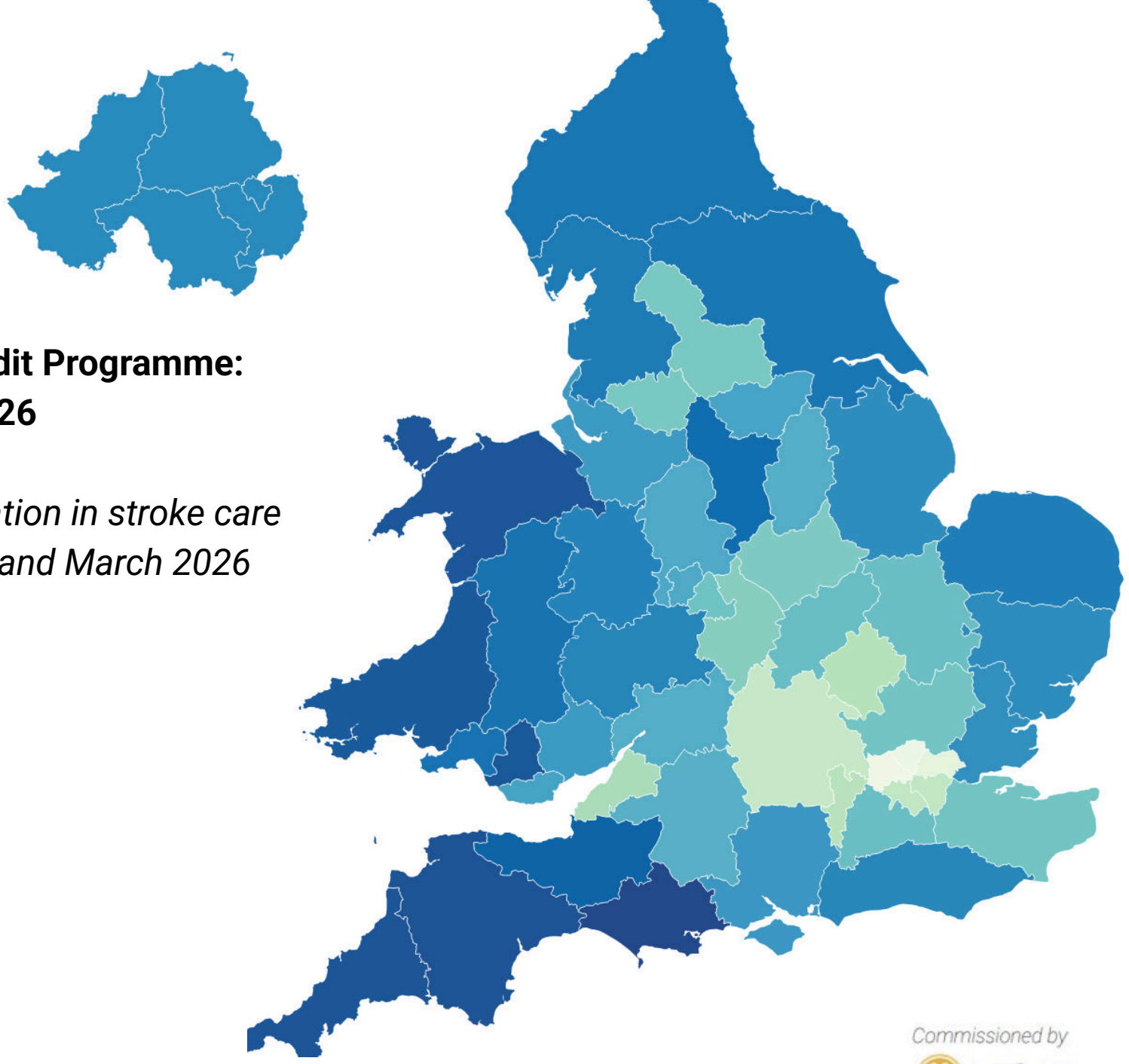

Sentinel Stroke National Audit Programme: Atlas of Variation Report 2026

Identifying geographical variation in stroke care provided between April 2025 and March 2026

KING'S College LONDON

SSNAP
Sentinel Stroke National Audit Programme

Commissioned by
HQIP
Healthcare Quality Improvement Partnership

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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Sentinel Stroke National Audit Programme (SSNAP)

SSNAP measures the quality and organisation of stroke care across England, Wales and Northern Ireland. Processes of care are measured against evidence-based quality standards that describe the interventions that patients 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.

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Introduction

This report covers patients admitted to, and/or discharged from, stroke services between April 2025 and March 2026. Organisational measures are based on the SSNAP organisational audit snapshot from November 2025. Further information on the programme including data analysis and methodology, full datasets, and reports produced are available on the SSNAP website: www.strokeaudit.org.

Atlas of Variation

An Atlas of Variation highlights how healthcare provision varies geographically and across populations. It helps identify unwarranted variation, improve quality and efficiency of care, and inform policy and planning.

Variation is not necessarily unwarranted. Differences between areas may reflect population characteristics, patient preferences, service configuration, geography, access to specialist services or data completeness, rather than quality of care. This report highlights variation in the delivery of evidence-based interventions across the stroke pathway, supporting local enquiry and improvement by helping to identify population-level priorities for quality improvement, rather than assigning blame or drawing conclusions from any single measure.

Methodology

This Atlas of Variation has 13 measures selected as indicators of variation in stroke care provision. Most use routinely collected clinical and organisational stroke audit data, and no new data collection has taken place. Data for measure 1 were provided by NIHR PenARC. Data for measure 3 were obtained from CVD Prevent.

Results are reported at population level rather than by provider. Patient data is aggregated by Integrated Care Board (ICB) or Local Health Board (LHB). This is achieved by linking patients' home postcodes to the relevant ICB or LHB, enabling population-level reporting of stroke care. As postcodes are not collected in Northern Ireland, population-level analysis is not possible and Northern Ireland is presented as a single region. Some measures cannot be reported at regional level as the data are collected at hospital level rather than patient level. Where this is the case this has been identified in the report.

The measures presented are not adjusted or standardised for casemix. Results should therefore be interpreted with appropriate caution, particularly where differences in patient populations or service models may influence performance.

Interpreting the Maps and Legends

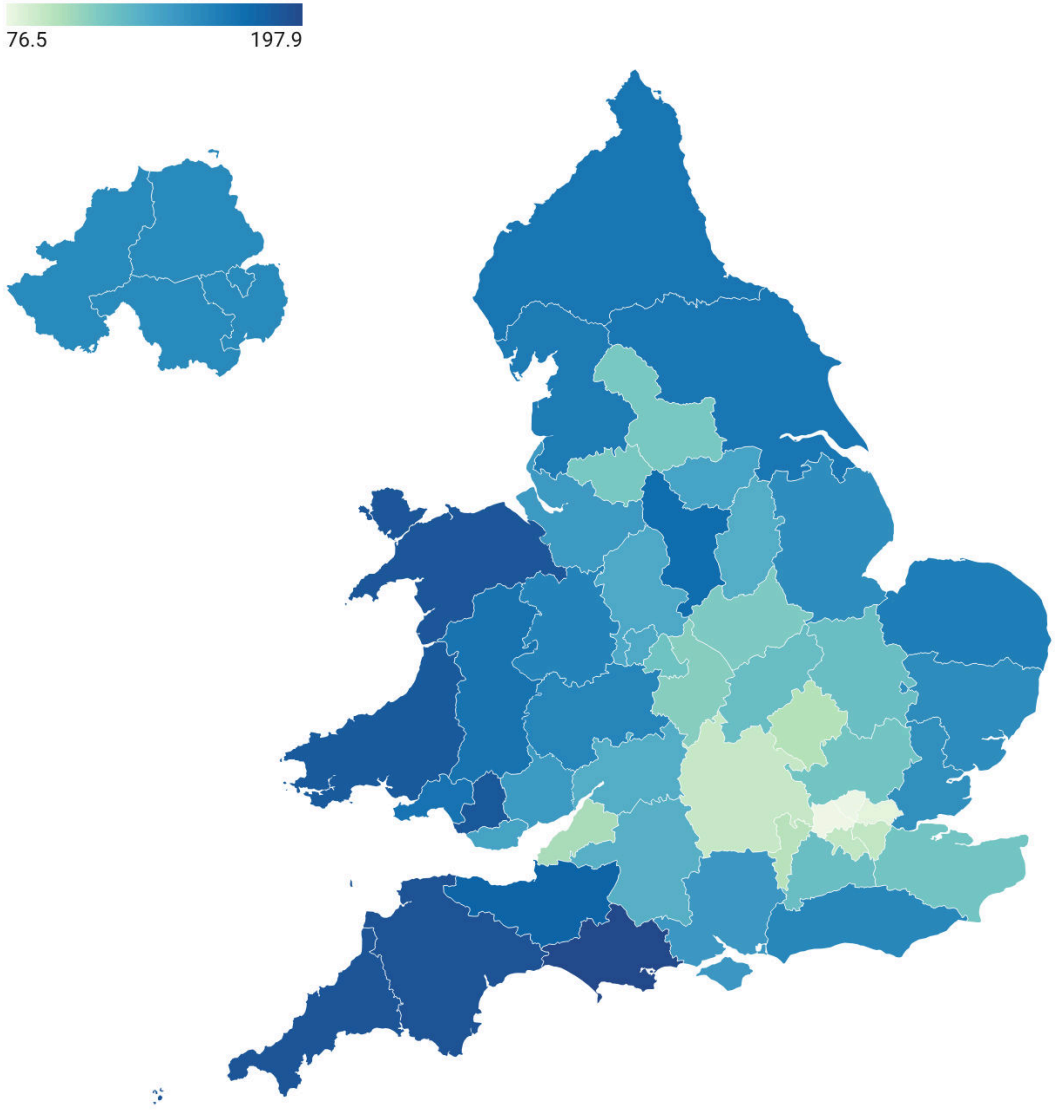
The maps illustrate each region's variation from the national performance, allowing regions to benchmark their performance against others and the national average. The legend values display the absolute differences from the national average: **0** represents no variance from the national value, while a **positive (+)** value indicates a higher measurement and a **negative (-)** value indicates a lower measurement relative to national value.

A red-to-green colour scale is used, where **green always indicates better performance** and **red always indicates poorer performance,** as compared to the national average or rate. The colour intensity reflects the extent of the variation. Because different metrics have different goals, a note beside each map clarifies whether a higher or lower value is desired. For example, for "Onset to arrival", a value of -102 means the region was **102 minutes quicker (better) than the national average**, resulting in **green** shading.

Each measure is accompanied by a ranked bar chart of all ICBs and LHBs, and Northern Ireland. These charts help to illustrate the degree of variation for each measure.

Casemix

Number of stroke admissions per 100,000 population



Map 1: The number of stroke admissions per 100,000 for each ICB/LHB and Northern Ireland in 2025/26.

Maps 1-3 show selected characteristics for stroke patients to illustrate how the stroke population varies across the country. These maps show variation in casemix across areas and are not a comparison with national performance, and should not be interpreted as indicating better or worse performance.

For Maps 1-3, a light-to-dark scale has been adopted. A darker colour represents a higher value, whether absolute number or proportion.

	Higher value
	Lower value

Stroke admissions vary across the UK and may reflect differences in population size, age, ethnicity, socio-economic factors, local geography, and the underlying burden of cardiovascular risk and disease.

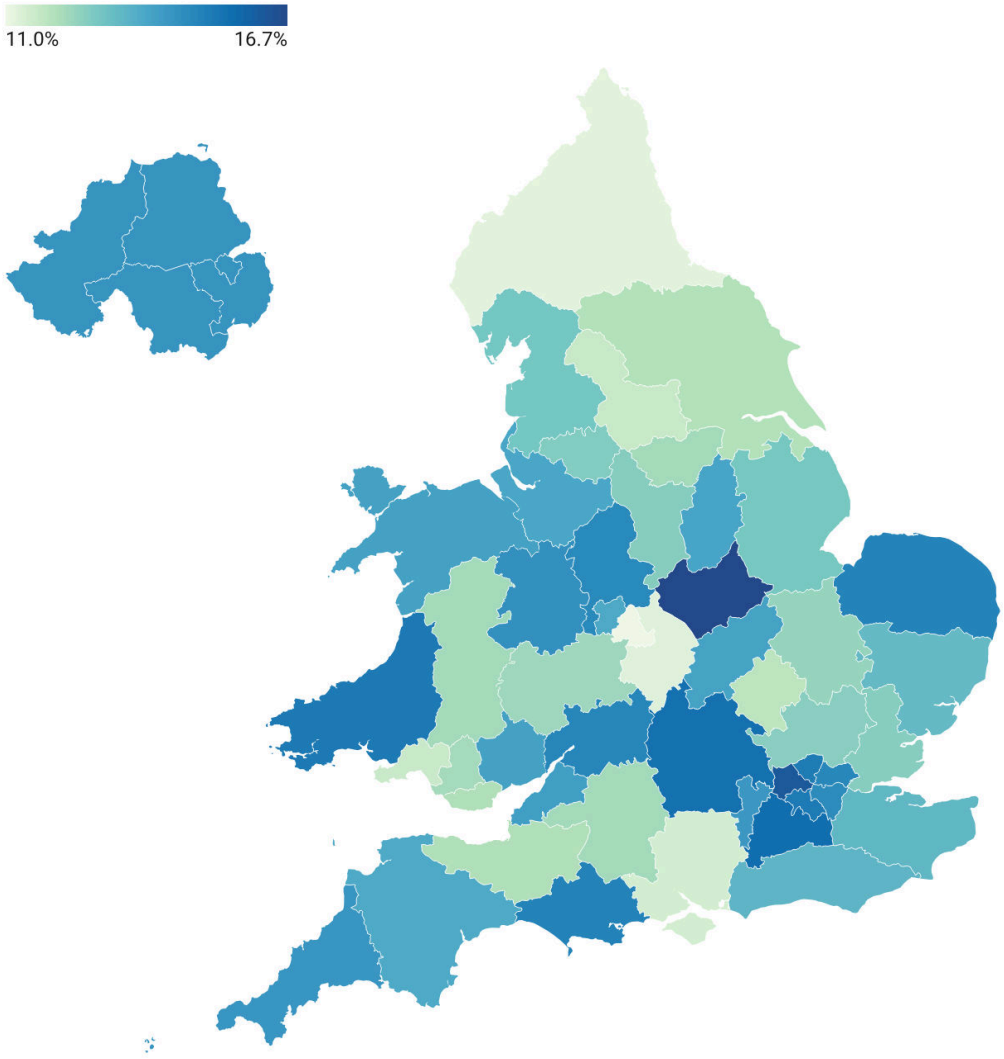
Population Data Sources

Northern Ireland: Based on the June 2024 population estimates from the Northern Ireland Statistics and Research Agency (NISRA).

ICBs: Based on the projected registered population for 2025/26 from NHS England.

