



Thrombolysis in Acute Stroke
Collaborative

TASC Case Study

Blackpool Teaching Hospitals



Small changes make a big difference to Thrombolysing rates in Blackpool

Blackpool Teaching Hospitals had failed to make any change to its 8.4% thrombolysis rate, despite efforts to improve it between 2020 and 2024. So, when neighbouring Lancashire Teaching Hospitals joined the first cohort of TASC (the Thrombolysis in Acute Stroke Collaborative network) and succeeded in improving its own thrombolysis rates, Blackpool was keen to follow suit.

The TASC Network

TASC helps trusts to improve outcomes and provide faster, more effective thrombolysis. It supports best practice by sharing learning across stroke units, helping individual trusts identify and address barriers in their thrombolysis pathway. By reducing delays, it supports trusts to accelerate diagnosis and treatment in hyper acute stroke care.

Blackpool applied to join cohort two of TASC in 2024. Tom Rushworth, Operational Service Manager for Stroke at Blackpool explained:

” We applied for the programme quite late on and didn’t expect to get in, so it came as a pleasant surprise when we were accepted. We’d been trying for years to improve our thrombolysing rates without much success. It had stayed stubbornly at 8.4%. So, when we joined the cohort in November 2024 and the SAMuel tool* suggested we could achieve a rate of 21%, we were gobsmacked. It seemed unreachable. We never imagined then that we’d go on to achieve a thrombolysis rate of 26.5%. That’s compared to a national average of 14%.

Tom Rushworth

Not only did Blackpool exceed the target proposed by NHS Elect, but between April and June 2025, it achieved the fifth best thrombolysis score out of 118 trusts nationally.

So, how did the trust turn things around so dramatically within the space of a year and what can others learn from this?

Despite what the Blackpool team initially believed, it wasn’t about making costly, large-scale changes but small, targeted improvements. Their story shows that, even in the face of financial constraints and limited clinical time, it’s possible to make significant and sustained improvements that enhance outcomes for patients.



©NHS Elect, September 2026

* SAMuel was developed by the University of Exeter, based on 5 years of stroke audit data (SSNAP data) from individual sites. NHS Elect routinely uses SAMuel as part of TASC. <https://arc-swp.nihr.ac.uk/research/projects/samuel>

What they did

Blackpool embarked on its TASC journey in November 2024. From the outset it took a structured and methodical approach, based on proven improvement methodology.

1: Established a motivated project team

The first step was to put together a project team. Blackpool invited clinical staff, operational managers, data analysts, nurses, consultant stroke physicians, Advanced Clinical Practitioners and even colleagues from the North West Ambulance Service to be part of the project. Everyone was motivated by the same vision – to improve outcomes for stroke patients by increasing thrombolysis rates.

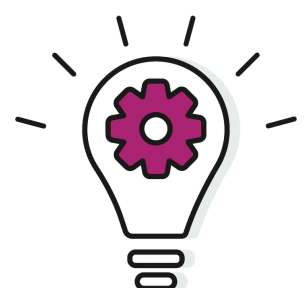
Executive buy-in was a prerequisite for participation in TASC and Blackpool's Chair of the Stroke Improvement Board, Dr Chris Barben, took up the role of executive sponsor. His support proved essential right from the outset.

” The first national TASC event was held in London in December 2024. Eight of us were planning to attend but, unfortunately, our divisional leadership team pushed back due to the clampdown on discretionary spend across the Trust. We escalated this our executive sponsor and, thankfully, the decision was overturned and we were able to go. As our work continued and we started making a difference to thrombolysis rates, we gained more support from the executive team. Our work was featured in Communications Bulletins, and we put up posters celebrating our improvements. The Medical Director, Dr Neil Hartley-Smith took an interest in what we were doing.

Tom Rushworth

” It's always good to hear positive news like this. The team have come a very long way in a such a short space of time with such limited resource. Well done to all concerned.

Dr Neil Hartley-Smith
Chief Medical Officer



2: Aimed high

At the start of the TASC programme, NHS Elect used a machine learning programme (SAMuEL) to predict the best thrombolysis rates Blackpool could achieve based on the site's current data.

The software compares individual sites to the top performing 25 trusts in the country, forecasting potential thrombolysing rates based on five years' worth of SSNAP data. It considers a range of factors including the patient's age, stroke onset time, whether they

arrived late, previous disability etc.

At the start of TASC, and for the previous four years, Blackpool had achieved a rate of 8.4% (Fig 1). The SAMuEL programme predicted that it could more than double this to 21%.

At the start, the team was daunted, believing such a big jump was impossible. However, a piece of advice from NHS Elect's Director of Measurement, Matt Tite proved invaluable, as Stephen Ward, Stroke Data Analyst, explained:

“ Matt told us ‘Don't focus on the rate, focus on what you are doing instead’. That was really helpful. We got on with making the changes we needed to make without worrying too much about the target and, ultimately, we exceeded it.”

