



East of England
Stroke Forum

Urgent and Emergency Care: National Stroke Programme



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NHS England and NHS Improvement



Thanks to Sally Evans, Laura Rogers & Darrien Bold

I have no conflicts of interest

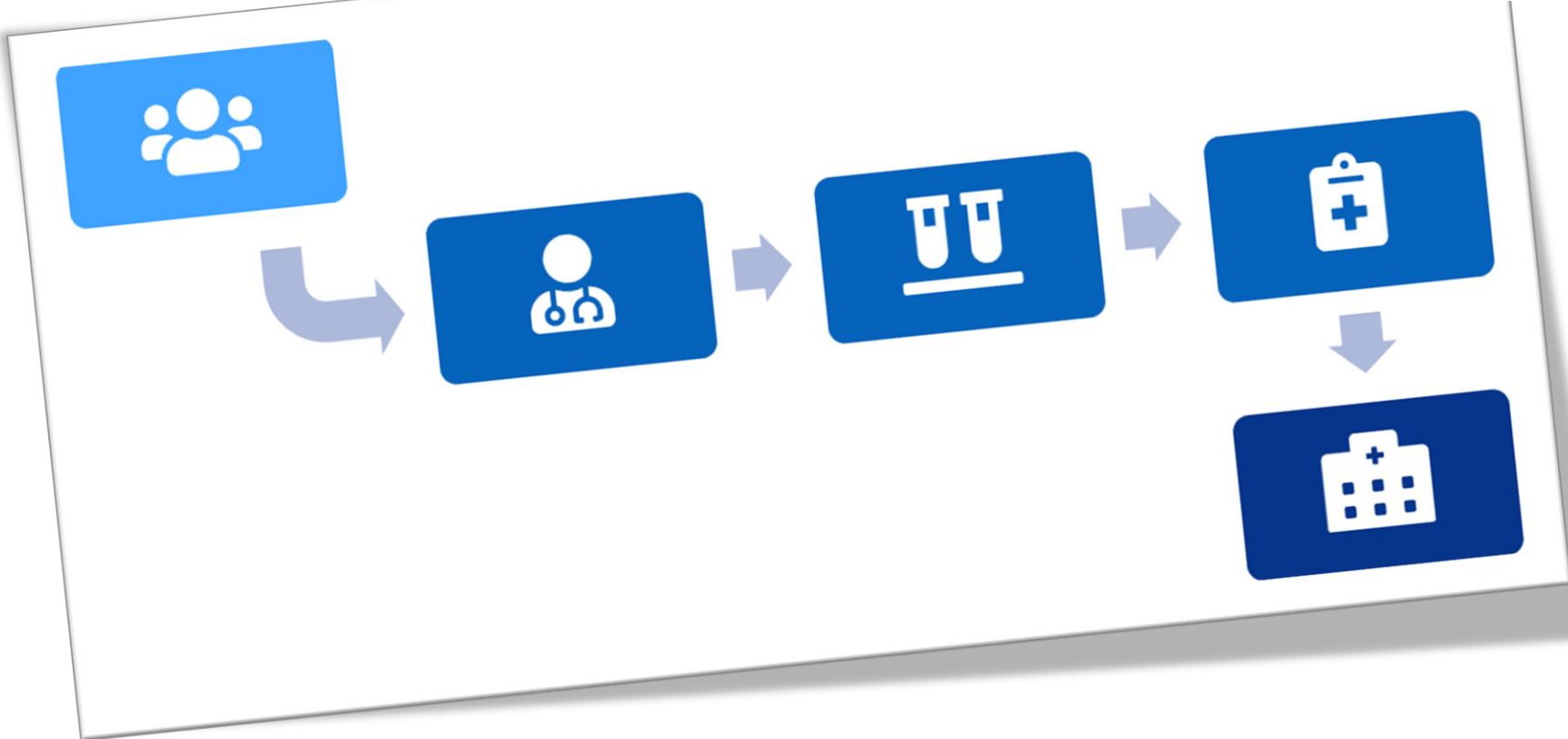


NATIONAL CLINICAL GUIDELINE FOR STROKE

for the United Kingdom and Ireland

<https://www.strokeguideline.org/resources/>

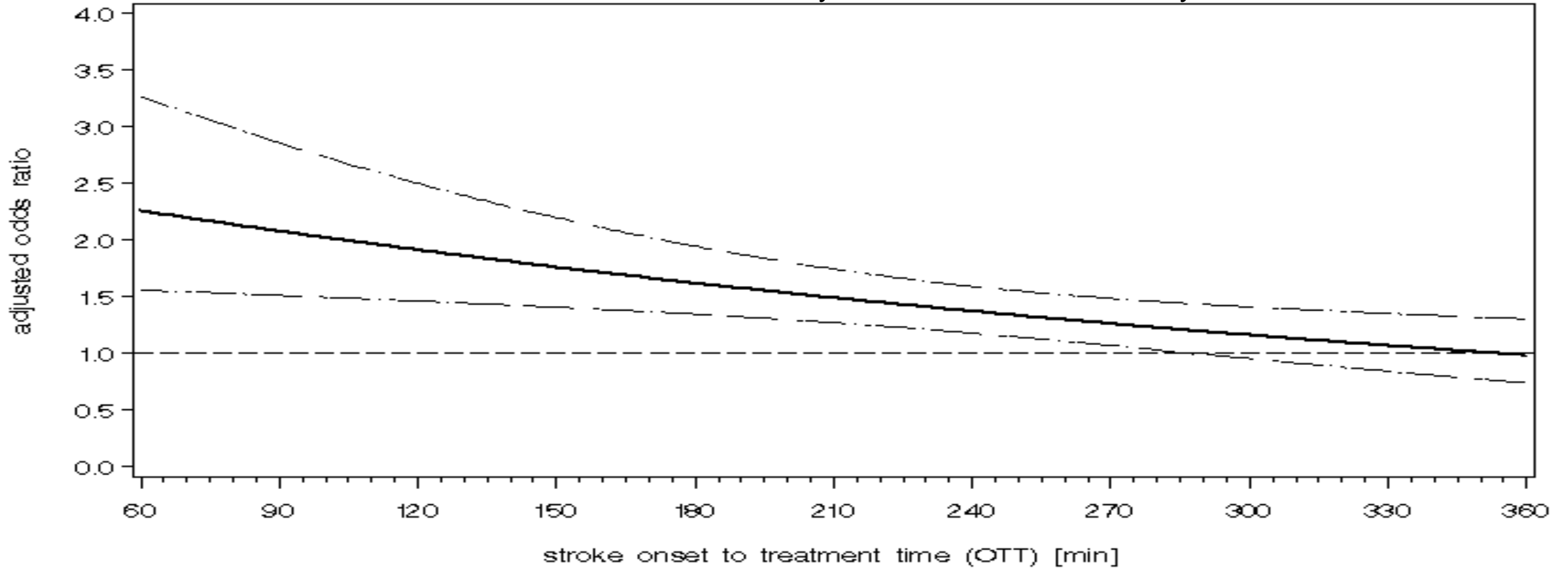
Pre hospital pathway:



'Time is Brain'



Odds of Good Outcome with Thrombolysis in Acute Stroke Decays with Time*

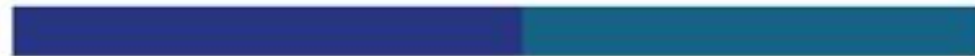


Not all patients who arrive at hospital turn out to have had a stroke

52.8% of stroke assessments finally diagnosed as stroke mimics



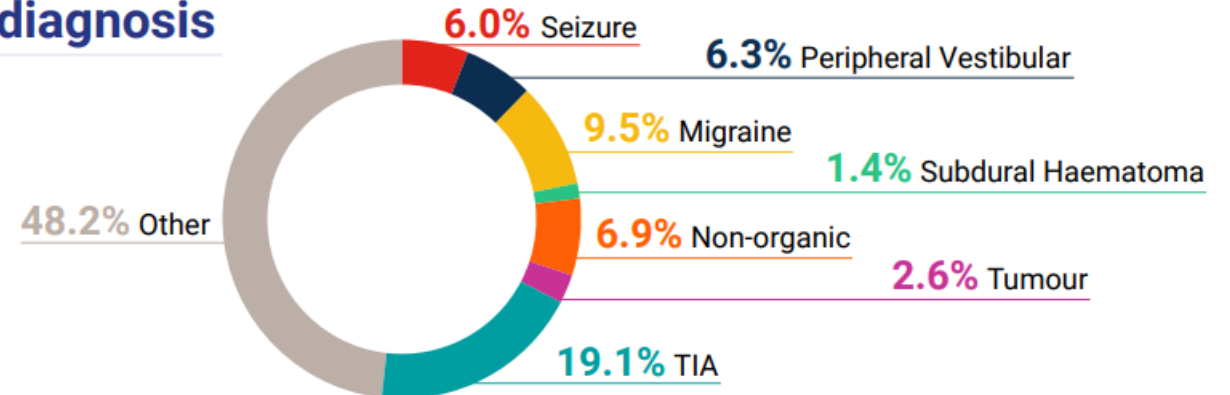
6,351 mimics reported 5,672 strokes reported