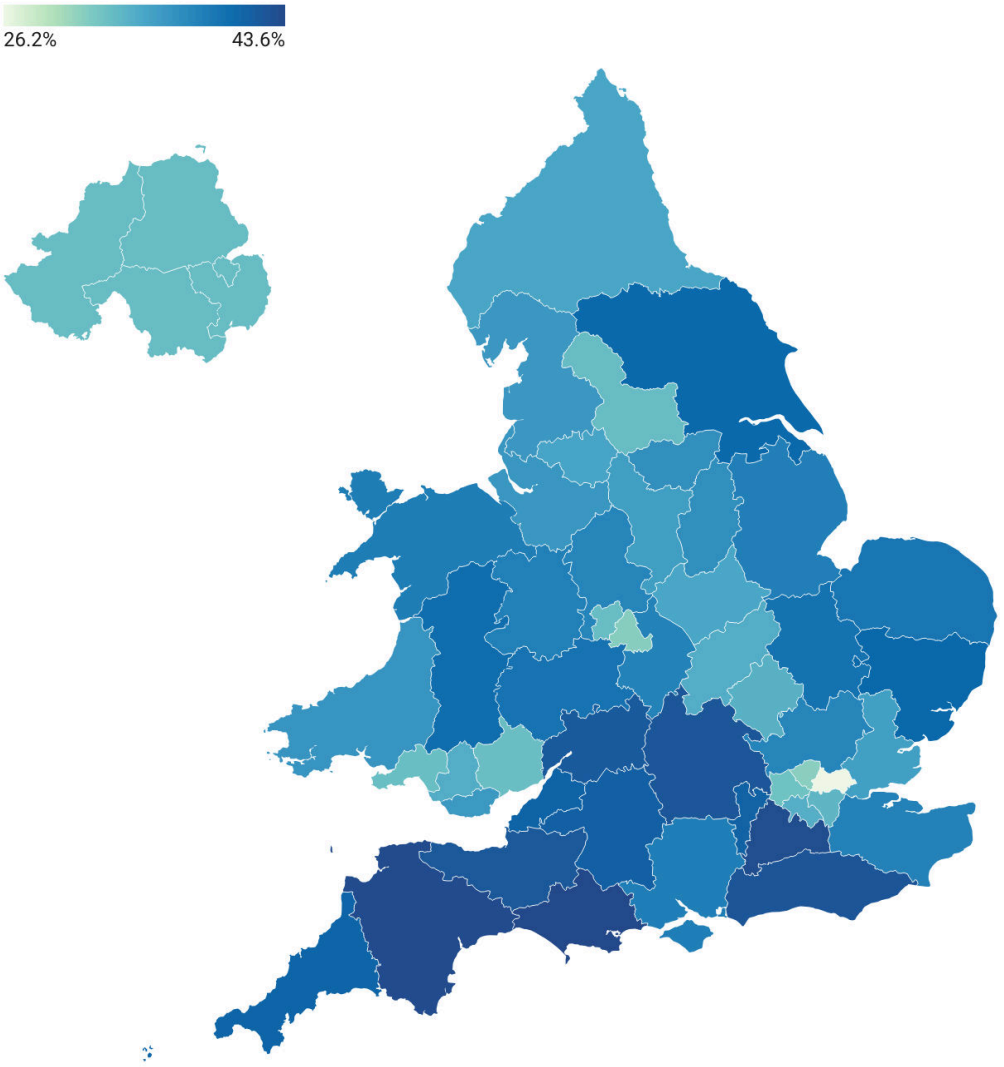
LHBs: Based on the mid-year 2024 population estimates from Stats Wales.

Proportion of patients diagnosed with intracerebral haemorrhage



Map 2: Proportion of stroke patients in each ICB/LHB and Northern Ireland diagnosed with intracerebral haemorrhage in 2025/26.

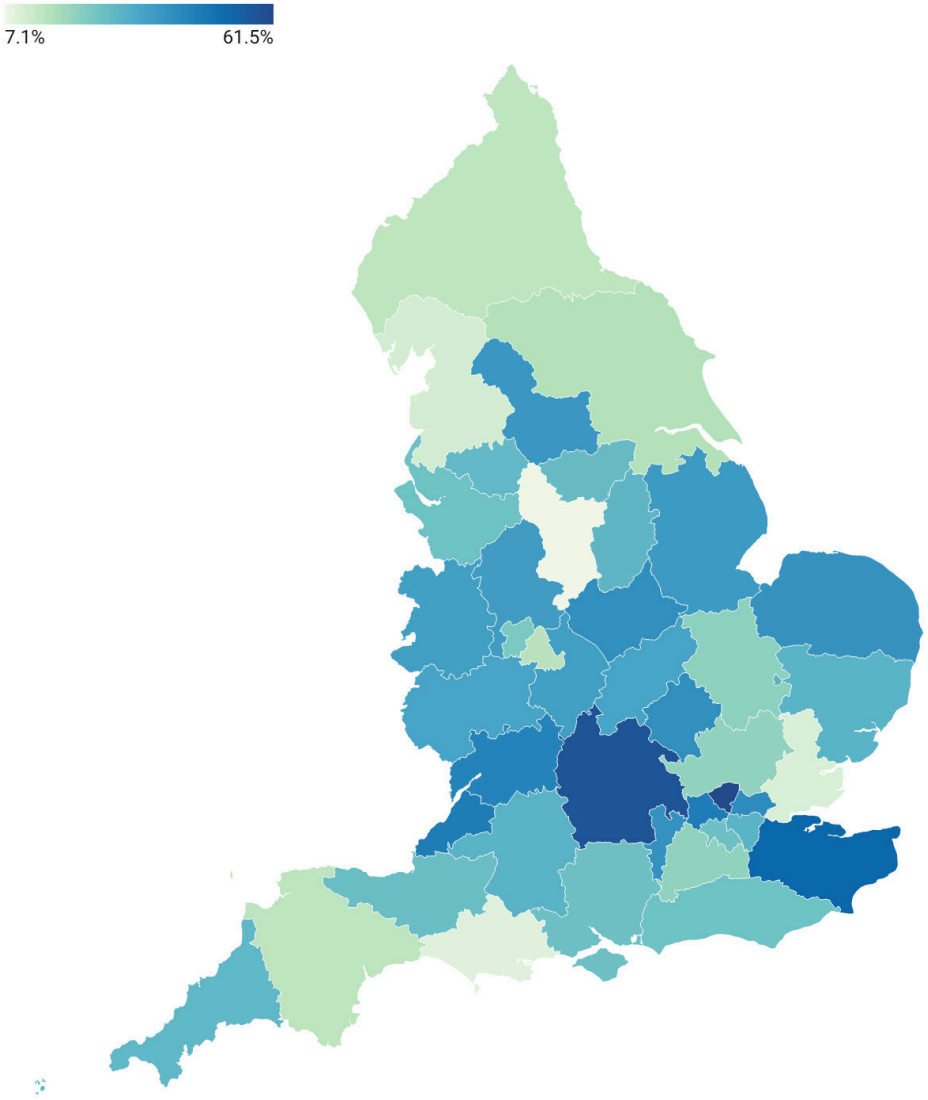
Proportion of patients aged over 80 years



Map 3: Proportion of stroke patients in each ICB/LHB and Northern Ireland aged over 80 at time of admission for stroke in 2025/26.

How much will the number of people suffering a stroke change over the next 10 years?

Percentage change in stroke incidence between 2025/26 and 2035/36



Map 4: Percentage change in the number of stroke admissions over a 10 year period, comparing real stroke admissions in 2025/26 with projected stroke admissions in 2035/36. Data on projected admissions has been provided by NIHR PenARC. Data restricted to England only.

For this map, a light-to-dark scale has been adopted. A darker colour shows areas with a greater projected increase in stroke admissions, while a lighter colour shows areas with a smaller projected increase.

	Greater projected increase in stroke admissions
	Lower projected increase in stroke admissions

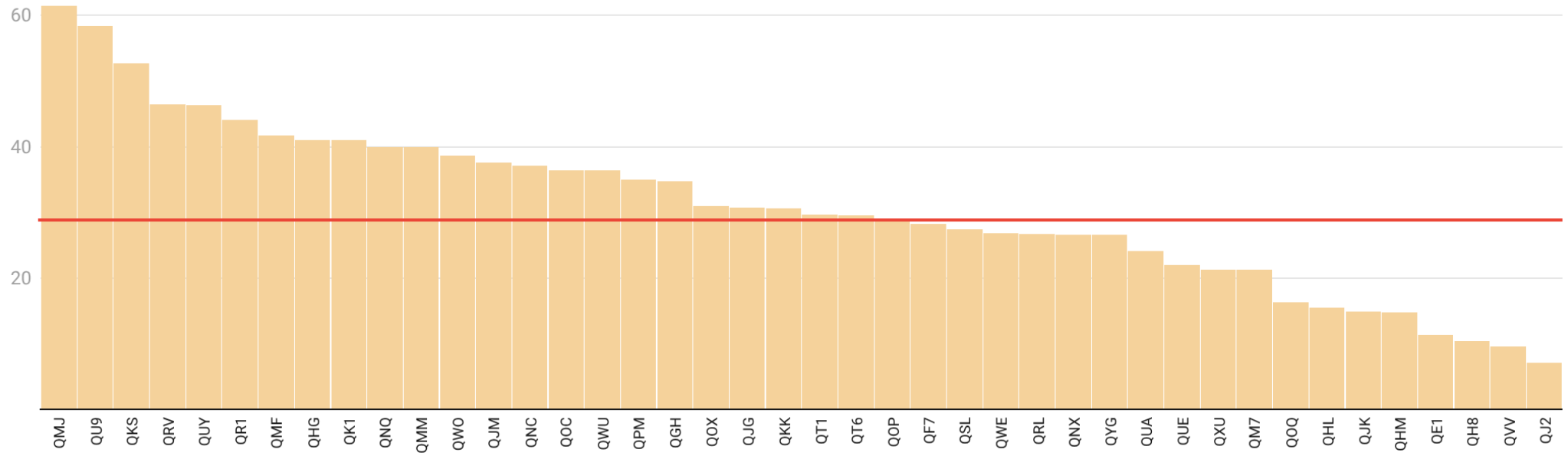
This map shows the predicted change in stroke admissions over 10 years. It is not a comparison with national performance, and colours indicate the size of the predicted change only.

The method of predicting change is a proportionate scaling method based on projections for the growth in the population aged 65 or more from the Office of National Statistics at a Middle-layer Super Output Area (MSOA) level, applied across the entire age structure for each ICB.

By this method, across England stroke admissions are projected to increase by 28.8% over 10 years, ranging between 7.1% in NHS Derby and Derbyshire and 61.5% in NHS North Central London.

The observed change at ICB/LHB level will vary according to deprivation, population movement, and the prevalence and management of the risk factors at a population level, so the changes predicted should be regarded as an ‘upper bound’ prediction.

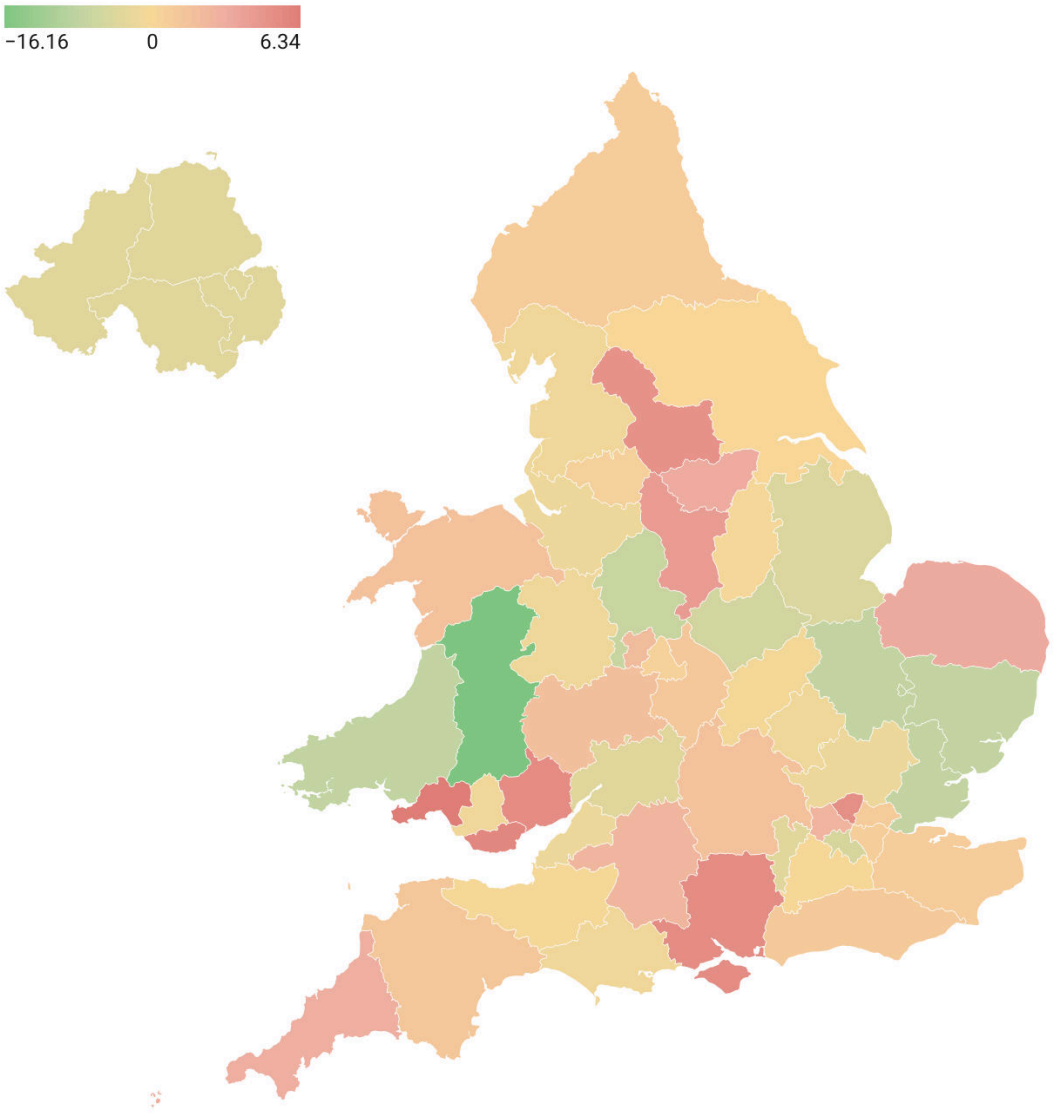
Ranked bar chart of percentage change in stroke incidence between 2025/26 and 2035/36



Graph 1: Bar chart shows the variation across all ICBs in England, both between areas and with the national. The national value (28.8%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

How good is stroke prevention in people with atrial fibrillation?

Proportion of patients with atrial fibrillation prior to stroke and not on anticoagulants



Map 5: Proportion of stroke patients with a diagnosis of atrial fibrillation prior to stroke and not on anticoagulants prior to stroke in 2025/26.

