Royal College of Physicians | SSNAP

Sentinel Stroke National Audit Programme (SSNAP)

Results for Clinical Commissioning Groups (CCG) in England and Local Health Boards (LHB) in Wales

National results

Based on stroke patients admitted to and/or discharged from hospitals assigned to the relevant CCG/LHB between April 2013 – July 2017

October 2017

Prepared by

Royal College of Physicians, Clinical Effectiveness and Evaluation Unit on behalf of the Intercollegiate Stroke Working Party

Clinical audit

Contents

Introduction 6
Methods 9
Participation and Case Ascertainment 10
Section 1: Periodic Results 13
CCG Outcomes Indicator Set (OIS) 13
Care delivered within the first 72h 13
Care delivered between 72h and discharge from inpatient care 16
6 month assessments 18
Further CCG Indicators 20
Atrial Fibrillation 20
Early Supported Discharge (ESD) 20
SSNAP Key Indicators 21
Changes over time 30
Section 2: Annual Results 32
CCG Outcomes Indicator Set (OIS) 32
Care delivered within the first 72h 32
Care delivered between 72h and discharge from inpatient care 36
Care delivered after discharge from inpatient care 39
6 month assessments 40
Mortality data 43
Further CCG Indicators 45
Atrial Fibrillation 45
Early Supported Discharge (ESD) 45
Institutionalisation 46
SSNAP Key Indicators – annual results 47
Conclusion 54
Appendix 55

Document purpose	To disseminate national periodic and annual results on the processes of stroke care at population level.
Title	CCG/LHB Public Report – Includes periodic (April 2017 - July 2017) and annual (April 2013-March 2017) level results
Author	Royal College of Physicians, Clinical Effectiveness and Evaluation Unit on behalf of the Intercollegiate Stroke Working Party
Publication	October 2017
Target audience	Clinical Commissioning Groups (CCGs), Local Health Boards (LHBs), general public, stroke survivors and carers, health and social care professionals, stroke researchers
Description	This is the latest CCG/LHB level report on the clinical component (processes of care) of the national stroke audit, SSNAP. It includes results for those stroke care measures included in the CCG Outcomes Indicator Set and each of the 44 key indicators chosen by the Intercollegiate Stroke Working Party (ICSWP) as representative of high quality stroke care. It also highlights results for additional indicators including prior anticoagulation for patients in atrial fibrillation, and institutionalisation rates for patients discharged alive from hospital. More details on the measures reported on can be found in the introductory section of this document. The report is divided into two sections. Section 1 outlines national CCG/LHB results on the quality of stroke care for patients admitted and/or discharged between 1 April 2017 and 31 July 2017. Results for the three previous reporting periods are also provided so changes over time can be monitored. Section 2 outlines annual level results on four years' worth of SSNAP data; for patients admitted and/or discharged between 1 April 2013 and 31 March 2014; 1 April 2014 and 31 March 2015; 1 April 2015 and 31 March 2016 and patients admitted and/or discharged between 1 April 2016 and 31 March 2017. The same stroke measures are reported in both sections of the report, with the exception of institutionalisation rates and mortality, which are only published annually. The report findings enable the processes of stroke services at population level to be compared with national standards outlined in the fifth edition of the National Clinical Guideline for Stroke (2016) published by the Intercollegiate Stroke Working Party, the National Institute for Health and Clinical Excellence (NICE) Clinical Guidelines, the National Stroke Strategy 2007 and the NICE Quality Standard for Stroke (2016).
Supersedes	SSNAP Clinical Audit CCG/LHB April 2013 – March 2017 public report
Related publications	**Present publications** SSNAP CCG/LHB Portfolio – October 2017 http://www.strokeaudit.org/results/National-Results.aspx National clinical guideline for stroke 5th edition (Royal College of Physicians, 2016): http://www.strokeaudit.org/guideline SSNAP Clinical audit public report – October 2017 https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx SSNAP Full Results Portfolio – October 2017 https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx SSNAP Acute Organisational Audit Report – September 2016: http://www.strokeaudit.org/results/Organisational/National-Organisational.aspx CCG Outcomes Indictor Set 2015-16: http://www.england.nhs.uk/resources/resources-

	for-ccgs/ccg-out-tool/ccg-ois/ NICE Quality Standard for Stroke 2016: https://www.nice.org.uk/guidance/qs2 **Historical publications** National Sentinel Stroke Audit Clinical Report – May 2011: http://www.rcplondon.ac.uk/sentinel SINAP Combined Quarters 1-7 Report – February 2013: https://www.rcplondon.ac.uk/projects/outputs/sinap-data-transparency National clinical guidelines for diagnosis and initial management of acute stroke and transient ischaemic attack (NICE, 2008): https://www.nice.org.uk/guidance/CG68 Stroke rehabilitation: Long-term rehabilitation after stroke (NICE 2013): www.nice.org.uk/CG162 National Stroke Strategy (Department of Health, 2007): http://webarchive.nationalarchives.gov.uk/20130107105354/http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_081062 Department of Health: Progress in improving stroke care (National Audit Office, 2010): http://www.nao.org.uk/publications/0910/stroke.aspx National Cardiovascular Outcomes Strategy – March 2013: https://www.gov.uk/government/publications/improving-cardiovascular-disease-outcomes-strategy
Contact	ssnap@rcplondon.ac.uk

Report prepared by:

Mr Simon Bragg MSc
SSNAP Data Coordinator, CEEu, Royal College of Physicians

Ms Lizz Paley MSc
Stroke Programme Intelligence Manager—Data, CEEu, Royal College of Physicians

Mr Mark Kavanagh BA
SSNAP Programme Manager, CEEu, Royal College of Physicians

Ms Victoria McCurran MPH
SSNAP Senior Data Analyst, CEEu, Royal College of Physicians

Mrs Alex Hoffman MSc
Stroke Programme Manager, CEEu, Royal College of Physicians

Professor Anthony Rudd FRCP CBE
Chair of the Intercollegiate Stroke Working Party, Associate Director for Stroke (CEEu)
Consultant Stroke Physician, Guy's and St Thomas' Hospital, London

Supported by:

Dr Martin James FRCP
Associate Director for Stroke (CEEu)
Consultant Stroke Physician, Royal Devon and Exeter Hospital, Devon

Professor Pippa Tyrrell FRCP
Associate Director for Stroke (CEEu)
Professor of Stroke Medicine, University of Manchester; Consultant Stroke Physician, Salford Royal NHS Foundation Trust

Introduction

This report aims to provide commissioners of stroke services [Clinical Commissioning Groups (CCGs) in England and Local Health Boards (LHBs) in Wales], other interested stakeholders within the NHS, and the general public with key information on the population receiving stroke care according to the CCG/LHB assigned to patients, at national level and over time. This report should be read in conjunction with other outputs (outlined on page 7) that are designed to help drive quality improvement. This report is based on data submitted to the Sentinel Stroke National Audit Programme (SSNAP). SSNAP is a prospective clinical audit that measures the quality of stroke care delivered to every stroke patient across all providers; from initial admission up to 6 months when outcomes are measured. SSNAP is the single source of stroke data in England and Wales.

What is included in this report

CCG Outcomes Indicator Set (CCG OIS measures)

The report includes results for the CCG Outcomes Indicator Set (CCG OIS). The CCG OIS is a set of measures by which commissioners of health services in England are held to account for the quality of services and the health outcomes achieved by their commissioning. http://www.england.nhs.uk/ccg-ois. The data are also analysed for Wales as this information is relevant to all stroke care. The report also contains two measures which are of high priority for stroke work across many CCGs and LHBs: prior anticoagulation of stroke patients who are admitted to hospital and known to be in atrial fibrillation; and treatment by stroke skilled Early Supported Discharge teams (ESDs). Maps are used to present these results at both periodic and annual level throughout this report and Appendix 1 gives a breakdown of the number and percentage of CCGs/LHBs achieving each level for the CCG OIS measures and overall SSNAP score at annual and periodic level. All of the data is available in the CCG/LHB Portfolio. More details about this portfolio are given below in the Further Information section.

SSNAP Key Indicators

All 44 of the SSNAP 'Key Indicators' are included in this report, giving a broad picture of stroke care across inpatient care providers. This enables the processes of stroke services at national level to be compared with national standards outlined in the fifth edition of the National Clinical Guideline for Stroke (2016) published by the Intercollegiate Stroke Working Party, the National Institute for Health and Care Excellence (NICE) Clinical Guidelines, the National Stroke Strategy (2007) and the NICE Quality Standard for Stroke (2016).

How to read this report

The report presents results at both a periodic and annual level across recent SSNAP reporting periods to enable changes over time to be monitored. Section 1 of the report presents results for all patients admitted (or having a stroke as an inpatient) and/or discharged from hospital across 4 reporting periods between April 2016 and July 2017. Section 2 presents results for each of the four years: April 2013 to March 2014, April 2014 to March 2015, April 2015 to March 2016, and April 2016 to March 2017.

Please note that as of April 2016, SSNAP began reporting periodically over a four monthly reporting period, rather than every three months as with all previous reporting periods.

By highlighting the performance of each CCG in England and LHB in Wales for key indicators of care it is possible to develop a national picture of stroke services in England and Wales, identify where variations in the quality of services exist and where improvements are being made. It is hoped that these results will help commissioning groups to identify how their patients are being treated, and enable healthcare professionals and the public to identify the strengths of current service provision and the areas where improvements are needed.

Further Information

Those who work within the NHS, such as within a CCG or LHB, should register themselves on the SSNAP webtool at www.strokeaudit.org by following the path under "Registration". This will give them privileged access to SSNAP results for a period of time before they are put into the public domain. They can also benefit from a helpdesk that exists to help them interpret their results and drive quality improvement in their local service. Registration is quick and simple to do.

Additional Reports available

The CCG/LHB Results portfolio gives results for individual CCGs and LHBs for every measure in the CCG OIS and each SSNAP Key Indicator. It is produced every four months and on an annual basis. This excel file contains a list of all of the hospitals (teams) to which each CCG's/LHB's patients were admitted and further details about the methodology used in the analysis of results. The portfolio also gives the names of each of the hospital(s) where CCG/LHB patients were treated and details levels of case ascertainment achieved by each CCG/LHB.

To access this portfolio go to https://www.strokeaudit.org/results/Clinical/National-Results.aspx

SSNAP also produces Interactive Maps that give a visual representation of hospitals' performance within each CCG/LHB. Go to https://www.strokeaudit.org/results/Clinical-audit/Maps to access these maps. Once domain or key indicator results have been selected, click on CCG boundaries in the box on the bottom right of the screen to highlight which hospitals are within each CCG.

This CCG/LHB report is supplementary to the full SSNAP Public Report which is published every four months and reports on every measure collected by SSNAP according to the team or series of teams treating the patient. It also includes contextual information, further details about specific SSNAP Key Indicators and clinical commentary on performance at a national level against evidence based standards.

Health Economics on SSNAP

SSNAP has recently produced a Health Economics section of the webtool that allows people, including those who commission services, to see the financial implications from implementing certain interventions such as thrombolysis or increasing the number of patients discharged from hospital with an ESD team. This is currently available to logged in users here: https://www.strokeaudit.org/Health-Economics.aspx

A note on results for Local Health Boards

SSNAP has been advised that Local Health Boards are the best approximation of CCGs. While the CCG Outcomes Indicator Set is applicable to CCGs in England only, results for LHBs in Wales are also included in the CCG portfolio to enable the results for these important indicators to be used for quality improvement purposes in Wales, and allow comparability across England and Wales. Results by named LHB have been included in the CCG portfolio since the January – March 2015 report.

Methods

Data Collection

A core, minimum dataset was developed by the Intercollegiate Stroke Working Party (ICSWP) in collaboration with other key stakeholders. Prospective data were collected via a secure web-based tool provided by Netsolving Ltd. Security and confidentiality were maintained through the use of passwords and a person specific registration process. Detailed help notes and FAQs were provided to ensure standard interpretation of the dataset questions across all participants. Data were analysed by the Stroke Programme at the Royal College of Physicians.

Only 'locked' data are included in SSNAP analysis. The process of locking ensures high data quality and signifies that the data have been signed off by the lead clinician and are ready for central analysis. To view the SSNAP core dataset and help-notes, and for more details about the methods of data collection, submission, and analysis, please visit https://www.strokeaudit.org/Support/New-SSNAP-Users.aspx

Assigning patients to CCGs/LHBs

The preferred methodology for CCG/LHB analysis would assign patients to a CCG/LHB based on the patient's GP practice. However as this information is not collected by SSNAP, a postcode of residence is used to assign patients to a CCG/LHB.

Participation and Case Ascertainment

Case ascertainment is a vital component of SSNAP as the aim is to have fully complete data on every new stroke admission. It measures the proportion of stroke cases entered onto SSNAP. High levels of case ascertainment are essential to ensure representativeness.

Please note that CCGs/LHBs with less than 50% case ascertainment or fewer than 20 patients do not receive all results.

This table below presents the number of records included in SSNAP across all CCGs and LHBs as a percentage of the estimated expected number of patients from Hospital Episode Statistics (HES) for the previous four reporting periods. The five bandings for average case ascertainment are shown in the legends for the maps on the next page. The national average case ascertainment band for CCG/LHB reporting is currently an A (90%+).

	Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**
National average case ascertainment band	90%+	80-89%	90%+	90%+
Number of CCGs/LHBs receiving scoring	215/216	211/216	215/216	212/214
Median number of patients admitted per CCG/LHB	105	101	105	103

The CCGs/LHBs not included in each reporting period's SSNAP scoring due to insufficient records are given below.

Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**
Bradford City CCG	Darlington CCG	Tower Hamlets CCG	Lewisham CCG
	Durham Dales, Easington and Sedgefield CCG		North East Hampshire and Farnham CCG
	Hastings and Rother CCG		
	Havering CCG		
	North Durham CCG		

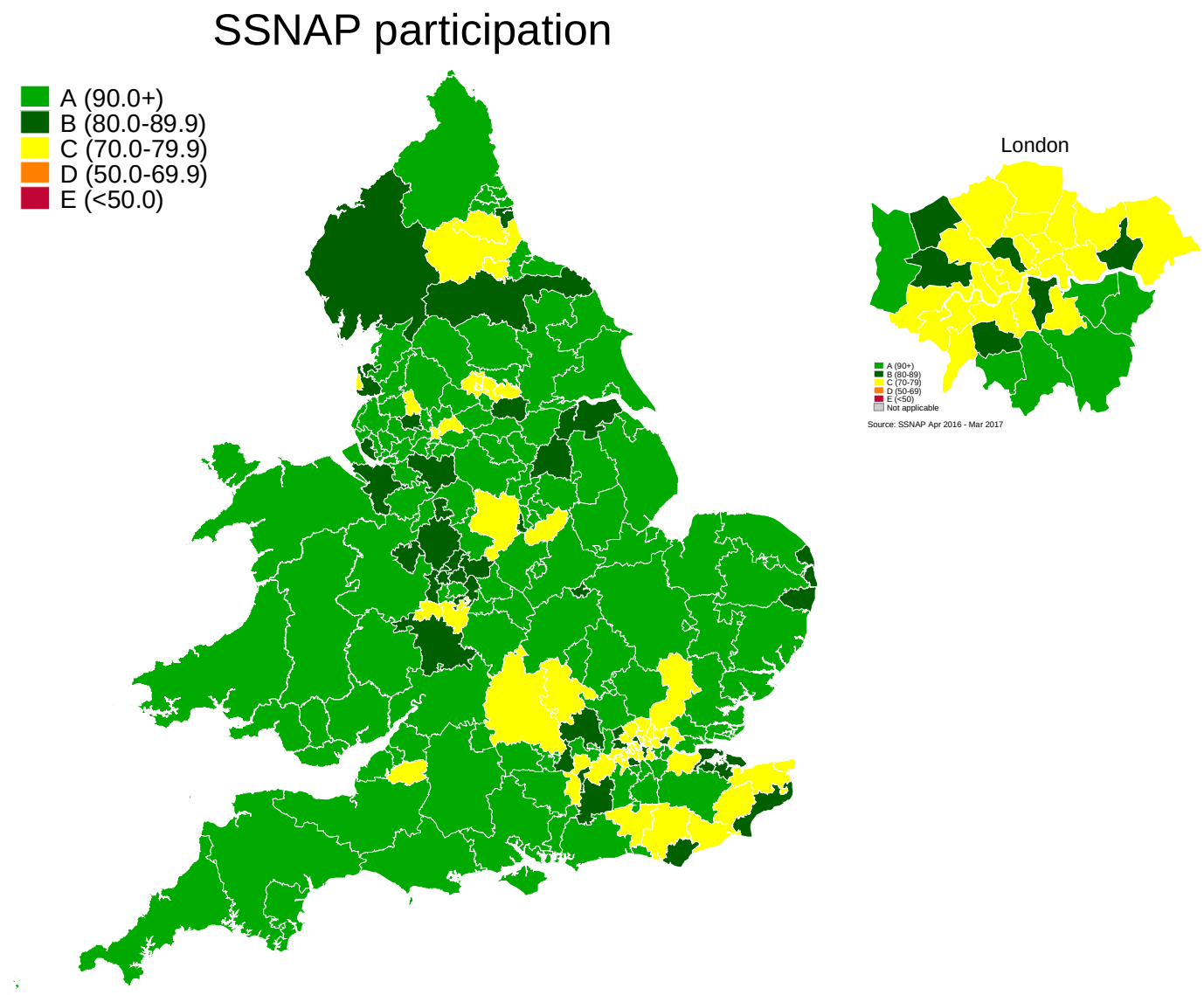
Denominators for CCG/LHBs

SSNAP derives CCG/LHB denominators from Hospital Episode Statistics (HES) data for England and Patient Episode Database for Wales (PEDW).

Case Ascertainment Maps

The following maps show the average case ascertainment bandings achieved by all CCGs/LHBs. Each symbol represents a CCG/LHB, colour coded by band. The map below shows the average case ascertainment bandings achieved by all CCGs/LHBs from the most recent annually reported data.