SSNAP | Sentinel Stroke National Audit Programme



Mimic diagnosis

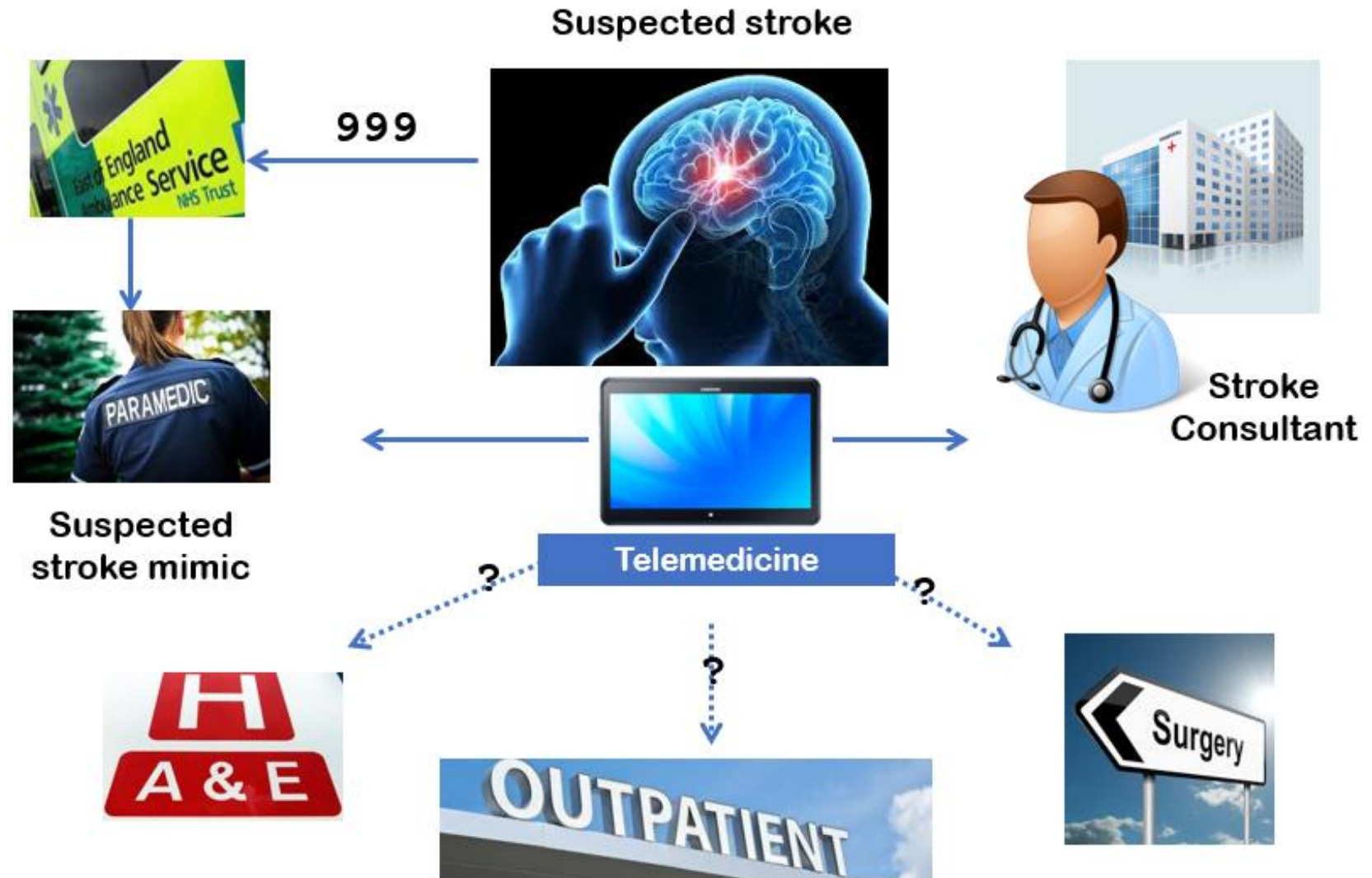


Hospital discharge

- 33.3%** Mimics discharged from hospital the same day as arrival
- 24.4%** Mimics discharged from hospital the day after arrival
- 42.4%** Mimics discharged from hospital more than two days after arrival

Common 'Other' mimics	Percentage
Common 'Other' mimics	48.2%
Bell's palsy	5.7%
Syncope	5.3%
Delirium	4.1%
Fall	3.8%
Decompensation of old stroke	3.7%
Headache	2.1%
Peripheral nerve / neuropathy/neuropaxia	1.8%

Stroke Prehospital video Triage (Stroke PvT)



The 'ideal' Pre-hospital triage?



Mimic
53%

Home / Clinic/
Local ED

Stroke
42%

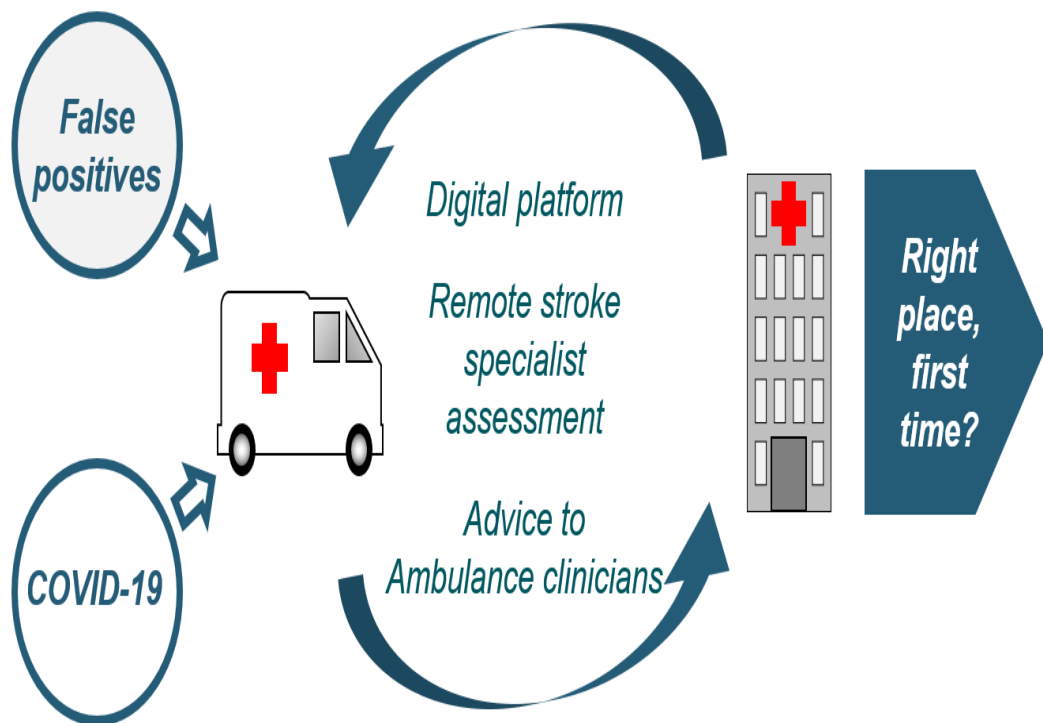
Nearest (ASC)
stroke unit

Stroke - LVO
5%

Thrombectomy
centre (CSC)



Stroke Pre-hospital triage(PVT)



Local ambulance

- 1,400 journeys,
- Apr-Sept 2020

National stroke audit (team-level)

- n=137,650, Jul-Dec, 2018-2020
- Before and after Diff-in-Diffs

Area	HASU	Non-HASU	Not conveyed
NC London	39.1%	41.4%	19.5%
East Kent	51.1%	35.9%	13.0%

- Audit: almost all stroke patients treated in HASU

- >95% reached HASU within time thresholds
- No increase in median times onset to stroke unit

- Some interventions increased; none reduced
- Other service changes may have contributed