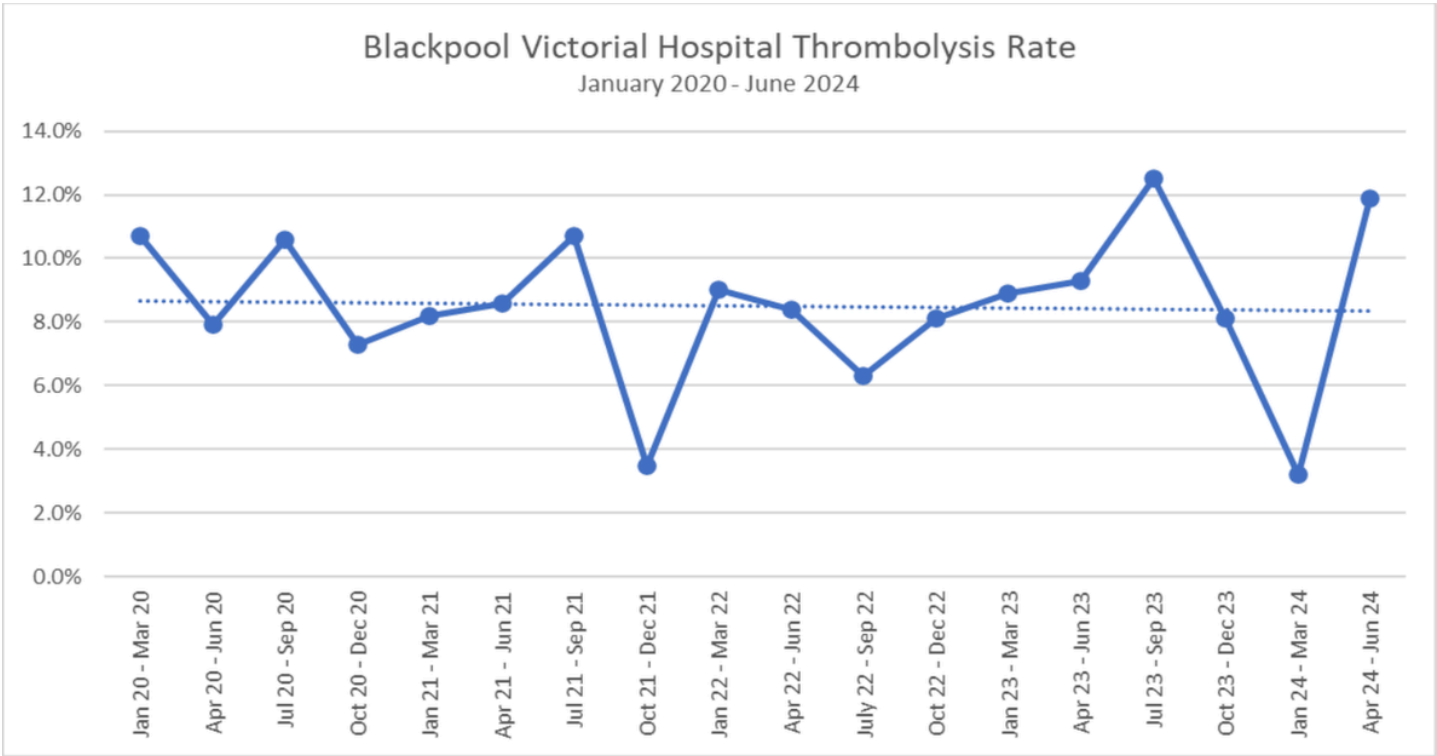


Fig 1: Line graph showing quarterly thrombolysis rates at Blackpool Victoria Hospital (Jan 2020 to Jun 2024), prior to starting the TASC programme

3: Focused on making small changes with big potential gains

The team used a Pareto Chart to analyse its thrombolysis pathway and identify areas with the greatest potential for improvement (Fig 2).

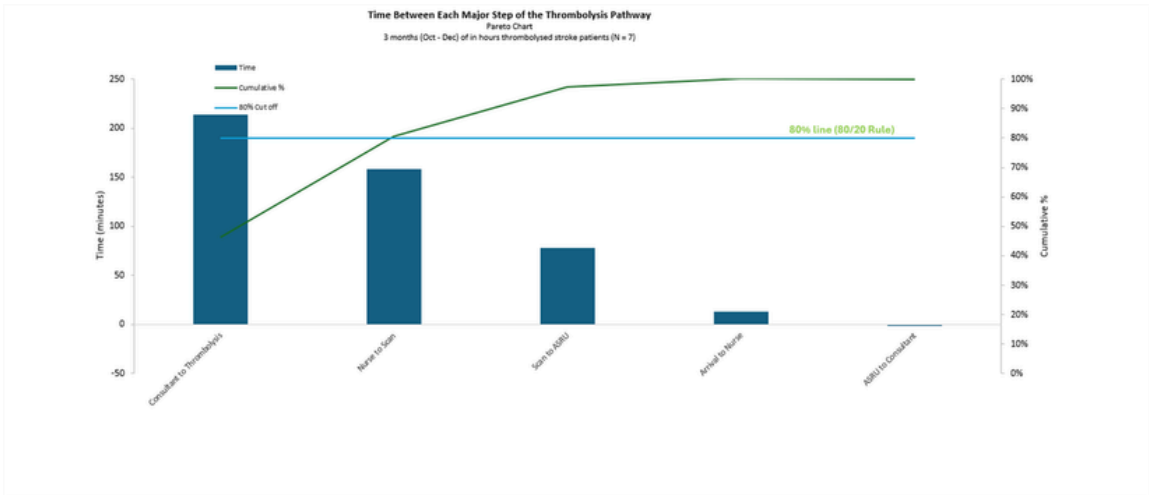


Fig 2: Pareto chart of the time between each step of the thrombolysis pathway (Jan 2024 to Sep 2024)

They flow mapped the thrombolysis pathway, step-by-step, to help identify possible areas for improvement (Fig 3).