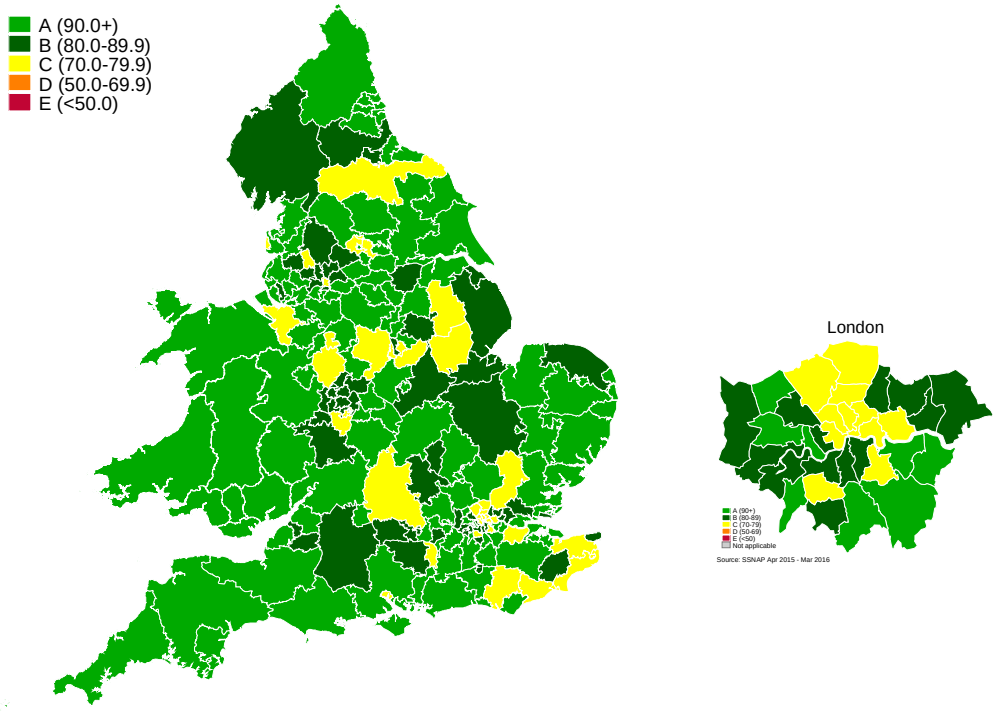
Average Case Ascertainment Apr 2016 – Mar 2017



Source: SSNAP Apr 2016 - Mar 2017

Apr 2015 – Mar 2016

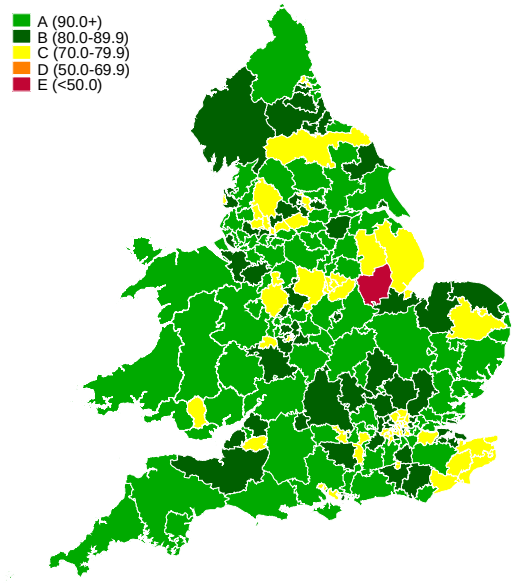
SSNAP participation



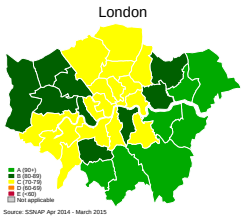
Source: SSNAP Apr 2015 - Mar 2016

Apr 2014 – Mar 2015

SSNAP participation

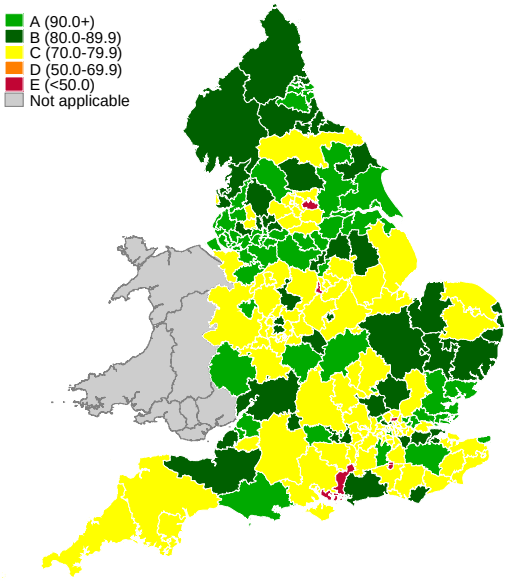


Source: SSNAP Apr 2014-Mar 2015

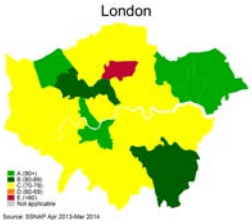


Apr 2013 – Mar 2014

SSNAP participation



Source: SSNAP Apr 2013-Mar 2014



Section 1: Periodic Results

CCG Outcomes Indicator Set (OIS)

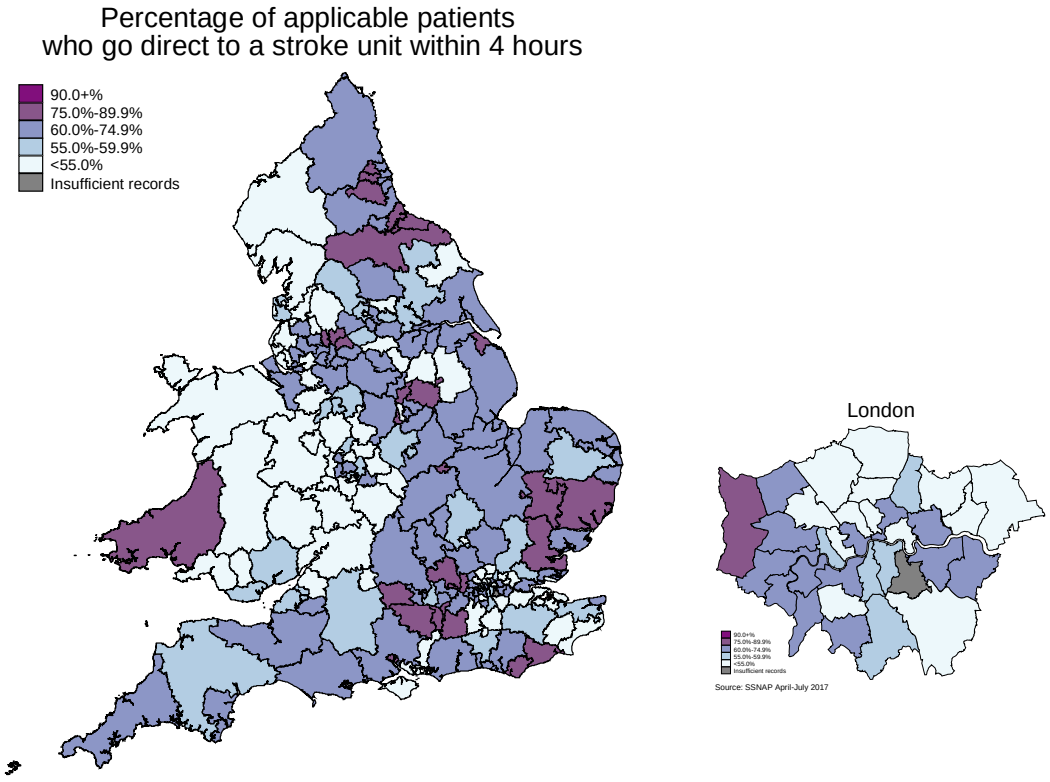
In this section of the report, CCG OIS measures are divided into three groups: "Care delivered within the first 72h", "Care delivered between 72h and discharge from inpatient care" and "Care delivered after discharge from inpatient care". All groups are based on patients either admitted to or discharged from inpatient care across 4 reporting periods between April 2016 and July 2017. The results for the most recent reporting period are highlighted in bold. The 'Ref' column refers to where each result can be found in the Results Portfolio. The national row gives the total number of patients assigned to CCGs/LHBs that are included in the results for each reporting period.

Care delivered within the first 72h

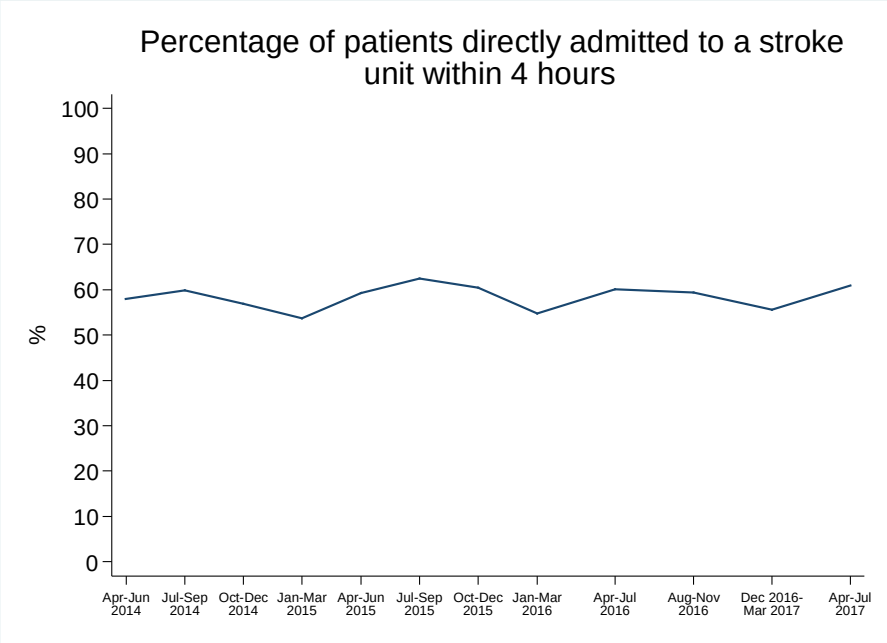
Direct to stroke unit within 4 hours

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017	*Ref*
National	N=26356	N=25629	N=26753	**N=26442**	
Percentage of applicable patients who go direct to a stroke unit within 4 hours **(CCG OIS - C3.5)**	60.1%	59.3%	55.6%	**60.9%**	*G7.18.1*

Exclusion Criteria for admission to stroke unit within 4 hours
Those patients first admitted to an Intensive Therapy Unit (ITU), Coronary Care Unit (CCU), or High Dependency Unit (HDU) are not applicable for this key indicator. From Jan-Mar 2016, patients that receive a thrombectomy are also excluded.

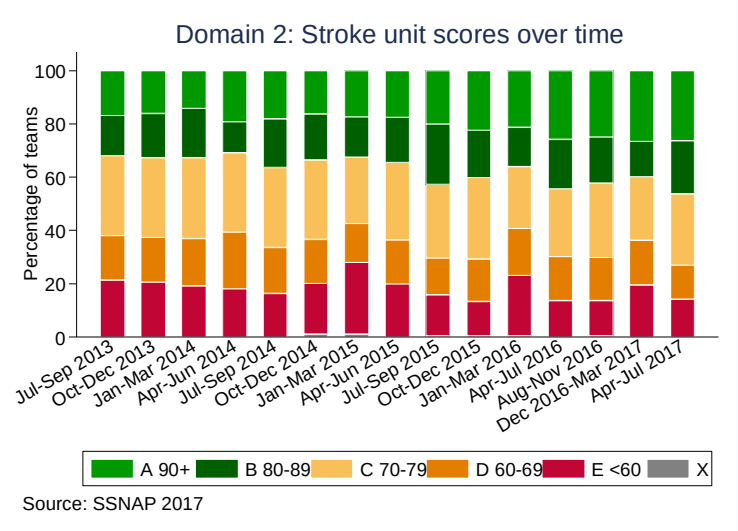


CCG OIS - C3.5
Source: SSNAP April-July 2017



The evidence for stroke units is very strong and it is important to monitor changes to rates in stroke unit admissions over time. The percentage of applicable patients directly admitted to a stroke unit within 4 hours of arrival at hospital was 60.9% in the latest reporting period, an increase from the previous reporting period where we reported 55.6%. In the previous seven reporting periods, this indicator has fluctuated, tending to fall in winter months. A poor performance in this key indicator will often mean that other standards will fall. It is concerning when performance drops, and results for this key indicator should be closely monitored.

The number of patients being admitted to a stroke unit within 4 hours between December 2016 and March 2017 impacted the overall levels achieved by hospitals for the Stroke Unit domain. This domain also includes the median time taken to be admitted to a stroke unit, and the percentage of patients who spend at least 90% of their inpatient stay in a stroke unit. The stacked chart below visually demonstrates the fluctuations in performance within this domain in recent reporting periods. This reporting period has seen a decrease in the number of E bandings being awarded.



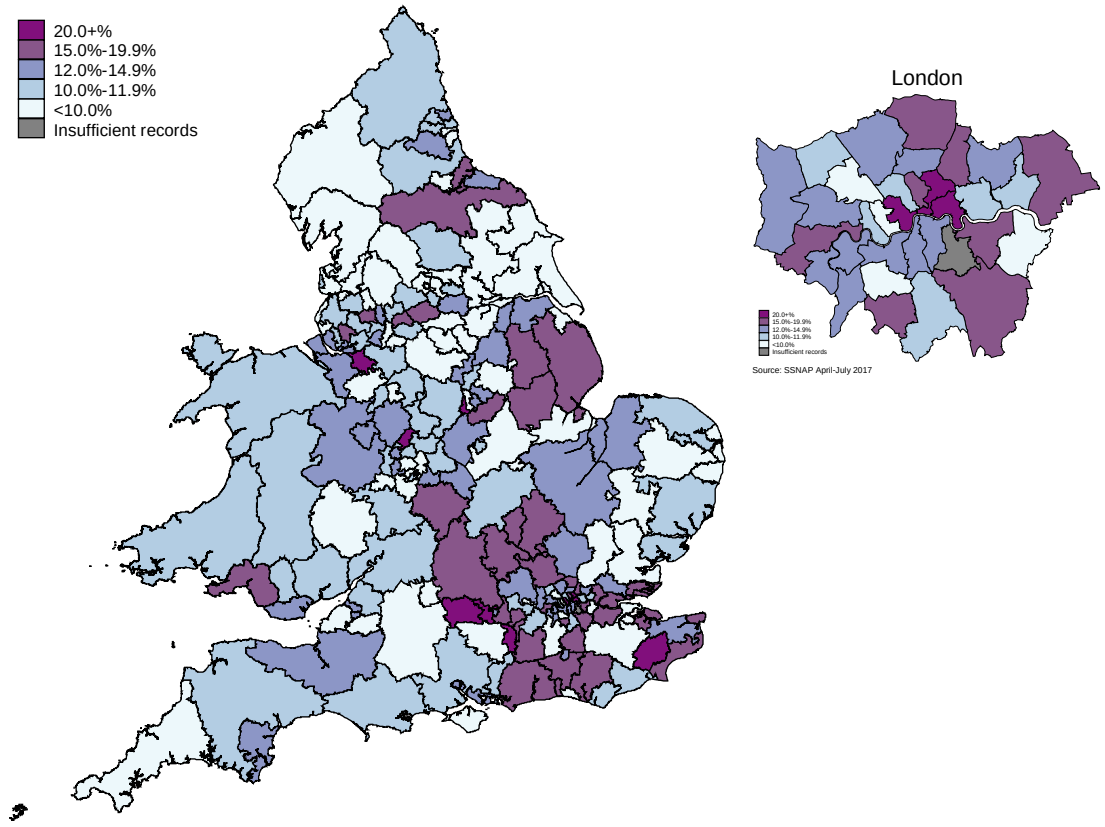
Stroke patients who receive thrombolysis

Percentage of eligible patients given thrombolysis (according to the RCP guideline minimum threshold)

Though the percentage of *eligible* patients given thrombolysis (according to RCP guideline minimum threshold) is not included in the CCG OIS, it is important to highlight the year on year change in this indicator of quality stroke care. In April 2015 – March 2016, 85.2% of eligible patients were thrombolysed, but between April 2016 – March 2017, this percentage had increased to 87.1%. Between December 2016 – March 2017, this marginally dropped to 85.6%, before increasing again to 87.3% from April 2017 – July 2017.

