

# State of the Nation Report 2025

*Stroke care received between April 2024 to March 2025*



The Sentinel Stroke National Audit Programme (SSNAP) is led by the School of Life Course and Population Sciences at King's College London.

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**Healthcare Quality Improvement Partnership**

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## Introduction

SSNAP measures the quality and organisation of stroke care across England, Wales and Northern Ireland. The overall aim of SSNAP is to provide timely information to clinicians, commissioners, patients, and the public on how well stroke care is being delivered. Processes of care are measured against evidence-based quality standards referring to the interventions that any patient may be expected to receive. These standards are laid out in the latest clinical guidelines including the [National Clinical Guideline for Stroke](#) (2023) and NICE guidelines ([Stroke and TIA, NG128](#); [Stroke rehabilitation, NG236](#); and [Quality standard for stroke](#)), as well as national policy documents including the [10 Year Health Plan](#), the [National Stroke Service Model](#), the [National service model for an integrated community stroke service](#) and the [Quality statement for stroke](#).

Further information on the programme including [data analysis and methodology](#), [full datasets](#), and [reports produced](#) are available on the SSNAP website: [www.strokeaudit.org](http://www.strokeaudit.org). The full annual results portfolio and annual thrombectomy portfolio can be accessed by going to: [www.strokeaudit.org](http://www.strokeaudit.org). Throughout the report, five national recommendations are shown in **light red** boxes and five key messages in **dark blue** boxes. A [full line of sight table](#), linking national recommendations to report findings, is available online.

## Patient characteristics

92,414 patients were admitted across 250 hospitals, 195 community services and 184 six-month follow up providers in England, Wales and Northern Ireland with a stroke in 2024/25. This compares to 95,222 in 2023/24 and 92,143 in 2022/23. Table 1 summarises the key characteristics of those patients admitted in 2024/25, highlighting the complex nature of this disease requiring a skilled multidisciplinary specialist team across the patient's entire journey.

| Total stroke admissions     |                | 92,414                  |                | Ethnicity |  |
|-----------------------------|----------------|-------------------------|----------------|-----------|--|
| Infarction                  | 79,516 (86.0%) | White                   | 75,299 (81.5%) |           |  |
| Intracerebral haemorrhage   | 12,406 (13.4%) | Black                   | 1,984 (2.1%)   |           |  |
| Not known                   | 492 (0.5%)     | Asian                   | 3,940 (4.3%)   |           |  |
| Age (median, IQR)           | 76 [65-84]     | Mixed                   | 572 (0.6%)     |           |  |
| Age (under 60 years)        | 14,369 (15.5%) | Other                   | 1453 (1.6%)    |           |  |
| Gender (female)             | 42,548 (46.0%) | Not stated/Not known    | 9166 (9.9%)    |           |  |
| Comorbidities before stroke |                | Number of comorbidities |                |           |  |
| Congestive heart failure    | 6,110 (6.6%)   | 0                       | 21,489 (23.3%) |           |  |
| Hypertension                | 53,484 (57.9%) | 1                       | 30,740 (33.3%) |           |  |
| Diabetes                    | 23,670 (25.6%) | 2                       | 25,147 (27.2%) |           |  |
| Previous stroke/TIA         | 22,735 (24.6%) | 3                       | 11,483 (12.4%) |           |  |
| Atrial fibrillation (AF)    | 17,871 (19.3%) | 4                       | 3,046 (3.3%)   |           |  |
| Dementia                    | 6,393 (6.9%)   | 5                       | 464 (0.5%)     |           |  |

**Table 1:** Casemix of patients admitted with stroke in England, Wales and Northern Ireland.



## Summary of results for people admitted to hospital with stroke

### Stroke care providers



**92,414**  
stroke admissions



**250**  
hospitals



**195**  
community services



**184**  
6 month follow-up  
providers

### Arrival at hospital



**4h11m**  
median time from onset to arrival  
at first hospital  
4h00m in 2023/24

### Hyperacute assessment



**28.3%**  
of patients received brain imaging  
within 20 minutes of hospital arrival  
26.5% in 2023/24

### Acute interventions



**12.2%**  
of all stroke patients received  
thrombolysis  
11.6% in 2023/24

[Click here to see  
country rates](#)



**4.4%**  
of all stroke patients received  
a thrombectomy  
3.9% in 2023/24

[Click here to see  
country rates](#)



**32.0%**  
of eligible patients received  
hyperacute intervention for  
intracerebral haemorrhage within 1  
hour of hospital arrival  
24.9% in 2023/24



**51.9%**  
of patients were assessed by a stroke-  
skilled clinician within 1 hour of hospital  
arrival in January-March 2025  
49.1% in October-December 2024

### Specialist pathway



**46.5%**  
of patients were directly admitted  
to a stroke unit within 4 hours of  
hospital arrival  
46.7% in 2023/24



**74.0%**  
of patients spent at least 90% of  
their hospital stay on a specialist  
stroke unit  
75.9% in 2023/24



**66.6%**  
of patients were discharged to a  
stroke/neurology specific  
community rehabilitation service  
63.4% in 2023/24



**23.1%**  
of patients were discharged to a  
stroke/neurology specific combined  
ESD-CRT service  
22.9% in 2023/24

### 6 month follow-up



**35.1%**  
of applicable patients received  
a 6 month follow-up  
38.8% in 2023/24

**Hyperacute intervention for intracerebral haemorrhage:** for patients on anticoagulants eligible for reversal, given reversal agents within 1hr of arrival OR for patients with elevated systolic blood pressure (>150mmHg) on admission, given anti-hypertensives within 1hr of arrival.

