



Royal College
of Physicians

SSNAP

Sentinel Stroke National Audit Programme (SSNAP)

Changes over Time: 4 years of data
April 2013 – March 2017

National results

Based on stroke patients admitted to and/or
discharged from hospital between
April 2013 – March 2017

Prepared by

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

Clinical audit

Document purpose	To display the changes over time of SSNAP Key Indicators between 2013 and 2017.
Title	Changes over Time: 4 years of data April 2013 – March 2017
Author	Royal College of Physicians, Clinical Effectiveness and Evaluation Unit on behalf of the Intercollegiate Stroke Working Party
Target audience	General public, stroke survivors and carers, health and social care professionals, stroke researchers
Description	This is a concise report which covers the 44 SSNAP Key Indicators at a national level for each annual reporting period from April – March 2013 to April – March 2017, providing easy and direct comparison year-on-year.
Related publications	National Clinical Results April 2016 – March 2017 https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx SSNAP Acute Organisational Audit Report - November 2016 https://www.strokeaudit.org/results/Organisational/National-Organisational.aspx
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Glossary

44 Key Indicators

44 key indicators have been chosen by the ICSWP (Inter-Collegiate Stroke Working Party) as representative of high quality stroke care. These include data items included in the CCG (Clinical Commissioning Groups) Outcomes indicator Set and NICE (The National Institute for Health and Care Excellence) Quality Standards (covering England only).

10 Domains

10 domains covering key aspects of the process of stroke care.

Patient –centred

Patient-centred attributes the results to every team which treated the patient at any point in their care. This recognises that the stroke care pathway usually involves many teams treating the patient at different points. This holistic approach is aimed at encouraging teams to work closely together to ensure consistency of care. It is ‘patient-centred’, because it describes that care and outcomes from the patient perspective, regardless of which team treated the patient.

Team-centred

Team-centred attributes the results to the team considered to be most appropriate to assign the responsibility for the measure to. It is recognised that it is useful to provide results on a team-centred basis so that teams can see the results for the interventions delivered.

Clock Start

This term is used throughout SSNAP reporting to refer to the date and time of arrival at first hospital for newly arrived patients, or to the date and time of symptom onset if the patient is already in hospital at the time of their stroke.

Occupational Therapy

Occupational therapy is a type of therapy to help patients re-learn activities of everyday life.

Physiotherapy

Physiotherapy is a type of therapy to restore movement and function.

Speech and Language Therapy

Speech and language therapy is a type of therapy to help patients recover from communication or swallowing difficulties

‘No but’

‘No but’ refers to a medical reason stated for not giving thrombolysis according to the hospital.

SSNAP Changes over Time: 4 years of data

Introduction to SSNAP

The Sentinel Stroke National Audit Programme (SSNAP) is the single source of stroke data in England, Wales and Northern Ireland. There are three main components of SSNAP; the clinical audit, acute organisational audit and post-acute organisational audit.

Four years of data

This is a new set of annual data, which for the first time can be compared against three previous years of data. A huge amount of stroke data can now be compared between the years 2013/14, 2014/15, 2015/16 and 2016/17 (all April – March). We would like to thank all SSNAP users for making such a great resource and wealth of data possible.

SSNAP scoring consists of 44 key indicators; these are grouped into 10 domains which are scored A-E. Each domain has been carefully constructed using a combination of selected key indicators to provide a balanced measure of performance in this area of care. The performance of the team in each key indicator is combined into a Domain score. Domains are graded from A to E, with A being the very best standard of care.

Table 1: Cohort of Patients	<i>National Report – 4 years of data</i>			
Period of admission/discharge:	<i>Apr 2013-Mar 2014</i>	<i>Apr 2014-Mar 2015</i>	<i>Apr 2015-Mar 2016</i>	<i>Apr 2016-Mar 2017</i>
Number of patients (72h cohort):				
Patient-centred 72h cohort	74308	80754	84184	85122
Team-centred 72h cohort	74308	80754	84184	85122
Number of patients (post-72h cohort):				
Patient-centred post-72h cohort	66799	78429	81610	83484
Team-centred post-72h cohort (7 day team)	66799	78429	81610	83484
Team-centred post-72h cohort (inpatient discharging team)	66799	78429	81610	83484
Team-centred post-72h cohort (all teams)	78499	92260	97681	99975

Table 1 lists the total number of patients in each cohort, over the last 4 years.