NHSE 9 Stroke PVT phase 1 Pilot sites



	Buckinghamshire, Oxfordshire & Berkshire (BOB)	Cheshire and Merseyside	East of England	Frimley & Surrey Heartlands (F&SH)	Greater Manchester	London	North East & North Cumbria	South Yorkshire
Pilot Area	Berkshire West and Buckinghamshire; 1.1m	St Helens & Knowsley & Warrington	<ul style="list-style-type: none"> → Peterborough; 200k → Fenlands; 100k → Huntingdonshire; 175k → West Essex; 280k → Southwest Essex; 75k 	<ul style="list-style-type: none"> → Frimley Health catchment area; approx. 1m 	<ul style="list-style-type: none"> → Western Sector of Greater Manchester; approx 1.3m 	North East London ICS and North Central London ICS, approx. 2.5m	<ul style="list-style-type: none"> → Newcastle; approx. 500k → Durham, Darlington, etc.; approx. 670k 	South Yorks; approx 1m
Ambulance Service(s)	South Central Ambulance Service (SCAS)	North West Ambulance Service (NWAS)	East of England Ambulance Service (EEAST)	<ul style="list-style-type: none"> → South Central Ambulance Service (SCAS) → South East Coast Ambulance Service (SECAMB) 	North West Ambulance Service (NWAS)	London Ambulance Service (LAS)	North East Ambulance Service (NEAS)	Yorkshire Ambulance Service (YAS)
Participating Hospitals	<ul style="list-style-type: none"> → Wycombe Hospital (ASC) → Royal Berkshire Hospital (ASC) 	St Helens & Knowsley Teaching Hospital Acute Trust	<ul style="list-style-type: none"> → Peterborough City Hospital (PCH) [ASC] → Queen's Hospital, Romford [CSC] → UCLH (indirectly - hosting) 	<ul style="list-style-type: none"> → Frimley Park Hospital [ASC] 	<ul style="list-style-type: none"> → Salford Royal Hospital (CSC) → Fairfield Hospital (ASC) → Stepping Hill Hospital (ASC) → Wythenshawe, Manchester Royal Infirmary, Wigan, Bolton and Trafford (no acute stroke services) 	<ul style="list-style-type: none"> → University College of London Hospital (UCLH) [CSC] → Royal London Hospital [ASC] → Queen's Hospital Romford [CSC] 	<ul style="list-style-type: none"> → Royal Victoria Infirmary [CSC] → University Hospital of North Durham [ASC] → Darlington Memorial Hospital [no acute stroke service] → Queen Elizabeth Hospital [no acute stroke service] 	<ul style="list-style-type: none"> → Royal Hallamshire Hospital [CSC] → Doncaster Royal Infirmary [ASC]
Software Platform	GoodSAM	MS Teams	FaceTime	FaceTime(SECamb)	FaceTime	GoodSam	GoodSAM	GoodSam
Hospital triage model	Nurse led: Band 6 stroke specialist nurses with a stroke consultant for escalation	Nurse led: B7 Stroke Nurse Specialists	<p>Doctor led:</p> <ul style="list-style-type: none"> → West Essex; stroke consultants, with some stroke registrars → PCH; middle-grade doctors and above; may assess feasibility of using nurses 	Nurse led: B6 Stroke Triage Nurse	<p>Mixed:</p> <ul style="list-style-type: none"> → Stroke consultants in phase 1 plus experimenting with senior ACPs and registrars → Looking to develop a stroke-specific nurse assessor role 	Doctor led: Either a stroke consultant, or registrar. Registrar to refer to consultant if trying to redirect someone within six hours of symptom onset.	Nurse led: Stroke nurse; with stroke physician support available	Nurse led: Stroke nurses or ACPs; seeking advice from stroke consultants as appropriate
Do not convey option?	Yes – e.g. TIA referral	Yes – TIA referral follow liaison with TIA coordinator	Yes	Yes – e.g. TIA referral, or referral for GP review	Yes - e.g. TIA referral, or referred to neurology or GP, or stay at home	Yes; e.g. referring suspected TIAs into a TIA pathway.	No - May be considered in future	No- Patients won't be directly referred into a TIA pathway; if not suitable for HASU, will be taken to ED. Current governance will not allow patients to be left

Results from UCLH analysis of 5000 patients triaged via Stroke PvT

Thrombolysis

Conclusion:

1. Stroke PVT tends to reduce (not significantly) thrombolysis Door-to-needle time ($p=0.093$ in the fully adjusted model)
2. **Stroke PVT significantly increases the odds of gold-standard door-to-needle time (30 mins) for thrombolysis ($p=0.015$ in the fully adjusted model)**



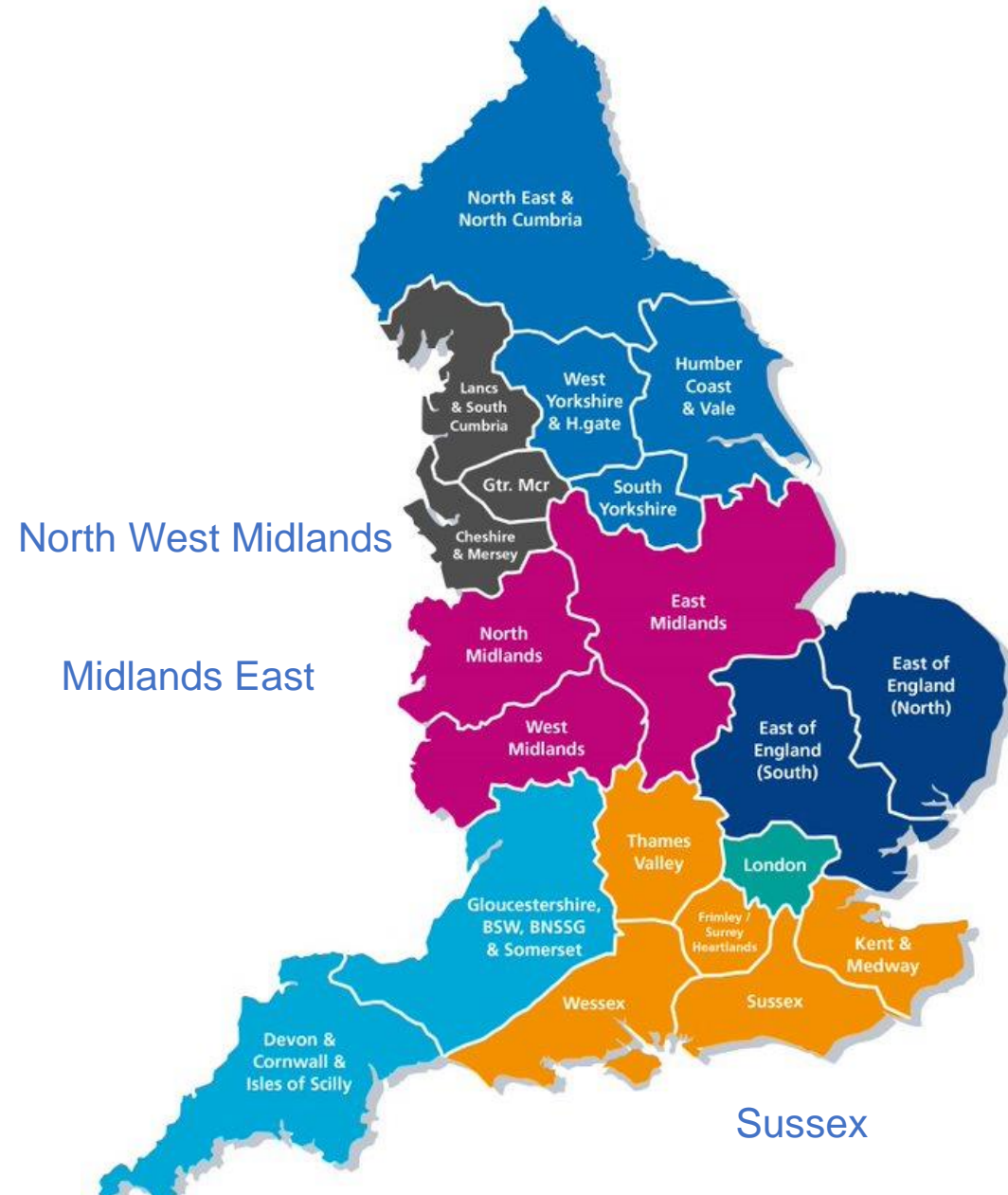
Thrombectomy

Conclusion:

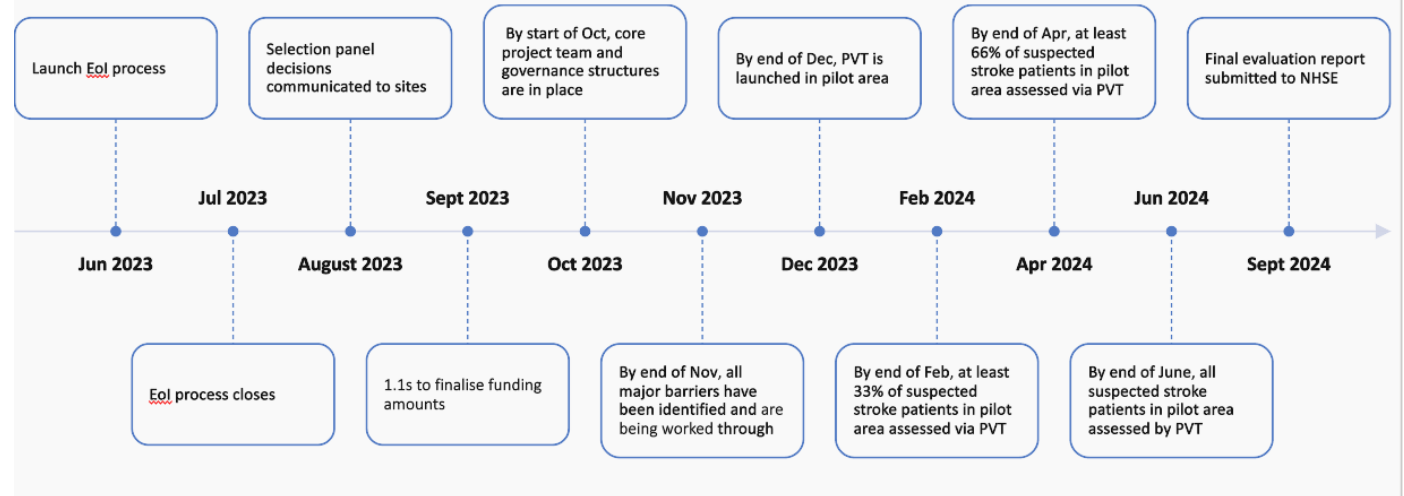
1. **Stroke PVT significantly reduces thrombectomy Door-to-groin time ($p=0.043$ in the fully adjusted model)**
2. **Stroke PVT significantly increases the odds of gold-standard Door-to-groin time (90 mins) for thrombectomy ($p=0.003$ in the fully adjusted model)**



NHSE 5 Stroke PVT phase 2 Pilot sites



Phase 2 of PVT pilots: Implementation timeline



East of England (South)

London (West)

Specific unwanted variation in:

Stroke

GIRFT Programme National Specialty Report

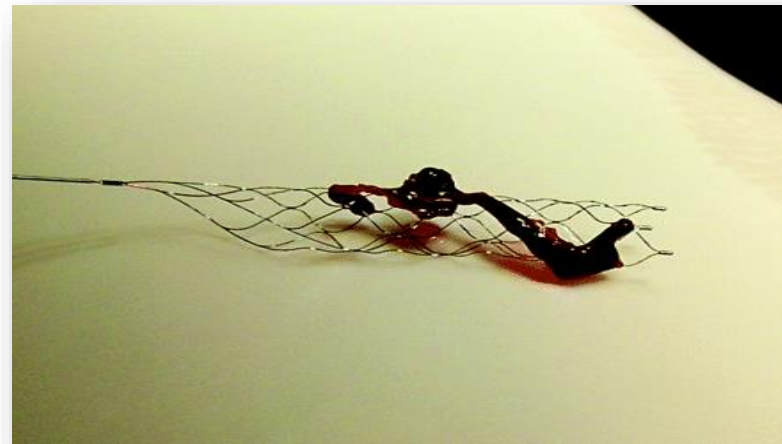
By Dr David Hargroves and Dr Deb Lowe
GIRFT Clinical Lead for Stroke and Senior Clinical Advisor for Stroke

April 2022



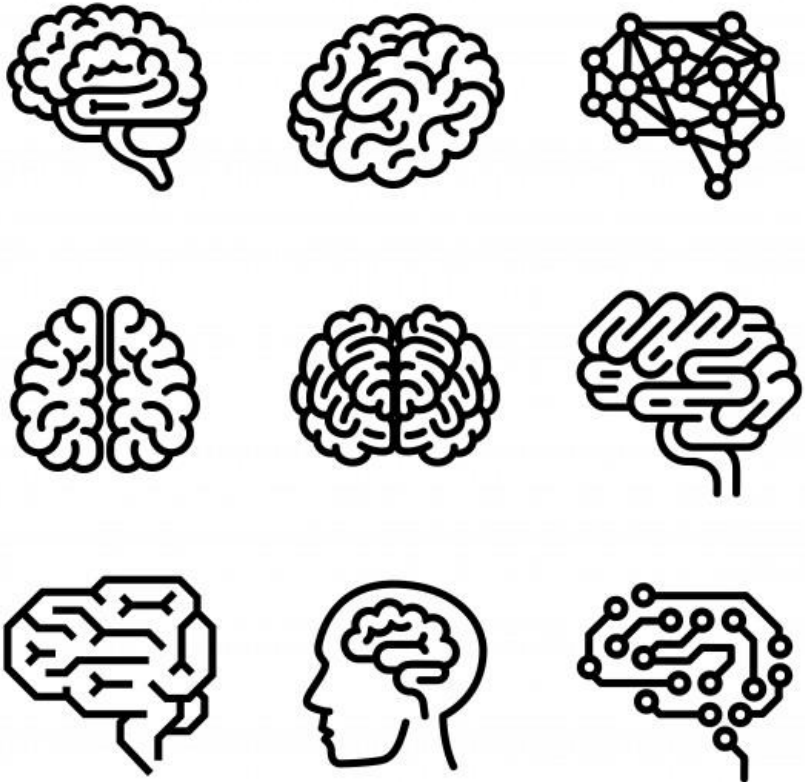
GIRFT is part of an aligned set of programmes within NHS England and NHS Improvement