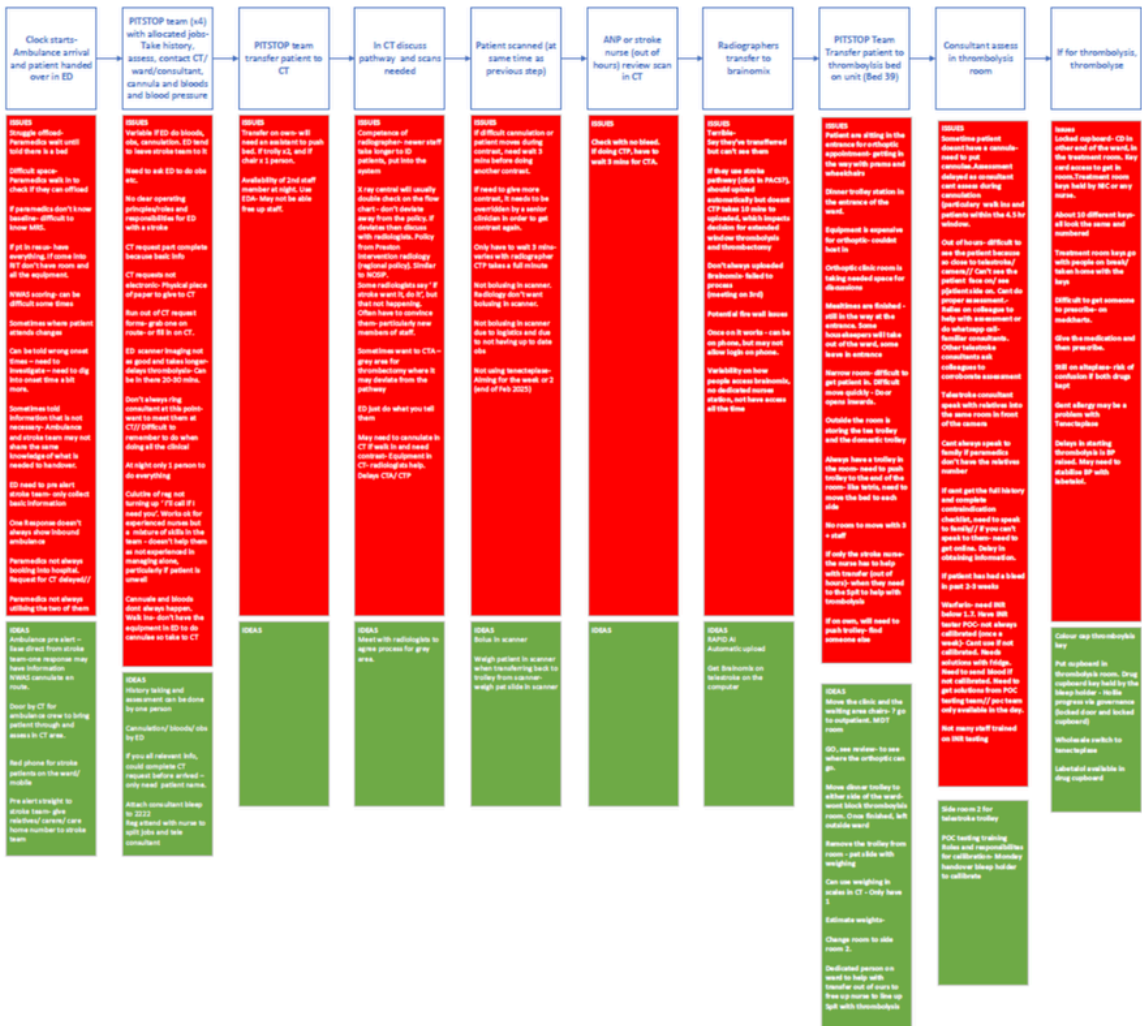


Fig 3: Functional map of the thrombolysis pathway highlighting key delay points and potential change ideas

Then used a driver diagram to bring together change ideas and prioritise which ones to take forward using structured tests of change (Fig 4).

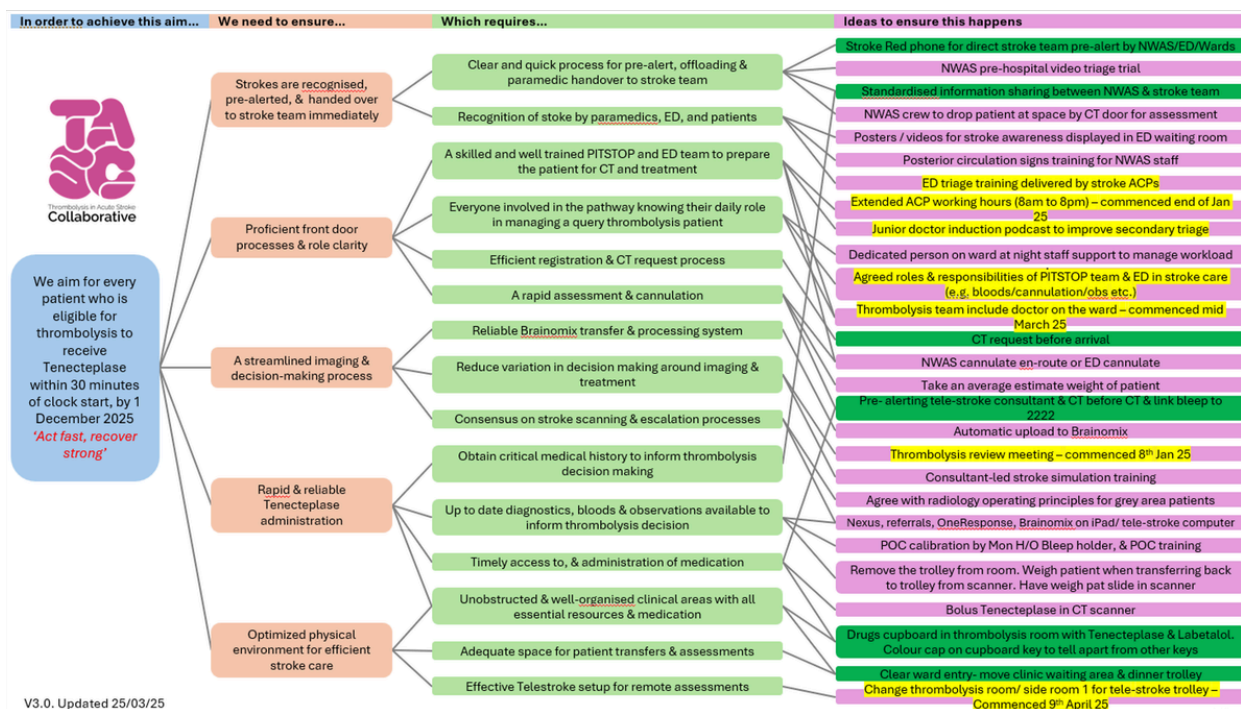


Fig 4: Driver diagram linking improvement aims, primary and secondary drivers, and change ideas

“ We drilled down to the smallest details – looking at each step in the process, from the patient arriving at the front door to getting into a hospital bed – so we could see exactly where any hold-ups occurred. Financial constraints meant we couldn’t implement costly changes so, instead, we prioritised ideas that would deliver maximum impact with minimum input. As a team, we scored each change idea and then invited our colleagues to vote on the ones they preferred. Once we’d chosen what we wanted to do, we set about systematically implementing and testing the changes.”

Tom Rushworth

Stephen added:

“ There were lots of potential solutions to our problems, but by identifying the ones that were in our gift, we were able to make small, simple changes in a relatively short space of time. For example...

“ we removed some chairs which sped up getting the patient onto the ward for their thrombolysis.

