

Improving Thrombolysis in Acute Stroke at Wye Valley NHS Trust Vignette

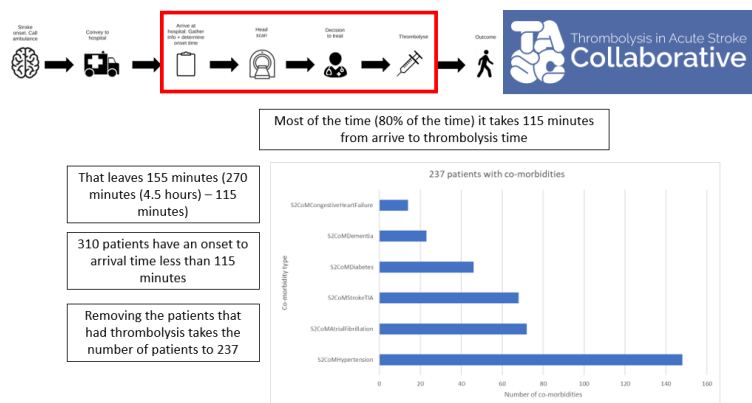
Background

Wye Valley NHS Trust participated in the Thrombolysis in Acute Stroke Collaborative (TASC2) to improve thrombolysis rates and streamline stroke pathways. The initiative was led by Marie Harrison (CNS) and the Team, supported by NHS Elect and regional partners.

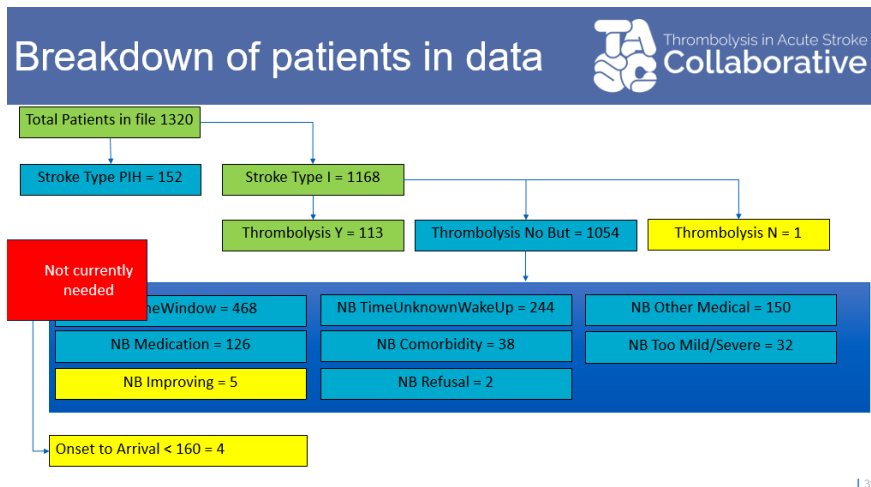
What Wye Valley Did

Process Mapping: The team identified bottlenecks in the stroke pathway, particularly in **out-of-hours (OOH)** care where specialist expertise was limited. Analysis focused on delays in CT imaging and thrombolysis delivery.

They also undertook a “**last ten patient review**” of patients who were not thrombolysed, particularly those with low NIHSS scores, to better understand decision-making and identify missed opportunities.



What were Times to CT after TASC2



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Key Issues Identified

- Rapid “pit stop” decisions to proceed directly to CT without full assessment
- NIHSS scores often **not documented or unknown**
- Delays in CT, particularly out of hours and at weekends
- Lack of consistent early escalation of suspected stroke patients
- Variable ED processes and clinical decision-making
- OOH pathway remains fragmented (“stop–start” process)
- High turnover of ED staff and absence of CNS support
- Poor engagement across multidisciplinary teams
- Variation in door-to-CT and CT-to-thrombolysis times
- Locum middle-grade ED doctors:
 - Not consistently or accurately recording NIHSS
 - May lack access to the WORCS system
 - Require appropriate stroke assessment competencies
- Inconsistent communication with radiology affecting prioritisation
- Delays occur when patients are not highlighted early in their journey