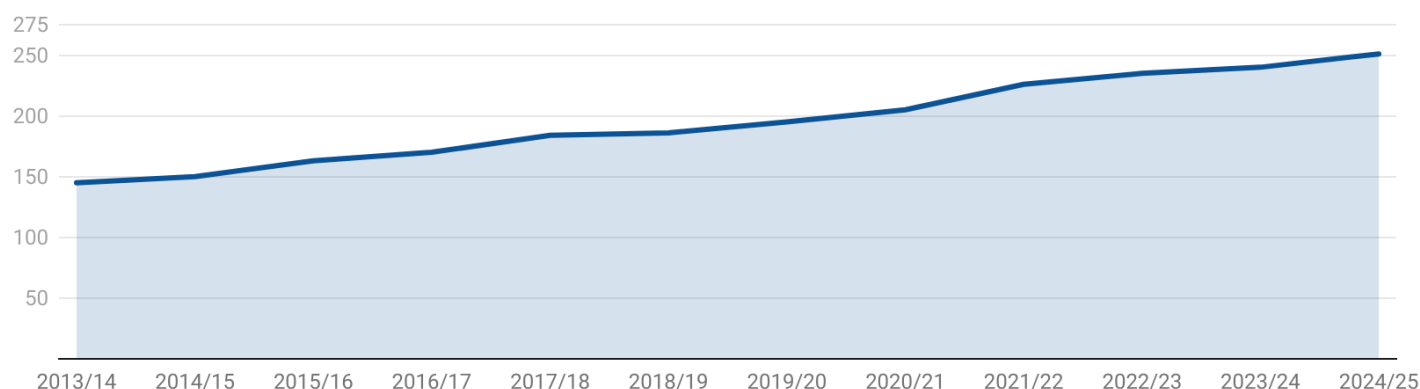
From 2024/25, a new metric for the proportion of patients assessed by a **stroke-skilled clinician** within 1hr of arrival will be reported. Therefore, there will be no annual comparison for this measure in the 2023/24 reporting period. This data is available just for the Oct24-Mar25 period.

**Key:** green icons show improvement against previous year, orange no change, and red worsening. Technical guidance on metrics available [here](#).

**Note:** For targets, please see the NHS 10 Year plan [here](#)

## Arrival at hospital

### Onset to arrival time



**Figure 1:** Median time (in minutes) from onset of stroke to arrival at hospital between 2013 and 2025.

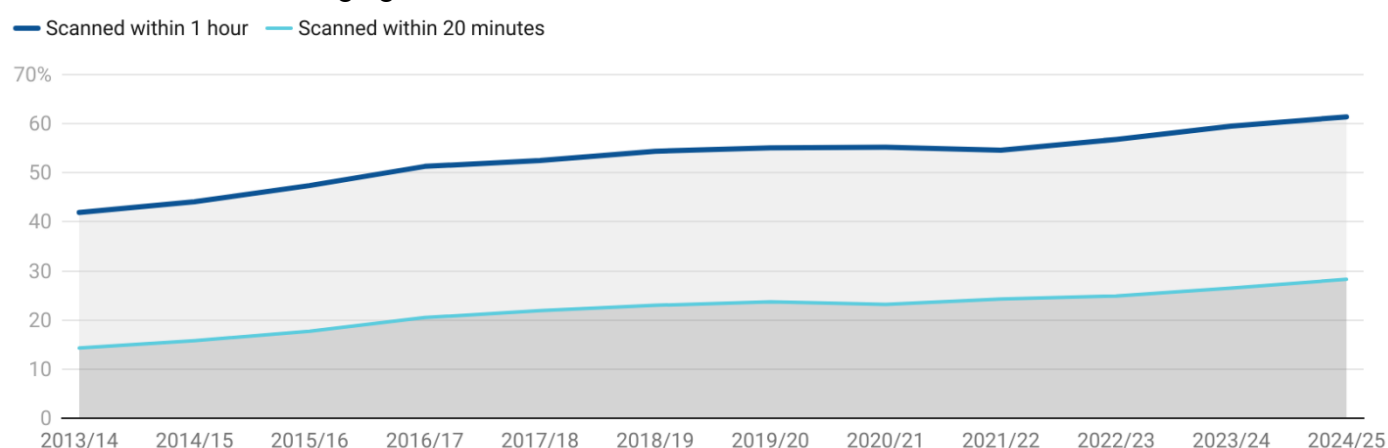
Increasing delays are still evident from the time of stroke onset to hospital arrival with 2024/25 data showing a further increase to 4 hours 11 minutes (compared to 2 hours 25 minutes in 2013/14). SSNAP data from 2019-2023 identify specific patient characteristics associated with delays in the pre-hospital pathway, providing opportunities for targeted interventions ([UKSF 2024: Determinants of pre-hospital timings for acute stroke](#)). There is a pressing need for stroke networks to continue to work with ambulance services to improve pre-hospital care for all patients with stroke. Efficient practices should include enhancing public awareness of stroke symptoms through wider use of the Face Arm Speech (FAST) test, reducing time spent at the scene, and innovations such as pre-hospital video triage.