Domain 1: Scanning

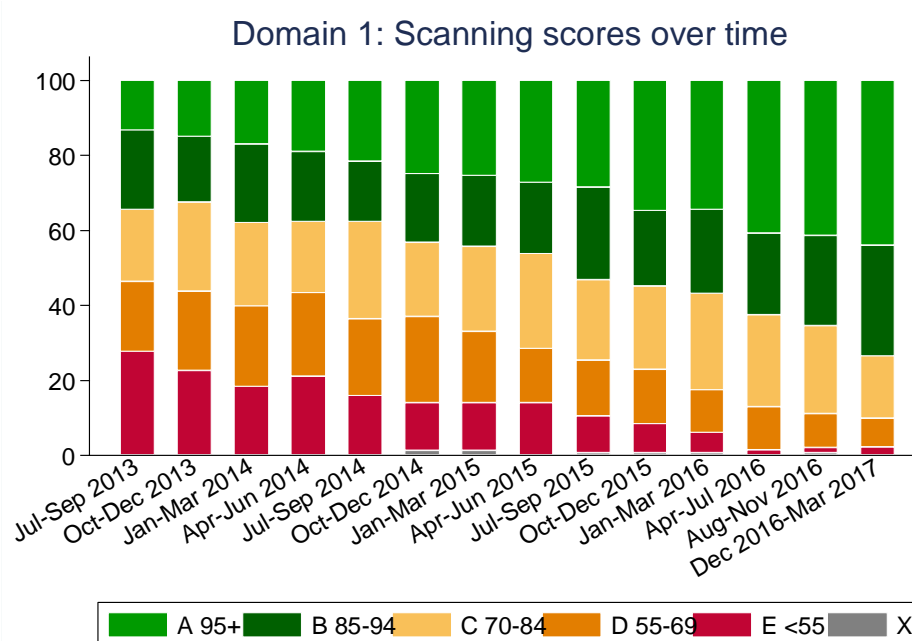
A brain scan is essential in order to make the diagnosis of stroke, in particular to identify the 1 in 9 people who have a haemorrhagic stroke. Acute treatment for ischaemic stroke and haemorrhagic stroke is different, so the sooner the stroke type can be identified, the sooner the patient can receive the right treatment.

There is no benefit in delaying a scan, and it is more cost effective to scan immediately, so it is encouraging to see that more people are having a scan more quickly.

The new RCP National Clinical Guideline for Stroke (fifth edition, 2016) recommends that all patients are scanned within 1 hour of arrival at hospital, and this is now being achieved for more than half of stroke admissions.

Since this is a new recommendation, it is appreciated that this change will take time to implement. The previous standard was that selected patients should receive a scan within 1 hour and all patients within 12 hours.

Table 2: Scanning	National Report – 4 years of data			
Period of admission:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 1: Scanning				
Percentage of patients scanned within 1 hour of clock start	41.9%	44.1%	47.5%	51.3%
Percentage of patients scanned within 12 hours of clock start	84.6%	88.2%	91.3%	93.5%
Median time between clock start and scan	1h 22m	1h 15m	1h 06m	58 mins



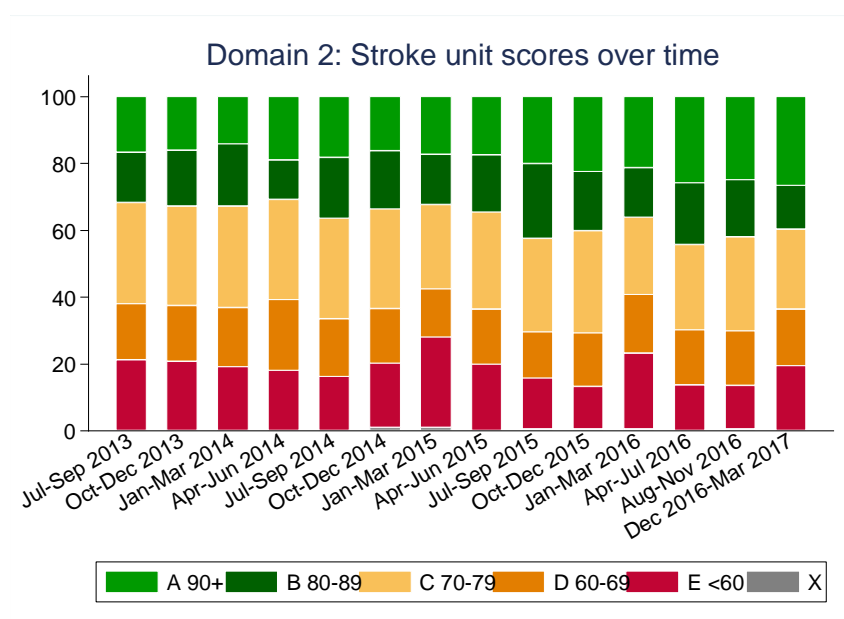
Domain 2: Stroke Unit

A stroke unit is a special ward in a hospital where stroke patients are cared for by a team of professionals (a multidisciplinary team) who specialise in stroke care. There is very robust evidence that stroke units save lives and reduce disability, without increasing costs, so there is no reason to admit a patient with stroke to any other sort of hospital ward, unless they need more specialist care such as the intensive care unit.

Once the patient is admitted to the stroke unit, they receive all their nursing care from stroke nurses, are much more likely to see a specialist stroke doctor and stroke therapists, and receive all of their treatments and assessments more quickly. A highly functioning and well organised stroke unit is essential for providing a good stroke service to patients.

Patients should go directly to a stroke unit and should arrive there as quickly as possible, certainly within four hours of arrival at hospital, to ensure they receive coordinated care from a specialist stroke team with appropriate facilities.

