

**NORTH YORKSHIRE COUNTY COUNCIL****North Yorkshire Scrutiny of Health Committee****12 June 2015****Joint Report on the Relocation of Hyper Acute Stroke Services from Airedale NHS Foundation Trust to Bradford Teaching Hospitals NHS Foundation Trust****Purpose of Report**

1. This report provides an overview on the current stroke services in Airedale NHS Foundation Trust and Bradford teaching Hospitals NHS Foundation Trust and outlines the relocation of the hyper acute stroke service from Airedale NHS Foundation Trust to Bradford teaching Hospitals NHS Foundation Trust for the population of Bradford District and Craven.

**Background****What is a stroke?**

2. A stroke is a brain attack where the blood supply to a part of the brain is cut off. If the brain cannot receive blood then brain cells can be damaged or die. It will have different effects dependent on where it happens in the brain. All strokes are different and the effects for some may be minor. For others, however, they can be significant which is why access to prompt treatment is crucial to improve the chances of a better recovery.<sup>1</sup>
3. In the UK, a stroke occurs every three minutes and 27 seconds with men at higher risk than women. Age is the most important risk factor although lifestyle plays a significant part in increasing the likelihood of having a stroke. Important to note for the Bradford District and Craven is that people from the most economically deprived areas are twice as likely to have a stroke, and that people of black and South Asian origin are at a higher risk also.<sup>2</sup>

**Where should a suspected stroke patient receive their treatment?**

4. Everyone who has a suspected acute stroke should be immediately transferred to a hospital which provides acute stroke services. There – after initial triage - they will have an expert clinical assessment, and a CT and/or MRI scans. People who have had a stroke will be cared for by a specialist team who can deliver the necessary treatment - such as intravenous thrombolysis (a clot busting procedure) - throughout a 24 hour period (National Stroke Strategy 2007). This will take place in a hyper acute stroke unit (known as a HASU which provides intensive care for stroke patients) and needs to happen within a very short timescale - one hour for the scan via a CT or MRI,

<sup>1</sup> <https://www.stroke.org.uk/what-stroke/what-stroke>

<sup>2</sup> [https://www.stroke.org.uk/sites/default/files/stroke\\_statistics\\_2015.pdf](https://www.stroke.org.uk/sites/default/files/stroke_statistics_2015.pdf)

and a maximum of four and a half hours from the onset of symptoms to thrombolysis treatment, if required.

5. Patients who have had a stroke will spend between 24 and 72 hours in a HASU, where beds are similar in nature to critical care beds, and be cared for by a skilled specialist multidisciplinary team which includes therapists, specialist nurses and stroke consultants. Following this 72 hour period, they will be transferred to an acute stroke unit where this specialist care will continue but with consultant care moving to five day per week ward rounds. Following their care on the acute stroke unit, patients will receive a period of rehabilitation either in the hospital environment or at home dependent on their level of need.

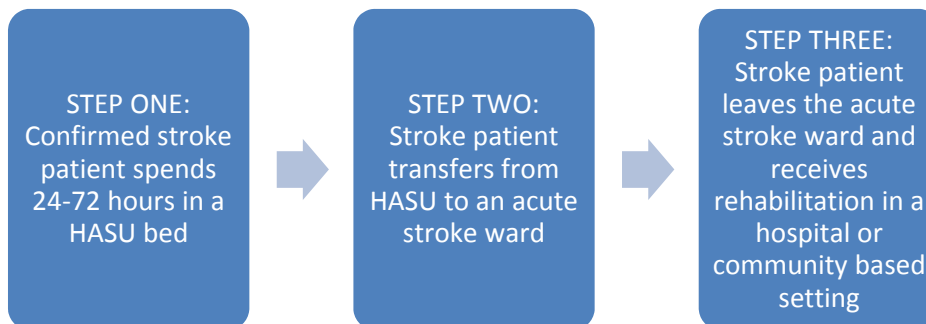


Figure 1: Current in hours services at Airedale FT & BTHFT

6. People who experience a suspected stroke in the district are currently receiving services provided by Airedale NHS Foundation Trust (Airedale FT) and Bradford teaching Hospitals NHS Foundation Trust (BTHFT).
7. In 2014/15, Airedale FT treated 480<sup>3</sup> suspected strokes, and BTHFT treated 951 suspected strokes.

