



**Improving Post-acute Stroke Care (Stroke
Rehabilitation) services across Barking &
Dagenham, Havering and Redbridge
The Case for Service Change**

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1 Executive Summary

Stroke is the sudden loss of brain function when the supply of blood to the brain is either interrupted or reduced. The impact of a stroke is both instant and unpredictable. The nature and the severity of the effects depend on the amount of damage caused and the part of the brain that has been affected. It is the largest cause of complex disability; 30% of people who have had a stroke will have persisting disability, and consequently require access to effective community stroke rehabilitation services (also referred to as post-acute stroke care).

In Barking and Dagenham, Havering and Redbridge (BHR), there are 8,944 people registered on the Stroke Register with the highest prevalence in Havering due to its older population. The demand for stroke rehabilitation services will increase by around 35% over the next twenty years; equating to 335 more people per year for stroke rehabilitation.

Specialist co-ordinated rehabilitation, started early after stroke and provided with sufficient intensity, reduces mortality and long-term disability. A number of national guidelines and commissioning guides have articulated that early rehabilitation is effective when provided in specialist stroke units, or as part of properly organised early supported discharge service with longer term support in the community. This comprises of three types of community stroke rehabilitation:

- **Early Supported Discharge (ESD):** Rehabilitation at home at the same intensity of inpatient care.
- **Inpatient Rehabilitation (IR):** Provided in specialist community stroke rehabilitation inpatient units
- **Community Rehabilitation Services (CRS):** Needs - led rehabilitation within the home environment which should include six and 12 monthly reviews to ensure on-going needs are met.

The BHR Stroke Pathway Transformation project was established in 2014 following recognition that the current community stroke rehabilitation service provision followed a disjointed pathway that was too reliant on the use of inpatient rehabilitation services, and that as a result people who have had a stroke were not achieving the best possible outcomes. The Delivery Improvement Transformational Change team (DITC) within NEL CSU was commissioned by BHR CCGs to identify what needs to change in the way community stroke rehabilitation services are currently commissioned and delivered.

The outputs of this work has identified that although all three types of community stroke rehabilitation exist within BHR, there is variation in provision and quality in comparison to best practice. The number of providers with differing commissioning and delivery arrangements both within and across CCGs mean that the stroke care pathways are complex and confusing to articulate. The key highlights are:

- There is no ESD service available to people living within the west of Redbridge.
- Whilst NELFT is the single provider of community stroke rehabilitation (CRS) all three borough teams have different numbers and levels of specialist staff within them.
- The two inpatient stroke rehabilitation providers have different access criteria and different target Lengths of Stay (LoS).
- People living in Barking and Dagenham have limited access to 6/12 and 12 monthly reviews to ensure robust stroke survivorship support and on-going measurement of patient outcomes.
- Patient outcomes across the entire stroke pathway are not routinely recorded or reported across BHR.
- Activity and financial reporting is inadequate; individual BHR CCGs are currently unable to tell how much they are spending on stroke services or how many patients are treated.

This document demonstrates a clear case for change in the provision of community stroke rehabilitation services. The current variation in service configuration, quality and lack of information is impacting on patient outcomes.

Therefore it is recommended that BHR CCGs undertake the following:

1. Agree that outcomes for people living with the effects of stroke will improve by changing the way that post-acute stroke care is commissioned and delivered across BHR.
2. Agree to prepare a business case to consider possible changes to the provision of post-acute stroke services.
3. Agree to engage widely with patients and the public on the case for change.

sharon morrow
3 Aug 2015 12:31

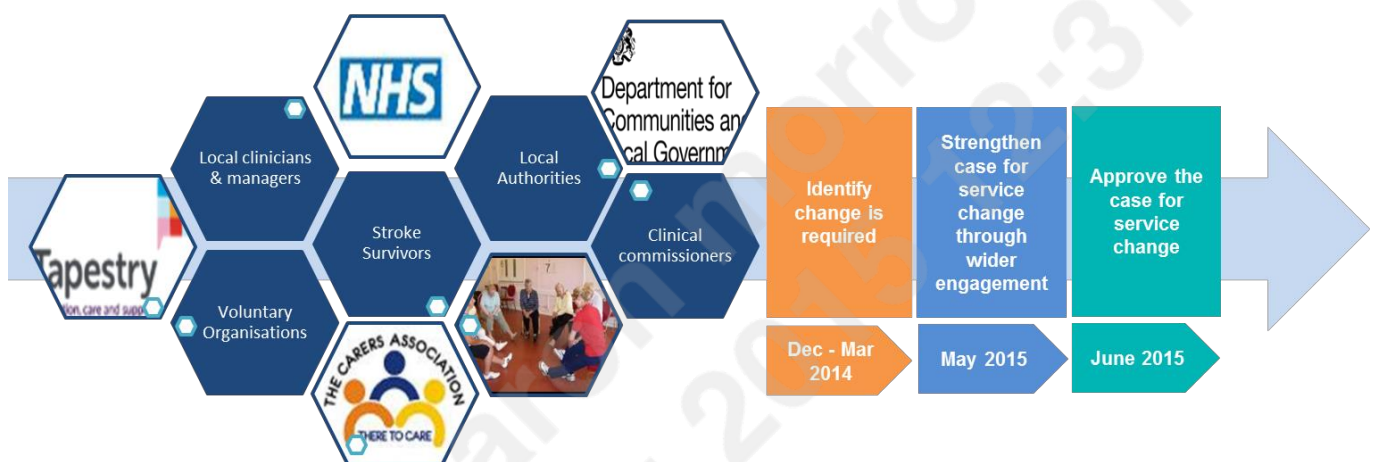
2 Introduction

2.1 Context

In November of 2014 Barking & Dagenham, Havering and Redbridge (BHR) Clinical Commissioning Groups (CCGs) agreed to work in partnership to establish a BHR Stroke Pathway Transformation project. They believe that the current post-acute stroke care, or stroke rehabilitation service offer follows a disjointed pathway that is too reliant on the use of inpatient rehabilitation services, and that as a result people who have had a stroke are not achieving the best possible outcomes.

The vision of the BHR CCG's is to: 'identify what needs to change within the stroke rehabilitation pathway together and develop future solutions to ensure the best possible outcomes for users of stroke rehabilitation are delivered'

Local providers of post-acute stroke care, commissioners, local authorities, voluntary organisations and stroke survivors were invited to participate in this project, providing expertise and representation on committees and clinical working groups.



The ONEL non-acute bed base review in 2012 recommended that changes needed to be made to the inpatient stroke rehabilitation bed base across BHR. Organisational change across the NHS since 2012 has meant that these changes had not yet been implemented.

Emerging evidence on the benefits of Stroke Early Supported Discharge (ESD) and the recent consultation on Intermediate Care provision in BHR has enabled the CCGs to revitalise this work. Before delivering any change to stroke inpatient rehabilitation provision in the future, commissioners and providers are keen to understand how existing Stroke ESD and Community Rehabilitation (CR) services are delivering post-acute stroke care to people living in the boroughs of BHR, to identify what needs to change in the future to improve outcomes for stroke survivors.

The Delivery Improvement and Transformational Change (DITC) team in NELCSU, in partnership with BHR CCG's, have undertaken three key activities to identify if post-acute stroke care needs to change. This includes analysis of all available data from both acute and community providers, a mapping exercise across all three BHR boroughs, and engagement with key stakeholders across the BHR landscape to validate and strengthen the findings.

The purpose of the Stroke Pathway Transformation project is to:

- Identify the best model for stroke rehabilitation locally and make sure all local people have equal access to this model of care, so that no matter where they live, stroke survivors are able to achieve the best possible outcomes.
- Make sure that everyone working to support people after a stroke are clear about what support is available
- Make sure that everyone working to support people after a stroke are clear about what support is available
- To understand how existing resources for stroke rehabilitation are currently being used to ensure they are being used in the most efficient way in the future

BHR CCGs would now like to engage in a period of wider stakeholder engagement and data analysis to strengthen their existing case for change in post-acute stroke care. They would like to understand what impact the variation in stroke services configuration has on both the quality of stroke rehabilitation being delivered, and patient outcomes. As a greater number of people are surviving their initial stroke, demand for post-acute stroke care is increasing. To ensure this demand can be met there is also a need to understand how existing stroke rehabilitation resource is being utilised. This will require a much more detailed analysis of how people move through the pathway both within and across services and organisations, as well as specific financial detail about each different phase of the pathway. This way informed decisions can be made on what is the most cost-effective way to deliver the best outcomes for people living with the effects of stroke and their carers' in the future.

2.2 Purpose of this paper

The purpose of this paper is to:

- Describe the current and future demand for stroke rehabilitation services across Barking & Dagenham, Havering and Redbridge CCGs.
- Describe what good stroke rehabilitation care should look like in relation to national best practice and understand the gaps in the existing provision of service
- Explain the emerging case for change in stroke rehabilitation care across BHR CCGS
- Describe the potential barriers to change that need to be considered
- Make recommendations for next steps to improving stroke care across BHR CCGs

3 Demand for stroke rehabilitation care: the national and local context

3.1 What is stroke?

Stroke, also known as a 'brain attack' is a sudden loss of brain function when the supply of blood to the brain is either interrupted or reduced.

There are two main causes of stroke:

- **Ischaemic** – When a blood vessel in the brain is blocked by a blood clot which severely reduces blood flow. These clots can form either in the arteries connecting to the brain, or elsewhere in the body and travel through the bloodstream into narrower blood vessels in the brain – this cause of stroke accounts for 85% of all cases.
- **Haemorrhagic** – When a blood vessel in the brain breaks or ruptures. This causes blood to seep into the brain tissue, causing damage to brain cells.

There is also a related condition known as a **transient ischaemic attack (TIA)**, where the supply of blood to the brain is temporarily interrupted, causing a 'mini-stroke' often lasting between 30 minutes and several hours. They are similar to ischemic strokes in that they are often caused by blood clots or other debris.

Symptoms of stroke

Strokes occur quickly, and as such their symptoms often appear suddenly without warning. Typical symptoms include¹:

- Numbness, weakness or paralysis on one side of your body
- Slurred speech, or difficulty finding words or understanding speech
- Sudden blurred vision or loss of sight
- Confusion or unsteadiness, or
- A sudden, severe headache.

The best possible outcomes for people having a stroke have been associated with accessing urgent assessment and treatment within 30 minutes from the onset of symptoms of stroke. This is discussed further in section 2.

There are a number of risk factors that increase the likelihood of someone having a stroke. These are classified in two ways. The first group are ones that are modifiable, where changes can be made to reduce the risk of having a stroke. The second group are factors that are considered non – modifiable, or things people are unable to change to reduce their risk of having a stroke.

Modifiable Stroke Risk Factors

- Lack of physical activity
- High blood pressure
- Smoking
- Diabetes
- Unhealthy diet
- Certain medical conditions, such as sickle cell anaemia and bleeding disorders
- Alcohol and illegal drug use
- High cholesterol levels
- Obesity
- Stress and Depression

¹ Stroke Association (2015) What are the symptoms of stroke?

Non-modifiable Stroke Risk Factors

- **Age and gender** - Risk of stroke increases with age. At younger ages, men are more likely than women to have strokes. However, women are more likely to die from strokes. Women who take birth control pills also are at slightly higher risk of stroke.
- **Race and ethnicity** - Strokes occur more often in African American, Alaska Native, and American Indian adults than in Caucasian, Hispanic, or Asian American adults.
- **Personal or family history of stroke or TIA** - TIA or a previous stroke increases the risk of having another stroke, as does having a family history of stroke.

Possible effects of stroke: Given that a stroke can occur in a variety of areas of the brain, there is a very wide range of difficulties people can experience as a result. 30% of people who have had a stroke will have persisting disability, and consequently require access to effective rehabilitation services.² Figure 1 describes the range and types of difficulties stroke survivors may face following their stroke and the proportion of stroke survivors who have been affected by that particular difficulty.³

Each individual patient will have a combination of each of these conditions with varying degrees of acuity. This variation in the needs of patients illustrates the challenges commissioners and providers of stroke services face when designing the right configuration of stroke care for their population, and ensuring robust measurement of patient outcomes being achieved.

Difficulty	% of people affected
Upper limb/arm weakness ⁴²	77%
Lower limb/leg weakness ⁴²	72%
Visual problems ⁴³	60%
Facial weakness ⁴⁴	54%
Slurred speech ⁴⁴	50%
Bladder control ⁴⁵	50%
Swallowing ⁴²	45%
Aphasia ^{46 47 48}	33%
Sensory loss ⁴⁴	33%
Depression ⁴⁹	33%
Bowel control ⁴⁵	33%
Inattention/neglect ⁴⁴	28%
Emotionalism within six-months ⁵⁰	20%
Reduced consciousness ⁴⁴	19%
Emotionalism post-six months ⁵⁰	10%
Identified dementia one-year post stroke ⁵¹	7%

Figure 1: Range and types of difficulties people can have following stroke and % people affected

² NICE Clinical Guidelines: Stroke rehabilitation - 162

³ Stroke Association (2015) State of the Nation – Stroke Statistics

3.2 The national picture for stroke

Improvements in stroke care since the 1960s have meant that the proportion of people who survive a stroke has been increasing steadily; 125,000 people in the United Kingdom survive a stroke each year, but often at the cost of long-term disability. The Stroke Association has reported in '*State of the nation*' that 1 in 8 strokes are fatal within the first 30 days⁴, and that more than 900,000 people are currently living in the UK with the effects of stroke.

There are a number of factors that predict the incidence of stroke including age and gender.⁵ These have been used to calculate the % incidence of stroke nationally and are described in Table 1 below.

Age Group	Incidence of Stroke (%)	
	Women	Men
0-44	1	1
45-64	1.5	2.1
65-74	6.2	9.2
75 and over	19.8	18.7

Table 1: Ave. incidence of stroke per age group

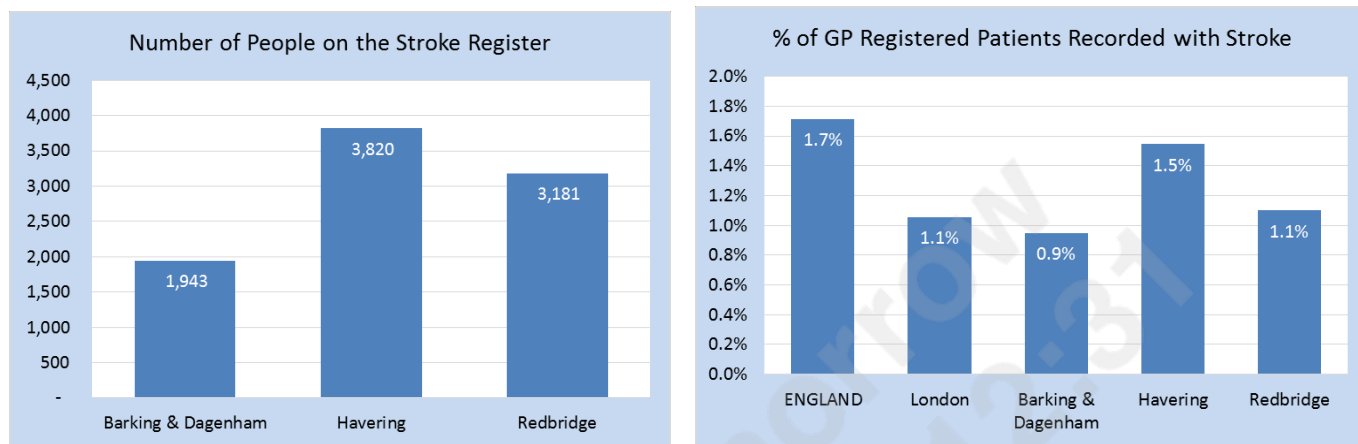
⁴ D'Agostino, et al (1994) Stroke Risk Profile: The Framingham Study

⁵ Majeed A; Carroll K et al. (2001) Stroke incidence and risk factors in a population- based prospective cohort study.

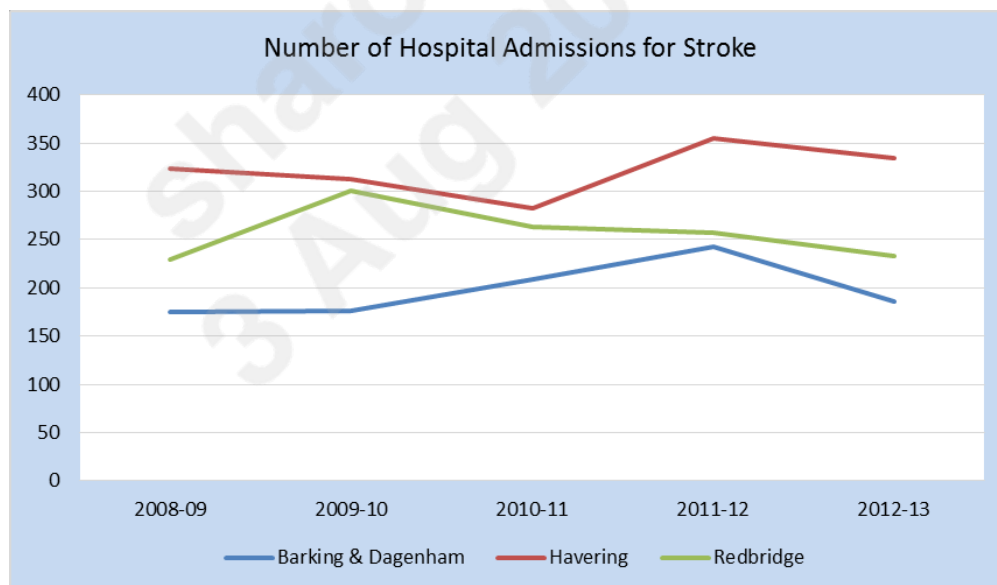
3.3 The local picture for stroke in Barking & Dagenham, Havering and Redbridge⁶

The proportion of the population over the age of 65 varies across the three boroughs with Havering having the highest at 17.9%, Redbridge 11.9%, and Barking & Dagenham the lowest at 10.3%. As a consequence the prevalence of stroke is highest in Havering and this is shown in the analysis below.