Table 3: Stroke unit key indicators	National Report – 4 years of data			
Period of admission/discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 2: Stroke unit key indicators				
Percentage of patients directly admitted to a stroke unit within 4 hours of clock start	58.0%	56.8%	58.3%	57.4%
Median time between clock start and arrival on stroke unit	3h 36m	3h 40m	3h 38m	3h 40m
Percentage of patients who spent at least 90% of their stay on stroke unit	83.0%	81.9%	83.5%	83.8%

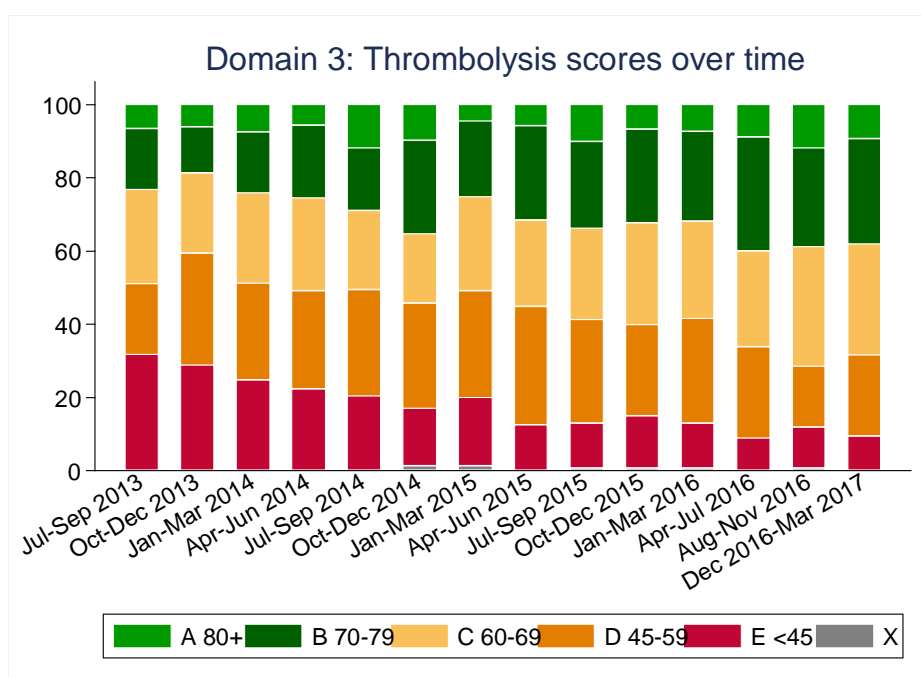


Domain 3: Clot Busting Treatment (Thrombolysis)

Thrombolysis is a treatment given to stroke patients that can break down a clot that is blocking blood from reaching the brain. It is not suitable for everyone, but it should be offered to anyone for whom the treatment is appropriate, which is estimated to be between 15-20% of patients.

The best outcome for patients is achieved when the time from onset to treatment is as short as possible (for example, research studies show that the outcome for people thrombolysed within 90 minutes of symptom onset is much better than those who receive treatment within 180 minutes). The shorter the time taken from the start of symptoms to arrival in hospital, and from arrival in hospital to treatment, the less disability people will suffer.

Table 4: Thrombolysis Key Indicators	National Report – 4 years of data			
Period of admission:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 3: Thrombolysis key indicators				
Percentage of all stroke patients given thrombolysis (all stroke types)	11.6%	11.6%	11.1%	11.6%
Percentage of eligible patients (according to the RCP guideline minimum threshold) given thrombolysis	74.3%	80.7%	84.9%	86.9%
Percentage of patients who were thrombolysed within 1 hour of clock start	53.2%	56.1%	58.5%	62.3%
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	56.6%	56.2%	58.0%	57.0%
Median time between clock start and thrombolysis	58 mins	56 mins	55 mins	52 mins



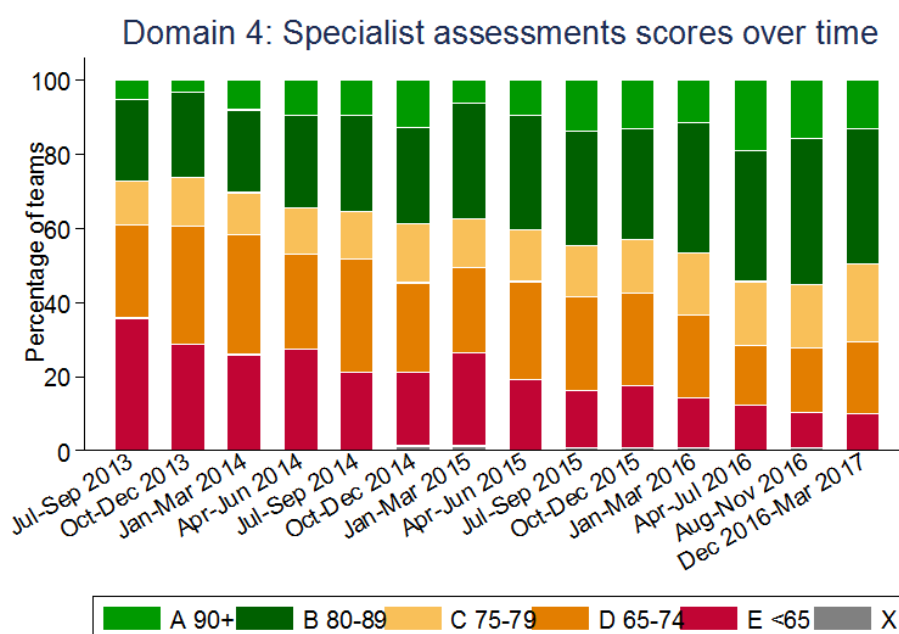
Domain 4: Specialist Assessments

When a patient is admitted in hospital, there are a number of assessments that are considered mandatory elements of high quality stroke care.

