for improvement and system-wide approach to improvement.

What they did (the process)

The RHH stroke team worked in partnership with EMAS, radiology, ED and NHS Elect to develop a system-level understanding of their pathway using quality improvement methodology. A wide range of stakeholders were actively engaged, including the wider stroke team, ED clinicians, radiology teams, ambulance services, administrative teams and executive leadership. The team did observational walks of the patient pathway to identify what was working well and where challenges were present.

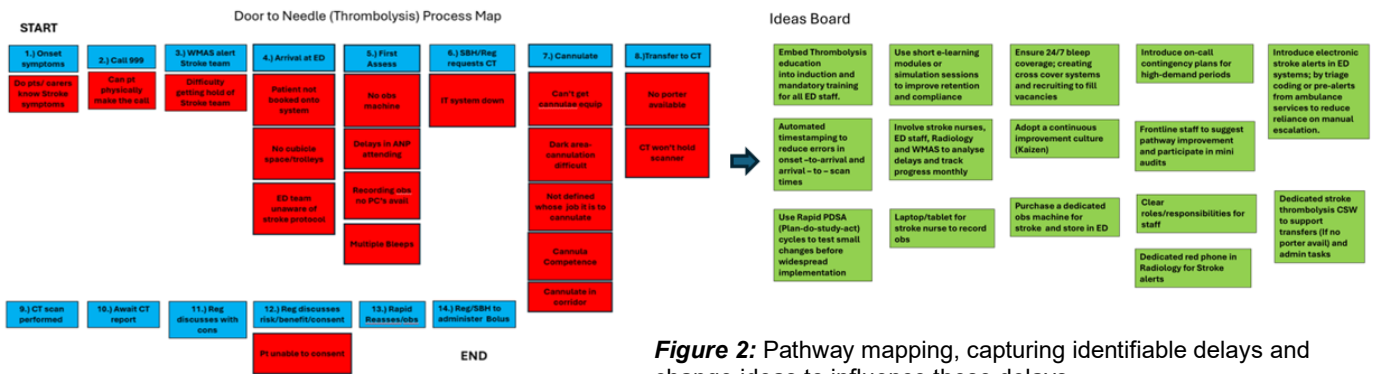


Figure 2: Pathway mapping, capturing identifiable delays and change ideas to influence these delays

Next, the team began to map the entire thrombolysis pathway to understand patient flow and identify delays (Figure 2). This was supported by the use of a fishbone diagram (Figure 3) and 5 Whys analysis to systematically explore the root causes of variation. These highlighted that delays were primarily driven by people and process issues, including training gaps and inconsistent ways of working.

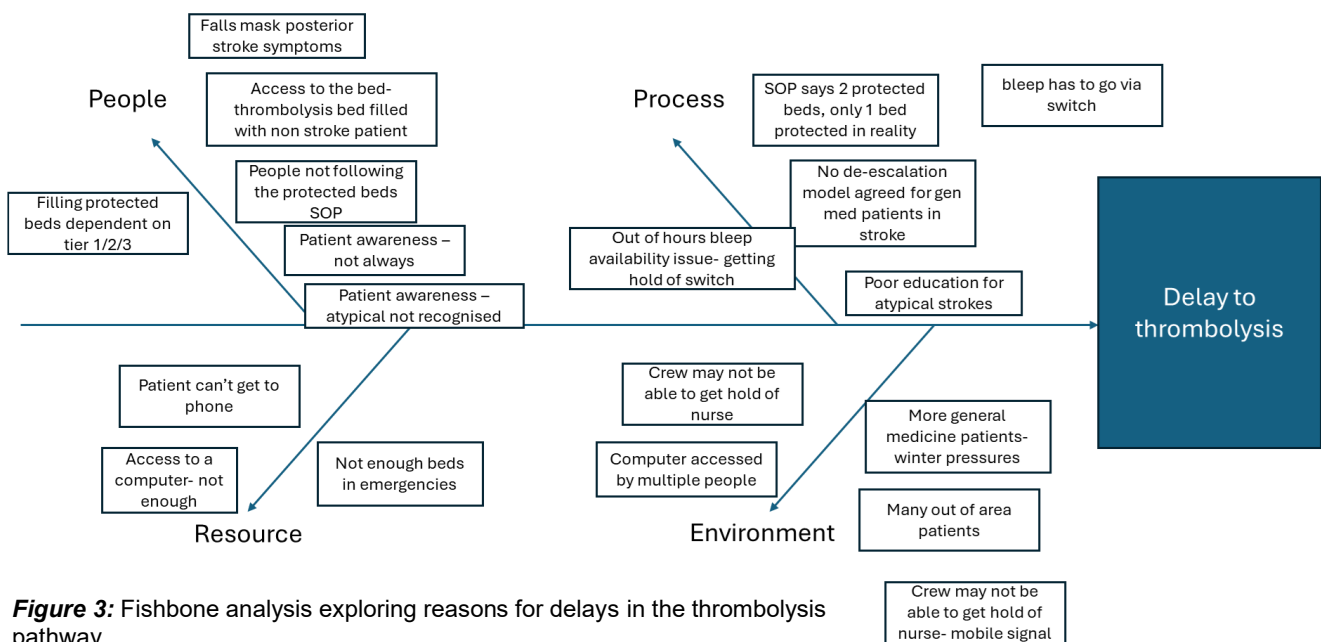


Figure 3: Fishbone analysis exploring reasons for delays in the thrombolysis pathway.