### Recommendation 1

Targeted quality improvement led by stroke networks is needed to reduce the time from stroke onset to hospital and subsequently to specialist care on a stroke unit. *For action by: Integrated Stroke Delivery Networks (ISDNs) and Welsh Local Health Boards (WLHBs).*

## Hyperacute assessment

### Access to initial brain imaging



**Figure 2:** Proportion of patients receiving brain imaging within 1 hour of arrival and within 20 minutes of arrival between 2013 and 2025.

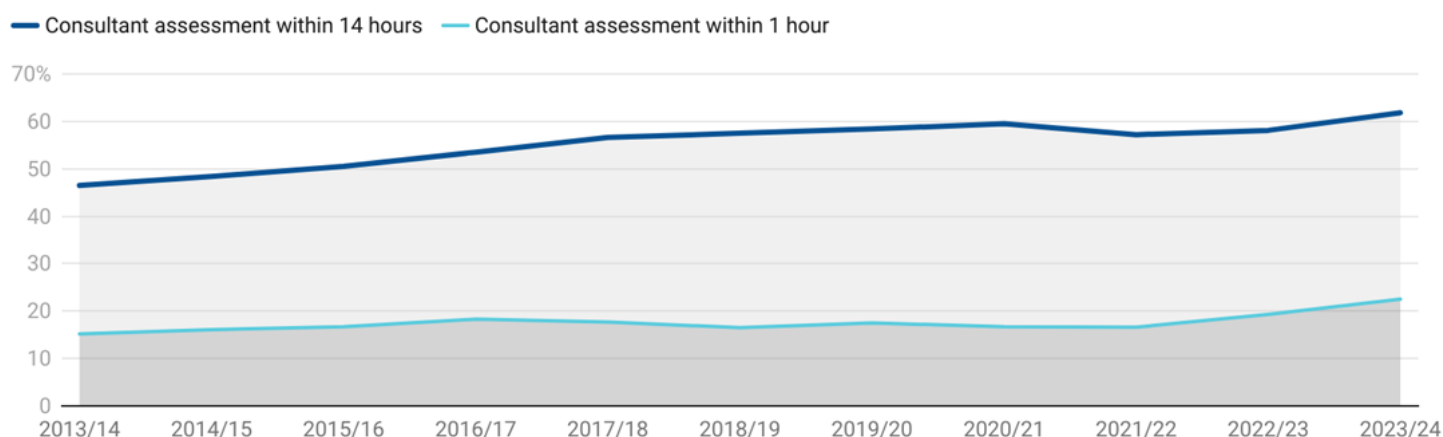
The proportion of patients receiving brain imaging within 1 hour of arrival to hospital has increased from 59.5% in 2023/24 to 61.4% in 2024/25, and the proportion scanned within 20 minutes of arrival has improved from 26.5% in 2023/24 to 28.3% in 2024/25 (Fig.2). Further advances in reperfusion therapy have resulted in the need for time-critical access to multi-modal imaging such as CT angiography and CT perfusion. SSNAP data identify the need to increase the proportion of patients receiving advanced imaging

for reperfusion therapy ([UKSF 2023: Advanced imaging implications of new national guidelines for thrombolysis beyond 4.5 hours](#)). In order to maximise the delivery of such therapies, it is imperative that the sequence of imaging is undertaken in a single setting to avoid unnecessary delays, with artificial intelligence (AI) to support decision making ([National Optimal Stroke Imaging Pathway: NOSIP](#)). The use of advanced imaging is a new Key Indicator in the updated 2024 dataset

### Recommendation 2

Improve adherence to the National Optimal Stroke Imaging Pathway (NOSIP) to increase the proportion of patients receiving the appropriate imaging immediately on arrival at hospital and accelerate the identification of patients eligible for hyperacute interventions. *For action by: ISDNs, WLHBs and Regional Radiology Networks.*