People with suspected acute stroke should be seen by specialist stroke doctors and nurses as soon as possible after arriving at hospital to understand the cause of the stroke and to decide on the appropriate treatment based on the particular problems each patient has.

Around 40% of people with acute stroke cannot swallow safely. Patients with swallowing difficulties (dysphagia) after they have been screened should have a more detailed swallow assessment by a skilled speech and language therapist to ensure that these patients have a management plan in place for keeping hydrated and nourished. Our research shows that people who do not have these assessments in a timely manner could be at higher risk of developing pneumonia.

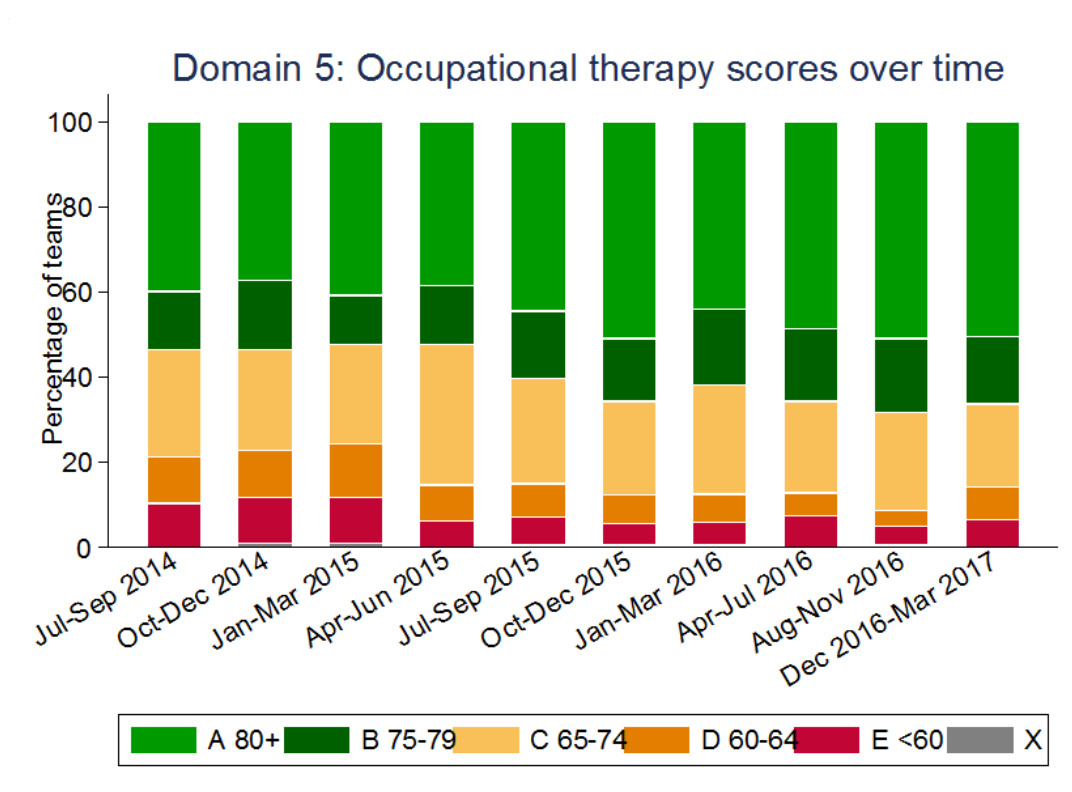
Table 5: Specialist assessments key indicators	National Report – 4 years of data			
Period of admission:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 4: Specialist assessments key indicators				
Percentage of patients assessed by a stroke specialist consultant physician within 24h of clock start	73.7%	75.7%	78.6%	81.0%
Median time between clock start and being assessed by stroke consultant	13h 41m	12h 57m	12h 27m	11h 15m
Percentage of patients who were assessed by a nurse trained in stroke management within 24h of clock start	86.3%	87.2%	88.4%	89.5%
Median time between clock start and being assessed by stroke nurse	2h 17m	1h 48m	1h 30m	1h 15m
Percentage of applicable patients who were given a swallow screen within 4h of clock start	63.6%	68.1%	71.6%	73.8%
Percentage of applicable patients who were given a formal swallow assessment within 72h of clock start	78.3%	82.6%	83.9%	87.0%



Domain 5: Occupational therapy (OT)

Occupational therapy helps patients to re-learn everyday activities such as cooking, washing and dressing following a stroke, increasing the person’s independence. People with stroke who require occupational therapy should accumulate at least 45 minutes of occupational therapy each weekday, so long as the person is willing and able to tolerate it. This frequency enables them to meet their rehabilitation goals for as long as they are willing and able to participate.