Alongside this, the team worked closely with their Business Intelligence team to improve the quality and reliability of their data. This included identifying and removing duplicate patient records, addressing missing and inconsistent data fields, and strengthening processes for data validation and submission. This work ensured that SSNAP data more accurately reflected true performance and could be used with greater confidence to inform improvement.

The team identified key priorities including refining front door processes, improving access to imaging quicker, embedding a “thrombolysis mindset”, and strengthening workforce capability and leadership. To inform this work, the team recognised the importance of measurement and significantly strengthened their use of data. Time-series data (SPC Charts) began to be used to understand variation and track the impact of changes, shifting the focus from simple reporting to using data actively for improvement. A series of Plan–Do–Study–Act (PDSA) cycles were used to test key change ideas, particularly at the front end of the pathway.

These included:

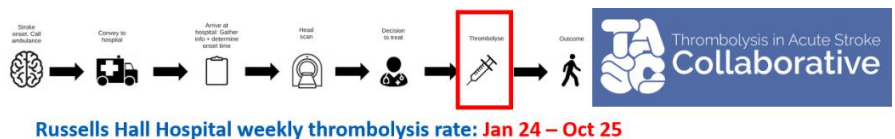
- Pre-registration of stroke patients following ambulance pre-alerts
- Earlier pre-alerting and coordination with radiology
- Strengthening communication between ambulance crews, ED and stroke teams
- Introducing pre-hospital video triage to support early clinical decision-making
- Improving access to CT angiography and CT perfusion, supported by AI tools

In parallel, the team worked to strengthen relationships and communication across the system. Active engagement with ambulance services, including training on BEFAST and extended treatment windows, helped improve the quality and timeliness of pre-alerts. Opportunities for paramedics to observe the in-hospital pathway further enhanced shared understanding and collaboration. Regional working was also strengthened, particularly with the Queen Elizabeth Hospital thrombectomy centre, improving referral processes and communication.

What was achieved (the outcomes/data)

Through this structured approach, RHH achieved measurable improvements across multiple areas of the stroke pathway.

Thrombolysis rates increased from 11.18% to 14.5% (Figure 4), reflecting a more intentional and systematic approach to identifying and treating eligible patients. Modelling also suggested a realistic future ambition of 18%, providing a clear focus for continued improvement.



Russells Hall Hospital weekly thrombolysis rate: Jan 24 – Oct 25

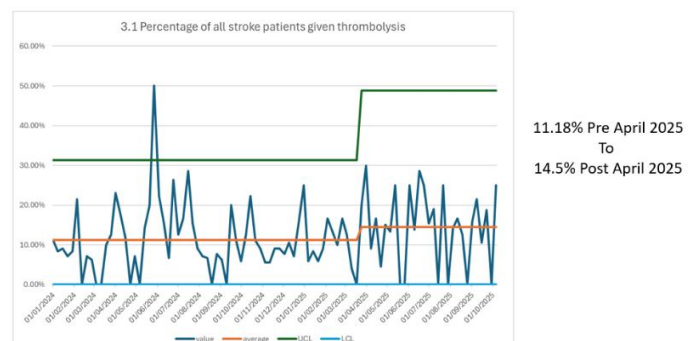


Figure 4: SPC chart showing step change improvement in thrombolysis rate.

Some signs of improvement were also emerging around arrival to scan times, with the last 11 patients averaging a time of 52 minutes; 19 minutes quicker than previous average time. This shows promising process improvements, which will start to reduce door to needle time for stroke patients as well as providing more opportunity for patients attending within the thrombolysis window.

Significant progress was also made in thrombectomy referrals, with rates increasing from 2% to 7% over the course of the programme, supported by improved pathways and closer working with the regional thrombectomy centre.

Access to advanced imaging improved substantially, with the introduction of CT angiography and perfusion supported by AI, enabling faster and more informed clinical decision-making.



Russells Hall Hospital time between arrival and scan: Jan 24 – Oct 25



Figure 5: SPC chart showing recent improvements in arrival to scan times.

Alongside these improvements, the team developed a more reliable and mature approach to data. Work to address duplication, missing data and inconsistencies improved the accuracy of SSNAP reporting, enabling the team to better understand variation, identify root causes and track the impact of change over time. This increased confidence in the data supported more effective and timely decision-making.

Beyond this, one of the most significant achievements was the shift in culture and ways of working. Relationships between ED, stroke and ambulance teams improved markedly, with increased trust, better communication and a shared understanding of urgency. This led to more proactive referrals, improved teamwork and greater psychological safety across the pathway. Improvements in system flow were supported by better access to step-down rehabilitation beds and strengthened partnerships with neighbouring organisations, helping to reduce pressure on acute capacity and improve patient movement through the pathway.

Overall, the programme enabled the team to move from isolated improvement efforts to a coordinated, system-wide approach, underpinned by data, collaboration and continuous learning.



Testimonials

“The biggest difference since working with the TASC programme has been the collaboration and the discussions with other hospitals. This has enabled us to make meaningful changes to our processes and procedures, helping to speed up both assessment and treatment for our patients. It has also helped us reflect on our work, identify limitations, and learn in a way that supports improvement not just locally, but across other sites as well.”

Terence Byrne
Specialist Stroke Nurse
Russells Hall Hospital

“The TASC programme came at exactly the right time for us. The speed at which we’ve been able to make progress, and the level of engagement from staff, has been incredible. What has been achieved in such a short space of time is outstanding, and a testament to the commitment of the team.”

Saffiya Kerr
Directorate Manager for Medicine and Integrated Care
Russells Hall Hospital

Key system contacts

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