Data published by the Health and Social Care Information Centre gives a picture of the demand for stroke care in the three boroughs. GP registers show that in 2013-14 there were 8,944 people registered as having had a stroke. This is shown in the graph below on the left. The graph on the right shows the same number as % of all registered patients. This shows the highest number of patients in Havering which is to be expected given the age profile of the population

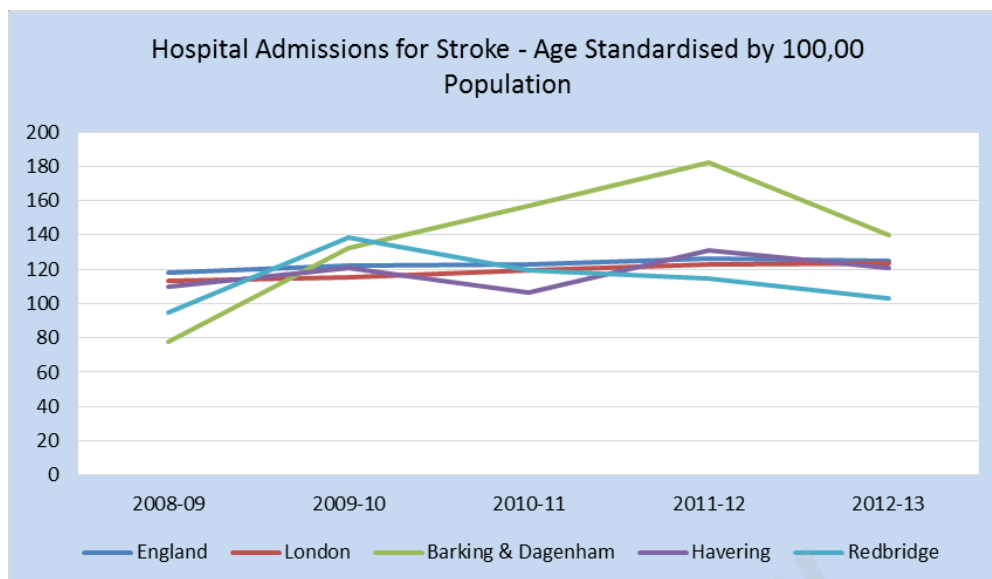


The graph below shows the number of hospital admissions recorded as stroke for the five years from 2008-09 to 2012-13. Again this shows Havering having more admissions (average 322) than Barking & Dagenham (average 198) and Redbridge (average 256).

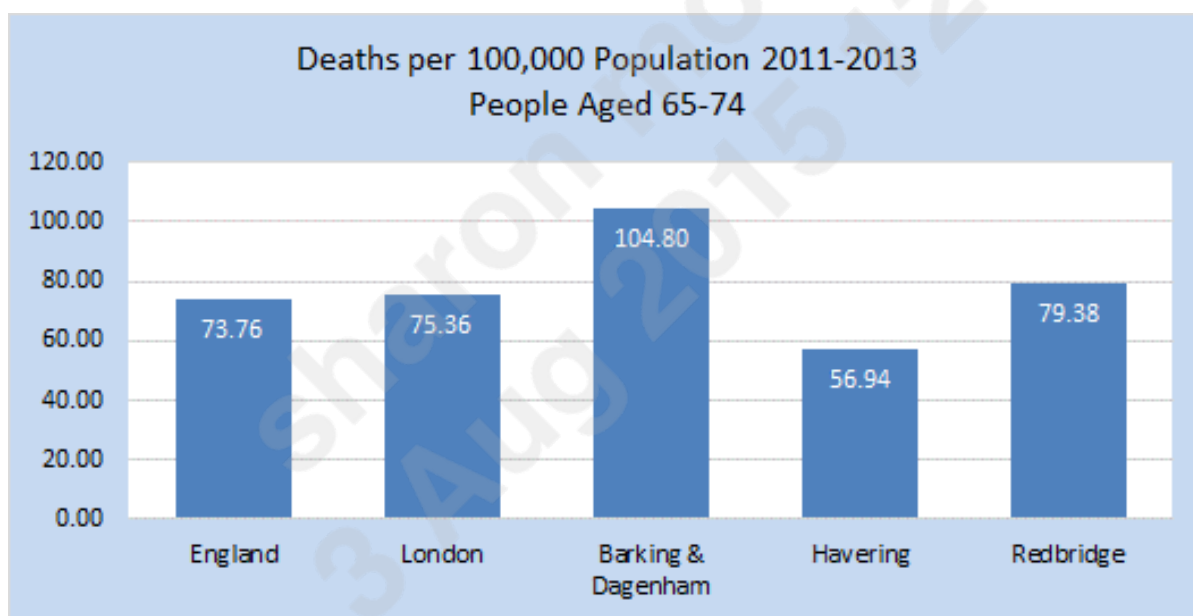


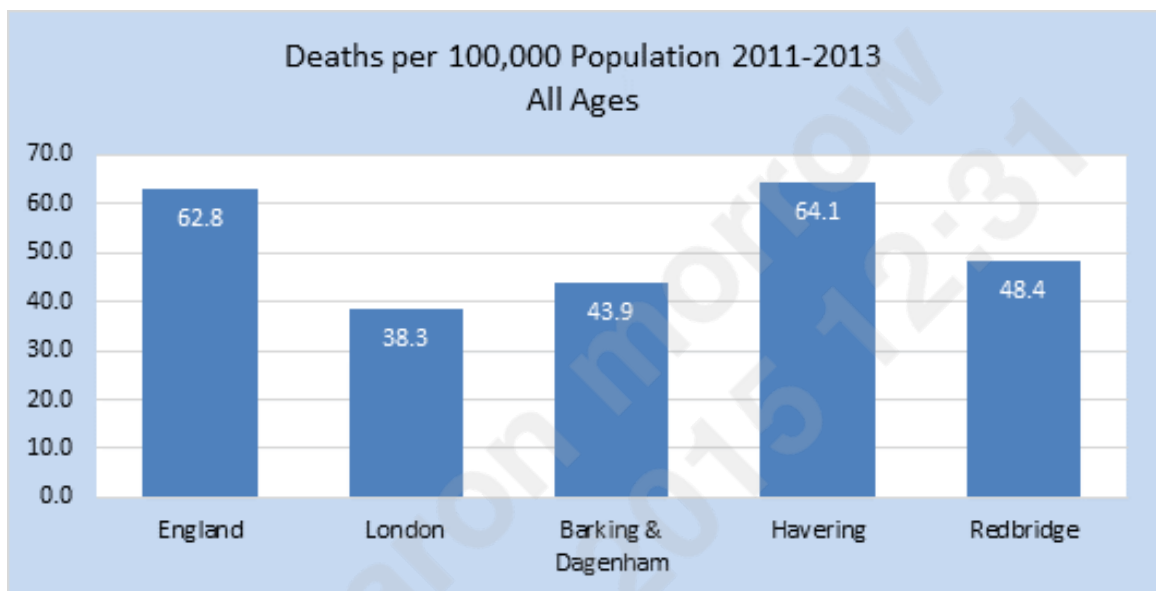
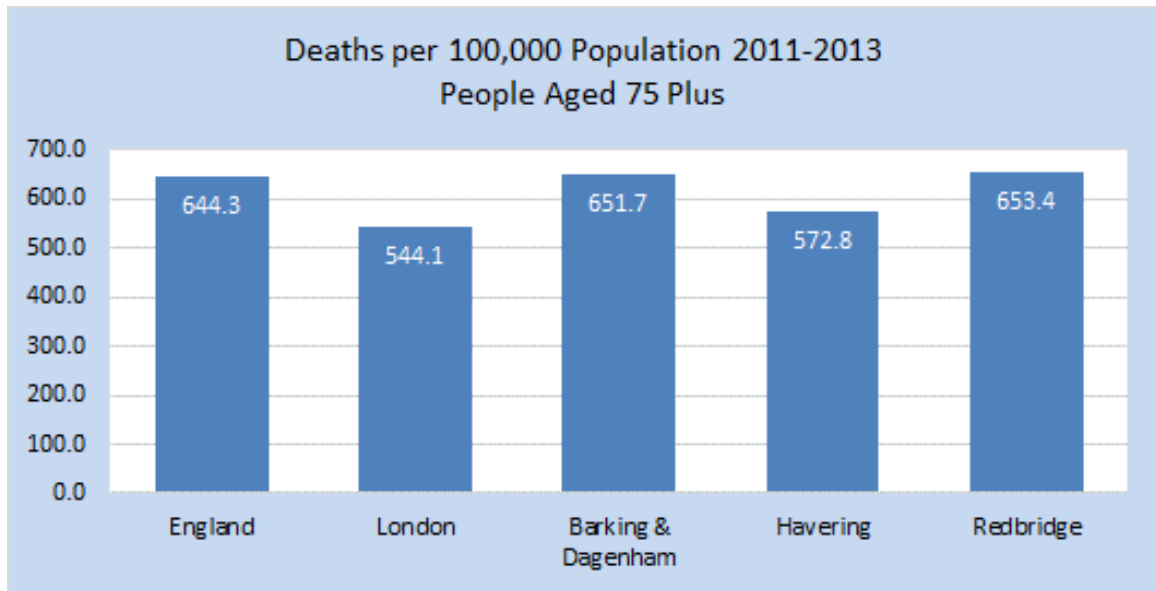
⁶ All data in this section from HSCIC unless otherwise stated

However when the information is standardised for the age profile of the population it is Barking & Dagenham that appears to have more admissions for stroke than would be expected.



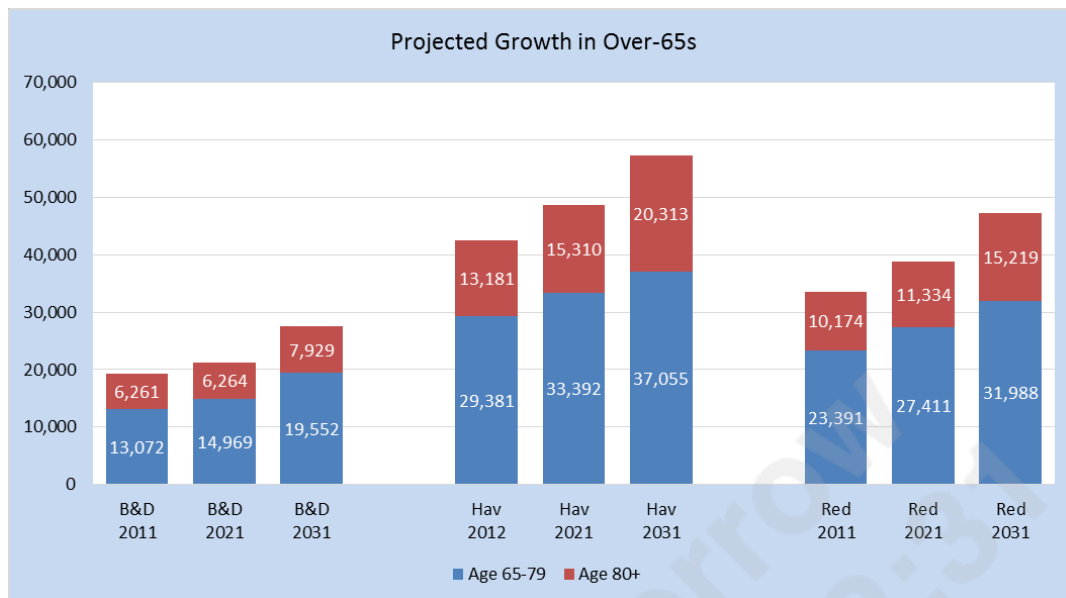
These results are replicated in the information on deaths for stroke. The graphs below show deaths per 100,000 people for 2011-2013, for all ages and for people in the age bands 75+ and 65-74. This also shows Barking & Dagenham as having more deaths than would be expected for the age profile of the population.





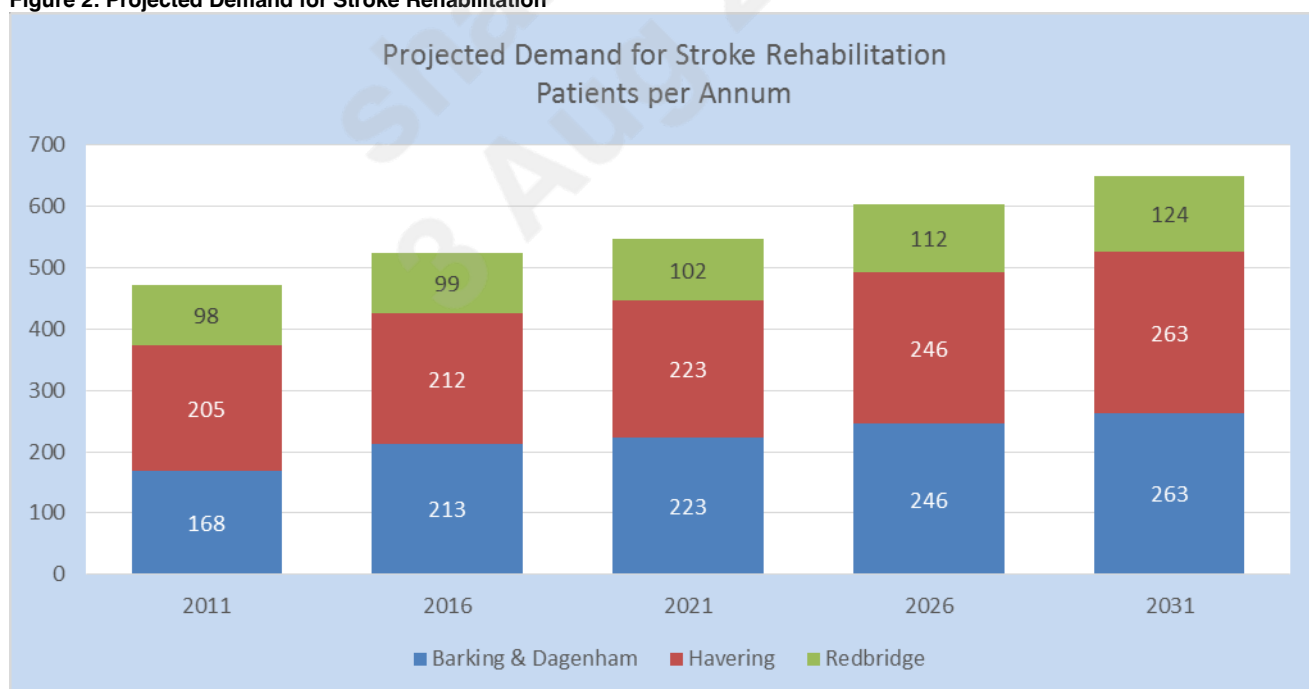
3.4 Future demand for stroke care

The numbers of people having strokes in the area will increase over the next twenty years as the population gets older. The graphs below show the expected growth in the numbers of people aged 65 plus from the census in 2011⁷. In the twenty years from 2011 to 2031 it is expected that the numbers of people aged 65 or more will increase by 38% and the number of people aged 85 or more will increase by 47%. The highest increase will be in Havering.



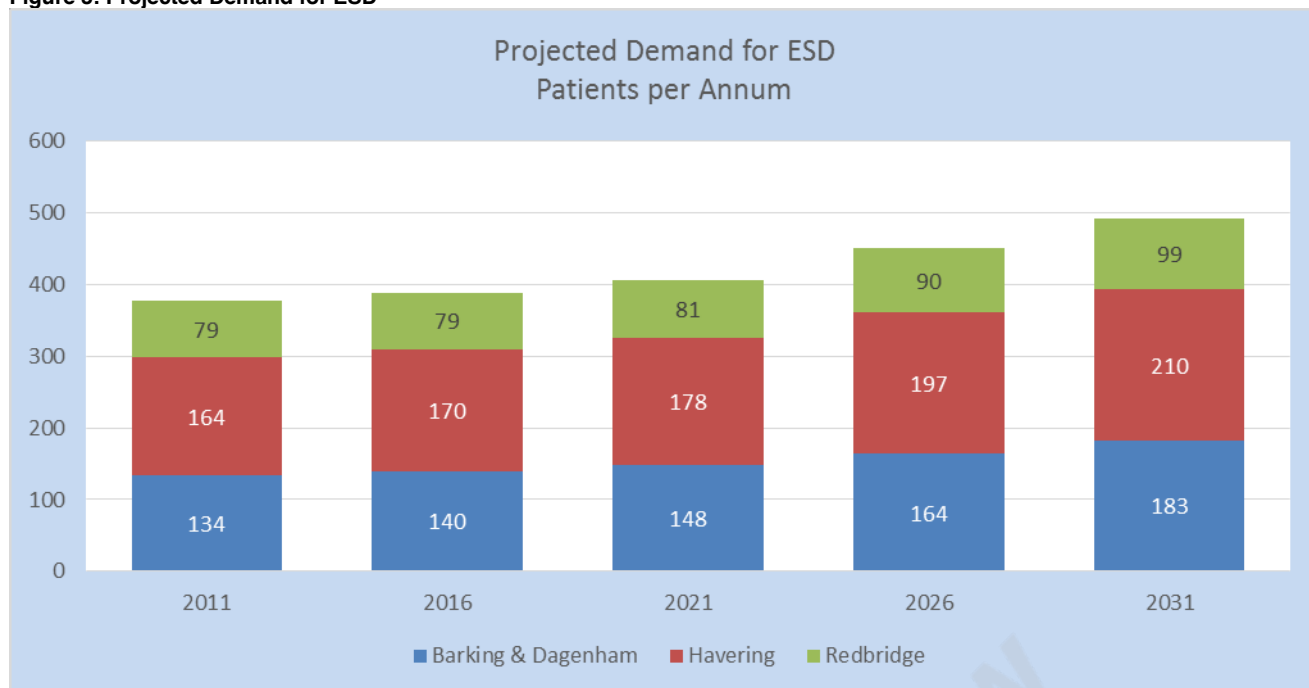
By taking the forecast population growth and the incidence of stroke in the population it is possible to project the future likely demand for stroke rehabilitation services. Expert opinion (Stroke CRG) suggests that 40% of inpatient stroke patients will be eligible for ESD (Figure 2); and the remainder for some form of rehabilitation (Figure 3). However it should be remembered that these estimates are based upon national levels of incidence and survival; there may be local factors that mean that demand locally will be different.