- Access to IV recanalisation therapy (6.5% - >20%)
- Access to Mechanical Thrombectomy (0% - > 8%)

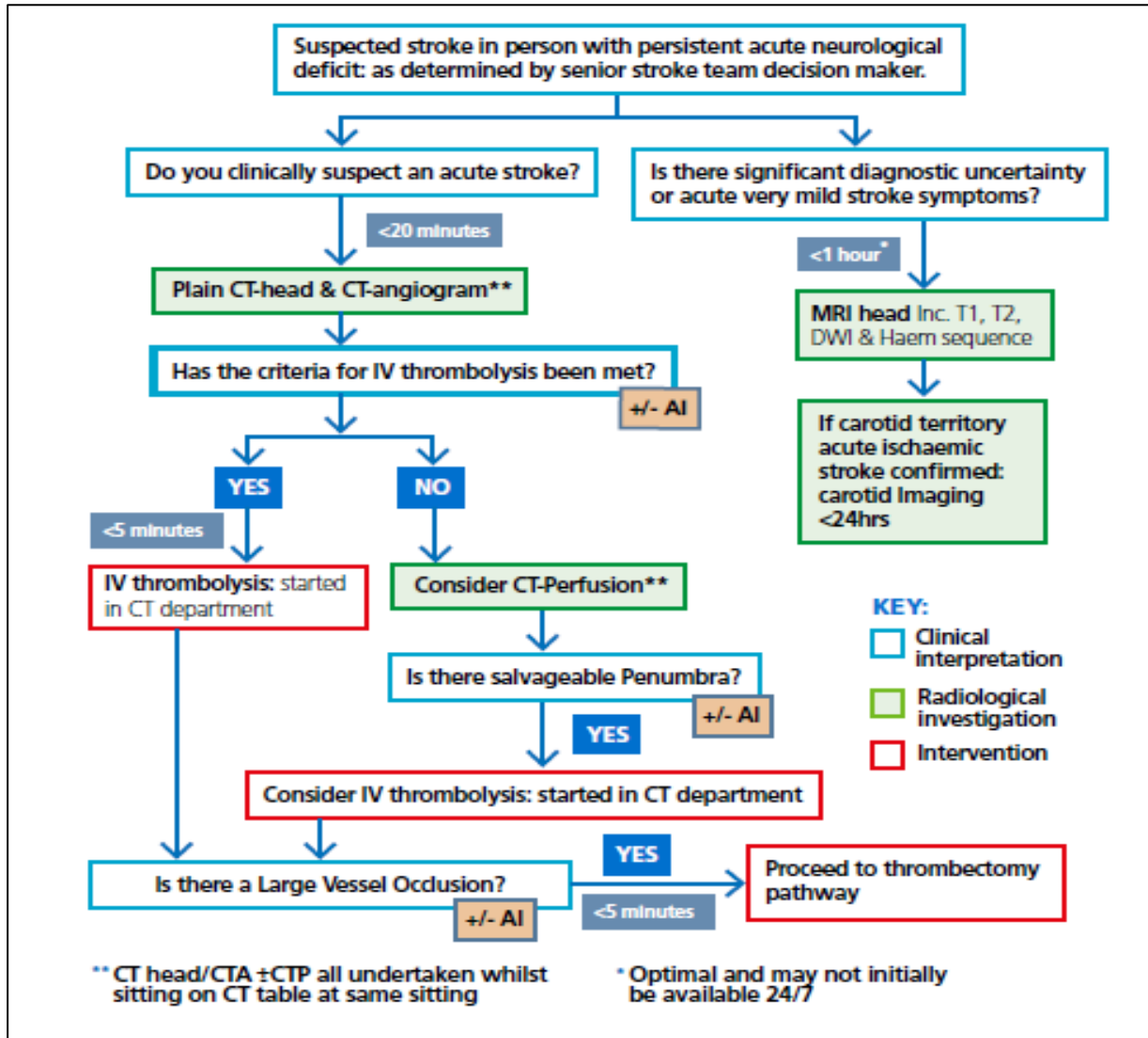


- Length of stay for patients with mild stroke like symptoms (<24hrs – 4/7)

Rapid access to appropriate imaging



National Optimal Stroke Imaging Pathway



The National Stroke Service Model (NSSM) was published in May 2021, outlining best practice stroke care for the NHS.

- Optimal pathway created following GIRFT reviews
- Designed to guide efficient use of resources and reduce duplication
- Patient centred, not resource centred
- Endorsed by NHS National Optimal Imaging Board
- Rapid access to imaging as a fundamental component of the initial patient assessment
- AI should be used for decision support only
- It is acknowledged that not all elements of the NOSIP are deliverable immediately at all centres

What does the new guideline say about thrombolysis?