### Assessment by Stroke Clinician within 1 hour

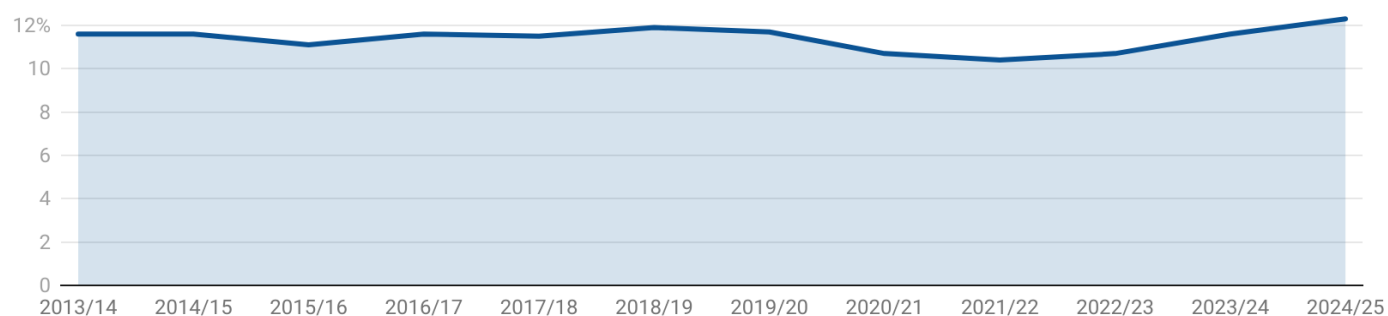


**Figure 3:** Proportion of patients assessed by a stroke consultant following hospital arrival between 2013 and 2024.

In the revised SSNAP dataset from October 2024, this Key Indicator was redefined to reflect changes in clinical practice – the redefined measure reports the proportion of patients assessed by a an appropriately trained and skilled senior decision-maker within 1 hour of hospital arrival. This will be a clinician skilled inpatient selection for advanced imaging and in initiating hyperacute treatments for both ischaemic and haemorrhagic stroke. For the January-March 2025 quarter, this figure was 51.9%. As a result of this change, it is not possible to report historical trends in stroke clinician assessment, but the 2024-25 data establishes a baseline for quality improvement going forwards. Prompt specialist assessment by a trained clinician is critical to the accurate diagnosis, decision-making, eligibility and subsequent delivery of reperfusion therapies and hyperacute interventions for intracerebral haemorrhage (ICH) reinforcing the maxim of ‘time is brain’. SSNAP still reports consultant assessment of all acute admissions within 14 hours, which has been an objective since the publication of the 2017 [Seven day services clinical standards](#).

### Acute interventions

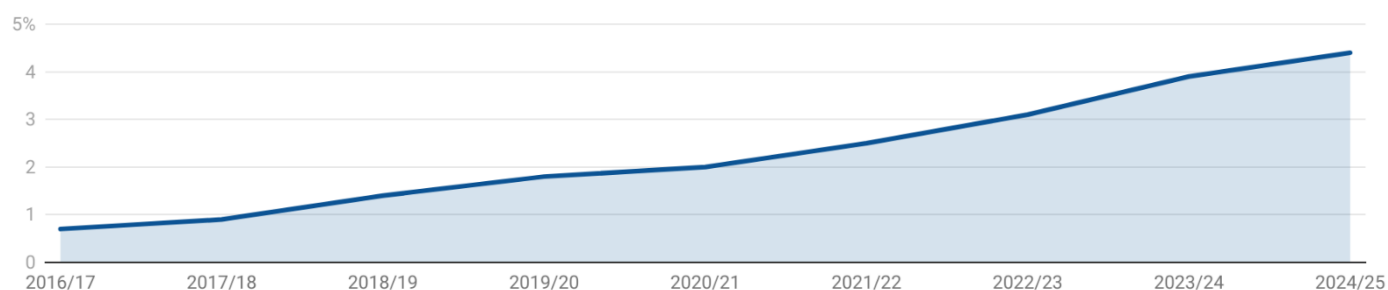
#### Thrombolysis rate



**Figure 4:** Proportion of all patients receiving thrombolysis between 2013 and 2025.

The proportion of patients receiving thrombolysis has increased from 11.6% in 2023/24 to 12.3% in 2024/25, the highest rate recorded since the inception of SSNAP (Fig. 4). As the evidence for thrombolysis eligibility has progressed within an extended time window, door to needle time has increased marginally from 54 minutes in 2023/24 to 56 minutes in 2024/25. The 2024 dataset revision has allowed SSNAP to adopt machine learning-based techniques to help improve thrombolysis rates and reduce unwanted variation in practice ([Pearn et al., 2023](#)). SSNAP reports now contain a new Key Indicator of the percentage of stroke patients given thrombolysis compared with each sites' bespoke target –this is a 'world first' for the adoption of machine learning into routine national clinical audit and will support further quality improvement to increase the population benefit from thrombolysis.