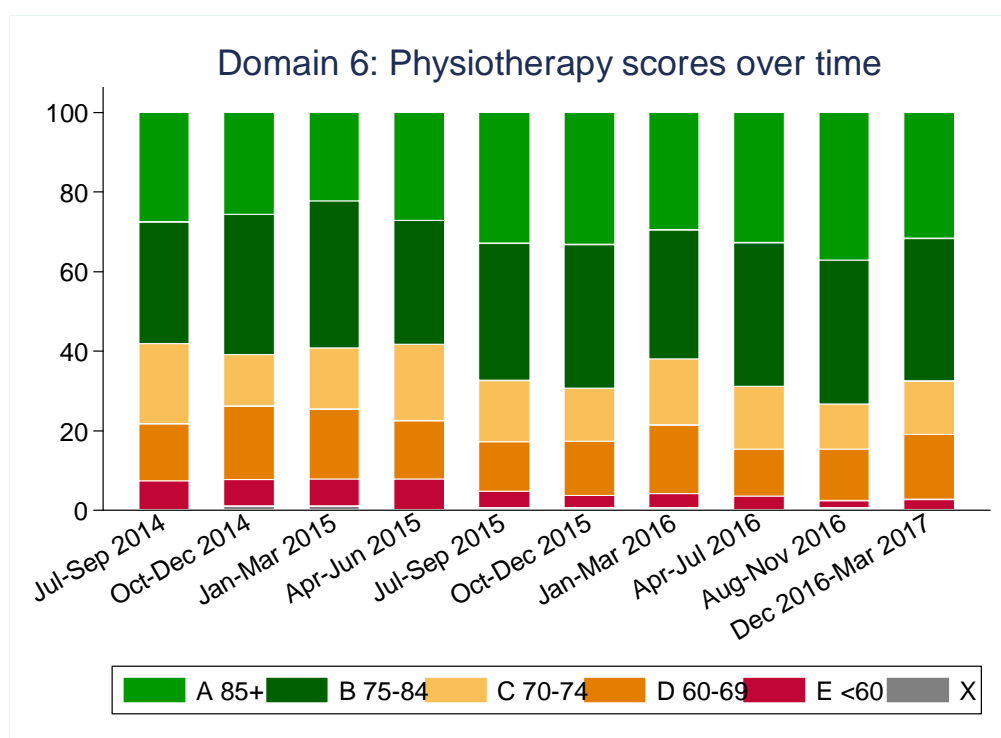
	<i>National Report – 4 years of data</i>			
Period of inpatient discharge:	<i>Apr 2013-Mar 2014</i>	<i>Apr 2014-Mar 2015</i>	<i>Apr 2015-Mar 2016</i>	<i>Apr 2016-Mar 2017</i>
Domain 5: Occupational therapy key indicators				
Percentage of patients reported as requiring occupational therapy	80.1%	81.3%	83.2%	84.1%
Median number of minutes per day on which occupational therapy is received	40 mins	40 mins	40.2 mins	40 mins
Median % of days as an inpatient on which occupational therapy is received	44.8%	57.0%	61.2%	63.6%
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)	55.8%	72.1%	79.6%	83.2%



Domain 6: Physiotherapy

Physiotherapy is used to overcome or adapt to weakness on the side of the body affected by stroke, it helps to improve balance and movement. It increases independence and helps patients cope with long term difficulties. People with stroke who require physiotherapy should accumulate at least 45 minutes of physiotherapy each weekday, so long as the person is willing and able to tolerate it. This frequency enables them to meet their rehabilitation goals for as long as they are willing and able to participate.

Table 7: Physiotherapy key indicator	National Report – 4 years of data			
Period of inpatient discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 6: Physiotherapy key indicator				
Percentage of patients reported as requiring physiotherapy	84.6%	84.6%	85.3%	85.8%
Median number of minutes per day on which physiotherapy is received	31.7 mins	33.3 mins	33.8 mins	35 mins
Median % of days as an inpatient on which physiotherapy is received	54.3%	66.6%	69.7%	71.6%
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)	53.3%	68.7%	73.5%	78.8%