Figure 2: Projected Demand for Stroke Rehabilitation



⁷ Greater London Authority projection 2013 release (Capped SHLAA model)

Figure 3: Projected Demand for ESD



In total it is estimated that demand for stroke rehabilitation services will increase by around 35% over the next twenty years. By 2031 services will need to provide ESD for 115 more people per year and other types of stroke rehabilitation for 180 more people per year.

The future demand for rehabilitation including ESD will be greatest in Havering due to its older population and the increased risk of stroke in this age group.

A clear understanding of current capacity within the existing post – acute stroke services will be required to understand what impact this demand will have on existing resources and service configuration.

4 What good stroke care looks like

National evidence and good practice clearly describes what good looks for stroke care across BHR CCGs in respect to:

- The ideal configuration of services
- The standards of good quality stroke care and,
- The outcomes people living with the effects of stroke should expect from their stroke care.

These three areas are described in more detail throughout the following section, as well as emerging evidence on commissioning for value in stroke care following the London reconfiguration in 2010.

4.1 The ideal service configuration for good stroke care

Commissioning Support for London and the Royal College of Physicians have published a number of commissioning guides in relation to both the acute and post-acute elements of good stroke care^{8,9}. In 2010 the London acute stroke reconfiguration programme defined a nationally recognised stroke pathway delivered through a 'hub and spoke' model of acute stroke care that includes the care delivered through the Hyper-acute stroke unit (HASU) and the acute Stroke Unit (SU). (See Figure 4 below). Hospitals of differing capability worked together to create a centralised system where people are taken to specialist stroke units rather than the nearest hospital¹⁰, with a maximum journey time of 30 minutes.

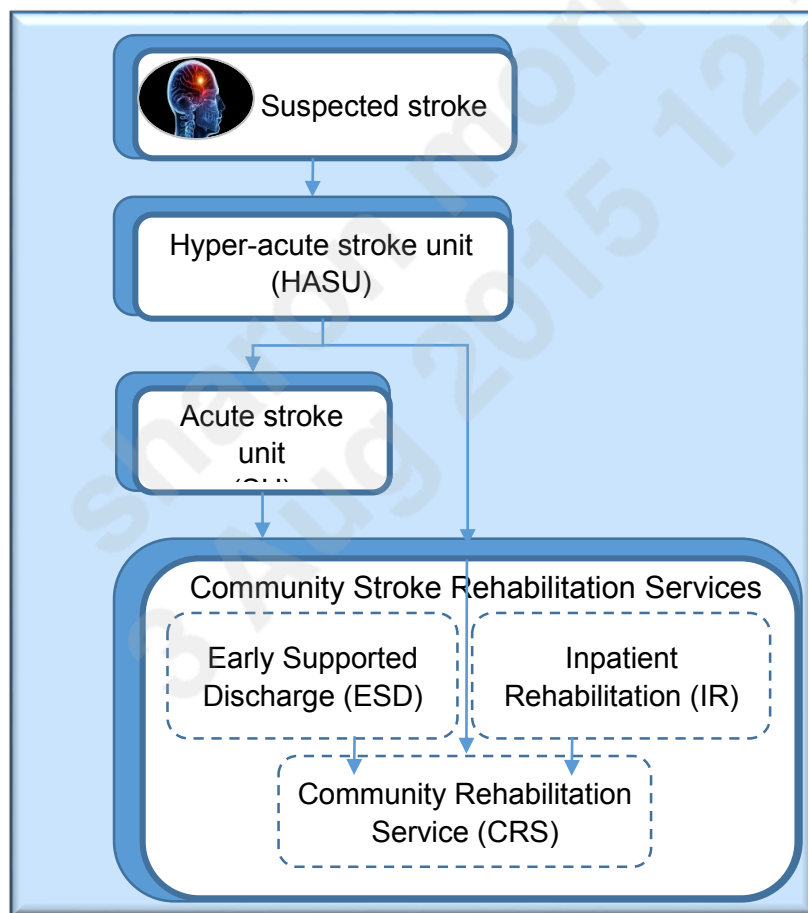


Figure 4: Summary of acute stroke pathway after London

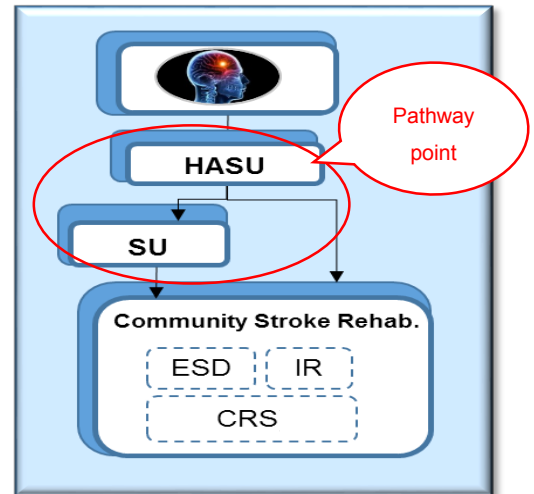
⁸ Royal College of Physicians (2012) Commissioning concise guide for stroke services.

⁹ Commissioning Support for London (2010) Stroke rehabilitation guide: supporting London Commissioners to commission quality Services 2010/11.

¹⁰ Higashida et al (2013) Interactions within stroke systems of care: a policy statement from the American Heart & Stroke Association in *Stroke*

4.1.1 The ideal configuration of acute Stroke care

The new configuration for acute stroke care is clearly articulated in a variety of commissioning guidance documents. It must be provided 24 hours a day, seven days a week, by stroke specialist staff from a wide variety of professional backgrounds. Each London provider of hyper acute and/or acute stroke care receive an enhanced tariff linked to core set of quality standards. A key enabler for ensuring adequate capacity, and therefore quality, in hyper acute and acute stroke care, has been ensuring each unit maintains the required number of beds and number of stroke specialist staff through a robust quality review process. The quality standards providers are required to meet to maintain their enhanced tariff can be found in Appendix 1.



Hyper-Acute stroke care

Hyper acute stroke units (HASU) are 24 hr centres providing high quality expertise in diagnosing, treating, and managing stroke patients. On arrival, a person is assessed by a specialist, has access to a brain scan and receives clot-busting drugs (thrombolysis) if appropriate, all within 30 minutes.¹¹ The capacity (numbers of beds and WTE specialist staff) of each one of the eight London HASU's has been determined by the London Strategic Clinical Network (SCN) for Stroke, and is monitored through each responsible Clinical Commissioning Group's (CCG) own governance arrangements. The ideal length of stay (LoS) within a Hyper-acute stroke unit is considered to be 24 – 72 hrs (one to three days), and no longer than five days prior to being transferred to a more appropriate care setting.

Acute stroke care

Acute stroke units, or SUs, provide multi-therapy (physiotherapy, occupational therapy, speech and language therapy) rehabilitation and ongoing medical supervision. The stroke unit people should be transferred is the one closest to their home based upon their post-code. This may be in the same hospital as the HASU, or a different one. The route people take through the stroke pathway, (E.g. whether they move from the HASU directly to CRS, or via the SU) very much depends on the level, and type of difficulty they have experienced as a result of their acute stroke.

Like the HASU, capacity within the 24 London SU's have also been determined through NHSE SCN. People who experience more profound levels of disability, or are taking longer to stabilise, are more likely to require longer periods in an SU. There is a London-wide target of 17 days for average LoS, to ensure appropriate patient flow through the pathway. National stroke guidance recommends neither an extended stay in acute units, nor referral to community Inpatient rehabilitation should be a substitute for high-quality community stroke rehabilitation (CRS) services, however as the following sections will articulate, definitions of the ideal service structure in terms of skill mix and hours of operation do not exist in the same level of detail as the acute service configuration.

¹¹ London Strategic Clinical Networks (2014) Stroke acute commissioning and tariff guidance.

4.1.2 The ideal configuration of post-acute stroke care

People who have survived their initial stroke and stabilised are either transferred from the HASU, or the SU to community stroke rehabilitation services based upon the findings of stroke specialist assessments. Based on national good practice, each CCG should ensure people living with the effects of stroke have adequate access to three types of post-acute stroke care, or stroke rehabilitation. These include Early Supported Discharge (ESD), Inpatient Rehabilitation (IR) and Community Rehabilitation Services (CRS). There is also a requirement for CCGs to ensure everyone living with the effects of stroke have longer-term support identified once they are discharged from their community stroke rehabilitation. This is because research has shown improvement in levels of disability can be seen up to 12 months from the initial stroke, therefore this needs to be identified at both 6/12 and 12 month intervals following a person's stroke to ensure all of their ongoing health and social care needs are met.

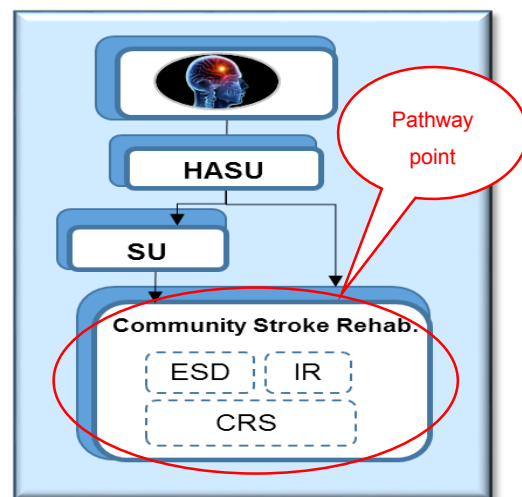


Figure 5 describes the ideal configuration of post-acute stroke care, both in relation to the three specific types of rehabilitation, as well as ongoing support through six and 12 monthly reviews for people living with the effects of stroke in their communities. Unlike national good practice for acute stroke care, there is less clarity about what the ideal capacity and skill mix of post-acute stroke services should be to ensure the best possible quality of care is delivered and outcomes are achieved. NHS Commissioning Support for London have reported that when compared with general care, specialist stroke care leads to a reduction in mortality, dependence levels, and institutionalisation, therefore post-acute stroke rehabilitation must be provided by stroke specialist-trained staff to ensure the best possible outcomes for patients.

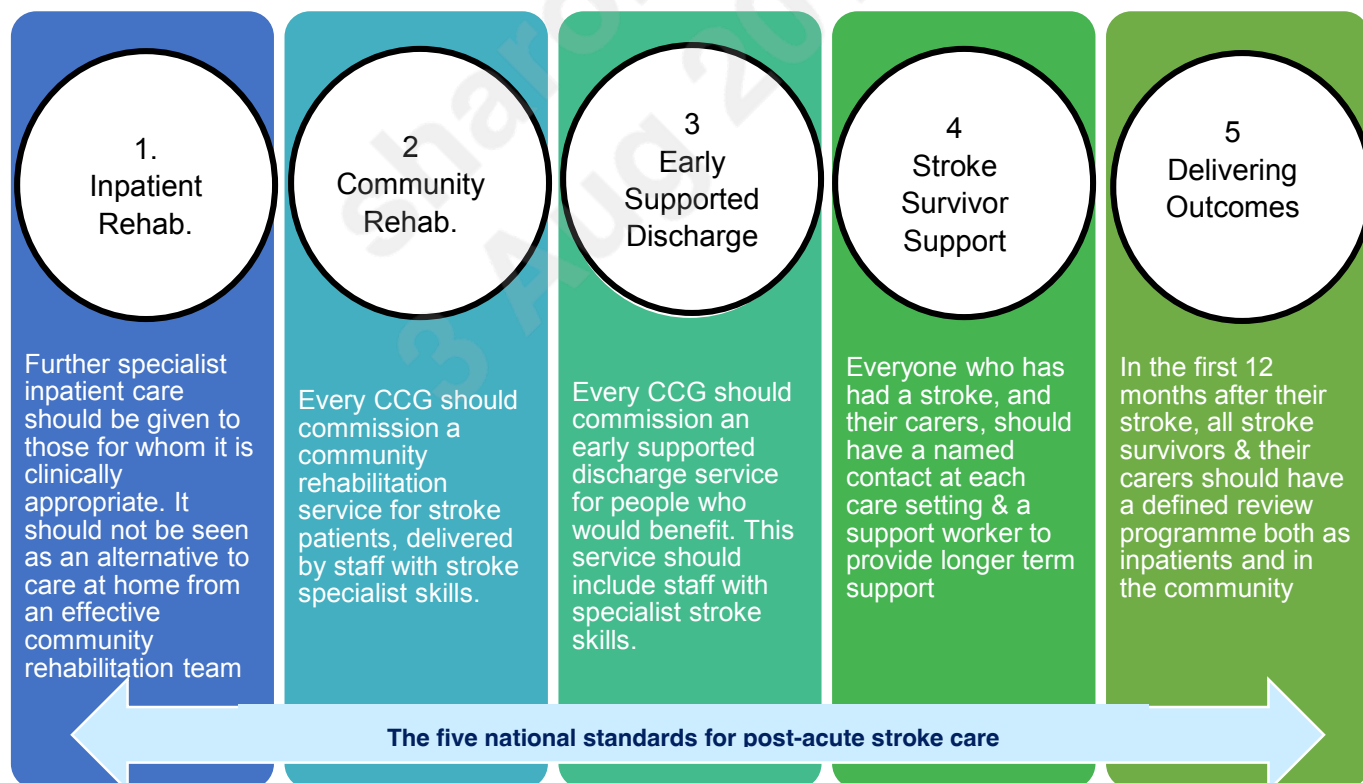


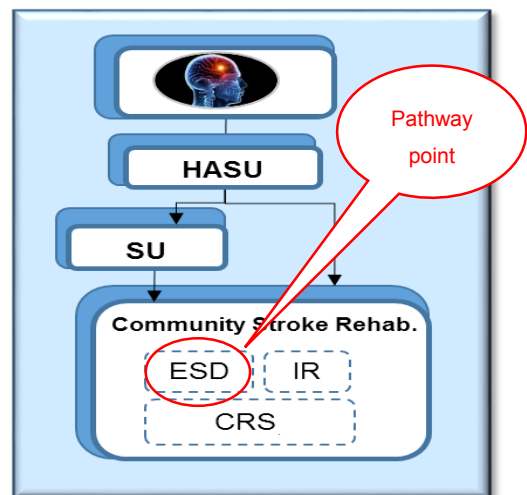
Figure 5: National stroke standards for the provision of post-acute stroke care

The following pages defines the three specific types of stroke rehabilitation.

Early Supported Discharge (ESD)

Early rehabilitation is effective when provided as part of an Early Supported Discharge (ESD) service. ESD services aim to provide patients with rehabilitation at home at the same intensity of inpatient care. It is designed to improve transfer of care arrangements, offer patient choice, deliver efficiencies in acute bed usage and deliver improved clinical and wellbeing outcomes. Evidence shows improved clinical and well-being outcomes after 6 months and 1 year as well as reduced costs through shorter hospital stays¹².

Cumulative evidence has proven that ESD services delivered by coordinated, multidisciplinary teams can significantly reduce the length of in-hospital stay and improve long-term functional outcomes for patients with mild to moderate stroke.



- ESD for up to 50 per cent of patients to a stroke specialist and multi-disciplinary team (which includes social care) in the community, but with a similar level of intensity of care as a stroke unit, can lower overall costs and reduce long-term mortality and institutionalisation rates¹³.
- An individual patient data meta-analysis concluded that appropriately resourced ESD services, provided for a selected group of stroke patients can reduce long term dependency and admission to institutional care as well as reducing the length of hospital stay¹⁴.
- A 2012 Cochrane systematic review of ESD services concluded that patients who received ESD services showed significant reductions in the length of hospital stay equivalent to approximately seven days and were more likely to remain at home in the long term and to regain independence in daily activities¹⁵.

The case study below describes an example of how an ESD service calculated the capacity they required to deliver quality stroke ESD and demonstrated improved outcomes to their patients.¹⁶

Case study: Good Practice of ESD Provision Camden stroke reach early discharge service (REDS)

Intervention

- Stroke REDS developed from within a community stroke rehabilitation team, which is considered best practice to be able to flex with demand.
- Operates an 'in-reach' model to assess, facilitate and complete a discharge within 24 hours of referral, including escorting the stroke survivor home using Stroke REDS transport.
- Conducts comprehensive 6 month reviews after discharge from the service to measure outcomes and review existing stroke survivorship support.

Outcomes

- ✓ Improved patient independence - achieving 81% of all goals set with stroke survivors using goal attainment scaling (GAS)
- ✓ Reduced home care packages and dependence on social services by an average of 15 hours a week post 6 week rehabilitation with Stroke REDS.
- ✓ 100% of clients maintained or improved their Barthel score.
- ✓ 100% of clients maintained or improved their Canadian Model of Occupational Therapy (COPM) Performance score
- ✓ 96.6% of clients maintained or improved their COPM Satisfaction score.
- ✓ 87% of clients maintained or improved their Nottingham extended Activities of Daily Living score.
- ✓ 70% of clients maintained or improved their score on the Stroke Quality of Life 39 Questionnaire

¹² National Audit Office (2010) Progress on improving stroke care; a good practice guide

¹³ DH (2007) National Stroke Strategy

¹⁴ Langhorne (2005) Early supported discharge services for stroke patients: a meta-analysis of individual patients' data

¹⁵ Cochrane (2012) Services for reducing duration of hospital care for acute stroke patients (Review)

¹⁶ Skrypak et al (2012) Why early discharge in stroke care can be vital for recovery in HSJ.