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017	*Ref*
National	N=27020	N=26291	N=27489	**N=27135**	
Percentage of all stroke patients who receive thrombolysis **(CCG OIS - C3.6)**	11.9%	11.4%	11.4%	**11.9%**	*G16.3*

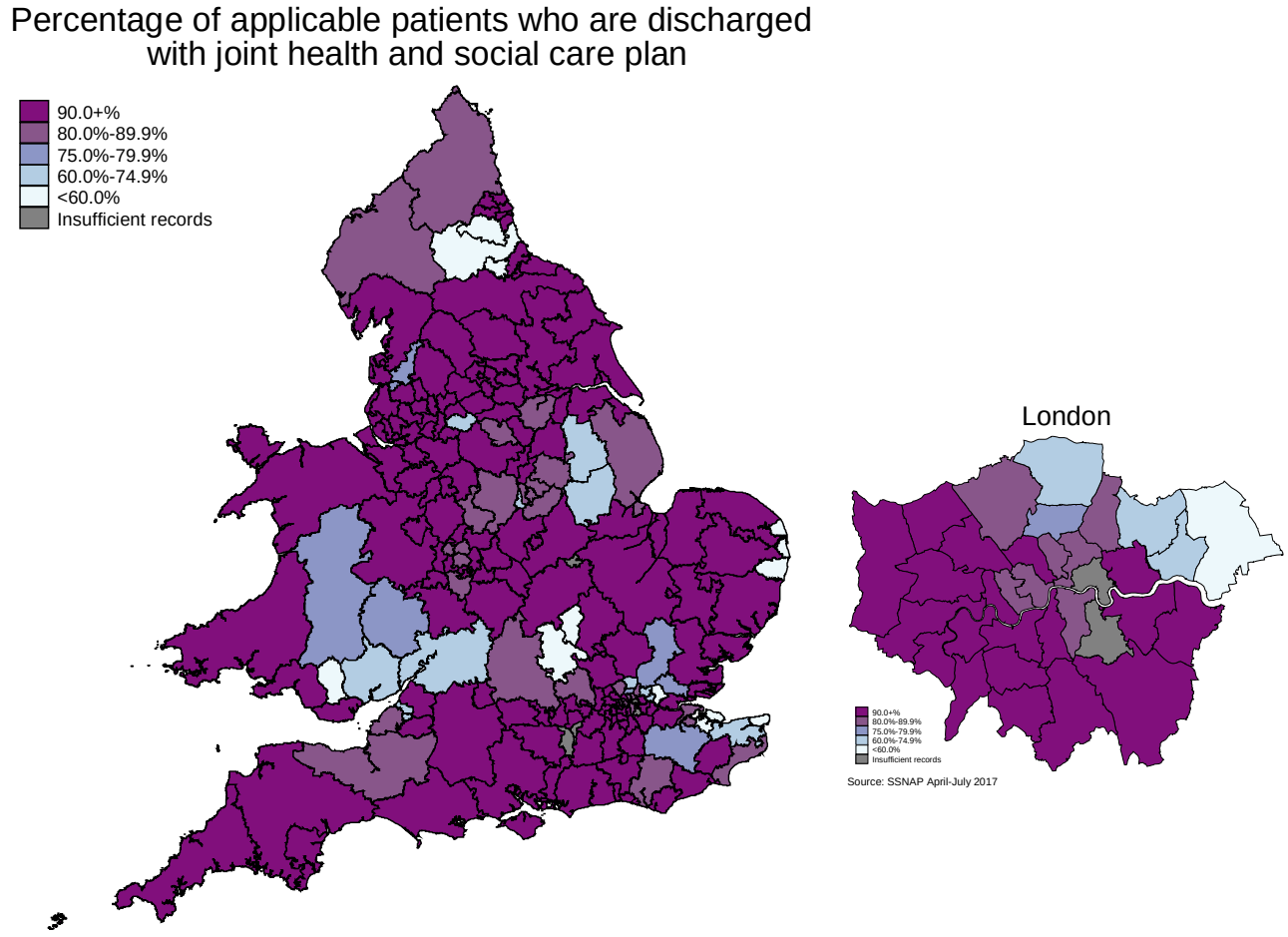
Percentage of all patients who receive thrombolysis



CCG OIS - C3.6
Source: SSNAP April-July 2017

Care delivered between 72h and discharge from inpatient care

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017	*Ref*
National	N=11915	N=11814	N=12207	**N=11817**	
Percentage of applicable patients who are discharged with joint health and social care plan **(CCG OIS - C3.7)**	90.4%	90.2%	89.7%	**90.5%**	*J33.13*



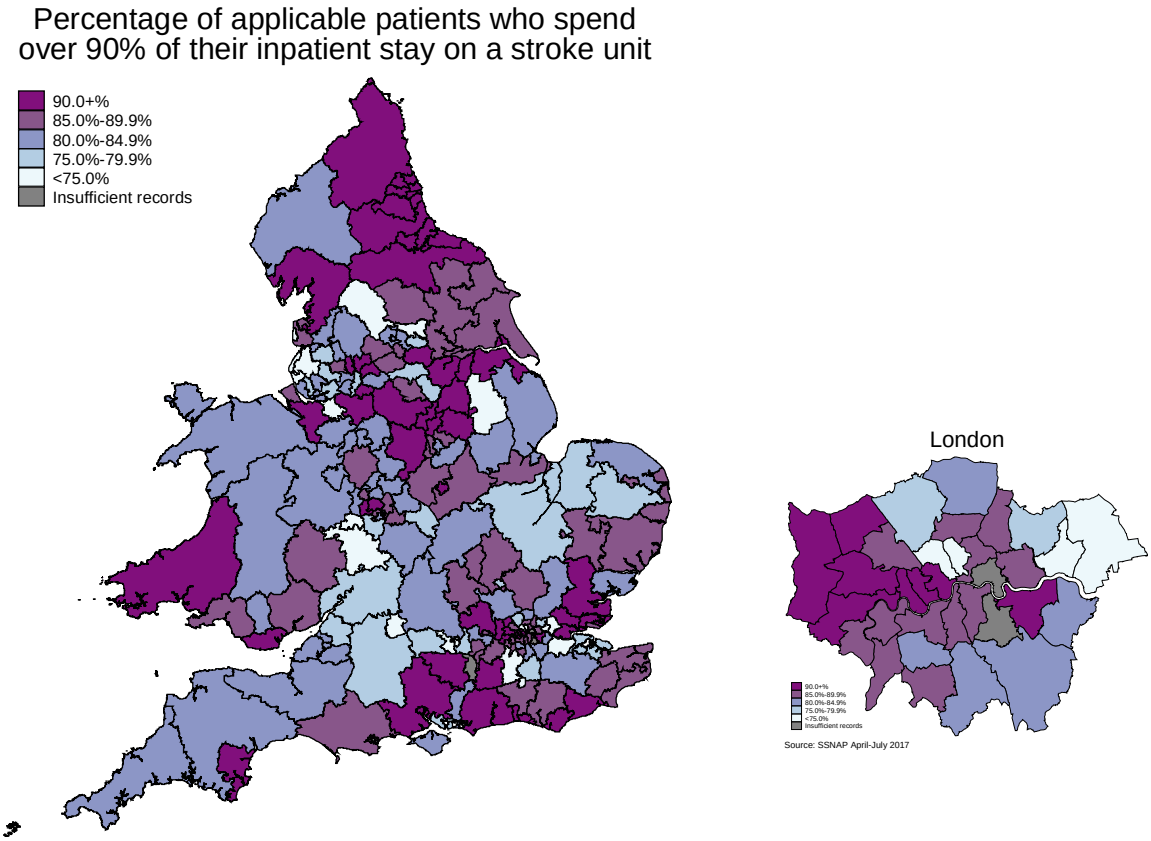
CCG OIS - C3.7
Source: SSNAP April-July 2017

Over 90% of inpatient stay on a stroke unit

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017	*Ref*
National	N=26089	N=25169	N=26438	**N=26165**	
Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit **(CCG OIS - C3.9)**	84.4%	85.2%	83.1%	**85.0%**	*J8.11*

Exclusion Criteria

If a hospital admitted patients who went directly to an Intensive Therapy Unit (ITU), Coronary Care Unit (CCU), or High Dependency Unit (HDU), those patients are excluded from this indicator. Patients who died on the same day as arrival/onset of symptoms are also excluded.



CCG OIS - C3.9
Source: SSNAP April-July 2017

Care delivered after discharge from inpatient care

6 month assessments

Collection of six month outcome data is key to assessing the outcomes of stroke care and forms part of the CCG OIS that is reported periodically in England.

It is extremely important that data regarding a patient's status and outcome at six months after their stroke is recorded on SSNAP. Without this data the outcomes of the care that patients receive cannot be fully assessed. Unfortunately a high percentage of patients are not receiving this follow up. SSNAP reports the completion rate of those considered applicable for this assessment. These data have the potential to reveal variations in access to six month assessments across the country. In cases where six month assessments are being provided but are not recorded on SSNAP, valuable information about patient outcomes post stroke is being missed. Phase 1 of the post-acute organisational audit reported 54% of CCGs/LHBs commissioned this service yet in the latest reporting period only 31.3% of applicable patients received a six month assessment as reported by SSNAP. This percentage needs to be improved.

CCG/LHBs should use SSNAP data to monitor provision of six month assessments. If patients in your area are not currently being offered a six month assessment or they are not being commissioned, action plans should be made to address this. The below table shows the overall percentage of patients who are alive that could be benefitting from a six month assessment.

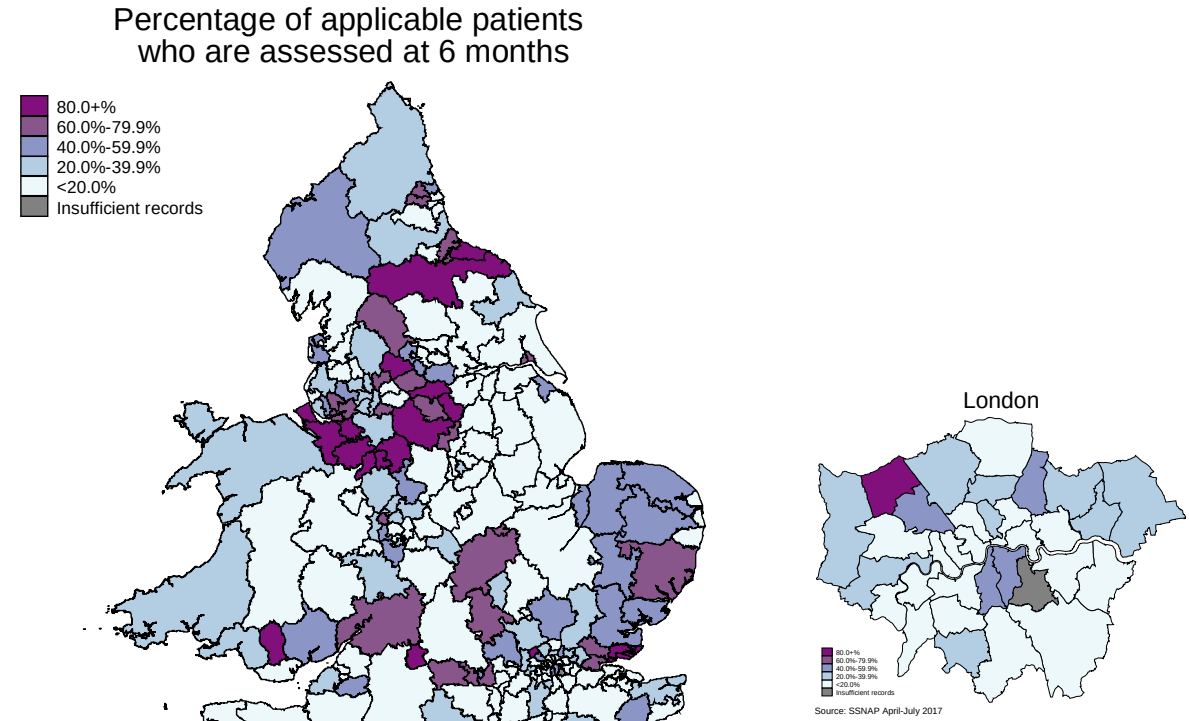
Patient applicability for 6 month assessment

	Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**	*Ref*
	N=20855	N=21927	N=22490	**N=20389**	
Percentage of patients alive who are considered applicable to be assessed at 6 months	93.0%	92.3%	92.1%	**92.3%**	*B12.3*

Patients are considered not applicable for a six month assessment if they refused their assessment after being contacted, and/or did not attend their scheduled assessment when they were due to have their assessment, or if they are known to have died before their assessment is due.

	Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**	*Ref*
	N=19397	N=20243	N=20716	**N=18821**	
Percentage of applicable patients who are assessed at 6 months **(CCG OIS 3.8)**	30.6%	31.3%	28.5%	**31.3%**	*B13.3*

Completion rate of 6 month follow-up assessments for applicable patients on SSNAP



CCG OIS - C3.8
Source: SSNAP April-July 2017

Further CCG Indicators

Atrial Fibrillation

SSNAP data has revealed major issues in primary and secondary care about ensuring that patients have effective primary stroke prevention. One fifth of patients are in atrial fibrillation (AF) on admission. Only 56.2% of patients reported to be in AF prior to admission are taking anticoagulants. Though this percentage is incrementally increasing over time, more work needs to be done in primary care to ensure people who would benefit from anticoagulants are provided with this medication. Unfortunately 16.2% are taking antiplatelet drugs alone which are considered ineffective for most patients in AF.

Prior anticoagulation for patients known to be in atrial fibrillation prior to being admitted to hospital for stroke

	Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**	*Ref*
	N=5203	N=5111	N=5505	**N=5149**	
Percentage of patients in AF admitted to hospital for stroke who had been prescribed anticoagulation prior to their stroke	51.0%	53.5%	54.0%	**56.2%**	*F6.13*

Early Supported Discharge (ESD)

ESD is defined as a service providing rehabilitation and support to stroke patients in a community setting, usually at home, by a multidisciplinary team with the aim of reducing the duration of hospital care for stroke patients. The rehabilitation provided to patients should be at the same intensity as inpatient care. ESD should be stroke specific and delivered by teams with specialist stroke skills. According to literature, approximately 34% of stroke patients are considered eligible for ESD. Phase 1 of the post-acute organisational audit reported that 82% of CCGs in England and 67% of LHBs in Wales commissioned ESD services as of 1 December 2014. ESD can result in better outcomes including reduction of long-term mortality and institutionalisation rates, increased independence six months after a stroke and increased capacity to undertake activities of daily living and greater patient satisfaction (Langhorne et al 2005). Benefits for hospitals include a reduced length of stay.

Treatment by a stroke skilled Early Supported Discharge team

	Apr-Jul 2016	**Aug-Nov 2016**	**Dec 2016-Mar 2017**	**Apr-Jul 2017**	*Ref*
	N=22882	N=21968	N=22849	**N=23091**	
Percentage of patients treated by a stroke skilled Early Supported Discharge team	34.1%	35.1%	35.8%	**33.8%**	*J10.3*

SSNAP Key Indicators

44 Key Indicators have been chosen by the Intercollegiate Stroke Working Party (ICSWP), a multidisciplinary steering group that guide the audit, as representative of high quality stroke care. These indicators include data items from the CCG Outcomes Indicator Set and NICE Quality Standards (covering England only). The key indicators are grouped into 10 domains covering key aspects of the process of stroke care, such as "Brain scanning" or "Physiotherapy". The following section of this report gives the results for each key indicator at CCG/LHB level for the 4 most recent reporting periods which enables changes over time to be measured.

The term 'clock start' is used to identify the time at which the 'clock starts' for measuring key timings. This is arrival time for patients who were not in hospital at the onset of symptoms (around 95% of patients) but will be the onset of symptoms time for those patients already in hospital when they have a stroke (approximately 5% of stroke cases).

Brain Scanning Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
1.1 Percentage of patients scanned within 1 hour of clock start	51.1	51.0	52.6	**52.7**
1.2 Percentage of patients scanned within 12 hours of clock start	93.6	93.9	94.3	**94.4**
1.3 Median time between clock start and scan (hours:mins)	0:58	0:58	0:55	**0:55**

Stroke Unit Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
2.1 Percentage of patients directly admitted to a stroke unit within 4 hours of clock start*	60.1	59.3	55.6	**60.9**
2.2 Median time between clock start and arrival on stroke unit (hours:mins)	3:33	3:36	3:45	**3:30**
2.3 Percentage of patients who spent at least 90% of their stay on stroke unit	84.4	85.2	83.1	**85.0**

Thrombolysis Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
3.1 Percentage of all stroke patients given thrombolysis (all stroke types)	11.9	11.4	11.4	**11.9**
3.2 Percentage of eligible patients (according to the RCP guideline minimum threshold) given thrombolysis	88.1	88.3	85.6	**87.3**
3.3 Percentage of patients who were thrombolysed within 1 hour of clock start	61.4	62.9	62.1	**64.0**
3.4 Percentage of applicable patients directly admitted to a stroke unit within 4 hours of clock start AND who either receive thrombolysis or have a pre-specified justifiable reason ('no but') for why it could not be given*	59.7	58.9	55.1	**60.6**
3.5 Median time between clock start and thrombolysis (hours:mins)	0:52	0:51	0:52	**0:50**

Specialist Assessments Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
4.1 Percentage of patients assessed by a stroke specialist consultant physician within 24h of clock start	80.8	82.2	81.3	**83.0**
4.2 Median time between clock start and being assessed by stroke consultant (hours:mins)	11:20	11:00	11:01	**10:23**
4.3 Percentage of patients who were assessed by a nurse trained in stroke management within 24h of clock start	90.4	90.6	89.9	**90.8**
4.4 Median time between clock start and being assessed by stroke nurse (hours:mins)	1:13	1:13	1:09	**1:05**
4.5 Percentage of applicable patients who were given a swallowscreen within 4h of clock start	75.1	74.6	74.1	**76.1**
4.6 Percentage of applicable patients who were given a formal swallow assessment within 72h of clock start	88.3	87.7	87.4	**87.8**

Occupational Therapy Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
5.1 Percentage of patients reported as requiring occupational therapy	83.6	83.6	84.6	**84.7**
5.2 Median number of minutes per day on which occupational therapy is received	40.0	40.7	40.0	**40.0**
5.3 Median % of days as an inpatient on which occupational therapy is received	62.7	65.2	64.6	**65.3**
5.4 Compliance (%) against the therapy target of an average of 25.7 minutes of occupational therapy across all patients *(Target = 45 minutes x (5/7) x 0.8 which is 45 minutes of occupational therapy x 5 out of 7 days per week x 80% of patients)*	81.5	86.2	85.0	**86.0**

Physiotherapy Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
6.1 Percentage of patients reported as requiring physiotherapy	85.4	85.2	86.6	**86.1**
6.2 Median number of minutes per day on which physiotherapy is received	34.7	35.0	35.0	**35.0**
6.3 Median % of days as an inpatient on which physiotherapy is received	71.0	74.0	71.6	**73.1**
6.4 Compliance (%) against therapy target of an average of 27.1 minutes of physiotherapy across all patients *(Target = 45 minutes x (5/7) x 0.85 which is 45 minutes of physiotherapy x 5 out of 7 days x 85% of patients)*	77.0	80.7	79.4	**80.6**