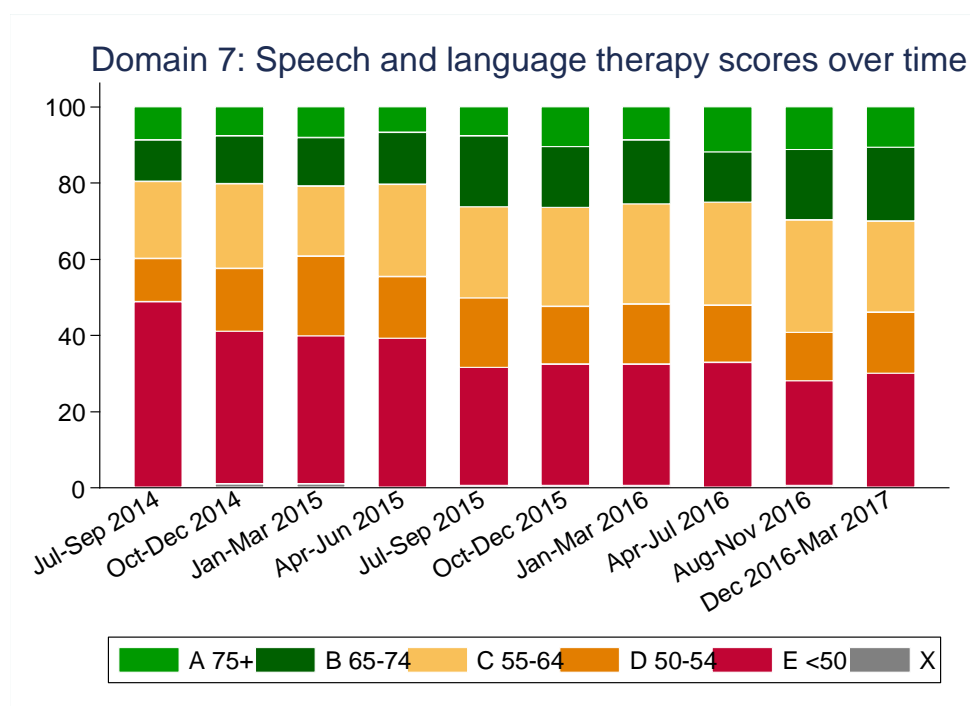


Domain 7: Speech and Language Therapy

Speech and language therapy helps people to overcome communication and swallowing difficulties. Communication is important for independence following a stroke. Around 40% of people with acute stroke cannot swallow safely. Patients with swallowing difficulties (dysphagia) after they have been screened should have a more detailed swallow assessment by a skilled speech and language therapist to ensure that these patients have a management plan in place for keeping hydrated and nourished.

People with stroke who require speech and language therapy should accumulate at least 45 minutes of speech and language therapy each weekday, so long as the person is willing and able to tolerate it. This frequency enables them to meet their rehabilitation goals for as long as they are willing and able to participate.

	National Report – 4 years of data			
Period of inpatient discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 7: Speech and language therapy key indicators				
Percentage of patients reported as requiring speech and language therapy	47.1%	48.1%	48.8%	50.9%
Median number of minutes per day on which speech and language therapy is received	30 mins	30.7 mins	31.7 mins	31.7 mins
Median % of days as an inpatient on which speech and language therapy is received	27.5%	38.8%	43.2%	46.8%
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%	35.6%	41.6%	46.9%

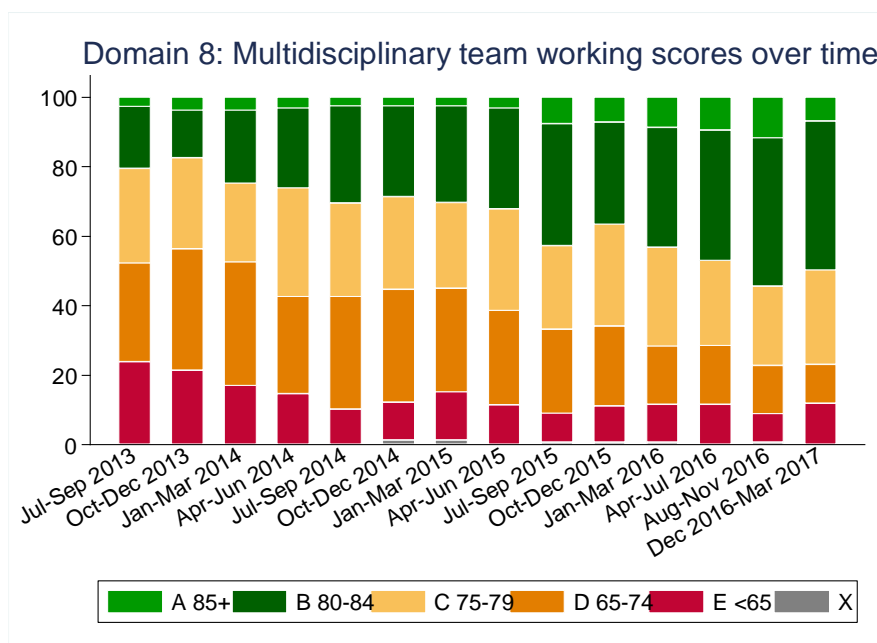


Domain 8: Multidisciplinary Team Working

Therapists are a vital part of the stroke team, and we know that early assessment and provision of specialist stroke therapy can reduce the length of time a person stays in hospital and can help with recovery.

Each member of the multidisciplinary team should assess appropriate patients for a range of impairments. The sooner this is done the faster patients can start receiving the therapy they require, and to set goals for recovery jointly with the patients.