Last ten Patient Review

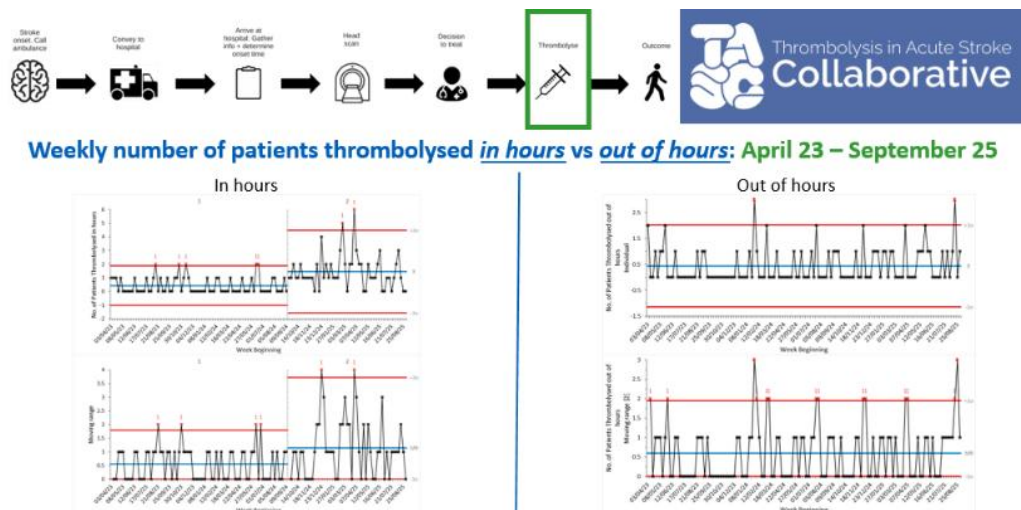
Following an understanding of the data, the stroke team explored looking at patients who were not thrombolysed and had a low NIHSS score, to examine in more detail the patient journeys and explore where change could lead to future improvements.

From this several issues were identified and recommendations were made and acted upon.

Issues identified:

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This prompted a further review of out-of-hours data and ED assessment delays. Variation in thrombolysis decision-making was reduced through discussion and education, leading to incremental increases in in-hours thrombolysis.



Main gains with increase in thrombolysis rate are primarily from an increase in number of patients thrombolysed in hours since September 2024

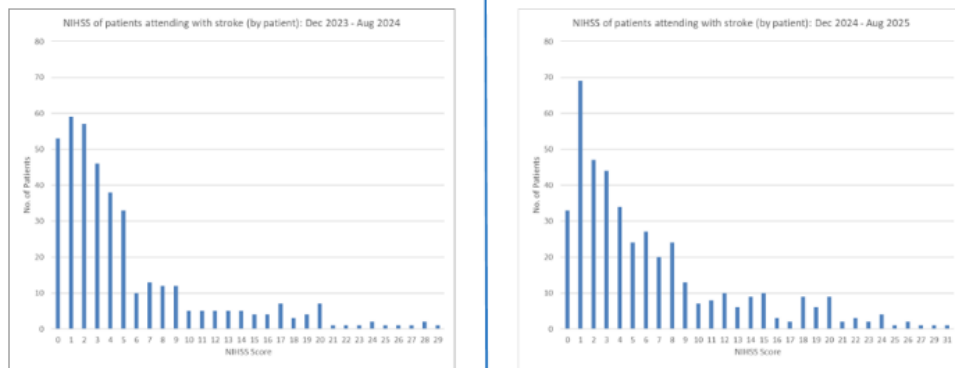
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Education & Engagement:

- Peer-to-peer teaching (doctors teaching doctors; nurses teaching nurses)
- Informal and accessible education sessions
- Reception staff trained to recognise and escalate suspected stroke patients

Pathway Redesign:

- Introduction of a **bleep system** for walk-in stroke patients
- Early implementation of **pre-hospital video triage**
- Promotion of a **direct-to-scanner approach**
- Shift in culture toward “*Why not thrombolysed?*” rather than risk-averse decision-making
- Increased focus on accurate NIHSS scoring



No significant difference between the number of each NIHSS score between the two graphs ($p=0.3793$)

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Radiology Access:

- CNS staff enabled to directly request CT scans in line with NHS England guidance

Communication

- Improved coordination between ED and radiology
- Stroke awareness video introduced