We introduced an iPad for stroke nurses so that they could access scans and systems faster rather than having to wait for a computer to be free. And we added our radiology team to the stroke pre-alert bleeps so they would know that a patient was arriving shortly for a CT scan. The drugs we need for thrombolysis were previously kept in a locked cupboard and the Thrombolysing team didn’t hold the keys and would need to find them from another staff member for each thrombolysis case. We changed this to reduce unnecessary delays. Now we have a bespoke drugs cupboard installed in a larger thrombolysis room so staff can easily access Tenecteplase. By starting with simple changes like these, we built momentum. To date, we have ticked off 15 improvement ideas and all of them have had an impact.”

4: Used tests of change

The team made effective use of quality improvement methodology, including PDSA (Plan Do Study Act) tests of change to develop, implement and refine its proposed changes. For example, after identifying delays with images being uploaded from patient scans to its Brainomix system, it developed and tested a new stroke protocol that uploads images automatically. This has now been implemented, supported by training for staff.

Data shows that the changes have reduced the average time between the scan and images being received by Brainomix from 11.15 minutes to 4.08 minutes (*Fig 5*).

Patient ID	Scan time	Receiving time	First received	Processed	Processing time	Cloud sync	Cloud sync
Pre-test data delays	23:10:29	108 secs	23:12:17	23:14:13	85 seconds	23:14:23	
							Not processed due to only NCCT with bone window sent
							Not processed due to only NCCT with bone window sent
	10:42:11	1635 secs	11:09:26	11:10:55	79 seconds	11:11:04	
	10:55:52	1775 secs	11:13:47	11:15:22	83 seconds	11:16:00	
	21:39:03	356 secs	21:44:59	21:46:38	73 seconds	21:46:48	
	21:33:21	319 secs	21:38:40	21:40:39	90 seconds	21:40:47	
	14:18:29	1589 secs	14:44:58	14:46:08	45 seconds	14:46:14	
	20:17:15	485 secs	20:25:20	20:26:43	73 seconds	20:27:23	
	15:53:51	308 secs	15:58:59	16:00:38	90 seconds	16:00:47	
	08:59:27	447 secs	09:06:54	09:08:31	88 seconds	09:09:16	
	16:37:00	514 secs	16:45:34	16:46:58	75 seconds	16:47:08	
	15:34:24	315 secs	15:39:39	15:41:15	87 seconds	15:41:24	
	09:16:46	245 secs	09:20:51	09:22:29	85 seconds	09:22:38	
							Could not be found on the server
Patient ID	Scan time	Receiving time	First received	Processed	Processing time	Cloud sync	Cloud sync
Post-test data improvement	10:24:58	222 secs	10:28:40	10:29:56	76 secs	10:30:04	
	10:34:05	342 secs	10:39:47	10:41:09	82 secs	10:41:17	
	18:27:58	300 secs	18:32:58	18:34:16	78 secs	18:34:23	
	13:57:45	214 secs	14:01:19	14:02:47	88 secs	14:02:55	
	11:21:09	133 secs	11:23:22	11:24:40	78 secs	11:24:47	
	18:11:55	268 secs	18:16:23	19:17:50	87 secs	18:17:58	
	13:55:27	121 secs	13:57:28	13:58:57	89 secs	13:59:06	
	10:36:32	477 secs	10:44:29	10:45:48	79 secs	10:45:56	
	22:02:21	908 secs	22:17:29	22:18:47	78 secs	22:18:55	
	14:29:27	72 secs	14:30:39	14:31:57	82 secs	14:32:12	
	13:48:07	173 secs	13:51:00	13:52:24	84 secs	13:52:33	
	11:03:36	173 secs	11:06:30	11:07:49	79 secs	11:08:01	
	19:34:55	176 secs	19:37:59	19:39:23	84 secs	19:39:30	
	02:24:29	184 secs	02:22:36	02:24:12	96 secs	02:24:20	Brainomix scan data wrong?
	16:11:20	173 secs	16:14:17	16:15:33	77 secs	16:15:40	

Fig 5: Local data collection showing improvements in scan to Brainomix image upload times

5: Encouraged culture change

Blackpool recognised there was a need to thrombolyse more minor stroke patients and that this would require a shift in mindset for some of its consultants. A weekly Stroke Review Meeting was scheduled where clinicians and nurses could come together to discuss the previous week's stroke patients. The focus was on patients who could have been thrombolysed, but who weren't. After an open discussion, staff voted on what they would have done. This challenged assumptions and invited clinical staff to consider their own decision-making and how it compared to others in the team. Over time, staff became more confident and started questioning decisions not to thrombolyse – their own and other people's.

Data shows there has been a marked increase in the willingness to thrombolyse more minor strokes since the team embarked on TASC (Fig 6).