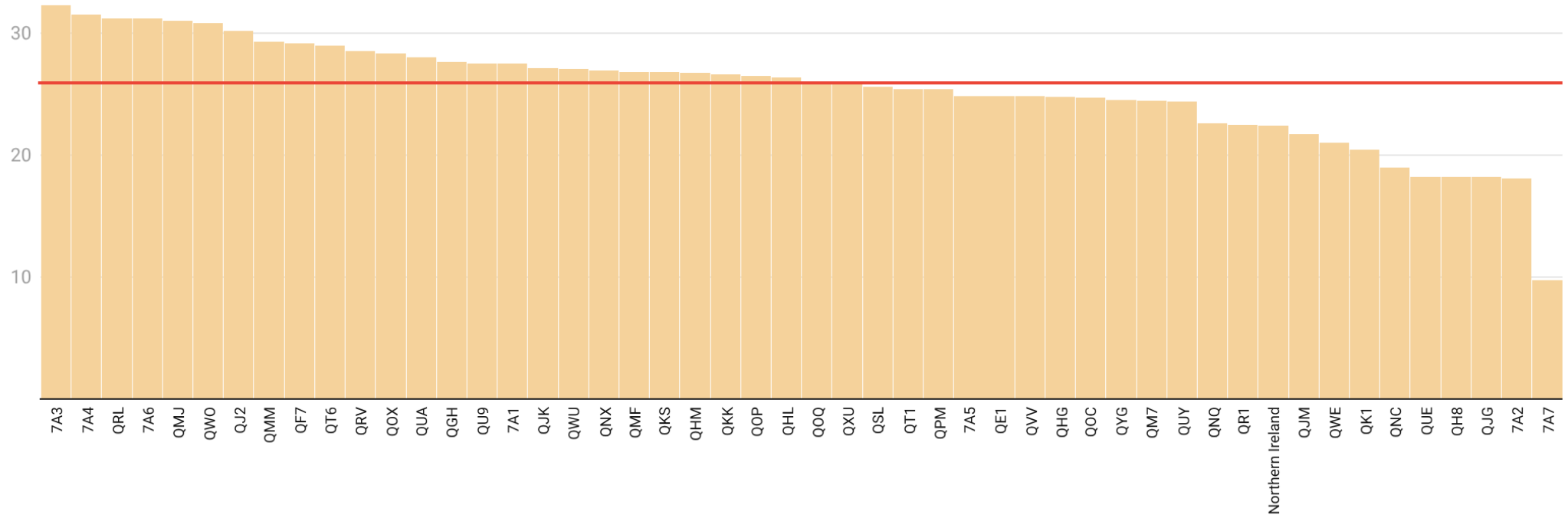
For this measure, lower values are more favourable. Green shows areas below the national performance, while red shows areas above it.

	Below the national rate
	Above the national rate

Red–green maps in this report show variation from the national performance. Green indicates better performance than the national value, while red indicates worse performance. The strength of the colour shows the extent of the variation.

The national (England, Wales and Northern Ireland) performance for this metric is 25.9%. The legend shows the percentage point difference from the national rate (shown as 0, yellow), ranging from 9.8% (shown as -16.16, green) to 32.3% (shown as +6.34, red).

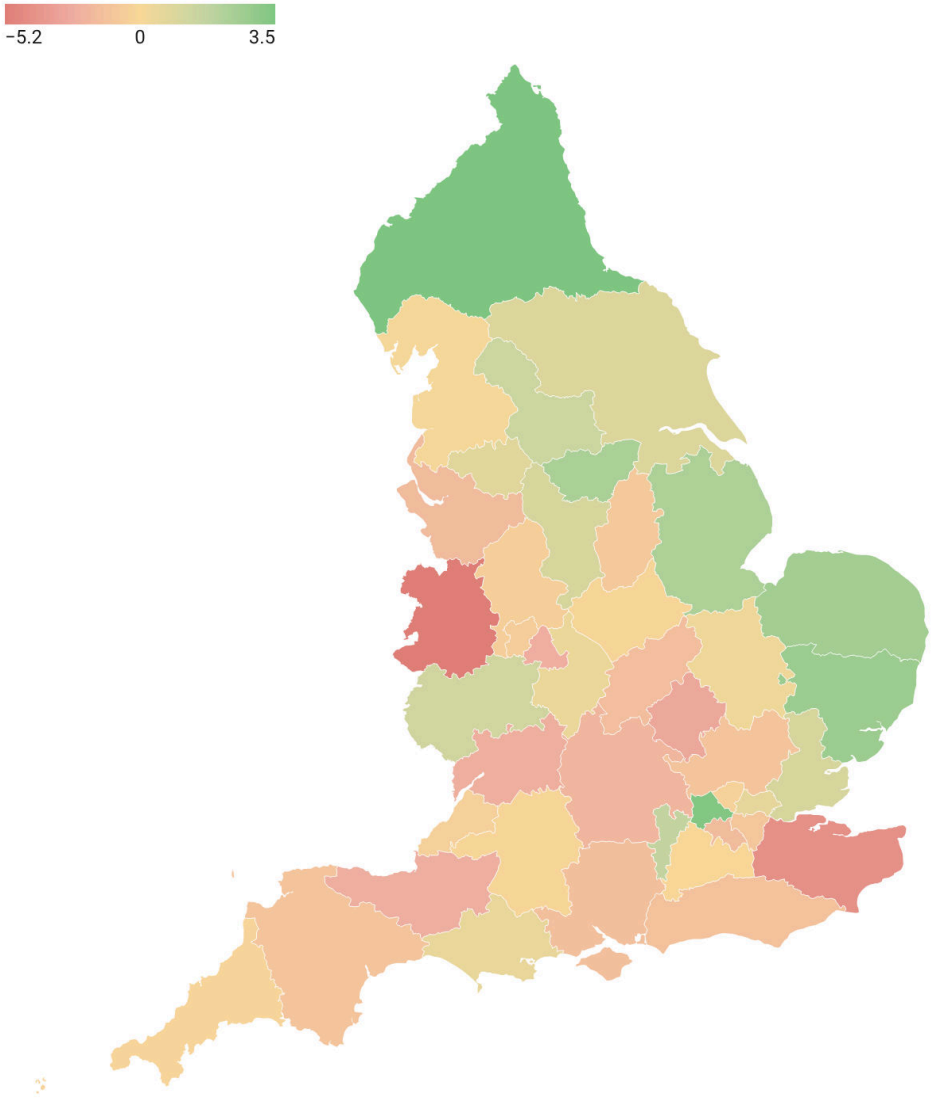
Ranked bar chart of proportion of patients with atrial fibrillation prior to stroke and not on anticoagulants



Graph 2: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (25.9%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

How good is stroke prevention in people with high blood pressure?

Proportion of people with blood pressure controlled to the relevant target



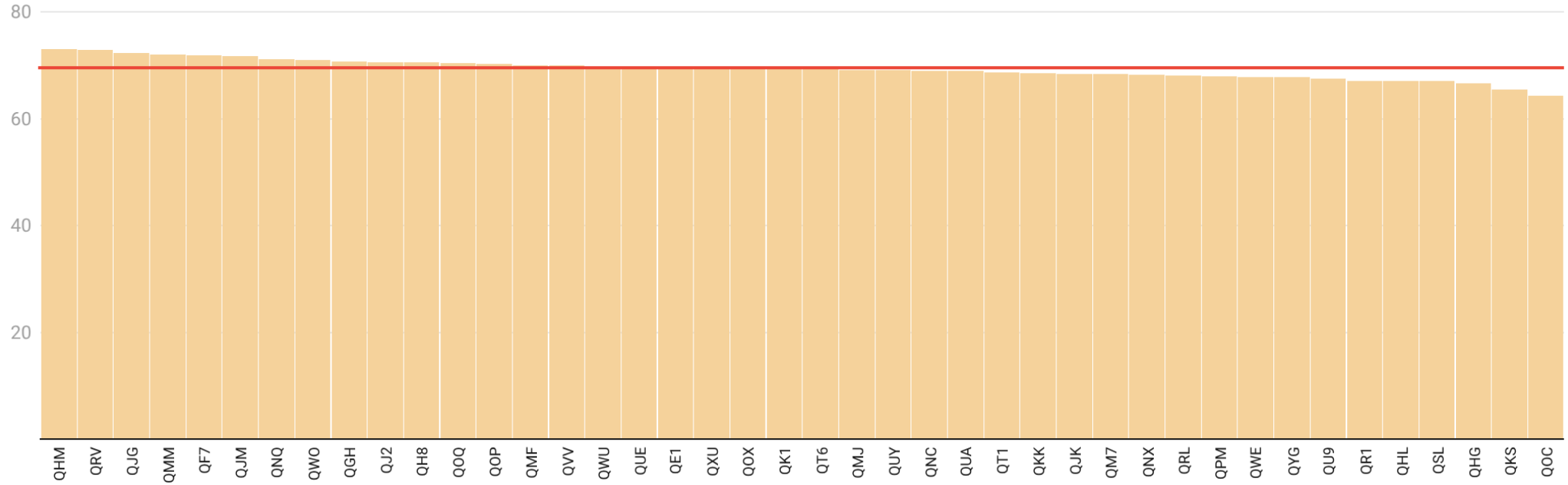
Map 6: Proportion of people with GP-recorded hypertension treated to the relevant age-appropriate blood pressure threshold between January-December 2025. This data is not limited to stroke patients. Data has been obtained from CVDPrevent. Data restricted to England only.

For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England only) value for this metric is 69.5%. The legend shows the percentage point difference from the national rate (shown as 0, yellow), ranging from 64.3% (shown as -5.2, red) to 73.0% (shown as +3.5, green).

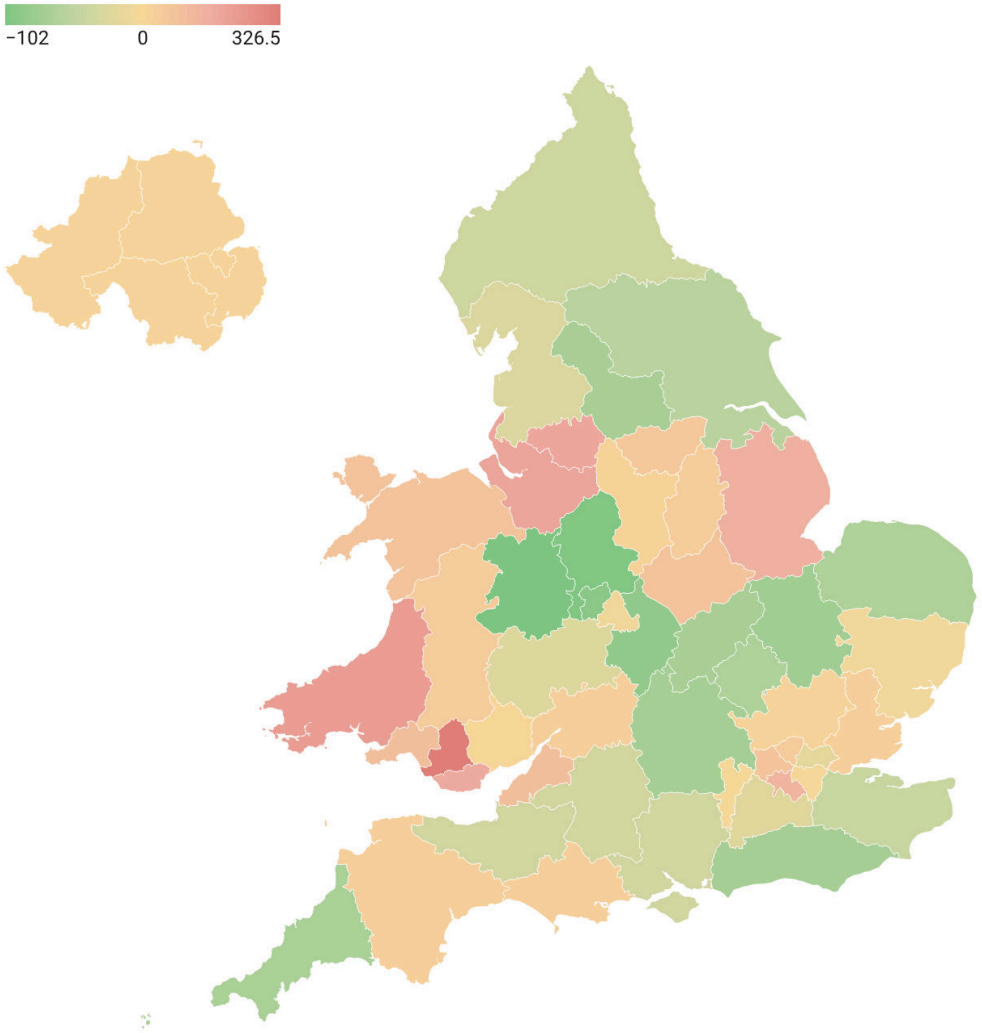
Ranked bar chart of proportion of people with blood pressure controlled to the relevant target



Graph 3: Bar chart shows the variation across all ICBs across England, both between areas and with the national. The national value (69.5%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

How quickly does a person with acute stroke get to hospital?

Onset to arrival time



Map 7: Median time (in minutes) from onset of stroke to arrival at hospital in 2025/26.

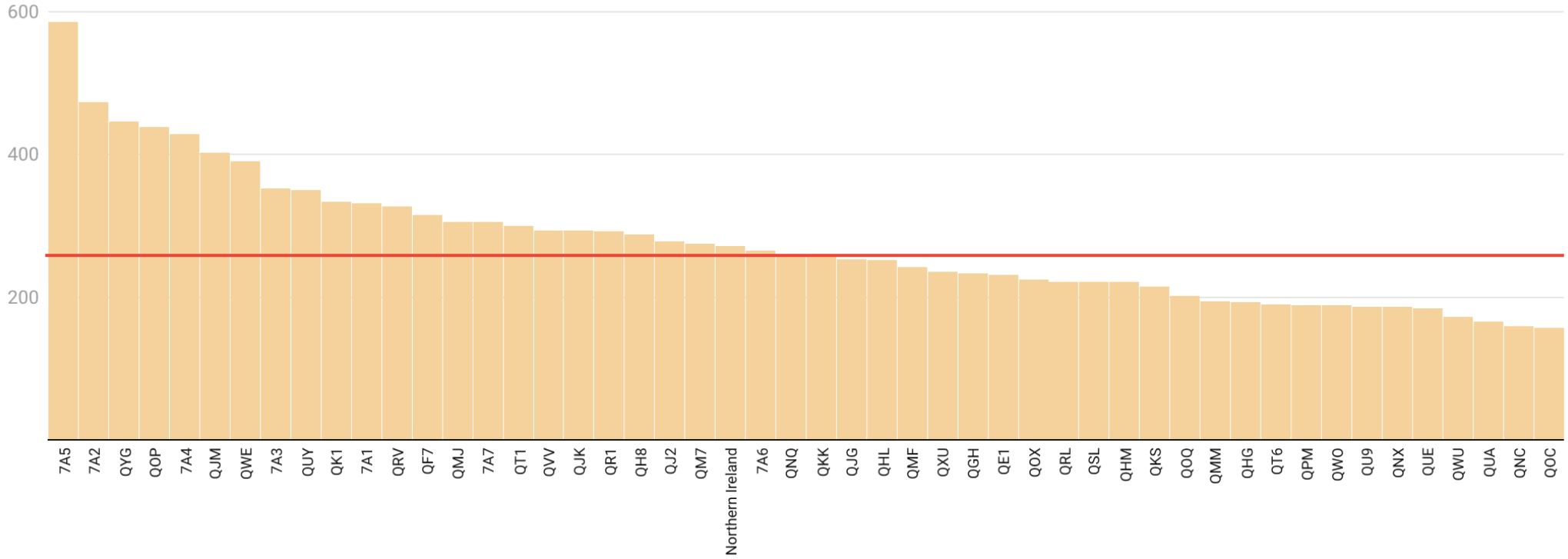
For this measure, lower values are more favourable. Green shows areas below the national performance, while red shows areas above it.

	Below the national median
	Above the national median

The national (England, Wales and Northern Ireland) average for this metric is 259 minutes. The legend shows the difference in minutes from this average (shown as 0, yellow), ranging from 157 minutes (shown as -102, green) to 585.5 minutes (shown as +326.5, red).