### Local stroke services in Airedale, Wharfedale, Craven and Bradford District

8. Airedale FT has had problems sustaining a 24 hours a day, 7 days per week HASU (this can also be referred to as the hyper acute stroke service) since the resignation of two of their stroke consultants, and the long term sickness of a third consultant in March 2014. Nationally, there is an acute shortage of stroke consultants, with approximately 46% of posts across the country remaining unfilled. As a result, despite several recruitment attempts, Airedale FT has not been able to secure a stable stroke consultant workforce, the service is currently being staffed by interim consultants (known as locums) who do not have permanent employment contracts and can therefore provide the minimum period of notice should they choose to resign their post. This has also meant that Airedale FT has not been able to staff its HASU out of hours (between the hours of 6pm until 8am Monday to Friday, and during weekends and bank holidays). As a result, during the out of hours period, patients in Airedale, Wharfedale and Craven have been treated in the Hyper Acute Stroke Unit at BTHFT.

<sup>3</sup> Note this excludes East Lancashire patients

9. Airedale FT has been fortunate in that until May 2015, the locum consultants recruited between May 2014 and January 2015 have remained in post, however two of the three consultants have now given notice with one having left already and the second will leave at the end of July. This will leave one consultant to continue to manage the service from July onwards during the hours of 8am-6pm Monday to Friday.
10. In addition to providing services for people suspected of stroke in Bradford, BTHFT's team of four permanent stroke consultants has provided an out-of-hours, weekend and bank holiday service to Airedale FT's suspected stroke patients.
11. Due to the shortage of consultants, performance of the HASU at Airedale FT has been decreasing over a number of months. HASUs are measured on their performance by a self-assessment against a series of proxy measures which are accepted standards nationally to measure patient outcomes. Key to this are the number of stroke consultants and specialist nurses who can support the HASU to ensure patients are receiving optimum care. This data is referred to as Sentinel Stroke National Audit Programme (SSNAP) data and, during 2014 and early 2015, Airedale FT shows significant poor performance compared to both national and West Yorkshire providers in those indicators relating to the first 48 hours of stroke care – please refer to the table below for further information.

<b>Standard</b>	<b>SSNAP target %</b>	<b>WY average %</b>	<b>ANHSFT %</b>	<b>BTHFT %</b>
Proportion of patients scanned within 1 hour	50	30.2	18.3	46.0
Proportion of patients scanned within 12 hours	90	79.4	69.7	82.3
Proportion of patients directly admitted to a stroke unit within 4 hours	N/A	53.8	34	61.3
Proportion of all stroke patients given thrombolysis	N/A	11.5	2	17.3
Proportion of eligible patients given thrombolysis	N/A	72.7	27.7	94.3
Proportion of applicable patients directly admitted to a stroke unit within 4 hours AND who either receive thrombolysis or are not suitable for thrombolysis	N/A	51.2	32.7	61.3
Proportion of patients assessed by a stroke specialist consultant physician within 24 hours	N/A	79.7	58.3	82.0
Proportion of patients who were assessed by a nurse trained in stroke management within 24 hours	N/A	82.3	62.7	87.3
Proportion of applicable patients who were given a swallow screen within 4 hours	N/A	63.4	51	68.0
Proportion of applicable patients who were given a formal swallow assessment within 72 hours	N/A	69.3	77	72.7