Inpatient Rehabilitation

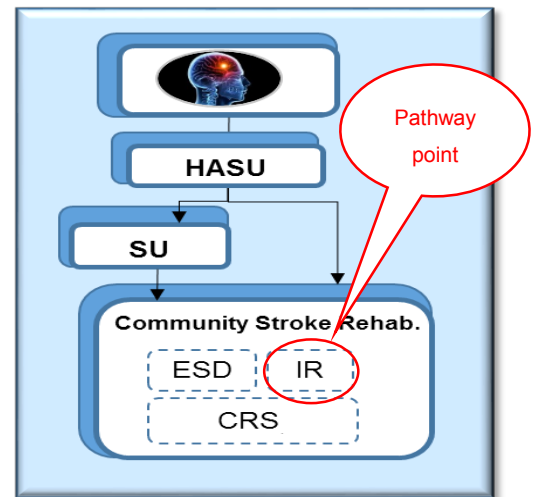
Patients who require further non-acute care after their condition has stabilised are treated in specialist stroke rehabilitation units. NICE describes these units as “an environment in which multidisciplinary stroke teams deliver stroke care in a dedicated ward which has a bed area, dining area, gym, and access to assessment kitchens.’ People admitted to these environments have been medically stabilised in the HASU, and are either transferred via the SU or directly into the inpatient rehabilitation unit.

Stroke inpatient rehabilitation is delivered by a team of nurses, occupational therapists, physiotherapists, psychologists, social workers, speech and language therapists, medical staff and clinical neuropsychologists. Typically, stroke survivors follow an individually tailored programme based on their goals set by the survivor and their family and carers to help those for whom it is appropriate get back to work or other meaningful activity. The average length of stay in non-acute inpatient stroke rehabilitation units is 20 days but some stroke survivors stay for more than four weeks when it is clinically appropriate.

Like the ESD element of post-acute stroke care, inpatient rehabilitation units outside acute hospitals are not currently commissioned through a robust set of recognised quality standards, associated contracting and audit arrangements. That said, the London Stroke Strategic Clinical Network (SCN) have recommended that these units be contracted under the same setoff stroke standards as the acute stroke units (see Appendix 1). This decision was taken after the North East London Cardiovascular and Stroke Network reviewed the ‘non-designated’ stroke rehabilitation inpatient units in London.

This review highlighted the wide variation in bed capacity and length of patient stay that were difficult to explain. Two recommendations were made on the basis of this review were:

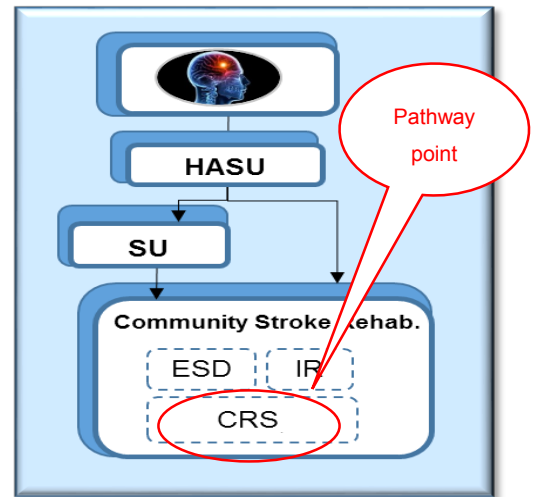
- for patients to be treated in stroke specialist units and discharged directly home, where possible, with stroke specific early supported discharge and longer term community neuro-rehabilitation as soon as is feasible.
- If stroke survivors are going to be recommended for more slow stream inpatient rehabilitation there need to be clearly identified clinical rationale such as complex therapy and equipment needs, unpredictable care needs or a completely unsuitable home environment.
- The facilities providing rehabilitation to such individuals should meet the NHS London stroke standards for SU.¹⁷



¹⁷ North East London Cardiovascular and Stroke Network (2012) outputs from the review of ‘non-designated’ stroke rehabilitation inpatient units in London

Community Stroke Rehabilitation

Patients who are ready for discharge but deemed unsuitable for ESD are often referred to a Community Rehabilitation Service. It provides needs-led rehabilitation within the home environment to maximise functional ability and independence and facilitate reintegration in the community. The community rehab team is multi-disciplinary and usually consists of occupational therapists, physiotherapists, speech and language therapists and rehabilitation assistants with the option to access dietetics, psychology and nursing support if required. The team assesses the stroke survivor's needs (where possible with family and/or carers) and develops a treatment programme with the stroke survivor. The duration and intensity of the programme varied according to the needs. The programme and its goals are usually reassessed on a fortnightly basis with clear exit strategies identified from the start of the intervention.



There is value in having an ESD service structured within a community rehabilitation team, rather than being a standalone service. It provides community rehabilitation services (CRS) with flexible capacity and access to specialist advice and support. It further enables smoother patient transition into long term care and support. Camden's life after stroke services were rated top in London and third best nationally.

4.2 National Quality Standards for Stroke Care

4.2.1 Hyper-acute and Acute Stroke Care

Quality standards for the Hyper-acute and Acute phases of the patient journey were developed and have been robustly implemented and measured as part of the London Acute Stroke reconfiguration 2010-2012 through two separate processes – Clinical Audit and an annual Organisational Audit. Acute providers of stroke care are contracted to use the Sentinel Stroke National Audit Programme (SSNAP). SSNAP aims to improve the quality of stroke care by auditing stroke services against evidence based standards, and national and local benchmarks¹⁸.

An organisational audit template for Queens Hospital HASU and SU has been provided in Appendix 1 which details all national stroke standards. London's acute stroke care providers are required to enter their data into SSNAP which is validated quarterly. It is the aim of the SCN for Stroke that the Organisational audits are undertaken annually, with the last being undertaken at Queens' hospital in June 2014. These ongoing national clinical audit processes demonstrate the level of detail providers are required to submit to demonstrate the income derived from the enhanced Stroke tariff is used to deliver high-quality acute stroke care, and ensure the improvements demonstrated in stroke mortality are maintained post reconfiguration.

Many of the standards are related to measuring the quality of the *process* of delivering good stroke care, rather than patient *outcomes*. This is not uncommon, and is partly related to the difficulty of reaching national consensus on what outcomes should be measured given the broad range of difficulties people living with the effects of stroke may experience. Whilst there is some concern about the Modified Rankin Score (mRS) used within SSNAP to record a person's improvement in disability scale and its lack of sensitivity for all levels of disability, this assessment tool is the national tool recommended for all services providing stroke care to use. There is a recommendation from the RCP that all providers of both acute and

¹⁸ Royal College of Physicians (2014) Sentinel Stroke National Audit Programme.

post-acute stroke care be contracted to use SNNAP to improve the understanding of the quality of stroke rehabilitation being provided. Further detail on the mRS and measuring outcomes in Stroke care are discussed in section 4.3.

4.2.2 Post-acute: Stroke Rehabilitation and Longer term stroke survivorship support

An important indicator of quality in the post-acute stroke care being provided can be identified through the annual SNAPP organisational audit described above. One of the expectations of acute stroke care is to ensure that all stroke survivors have a personal health and social care plan in place on transfer between acute and non-acute stroke care. This standard is very dependent on strong multidisciplinary working both within and across organisations, and there is evidence to suggest that the greater number of 'hand-off's' between providers and organisations within the stroke pathway, the more likely delays in care delivery are to occur. The performance of the acute trust in this indicator can suggest how able the post-acute stroke services

The National Stroke Strategy (2007) and the NICE clinical guideline for Stroke Rehabilitation (CG 162) detail several quality markers for post-acute stroke care. These include:

- After stroke, people should be offered a review of their health, social care and secondary stroke prevention needs, typically within six weeks of leaving hospital, before six months have passed and then annually. This will ensure it is possible to access further advice, information and rehabilitation where needed.
- Offer initially at least 45 minutes of each relevant rehabilitation therapy for a minimum of five days per week to people who have the ability to participate, and where functional goals that can be achieved.
 - If more rehabilitation is needed at a later stage, tailor the intensity to the person's needs at that time.
- Return-to-work issues should be identified as soon as possible after stroke, reviewed regularly and managed actively
- Carers of patients with stroke are provided with a named point of contact for stroke information, written information about the patient's diagnosis and management plan, and sufficient practical training to enable them to provide care.
- Review the health and social care needs of people after stroke and the needs of their carers at 6 months and annually thereafter. These reviews should cover participation and community roles to ensure that people's goals are addressed.

This is further reinforced by the following quality standards:

- **Royal College of Physicians (RCP) National Clinical Guidelines for Stroke (2012):** Any patient with residual impairment after the end of initial rehabilitation should be offered a formal review at least every 6 months, to consider whether further interventions are warranted
- **National Stroke Strategy QM14 (2007) :** People who have had strokes and their carers, either living at home or in care homes, are offered a review from primary care services of their health and social care status and secondary prevention needs, typically within six weeks of discharge home or to a care home and again six months after leaving hospital. This is followed by an annual health and social care check, which facilitates a clear pathway back to further specialist review, advice, information, support and rehabilitation where required

→ **Care Quality Commission review on stroke care (2011):** Regular reviews after transfer home provide a key opportunity to ensure people get the support they need.

These standards have been used to define each element of a stroke rehabilitation service and the quality standards they are required to meet. Commissioners have a responsibility to ensure:

- All three different types of stroke rehabilitation are available for their populations in Figure 4 page 13 and are meeting these standards
- Stroke reviews for all stroke survivors are being delivered at 6/12 and 12 monthly points to ensure their future needs are being met and outcomes are being achieved.

4.3 National outcomes for people living with the effects of stroke

The National Outcomes Framework for 2015/16 articulate a number specific outcome measures in relation to stroke, both in relation to preventing people from dying prematurely, and helping people to recover from episodes of ill health or following injury.

Preventing people from dying prematurely	Helping people to recover from episodes of ill health or following injury
Overarching Indicator	Overarching Indicators
Potential years of life lost from causes considered amenable to healthcare: adults, children and young people (NHS OF 1a i & ii) ^	<ul style="list-style-type: none"> • Emergency admissions for acute conditions that should not usually require hospital admission (NHS OF 3a) ^ • Emergency readmissions within 30 days of discharge from hospital (NHS OF 3b)
Improvement Areas	Improvement Areas
Reducing premature mortality from the major causes of death: <ul style="list-style-type: none"> • Under 75 mortality from cardiovascular disease (NHS OF 1.1) ^ * • Cardiac rehabilitation completion • Myocardial infarction, stroke & stage 5 kidney disease in people with diabetes • Mortality within 30 days of hospital admission for stroke 	Improving recovery from stroke People who have had a stroke who: <ul style="list-style-type: none"> • are admitted to an acute stroke unit within four hours of arrival to hospital • receive thrombolysis following an acute stroke • are discharged from hospital with a joint health and social care plan • receive a follow-up assessment between 4-8 months after initial admission • spend 90% or more of their stay on an acute stroke unit

There is clear evidence nationally to suggest that mortality has improved with the introduction of a hub and spoke model through the London Acute Stroke Care reconfiguration in 2010-2012. Survival at 30 days post stroke has vastly improved, from a position of 13% mortality from stroke at 90 days in 2010 in to 7% from Barking and Dagenham, Havering and Redbridge University Trust (BHRUT) in 2013/14.

Whilst this is an incredible achievement in terms of survival, there is much less clarity around what people and their carers should expect in relation to the longer term outcomes for stroke survivors. As stroke causes the greatest range of disabilities than any other condition, there is a lack of clarity about what outcome measures clinician's should use to determine the benefits, or outcomes people should achieve from post-acute stroke care, or rehabilitation.

The Modified Ranking Scale (mRS) is commonly used as an outcomes rating scale for patients post-stroke in BHR. It is used to categorise the level of functional independence with reference to pre-stroke activities rather than on observed performance of a specific task. There are a range of disability scales available (Table 2) but there is wide variability in its use and a rising debate on the appropriateness of assessing stroke outcomes with stroke impairment scales. Furthermore there is a lack of consensus on the selection of measures which best address and balance the needs and values of patients, their carers, practitioners, and commissioners.

Table 2: Classification of Outcome Measures¹:

Body Structure (Impairments)	Activities (Limitations to Activity)	Participation (Barriers to Participation)
Beck Depression Inventory	Action Research Arm Test	Canadian Occupational
Behavioral Inattention Test	Barthel Index	Performance Measure
Canadian Neurological Scale	Berg Balance Scale	EuroQol Quality of Life Scale
Clock Drawing Test	Box and Block Test	LIFE-H
Frenchay Aphasia Screening Test	Chedoke McMaster Stroke	London Handicap Scale
Fugl-Meyer Assessment	Assessment Scale	Medical Outcomes Study Short-
General Health Questionnaire -28	Chedoke Arm and Hand Activity	Form 36
Geriatric Depression Scale	Inventory	Nottingham Health Profile
Hospital Anxiety and Depression Scale	Clinical Outcome Variables Scale	Reintegration to Normal Living
Line Bisection Test	Functional Ambulation Categories	Index
Mini Mental State Examination	Functional Independence Measure	Stroke Adapted Sickness Impact
Modified Ashworth Scale	Frenchay Activities Index	Profile
Montreal Cognitive Assessment	Motor Assessment Scale	Stroke Impact Scale
Motor-free Visual Perception Test	Nine-hole Peg Test	Stroke Specific Quality of Life
National Institutes of Health Stroke Scale	Rankin Handicap Scale	
Orpington Prognostic Scale	Rivermead Mobility Scale	
Stroke Rehabilitation Assessment of Movement	Rivermead Motor Assessment	
	Six Minute Walk Test	
	Timed Up and Go	
	Wolf Motor Function Test	

However as each patient should enter the rehabilitation phase of the pathway with a personal care plan, it should be possible to both assess the outcomes that each patient should expect from their rehabilitation and measure whether the extent to which these expectations were met when rehabilitation is completed.

4.4 Commissioning for Value in Stroke care

Information available in commissioning for stroke care is not available for all aspects of the stroke pathway, however there is emerging evidence where value, both in respect to patient outcomes as well as the commissioning spend.

Early Supported Discharge

ESD service has a strong evidence base that proves to reduce long-term dependency and admission to institutional care, as well as reduce the length of hospital stay. In addition, an ESD consensus¹⁹ document states that the annual cost of an ESD team should be less, or equal to annual savings made by a reduction in length of hospital stay.

This was truly reflected in the NICE assessment of the Camden REDS case study for quality improvement and cost savings. There were savings in excess of £277,800 through a reduced need for non-elective bed days and ongoing social services packages of care – equating to £118,069 per 100,000 population. This was achieved entirely through a joint commissioning approach, funding a well-resourced ESD team, including therapy service provision integrated with an enabling care approach to provide intensive stroke rehabilitation within the patient's home. This reduced acute and inpatient bed days and reduced dependence on ongoing social services packages of care.

¹⁹ Fisher et al (2011) A consensus on stroke: early supported discharge

In 2009, the service reduced the average length of stay for 32% of all Camden strokes in 2009 by 10 days on average, leading to a potential £307,161 saving in acute bed-day costs. In 2011/2012 the service reduced the average length of stay for 41.3% (74/179) of all strokes in Camden by 10 days on average, leading to a potential £277,800 saving in acute bed-day costs.

5 The emerging case for change in Stroke Rehabilitation across BHR

5.1 What's working well across BHR stroke services?

HASU/SU

BHRUT Acute

- ✓ Mortality from Stroke at 30 days - 7% during 2013/14, an improvement from 13% in 2010.

ESD

BHRUT ESD service

- ✓ July – Dec 2014 SSNAP reporting; for 67 pts seen pathway processes show team is meeting required standards set; seen within 1 day of discharge (1) and 2 days between being first seen by team and date rehab. goals agreed (0-4)
- ✓ mRS scores for same period showed 20% of people having some improvement in mRS.

Stroke Survivorship

Having: Carers Trust Supporting Independence Programme

- ✓ April 2014 demonstrated that 93% of people had benefited from the programme, particularly in the areas of Health and Emotional well-being and Choice and Control.
- ✓ Positive feedback from both NELFT and BHRUT stakeholders

5.2 How are we doing in respect to stroke care configuration and provision across the pathway?

5.2.1 Hyper-acute and Acute stroke care

Through the SSNAP organisational audit of the acute service at BHRUT in June 2014, it is understood that both the HASU and SU are providing the right numbers of stroke unit beds and WTE staff to deliver the quality of stroke care required.