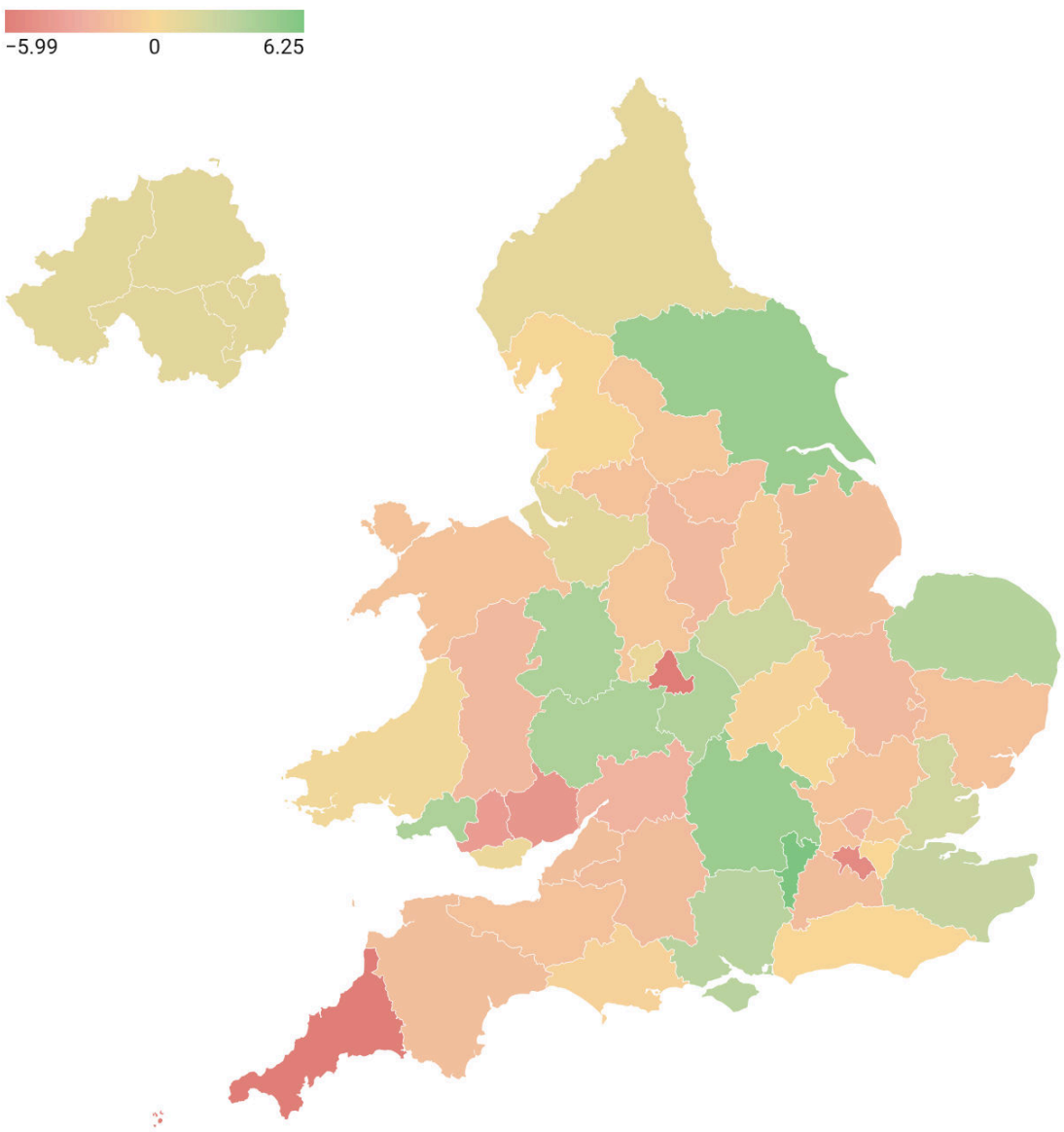
Variation in onset to arrival times is likely to be multifactorial and may reflect differences in recognition of stroke symptoms, local stroke service configuration, and conveyance pathways, including direct transfer of patients to thrombectomy centres rather than their nearest stroke unit.

Ranked bar chart of proportion of onset to arrival time



Graph 4: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (259 minutes) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

How many people with stroke are receiving thrombolysis?



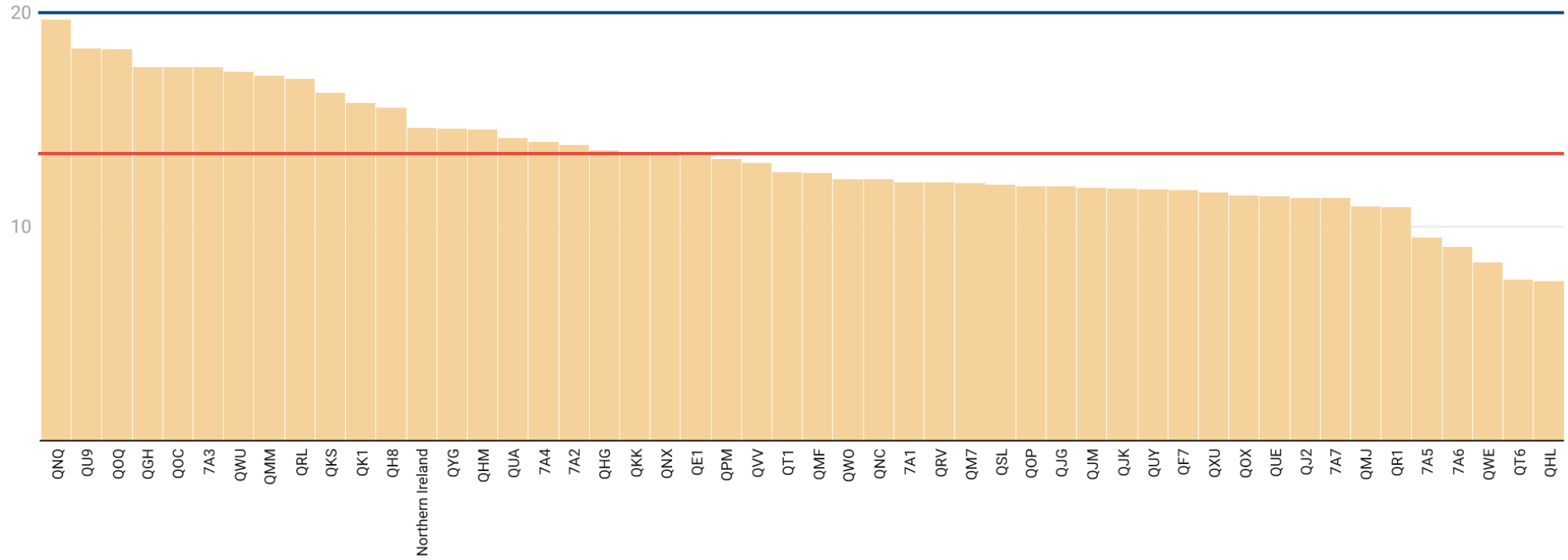
Map 8: Proportion of all stroke patients receiving thrombolysis in 2025/26.

For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England, Wales and Northern Ireland) value for this metric is 13.4%. The legend shows the percentage point difference from this rate (shown as 0, yellow), ranging from 7.4% (shown as -5.99, red) to 19.7% (shown as +6.25, green).

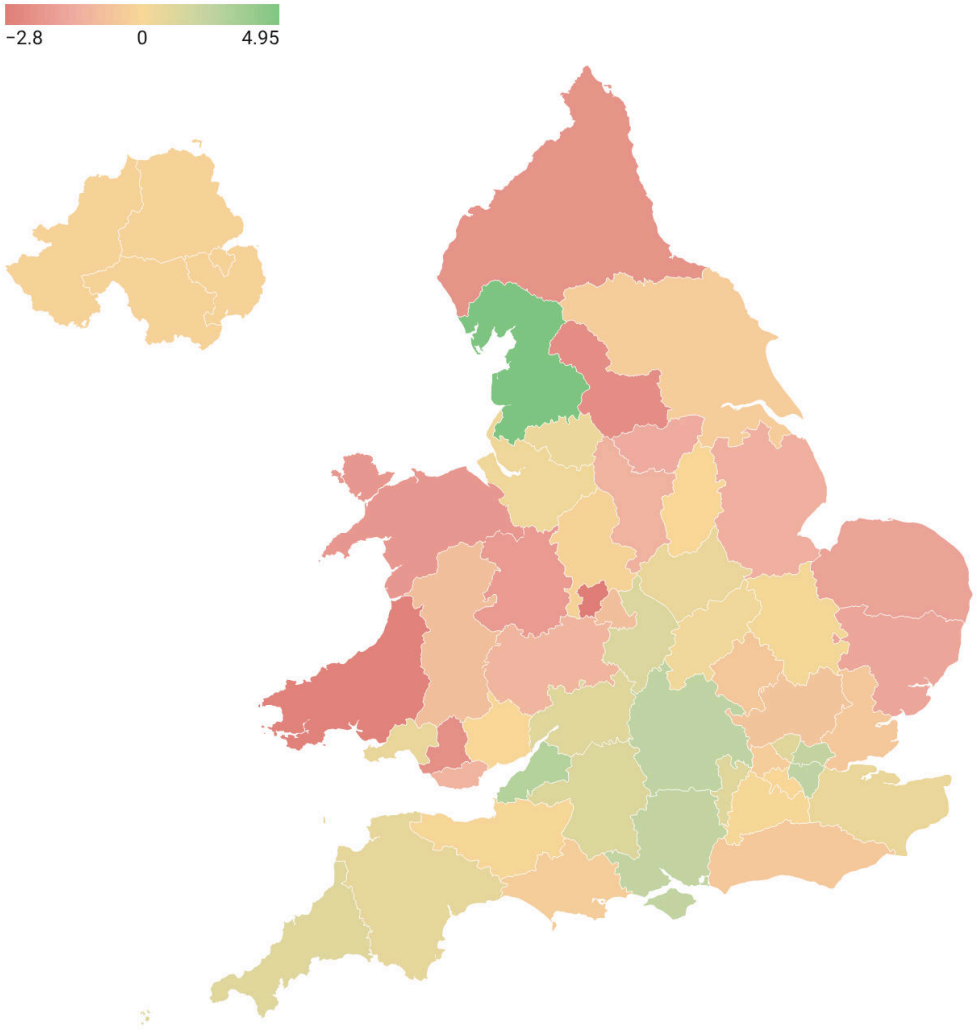
Ranked bar chart of thrombolysis rate



Graph 5: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (13.4%) is represented by the red horizontal line, and the national target (20%) is represented by the blue horizontal line. ICB codes and associated names are available in Appendix 1.

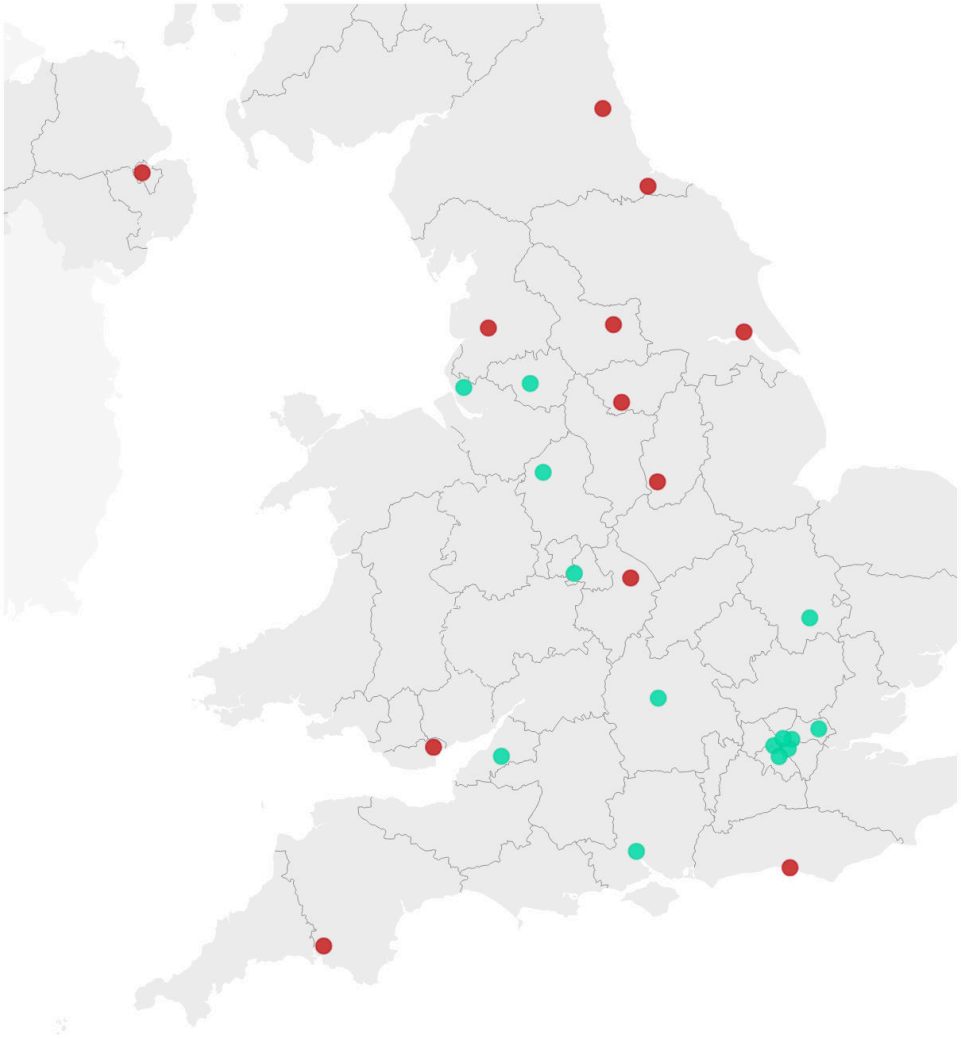
How many people with stroke are receiving thrombectomy?

Thrombectomy rate



Map 9: Proportion of all stroke patients receiving mechanical thrombectomy in 2025/26.

Access to a thrombectomy centre



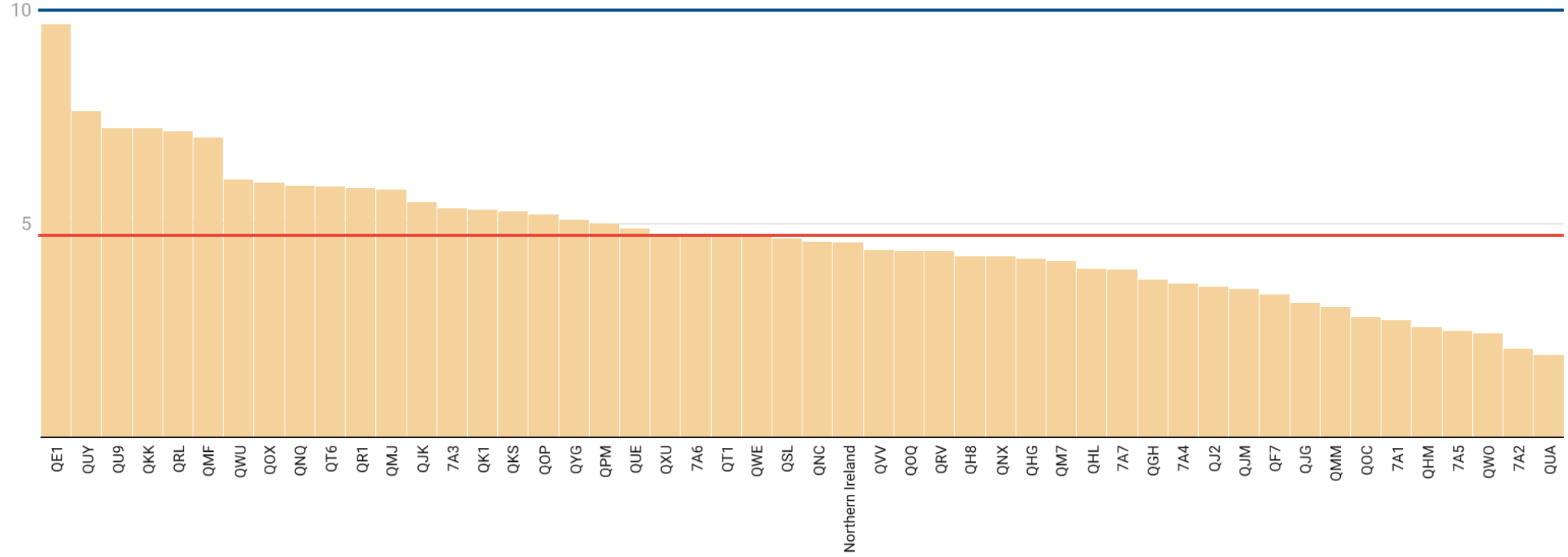
Map 10: Location of thrombectomy centres. Green dots represent 24/7 centres and red dots represent centres that do not offer a 24/7 thrombectomy service. Based on data from the SSNAP organisational audit November 2025.