Compliance against the occupational therapy target	N/A	63.2	45.7	76.3
Compliance against the physiotherapy target	N/A	56.9	48.3	64.3
Compliance against the Speech and Language Therapy target	N/A	23.4	27.3	68.7
Proportion of applicable patients receiving a joint health and social care plan on discharge	N/A	86.0	100	98.0
Proportion of patients treated by a stroke skilled early supported discharge (ESD) team	N/A	28.3	6	51.0
Proportion of applicable patients in Atrial Fibrillation on discharge who are discharged on Anti-coagulants or with a plan to start anti-coagulation (that is, with an irregular or abnormally fast heart rate) who, are discharged on anticoagulants (medicines that reduce the ability of the blood to clot, helping to prevent further stroke) or with a plan to start anti-coagulation	N/A	96.3	100	100

Table One: SSNAP Indicators - extract

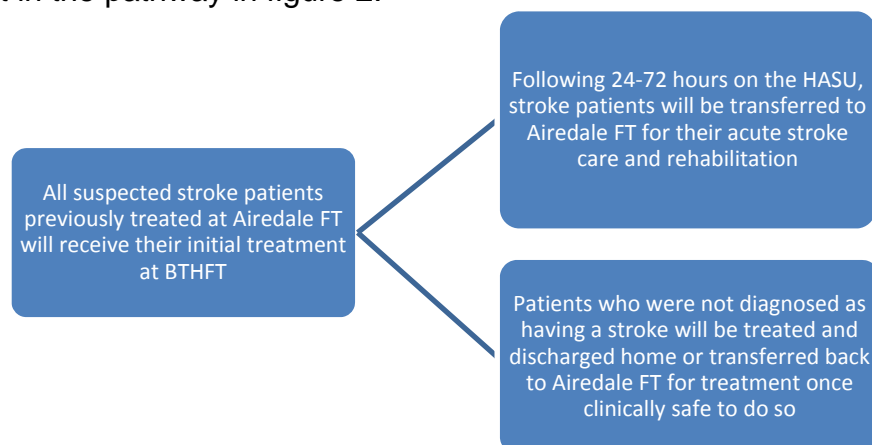
### What is the regional and national picture?

12. There is a national shortage of trained stroke consultants, and the incidence of stroke is increasing. The British Association of Stroke Physicians, (BASP), calculates that there is a national shortfall of 163 stroke consultants posts across the whole of the UK, or a 46% shortfall in what is required to deliver stroke services.
13. Internationally, stroke is not recognised as a specialism and therefore training programmes do not exist in other countries for the UK to recruit these individuals in order to backfill the UK shortage.
14. For a HASU to operate efficiently and provide the most effective care, it is recommended that:
  - the unit must admit a minimum of 600 confirmed strokes per year, and
  - that six British Association of Stroke Physicians (BASP) trained in thrombolysis are required to staff a 24/7 rota for an acute hospital that receives 600 or more suspected strokes per year.
15. Across the country a number of hospitals – including North West London, Birmingham and Manchester have already established centralised specialist units and located HASU services hyper acute stroke services on one or two sites. On a more local setting, Northern Lincolnshire and Goole NHS Foundation Trust centralised to the Scunthorpe site in November 2013, and their outcomes for patients have improved as a result.

16. The HASU service is similar to the long established acute myocardial infarction (heart attack) service. Patients in Airedale, Wharfedale and Craven who have a myocardial infarction which shows on an ECG heart tracing are transferred directly to Leeds General Infirmary to undergo immediate investigation and treatment of blocked arteries if indicated. After the intervention patients are then discharged or transferred back to Airedale FT.
17. Bearing in mind the national shortage of stroke consultants – and the recommendations about the patient numbers required for safety, clinical effectiveness and outcomes – it is unrealistic to plan for a service that requires both Airedale FT and BTHFT to have six BASP consultants.