Speech and Language Therapy Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
7.1 Percentage of patients reported as requiring speech and language therapy	50.1	50.9	51.5	**51.2**
7.2 Median number of minutes per day on which speech and language therapy is received	32.0	31.7	31.7	**31.7**
7.3 Median % of days as an inpatient on which speech and language therapy is received	45.3	48.2	48.0	**49.8**
7.4 Compliance (%) against the therapy target of an average of 16.1 minutes of speech and language therapy across all patients *(Target = 45 minutes x (5/7) x 0.5 which is 45 minutes of speech and language therapy x 5 out of 7 days per week x 50% of patients)*	45.2	48.3	48.8	**50.2**

Multidisciplinary Team Working Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
8.1 Percentage of applicable patients who were assessed by an occupational therapist within 72h of clock start	91.7	92.1	91.7	**92.2**
8.2 Median time between clock start and being assessed by occupational therapist (hours:mins)	21:50	21:33	21:40	**21:13**
8.3 Percentage of applicable patients who were assessed by a physiotherapist within 72h of clock start	94.8	95.2	94.5	**94.9**
8.4 Median time between clock start and being assessed by physiotherapist (hours:mins)	21:01	20:46	21:08	**20:38**
8.5 Percentage of applicable patients who were assessed by a speech and language therapist within 72h of clock start	89.0	89.5	88.2	**89.4**
8.6 Median time between clock start and being assessed by speech and language therapist (hours:mins)	23:07	22:55	23:17	**22:51**
8.7 Percentage of applicable patients who have rehabilitation goals agreed within 5 days of clock start	90.3	92.0	92.5	**92.4**
8.8 Percentage of applicable patients who are assessed by a nurse within 24h AND at least one therapist within 24h AND all relevant therapists within 72h AND have rehab goals agreed within 5 days	59.6	62.8	61.3	**63.6**

Standards by Discharge Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
9.1 Percentage of applicable patients screened for nutrition and seen by a dietitian by discharge	82.5	83.5	82.8	**82.4**
9.2 Percentage of applicable patients who have a continence plan drawn up within 3 weeks of clock start	90.8	92.1	91.7	**92.9**
9.3 Percentage of applicable patients who have mood and cognition screening by discharge	91.2	92.0	91.9	**91.7**

Discharge Processes Key Indicators

	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	Apr-Jul 2017
10.1 Percentage of applicable patients receiving a joint health and social care plan on discharge	90.4	90.2	89.7	**90.5**
10.2 Percentage of patients treated by a stroke skilled Early Supported Discharge team	34.1	35.1	35.8	**33.8**
10.3 Percentage of applicable patients in atrial fibrillation on discharge who are discharged on anticoagulants or with a plan to start anticoagulation	97.6	97.5	97.9	**98.2**
10.4 Percentage of those patients who are discharged alive who are given a named person to contact after discharge	93.5	96.8	96.9	**96.8**

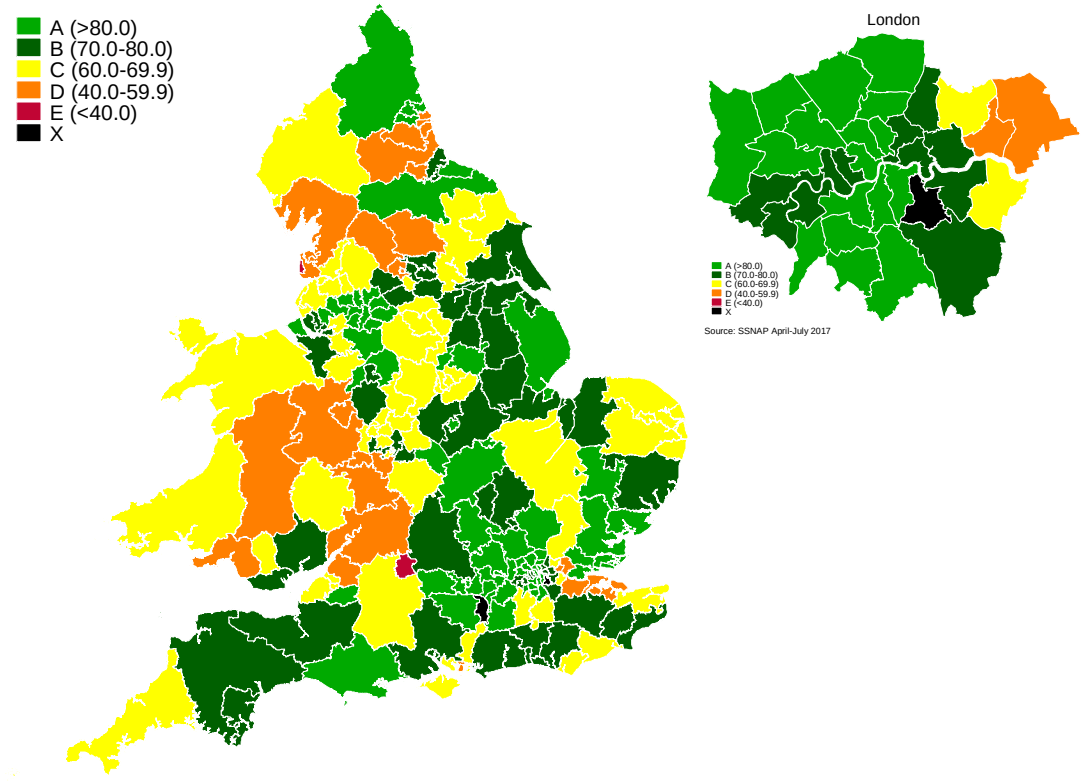
Overall SSNAP level

The RCP stroke programme has calculated SSNAP levels that indicate the average level attributed to providers within your CCG/LHB. The SSNAP level is based on providers' performance within 10 domains of care which comprise 44 key indicators. This combined key indicator score is adjusted for providers' case ascertainment and audit compliance. The map below shows the average SSNAP level within each CCG/LHB for the quality of care delivered for patients admitted and/or discharged between 1 April 2017 to 31 July 2017.

Assigning a SSNAP score

The SSNAP score for CCGs and LHBs is a weighted average of the scores that the hospitals treating the patients received. The weights are based on how many patients within that CCG/LHB each hospital treated. So if 100 patients from CCG 00C had strokes, and 50 went to hospital A, 25 to hospital B and 25 to hospital C then that CCG's score is 0.5*hospital A's score + 0.25*hospital B's score+ 0.25*hospital C's score.

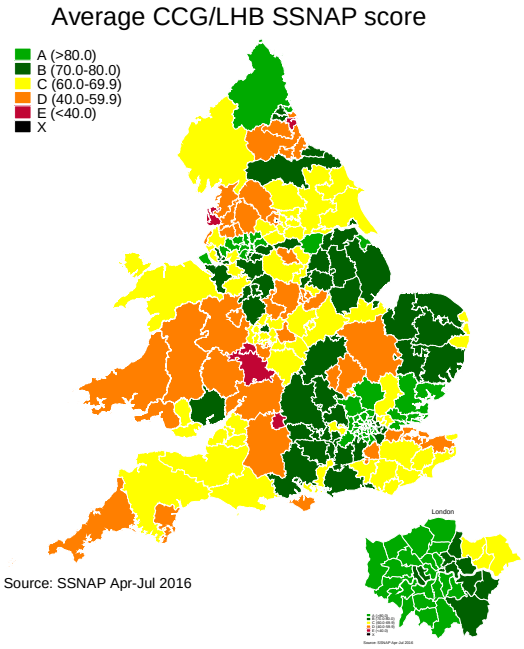
Overall SSNAP levels for individual CCGs/LHBs can be found in SSNAP's CCG/LHB results portfolio.

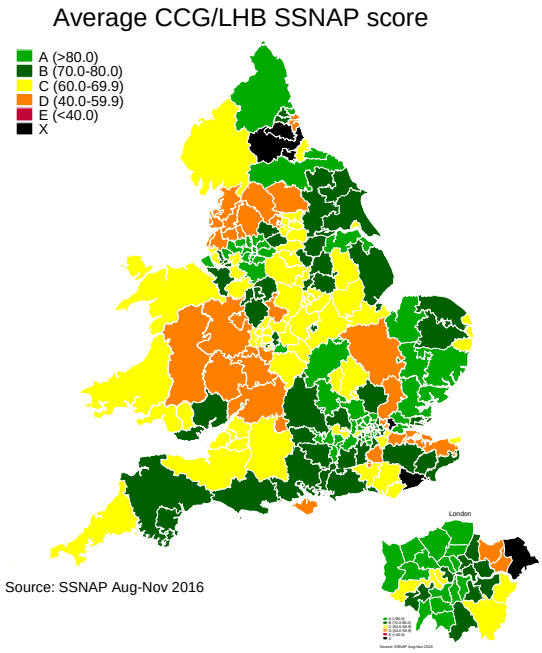


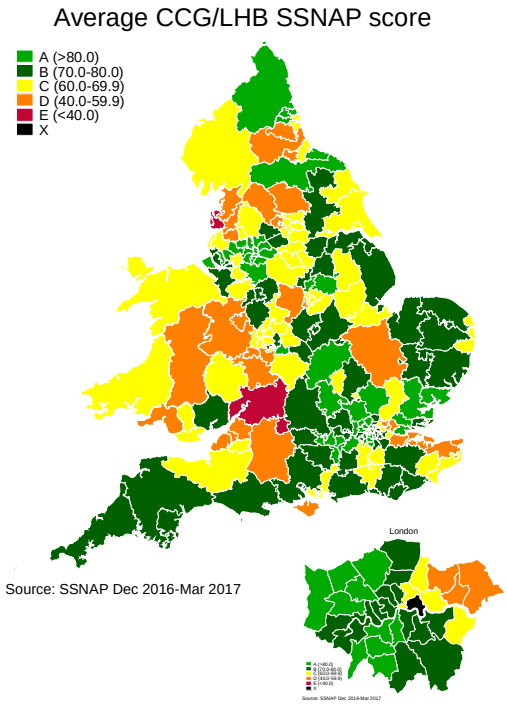
Source: SSNAP April-July 2017

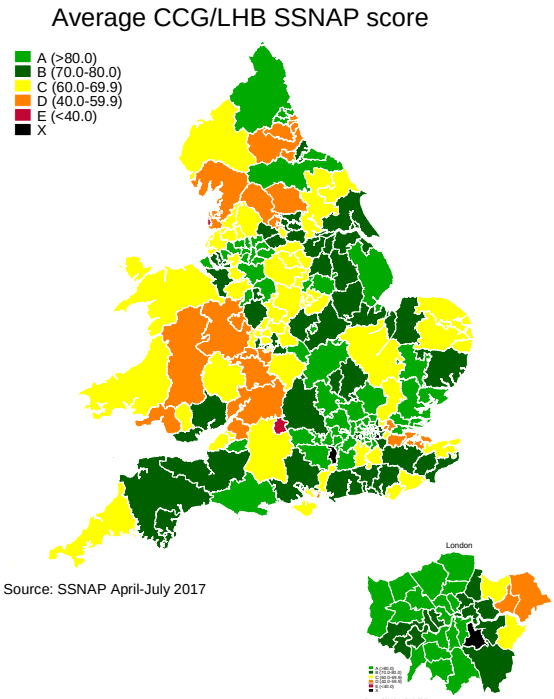
Changes over time

The maps below show the average SSNAP level for providers for all CCGs/LHBs across the past four reporting periods (April – July 2016; August – November 2016; December 2016 – March 2017; April 2017 – July 2017). We are providing information on how the current results compare with the previous reporting periods for an indication of where changes in the quality of stroke care are happening.





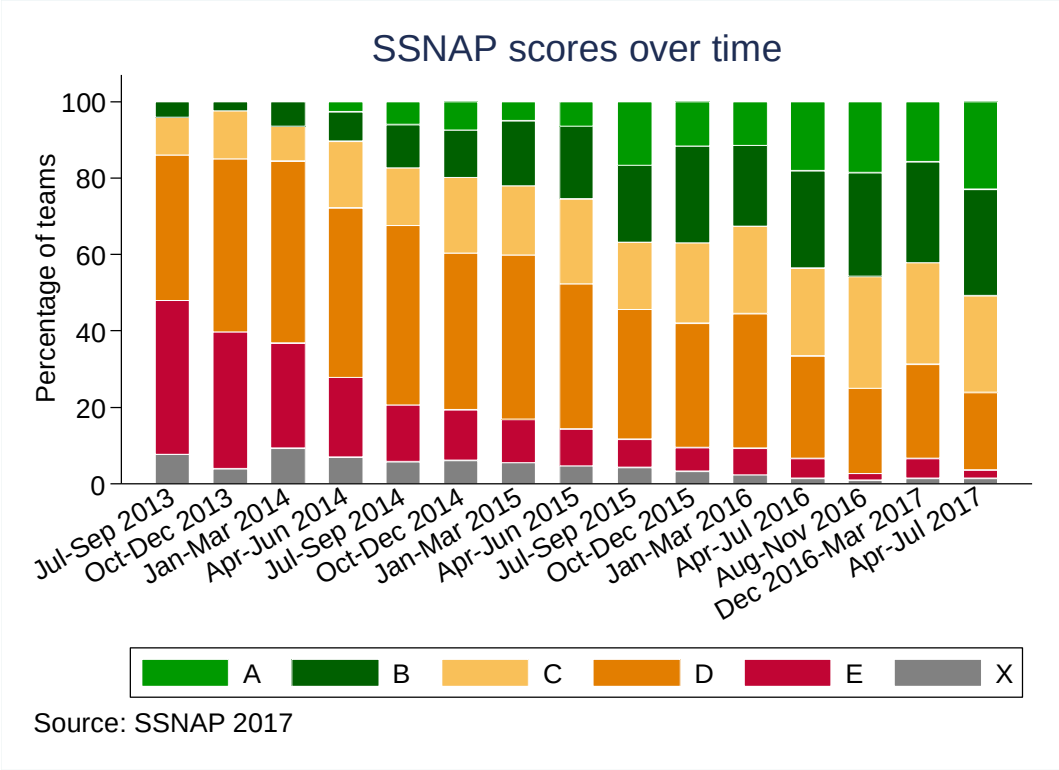




Hospital level reporting

This section gives details of changes in SSNAP performance over time at individual inpatient team (or stroke service) level rather than CCG/LHB level to further highlight the overall improvements to stroke services over the past four reporting periods.

The stacked graph below highlights how providers' SSNAP levels have changed over time at national level. These graphs clearly demonstrate that improvements in stroke services have been made with significantly more 'A' - 'B's and fewer 'D' - 'E's in April 2017 – July 2017 than April – June 2014.



Source: SSNAP 2017

This table shows the distribution of SSNAP levels across inpatient teams for the last four reporting periods.

SSNAP Levels	Apr-Jul 2016 228 teams	Aug-Nov 2016 218 teams	Dec 2016-Mar 2017 225 teams	Apr-Jul 2017 219 teams
A	42 teams (18%)	41 teams (19%)	36 teams (16%)	51 teams (23%)
B	59 teams (26%)	60 teams (28%)	60 teams (27%)	62 teams (28%)
C	53 teams (23%)	64 teams (29%)	61 teams (27%)	56 teams (26%)
D	62 teams (27%)	49 teams (22%)	56 teams (25%)	45 teams (21%)
E	12 teams (5%)	4 teams (2%)	12 teams (5%)	5 teams (2%)

Section 2: Annual Results

CCG Outcomes Indicator Set (OIS)

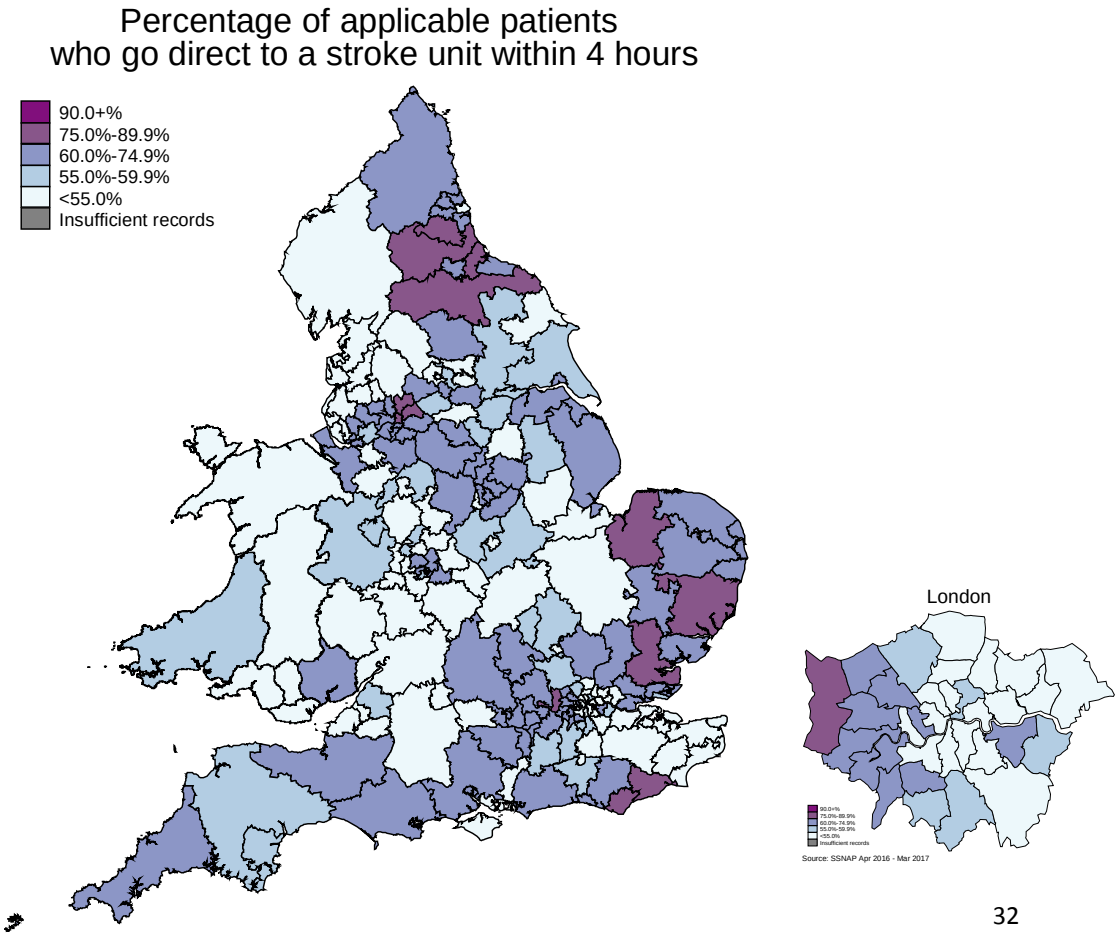
In this section of the report, CCG OIS measures are divided into four groups: "Care delivered with the first 72h", "Care delivered between 72h and discharge from inpatient care", "Care delivered after discharge from inpatient care" and “Patient Outcomes”. All groups are based on patients either admitted to or discharged from inpatient care across 4 years between April 2013 and March 2017.