For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England, Wales and Northern Ireland) value for this metric is 4.7%. The legend shows the percentage point difference from this rate (shown as 0, yellow), ranging from 1.9% (shown as -2.8, red) to 9.7% (shown as +4.95, green).

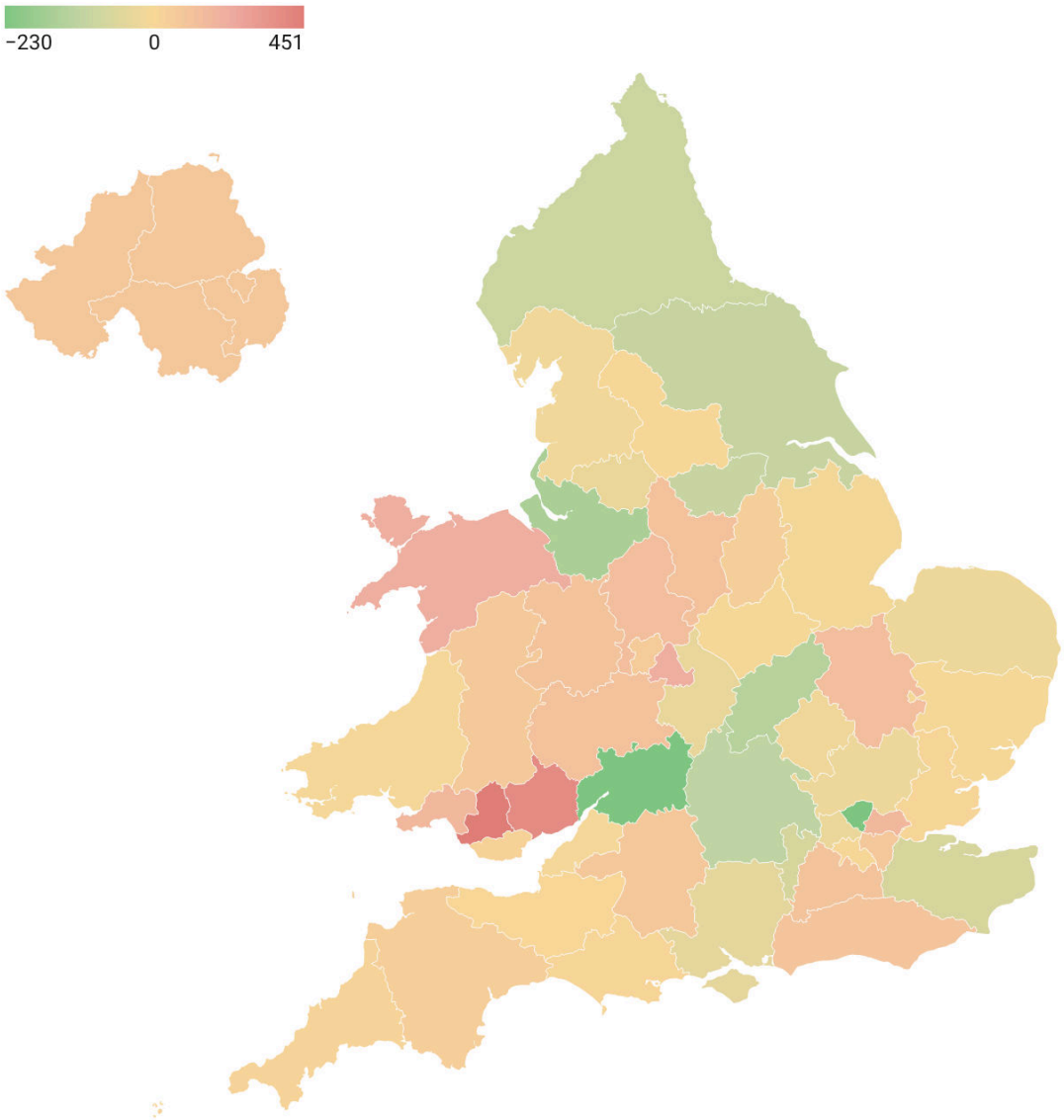
Ranked bar chart of thrombectomy rate



Graph 6: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (4.7%) is represented by the red horizontal line, and the national target (10%) is represented by the blue horizontal line. ICB codes and associated names are available in Appendix 1.

How quickly does a person admitted to hospital with stroke arrive to a specialist stroke unit?

Arrival at hospital to arrival on a stroke unit



Map 11: Median time (in minutes) from arrival at hospital to arrival on a specialist stroke unit in 2025/26.

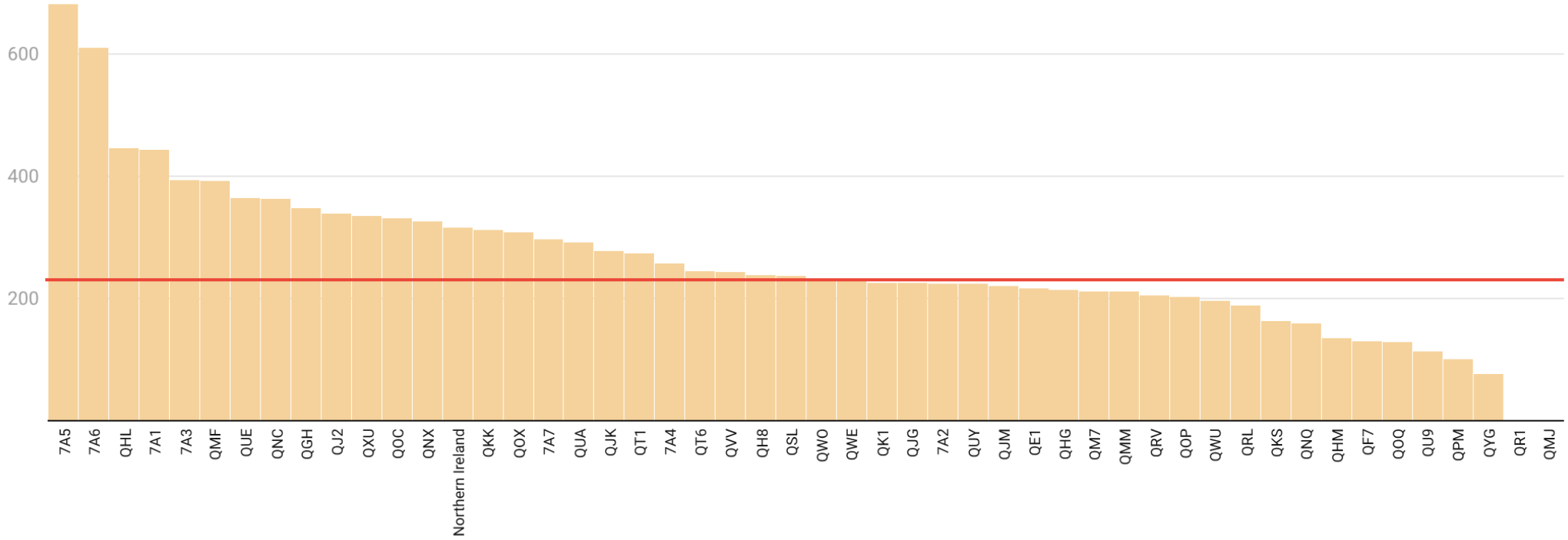
For this measure, lower values are more favourable. Green shows areas below the national performance, while red shows areas above it.

	Below the national median
	Above the national median

The national (England, Wales and Northern Ireland) performance for this metric is 230 minutes. The legend shows the difference in minutes from this average (shown as 0, yellow), ranging from 0 minutes (shown as -230, green) to 681 minutes (shown as +451, red).

Direct admission to an acute stroke unit supports timely multidisciplinary assessment and delivery of acute interventions, helping to improve patient outcomes.

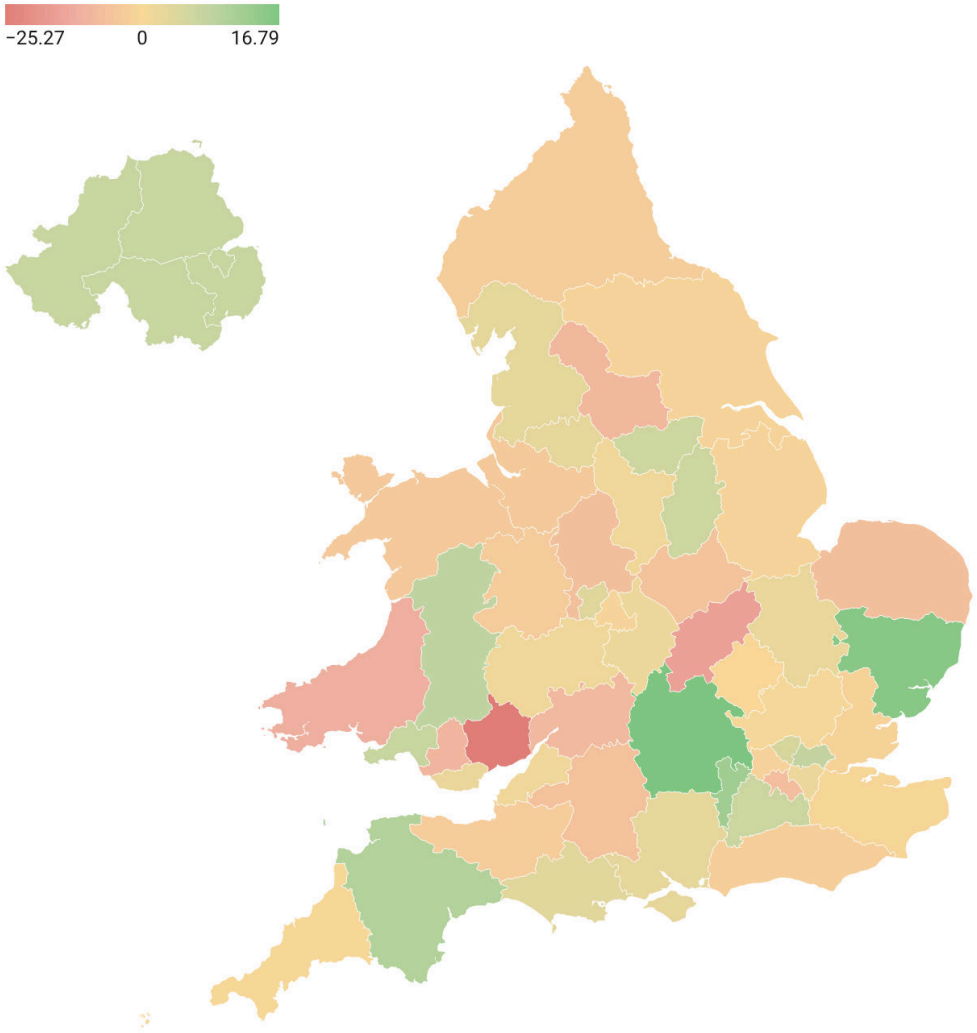
Ranked bar chart of arrival at hospital to arrival on a stroke unit



Graph 7: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (230 minutes) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

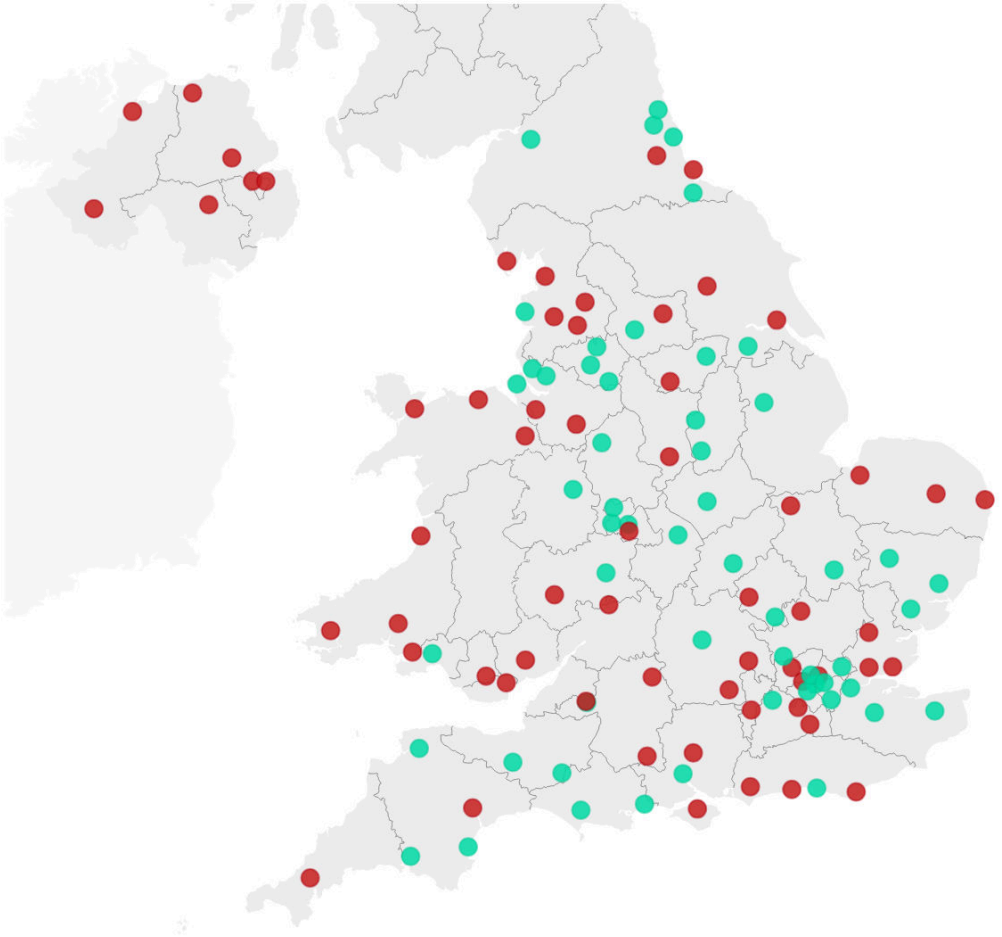
Are people with stroke getting the recommended levels of therapy?

Total minutes of therapy received per day of in patient stay



Map 12: Median number of minutes of total therapy received per day the patient is an inpatient in 2025/26.