Table 9: Multidisciplinary team working key indicators	National Report – 4 years of data			
Period of admission/discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 8: Multidisciplinary team working key indicators				
Percentage of applicable patients who were assessed by an occupational therapist within 72h of clock start	86.3%	88.7%	89.8%	91.2%
Median time between clock start and being assessed by occupational therapist	23h 51m	23h 24m	22h 15m	21h 51m
Percentage of applicable patients who were assessed by a physiotherapist within 72h of clock start	93.3%	93.7%	93.8%	94.5%
Median time between clock start and being assessed by physiotherapist	22h 25m	22h 07m	21h 25m	21h 06m
Percentage of applicable patients who were assessed by a speech and language therapist within 72h of clock start	77.8%	82.0%	85.0%	88.1%
Median time between clock start and being assessed by speech and language therapist	25h 26m	24h 52m	23h 54m	23h 16m
Percentage of applicable patients who have rehabilitation goals agreed within 5 days of clock start	79.7%	86.6%	89.3%	91.3%
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	44.1%	51.4%	56.4%	60.1%



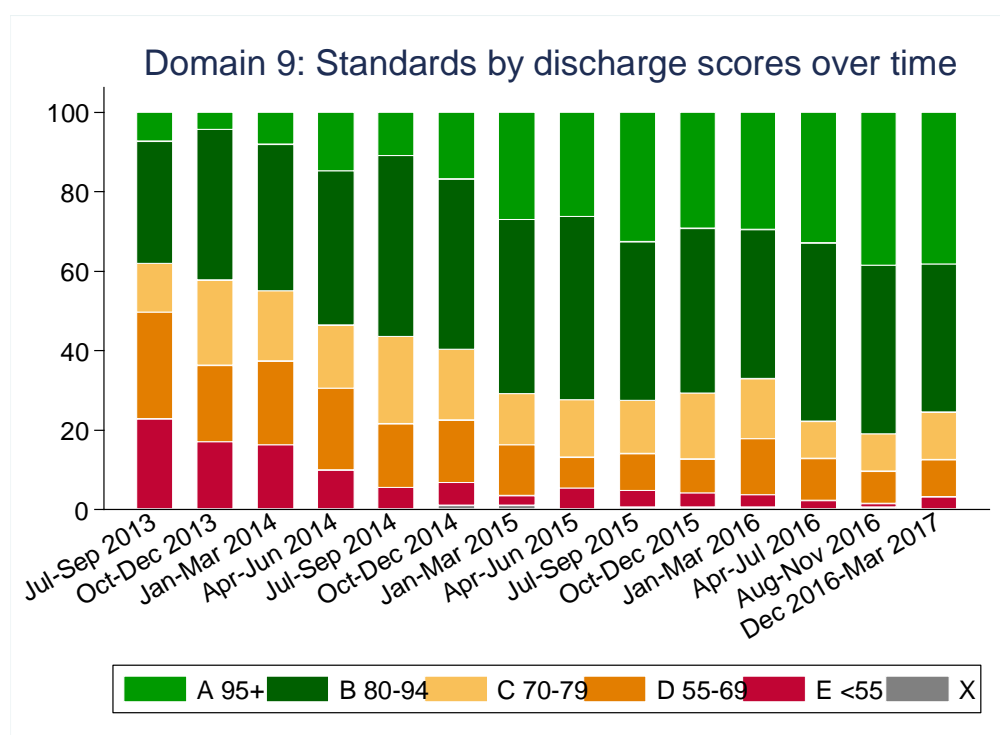
Domain 9: Standards met by Discharge

Malnutrition can be an important problem after stroke, particularly for people who have swallowing difficulties and may be tube fed – people with stroke need an assessment of their nutritional status and to be seen by a dietitian if required.

Regaining bowel and bladder control is important for independent living and self-esteem, therefore stroke unit staff should assess for constipation and incontinence (loss of bowel or bladder control). People with a continued loss of bowel or bladder control should be re-assessed and involved in treatment plans.

Mood disturbance is unsurprisingly very common following stroke, as are difficulties with memory and concentration (sometimes called cognitive difficulties). It is therefore important that people with stroke are screened for these difficulties before they go home.

Table 10	National Report – 4 years of data			
Period of inpatient discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 9: Standards by discharge key indicators				
Percentage of applicable patients screened for nutrition and seen by a dietitian by discharge (excluding patients on palliative care)	65.5%	74.2%	79.2%	82.6%
Percentage of applicable patients who have a continence plan drawn up within 3 weeks of clock start	75.2%	84.8%	89.3%	91.3%
Percentage of applicable patients who have mood and cognition screening by discharge	78.6%	86.0%	89.3%	91.3%