Care delivered within the first 72h

	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**	*Ref*
National	N=72013	N=78199	N=80026	**N=79835**	
Percentage of applicable patients who go direct to a stroke unit within 4 hours **(CCG OIS - C3.5)***	58.1%	56.9%	59.0%	**58.2%**	*G7.18.1*

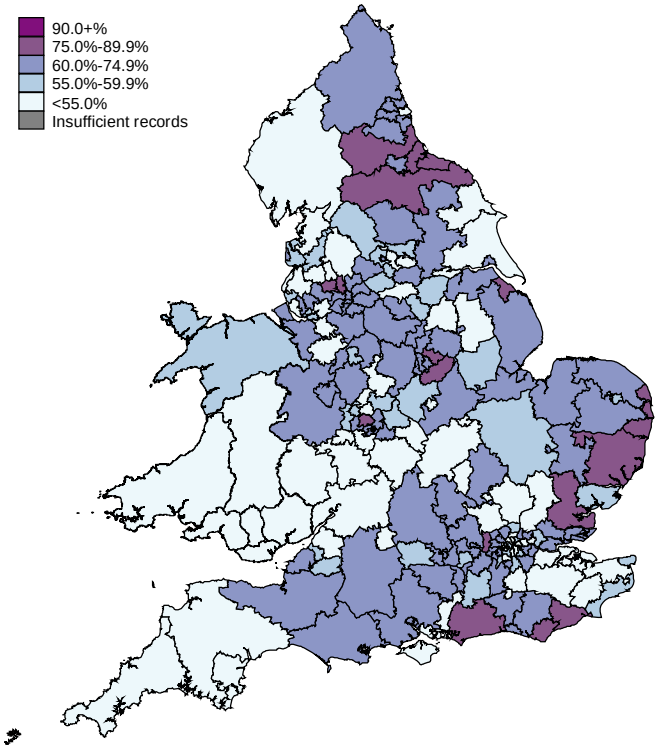
*From April 2015 – March 2016 patients who had a thrombectomy are excluded from this indicator

Direct to stroke unit within 4 hours

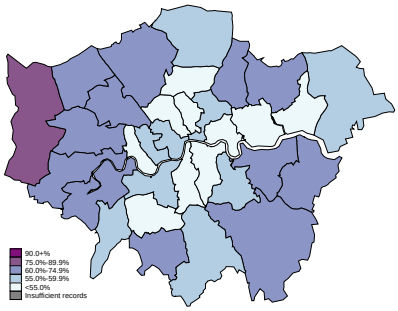


CCG OIS - C3.5
Source: SSNAP Apr 2016 - Mar 2017

Percentage of applicable patients
who go direct to a stroke unit within 4 hours

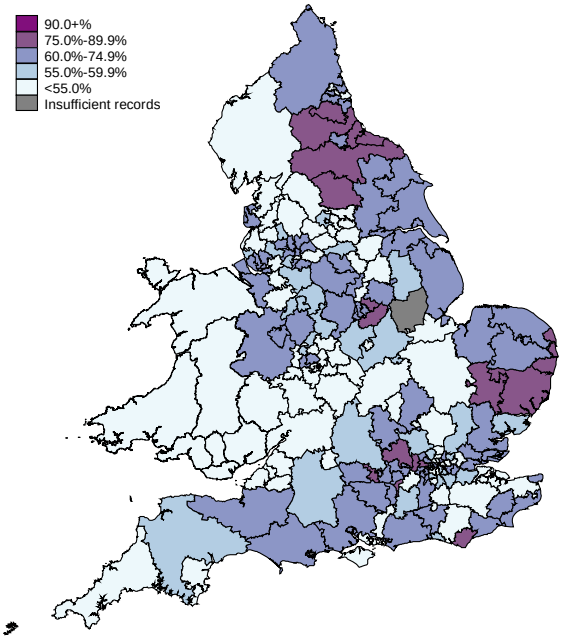


London



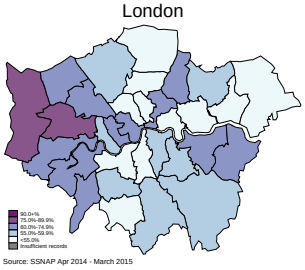
CCG OIS - C3.5
Source: SSNAP Apr 2015 - Mar 2016

Percentage of applicable patients
who go direct to a stroke unit within 4 hours

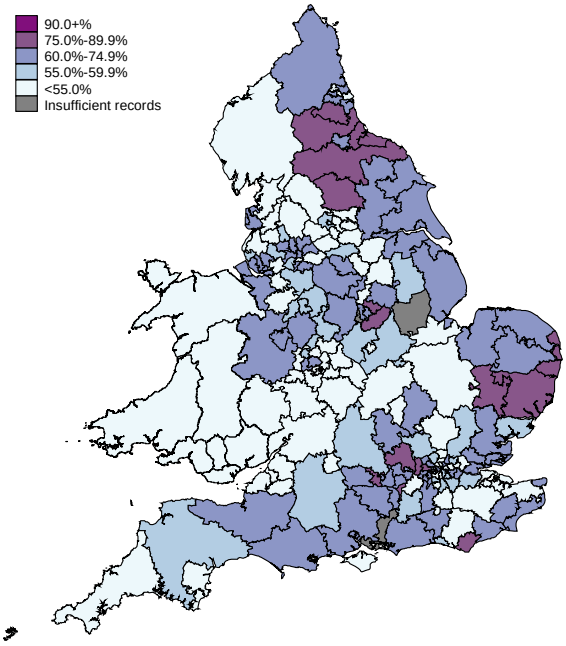


CCG OIS - C3.5
Source: SSNAP Apr 2014 - March 2015

London

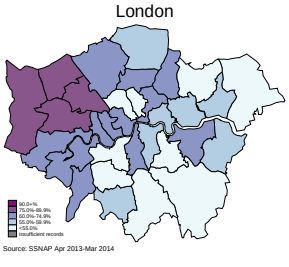


Percentage of applicable patients
who go direct to a stroke unit within 4 hours



CCG OIS - C3.5
Source: SSNAP Apr 2013-Mar 2014

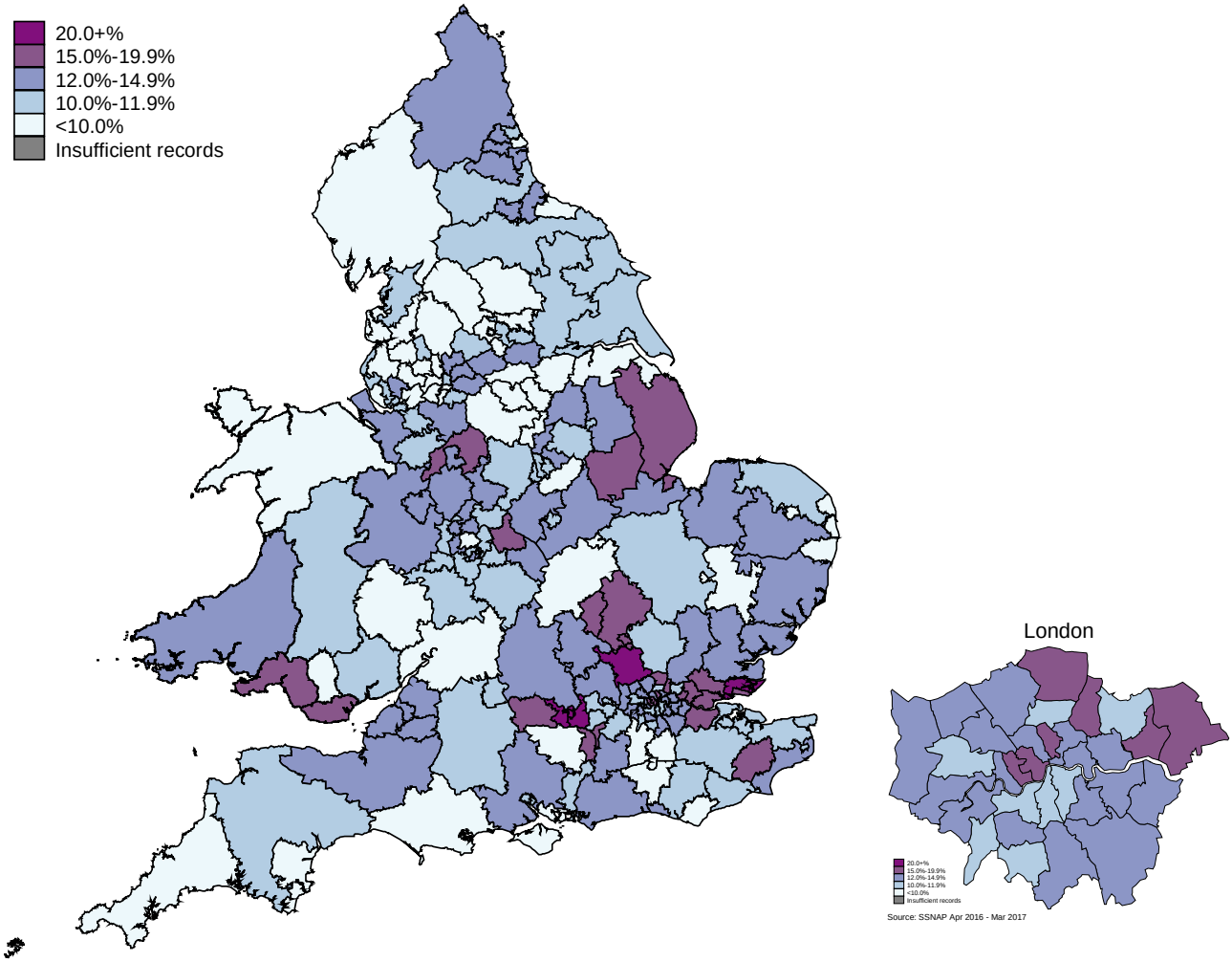
London



Stroke patients who receive thrombolysis

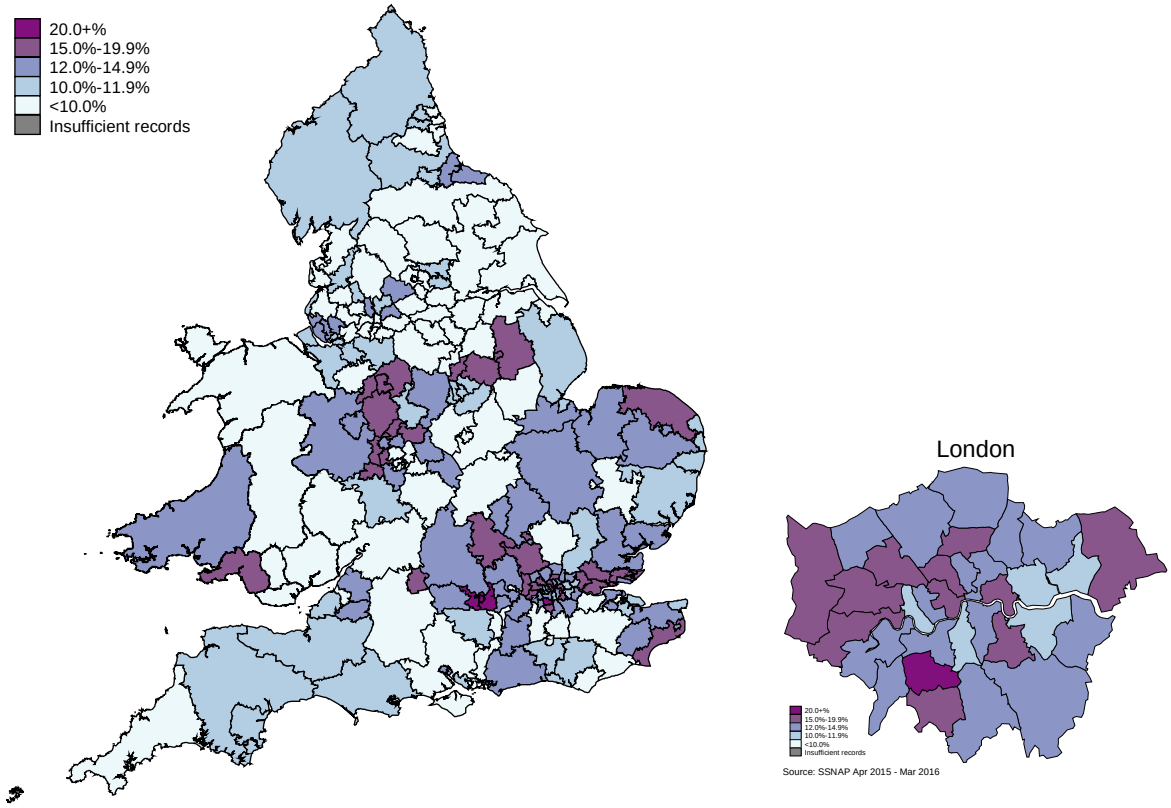
	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	April 2016 – March 2017	*Ref*
	N=73422	N=79721	N=81865	**N=81978**	
Percentage of all stroke patients who receive thrombolysis **(CCG OIS - C3.6)**	11.6%	11.6%	11.1%	**11.6%**	*G16.3*

Percentage of all patients who receive thrombolysis



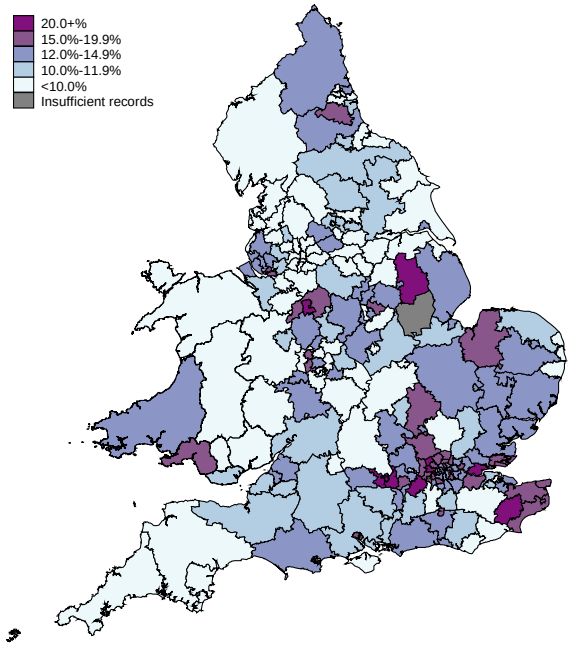
CCG OIS - C3.6
Source: SSNAP Apr 2016 - Mar 2017

Percentage of all patients who receive thrombolysis

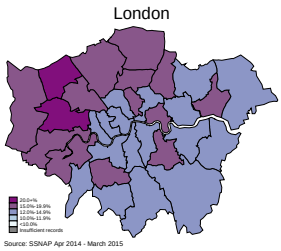


CCG OIS - C3.6
Source: SSNAP Apr 2015 - Mar 2016

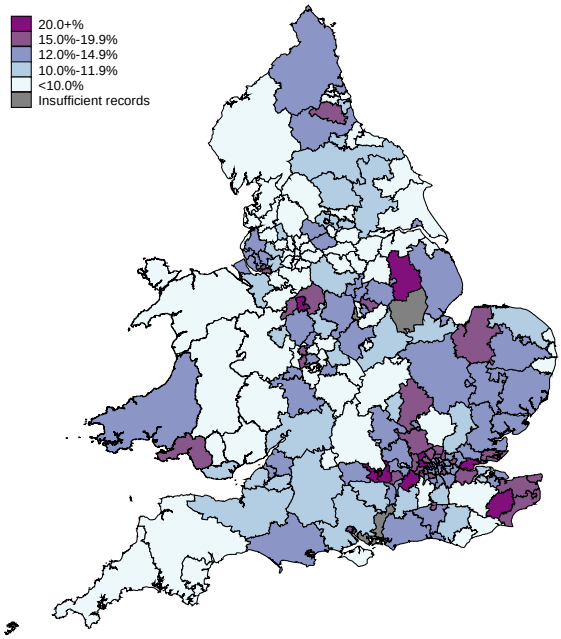
Percentage of all patients who receive thrombolysis



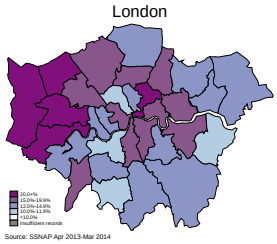
CCG OIS - C3.6
Source: SSNAP Apr 2014 - March 2015



