Mind the Gaps: Stroke audit data, inequalities and next steps

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CLINICAL LEAD, SCOTTISH STROKE CARE AUDIT

Scottish Stroke Improvement Programme 2026, with data from the Scottish Stroke Care Audit: national report

A Management information release for Scotland

Publication date: 11 August 2026

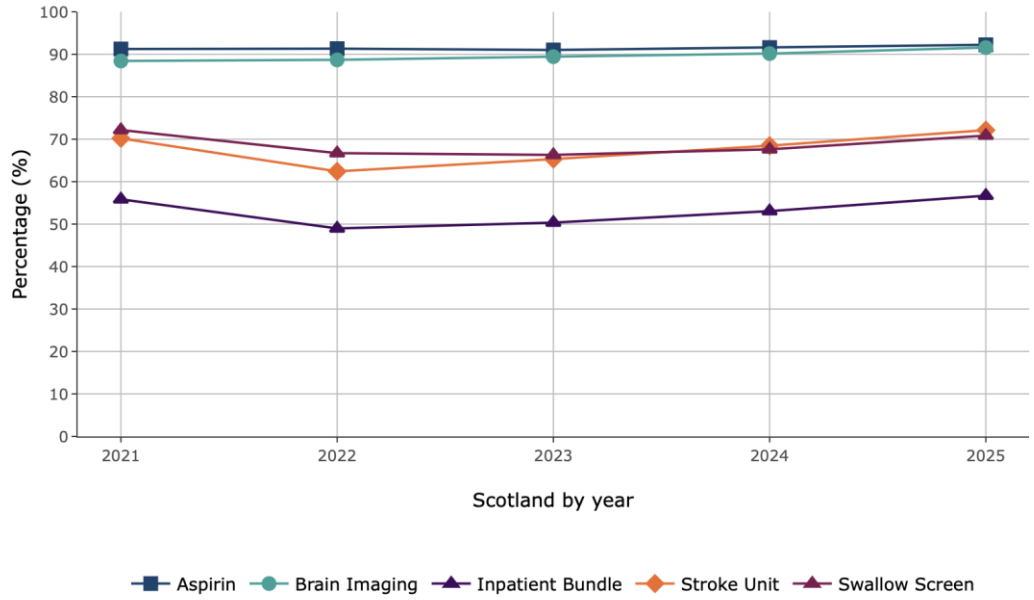
Public Health Scotland

Scottish Stroke Care Audit

Stroke Standards: performance 2021 - 2025

Admission to stroke unit within 1 day	**90%**
Aspirin on day 0 or day 1	**95%**
Brain imaging within 12 hours of arrival	**95%**
Swallow screen within 4 hours of arrival to hospital	**100%**
Stroke bundle	**80%**

Figure 4.1: Percentage of confirmed strokes achieving the appropriate standards from 2021 to 2025



Public Health Scotland

Scottish Stroke Care Audit

Stroke Care Bundle

RESEARCH ARTICLE | Originally Published 12 February 2015 |

Check for updates

Implementing a Simple Care Bundle Is Associated With Improved Outcomes in a National Cohort of Patients With Ischemic Stroke