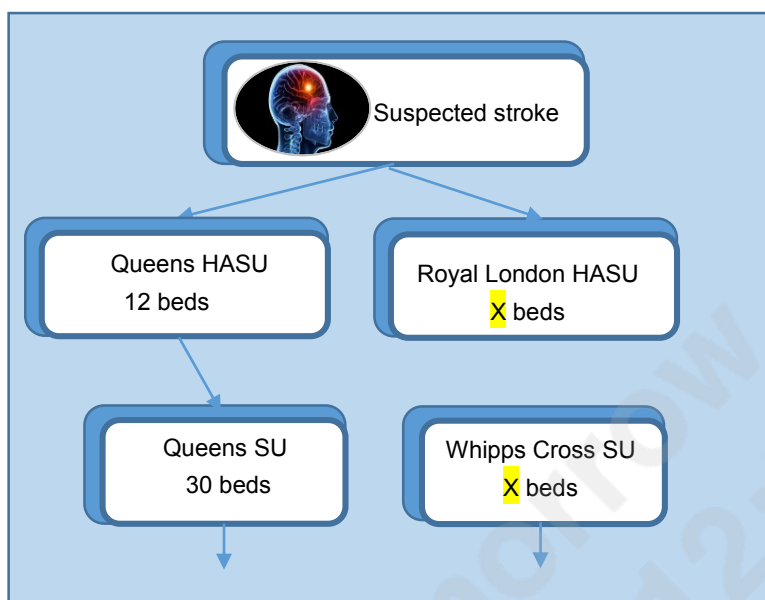


Figure 6: Summary of acute stroke provision supported through enhanced stroke tariff

5.2.2 Post-acute stroke care

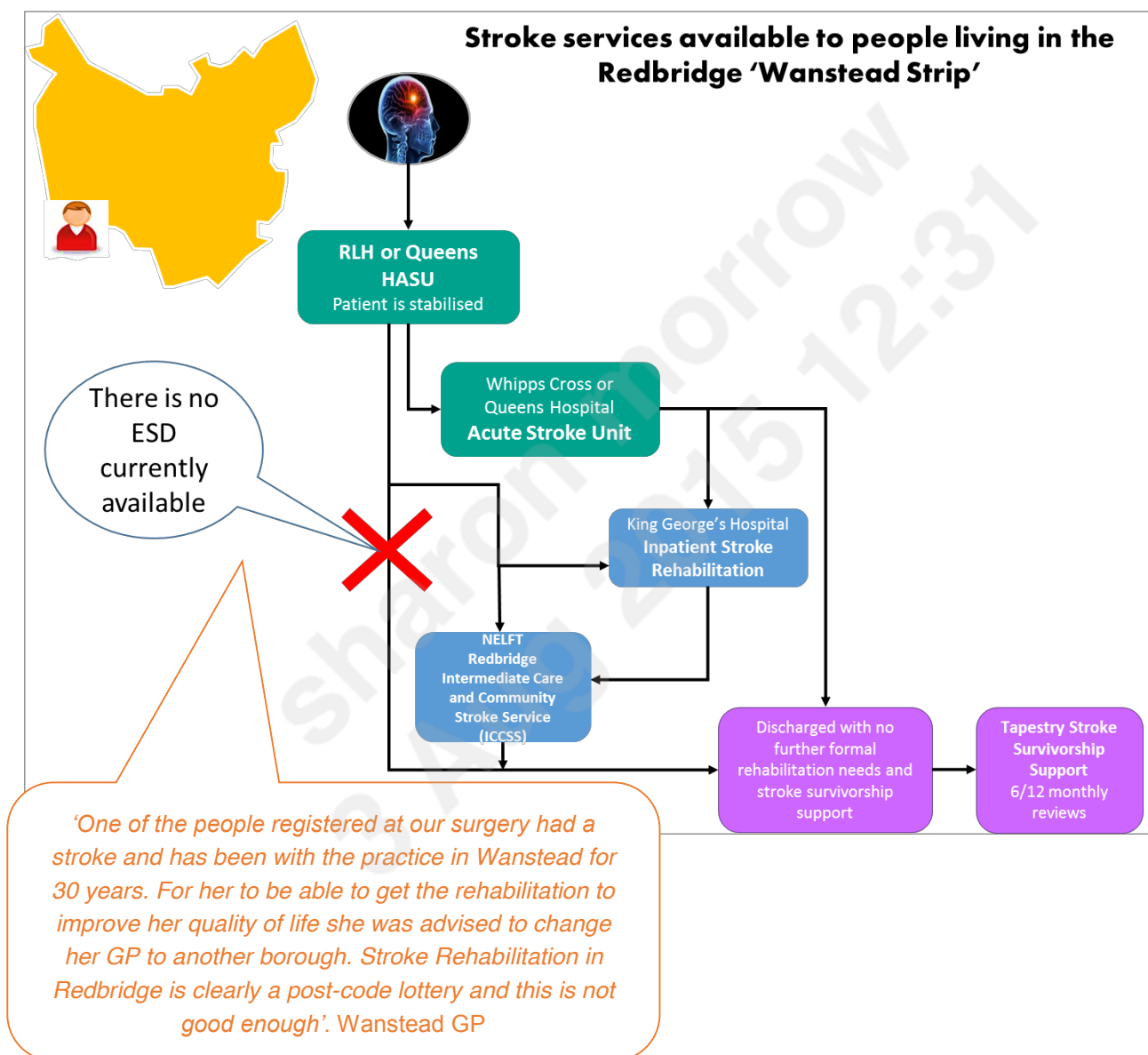
The way in which the three types of post-acute stroke services are commissioned and delivered across BHR is very complex. Whilst there is one main provider for community stroke rehabilitation (NELFT), service configuration within each borough is very different. The table below is an overview of current service provision by provider, and the geographical population they provide post-acute stroke care to.

Service Type	Provider	Site	CCG population
IP	BHRUT	Beech Ward – King Georges Hospital site (15 beds)	Barking & Dagenham Redbridge Havering
	NELFT	Grays Court (17 beds)	Barking and Dagenham Havering
ESD	BHRUT	Therapy team based at Queens Hospital site (X WTE stroke specialists)	Barking & Dagenham Redbridge (except Wanstead strip) Havering
	NELFT	Barking & Dagenham and Havering CRS (X WTE stroke specialists) Redbridge ICC(X WTE stroke specialists)	B&D Havering Redbridge
CRS	NELFT	Barking & Dagenham and Havering CRS (X WTE stroke specialists)	B&D Havering
		Redbridge ICC(X WTE stroke specialists)	Redbridge

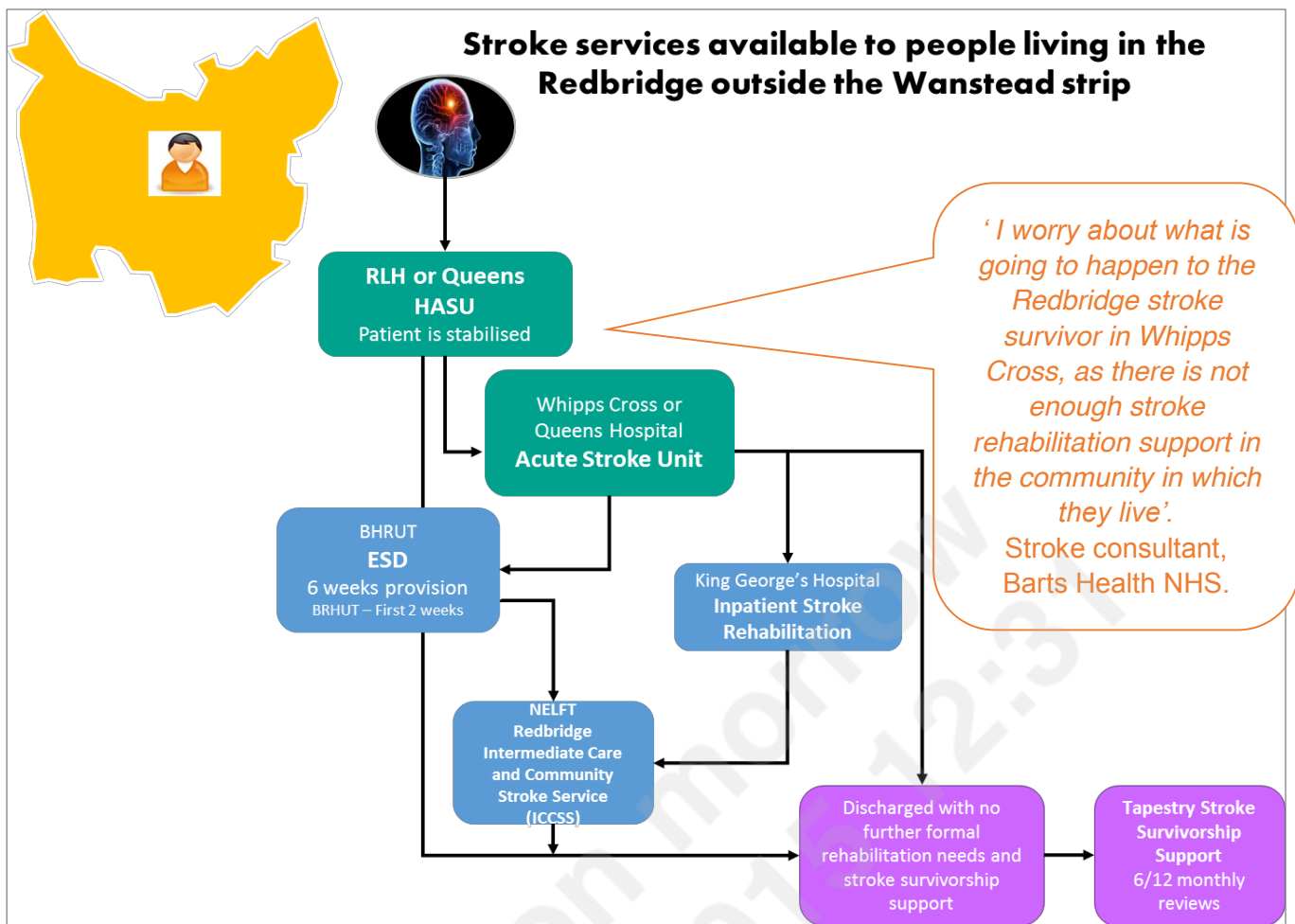
Given the complexities in describing current service configuration, this section describes the current provision of stroke care across the three BHR CCGs, and highlights areas of variation in service provision. The four diagrams below describe the different patient journeys through the stroke pathway, in relation to where they live and the impact this has on the services available to them.

5.2.3 Redbridge Stroke Service Provision

There are two different service offers to people who survive their stroke living in Redbridge. This document has already described the benefits of Early Supported Discharge in relation to outcomes and patient experience. If you live in the Wanstead strip of Redbridge there is currently no ESD services commissioned. This is based on historical boundary arrangements in relation to acute providers; currently BHRUT is the provider of the stroke ESD service but they are not required to provide this service to people living in Wanstead.



For people living in the rest of Redbridge the service offer in post-acute stroke care is very different. The BHRUT ESD therapists accept referrals from both Queens and Whipps Cross acute stroke units, with priority currently given to referrals from Queens to ensure patient flow through their acute stroke service.

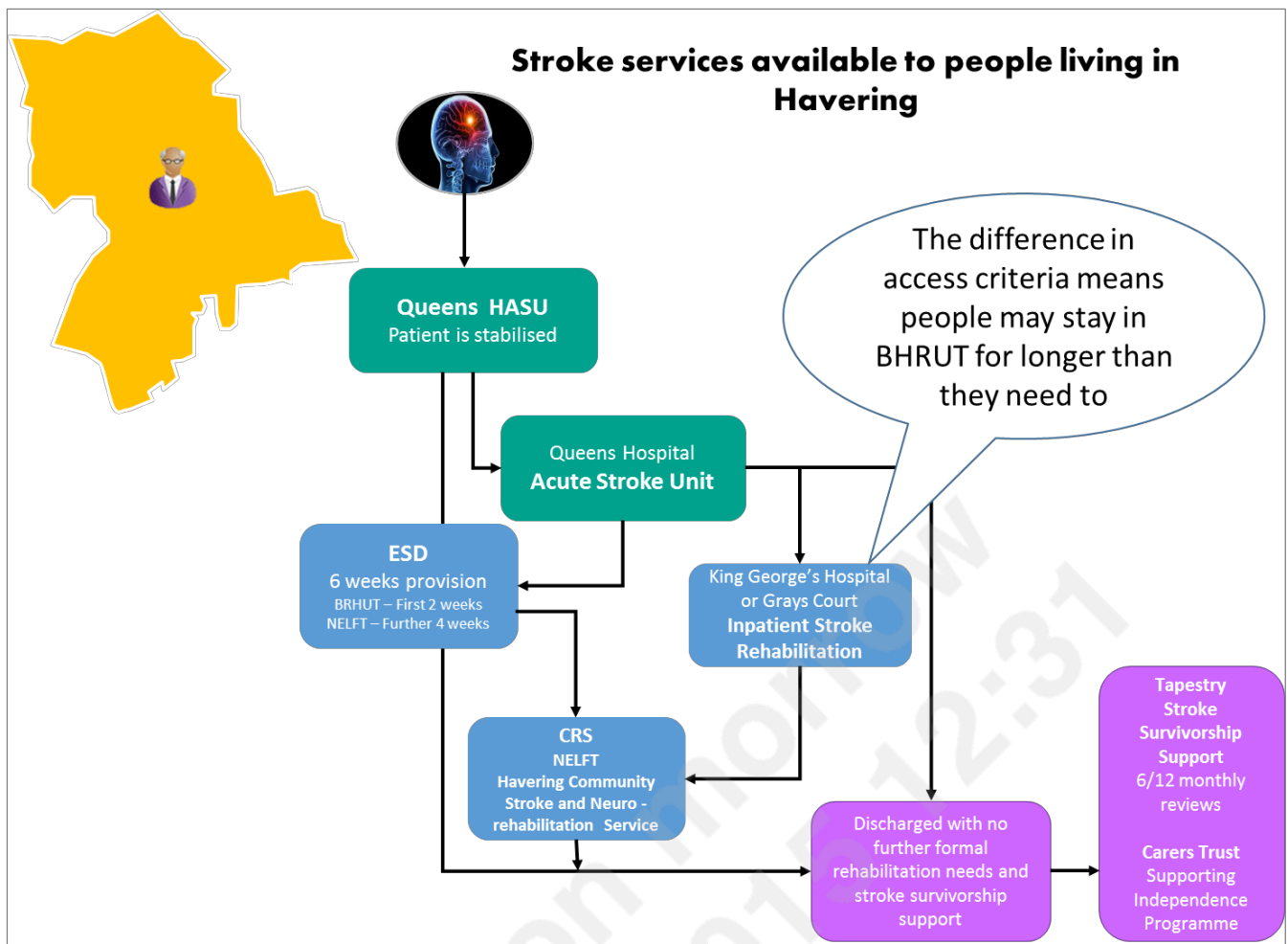


There is clearly inequity in access against national best practice standards for the provision of ESD stroke services for people in Redbridge. Other issues relating to the post-acute service offer for Redbridge patients identified through the pathway mapping workshop held on the 14th December 2014 include;

- Once discharged from the BHRUT ESD service, the Redbridge ICCSS provides a further 28 days of ESD support to people who require the support of one therapist to mobilise/participate in their rehabilitation. Stroke survivors needing the support of two people to deliver rehabilitation in their home receive no further ESD support.
- There is concern about the % of stroke specialists providing the stroke rehabilitation within the Redbridge ICCSS in comparison to that available in Havering and Barking & Dagenham.
- There is currently no provision of ESD or CRS for stroke survivors living in a nursing home.
- Existing capacity of both the BHRUT and ICCRS ESD services means that the intensity at which ESD rehabilitation is provided is not always at the quality standards expected e.g. 5 days per week for 45 minutes for two weeks per therapy required.
- Given the reduced post-acute service offer in Redbridge, GPs have reported that they are unsure as to where to refer stroke survivors to for the support they need.

5.2.4 Havering Stroke Service Provision

All residents living in Havering have the access to the same level of post-acute stroke care provision.

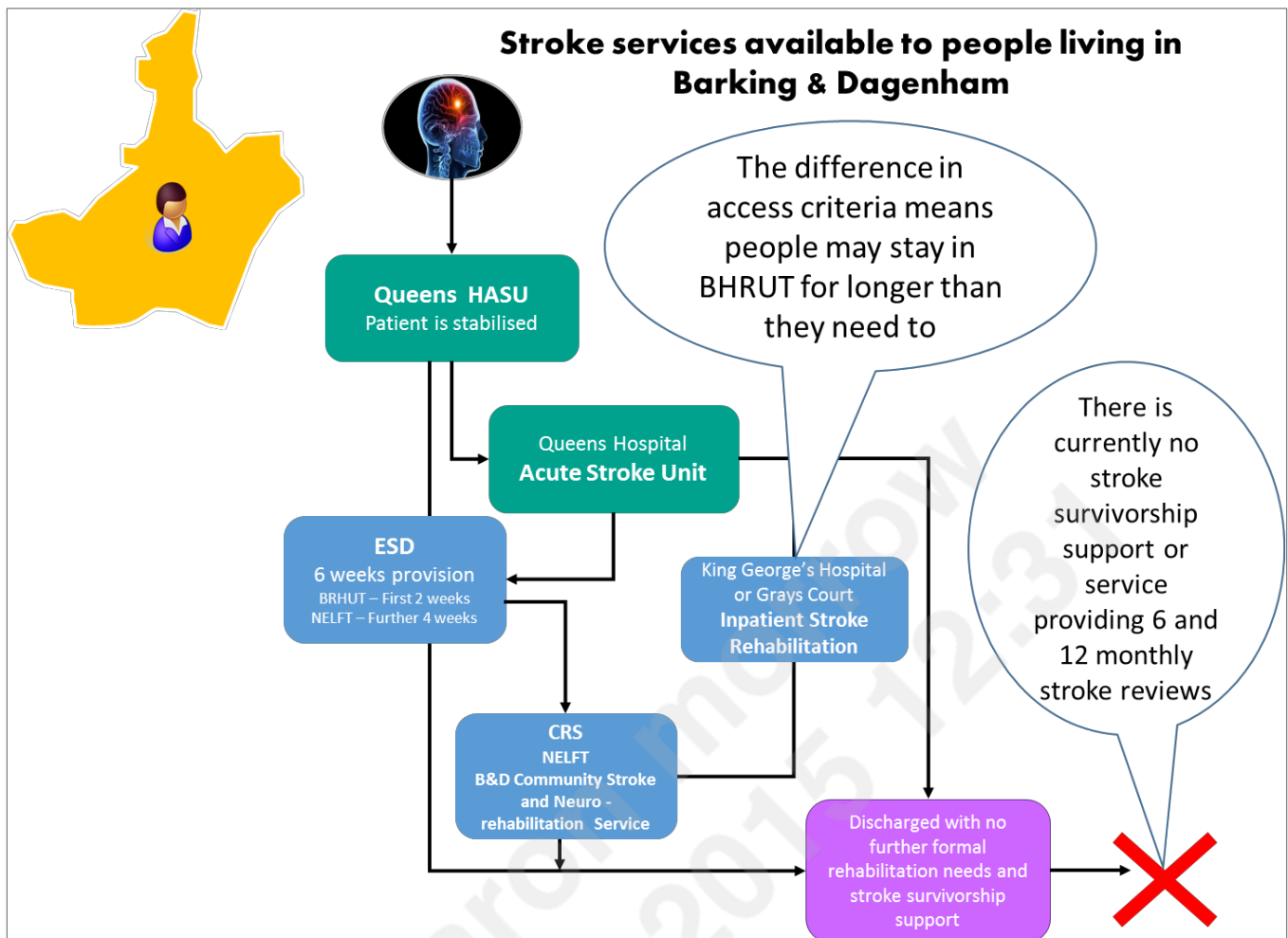


There are, however, several concerns in relation to the quality of stroke rehabilitation being provided.