Percentage of all patients who receive thrombolysis



CCG OIS - C3.6
Source: SSNAP Apr 2013-Mar 2014

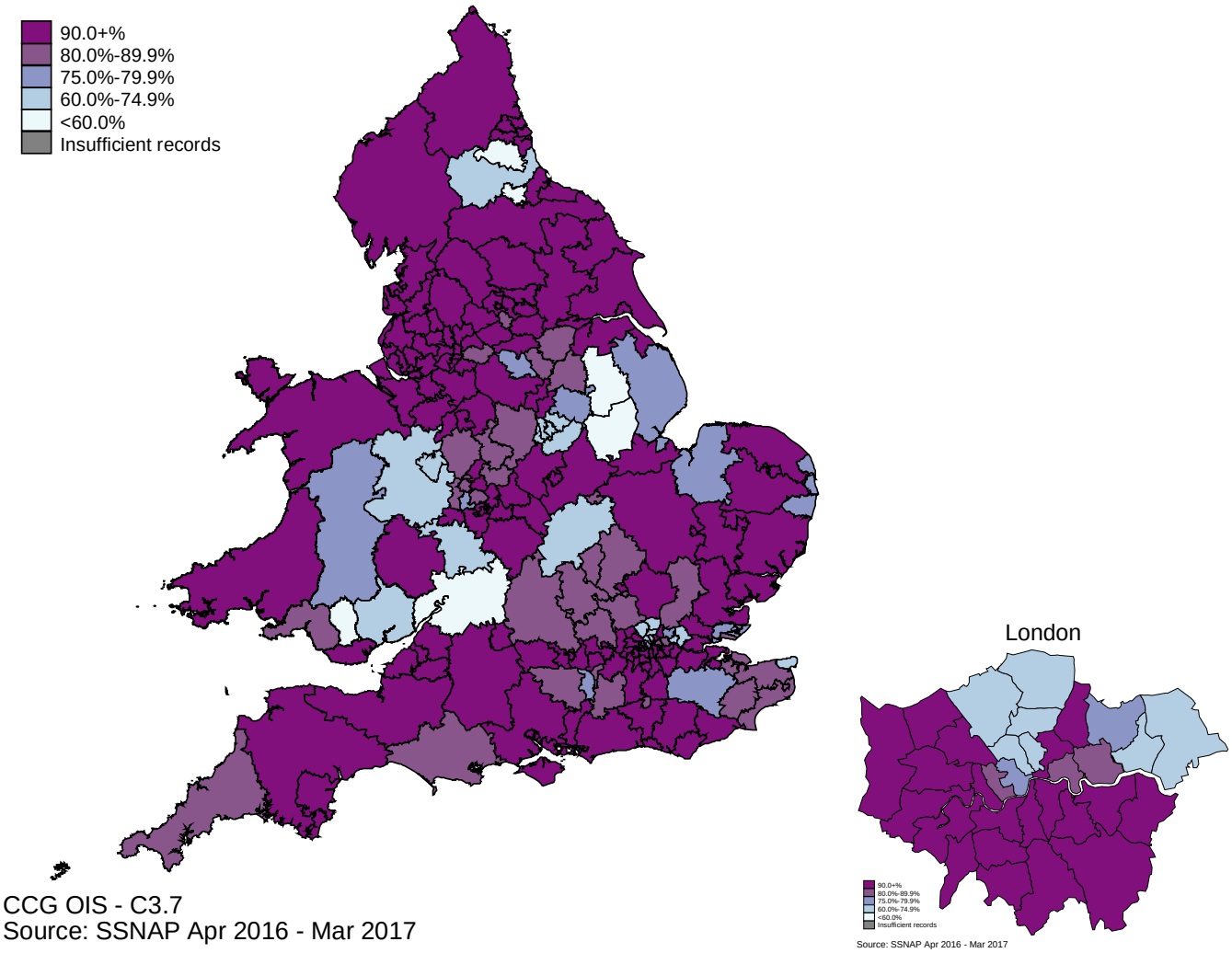


Care delivered between 72h and discharge from inpatient care

Discharged with joint health and social care plan

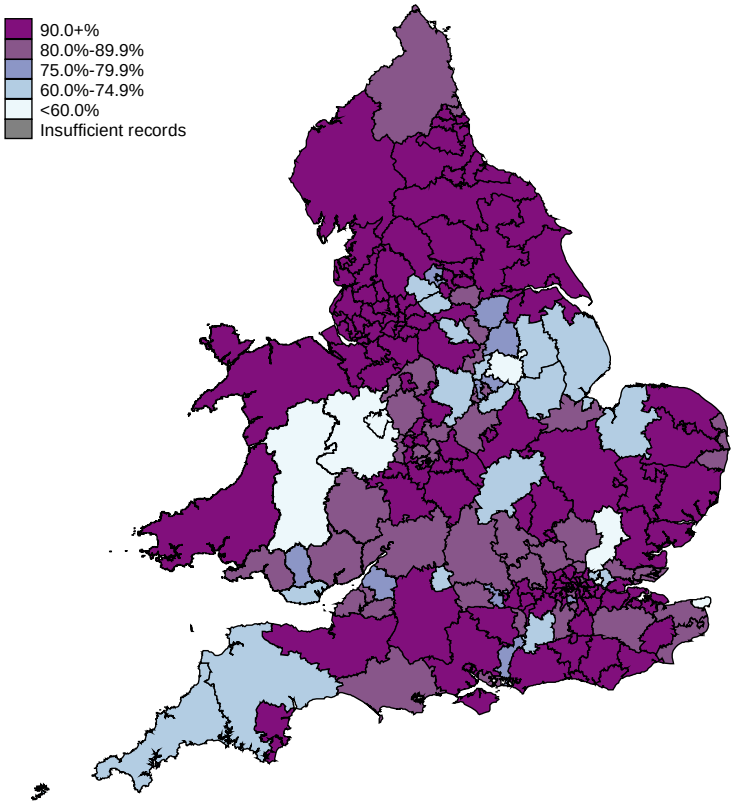
	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	April 2016 – March 2017	*Ref*
	N=30263	N=35990	N=35786	**N=36535**	
Percentage of applicable patients who are discharged with joint health and social care plan **(CCG OIS - C3.7)**	69.1%	81.0%	87.6%	**90.0%**	*J33.13*

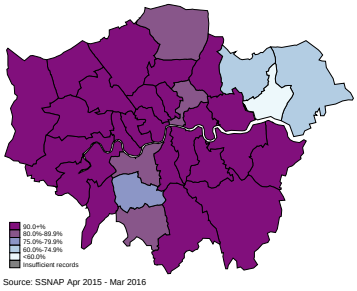
Percentage of applicable patients who are discharged with joint health and social care plan



CCG OIS - C3.7
Source: SSNAP Apr 2016 - Mar 2017

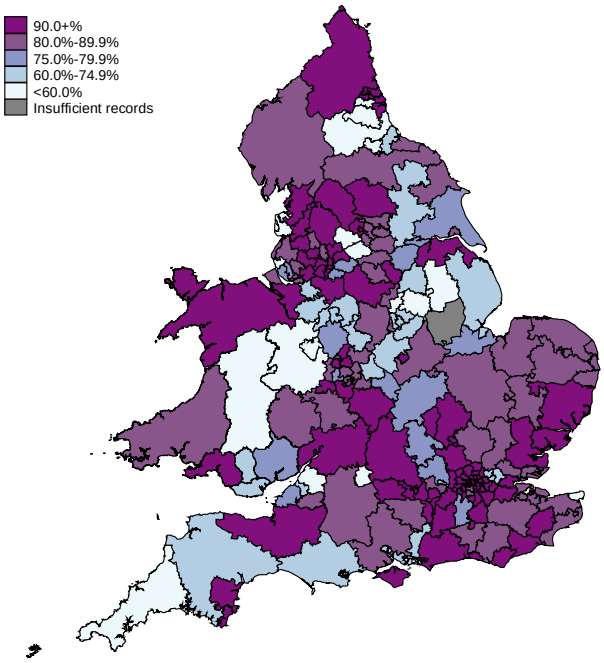
Percentage of applicable patients who are discharged with joint health and social care plan



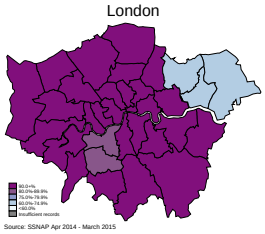


CCG OIS - C3.7
Source: SSNAP Apr 2015 - Mar 2016

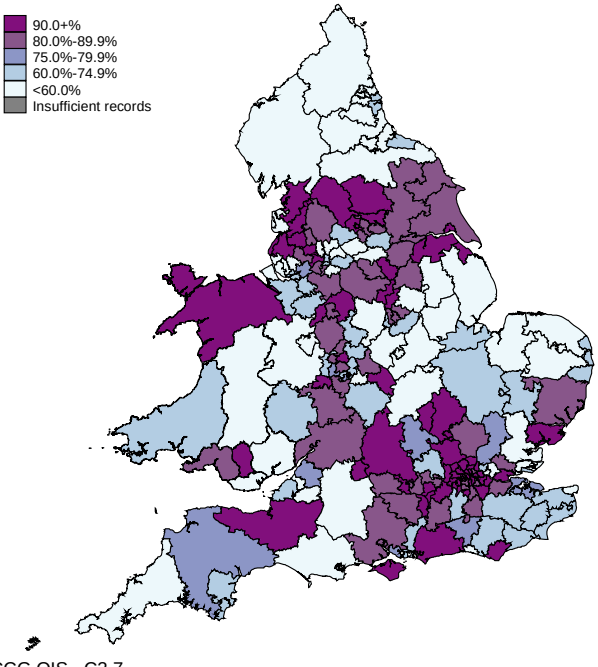
Percentage of applicable patients who are discharged with joint health and social care plan



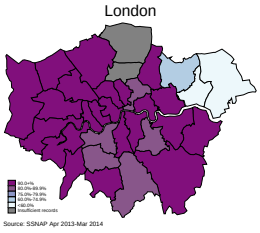
CCG OIS - C3.7
Source: SSNAP Apr 2014 - March 2015



Percentage of applicable patients who are discharged with joint health and social care plan

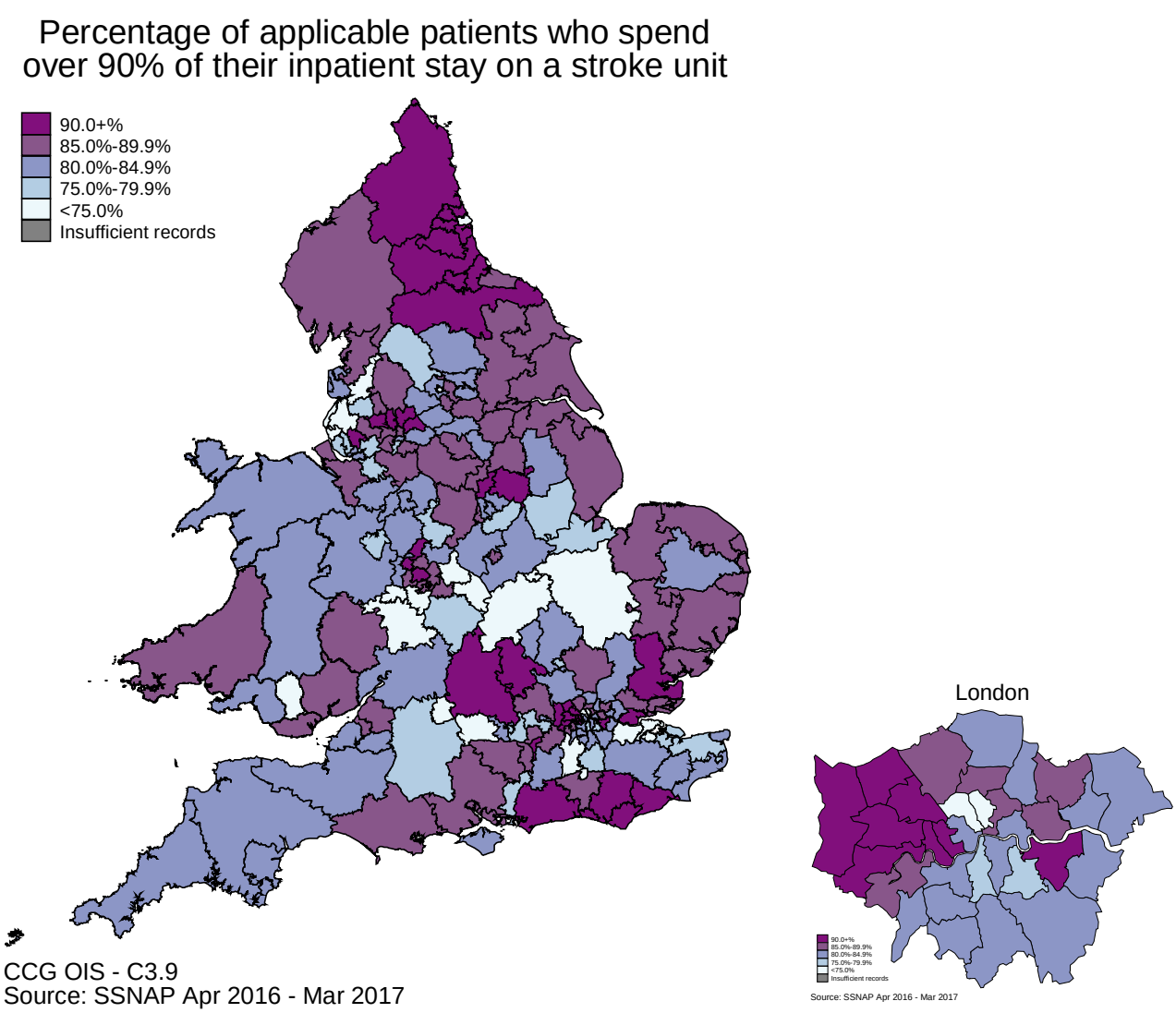


CCG OIS - C3.7
Source: SSNAP Apr 2013-Mar 2014



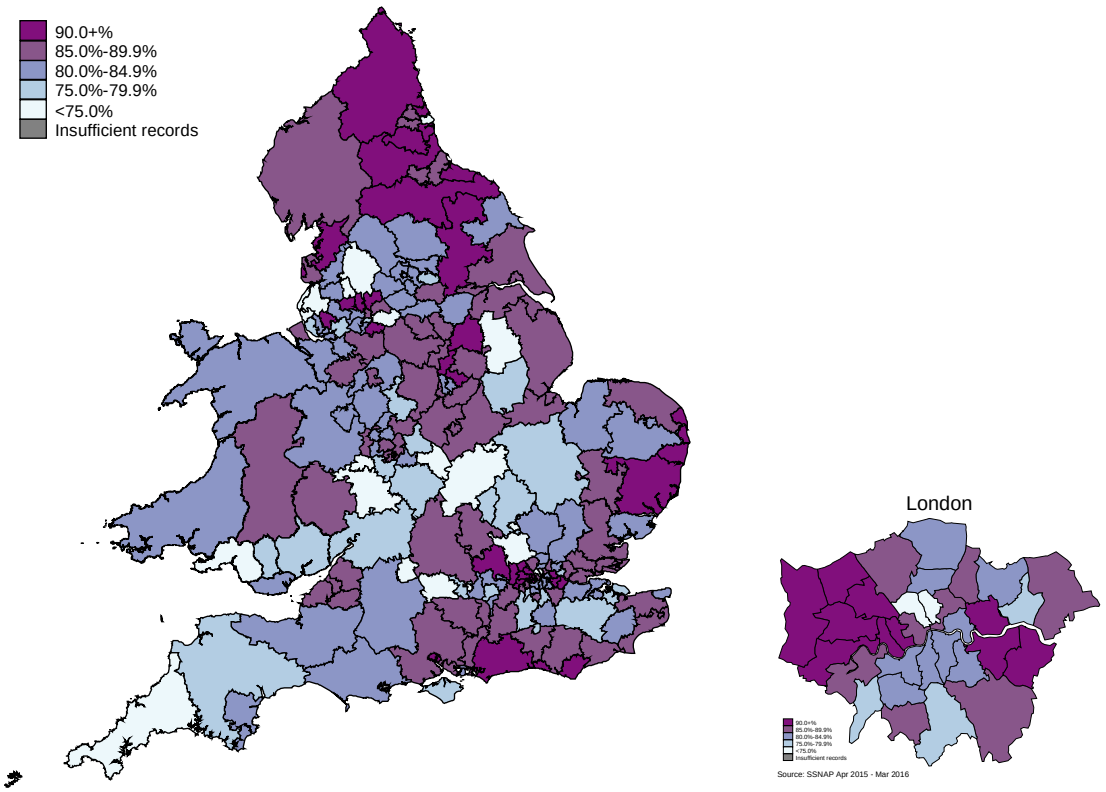
Over 90% of inpatient stay on a stroke unit

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	April 2016 – March 2017	*Ref*
	N=64748	N=75962	N=77714	**N=78688**	
Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit **(CCG OIS - C3.9)**	83.0%	82.0%	83.9%	**84.2%**	*J8.11*