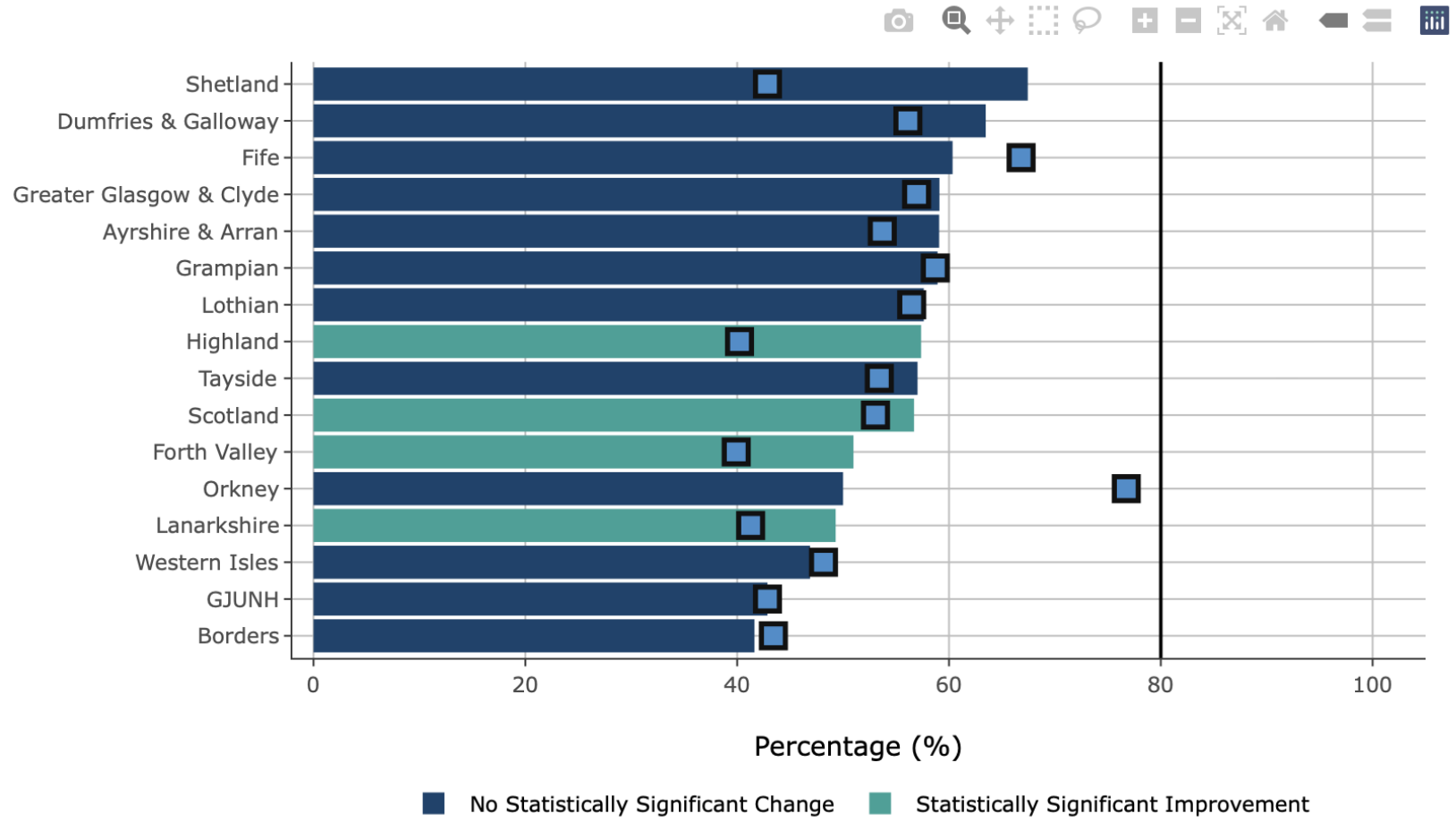
Melanie Turner, PhD, Mark Barber, MD, Hazel Dodds, BSc, David Murphy, Martin Dennis, MD, Peter Langhorne, PhD, and Mary-Joan Macleod, PhD on behalf of the Scottish Stroke Care Audit | AUTHOR INFO & AFFILIATIONS

Stroke • Volume 46, Number 4 • https://doi.org/10.1161/STROKEAHA.114.007608

CONCLUSIONS— Achieving a care bundle for ischemic stroke is associated with reduced mortality at 30 days and 6 months and increased likelihood of discharge to usual residence at 6 months.

Stroke patients receiving the appropriate stroke care bundle by NHS board: 2025 (bar) compared to 2024 (square).