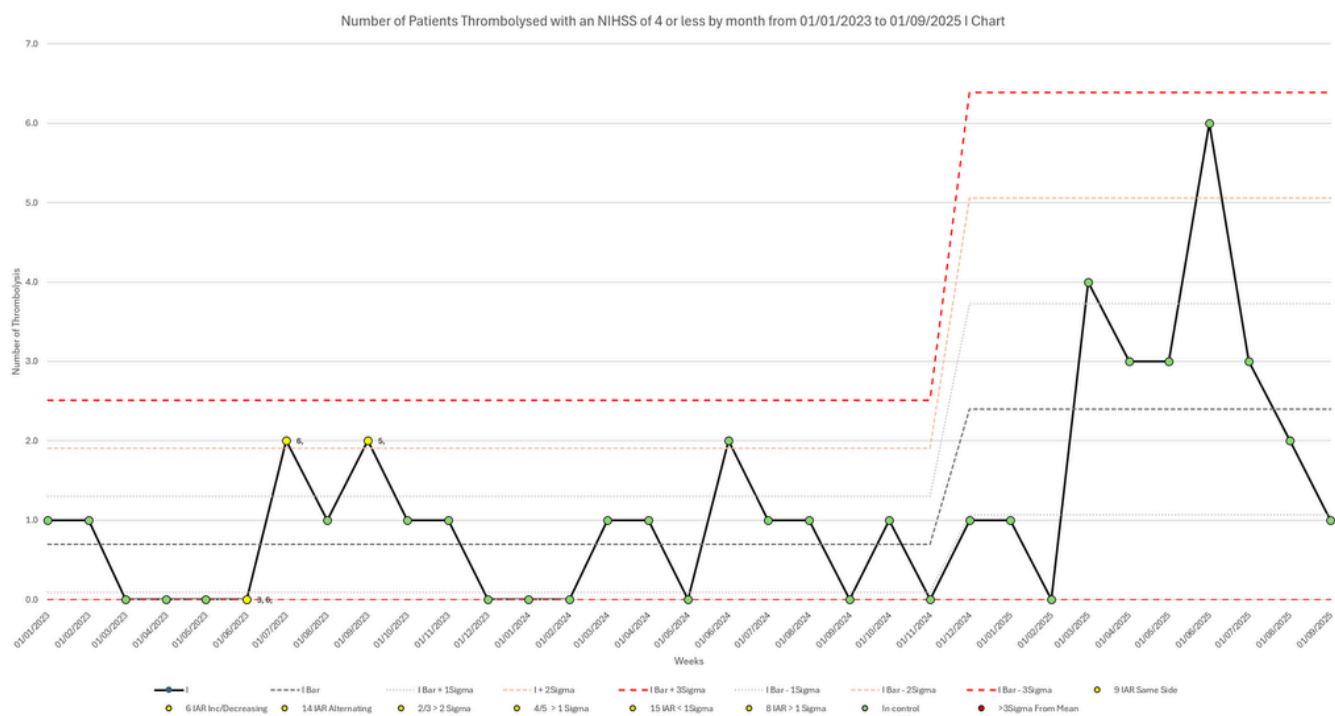


Fig 6: Statistical Process Control (SPC) chart of monthly number of patients thrombolysed with NIHSS ≤ 4 (Jan 2023 to Sept 2025), showing a step change increase from Dec 2024

“The weekly review meetings helped to build shared confidence and consistency among clinicians. NHS Elect was able to provide national data via the SAMuel web app so we could benchmark ourselves against some of the top performing trusts. Now, rather than considering whether a patient meets the criteria to be thrombolysed, the mindset we encourage is that ‘we thrombolyse unless there’s a clear reason not to’. This has been a major culture change.”

Tom Rushworth

6: Willingness to challenge

This shift hasn't always been easy to maintain. The hospital struggles to appoint permanent consultants which means it relies heavily on agency locums, making up around two thirds of its senior clinicians. This can lead to sudden and unexpected staff changes and the need to continually educate new staff about the trust's approach.

” “Senior clinicians come with their own ideas about when and when not to thrombolysed – and these don't always fit with our own. Getting consultants involved in our weekly Stroke Review Meetings helps them to understand our approach from the outset. As the nursing team has grown in confidence, there's also a greater willingness to challenge senior decision-making. Many of our nursing team have upskilled to become Specialist Stroke Nurses, which further increases their confidence. People actively think about thrombolysing now, they talk about it. It has become embedded within the team.”

Stephen Ward
Stroke Data Analyst

” “We can see that what we are doing is working, we have the evidence to be able to say, 'This is our approach and this is why'. The move from Alteplase to Tenecteplase in February 2025 also helped to speed up the thrombolysis process.”

Aisa Perez
Advanced Clinical Practitioner

7: Implemented the 'Pit Stop' Approach

Aisa introduced the idea of using a 'Pit Stop' approach to speed up door-to-scan times. Inspired by Formula 1 racing, the concept was pioneered in Ireland where it was developed for Mechanical thrombectomy. With Pit Stop each member of the team – consultant, stroke nurse, advanced nurse practitioner and healthcare assistant – has their own designated responsibilities and everyone works together seamlessly. These responsibilities – which include neurological assessment, cannulation and bloods, liaison with radiology – are assigned during the morning huddle. When the patient arrives, the team works together as a harmonised unit. The aim is to achieve a door-to-scan time of 20 minutes and, if treatment is required, a door-to-needle time of half an hour.

Pit Stop was implemented around the same time the trust joined TASC.

” “The idea is for everyone to complete their delegated tasks quickly and safely. In Ireland, where the approach was developed, ambulance crews were retained for half an hour during Pit Stop in case the patients needed a thrombectomy. We don't perform thrombectomies at Blackpool and are not guaranteed to retain an ambulance crew to transfer patients to Royal Preston Hospital, but the Pit Stop pathway's speed has hugely improved the chance that the same ambulance crew can convey suitable patients post imaging, to Preston.”

Aisa Perez
Advanced Clinical Practitioner

8: Trained emergency department staff

Data showed that staff in ED weren't always confident to identify strokes where the symptoms were less well-known so the team set about creating a simple aide memoir (Fig 7).

"The less obvious signs that someone has had a stroke – loss of balance or visual disturbance, for example – were sometimes being missed in ED. So, we developed some basic refresher training and created posters to remind staff what to look out for."

Stephen

WHEN IT COMES TO **STROKE**

BEFAST

Don't Ignore The **SIGNS** - It Could Be a **STROKE**



BALANCE
Sudden loss of balance or coordination



EYES
Sudden blurred, double, or loss of vision



FACE
Sudden drooping or numbness of the face



ARMS
Sudden weakness or numbness of arms or legs



SPEECH
Sudden Slurred speech, unable to speak, or difficult to understand.



TIME
If you experience ANY of these symptoms, call 999 immediately.

Onset < 9 hours
Dial **2222**.
Otherwise bleep **1547**.



WHEN IT COMES TO **STROKE**

BEFAST

Don't Ignore The **SIGNS** - It Could Be a **STROKE**



BALANCE
Sudden loss of balance or coordination



EYES
Sudden blurred, double, or loss of vision



FACE
Sudden drooping or numbness of the face



ARMS
Sudden weakness or numbness of arms or legs



SPEECH
Sudden Slurred speech, unable to speak, or difficult to understand.



TIME
If you experience ANY of these symptoms, call 999 immediately.

Notice **ANY** of these symptoms? Notify a staff member immediately.



Fig 7: BEFAST stroke recognition posters developed for ED staff to improve identification of less obvious stroke symptoms such as balance and visual disturbance.

Impact of the TASC work

Data showed that, between October 2024 and February 2025, only three stroke patients with an NIHSS score below 4 had been thrombolysed in Blackpool Teaching Hospitals. The following month, after the introduction of the weekly Stroke Review meetings, four patients with an NIHSS score of 4 or less were thrombolysed. This provided early evidence of a mindset shift which has continued (*Fig 8*).