Access to a 7-day therapy service



Map 13: Location of hyper-acute stroke units. Green dots represent centres providing at least 2 therapy disciplines (occupational therapy, speech and language therapy, physiotherapy) 7 days a week, and red dots do not offer at least 2 therapies 7 days a week. Based on data from the SSNAP organisational audit November 2025.

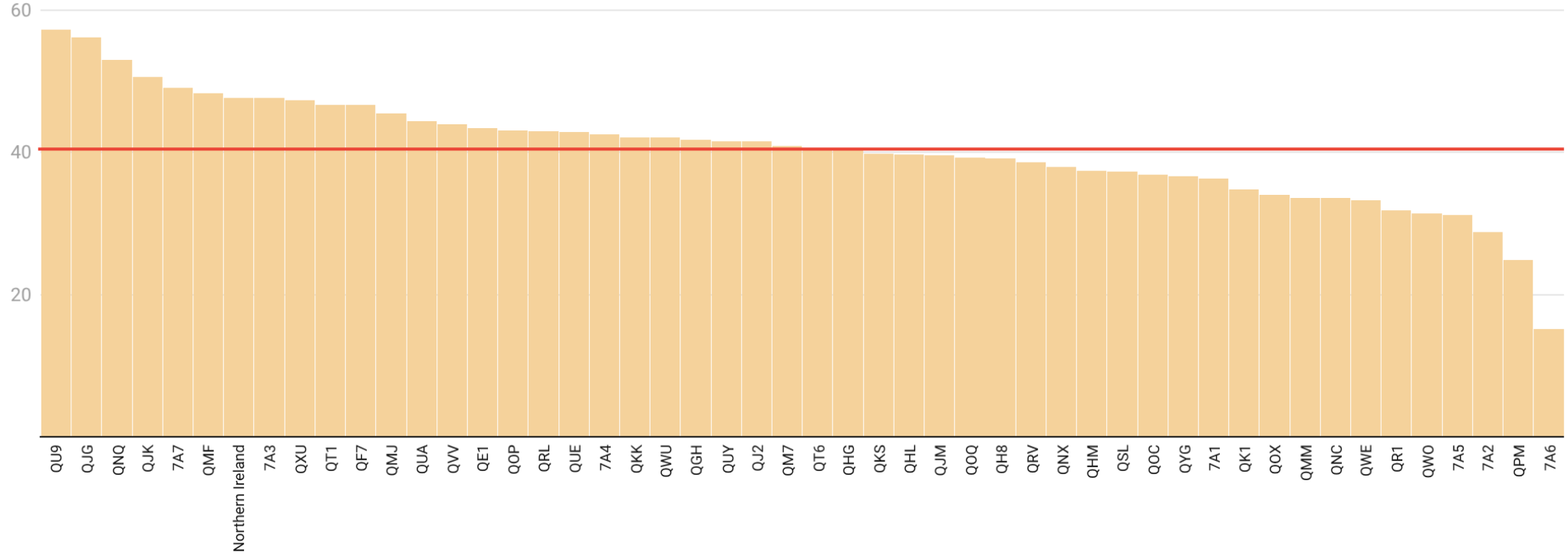
For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national median
	Below the national median

The national (England, Wales and Northern Ireland) performance for this metric is 40.5 minutes. The legend shows the difference in minutes from this average (shown as 0, yellow), ranging from 15.2 minutes (shown as -25.27, red) to 57.3 minutes (shown as +16.79, green).

Therapy should be provided at the intensity and frequency required to meet each patient's rehabilitation goals and preferences, with access available across seven days.

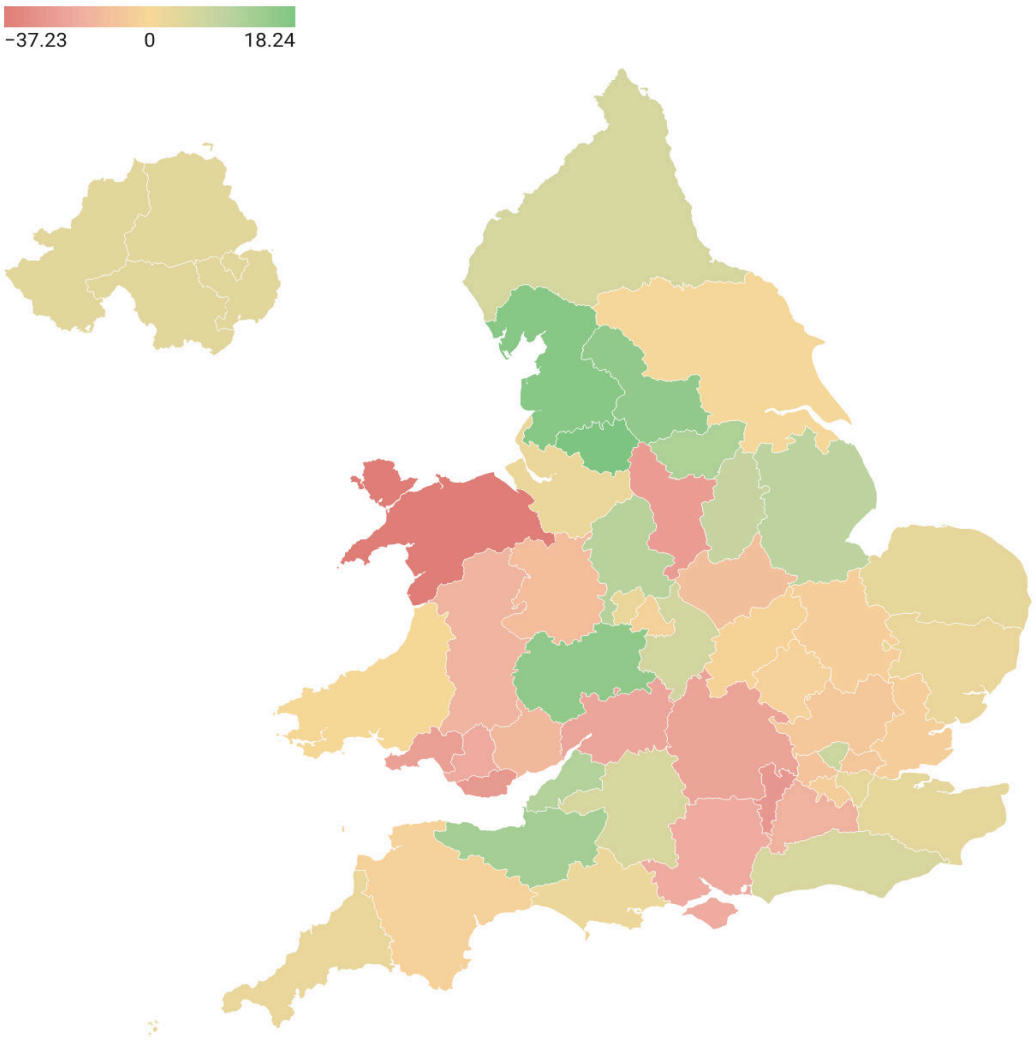
Ranked bar chart of total minutes of therapy received per day of in patient stay



Graph 8: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (40.5 minutes) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

Are people with stroke treated with specialist rehabilitation services at home?

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



Map 14: Proportion of patients discharged to a stroke-specific ESD and/or CRT service in 2025/26.

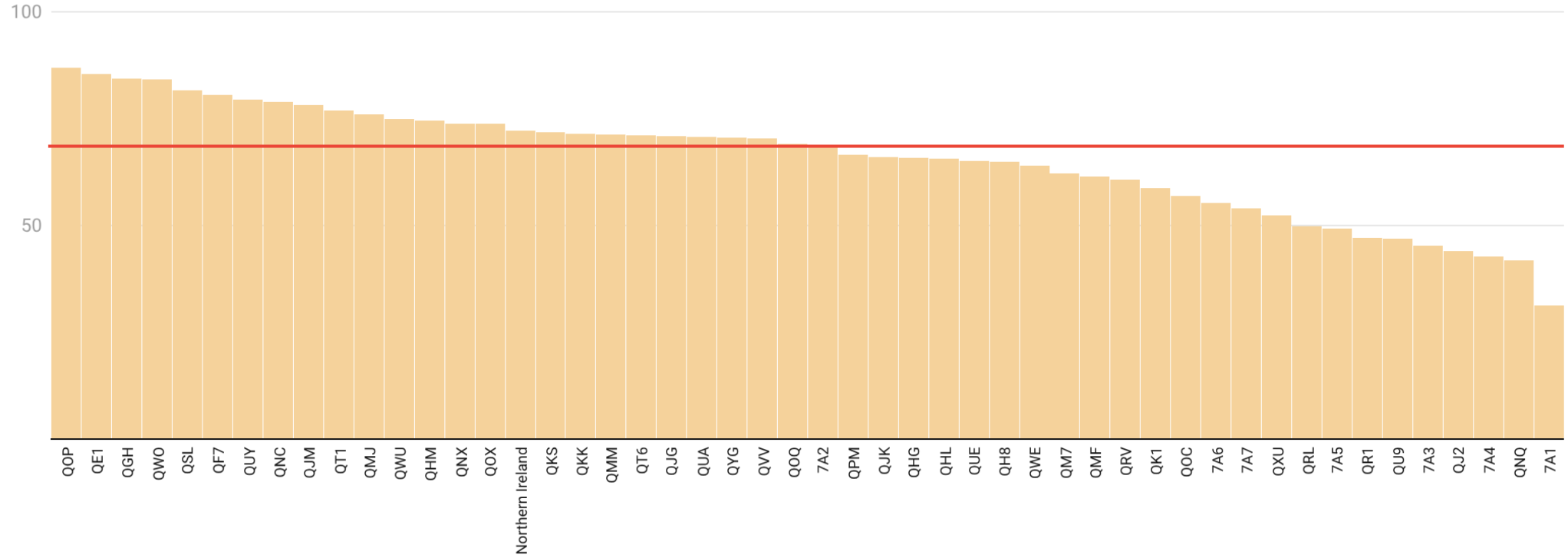
For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England, Wales and Northern Ireland) value for this metric is 68.6%. The legend shows the percentage point difference from this average (shown as 0, yellow), ranging from 31.4% (shown as -37.23, red) to 86.8% (shown as +18.24, green).

Specialist community stroke rehabilitation should be provided by multidisciplinary teams to support safe and effective discharge from hospital and maximise recovery at home.

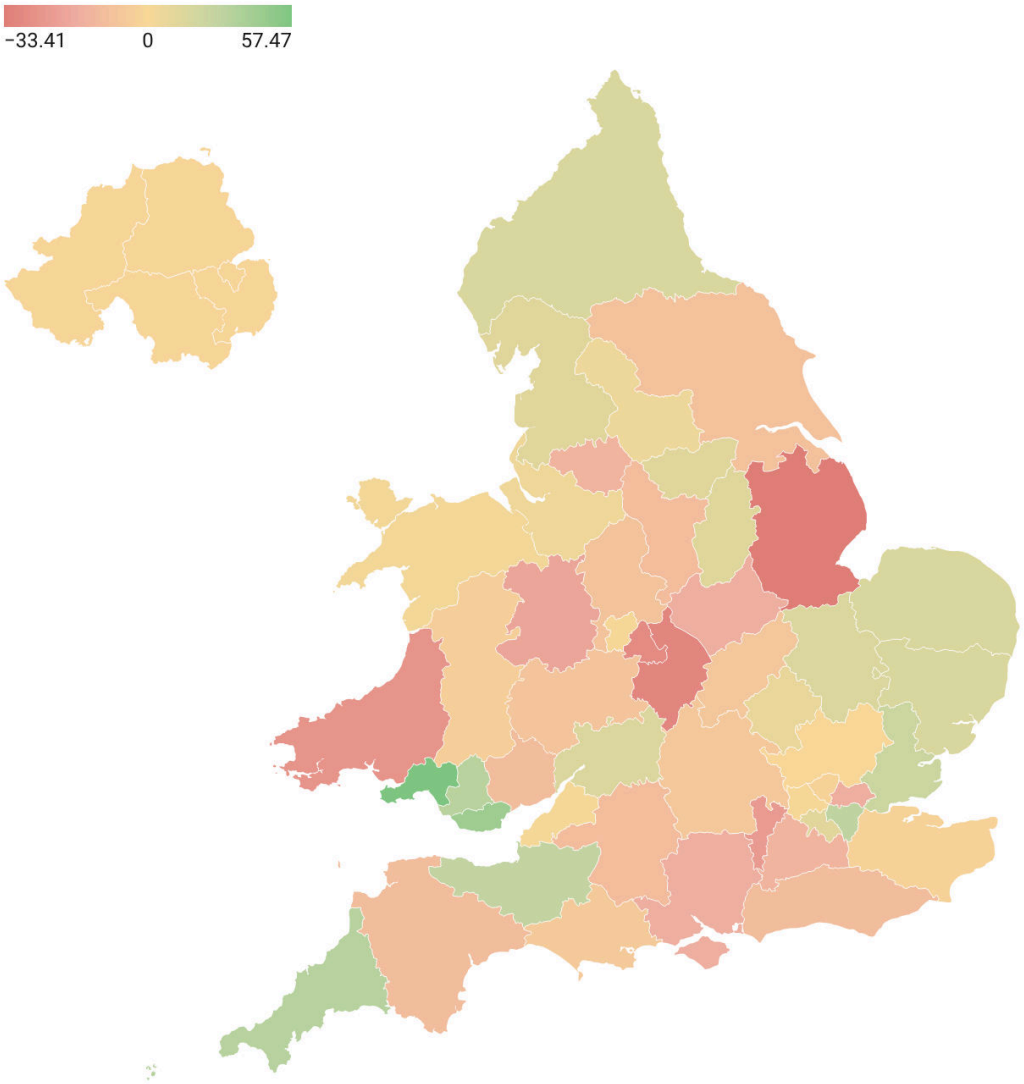
Ranked bar chart of access to stroke/neurology specific ESD and/or CRT services



Graph 9: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (68.6%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

Are people with stroke being reviewed at 6 months?

Access to 6-month follow-up



Map 15: Proportion of patients receiving a 6 month assessment after stroke. This measure is based on stroke admissions in 2024/25 and whether those patients received a 6-month assessment.