Patients with acute ischaemic stroke, regardless of age or stroke severity, who were last known to be well more than 4.5 hours earlier, should be considered for thrombolysis with alteplase if:

- treatment can be started between 4.5 and 9 hours of known onset, or within 9 hours of the midpoint of sleep when they have woken with symptoms

AND

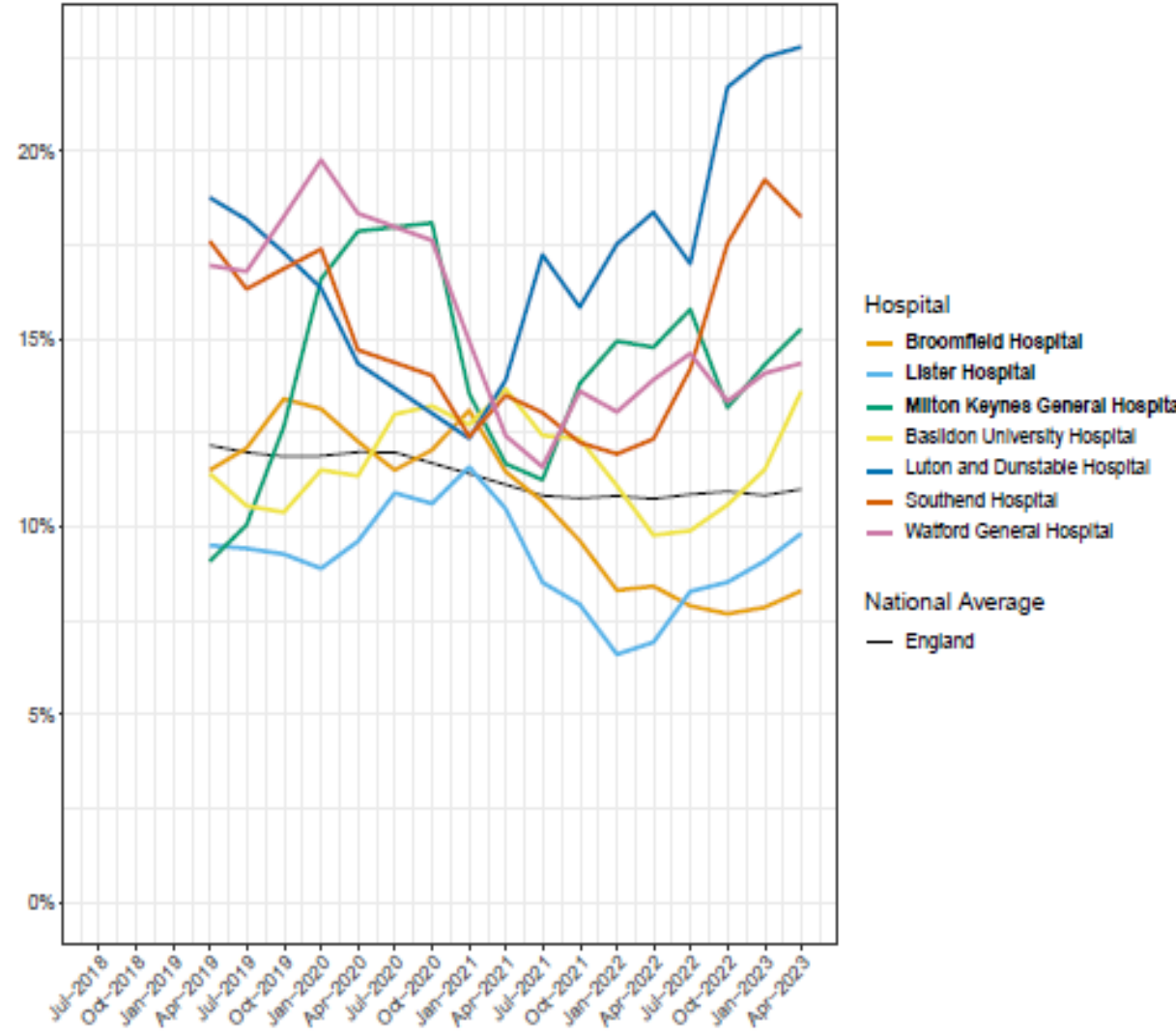
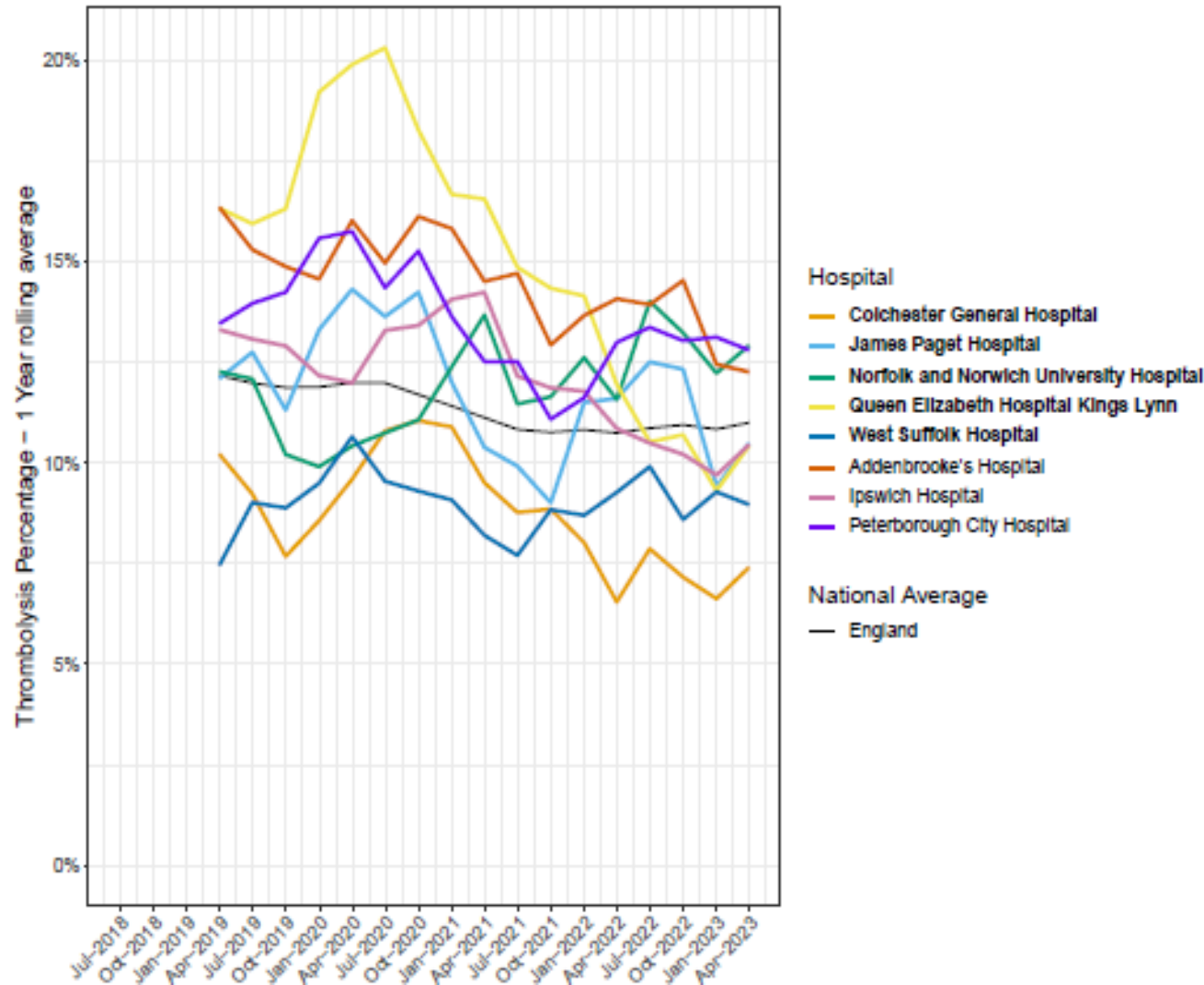
- they have evidence from CT/MR perfusion (core-perfusion mismatch) or MRI (DWI-FLAIR mismatch) of the potential to salvage brain tissue (*see Table 3.5.1 below*).