#### Thrombectomy rate (also see linked [Spotlight Report](#))



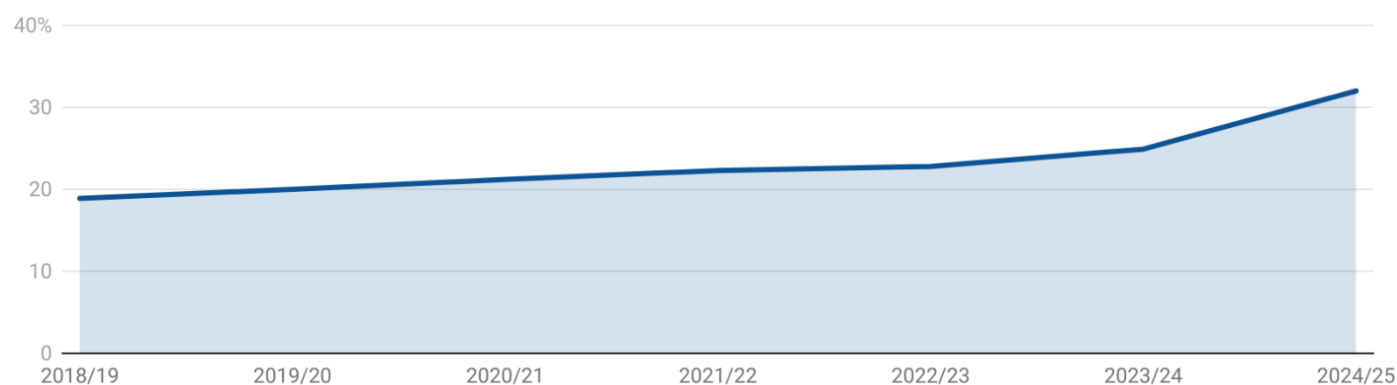
**Figure 5:** Proportion of all patients receiving mechanical thrombectomy between 2016 and 2025.

Although the rates of mechanical thrombectomy (MT) remain below the European average, the proportion of patients undergoing treatment was 4.4% in 2024/25 (Fig. 5) compared to 3.9% in 2023/24. Whilst this shows an increase, this is at a slower rate compared to previous years. As the evidence base extends to include patients with 'large core' and later-presenting strokes, it is likely that up to 15% of patients may be eligible for MT. To meet this expectation, services will need to support the delivery of MT to an increasing eligible population through extending 24/7 coverage to all MT centres, increasing access to AI for advanced brain imaging, expanding workforce capacity and efficient pre-hospital and inter-hospital pathways through a networked approach ([Mechanical thrombectomy delivery in England](#), Getting It Right First Time 2023).

#### Key message 1

One of the key elements for increasing thrombectomy access for the whole population is the quality of regional networks, to ensure equity of access no matter where a patient presents. In 2025-26 SSNAP will work with stakeholders to promote a better analysis and understanding of the overall quality of these networks as a lever for quality improvement.

#### Hyperacute interventions for intracerebral haemorrhage



**Figure 6:** Proportion of eligible patients diagnosed with intracerebral haemorrhage given an anticoagulant reversal agent within 1 hour AND/OR given antihypertensive treatment within 1 hour of arrival between 2018-2025.

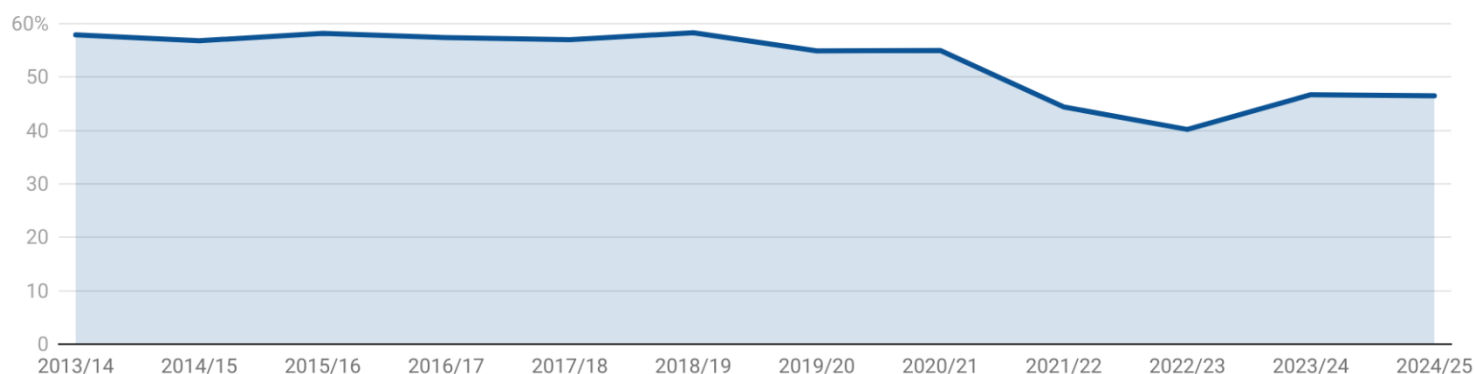
This year has seen a significant increase in the proportion of patients with intracerebral haemorrhage (ICH) receiving rapid interventions, the key components of which include rapid blood pressure lowering and anticoagulant reversal, to 32% within one hour of arrival (Fig.6). This should occur in parallel with patients accessing specialist stroke unit care in order to reduce disability and improve survival. Implementation of care bundles incorporating blood pressure reduction, anticoagulant reversal and care pathways for neurosurgical referral remains a priority with opportunities to foster quality improvement at a national level ([Ma et al., 2023](#); [Parry-Jones et al, 2024](#)).