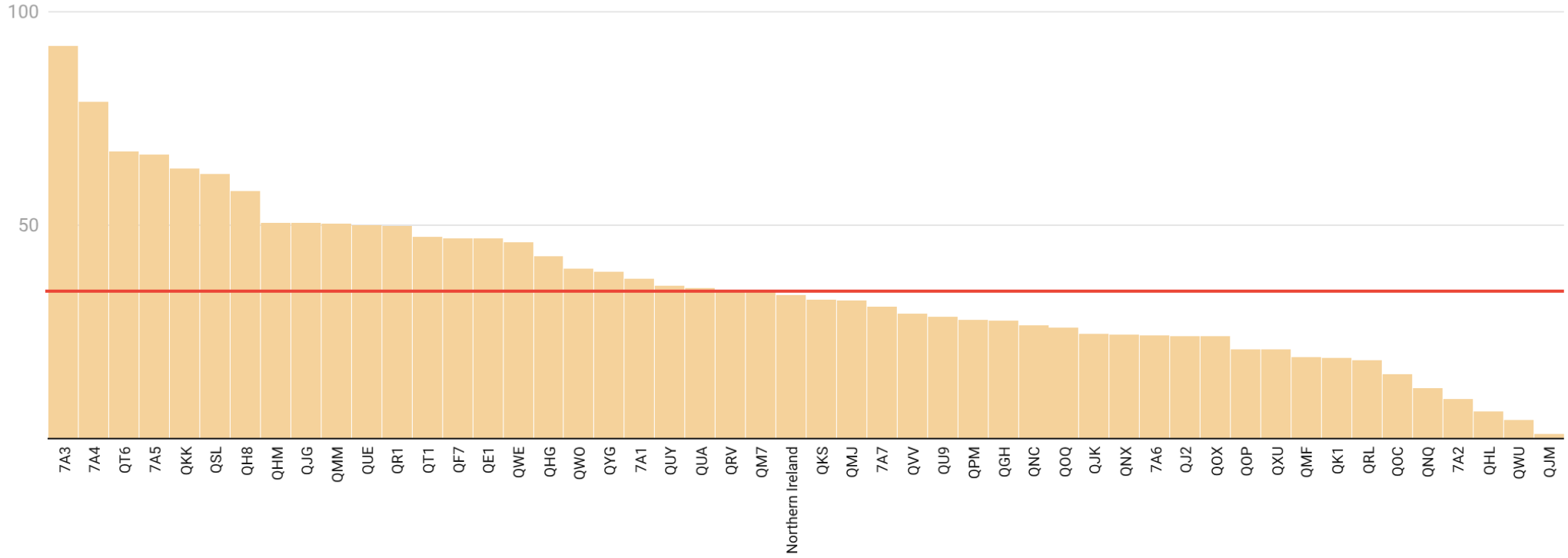
For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England, Wales and Northern Ireland) value for this metric is 34.5%. The legend shows the percentage point difference from this rate (shown as 0, yellow), ranging from 1.1% (shown as -33.41, red) to 92.0% (shown as +57.47, green).

Access to specialist stroke services at six months is important to identify and address the long-term needs of stroke survivors, including secondary prevention, psychological support, and vocational rehabilitation.

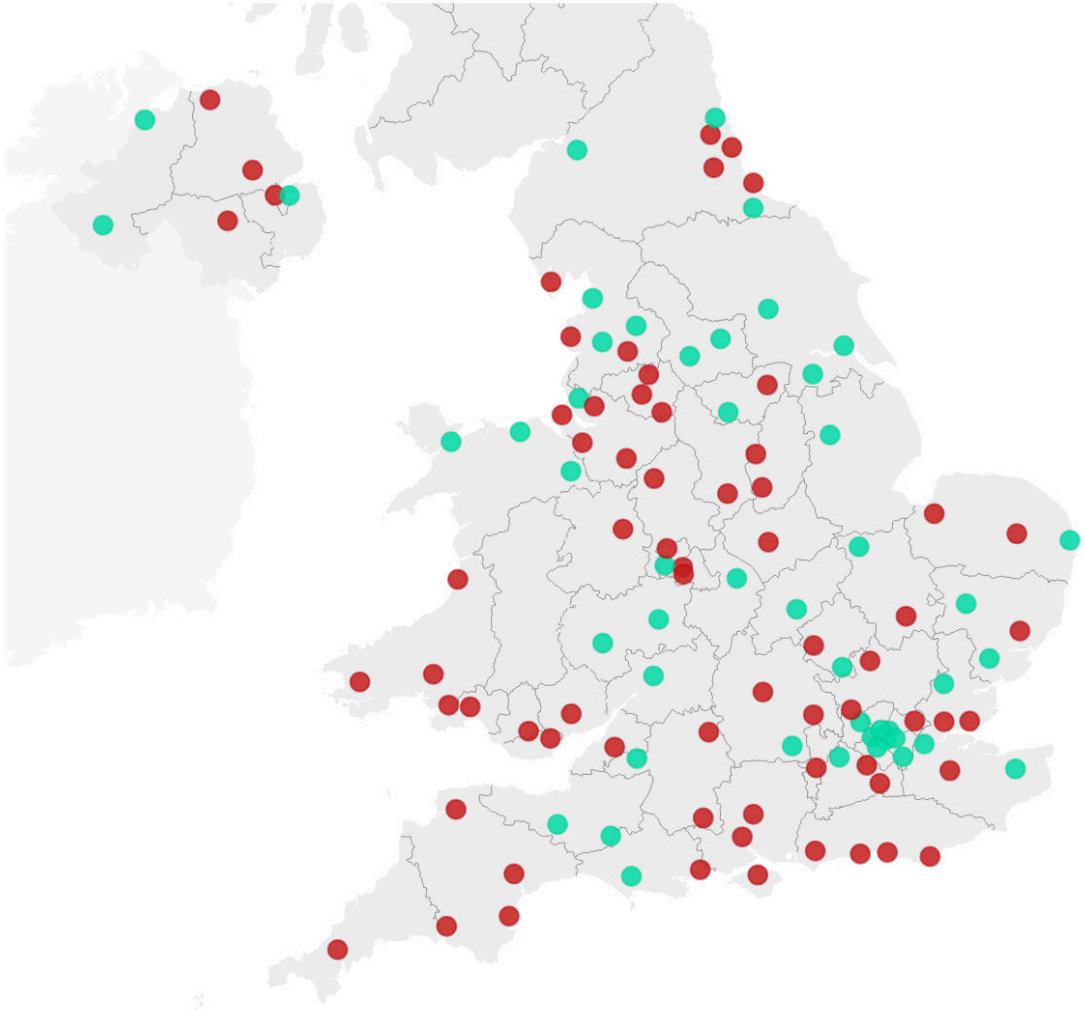
Ranked bar chart of access to 6-month follow-up



Graph 10: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (34.5%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

Are stroke units adequately staffed with stroke trained nurses?

Specialist nursing staff ratio for hyperacute beds



Map 16: Green dots represent stroke services with the minimum number of nurses on duty at 10am on weekends, while red dots do not have the minimum number of nurses on duty at 10am on weekends. Based on data from the SSNAP organisational audit November 2025.

For this measure, a green dot represents stroke services with the minimum number of nurses on duty at 10am on weekends, while red represents stroke services that do not have the minimum number of nurses on duty at 10am on weekends.

The minimum number of nurses on duty at 10am on weekends is met if the service has 3.0 WTE nurses per 10 type 1 and 3 beds (average number of nurses on duty on type 1 and type 3 beds).

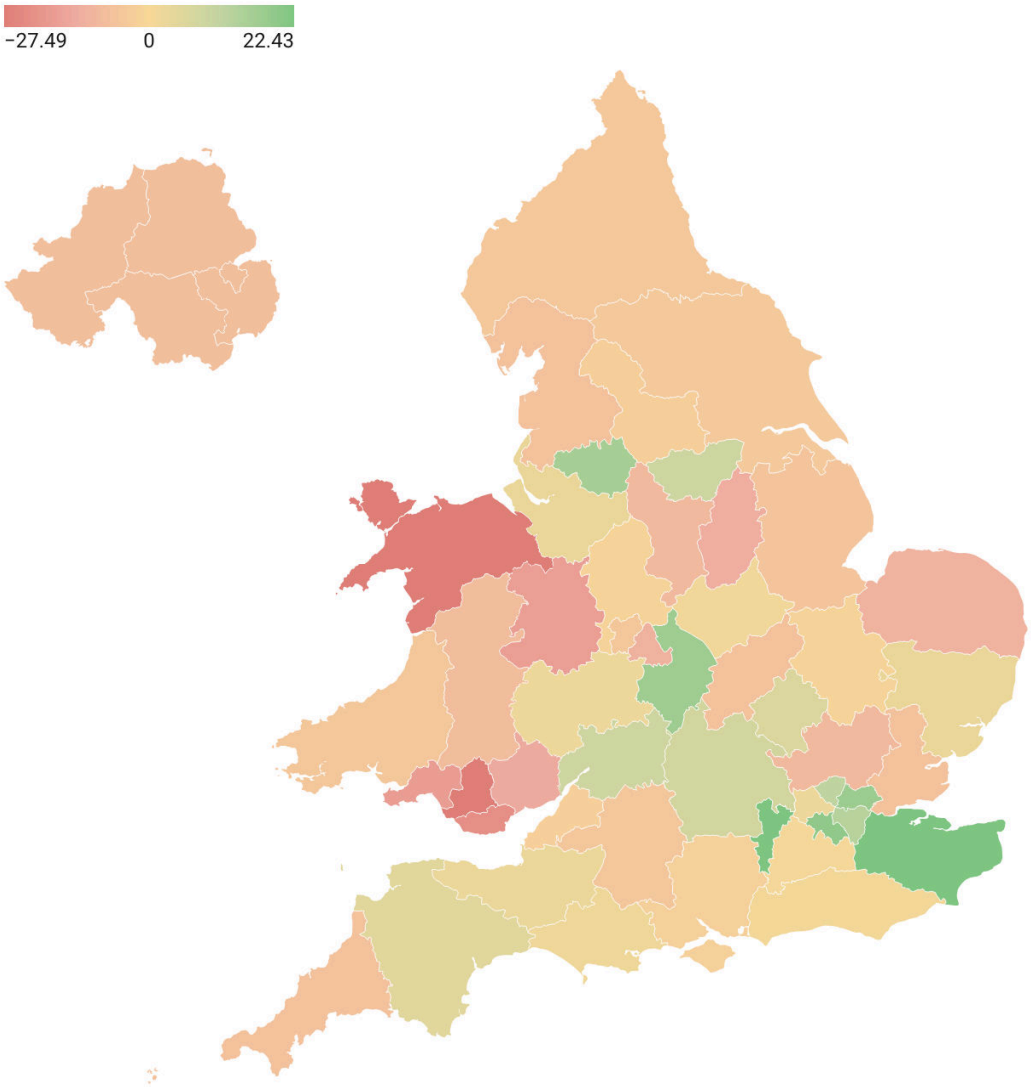
This metric is based on data from the SSNAP organisational audit November 2025.

Type 1 beds: beds solely for patients in first 72 hours after stroke
Type 3 beds: beds used for both pre- and post-72 hour care

Access to specialist nursing staff supports timely assessment, monitoring, and management of patients after stroke, helping to reduce the risk of post-stroke complications.

Are people with intracerebral haemorrhage receiving high quality care?

Hyperacute interventions for intracerebral hemorrhage (ICH)



Map 17: Proportion of eligible patients diagnosed with intracerebral haemorrhage given anticoagulant reversal agents within 1 hour OR given antihypertensives within 1 hour of arrival in 2025/26.

For this measure, higher values are more favourable. Green shows areas above the national performance, while red shows areas below it.

	Above the national rate
	Below the national rate

The national (England, Wales and Northern Ireland) value for this metric is 33.4%. The legend shows the percentage point difference from this rate (shown as 0, yellow), ranging from 5.9% (shown as -27.49, red) to 55.8% (shown as +22.43, green).

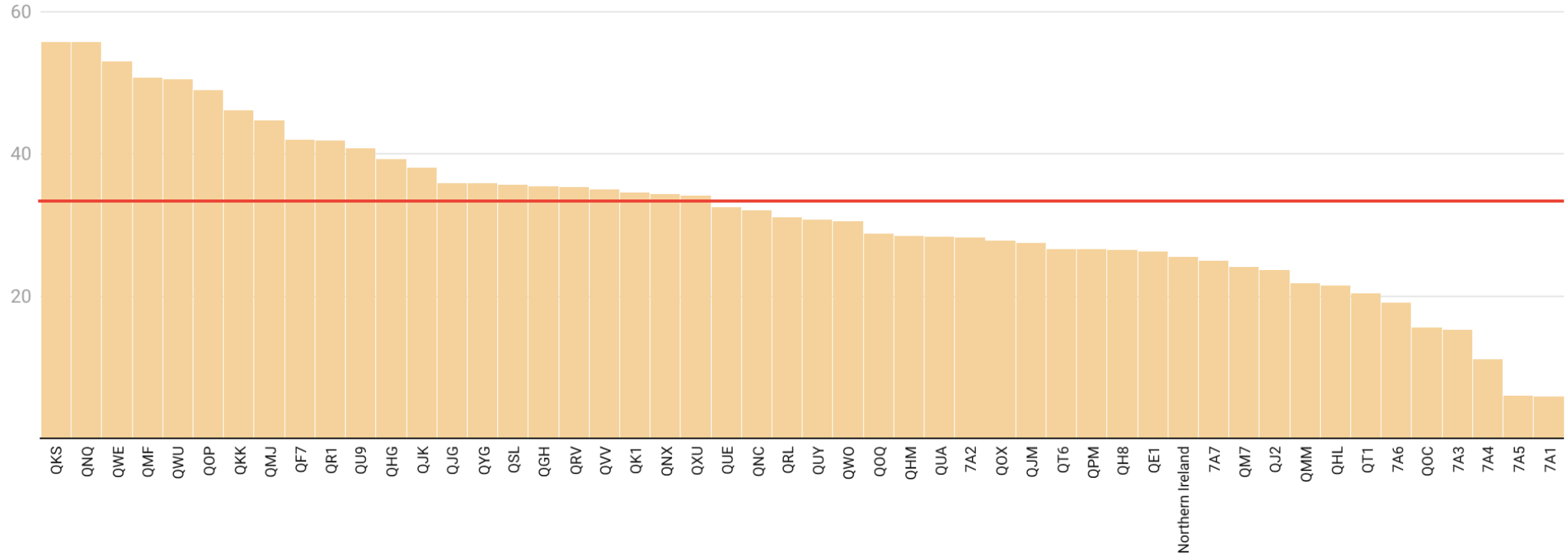
This measure includes the number of confirmed ICH patients:

- who were on anticoagulants eligible for reversal on admission and were given reversal agents within 1 hour of arrival

OR

- who had elevated systolic blood pressure (> 150) on admission and were given antihypertensives within1 hour of arrival.

Ranked bar chart of hyperacute interventions for intracerebral hemorrhage

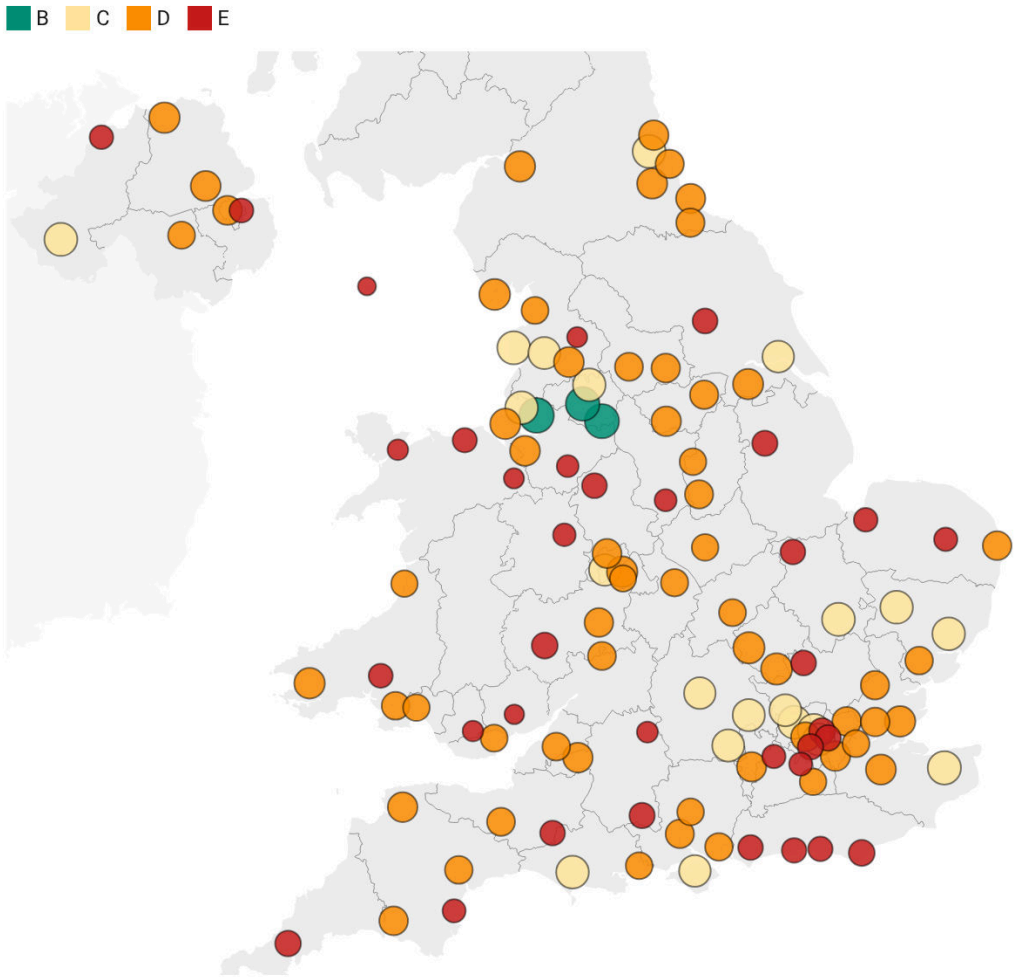


Graph 11: Bar chart shows the variation across all ICBs/LHBs and Northern Ireland, both between areas and with the national. The national value (33.4%) is represented by the red horizontal line. ICB codes and associated names are available in Appendix 1.