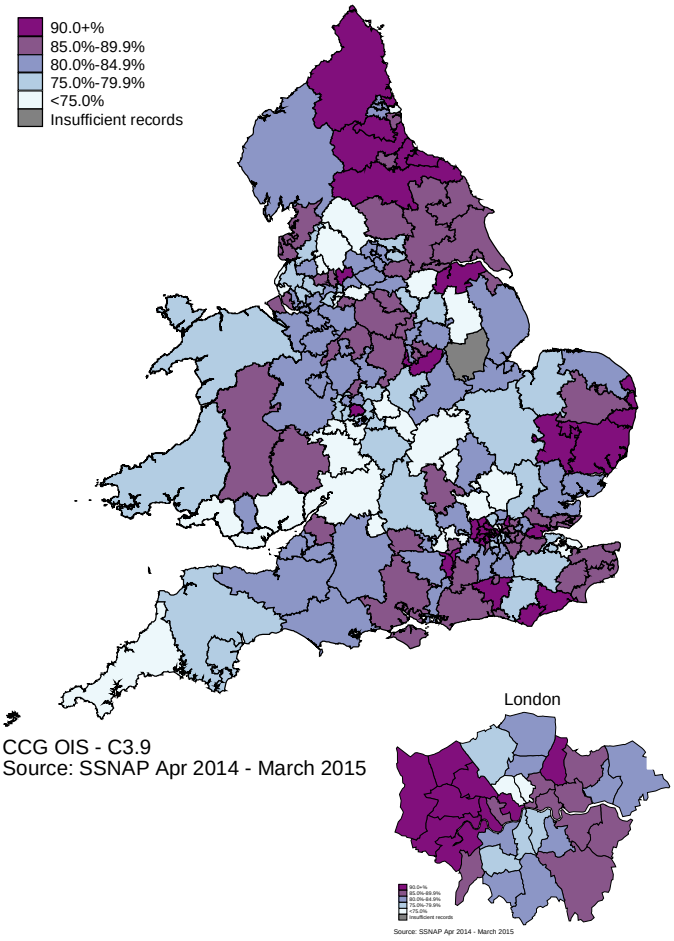
CCG OIS - C3.9
Source: SSNAP Apr 2016 - Mar 2017

Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit



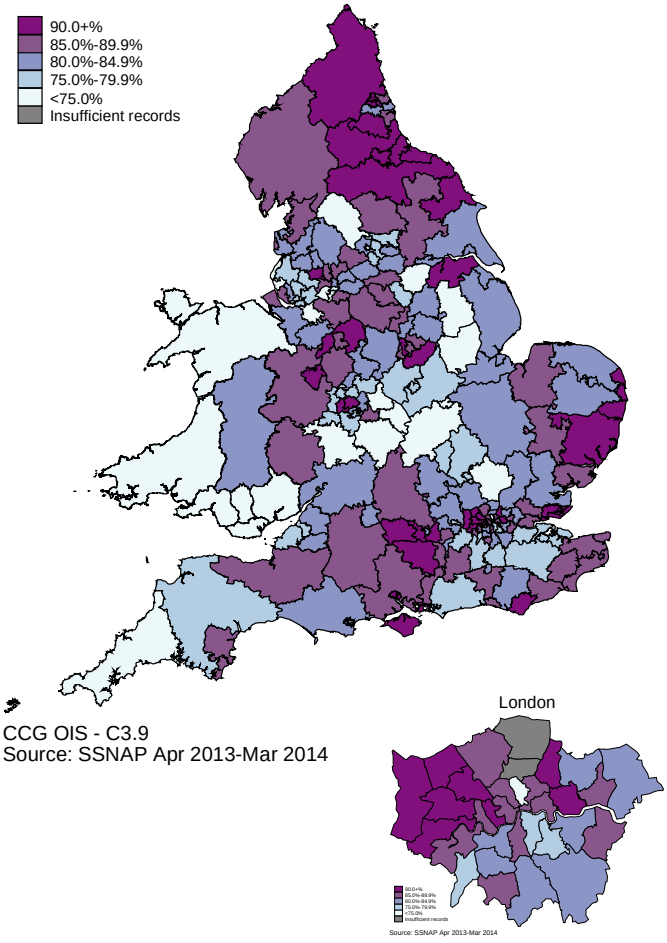
CCG OIS - C3.9
Source: SSNAP Apr 2015 - Mar 2016

Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit



CCG OIS - C3.9
Source: SSNAP Apr 2014 - March 2015

Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit



CCG OIS - C3.9
Source: SSNAP Apr 2013-Mar 2014

Care delivered after discharge from inpatient care

6 month assessments

Collection of six month outcome data is key to assessing the outcomes of stroke care and forms part of the CCG OIS that was reported in December 2014, December 2015 and December 2016 in England. CCG/LHBs should use SSNAP data to monitor provision of six month assessments. If patients in your area are not currently being offered a six month assessment or they are not being commissioned, action plans should be made to address this. Further information on 6 month assessments can be found on page 18 of this report.

Patient applicability for 6 month assessment

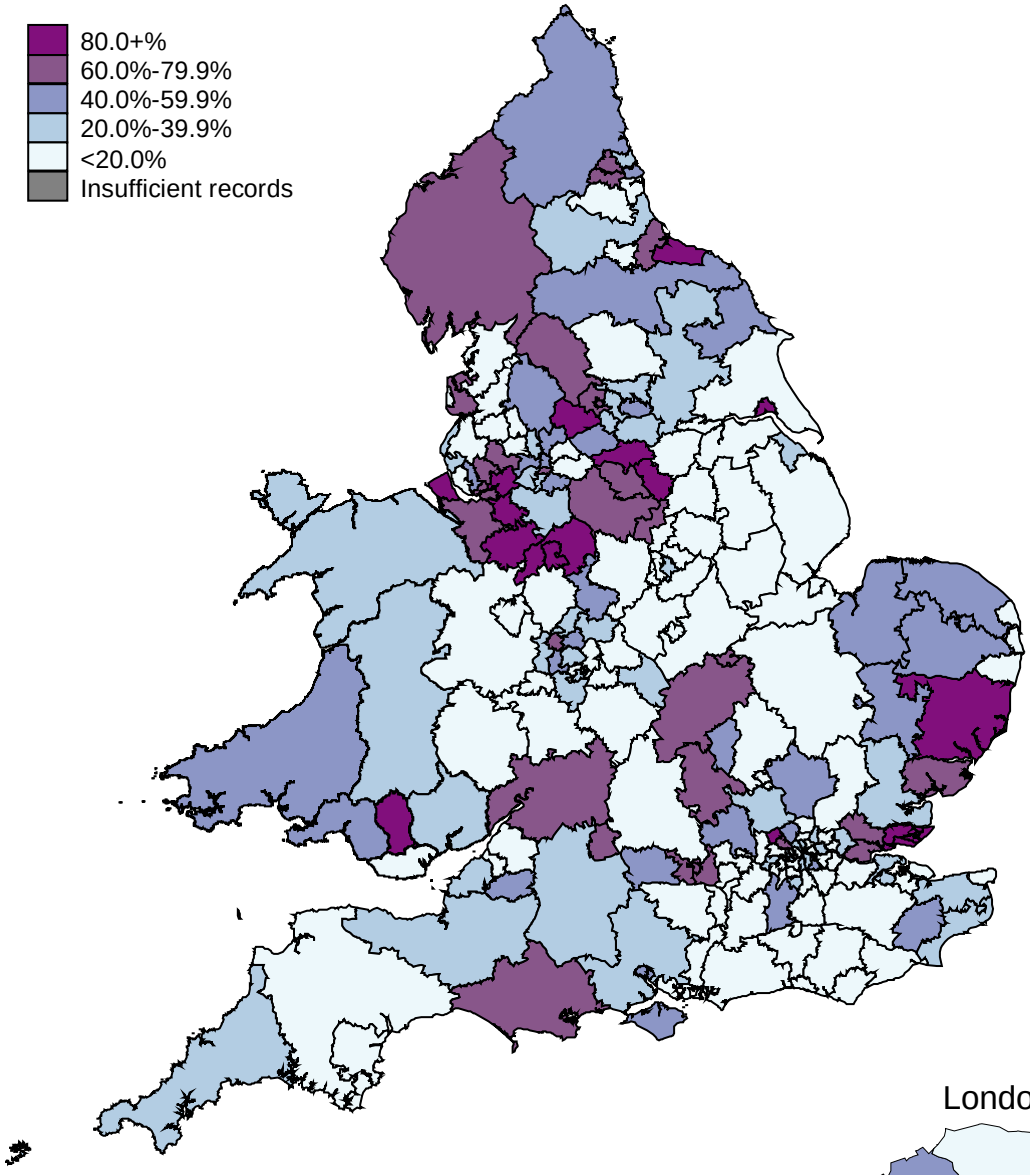
Patients are considered not applicable for a six month assessment if they refused their assessment after being contacted, and/or did not attend their scheduled assessment, and/or had died prior to the time period when they were due to have their assessment.

	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**	*Ref*
	N=27668	N=60028	N=61096	**N=65382**	
Percentage of patients alive who are considered applicable to be assessed at 6 months	92.0%	94.9%	93.4%	**91.8%**	*B12.3*

Completion rate of 6 month follow-up assessments for applicable patients on SSNAP

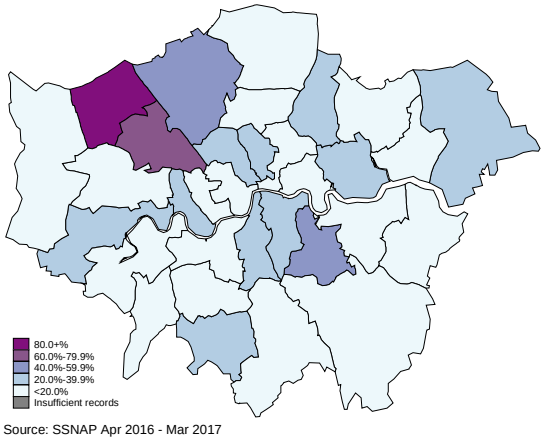
	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**	*Ref*
	N=25446	N=56982	N=57041	**N=60016**	
Percentage of applicable patients who are assessed at 6 months **(CCG OIS 3.8)**	16.2%	21.9%	30.0%	**31.9%**	*B13.3*

Percentage of applicable patients who are assessed at 6 months



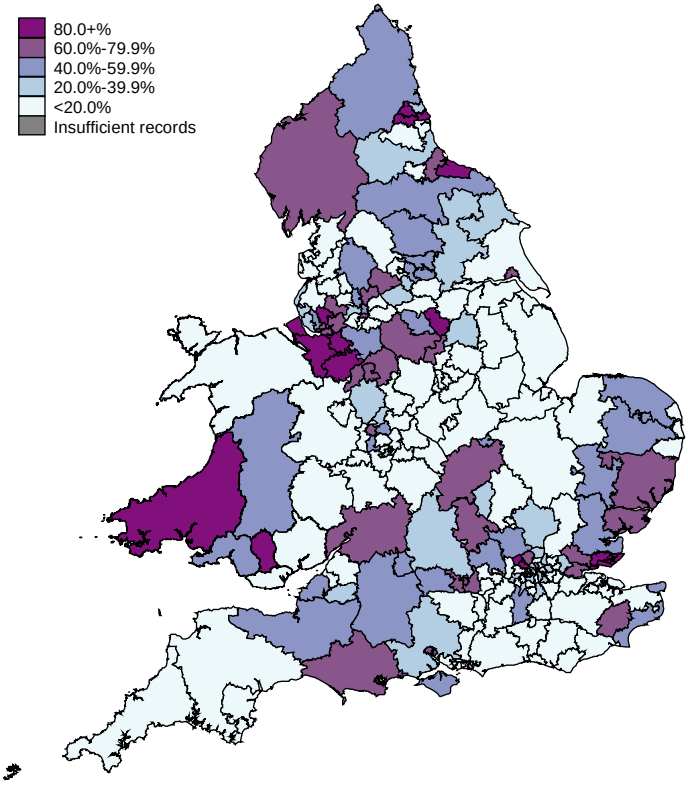
CCG OIS - C3.8
Source: SSNAP Apr 2016 - Mar 2017

London

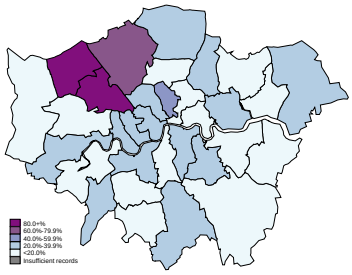


Source: SSNAP Apr 2016 - Mar 2017

Percentage of applicable patients who are assessed at 6 months



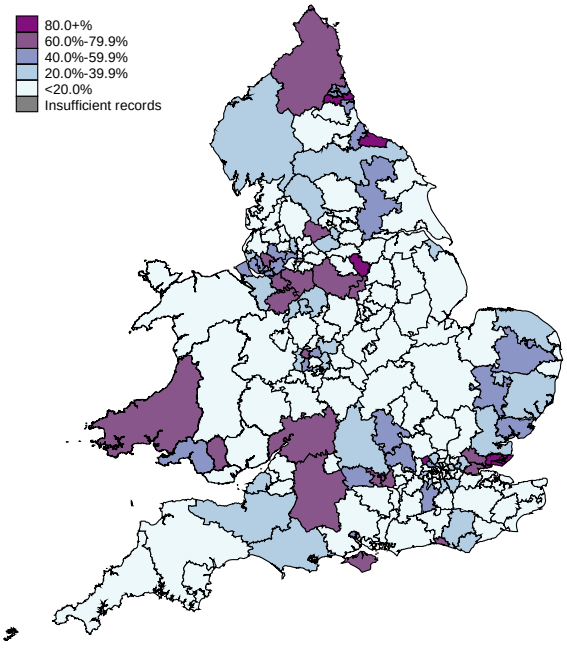
London



Source: SSNAP Apr 2015 - Mar 2016

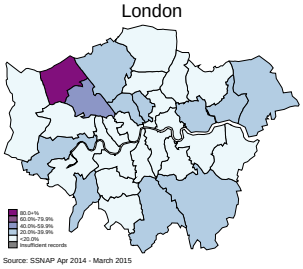
CCG OIS - C3.8
Source: SSNAP Apr 2015 - Mar 2016

Percentage of applicable patients who are assessed at 6 months



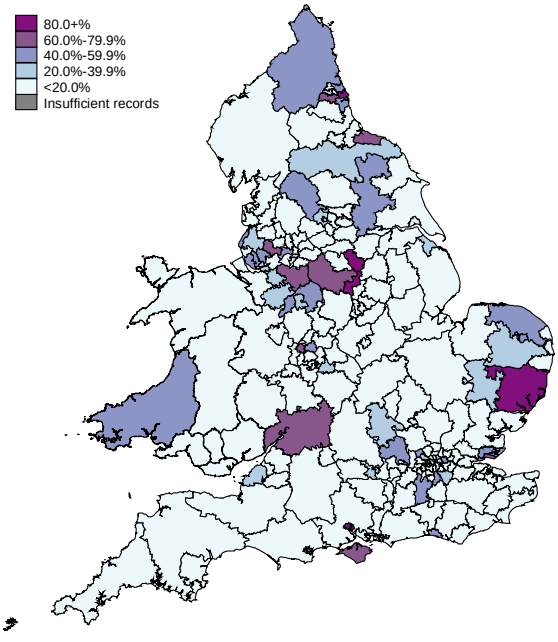
CCG OIS - C3.8
Source: SSNAP Apr 2014 - March 2015

London



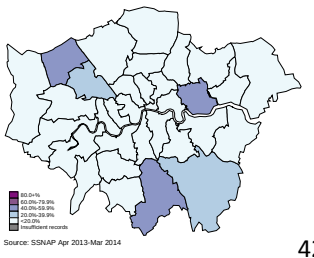
Source: SSNAP Apr 2014 - March 2015

Percentage of applicable patients who are assessed at 6 months



CCG OIS - C3.8
Source: SSNAP Apr 2013-Mar 2014

London



Source: SSNAP Apr 2013-Mar 2014

Mortality data

We are now reporting mortality rates by CCGs/LHBs for the year April 2015 to March 2016. Unlike the Dr Foster data, we have adjusted for case mix including stroke severity. The model used for this has been published in Stroke, and the published paper shows that the model is very reliable when externally validated. Briefly, the model takes account of the age of the patient, whether they have a prior diagnosis of atrial fibrillation (AF), stroke type (haemorrhage or infarction), and the NIHSS score at arrival (where this is not fully completed, the level of consciousness at arrival).

Having a higher than expected mortality should not necessarily be interpreted as being the result of poorer quality or unsafe care. Mortality data should not be ignored but needs to be understood in the context of the other SSNAP data and other factors. For example, mortality rates could be affected by the quality or accuracy of the data or by patient characteristics that were not taken into account when calculating the adjusted mortality rates, such as social deprivation. CCGs/LHBs should use the data to help better understand mortality in their patients.

Data submitted to SSNAP for patient admissions has been linked with data from the Office for National Statistics in order to determine all cause mortality for the patients with known stroke type admitted between April 2015 and March 2016. The number of deaths recorded within 30 days of admission (or stroke onset if inpatient stroke) in either Office for National Statistics (ONS) or SSNAP for each CCG/LHB's patients was used to calculate the CCG/LHB's crude mortality percentage.

99.8% control limits (approximately three standard deviations from the mean) were calculated for all CCGs/LHBs. The control limits for the accompanying funnel plot were calculated using Byar's approximation based on all CCGs/LHBs who directly admitted at least 10 patients with known stroke type.

Following analysis and case mix adjustment the expected number of deaths for each CCG/LHB's patients, and the Standardised Mortality Ratio (SMR) was calculated. Each CCG/LHB's SMR and the control limits are plotted on the funnel plot overleaf.

2015-16	*Patients residing in England and Wales*
Number of patients (with known stroke type)	81228
SMR (Standardised Mortality Ratio)	**1.04**
Crude mortality	**13.6%**

The funnel plot is useful for identifying outliers, taking into account the number of patients per CCG/LHB. What is therefore important is whether the point representing each CCG/LHB lies outside the dotted lines (the funnel). Points inside the funnel represent CCGs/LHBs where the number of observed deaths is not significantly different to the number of expected deaths.

The funnel area of the plot becomes narrower as the number of expected deaths increases because the more patients there are, the less likely variations in the number of deaths are due to chance alone.

For those CCGs/LHBs where the number of observed deaths is significantly higher than the number of expected deaths, their point on the funnel plot lies above the top dotted line. These CCGs/LHBs are outliers at the 99.8% control limit and their SMR in the public table is higher than their upper 99.8% control limit.

To view CCG level mortality results for the year 2015/16 download the CCG and LHB Public Table of Mortality.

Information about the identification, communication and management of outlying organisations in 30-day casemix adjusted mortality results can be downloaded here.