### Key message 2

The proportion of eligible patients with ICH receiving an appropriate hyperacute intervention within 1 hour of hospital arrival has increased significantly, from 24.9% in 2023/24 to 32% in 2024/25, reflecting a greater priority given to delivering hyperacute interventions in this group of patients.

### Specialist pathway

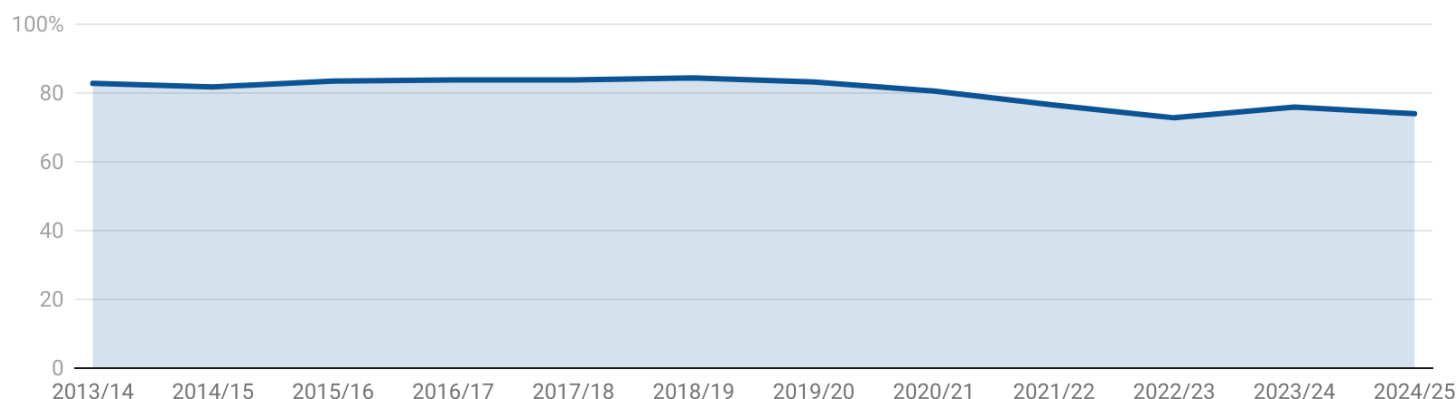
#### Access to stroke unit within 4 hours



**Figure 7:** Proportion of patients directly admitted to a stroke unit within 4 hours of hospital arrival between 2013-2025.

The proportion of patients directly admitted to a stroke unit within 4 hours of admission has remained static at 46.5% (Fig.7), a much lower level than in the past and reflecting the ongoing pressures on acute hospital capacity. Early admission to a stroke unit ensures that patients have the best possible opportunity for receiving timely interventions and key multidisciplinary assessments, such as the safe management of an unsafe swallow. Delivering stroke care in a time critical fashion is a key priority for the NHS outlined in the [10 Year Health Plan](#). Creating stroke unit capacity by maximising flow through the hospital stroke pathway will be critical in order to successfully respond to increasing demand for emergency care.

#### 90% stay on a stroke unit



**Figure 8:** Proportion of patients spending at least 90% of their stay on a stroke unit between 2013-2025.



The proportion of patients spending at least 90% of their inpatient stay on a stroke unit has declined further from 76% in 2023/24 to 74% in 2024/25 (Fig. 8), returning to a concerning downward trend in access to specialist services for people with acute stroke. Research is clear that better outcomes are achieved when patients are managed on a specialist unit for the majority of their hospital stay, and the importance of this Key Indicator is reflected in the new 'double weighting' given to scores in the new 'Specialist Pathway' domain of care in the revised SSNAP dataset and scoring structure. A whole system approach is required to ensure that improved access to specialist multidisciplinary care and rehabilitation is achieved to maximise improved outcomes from a population perspective.