Figure 3.1: Performance against standard for Inpatient Bundle

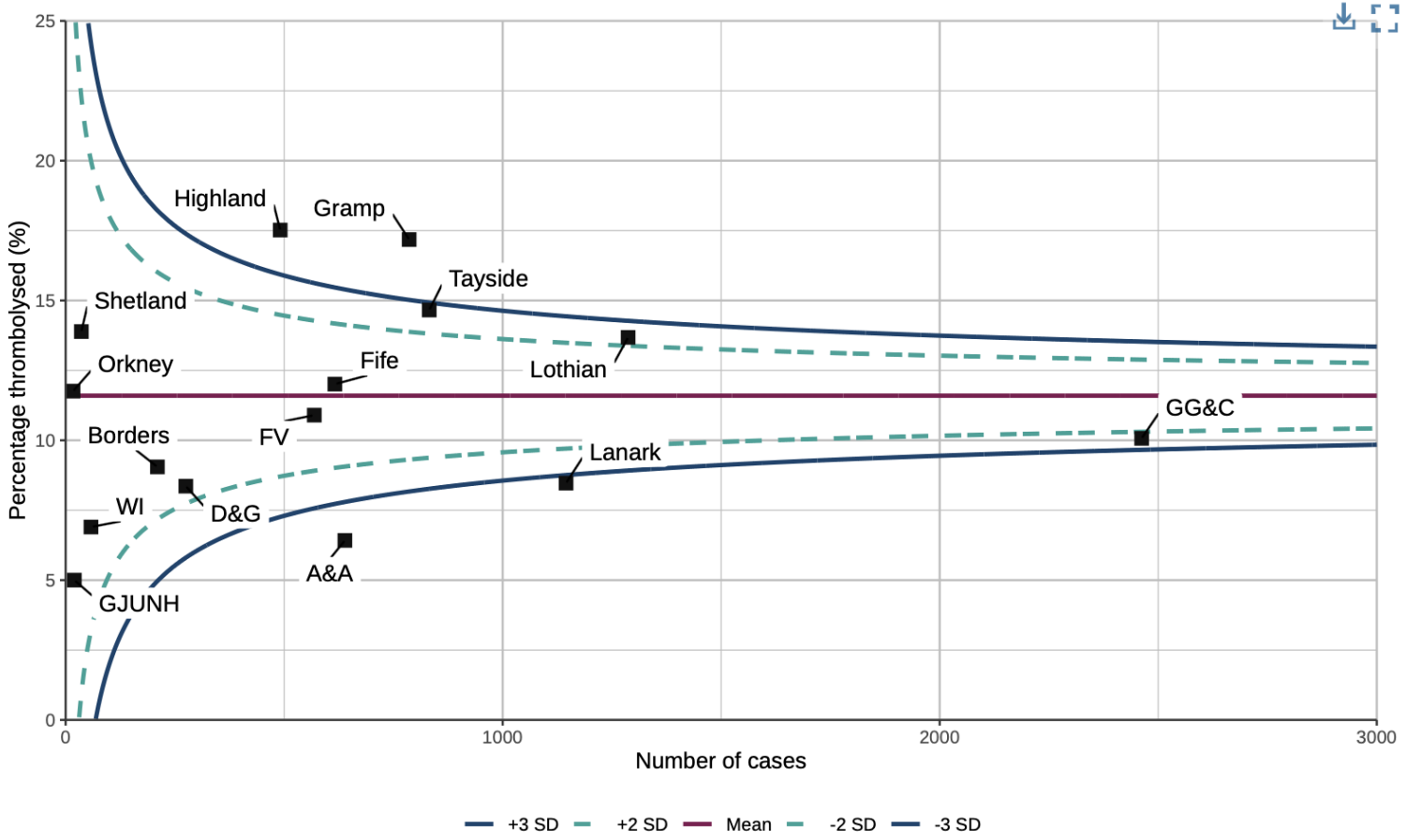


2019	63.6%
2023	50.4%
2024	52.9%
2025	56.7%

Where else can we identify inequity in stroke care in Scotland?

Percentage of ischaemic stroke patients thrombolysed by NHS board 2025

Figure 5.1: Percentage of ischaemic stroke patients thrombolysed by NHS Board, 2025