Domain 10: Discharge Processes

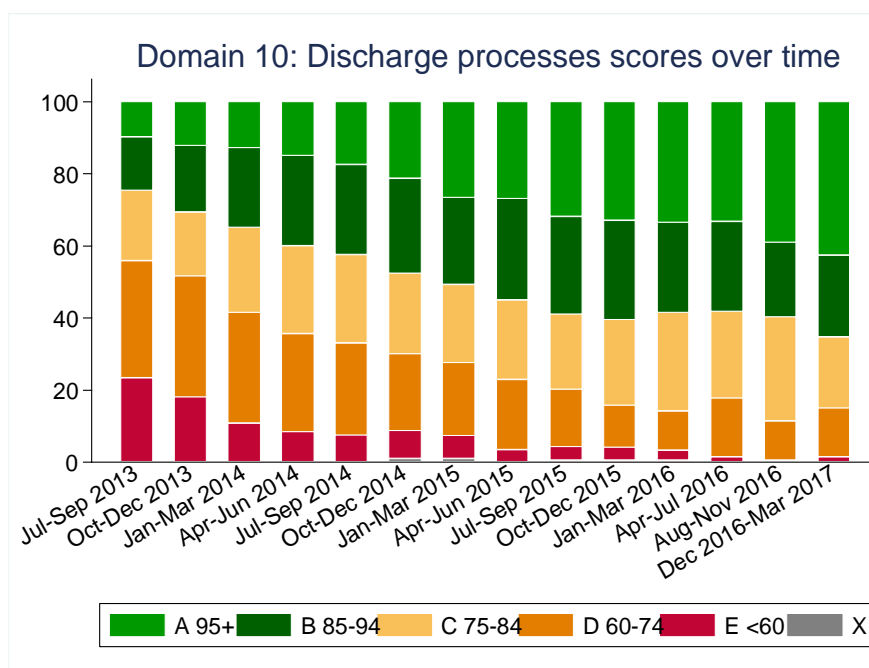
Stroke patients often have social care needs alongside health care needs after their stroke. Therefore prior to discharge, they should receive a plan which combines both aspects if applicable.

People with stroke need to be cared for in a specialist stroke unit and then, where possible, discharged home where they can continue their rehabilitation with the support of a skilled Early Supported Discharge (ESD) team. Not everyone is suitable for ESD at home, although the proportion of people who are suitable can be increased with better provision of home care (sometimes by enhanced home care packages for the first 6 weeks after discharge) and a responsive and well-staffed ESD team that includes nurses as well as therapists.

Treatment of atrial fibrillation (abnormal heart rhythm) with an anticoagulant is very important because it reduces the risk of a further stroke by thinning the blood to prevent clots from forming.

Because people with stroke often feel abandoned after they leave hospital, they should be given the name of a person they can contact.

Table 11: Discharge processes key indicators	National Report – 4 years of data			
Period of inpatient discharge:	Apr 2013-Mar 2014	Apr 2014-Mar 2015	Apr 2015-Mar 2016	Apr 2016-Mar 2017
Domain 10: Discharge processes key indicators				
Percentage of applicable patients receiving a joint health and social care plan on discharge	69.4%	81.1%	87.8%	90.3%
Percentage of patients treated by a stroke skilled Early Supported Discharge team	24.7%	28.2%	32.9%	34.6%
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%	97.6%
Percentage of those patients who are discharged alive who are given a named person to contact after discharge	76.7%	85.8%	90.9%	95.6%



Additional areas of stroke care not included in SSNAP Domains

Atrial Fibrillation: Prior anticoagulation for stroke patients in AF admitted to hospital

Atrial fibrillation is an abnormal heart beat which can result in the formation of blood clots that can migrate to the brain causing stroke. People with AF should normally be on anticoagulant drugs to reduce the risk of stroke. Anticoagulants are medicines that help prevent blood clots by interrupting the process involved in the formation of blood clots. Increasing the percentage of people with AF on anticoagulants will reduce the number of people having stroke. SSNAP data have revealed that there are major issues in primary and secondary care about ensuring that patients have effective primary stroke prevention. For more details on atrial fibrillation and stroke, and details on other co-morbidities prior to stroke go to the 'case mix' tab of the Annual Results Portfolio available here:

<https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx>. If everyone with atrial fibrillation was treated with anticoagulants appropriately then about 6000 stroke would be prevented each year.

Table 12: Prior AF and anticoagulation	National Report – 4 years of data			
Period of admission	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	April 2016 – March 2017
Percentage of patients prescribed anticoagulation prior to their stroke out of those known to be in atrial fibrillation prior to their stroke	38.3%	41.4%	47.9%	53.1%

Intermittent Pneumatic Compression (IPC)

A common complication of stroke is the formation of blood clots in the veins, often in a person's legs. This is known as deep vein thrombosis (DVT). This can be a very serious complication and can lead to death. In 2012 new evidence emerged in stroke which showed that Intermittent Pneumatic Compression (IPC) can reduce the risk of a person admitted to hospital with a stroke developing a deep vein thrombosis (DVT). More details on the Clots in Legs Or sTockings after Stroke (CLOTS 3) trial is available here: <http://www.dcn.ed.ac.uk/clots/>. IPC is a soft plastic sleeve placed on the patient's legs which provides gentle intermittent compression of the leg veins. SSNAP has measured the level of implementation of IPC sleeves since 1 April 2014 following the findings of the trial. About 60% of patients should be receiving this treatment so clearly there is still a lot of work to be done to improve the quality of care in this area

Table 13: Intermittent Pneumatic Compression application	National Report – 4 years of data			
Period of admission/discharge	April 2013 – March 2014	April 2014 – March 2015	April 2015 – March 2016	April 2016 – March 2017
Percentage of patients who had intermittent pneumatic compression applied at any point	N/A	8.6%	16.6%	20.8%
Median number of days intermittent pneumatic compression was applied for	N/A	7 days	7 days	6 days
Mean number of days intermittent pneumatic compression was applied for	N/A	13 days	14 days	12 days