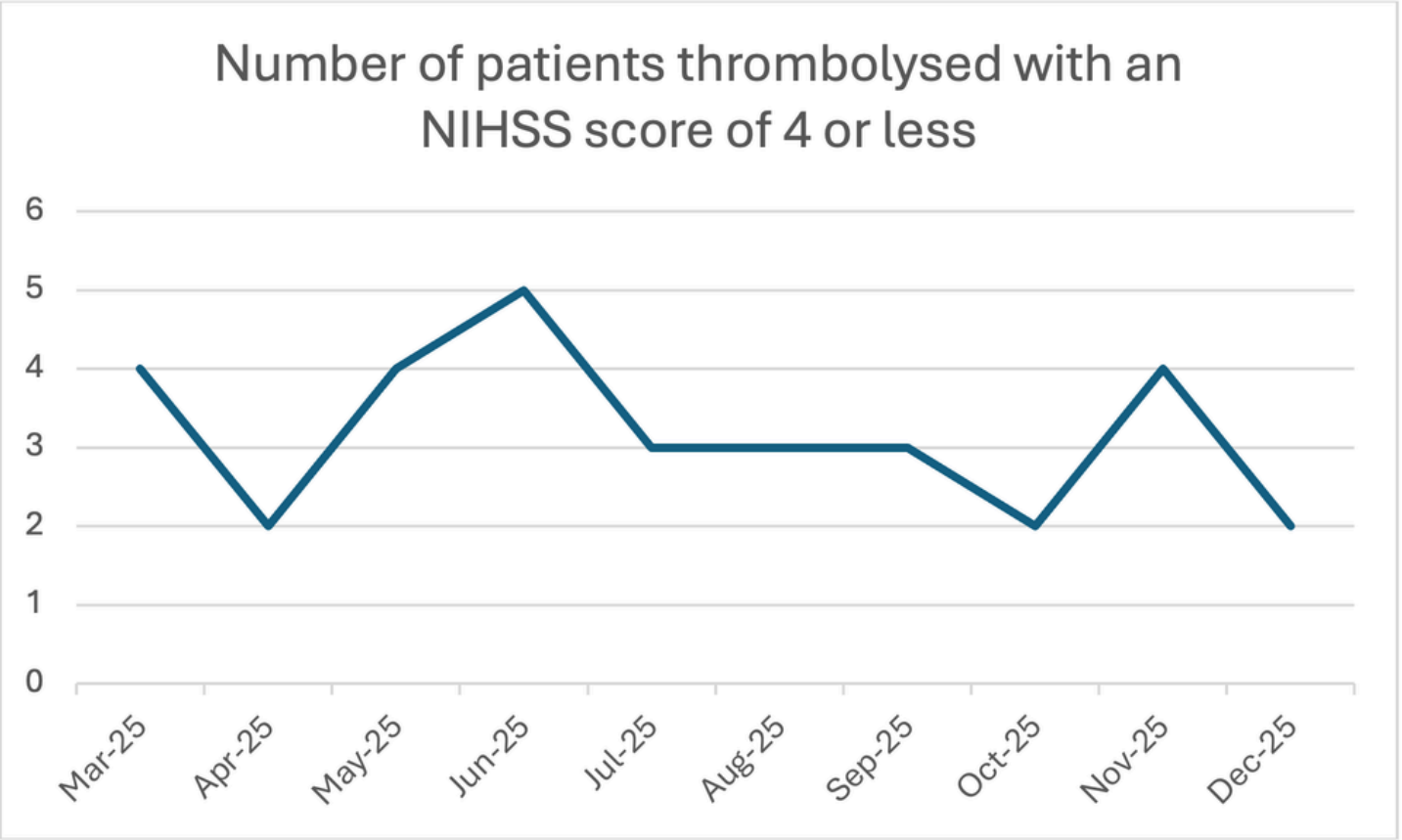


Fig 8: Line graph showing monthly number of patients thrombolysed with NIHSS ≤ 4 (Mar 2025 to Dec 2025), demonstrating an increase following TASC participation

This evidence suggests the learning has been studied

Blackpool achieved the fifth best thrombolysis score nationally out of a total of 118 trusts. Between April to June 2025, it achieved a thrombolysis rate of 26.5% compared to a national average of 14% (*Fig 9*). Some challenges over the summer led to a drop to 22% (*Fig 10*). However, this is still higher than the stretch target of 21% provided by NHS Elect at the start of TASC and far above the rate of 8.4% that Blackpool had achieved over the preceding four years.