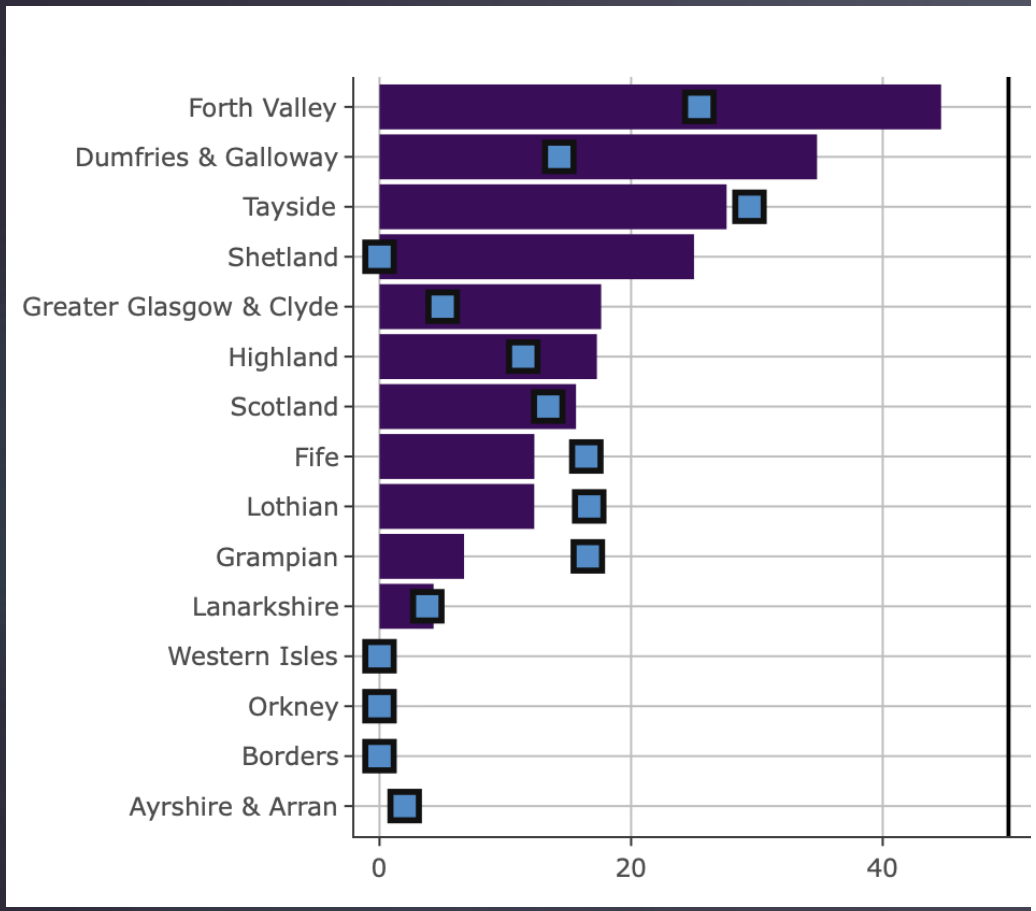
Total no. treated:

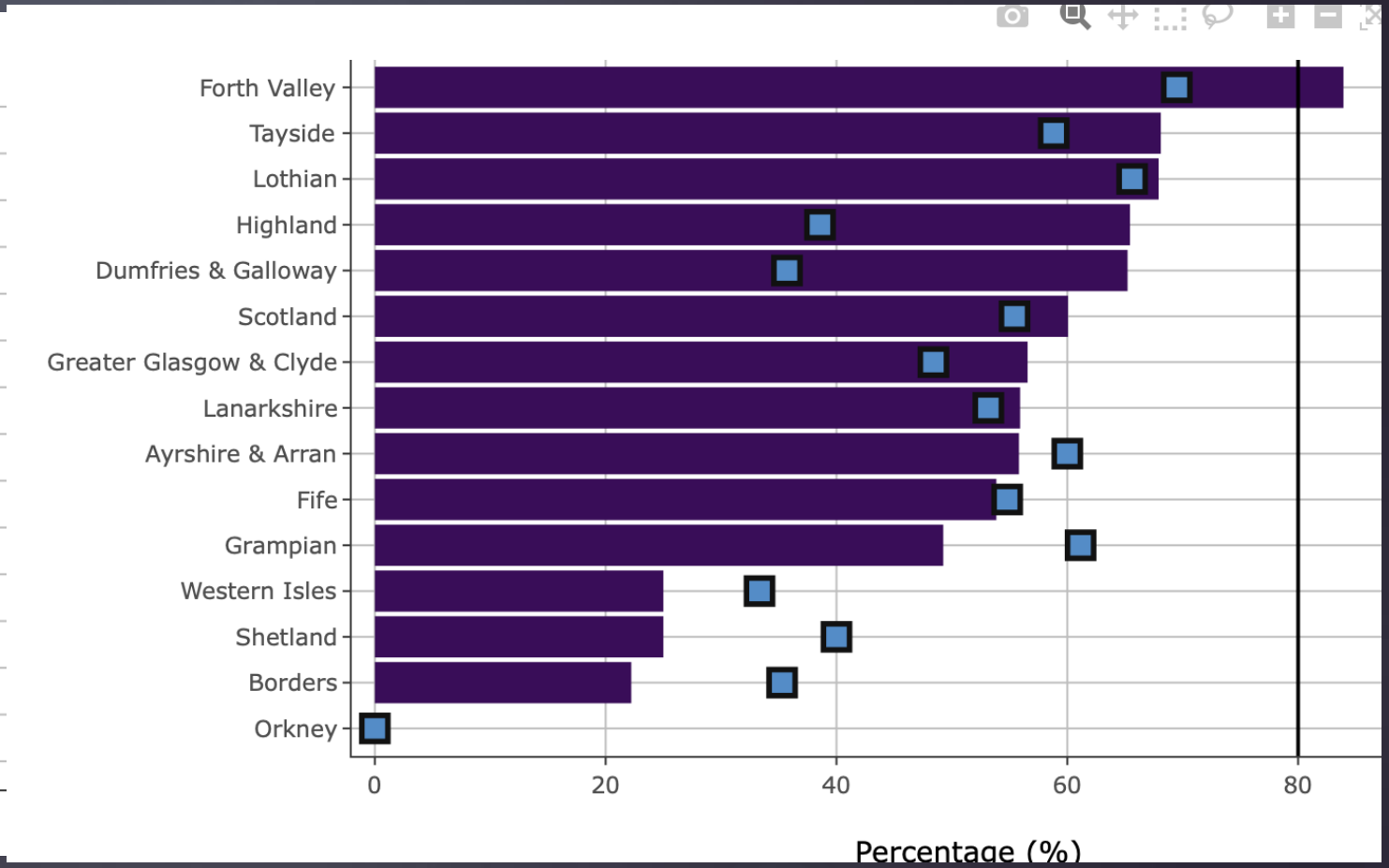
2024	1,045
2025	1.095

Why is there such variation in thrombolysis rates across Scotland?

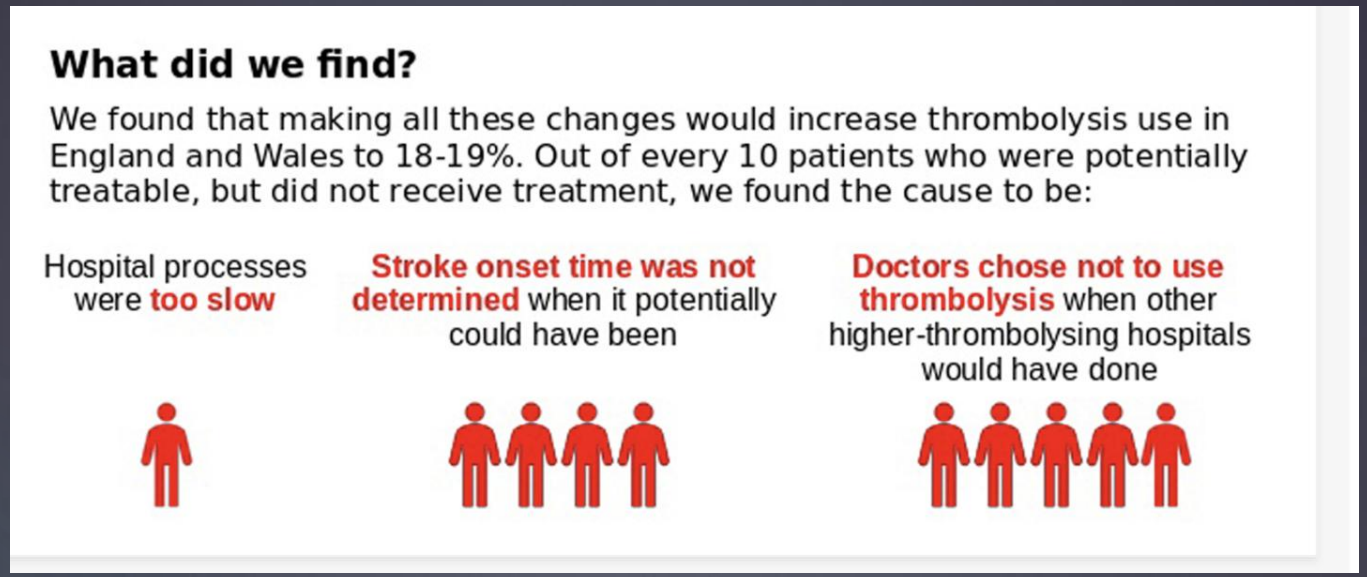
Health board	% thrombolysed	Ischaemic onset-to-arrival within 4.5hrs (%)	Ischaemic onset-to-arrival within 4.5hrs thrombolysed (%)
Ayrshire & Arran	6.77	37.97	17.84
Borders	10.45	33.33	26.87
Dumfries & Galloway	11.07	34.73	31.87
Fife	14.32	40.13	35.14
Forth Valley	11.52	32.54	33.71
Grampian	22.79	49.86	42.29
Greater Glasgow & Clyde	10.92	36.53	26.66
Highland	17.09	39.74	40.32
Lanarkshire	8.7	34.59	24.32
Lothian	16.5	44.66	35.22
Orkney	17.24	44.83	38.46
Shetland	18.18	40.91	44.44
Tayside	10.46	40.45	25.17
Western Isles	2.38	28.57	8.33
Scotland	12.65	38.94	30.59