This should be irrespective of whether they have a large artery occlusion and require mechanical thrombectomy.

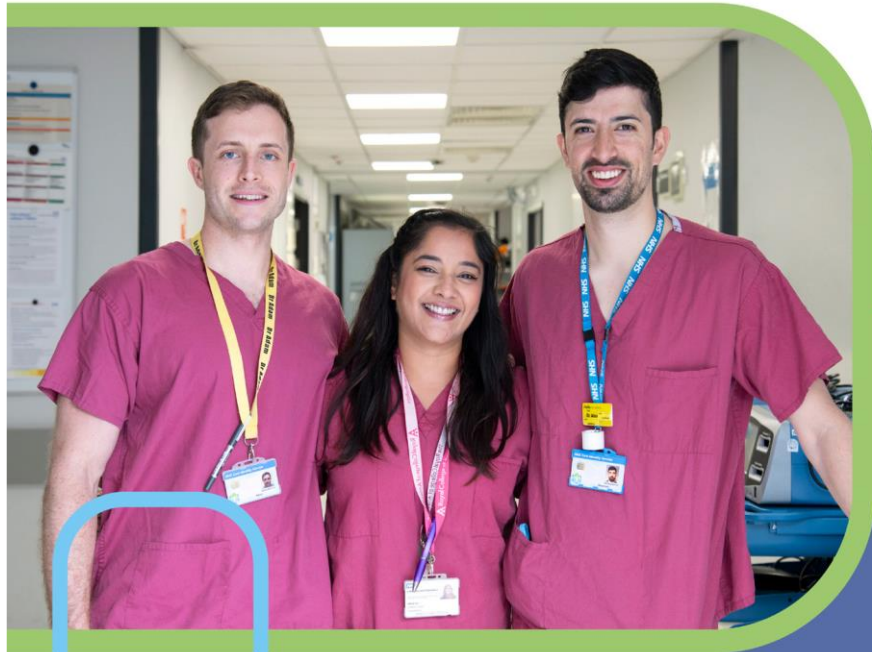
Thrombolysis Rate - Yearly Rolling Average



One year rolling averages for the thrombolysis rate for each provider in the East of England (North and South) ISDN. This is the mean of the four most recent thrombolysis rates at each quarter.



Thrombolysis in Acute Stroke Collaborative



Learning through
Collaboration

NHS Elect will work with NHS England, SSNAP and the SAMuel team to design and deliver the Thrombolysis in Stroke collaborative, combining an effective blend of practical expertise and experience to:

- support improvement in stroke pathways and subsequently achievement of the LTP ambition for thrombolysis delivery;
- work with up to six teams across NHS England to provide practical support to capture, develop and embed good practice to deliver and improve thrombolysis times;
- Create a repository of best practice case studies and guidance to support spread and sustainability of effective interventions across the ISDN's

Launch webinar planned for 29.9.23: england.clinicalpolicy@nhs.net


Patients with acute anterior circulation ischaemic stroke and a proximal intracranial large artery occlusion (ICA and/or M1) causing a disabling neurological deficit (NIHSS score of 6 or more) of onset between 6 and 24 hours ago, including wake-up stroke, and with no previous disability (mRS 0 or 1) should be considered for intra-arterial clot extraction (using a stent retriever and/or aspiration techniques, combined with thrombolysis if eligible) providing the following imaging criteria are met:

- between 6 and 12 hours: an ASPECTS score of 3 or more, irrespective of the core infarct size;
- between 12 and 24 hours: an ASPECTS score of 3 or more and CT or MRI perfusion mismatch of greater than 15 mL, irrespective of the core infarct size. **[2023]**

Patients with acute ischaemic stroke in the posterior circulation within 12 hours of onset should be considered for mechanical thrombectomy (combined with thrombolysis if eligible) if they have a confirmed intracranial vertebral or basilar artery occlusion and their NIHSS score is 10 or more, combined with a favourable PC-ASPECTS score and Pons-Midbrain Index. Caution should be exercised when considering mechanical thrombectomy for patients presenting between 12 and 24 hours of onset and/or over the age of 80 owing to the paucity of data in these groups. **[2023]**

Mechanical thrombectomy in England: communities of practice, improving access and quality

 5 October 2023 12:30pm – 1:45pm BST (+01:00)

 Virtual (MS Teams Live Events)



This webinar will discuss the delivery of mechanical thrombectomy interventions in England, and inform you how the upcoming guidance can support trusts to learn from best practice and drive wider access.

GIRFT and the national stroke programme are working on guidance which will bring together data and evidence, combined with examples of best practice, to help local and regional services build referral pathways and processes that can sustain rapid growth in MT and are effective in ensuring all suitable patients get rapid access to MT.

<https://www.events.england.nhs.uk/events/mechanical-thrombectomy-in-england-driving-wider-access-and-improving-quality>



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