**Intended changes to ensure safe, resilient, high quality acute stroke services for the population**

18. The over-riding priority is to ensure the provision of high quality, safe and effective care to local residents across Bradford District and Craven, and therefore the three Clinical Commissioning Groups, Airedale FT, and BTHFT - supported by the Strategic Clinical Network for Stroke and NHS England - have been working through potential solutions to address the gaps in service provision in Airedale FT. The Medical Director for NHS England, Yorkshire & the Humber has stipulated that in his opinion maintaining a HASU at Airedale Hospital is not an option to provide safe, high quality acute stroke care.
19. Discussions are ongoing at a regional level to address the future gap in stroke service provision but this will not be addressed in the short- to medium- term and will therefore not provide a timely solution for patients living in Airedale, Wharfedale and Craven.
20. Therefore a decision has been taken to relocate the two hyper acute stroke beds from Airedale FT to BTHFT. This will provide six HASU beds at BTHFT which is in line with the national recommendations for the number of beds required for 900 confirmed strokes set against the 950 confirmed strokes treated across Bradford and Airedale, Wharfedale and Craven in 2014/15.
21. Acute stroke services and rehabilitation will continue at both acute hospitals.
22. This will result in the pathway in figure 2:



**Figure 2 - Future provision of HASU**

## Impact of the relocation of hyper acute stroke beds

23. Airedale FT currently treats 566 suspected stroke patients, 480 of these are from AWC and bordering Bradford District localities (such as Bingley). Not everyone who is taken to hospital with suspected stroke actually has the condition (approximately 160 of the 480 cases, annually). This is because there are other conditions that might at first appear stroke-like (known as stroke mimics).
24. In the proposed model of care, anyone suspected of having had a stroke will be taken directly to the A&E department at BTHFT (where this is the nearest hospital with a HASU) and be seen by a team that includes a stroke consultant. All patients will have a brain scan (CT or MRI) within one hour of arrival which confirms whether or not they have had a stroke and, if so, whether it was caused by a blood clot or a bleed on the brain.
25. Patients **who have had a stroke** as a result of a blood clot may be assessed as suitable for treatment with a potentially life-changing drug, known as thrombolysis. This must commence within four and half hours of the onset of symptoms and, because of its complexity, can only be performed by a suitably qualified and experienced stroke consultant.
26. These thrombolysed patients, and all other patients who have had a stroke, will remain at BTHFT for their HASU care, following which they will be transferred to Airedale FT for their acute stroke care and rehabilitation.
27. Half of the **patients who have not had a stroke** will, within a matter of hours, be discharged from A&E following treatment whilst the remainder will require a longer stay in hospital for treatment and will be transferred to Airedale FT for their care.
28. As a result of the proposed changes, 85% of suspected strokes will go to BTHFT for their immediate care. The remaining 15% - who live nearer to a hospital with HASU facilities in East Lancashire, Harrogate and Leeds – will be transported directly there by the ambulance service. Yorkshire Ambulance Service is working with us to determine any impact on response times.

## What will this mean for patients?

29. Patients previously treated at Airedale FT for their acute stroke episode will receive high quality, timely, hyper acute stroke care in a fully staffed 24/7 unit at BTHFT from October 2015. Their period of care at BTHFT will last no longer than 72 hours when they will be transferred to a bed on the acute stroke unit at Airedale FT. Patients who receive prompt care in a HASU have better clinical outcomes and improved mortality.
30. Locating all hyper acute stroke care at BTHFT means that there are 6 consultants available on a rota basis 24 hours a day 7 days per week to provide critical diagnosis and treatment to stroke patients to ensure the best possible outcomes can be delivered.

31. It is recognised that patients will have to travel further for their initial treatment, and then return to Airedale FT or home, and that relatives and carers will have further to travel to visit for those initial 24-72 hours. Through engagement we will explore, among other things, how any associated difficulties for patients and carers can be addressed.

#### **What will this mean for staff?**

32. Airedale FT will continue to provide acute stroke services and will therefore continue to have a multi-disciplinary team, including stroke consultants, on site. Airedale FT will continue to have stroke consultants on site Monday to Friday and these consultants will also work in BTHFT to ensure their skill set is maintained. Nursing staff who want the opportunity to continue providing hyper acute care will have the option to work across both hospital sites.
33. Future consultant and other staff recruitment for the service will include details of these plans, making the prospect of working locally more attractive for consultants and other specialist staff wishing to maintain and improve their practice. A single HASU enables an extensive and resilient workforce who can maintain and develop their necessary specialist skills by treating a greater number of patients on a continual basis.