- Once discharged from the BHRUT ESD service, the NELFT Havering Community Stroke and Neuro-rehabilitation service provides a further 28 days of ESD support to people regardless of whether need one or two therapists to support them in their rehabilitation sessions.
- Existing capacity of both the BHRUT and Havering NELFT ESD services means that the intensity at which ESD rehabilitation is provided is not always at the quality standards expected e.g. clinicians have reported 5 days per week for 45 minutes for two weeks per therapy is a challenge for existing capacity, and are more likely to provide this 3 days per week.
- The acceptance criteria for the providers of stroke Inpatient Rehabilitation are very different;
 - BHRUT (15 beds in King Georges Hospital, Beech ward) accepts people who are less medically stable given the cross-cover arrangements of medical and stroke specialist therapy staff across BHRUT. This ensures throughput through the HASU and ASU elements of the pathway, freeing up these units for less stable stroke survivors.
 - NELFT (17 beds at Grays Court). The acceptance criteria at Grays Court requires people to be more medically stable, meaning some patients may wait longer in acute stroke units to receive their rehabilitation in Havering and Barking & Dagenham.
- The service at Grays Court also limits the stay to a maximum of 28 days inpatient rehabilitation, therefore if stroke survivors are likely to require longer inpatient rehabilitation to achieve their goals prior to being discharged home, they will remain in an ASU inpatient bed at BHRUT.

5.2.5 Barking and Dagenham Stroke Service Provision

Like Havering, residents living in Barking & Dagenham have the same access to the same level of post-acute stroke care provision regardless of where they live in the borough. There are, however, several concerns in relation to some stroke rehabilitation provided.



Whilst Havering and Barking and Dagenham appear to have better post-acute stroke care provision in line with national standards, other issues relating to the post-acute service offer for Barking & Dagenham patients identified through the pathway mapping workshop held on the 14th December 2014 include;

- Like Havering, once discharged from the BHRUT ESD service, the NELFT Havering Community Stroke and Neuro-rehabilitation service provides a further 28 days of ESD support to people regardless of whether need one or two therapists to support them in their rehabilitation sessions.
- Existing capacity of both the BHRUT and Barking and Dagenham NELFT ESD services means that the intensity at which ESD rehabilitation is provided is not always at the quality standards expected e.g. 5 days per week for 45 minutes for two weeks per therapy required.
- The acceptance criteria for the providers of stroke Inpatient Rehabilitation are very different. BHRUT (King Georges Hospital, Beech ward) accepts people who are less medically stable given the cross-cover arrangements of medical and stroke specialist therapy staff across BHRUT. This ensures throughput through the HASU and ASU elements of the pathway, freeing up these units for less stable stroke survivors. The acceptance criteria at Grays Court requires people to be more medically stable, meaning some patients may wait longer in acute stroke units to receive their rehabilitation in Havering and Barking & Dagenham.

- The service at Grays Court also limits the stay to a maximum of 28 days inpatient rehabilitation, therefore if stroke survivors are likely to require longer inpatient rehabilitation to achieve their goals, they will remain in an ASU inpatient bed at BHRUT.
- There is currently no service providing the required 6 or 12 monthly stroke reviews as recommended in post-acute stroke care best practice.
- Clinical audits undertaken between 2012 and 2013 demonstrated that approximately 30 - 50% of patients in Grays Court could have been treated in the community if specialist stroke rehabilitation teams were in place to meet needs.²⁰

Whilst all three boroughs have access to Community Rehabilitation Service which is provided by NELFT, there are variations in the service provision within boroughs and across them.

The skill mix of the community rehabilitation teams in all three Boroughs do not include all of the specialists recommended to be included in a multidisciplinary team; in particular, teams do not include speech and language therapists and have limited access to psychologists. As a consequence patient discharges from the acute setting are often delayed whilst the patient receives speech & language therapy. There is also a lack of specialist nursing input in the Redbridge community rehabilitation team. Further detail is required to understand the difference between the skill mix and resource available within each team.

5.3 How are we doing in respect to commissioning for quality?

With the London reconfiguration of acute stroke services in 2010-2012, a concise set of quality standards was developed to ensure the providers of these services delivered the standard of care expected and were commissioned through a London stroke tariff to do so. Acute stroke care providers are also commissioned to ensure they record all of their data in relation to these quality standards within the SSNAP data base, which allows quarterly reports to be generated across the provider landscape.

Because of this level of infrastructure and quality assurance through the annual quality stroke review process, BHR CCGs are able to benchmark acute provider performance in a robust manner. Whilst they are starting to use SSNAP to understand the quality of care provided by some post-acute stroke services, other standards from clinical guidelines have been used to understand the current quality of post-acute stroke care being provided by NELFT and BHRUT.

5.3.1 Hyper-acute and acute stroke care (HASU and SU)

The results of the SSNAP Organisational Audit that was undertaken in June 2014 are presented below. Overall the three acute organisations providing stroke care to residents living within BHR scored the same band in respect to the quality of stroke care they deliver. A full description of each of the six domains can be found in Appendix 2.

Acute Organisational Audit 2014 Performance Table	Total no. stroke beds	Overall band	D1*	D2	D3	D4	D5	D6
Barking, Havering and Redbridge University Hospitals NHS Trust <i>HASU + SU</i>	57	B	A	A	D	B	D	A
Barts Health NHS Trust (Royal London Hospital) <i>HASU + SU</i>	26	B	B	C	A	A	A	A
Barts Health NHS Trust (Whipps Cross Hospital) <i>SU only</i>	19	B	B	B	D	A	B	A

²⁰ ONEL Non-acute bed review (2013)

An analysis of the individual domains highlights concerns in two particular areas for BHRUT, and one for Whipps cross, which may indicate why discharge into community stroke services is not as clear or as smooth for people as it should be. Both hospitals scored D in domain D3 due to having reduced ratios of nurses and therapists to numbers of stroke beds and found delivery of 7 day therapy services difficult to deliver. This raises two key concerns; that communication between the acute and community rehabilitation providers, and therefore the next step in the journey for people on the stroke pathway, is not as good as it should be, and that patients are unable to be discharged when they are ready on weekends. BHRUT also scored D on D5, as the existing governance arrangements for the delivery of monthly service improvement meetings using SSNAP data to drive service improvement are not as robust as they are expected to be.

One area of improvement required at the Royal London site was in access to specialist roles (D2). It is understood that access to clinical psychologists specialised in stroke care at the Royal London is reduced and patients are often not receiving the required assessments or interventions before discharge from the acute unit.

5.3.2 Post- acute stroke care

Given the differences in service configuration and provision of post-acute stroke care across the BHR CCGs, it is currently a challenge to streamline reporting arrangement for stroke across the pathway. Although SSNAP has recently launched a post-acute clinical audit for stroke, community providers are not all contracted to use the SSNAP system, and therefore data input is variable across the country.

To understand if there is a case for service change in relation to post-acute stroke care, a variety of sources of information from clinicians and national best practice have been used. The table below provides a benchmark of the post-acute stroke services against the Royal College of Physicians guideline for Stroke which includes the best practice standards referred to in section two of this document.²¹

Quality Standard/s	Is there a known gap?			Comment/Gaps
	H	R	B&D	
6.2.1 Pts with stroke offered a minimum of 45 mins. of each active therapy required for a minimum of 5 days per week within their tolerance levels.	Y	Y	Y	The rehabilitation provided by the NELFT ESD service after handover from BHRUT is not always at the acuity recommended, often 3/7 days rather than 5.
6.3.1. Every patient should have their progress measured against goals set at regular intervals determined by their rate of change	Y	Y	Y	<ul style="list-style-type: none"> Redbridge ICCRS provides time-limited interventions for a period of 4 weeks. GC inpatient rehab provides maximum treatment period of four weeks Quality reporting on goals achieved not currently routinely reported
6.21.1 Patients with continuing problems with swallowing food or liquid safely should: have regular reassessment and management 6.38.1 Care should be taken when assessing people with communication impairments.		Y	Y	<ul style="list-style-type: none"> Referral back to SALT services for further input post the initial acute assessment is difficult There are delays in accessing SALT reviews for residents in Redbridge and B&D due to a variation in service operational delivery by NELFT in these two boroughs. Havering CRS has SALT integrated with their CRS team.
6.29.1B patients who wish to return to work should be referred to a disability employment advisor or vocational rehabilitation team if advisor not available	Y	Y	Y	<ul style="list-style-type: none"> Vocational rehab. not available to residents of BHR boroughs
6.30.1 A Any patient whose social interaction after stroke is causing stress or distress to others should be assessed by a clinical psychologist	Y	Y	Y	<ul style="list-style-type: none"> IAPT service across all boroughs does not currently see patients who are unable to attend the clinic setting.

²¹ Royal College of Physicians (2012) Clinical Guideline for Stroke

6.35.1 Brief, structured psychological therapy should be considered for patients with depression.				<ul style="list-style-type: none"> There is inadequate resource for clinical psychology provision within existing stroke CRS teams
<p>7.1.1 A Any patient whose situation changes should be offered further assessment by the specialist stroke rehabilitation service</p> <p>B Any patient with residual impairment should be offered a formal review every 6 months</p> <p>E Patients should have their stroke risk factors and prevention plan reviewed every year</p> <p>7.4.1 Pts and their carers should have their individual practical and emotional support needs identified annually</p>		Y	Y	<ul style="list-style-type: none"> Community rehab team in Redbridge is integrated with both generic and specialist stroke therapists within it. Pts may be treated by non-stroke specialist therapists Both Havering and Redbridge CCG commission stroke association to deliver the 6/12 stroke review Havering and Redbridge commission stroke association to deliver annual stroke reviews
7.3.1 Local commissioners should ensure that community integration and participation for disabled people is facilitated through making sure appropriate stroke specialist services and generic voluntary services and peer support are available and that information and signposting to them are given.			Y	Both Havering and Redbridge have formally commissioned a variety of stroke support services in the community e.g. swimming club, support groups.
7.5.1 All people with stroke in care homes should receive assessment and treatment from stroke rehabilitation services in the same way as patients living in their own homes		Y		Redbridge ICCSS don't currently provide community rehabilitation to nursing home residents

There are quite clearly gaps in the quality of care being provided in relation to national quality standards for stroke rehabilitation. It is understood that these gaps are likely to be a result of the variation in current configuration and provision across a multitude of providers, or a lack of service capacity in a particular area or team.

5.3.3 Quality in relation to Early Supported Discharge (ESD) in BHR

The NHSE Strategic Clinical Network for Stroke have recently published a report identifying that London Stroke care needs to be improved²². It uses SSNAP data received from providers of acute and post-acute stroke care from Q3 2013/14 and 2014/15 and highlights there is low uptake of life-after stroke services such as ESD, community rehabilitation and six monthly stroke reviews for people discharged from BHRUT.

²² NHSE Strategic Clinical Network for Stroke (2015) National Stroke Audit indicates London needs improvement

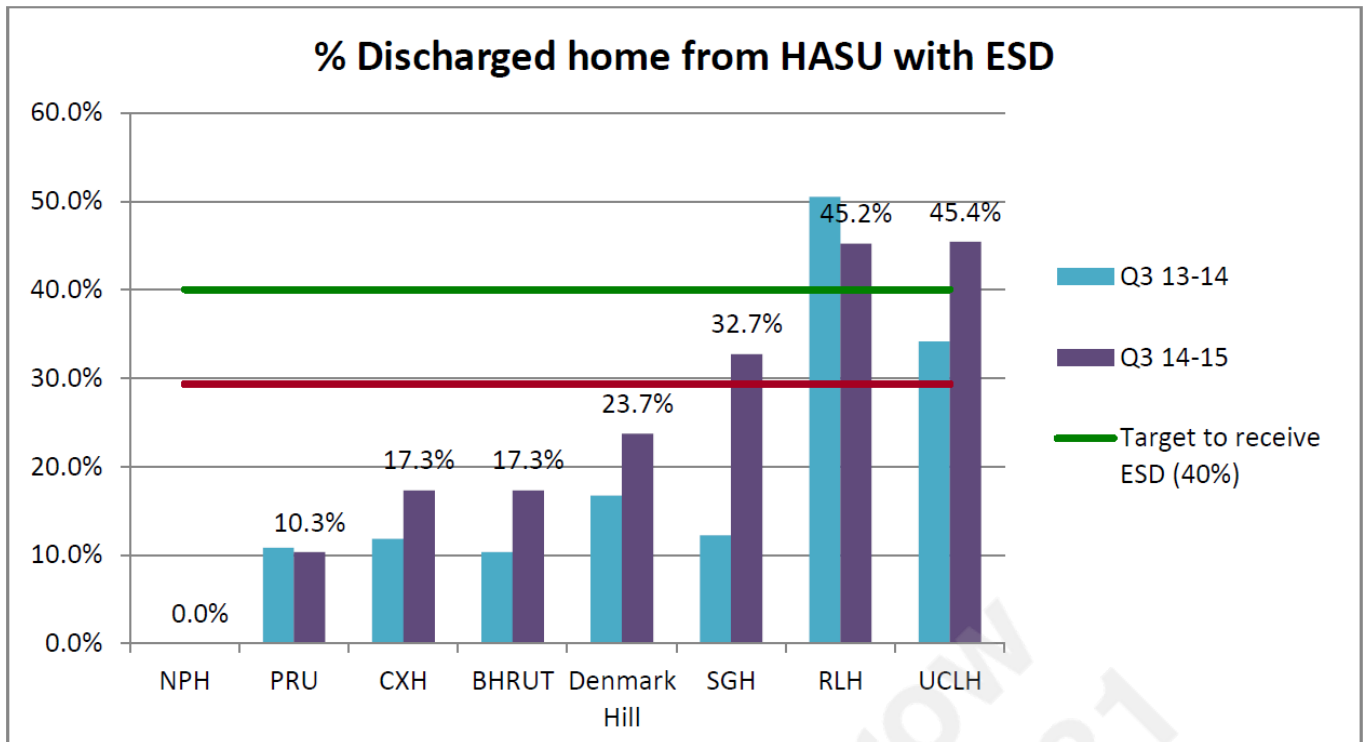


Figure 7: % of patients discharged home from HASU to stroke/neuro-specific Early Supported Discharge between Q3 2013/14 and 2014/15

The information presented in the graph above (Figure 7) highlights that fewer than the targeted 40% of people who have had a stroke are being discharged with ESD from the BHRUT HASU or SU. Although BHRUT has demonstrated an improvement between from Q3 2013/2014 and Q3 2014/15, there are less than half the amount of people being taken home with ESD support, indicating people are not being offered the best possible outcomes in relation to stroke care.

The graph in the following page (Figure 8) does not show a comparison between 2013/2014 and 2014/15, however it too demonstrates that BHRUT are not able to discharge as many people with ESD from the SU as national best practice advises. Clearly, people living in the BHR geography are not getting the same level of access to ESD, and therefore the type of post-acute stroke care that has demonstrated the best quality outcomes for patients. Something needs to change.