Drug Protocol

- Adoption of **Tenecteplase** to simplify treatment delivery

Achievements & Outcomes

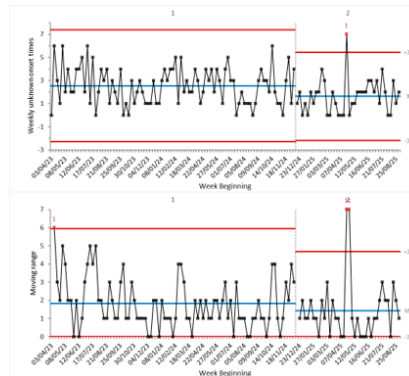
Thrombolysis Rate:

- Increased from **9% baseline to ~20–22%**
- Exceeded target range of 15–16%
- Step change observed from **September 2024 onwards**
- Increase driven by:

- More patients treated weekly
- Increased treatment of both low and higher NIHSS patients



Weekly number of patients with no stroke onset time- step change recalculation:
288 patients (23%)- 00:00:00



Pre-step change 03/04/23 – 09/12/24		Post-step change 16/12/24 – 01/09/25	
	No. of Patients		No. of Patients
Average	2.54	Average	1.63
UCL	7.32	UCL	5.55
80% Variation	4.93	80% Variation	3.59
Average MR	1.80	Average MR	1.47

- On average, approx. 2 patient per week have an unknown onset time- since 16/12/24 (down from approx. 3 per week pre-16/12/24)
- This may vary by approx. +/- 1 patient per week
- Most weeks (80% variation) no more than 4 patients per week will have an unknown onset time (down from 5 pre 16/12/24)

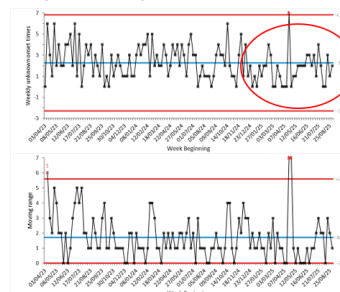
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Process Improvements

- Reduction in patients with **unknown stroke onset times**
- Improved early identification and escalation
- Streamlined imaging (combined CT + CTP)
- Faster ED triage and referral



Weekly number of patients with no stroke onset time: 288 patients (23%)- 00:00:00



	No. of unknown onset times
Average	2.27
UCL	6.79
80% Variation	4.53
Average MR	1.70

- 288/1277 patients had 00:00:00 onset times recorded
- Assumption is that all 00:00:00 time stamps are *unknown* onset times.
- 287/288 patients with onset times of 00:00:00 were out of hospital onsets
- Two of these patients were thrombolysed (02/12/24 and 24/02/25)
- Middle third rule showing a reduction of unknown onset times

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System Impact

- No significant increase in stroke attendances or scan demand
- Improvements largely due to pathway efficiency rather than increased workload

Regional Collaboration: Strengthened ties with West Midlands stroke network.

Challenges

- No 24 hour CNS Cover to ensure continuity, provide support to ED & drive for timely interventions and treatments
- Multi systems for documenting care
- ED staffing, High turnover of nursing staff, reliance on locum medical staff.
- ED Capacity Issues, can lead to delays in processing patients

- **Cross border patients** : Differences in pre alert processes from Welsh and English Ambulance services and can be difficult to repatriate patients across the border
- **Planned move of HASU to WRH**: Challenging as staff unsure of future and service potential relocation can be disrupting to staff.
- **Staffing Instability**:
 - Loss of Clinical Nurse specialist and temporary reduction to a 5-day service.
 - No substantive stroke consultants; reliance on locums and Worcester support.
- **Leadership Gaps**: Frequent managerial changes and limited engagement from senior leadership.
- **Cultural Barriers**: Difficulty engaging the wider MDT and ambulance crews.
- **Resource Constraints**: Limited out-of-hours coverage and initially there were radiology delays.

Key Success Factors

- Persistent leadership and passion.
- Use of quality improvement tools (SPC charts, process mapping).
- Incremental changes and informal education rather than large-scale formal training.
- Regional and national support for best practice adoption.

Lessons Learned

- **Small changes matter**: Simple interventions like education and bleep systems can have big impact.
- **Leadership is critical**: A committed lead can drive change despite systemic challenges.
- **Team engagement**: Whole-team buy-in is essential for sustainability.
- **Networking**: Face-to-face collaboration accelerates improvement.