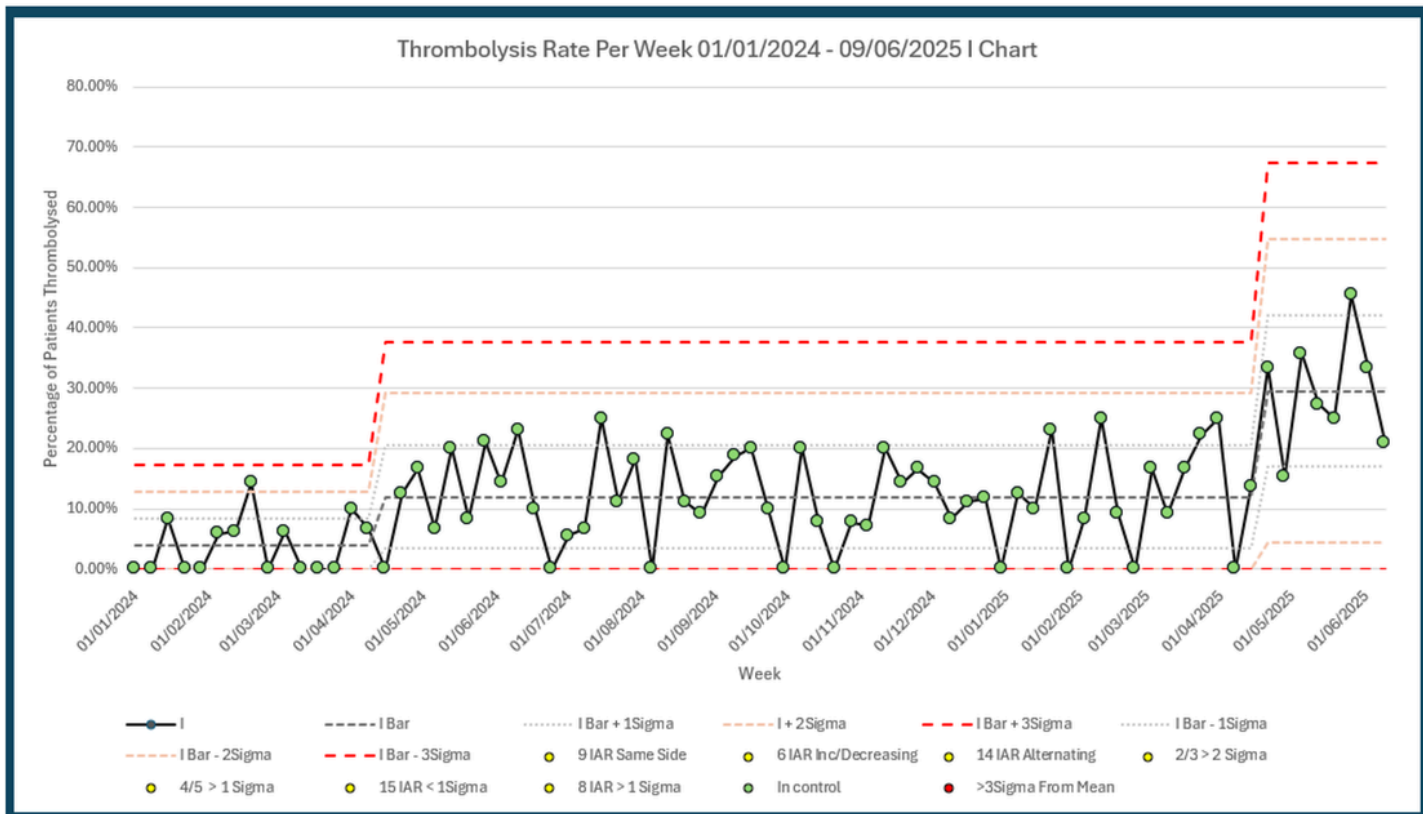


Fig 9: SPC chart showing weekly thrombolysis rates (Jan 2024 to Jun 2025), demonstrating a significant step change improvement from Apr 2025

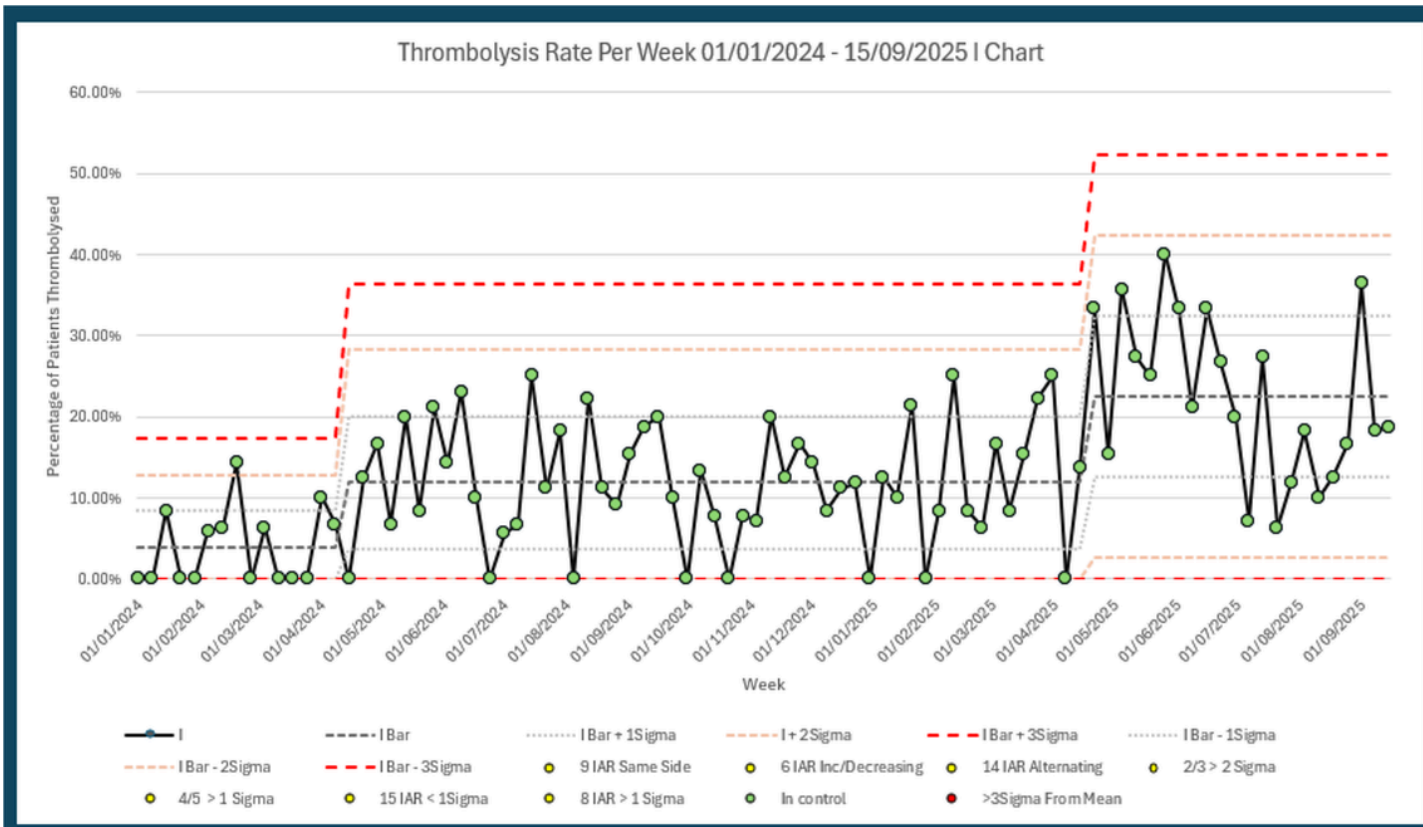


Fig 10: SPC chart showing weekly thrombolysis rates (Jan 2024 to Sep 2025), demonstrating a continued significant step change improvement from Apr 2025

There has been an increase in the number of patients being referred to nearby Preston hospital for a possible thrombectomy since the implementation of the TASC project (Fig 11).