Is the care and treatment of people with stroke improving?

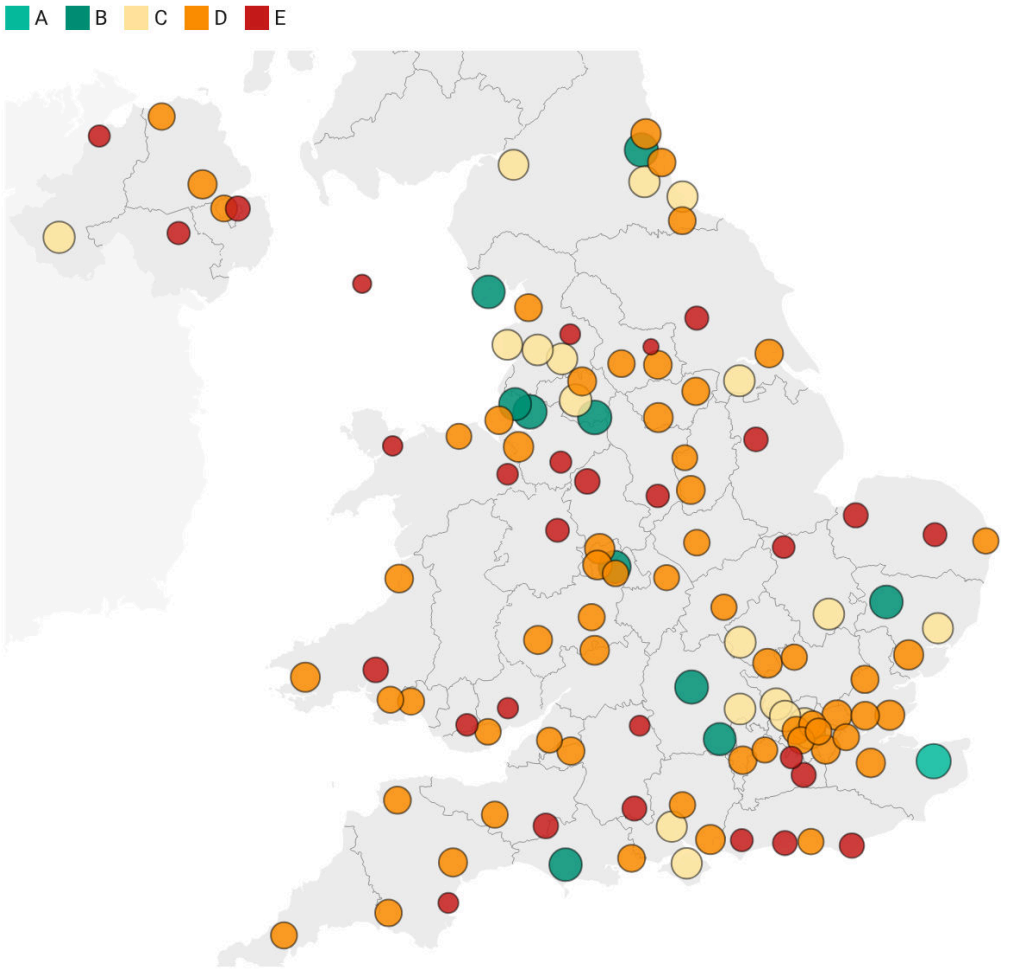
For these maps, the standard SSNAP red-to-green scoring colour scheme has been adopted. The size of the circle correlates to the score, i.e. a larger circle represents a higher SSNAP score.

April-June 2025



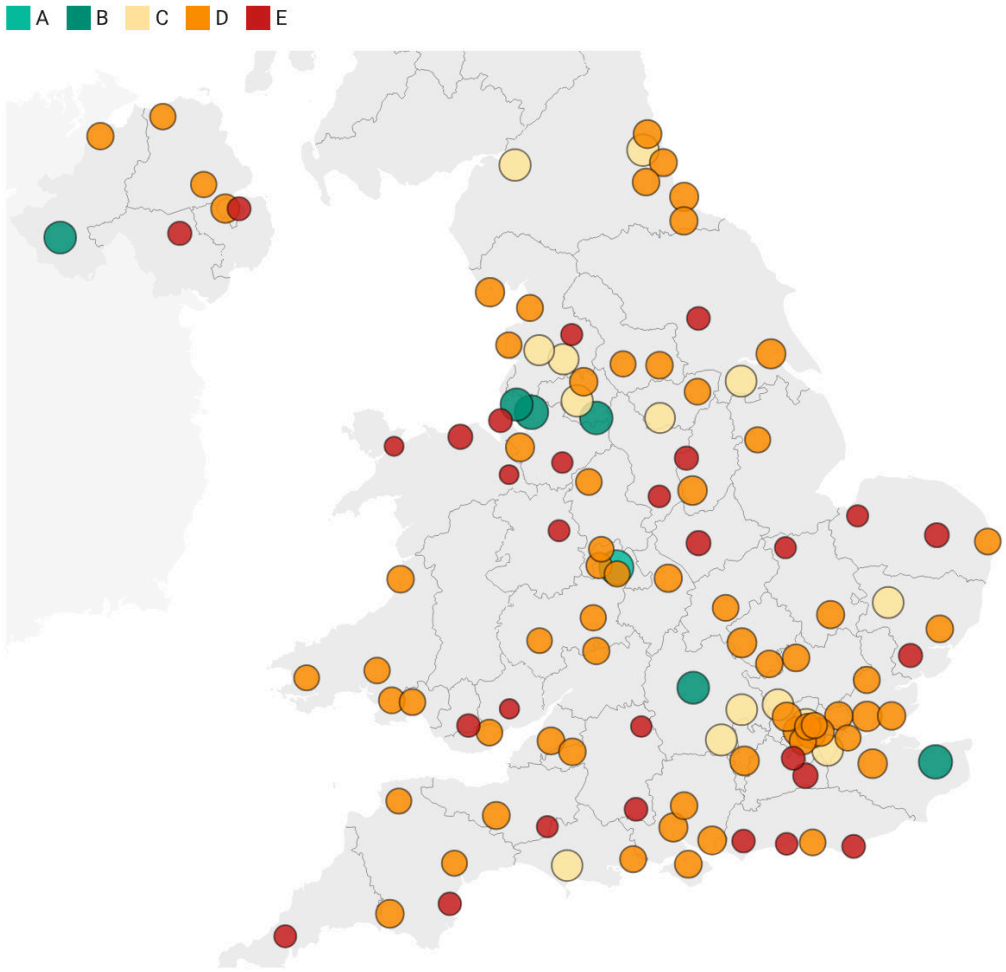
Map 18: SSNAP score for each routinely admitting team in April-June 2025.

July-September 2025



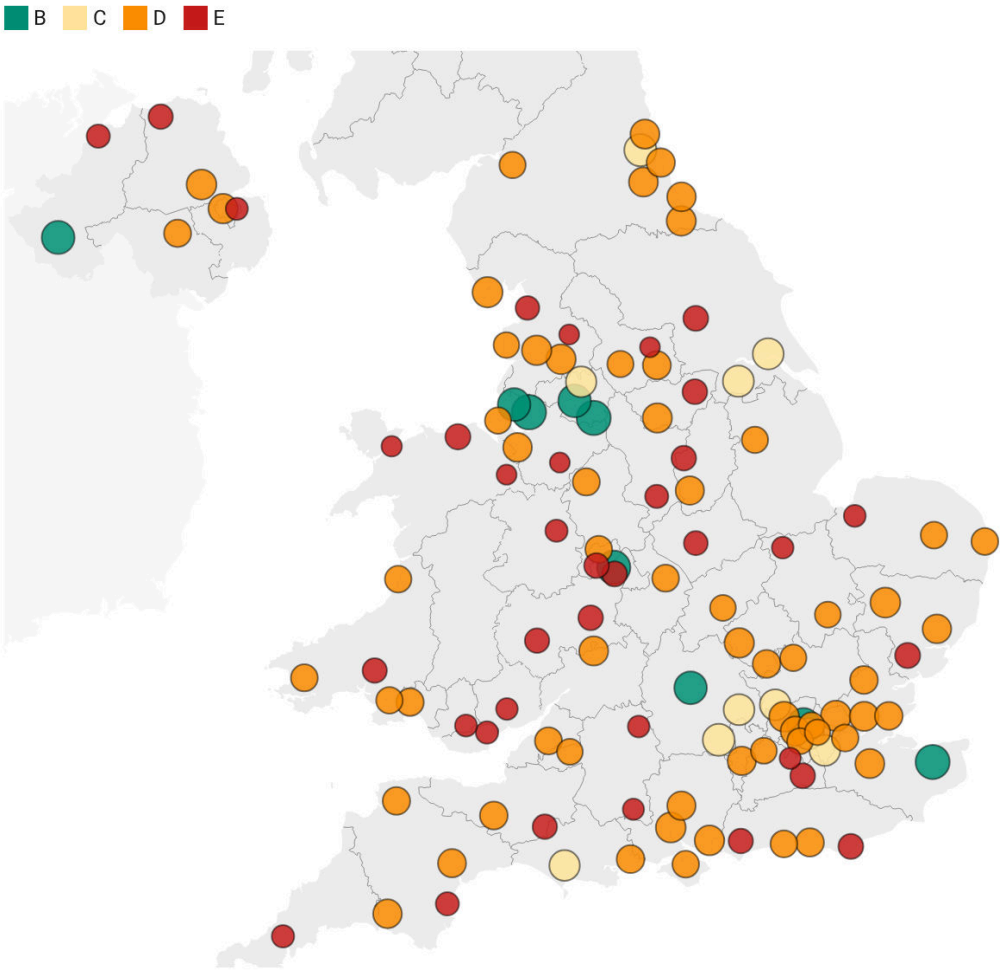
Map 19: SSNAP score for each routinely admitting team in July-September 2025.

October-December 2025



Map 20: SSNAP score for each routinely admitting team in October-December 2025.

January-March 2026



Map 21: SSNAP score for each routinely admitting team in January-March 2026.

Teams are expected to achieve an A or B SSNAP rating, indicating first class quality of care and a good or excellent service in many aspects. A SSNAP rating of a C or less suggests that some or several areas of care require improvement. A SSNAP rating of D or E indicates that several areas require improvement. For more information about SSNAP scoring, see SSNAP Scoring.

Concluding thoughts

This report represents a starting point for clinical leaders within both ICBs and LHBs to begin examining the key indicators for stroke care and understanding the quality of stroke care delivered. Preparing for future demands arising from demographic changes and increasing stroke incidence is a key priority.

Variation in the delivery of stroke care across populations may be unavoidable, however, whether variation is considered unwarranted is important. Using enriched stroke data from the Sentinel Stroke National Audit Programme can help to identify reasons for such variation and stimulate inquiry to offer solutions to reduce inequalities in healthcare. Such findings will be important to support the delivery of high-quality evidence-based stroke care across the pathway improving the delivery of preventative strategies, hyper-acute treatments, access to organised stroke care, specialist stroke rehabilitation and consistent personalised support longer term.

It is important that organisations responsible for commissioning stroke care benchmark against each other as well as against the national average. Such comparisons will enable services to learn from each other while also providing a platform to support quality improvement across the stroke pathway. These measures will be integral to reducing unwarranted variation in stroke care while improving patient outcomes, patient experience, and population health, in line with the NHS 10-Year Plan.

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, Ms Louise Clark, Stroke Consultant Therapist, Dr Rebecca Fisher, Senior Research Advisor, Stroke Association, and Prof Martin James, Consultant Stroke Physician/Hon Clin Professor.

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 programme.

The hospitals, community teams and ambulance trusts for continuing to participate in SSNAP. Their participation and commitment to the audit ensures that quality, rich and robust data is available which can be used to improve stroke services.

Appendix 1

ICB/LHB Code	ICB/LHB Name	ICB/LHB Code	ICB/LHB Name
7A6	Aneurin Bevan UHB	QKS	NHS Kent and Medway
7A1	Betsi Cadwaladr UHB	QE1	NHS Lancashire and South Cumbria
7A4	Cardiff and Vale UHB	QK1	NHS Leicester, Leicestershire and Rutland
7A5	Cwm Taf Morgannwg UHB	QJM	NHS Lincolnshire
7A2	Hywel Dda UHB	QH8	NHS Mid and South Essex
QOX	NHS Bath and North East Somerset, Swindon and Wiltshire	QMM	NHS Norfolk and Waveney
QHG	NHS Bedfordshire, Luton and Milton Keynes	QMJ	NHS North Central London
QHL	NHS Birmingham and Solihull	QMF	NHS North East London
QUA	NHS Black Country	QHM	NHS North East and North Cumbria
QUY	NHS Bristol, North Somerset and South Gloucestershire	QRV	NHS North West London
QU9	NHS Buckinghamshire, Oxfordshire and Berkshire West	QPM	NHS Northamptonshire
QUE	NHS Cambridgeshire and Peterborough	QT1	NHS Nottingham and Nottinghamshire
QYG	NHS Cheshire and Merseyside	QOC	NHS Shropshire, Telford and Wrekin
QT6	NHS Cornwall and the Isles of Scilly	QSL	NHS Somerset
QWU	NHS Coventry and Warwickshire	QKK	NHS South East London
QJ2	NHS Derby and Derbyshire	QWE	NHS South West London
QJK	NHS Devon	QF7	NHS South Yorkshire
QVV	NHS Dorset	QNC	NHS Staffordshire and Stoke-on-Trent
QNQ	NHS Frimley	QJG	NHS Suffolk and North East Essex
QR1	NHS Gloucestershire	QXU	NHS Surrey Heartlands
QOP	NHS Greater Manchester	QNX	NHS Sussex
QRL	NHS Hampshire and Isle of Wight	QWO	NHS West Yorkshire
QGH	NHS Herefordshire and Worcestershire	7A7	Powys Teaching Health Board
QM7	NHS Hertfordshire and West Essex	7A3	Swansea Bay UHB
QOQ	NHS Humber and North Yorkshire		