Thrombolysis: percentage treated within 30 and 60 minutes of arrival



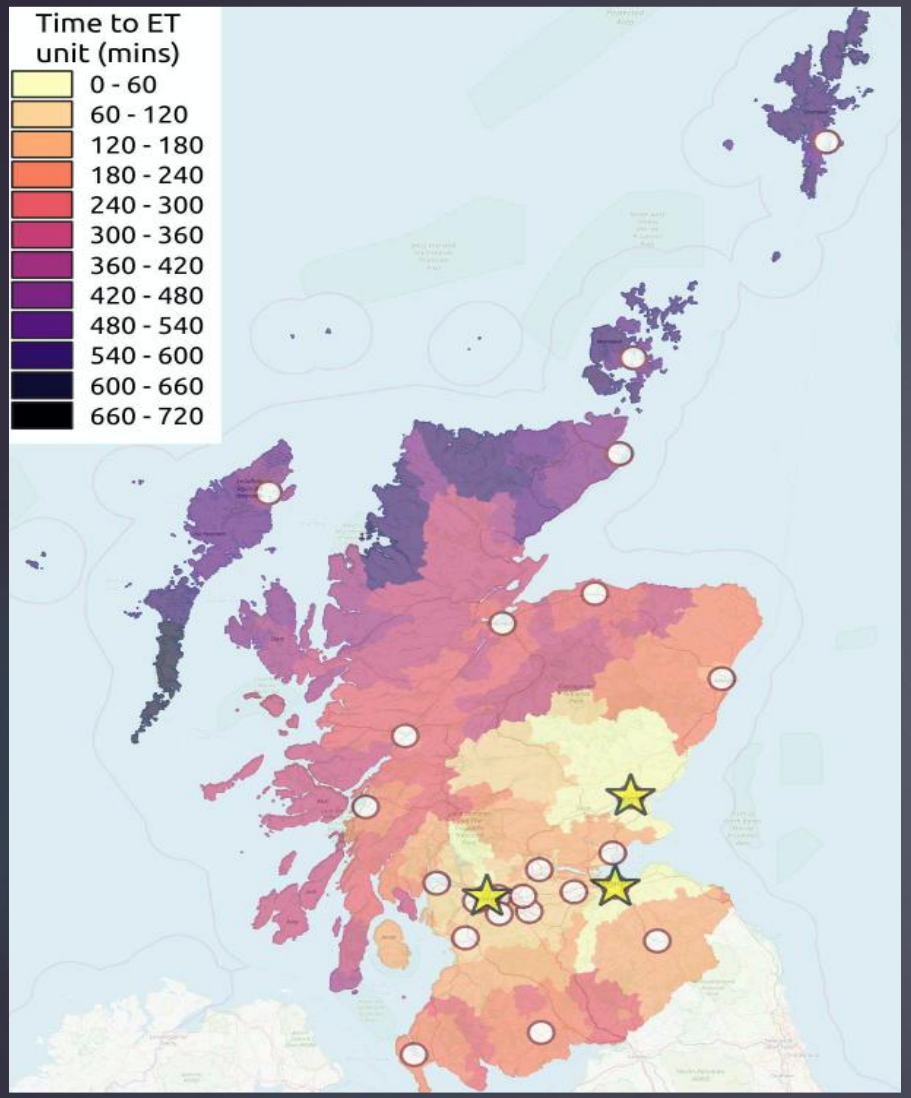


- SSNAP: Adjustment for confounders suggests thrombolysis rates of 18% are achievable in most hospitals.