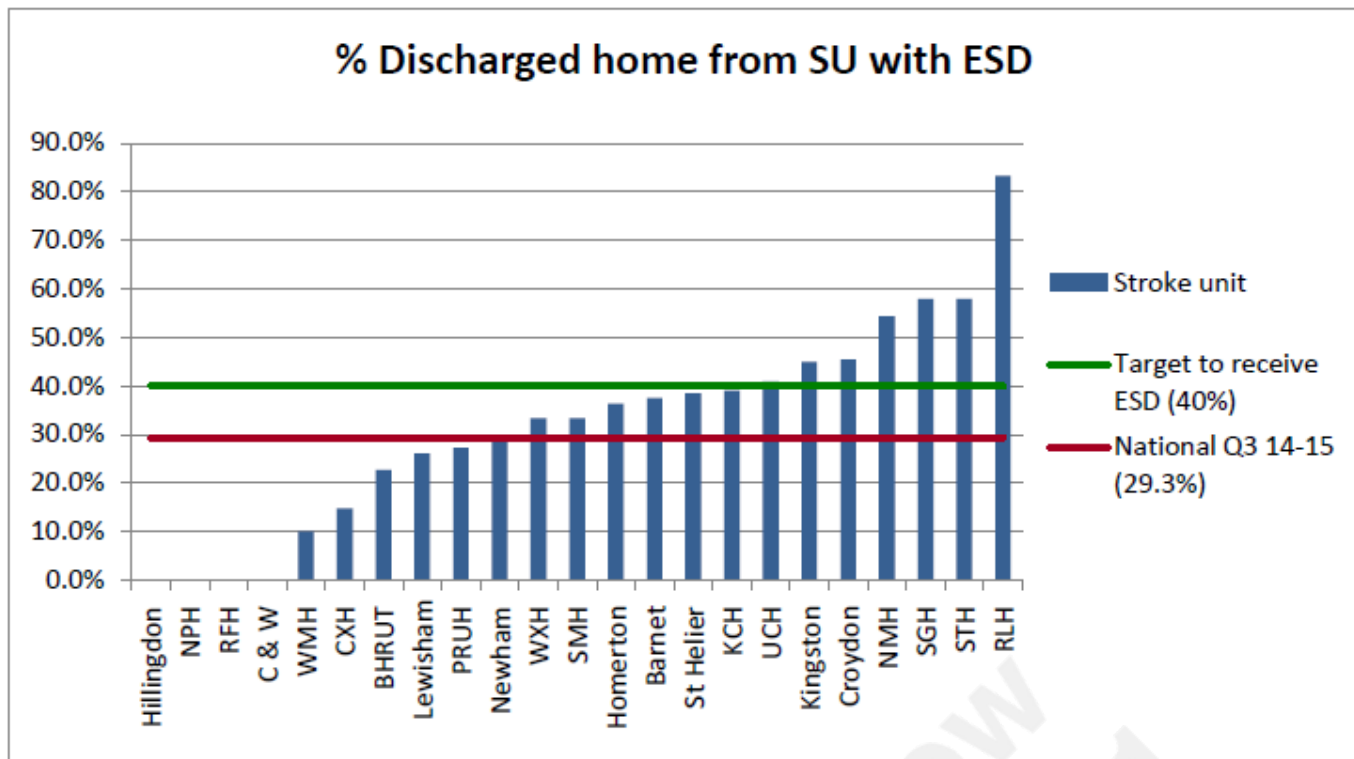
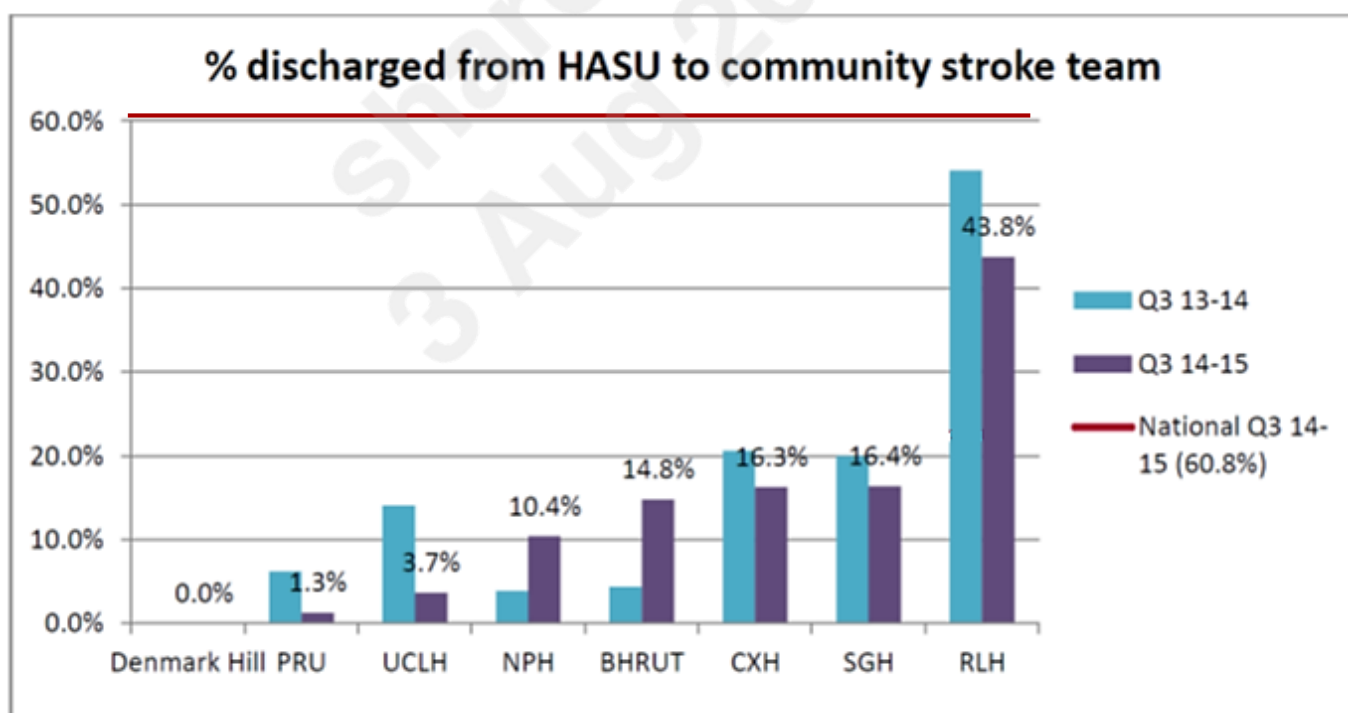
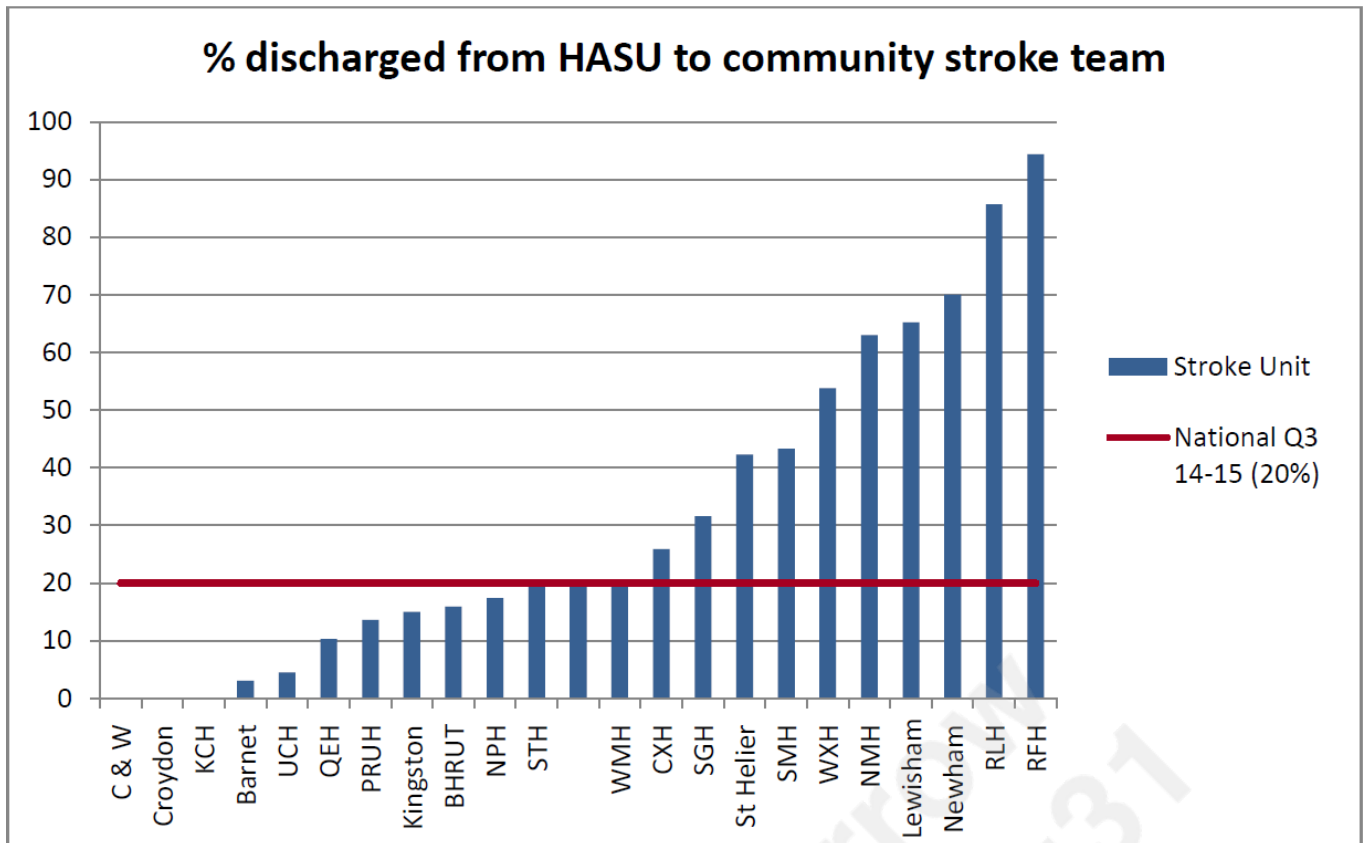


Figure 8: % of patients discharged home from SU to stroke/neuro-specific Early Supported Discharge between Q3 2013/14 and 2014/15.

5.3.4 Quality in relation to Community Stroke Rehabilitation Service

The two graphs below also demonstrate that stroke survivors are not necessarily getting the best possible access, and therefore quality of post-acute stroke care. Whilst the London standard is that 20% of people should be discharged from HASU or SU to community stroke team, 14.8% of people in BHRUT with stroke are being discharged from HASU, and approximately 16% from acute stroke unit.





Considering that discharges from BHRUT to either stroke ESD or CRS services are way below the London quality standards being set, there is a need for BHR CCGs to change the way the existing post-acute stroke services are commissioned. More needs to be understood in relation to the quality standards in relation to Inpatient rehabilitation, as this information was not included in the benchmarking provided in this report.

5.4 How are we doing in respect to commissioning for outcomes?

Whilst acute stroke providers are systematically using SSNAP to record nationally recognised outcomes for stroke, as this document has articulated in the section 2 there is currently very little information routinely recorded or reported across providers and organisations in respect to any outcomes from post-acute stroke care. This is largely due to the lack of consistency in commissioning services to use the nationally recognised SSNAP database for recording information on post-acute stroke care.

RCP Finding/Recommendation	Commentary	B&D	H	R
Participation in the SSNAP inaugural organisational audit of post-acute stroke care commissioning has been excellent with 99.6% of responsible bodies providing data	<i>All three BHR CCGs participated in the audit of post-acute stroke care</i>			
There is widespread variation, both by region and country, in the types of post-acute stroke care currently being provided.	<i>Variation does exist both within and across BHR CCGs, and the type of care available does depend on where people live. Patients living in the "Wanstead strip" receive a different service to the rest of Redbridge</i>			
There is concern that care home residents may be being denied access to stroke rehabilitation services in some areas.	<i>Some community rehabilitation services do not currently provide stroke rehabilitation to people living in care homes</i>			
All commissioners are recommended to draw up consistent service specifications with their provider organisations and include participation in SSNAP clinical audit as a requirement	<i>Of the four service specifications available for post-acute stroke care across the BHR CCGs none mention regular reporting through the SSNAP data base and all varied in content in relation to interventions, outcomes and performance measurement requirements.</i>			
All commissioners are recommended to support a 6 month post-stroke assessment for all patients as recommended in the National Stroke Strategy and required by the CCG Outcome Indication Set (CCG OIS)	<i>2/3 BHR CCGs are currently commissioning 6 month post-stroke assessments for their population. This creates a challenge in assessing the outcomes patients are achieving post-discharge from health and/or social services.</i>			
All commissioners should be commissioning stroke-specific Early Supported Discharge (ESD)	<i>2/3 BHR CCGs are commissioning ESD for their population. Service offer also varies across the patch</i>			
All commissioners are recommended to consider joint health and social care collaboration to address major shortfalls in provision of emotional and psychological support after stroke and vocational rehabilitation	<i>There is great variation in the provision of survivorship support across BHR landscape, with some being commissioned by either health or social care.</i>			
Commissioners are recommended to participate with providers in using SSNAP data as part of a programme of managed quality service improvement	<i>There is variation across BHR CCGs in how the information provided by the SSNAP data base is used to inform routine performance management and/or delivery improvement</i>			

Given the lack of readily available outcome data, the contracts and service specifications of those providers commissioned to provide both acute and post-acute stroke care were reviewed. Discussions with clinicians providing the services were also held in order to understand a) whether they used nationally recommended outcome measure such as mRS or b) what they were currently recording to enable them to understand the outcomes they were helping people to achieve.

The table below illustrates the outputs of this analysis.

Pathway Phase	Type	Provider	Are Outcomes for Stroke Measured and Reported?
Hyper-acute / Acute		BHRUT Barts Health	✓ Morality Rates ✓ mRS
	In-Patient	Grays Court (NELFT)	✗
		BHRUT	✓ mRS
Stroke Rehabilitation	Early Supported Discharge	BHRUT	✓ mRS
		NELFT	✗
	Community Rehabilitation Service	NELFT	✗
Stroke Survivorship Support	6 / 12 monthly reviews	Stroke Association	✗
		Carers Trust	✗

The DITC have found the availability of data on stroke-specific key performance indicators (KPI's) both within services and across the stroke pathway is sparse, and generally focus on measuring process measures e.g. the numbers of patient's seen, access, amount of time spent on stroke rehabilitation and level of intensity, rather than the outcomes stroke survivors are currently achieving.

Whilst some individual stroke service providers, such as BHRUT and Barts health, meet monthly to discuss their stroke service improvement plans, there is currently no formal meeting or forum where outcomes being achieved can be presented across the entire pathway, something that local stroke physicians have expressed frustration about.

I would love to know what the 6/12 and 12 monthly reviews are telling us about the patients we saw in HASU and what outcomes they have achieved. Currently, I have no way of doing that across so many different stroke rehabilitation and support services'.

Given the lack of outcome data available specific to the stroke pathway through existing commissioning and contracting arrangements, there is clearly a case for change in relation to developing and agreeing a number key patient outcomes the BHR CCGs may wish to measure in the future. This will need to be informed by discussions with expert clinicians to define a clear set of outcomes to be measured throughout the stroke pathway, and how this will routinely measure and reported on in the future to identify the outcomes people living with the effects of stroke are achieving.

5.5 How are we doing in respect to commissioning for Value?

The different contracting and reporting arrangements across the number of different types of providers mean that the BHR CCGs are currently unable to tell how much they are spending on stroke services. Consequently it is difficult to assess whether the existing resources going into stroke care represents the best way to achieve the best outcomes for patients. The first step in understanding the case for service change in relation to cost and value for money is try to understand the resources that are currently being spent on each element of the stroke pathway.

Unlike the previous sections in this document, it is important to understand existing spend across the entire stroke pathway to ensure any future redistribution shifts resources to the best place to serve stroke survivors. As there are a number of providers for each phase of the existing pathway, this has thus far proved challenging, and further work is required to fully understand how current resource is being spent.

Figure 9 on the following page articulates the existing contracting information understood by the BHR CCGs in relation to spend, and why the current contracting and reporting requirements do not enable the BHR CCGs to understand if they are spending the right amount of available resource in the best element of the pathway.

Commissioning spend per element across CCGs

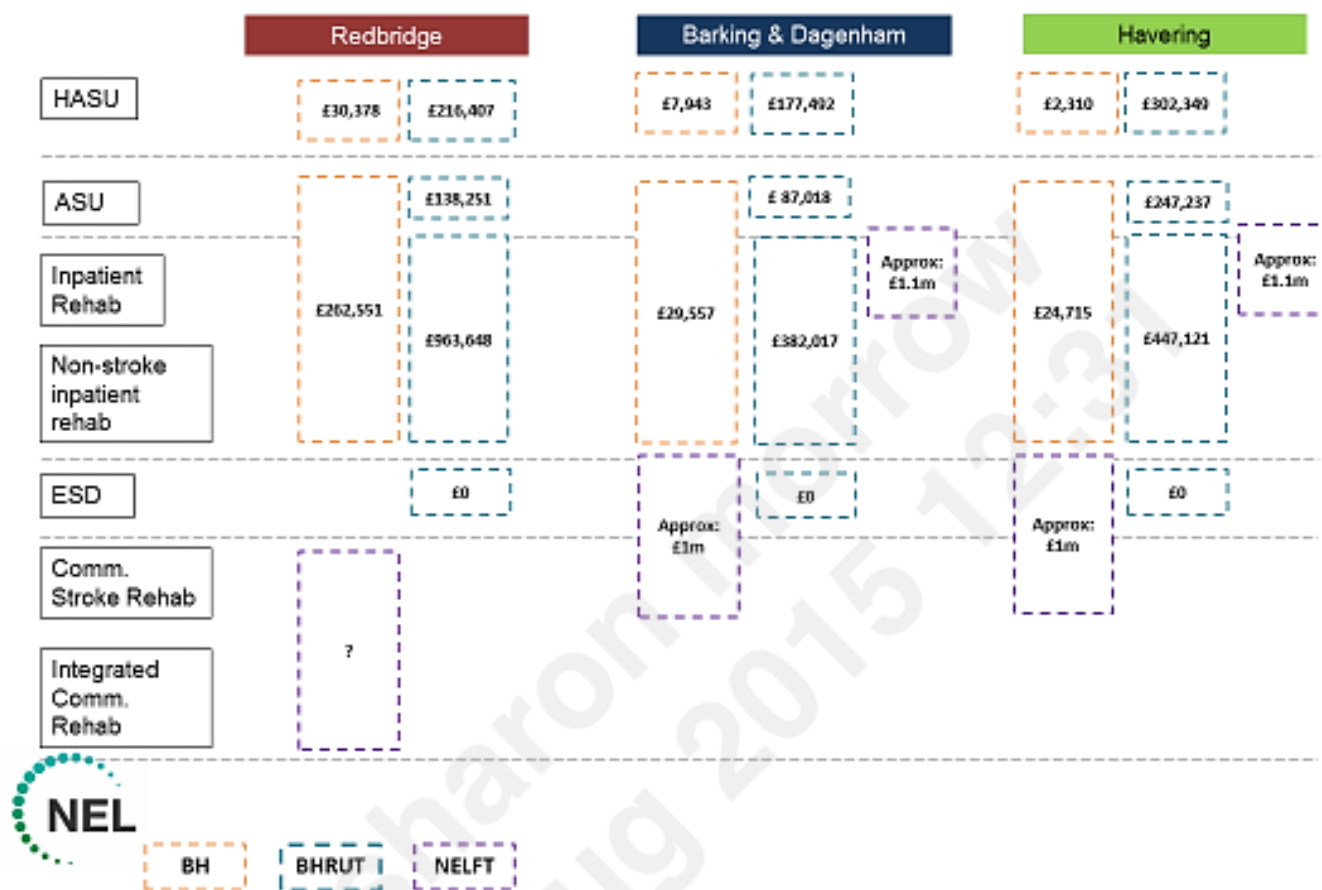


Figure 9: Existing contracting information understood by the BHR CCGs in relation to spend

The amounts shown on the diagram above are taken from a combination of the contract values and the Trusts' service line reporting (SLR). The problems that this has highlighted are:

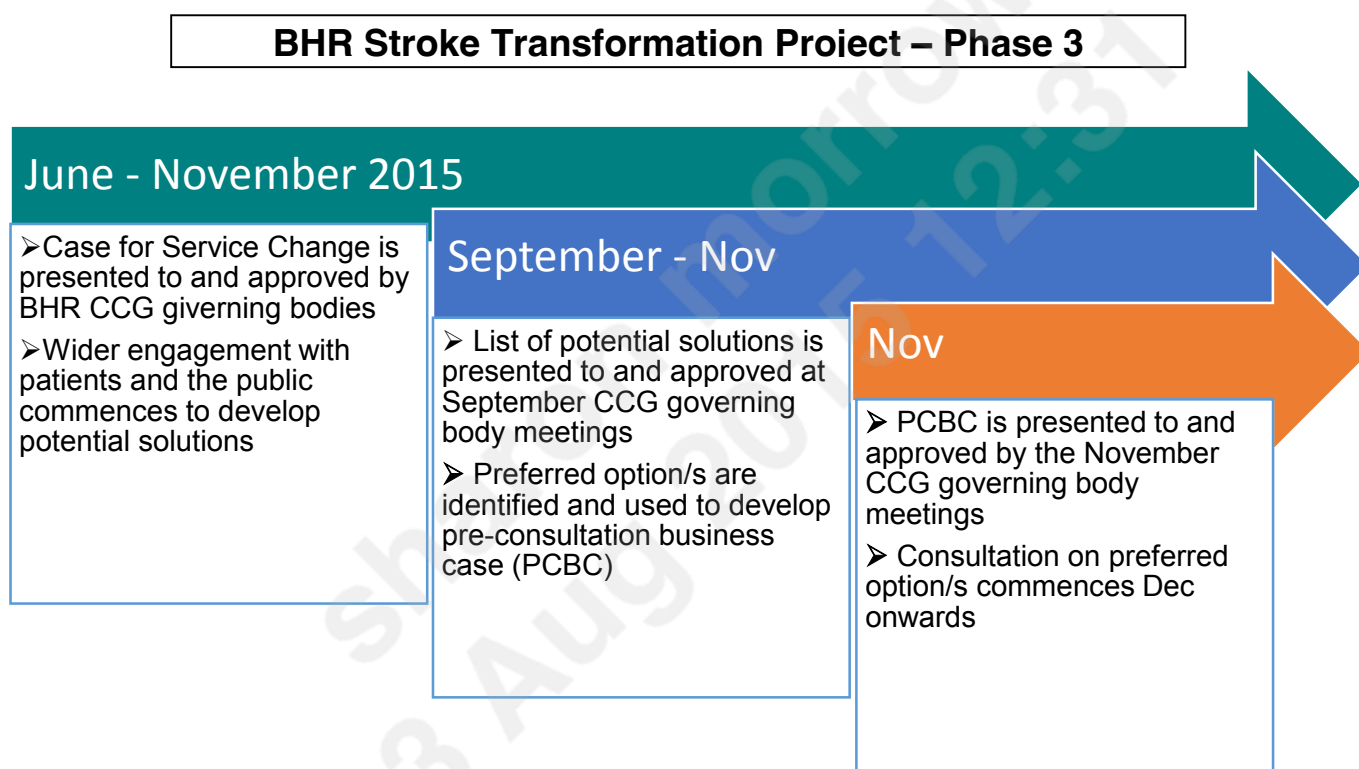
- Barts Health, that provide an inpatient service to some Redbridge patients from Whipps Cross Hospital, do not differentiate in their charges between ASU and inpatient rehabilitation
- BHRUT do not differentiate between inpatient stroke rehabilitation and rehabilitation for other conditions. The basis of the charge is by individual patient tariff. Also no specific charge is made for ESD, so the assumption is that this is also included in the price for inpatient rehabilitation.
- The community services provided by NELFT are on a single block contract with no differentiated prices. From the Trusts SLR a cost of stroke rehabilitation can be estimated. However the SLR does not show the cost to each commissioner, nor does it differentiate between the cost of ESD and the rest of the community stroke rehabilitation team.