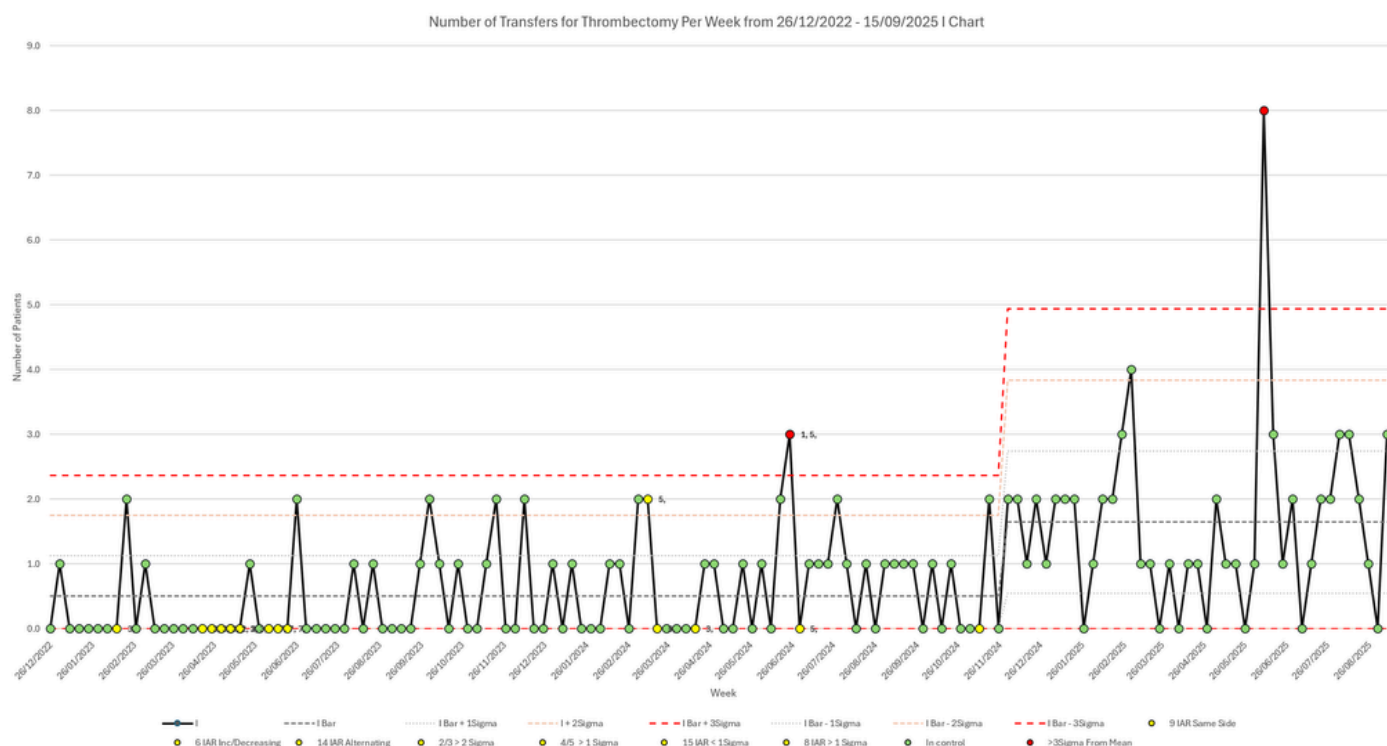


Fig 11: SPC chart showing weekly number of transfers for thrombectomy (Dec 2022 to Sep 2025), demonstrating an increase in referrals with a step change from Nov 2024.

The data shows increased variability between the patient coming in and getting into a scanner, and between coming in and receiving thrombolysis. Both are also taking slightly longer. The reason for this is that they now include patients who are less than ideal for thrombolysis.

Previously, such patients would previously have been deemed unsuitable for thrombolysis, but now even patients who take longer to get to the stroke team are considered eligible. Advances in imaging and the introduction of CTP (a scan that looks at brain perfusion) means patients can be considered for thrombolysis up to nine hrs after stroke onset. The previous cut-off would have been four and a half hrs.

Challenges

Blackpool struggles to appoint permanent consultants and its reliance on locums led to repeated changes in senior clinicians between December 2024 and March 2025. This made it challenging to maintain improvements in thrombolysis rates and the team has worked hard to educate agency locums about its approach.

” To overcome the problem, we made sure that our approach to thrombolysing was clearly articulated during the induction process and that senior staff joined the weekly Stroke Review Meeting immediately. As the evidence for our approach has grown, staff have become increasingly confident to challenge decisions that they don't agree with, even those made by senior clinicians.”

Aisa Perez
Advanced Clinical Practitioner

Project team reps attending meetings was an issue, particularly in the beginning in order to win over sceptical staff or those who were “too busy”.

Eventually as interest, momentum and improvement evidence grew, things snowballed and people became engaged.

We didn't get any QI buy in from our in-house Trust QI team despite pleading and escalation to the QI director at the outset. This was due to lack of capacity that team could dedicate. This hampered us initially as we didn't have anybody particularly skilled in QI methodology, however, Marc Berry, QI lead at NHS Elect, provided a lot of material, time and education to us which we would take away and implement locally to support our improvement work.

As with any new project, there was resistance to change behaviours and processes. An example was using the iPad we configured for our stroke specialist nurses to use in the emergency department as we discovered delays to care were attributed to lack of computer space in the ED itself. Once the staff were shown how to use this and the apps that had been installed, and that it had a carry strap and would make their work more efficient; after initially trialling it, they grew to enjoy and see how this streamlines their work and ultimately benefits the patient.

Key Learning

Blackpool believes its focus on team working and encouraging everyone to be part of the decision-making process increased engagement with TASC.

As the changes started to have an impact, it shared this information widely with staff and the executive team so everyone was aware of the difference it was making and could see that their efforts were paying off. A poster was created showing the impact of the TASC project on the culture at Blackpool. This helped to build momentum and allowed the team to celebrate its achievements.

Questions?

You can contact the service manager,
Tom Rushworth at:
thomas.rushworth@nhs.net