Further CCG Indicators

Atrial Fibrillation

Prior anticoagulation for patients in AF admitted to hospital for stroke

SSNAP data has revealed major issues in primary and secondary care about ensuring that patients have effective stroke prevention. Over one fifth of patients have a prior diagnosis of atrial fibrillation (AF) on admission. Only 52.8% of patients reported to be in AF on admission were taking anticoagulants between April 2016 and March 2017. For more details on this key indicator see section 1 of this report.

	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**	*Ref*
	N= 15248	N=16339	N=16410	**N=16099**	
Percentage of patients known to be in atrial fibrillation when admitted to hospital for stroke and prescribed anticoagulation prior to their stroke	38.3%	41.4%	48.0%	**52.8%**	*F6.13*

Early Supported Discharge (ESD)

Treatment by a stroke skilled Early Supported Discharge team

ESD can result in better outcomes for patients including reduction of long-term mortality and institutionalisation rates, increased independence six months after a stroke and increased capacity to undertake activities of daily living and greater patient satisfaction (Langhorne et al 2005). For more details on this key indicator see section 1 of this report.

	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**	*Ref*
	N=55868	N=65774	N=67835	**N=68605**	
Percentage of patients treated by a stroke skilled Early Supported Discharge team	24.9%	28.4%	33.2%	**35.0%**	*J10.3*

Institutionalisation

Recovery after stroke can be slow and it is important that patients have as much opportunity as possible to recover before a decision is made to discharge them into long-term institutional care. All patients with stroke, other than those who are dying or who have no impairment, should receive physiotherapy, occupational therapy, and speech and language therapy. Randomised controlled trials have shown that institutionalisation rates are lower for those patients discharged with ESD. It is therefore important to analyse the results for each of the indicators included in this report at national and CCG/LHB level as the performance of one standard may impact the results of another.

Patients discharged alive from hospital who are newly institutionalised

The tables below shows the age-sex standardised percentage of patients discharged alive from hospital who are newly institutionalised compared to the age and sex profile of patients discharged alive in SSNAP. As institutionalisation is only reported annually, results for this measure cannot be given in section 1 of this report.

	April 2013 – March 2014	**April 2014 – March 2015**	**April 2015 – March 2016**	**April 2016 – March 2017**
	N= 4580	N=5281	N=5167	**N=4911**
Age-sex standardised percentage of patients discharged alive from hospital who are newly institutionalised compared to the age and sex profile of patients discharged alive in SSNAP	8.2%	8.0%	7.6%	**7.2%**

Results for these indicators are available at CCG/LHB level at www.strokeaudit.org/results/clinical/national-results

SSNAP Key Indicators – annual results

44 Key Indicators have been chosen by the Intercollegiate Stroke Working Party (ICSWP) as representative of high quality stroke care. These include data items included in the CCG Outcomes Indicator Set and NICE Quality Standards (covering England only). The key indicators are grouped into 10 domains covering key aspects of the process of stroke care.

Scanning Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
1.1 Percentage of patients scanned within 1 hour of clock start	41.9%	44.1%	47.8%	**51.6%**
1.2 Percentage of patients scanned within 12 hours of clock start	84.7%	88.3%	91.7%	**93.9%**
1.3 Median time between clock start and scan (hours:mins)	1:22	1:15	1:05	**0:57**

Stroke Unit Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
2.1 Percentage of patients directly admitted to a stroke unit within 4 hours of clock start*	58.1%	56.9%	59.0%	**58.2%**
2.2 Median time between clock start and arrival on stroke unit (hours:mins)	3:36	3:40	3:36	**3:38**
2.3 Percentage of patients who spent at least 90% of their stay on stroke unit	83.0%	82.0%	83.9%	**84.2%**

* From Jan-Mar 2016 onwards patients receiving intra-arterial intervention are excluded from this indicator

Thrombolysis Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
3.1 Percentage of all stroke patients given thrombolysis (all stroke types)	11.6%	11.6%	11.1%	**11.6%**
3.2 Percentage of eligible patients (according to the RCP guideline minimum threshold) given thrombolysis	74.5%	81.1%	85.2%	**87.1%**
3.3 Percentage of patients who were thrombolysed within 1 hour of clock start	53.0%	55.9%	58.4%	**62.1%**
3.4 Percentage of applicable patients directly admitted to a stroke unit within 4 hours of clock start AND who either receive thrombolysis or have a pre-specified justifiable reason ('no but') for why it could not be given*	56.7%	56.3%	58.7%	**57.8%**
3.5 Median time between clock start and thrombolysis (hours:mins)	0:59	0:56	0:55	**0:52**

* From Jan-Mar 2016 onwards patients receiving intra-arterial intervention are excluded from this indicator

Specialist Assessments Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
4.1 Percentage of patients assessed by a stroke specialist consultant physician within 24h of clock start	73.8%	75.8%	78.8%	**81.3%**
4.2 Median time between clock start and being assessed by stroke consultant (hours:mins)	13:42	12:58	12:20	**11:07**
4.3 Percentage of patients who were assessed by a nurse trained in stroke management within 24h of clock start	86.3%	87.2%	89.0%	**90.1%**
4.4 Median time between clock start and being assessed by stroke nurse (hours:mins)	2:15	1:47	1:26	**1:12**
4.5 Percentage of applicable patients who were given a swallow screen within 4h of clock start	63.7%	68.1%	72.1%	**74.4%**
4.6 Percentage of applicable patients who were given a formal swallow assessment within 72h of clock start	78.5%	82.7%	85.0%	**87.6%**

Occupational Therapy Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
5.1 Percentage of patients reported as requiring occupational therapy	80.2%	81.4%	83.3%	**84.2%**
5.2 Median number of minutes per day on which occupational therapy is received	40.0	40.0	40.2	**40.1**
5.3 Median % of days as an inpatient on which occupational therapy is received	44.8%	57.0%	61.4%	**64.0%**
5.4 Compliance (%) against the therapy target of an average of 25.7 minutes of occupational therapy across all patients *(Target = 45 minutes x (5/7) x 0.8 which is 45 minutes of occupational therapy x 5 out of 7 days per week x 80% of patients)**	55.9%	72.1%	80.0%	**84.0%**

* The calculation methods for therapy intensity changed after 1st April 2014 following the addition of new questions to the dataset. Previously, therapy provision was measured out of a patient's total length of time for which they required any inpatient rehabilitation, but now it is measured out of the period they required the particular therapy for.

Physiotherapy Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
6.1 Percentage of patients reported as requiring physiotherapy	84.7%	84.7%	85.5%	**86.0%**
6.2 Median number of minutes per day on which physiotherapy is received	31.7	33.3	33.8	**35.0**
6.3 Median % of days as an inpatient on which physiotherapy is received	54.3%	66.6%	70.0%	**71.9%**
6.4 Compliance (%) against the therapy target of an average of 27.1 minutes of physiotherapy across all patients *(Target = 45 minutes x (5/7) x 0.85 which is 45 minutes of physiotherapy x 5 out of 7 days per week x 85% of patients)**	53.2%	68.8%	73.9%	**79.2%**

Speech and Language Therapy Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
7.1 Percentage of patients reported as requiring speech and language therapy	47.1%	48.2%	49.0%	**51.0%**
7.2 Median number of minutes per day on which speech and language therapy is received	30.0	30.7	31.7	**31.7**
7.3 Median % of days as an inpatient on which speech and language therapy is received	27.5%	38.8%	43.3%	**46.9%**
7.4 Compliance (%) against the therapy target of an average of 16.1 minutes of speech and language therapy across all patients *(Target = 45 minutes x (5/7) x 0.5 which is 45 minutes of speech and language therapy x 5 out of 7 days per week x 50% of patients)**	24.2%	35.7%	41.8%	**47.1%**

* The calculation methods for therapy intensity changed after 1st April 2014 following the addition of new questions to the dataset. Previously, therapy provision was measured out of a patient's total length of time for which they required any inpatient rehabilitation, but now it is measured out of the period they required the particular therapy for.

Multidisciplinary Team Working Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
8.1 Percentage of applicable patients who were assessed by an occupational therapist within 72h of clock start	86.6%	88.8%	90.3%	**91.7%**
8.2 Median time between clock start and being assessed by occupational therapist (hours:mins)	23:50	23:23	22:10	**21:43**
8.3 Percentage of applicable patients who were assessed by a physiotherapist within 72h of clock start	93.4%	93.8%	94.1%	**94.7%**
8.4 Median time between clock start and being assessed by physiotherapist (hours:mins)	22:24	22:06	21:20	**21:00**
8.5 Percentage of applicable patients who were assessed by a speech and language therapist within 72h of clock start	78.0%	82.1%	85.6%	**88.6%**
8.6 Median time between clock start and being assessed by speech and language therapist (hours:mins)	25:25	24:51	23:49	**23:09**
8.7 Percentage of applicable patients who have rehabilitation goals agreed within 5 days of clock start	79.7%	86.7%	89.7%	**91.5%**
8.8 Percentage of applicable patients who are assessed by a nurse within 24h AND at least one therapist within 24h AND all relevant therapists within 72h AND have rehab goals agreed within 5 days	44.3%	51.5%	57.1%	**61.1%**

Standards by Discharge Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
9.1 Percentage of applicable patients screened for nutrition and seen by a dietitian by discharge*	65.5%	74.2%	80.2%	**82.8%**
9.2 Percentage of applicable patients who have a continence plan drawn up within 3 weeks of clock start	75.1%	84.9%	89.7%	**91.5%**
9.3 Percentage of applicable patients who have mood and cognition screening by discharge	78.8%	86.1%	89.9%	**91.6%**

* From January 2015 Key Indicator 9.1 has additional exclusion criteria - patients recorded as for palliative care at any point during their inpatient stay are no longer deemed to be applicable for this indicator.

Discharge Processes Key Indicators

	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	**April 2016 – March 2017**
10.1 Percentage of applicable patients receiving a joint health and social care plan on discharge	69.1%	81.0%	87.6%	**90.0%**
10.2 Percentage of patients treated by a stroke skilled Early Supported Discharge team	24.9%	28.4%	33.2%	**35.0%**
10.3 Percentage of applicable patients in atrial fibrillation on discharge who are discharged on anticoagulants or with a plan to start anticoagulation	92.9%	95.4%	97.1%	**97.7%**
10.4 Percentage of those patients who are discharged alive who are given a named person to contact after discharge	76.7%	85.8%	91.0%	**95.7%**

Conclusion

This report has presented audit results on the quality of stroke services at national and CCG/LHB level. By presenting both periodic and annual results, changes in performance over time can be monitored carefully. Clinicians, commissioners of stroke services, regulating bodies, and the general public should use this information to highlight where improvements are needed in stroke care and implement action plans to address these issues. This can ensure better provision of stroke care in the future.

It is unprecedented to have collected such a high volume of cases, with good data quality and a representative sample, within five years of initiating a new national audit. In addition, an exceptional turnaround time for rapid public reporting by named hospital is a considerable achievement. The efforts of all the teams and registered audit users participating in SSNAP is highly valued.

SSNAP is now aiming to improve the quality of post-acute data submitted to the audit. We urge all CCG/LHBs to encourage post-acute inpatient teams, domiciliary teams, and six month assessment providers to register and record this vital data on SSNAP to ensure the entire patient pathway is reported on for all stroke patients. Having complete and robust post-acute data will foster improvements to the quality of care and outcomes for patients after they leave hospital.

There are a number of other SSNAP reports publicly available online at www.strokeaudit.org/results that can be used in conjunction with and in addition to the information contained in this report. Of particular interest may be the full CCG/LHB results portfolio which gives named CCG/LHB results for each of the measures included in this report. Any further questions or queries regarding SSNAP can be directed to ssnap@rcplondon.ac.uk.

Appendix 1: Breakdown of bandings assigned to CCGs/LHBs

Bandings attributed to CCGs/LHBs for each CCG OIS measure in the April – July 2017 reporting period

Percentage of eligible patients directly admitted to a stroke unit within 4 hours of clock start	
	Number of CCGs/LHBs attributed each level
Banding	**Apr-Jul 2017**
90.0%+	**0 (0%)**
75.0-89.9%	**28 (13%)**
60.0-74.9%	**84 (39%)**
55.0-59.9%	**31 (14%)**
Less than 55.0%	**70 (33%)**

Percentage of all patients who receive thrombolysis	
	Number of CCGs/LHBs attributed each level
Banding	**Apr-Jul 2017**
20.0%+	**10 (5%)**
15.0-19.9%	**41 (19%)**
12.0-14.9%	**48 (22%)**
10.0-11.9%	**54 (25%)**
Less than 10.0%	**60 (28%)**

Percentage of applicable patients who are discharged with joint health and social care plan	
	Number of CCGs/LHBs attributed each level
Banding	**Apr-Jul 2017**
90.0%+	**151 (71%)**
80.0-89.9%	**30 (14%)**
75.0-79.9%	**7 (3%)**
60.0-74.9%	**11 (5%)**
Less than 60.0%	**10 (5%)**

Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit	
	Number of CCGs/LHBs attributed each level
Banding	**Apr-Jul 2017**
90.0%+	**56 (26%)**
85.0-89.9%	**55 (26%)**
80.0-84.9%	**53 (25%)**
75.0-79.9%	**27 (13%)**
Less than 75.0%	**20 (9%)**

Percentage of applicable patients who are assessed at 6 months	
	Number of CCGs/LHBs attributed each level
Banding	**Apr-Jul 2017**
80.0%+	**17 (8%)**
60.0-79.9%	**25 (12%)**
40.0-59.9%	**30 (14%)**
20.0-39.9%	**46 (21%)**
Less than 20.0%	**95 (44%)**

Overall SSNAP scores achieved by CCGs/LHBs – changes over time

Average SSNAP Score				
	Number of CCGs/LHBs attributed each level			
SSNAP Score	Apr-Jul 2016	Aug-Nov 2016	Dec 2016-Mar 2017	**Apr-Jul 2017**
A: 80.0%+	44 (20%)	55 (25%)	49 (23%)	**67 (31%)**
B: 70.0-79.9%	58 (27%)	56 (26%)	65 (30%)	**57 (27%)**
C: 60.0-69.9%	64 (30%)	64 (30%)	64 (30%)	**60 (28%)**
D: 40.0-59.9%	43 (20%)	36 (17%)	33 (15%)	**26 (12%)**
E: Less than 40.0%	6 (3%)	0 (0%)	4 (2%)	**2 (1%)**
X	1 (<1%)	5 (2%)	1 (<1%)	**2 (1%)**

Comparisons between SSNAP Scores achieved by each CCG/LHB for each CCG OIS measure between Apr 2013 – Mar 2014, Apr 2014 – Mar 2015, Apr 2015 – Mar 2016, and Apr 2016 – Mar 2017

	Percentage of applicable patients who go direct to a stroke unit within 4 hours			
	Number of CCGs/LHBs attributed each level			
Banding	2013/14	2014/15	2015/16	**2016/17**
90.0%+	0 (0%)	0 (0%)	0 (0%)	**0 (0%)**
75.0-89.9%	21 (10%)	17 (8%)	17 (8%)	**14 (6%)**
60.0-74.9%	81 (38%)	84 (39%)	92 (43%)	**82 (38%)**
55.0-59.9%	36 (17%)	33 (15%)	37 (17%)	**33 (15%)**
Less than 55.0%	76 (36%)	83 (38%)	70 (32%)	**87 (40%)**

	Percentage of all patients who receive thrombolysis			
	Number of CCGs/LHBs attributed each level			
Banding	2013/14	2014/15	2015/16	**2016/17**
20.0%+	13 (6%)	10 (5%)	4 (2%)	**5 (2%)**
15.0-19.9%	35 (16%)	32 (15%)	31 (14%)	**24 (11%)**
12.0-14.9%	48 (22%)	66 (30%)	57 (26%)	**70 (32%)**
10.0-11.9%	44 (21%)	37 (17%)	44 (20%)	**62 (29%)**
Less than 10.0%	74 (35%)	72 (33%)	80 (37%)	**55 (25%)**

	Percentage of applicable patients who are discharged with joint health and social care plan			
	Number of CCGs/LHBs attributed each level			
Banding	2013/14	2014/15	2015/16	**2016/17**
90.0%+	60 (30%)	96 (44%)	136 (63%)	**145 (67%)**
80.0-89.9%	43 (22%)	58 (27%)	44 (20%)	**34 (16%)**
75.0-79.9%	10 (5%)	16 (7%)	11 (5%)	**12 (6%)**
60.0-74.9%	34 (17%)	28 (13%)	18 (8%)	**19 (9%)**
Less than 60.0%	53 (27%)	19 (9%)	7 (3%)	**6 (3%)**

	Percentage of applicable patients who spend over 90% of their inpatient stay on a stroke unit			
	Number of CCGs/LHBs attributed each level			
Banding	2013/14	2014/15	2015/16	**2016/17**
90.0%+	36 (18%)	31 (14%)	35 (16%)	**37 (17%)**
85.0-89.9%	55 (28%)	58 (27%)	68 (31%)	**70 (32%)**
80.0-84.9%	53 (27%)	61 (28%)	65 (30%)	**62 (29%)**
75.0-79.9%	32 (16%)	34 (16%)	26 (12%)	**24 (11%)**
Less than 75.0%	24 (12%)	33 (15%)	22 (10%)	**23 (11%)**

	Percentage of applicable patients who are assessed at 6 months			
	Number of CCGs/LHBs attributed each level			
Banding	2013/14	2014/15	2015/16	**2016/17**
80.0%+	5 (2%)	7 (3%)	15 (7%)	**16 (7%)**
60.0-79.9%	9 (4%)	20 (9%)	28 (13%)	**29 (13%)**
40.0-59.9%	22 (10%)	27 (12%)	34 (16%)	**33 (15%)**
20.0-39.9%	20 (9%)	32 (15%)	33 (15%)	**44 (20%)**
Less than 20.0%	158 (74%)	131 (60%)	106 (49%)	**94 (44%)**