### Key message 3

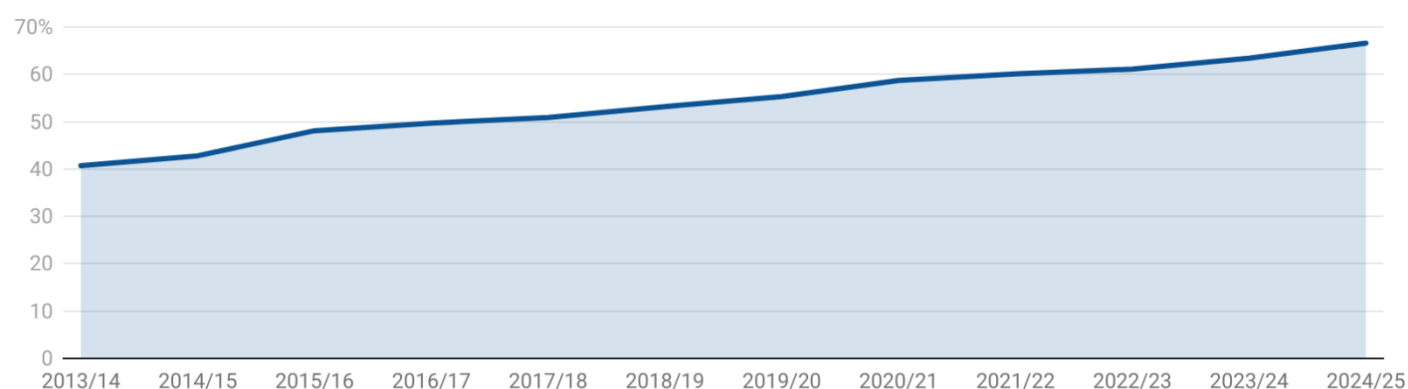
Timely access to specialist acute stroke care has again been challenging this year: 46.5% of patients were admitted directly to a stroke unit within 4 hours in 2024/25 compared to 46.7% in 2023/24, and 74% patients spent at least 90% of their stay on a stroke unit in 2024/25 compared to 76% in 2023/24.

### Recommendation 3

Restore timely access to hyperacute specialist inpatient care for all patients admitted with stroke.

*For action by: Integrated Care Boards (ICBs) and WLHBs.*

### Access to stroke/neurology specific ESD and/or CRT services



**Figure 9:** Proportion of patients discharged to a stroke-specific ESD and/or CRT service between 2013 and 2025.

The proportion of patients discharged to a stroke/neurology specific community rehabilitation service has increased to two thirds of all discharges: 66.6% in 2024/25 (Fig. 9). Over a third (23.1%) of these patients were transferred to a combined stroke/neurology specific Early Supported Discharge and Community rehabilitation (ESD-CRT) team. This reflects the ongoing commitment to implementation of the [National service model for an integrated community stroke service \(ICSS\)](#) across England as the means for delivering high quality needs-based specialist community rehabilitation. Providing patient-centred care in a timely fashion with a shift into the community remains a key policy ambition in the [10 Year Health Plan](#) for England. The [NHS England National stroke rehabilitation pilots](#) demonstrated the feasibility of implementation of the ICSS model in different geographical contexts.

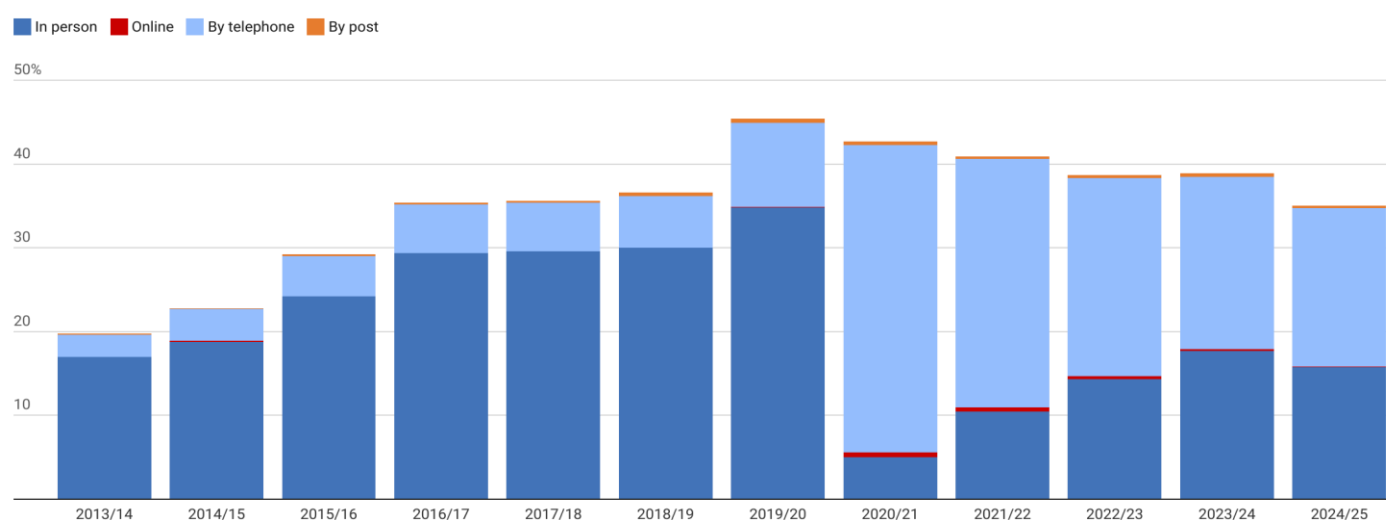
**Key message 4:** The transition to integrated, needs-based community stroke services continues with two thirds of patients being discharged to a stroke/neurology specific ESD (Early Supported Discharge) and/or CRT (Community Rehabilitation Team) service in 2024/25, compared with 63.4% in 2023/24.