- Prehospital pathways
- Initial imaging and assessment
- Clinical decision support tools

https://www.ahajournals.org/doi/10.1161/STROKEAHA.121.038454



RESEARCH ARTICLE | Originally Published 14 March 2025

Check for updates

Impact of Rurality and Geographical Accessibility on Stroke Care and Outcomes

The impact of rurality and geographical accessibility on stroke care and outcomes

Methods

N= 42917 with ischaemic stroke

Location = Scotland, UK

Binary geographical classification systems

- Urban vs rural
- Accessible vs remote

Six-category geographical classification system

- Large urban
- Other urban
- Accessible small town
- Remote small town
- Accessible rural area
- Remote rural area

Results

Binary geographic classifications of rurality and accessibility missed important differences in outcomes that were seen with a six-category classification

Decreased early brain imaging in patients residing in remote rural areas

Decreased thrombolysis rates in patients residing outside large urban areas

Decreased timely stroke unit admission in patients residing in remote rural areas

Increased 30-day discharge from hospital care in patients residing outside large urban areas

Decreased in-patient mortality and one-year mortality in patients residing outside large urban areas

Conclusion

It is important to account for both home location and accessibility when assessing stroke care and outcomes

https://doi.org/10.1161/STROKEAHA.124.048251

Cerebrovascular Diseases

Clinical Research in Stroke

Cerebrovasc Dis
DOI: 10.1159/000546261

Received: March 24, 2025
Accepted: May 1, 2025
Published online: May 7, 2025

Association of Neighbourhood Deprivation with Secondary Prevention Prescribing and All-Cause Mortality among Stroke Patients in Scotland: A Population-Based Study

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Chest Heart & Stroke Scotland

People in deprived areas are less likely to survive to one year after stroke

Compared to less deprived areas, those from more deprived areas were:

- Younger
- Less likely to be given aspirin or thrombolytic drugs in hospital
- Less likely to survive to one year after stroke
- More likely to have multiple health conditions

After a stroke, people from more deprived areas were less likely to be given:

- Anticoagulants (even if diagnosed with AF)

There were no differences in lipid lowering medication or blood pressure medication between the highest and lowest quintiles

https://doi.org/10.1159/000546261

Acute Care, Secondary Prevention, and Outcomes after Ischaemic and Haemorrhagic Stroke in Men and Women: A Data-Linkage Study

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Cerebrovascular Diseases
2024
DOI: 10.1159/000540371

Scottish Stroke Care Audit

Compared to men, women are:

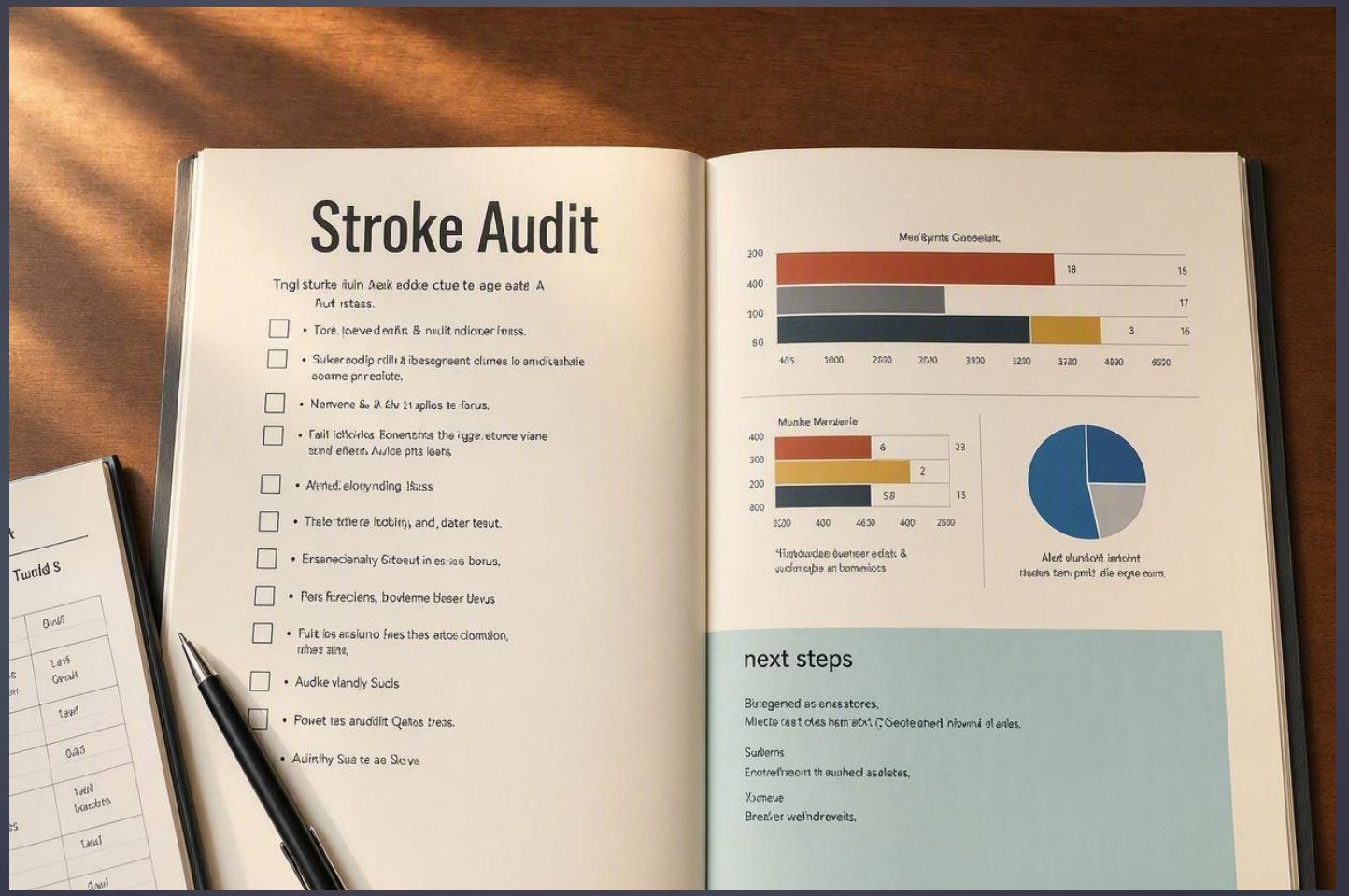
- Older at time of admission
- Less likely to be given aspirin or thrombolysis in hospital
- More likely to survive to one year after stroke

After a stroke, women were less likely to be given:

- Anticoagulants
- Blood pressure medication
- Lipid lowering medication

Multivariable models adjusted for age at admission, year of admission, independent in ADL before stroke, live alone before stroke, SIMD quintile, Charlson Co- morbidity Index scores, baseline stroke severity scores, achievement of stroke care bundle.

Next steps - 2027



Since 2016 when standards implemented.....

Stroke Im

June 2023

NATIONAL CLINICAL GUIDELINE FOR STROKE
for the United Kingdom and Ireland

Search ...

2023 edition

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What's new in the 2023 edition

Guideline development

1.0 Introduction

1.1 Scope

4.23.2 Musculoskeletal pain

4.23.3 Shoulder subluxation and pain

4.24 Spasticity and contractures

4.25 Fatigue

4.26 Swallowing

A Progressive Stroke Pathway

1. Review of Standards
2. Review of fields and definitions and aligning with SSNAP where fields are similar
3. Stroke standards at 100% from January 2027:

   Admission to stroke unit same or next day

   Aspirin within 12 hours

   Swallow screen within four hours

   CT within 4 hours if admitted within 72 hours of symptom onset or **onset unknown**

   Appropriate stroke bundle: will be reported but not a standard

4. Initial and final diagnosis stroke

   Initial, includes a variable amount of patients who turn out not to be stroke

   Final: includes patients in whom incidental stroke was only diagnosed on a scan a few days after admission with vague symptoms (*this data is important for feedback to HB)

   Initial and final diagnosis: a cohort who can reasonably be expected to achieve the stroke standards

5. Rehabilitaton audit embedded in inpatient audit

Summary

- Small improvement in bundle in 2025 – but not enough
- Significant variation in performance around Scotland
- Lots to focus on to try to reduce inequity in Stroke care – new standards may help with this

Increased awareness of the importance of the audit

Data capture depends on good data recording



Do you know your local audit coordinator?

Are your clinical notes clear and accurate?



Acknowledgements

Stephannie Whigham

Neil Muir
Pamela MacLean
Emma Munro/LACs

Katrina Brennan
Therese Lebedis
Matt Lambert
Martin MacDonald
SSCA steering group

Melanie Turner
Kadie-Ann Sterling

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