5.6 Recommendations on next steps for the BHR CCGs

At their governing body meeting in June 2015 the three BHR CCGs are asked to take the findings of the case for service change in post-acute stroke care and agree the following three recommendations.

1. **Agree that outcomes for people living with the effects of stroke will improve by changing the way that post-acute stroke care is commissioned and delivered across BHR.**
2. **Agree to prepare a business case to consider possible changes to the provision of post-acute stroke services.**
3. **Agree to engage widely with patients and the public on the case for change.**

Once the governing bodies have approved the case for service change, wider public and patient engagement on the BHR Stroke Transformation project will commence. This will include engaging on the case for service change, as well as a list of future solutions to the issues raised in this document. The proposed timescales for Phase 3 of the project is described in Figure 10 below.



Appendix 1: SSNAP Organisational Audit template for BHRUT HASU and SU

HASU Annual review template 2013/14

Unit: Queen's Hospital, Romford

Number of beds: 12

HASU Criteria	A1 STANDARDS	Measurement	RAG rating	Additional notes
STAFF				
16	Provision of 0.73 WTE Physiotherapist/5 beds Required: 1.75 Combined HASU & SU staffing: 7.44	Calculation provided by Trust. Should include appropriate evidence (budget statements, staff lists, staff roster etc) to demonstrate that the staff genuinely work on the SU. When retrospectively assessing, the scoring is as follows: hitting or exceeding the ratio – Green, Red - outside 11%		Staff rotas
17	Provision of 0.68 WTE Occupational Therapist/5 beds Required: 1.6 Combined HASU & SU staffing: 6.38			Staff rotas
18	Provision of 0.68 WTE SALT/10 beds Required: 0.8 Combined HASU & SU staffing: 3.2			Staff rotas
24	Provision of 24/7 nursing workforce to provide: 2.9 WTE nurses / bed 80:20 trained to untrained skill mix Required: trained 27.8 Untrained 7	Calculation provided by Trust. Should include appropriate evidence (budget statements, staff lists, staff roster etc) to demonstrate that the staff genuinely work on the SU. When retrospectively assessing, the scoring is as follows: hitting or exceeding the ratio – Green; Red outside 20%		Staff rotas
INFRASTRUCTURE (exception reported only)				
1	A robust operational pathway for receiving suspected stroke patients, alerting HASU team of suspected stroke patient admission and transferring to HASU from A&E	Review the arrangements		Discussion & written evidence
2	A radiology service responsible for provision of the following (24/7): <ul style="list-style-type: none"> CT scanning for suspected stroke patients CT reporting by radiology or stroke consultant 	Do these exist?		Discussion

	<ul style="list-style-type: none"> A contingency plan to ensure continuity of provision of CT scans 		
3	Established high-level thrombolysis treatment pathway	Provide evidence of pathway	Discussion & written evidence of pathway
4	24/7 availability of appropriately trained staff in eligibility assessment and administering thrombolysis treatment	Provide evidence, e.g. staff rotas	Rota
9	24/7 availability of appropriately trained staff in assessment of suspected stroke patients who are ineligible for thrombolysis treatment	Provide evidence, e.g. staff rotas	Rota
20	Arrangements for timely repatriation to appropriate local or co-located SU	Review the arrangements	Written evidence of policies and protocols
22	Consultant led HASU team	Provide management structure and name of lead consultant	Rota
23	Provision of 24/7 consultant cover provided by at least 6 BASP thrombolysis trained consultants on a rota able to make thrombolysis and hyper acute treatment decisions	Provide evidence, e.g. job plans	Rota
28	Evidence of management plan for access to neurosurgery, interventional neuroradiology and vascular surgery for appropriate patients	Review the arrangements	SSNAP & discussion

HASU Criteria	A2 STANDARDS	Measurement	RAG rating	Additional notes
5	100 % of appropriate stroke patients, identified as potentially eligible for thrombolysis treatment, to be scanned within next available CT slot (this must support a door to needle time of 60 mins)	(Ischaemic patients only) Green >=90%, below 60% Red		SSNAP
7	100 % of appropriate stroke patients to receive thrombolysis within 3 hrs or as soon as possible of symptom onset	Green 100%, <75%=Red		SSNAP
8	100% of appropriate patients scanned within 24 hrs of admission to A&E	Green 100%, <90%=Red		SSNAP

10	95 % of all appropriate stroke patients to be admitted to HASU directly from A+E	Green 95%, <75%=Red		SSNAP
11	70 % of all stroke patients to receive swallow test within 24 hrs of admission	Green 70%; <50%=Red		SSNAP
13	75 % of all patients to receive physiotherapist assessment within 72 hours of admission (performance standard)	Green 75%, <50%=Red		SSNAP
14	100% of appropriate patients to receive continuous physiological monitoring (ECG, oximetry, blood pressure) by appropriately trained staff	Green >=95% , below 80% Red		SSNAP

HASU Criteria	B STANDARDS	Measurement	RAG rating	Additional notes
6	90% of stroke patients eligible for thrombolysis (to be thrombolysed), to receive thrombolysis treatment within 45 mins of entry to A&E (door to needle time)	Green 90%, <80%=Red		SSNAP
12	100 % of appropriate stroke patients to be weighed during admission	Green 100%, <75%=Red		Local audit results
15	Daily consultant level ward rounds	Check patient notes and job plans		Trust to provide written evidence
27	100 % appropriate patients and carers to receive contemporary patient information provided in a variety of formats	Provide evidence that this is happening. Up to date leaflets and patient information (not photocopies), evidence that different font size, languages and different colours are available		Trust to provide written evidence

HASU Criteria	C STANDARDS	Measurement	RAG rating	Additional notes
6	50% of stroke patients eligible for thrombolysis (to be thrombolysed), to receive thrombolysis treatment within 30 mins of entry to A&E (door to needle time)	Green 50%, <30%=Red		SSNAP

31	Patient and carer involvement in development of stroke services	Provide evidence that this is happening, e.g. focus groups, patient satisfaction surveys, discovery interviews		Trust to provide written evidence
33	Evidence of timely implementation of service delivery improvements e.g. new guidance, compliance improvements	Provide evidence that this is happening		Trust to provide written evidence
35	Demonstration of participation in stroke related research, as a key part of HASU services	Provide evidence that this is happening e.g. lists of trials / research projects		Trust to provide written evidence
25	Recruitment plan for vacant positions and success in filling vacant positions	Evidence of a recruitment strategy. Discuss vacancy rate		Discussion and rotas

HASU Criteria	D STANDARDS	Measurement	RAG rating	Additional notes
26	Plan for rotation of posts across the professional groups along the patient pathway	Provide evidence that this is happening. This should cover junior doctors, therapists and nurses		Discussion and rotas
34	Completion of leadership training by key members of the stroke team to support stroke service improvement	Provide evidence that this is happening		SSNAP

Additional comments:

SU annual review 2013/14

Unit: Queen's Hospital, Romford

Unit size: 30 beds

Criteria	A1 Standards	Measurement	RAG rating	Data source
	STAFF			
11	Provision of 0.84 WTE physiotherapist/5 beds Required: 5.04 Combined HASU & SU staffing: 7.44	Calculation provided by Trust. Should include appropriate evidence (budget statements, staff lists, staff roster etc) to demonstrate that the staff genuinely work on the SU.		Discussion – trust to provide data
12	Provision of 0.81 WTE OT/5 beds Required: 4.86 Combined HASU & SU staffing: 6.38	When retrospectively assessing, the scoring is as follows:		Discussion – trust to provide data
13	Provision of 0.81 SALT WTE /10 beds Required: 2.43 Combined HASU & SU staffing: 3.2	hitting or exceeding the ratio – Green; outside 11% - Red.		Discussion – trust to provide data
23	Provision of 24/7 nursing workforce to provide: 1.35 WTE nurses/bed, 65:35 trained to untrained skill mix Required: Trained 26.3 Untrained 14.2	<ul style="list-style-type: none"> Named staff roster provided Head count Rotas WTEs can be made up using no more than 15% agency. Bank is an acceptable substitution for substantive staff. If Bank Staff, need to see recruitment plan including permanent posts. Performance in a subsequent period should show agency as a % no more than 10%. 		Discussion – trust to provide data
	INFRASTRUCTURE			
8	Evidence of a protocol to initiate suitable secondary prevention measures in all appropriate patients			Discussion & written protocol

9	A radiology service responsible for provision of the following: CT scanning and reporting, MRI scanning, ultrasonic angiology			Discussion
16	Availability of rehab facilities i.e. access to physiotherapy gym, OT kitchen, SALT equipment			Discussion & walk round
17	Demonstration of maintenance of all 5 characteristics of a good stroke unit: MDMs at least weekly to plan care; provision of information to patients; continuing education programs for staff; consultant physician with responsibility for stroke; formal links with patient & carer organisations			SSNAP
18	Demonstration of agreed referral pathways from SU to community rehab providers			SSNAP
21	Sharing of information between SU and GP and rehab provider (if applicable)			Discussion & presentation of template letters
22	Consultant led SU team; minimum of 5 consultant or equivalent ward rounds per week; dedicated junior medical team trained in stroke management			SSNAP

Criteria	A2 Standards	Measurement	RAG	Additional evidence/Comments
1	Timely admission of patients from HASU: 90% of patients repatriated within 24 hours	Timely is defined as within 24 hrs of confirmation that a patient has a discharge date and time, patient should be admitted to an SU (within 24 hrs of confirmed discharge date and time) Green ≥90%, below 65% Red		SSNAP
2	95% of all stroke patients to be admitted directly to SU on HASU transfer	Green 95%, <75% Red		SSNAP
3	95% of stroke patients to spend all of their in-hospital time in SU	Green: 80% or above, Red below 75%		SSNAP

4	75% of all patients to receive a physiotherapist assessment within 72 hours of admission to SU	Green 75%, <50% Red		SSNAP
5	60% of all patient to receive an occupational therapy assessment within 7 days of admission to SU	Green >=60%, below 50% Red		SSNAP
6	75% of all patients to be weighed within 72 hours of admission to SU	Green 100%, <75% Red		Local audit
10	70% of all patients to have their mood assessed by time of discharge	Green 70%, <60% Red		SSNAP
14	Patient access to a social worker	Provide evidence that this is happening e.g. systems are in place, referral forms		SSNAP
35	Provision of, and attendance at, MDT stroke training programs.	Provide evidence that they are taking place and numbers of attendees, e.g. agendas, feedback sheets from MDT training		Trust to provide written evidence
Criteria	A2 Standards	Measurement	RAG	Additional evidence/Comments
7	100% of appropriate patients to receive weekly nutritional screening	Green 100%, <80%=Red. Reflected and monitored in PDPs.		SSNAP
15	Availability of supporting services e.g. orthotics, podiatry, orthoptics, dietetics	Demonstrate that these exist e.g. evidence of referral pathway and paperwork and patient notes		Trust to provide written evidence
19	Arrangements for discharge of patient from SU with appropriate support	Evidence of protocol and provision of discharge plan for 100% of patients JCP: Green 85%, <75%=Red		Trust to provide written evidence
20	Plan for management of average length of stay (LoS)	Evidence of active monitoring of LoS, investigation into long LoS, active reduction of LoS plans, evidence that discharge plans are created early on in a patients stay		Discussion
24	Recruitment plan for vacant positions and success in filling vacant positions	Evidence of stroke recruitment strategy and vacancy rates		Discussion and evidence from rotas of numbers of staff in post
26	100% of appropriate patients and carers to receive contemporary patient information	Provide evidence that this is happening. Up to date leaflets and		Trust to provide written evidence

	and care plans provided in a variety of formats	patient information in different font sizes, languages and colours		
27	Provision of a named contact on discharge for each patient	Provide evidence that this is happening		Trust to provide written evidence
30	Demonstration of a stroke management group to oversee service delivery and improvement e.g. review of performance standards, impact of new guidance and methods for improvement of service	Provide evidence that this is happening – agenda/minutes, reasonable frequency		Trust to provide written evidence
34	Provision of structured training plan for new and rotational staff to ensure a competent understanding of the stroke pathway and compliance to standards	Provide evidence of a stroke specific induction program		Written evidence
37	Active involvement in local stroke networks	Network to assess evidence of meeting attendance lists and rapid and reliable provision of data		Trust to provide written evidence

Criteria	C and D Standards	Measurement	RAG	Additional notes
28	Process for obtaining and incorporating patient feedback into SU service development	Provide evidence that this is happening, e.g. focus groups, patient satisfaction surveys, interviews		Trust to provide written evidence
29	Patient and carer involvement in development of stroke services	Provide evidence that this is happening, e.g. stroke forum regularly attended by clinical management		Trust to provide written evidence
31	Evidence of timely implementation of service delivery improvements e.g. new guidance, performance standard compliance improvements	Provide evidence that this is happening		Trust to provide written evidence
33	Demonstration of participation in stroke related research, as a key part of SU services	Provide evidence that this is happening, e.g. lists of trials / research projects		Trust to provide written evidence
25	Plan for rotation of posts across the professional groups along the patient pathway	Provide evidence that this is happening		Discussion & where possible evidence of rotas

32	Completion of leadership training by key members of the stroke team to support stroke service improvement	Copies of PDPs provided, list of courses attended		Trust to provide written evidence
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Criteria	Standards	Measurement	RAG	Additional notes
5	90% of high risk TIA patients to receive a specialist assessment and treatment within 24 hours of first presentation to a healthcare professional	TIA pathway to cover both high and low risk treatment arms		Trust to provide written evidence
7	90% of low risk TIA patients to receive a specialist assessment and treatment within 7 days of first presentation to a healthcare professional	Evidence of compliance against performance standard e.g. local audit Green <90%, red less than 60%		Trust to provide written evidence
11	90% of appropriate TIA patients with symptomatic carotid stenosis to undergo CEA within 14 days of first presentation to a healthcare professional	Evidence of compliance with agreed network pathway e.g. local audit		Trust to provide written evidence

sharon morrow
3 Aug 2015 12:31

Appendix 2: 6 domains of stroke service organisation within the Sentinel Stroke National Audit Programme (SSNAP)

D1-Acute care: Presence of up to 7 features representing quality of care of stroke units treating patients within the first 72 hours of stroke; level of thrombolysis provision; nurse staffing levels at 10am weekends per ten beds

D2-Specialist roles: Frequency of consultant ward rounds; presence of senior nurses and/or therapists; access within 5 days to all of: social work expertise, orthotics, orthoptics, podiatry; palliative care patients treated on Stroke unit; access to clinical psychologists and aspects of care provided; provision of services which supports stroke patients to remain in, return to or withdraw from work and/or education or vocational training; patients staying in bed until assessed by physiotherapist

D3-Interdisciplinary services: Ratio of nurses and therapists to beds on the stroke unit(s); 6 or 7 days working for therapists; frequency and membership of formal team meetings

D4-TIA/Neurovascular clinic: Time TIA service can see, investigate and initiate treatment for all high- and low-risk patients; waiting time for carotid imaging (high- and low-risk patients)

D5-Quality improvement, training & research: Report on stroke services produced for trust board; presence of a strategic group responsible for stroke and membership; funding for external courses and number of days funded for nurses and therapists; clinical research studies; formal links with patients and carer's organisations; patient/carer views sought on stroke services; report produced in past 12 months which analysed views of patients

D6-Planning and access to specialist support: Patient information on: social services, benefits agency, secondary prevention advice and patient version of stroke guidelines/reports; personalised rehabilitation discharge plan given to patients; access to stroke/neurology specialist early supported discharge and community team for longer term management