### Recommendation 4:

Provide equitable access to needs-based, 7-day stroke rehabilitation along the whole pathway including increasing access to integrated community stroke services to support the key policy shift from hospital to community. *For action by: ICBs and WLHBs, supported by ISDNs.*

## 6-month Review

### Access to 6-month Review (also see linked [Spotlight Report](#))



**Figure 10:** Proportion of patients receiving a 6 month review after stroke, by follow-up method; 2013 to 2025.

The proportion of patients receiving a 6-month review in 2024/25 declined further to 35%, from 39% in 2023/24 (Fig. 10), continuing a concerning downward trend since 2019/20 in the delivery of an intervention regarded as vital by patients and families, and which has been a consistent component of health policy in stroke since 2007. Patient-reported outcome measures (PROMs) in SSNAP continue to record significant levels of physical and psychological morbidity at 6 months - for example, approximately one fifth of patients report moderate to severe mood issues that require ongoing management if people with stroke are to recover and return to full participation in family life and society (see linked [Spotlight Report](#) on patient outcomes).

#### Key message 5

The proportion of patients receiving a 6-month review after stroke has been in steady decline since 2019/20, despite patients continuing to report significant levels of physical and psychological morbidity.

#### Recommendation 5

Respond to the need for ongoing support and regular review when recovering from the life-changing effects of acute stroke and ensure that all stroke survivors receive formal follow-up 6 months after their stroke, with further support made available for those identified with ongoing needs.

*For action by: ICBs and WLHBs.*

## Conclusion

This year has represented a time of significant change for SSNAP, with a substantial revision to the dataset introduced at the mid-point of the year in response to updated national clinical guidelines and standards. This has affected some of the indicators in this report (most notably the redefinition of specialist clinician assessment, Fig.3), and the restructuring of a revised set of 40 Key Indicators in 7 new domains will have had a big impact on overall SSNAP scores as the recalibration creates the 'headroom' for further quality improvement over the coming years. As a result, some of this year's data should be regarded as transitional and be interpreted with caution.

Implementation of this report's **five national recommendations** in parallel with the 10 Year Health Plan ambitions will help to deliver the necessary innovations for high quality care to improve patient outcomes

and people's experience of stroke services. Ensuring a greater proportion of patients access the specialist stroke pathway remains a priority so that the benefits of organised stroke care can be afforded to as many patients as possible. Although it is encouraging to observe an increase in the use of both thrombolysis and thrombectomy, wider adoption of technologies such as pre-hospital video triage, artificial intelligence and machine learning is still needed to reduce clinical practice variation and maximise benefits for patients. The adoption this year of new Key Indicators and domains and an expanded community dataset reflecting the [National Clinical Guideline for Stroke](#) 2023 serves to emphasize the vital areas for improvement. This includes advanced imaging and access to specialist stroke unit care and stroke rehabilitation. SSNAP continues to support the stroke community and service providers to develop quality improvement in the long term, with a priority to increase stroke rehabilitation frequency and intensity. Acknowledging the long-term consequences of stroke as the prevalence of stroke related disability and economic burden rises, provides a challenge but also an opportunity to take action urgently to deliver care that transforms lives.

**We would like to express our thanks to the following people and organisations for their invaluable contribution in producing this report:**

SSNAP Clinical and Associate Directors: Dr Ajay Bhalla, Consultant Stroke Physician, Mrs Louise Clark, Stroke Consultant Therapist, Dr Rebecca Fisher, Programme Manager - Stroke, NHS England, and Professor Martin James, Consultant Stroke Physician.

Haydn Canter, stroke survivor and artist, who has provided us with the artwork featured in this report.

Our patient representatives on the Intercollegiate Stroke Working Party (ICSWP), for their continued support of the programme: Danny Lloyd, Emily Toplis and Marney Williams, and our Patient and Public Voice Representation group. Their valuable contribution keeps the patient voice at the heart of what we do as a quality improvement programme.

The hospitals and community teams and ambulance trusts for continuing to participate in SSNAP. Their participation and commitment to the audit ensures that high quality, comprehensive and robust data is available to provide the knowledge necessary to improve stroke services.

**Cover art provided by: Haydn Canter**



In July 2014 I had a haemorrhagic stroke which left me paralysed on the dominant left side. After 3 months in hospital, I was discharged. I was introduced to a Stroke support group and whilst I was there, the group co-ordinator ran an art group and challenged me to try with my right hand. I accepted it and have never looked back. I believe that art therapy is an excellent way to develop wellness, confidence and self-worth.