#### **What are the next steps?**

34. As noted earlier, Airedale FT has very recently received the resignation of two consultants – who leave in July 2015 – meaning that it is now extremely urgent to resolve the current situation for the wellbeing of all stroke patients. The resignations - along with directions from NHS England about the viability of the future service and accepted best practice for stroke services - have impacted significantly on the CCGs' ability to consult meaningfully on a choice of options as there is no viable alternative that could establish and maintain a safe clinical service, and improved outcomes in the long-term, for the local population.
35. As a result, we propose not to conduct a formal 12 week consultation on the changes to stroke services, but rather to engage meaningfully on the support needed by patients, carers and the general public to enable them to access the new services.
36. We recognise that our plans will have a direct impact on patients who will need to travel a further distance to receive their HASU care and, potentially, on those already receiving or likely to receive care at BHTFT. Therefore the clinical commissioning groups, in partnership with Airedale FT and BTHFT, will conduct extensive engagement for a period of nine weeks from July through to September.
37. During the engagement period we will explain in plain English why the service has to change and what impact this will have on patients and their families. Their views will enable us to understand what is important to people when accessing stroke services and how the changes will impact on their lives, and

to identify any issues we have not considered and potential service improvements that should be discussed. All the information we receive will be collated and a report will be written and published explaining how we will respond, through the new service, to people's concerns and comments.

38. The outcome of the engagement exercise will be presented to CCG and Trust Boards, published on CCG and Trust websites, and will be shared with the Health and Social Care Overview and Scrutiny Committees in Bradford and North Yorkshire.

### **Recommendations**

39. The Health Overview and Scrutiny Committee are asked to:
1. Note the content of the report on the relocation of hyper acute stroke services;
  2. Support the intended 9 week engagement period;
  3. Support discussions with their local communities to explain the changes to the hyper acute stroke service.

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01/06/2015

Appendix: Proposal for Bradford and AWC Stroke Service



## **Proposal for the Development of a Sustainable Stroke Service Across Bradford and Airedale**

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### **Date**

19<sup>th</sup> May 2015

### **1. Background**

All patients with suspected onset of stroke within previous 24 hours stroke should be immediately transferred to a receiving hospital providing acute stroke services, with a stroke triage system, able to provide expert clinical assessment, timely imaging and able to deliver intravenous thrombolysis throughout a 24 hour period, (National Stroke Strategy 2007). Minimum requirements at the receiving hospital are an appropriately staffed Acute Stroke Unit and the ability to provide specialist brain imaging 24/7. Specialist stroke consultants must be available 24/7.

The resilience of acute stroke care has been identified by the CCG Collaborative (10CC) in Yorkshire as a priority area for focus. This is in part because there is a recognition that the quality and outcome of current services is variable and in some places at risk in terms of the ability to sustain the specialist workforce needed. Plans for the local and regional stroke management must be developed to meet the demands and performance indicators identified within the Sentinel Stroke National Audit Programme (SSNAP) as best practice for managing acute stroke. This best practice has been defined by the Royal College of Physicians (see [www.rcplondon.ac.uk/projects/sentinel-stroke-national-audit-programme](http://www.rcplondon.ac.uk/projects/sentinel-stroke-national-audit-programme))

Nationally, there is a view, which is supported by evidence from London that clinical outcomes improve when patients are treated in acute stroke services which admit more than 600 strokes per year. This has resulted in the reconfiguration of stroke services in a number of parts of the country. In support of this, 10CC have commissioned a review of Hyper-acute Stroke Unit (HASU) and Acute Stroke Unit (ASU) services. This will enable sustainability and achieved improved outcomes for the stroke patients across West Yorkshire.

The 10CC workstream to review the resilience of local HASU was brought forward after ANHSFT encountered staffing problems amongst its consultant workforce

## 2. The stroke Pathway and HASU/ASU Requirements

People with suspected acute stroke must be conveyed immediately to a hospital that can provide the following:

- a) Immediate specialist assessment
- b) Rapid scanning
- c) Thrombolysis if appropriate
- d) Direct admission to HASU
- e) 7 day stroke specialist consultant delivered ward rounds and 24/7 availability

For strokes caused by a blood clot, Alteplase can be used to try to disperse the clot. For most patients thrombolysis should be given within the first 4 hours after the onset of the stroke; however there are some cases where benefits from thrombolysis can be achieved up to 6 hours. There are some clinical exceptions to thrombolysis and only 15% of patients will be eligible for treatment.

The HASU will be geographically distinct from an acute stroke unit and brings experts and equipment under one roof to provide world-class treatment 24 hours a day, reducing death rates and long-term disability.

- Physiological Monitoring
- 4 hourly general Monitoring – NEWS
- Neurological Monitoring (GCS NIHSS) with protocols to manage abnormal results
- Continuous monitoring for unstable patients.

HASU will have access to a 24/7 stroke consultant and level 2 (see appendix 1 for definition) standards of nurse staffing. Stroke patients would normally spend an average of 48 hours on HASU before being discharged or transferred to ASU.

Up until April 2014 stroke patients had access to HASU on both hospital sites. In order to safely run a sustainable HASU and to give quality care to critically ill stroke patients the following are required:

- A viable and sustainable stroke consultant rota to deliver 24/7 care to critically ill stroke patients in the first 48 hours following a stroke. Stroke consultants have to be on-site to deliver this care and due to the nature of the critically ill stroke patient it is not widely accepted by stroke physicians that this care can be delivered off-site using telemedicine. Stroke Networks, British Association of Stroke Physicians (BASP) and Royal Colleges accept that a minimum number of stroke consultants for this rota to be sustainable is 6.
- A viable and sustainable consultant rota to deliver 24/7 thrombolysis to those stroke patients who are eligible for thrombolysis treatment. There are different models of delivery for 24/7 thrombolysis. Throughout some of West Yorkshire, in-hours thrombolysis decisions are made by each of the hospitals established stroke consultant, however, unlike the provision of 24/7 critical care to stroke patients in HASU, decisions as to whether to undertake thrombolysis with a patient or not can be made via telemedicine and out-of hours thrombolysis decisions are made by a network of stroke consultants via telemedicine.
- HASU beds that are distinct from other stroke beds and have continuous physiological monitoring
- Minimum workforce numbers for HASU and ASU as defined by the Healthy Ambitions Program and monitored via the Regional Stroke Assurance Framework

These are as follows:

<b>Role</b>	<b>Whole Time Equivalent</b>
Consultant	1 Lead Clinician per Unit
Nursing - HASU	3.5 WTE per bed
Nursing - Acute/Rehab	1.5 WTE per bed
Physiotherapy	1 WTE per 5 beds
Occupational Therapy	1 WTE per 5 beds
Speech & Language Therapy	1 WTE per 10 beds
Clinical Psychology	0.92 WTE per 10 beds
Dieticians	0.3 WTE per 10 beds
Dietician support worker	0.3 WTE per 10 beds

### 3. Current Service Provision and the Issues

BTHFT is currently accredited to provide a Level 2 Acute Stroke and Thrombolysis Service and commissioned by Bradford District CCG and Bradford City CCG to provide a service to the population of Bradford. BTHFT currently manages approximately 600-650 definite strokes and approximately 310 stroke mimics. The BTHFT Stroke Service currently comprises of:

<b>Ward 9 – Bradford Royal Infirmary</b>
3 HASU Beds
19 Ward Beds Combined Stroke (14 beds) and Neurology (5 beds)
Rapid Access TIA Clinic

<b>Ward F6 – St Luke’s Hospital, Bradford</b>
19 Ward Beds Combined Stroke (8 beds) and Neurology Rehabilitation (11 beds)

<b>Community Services</b>
Community Stroke Nurse Service
Community Stroke Information Service (Newly Commissioned)
Stroke Early Supported Discharge Team

The average length of stay is for stroke patients is 15.4 days

ANHSFT is currently accredited to provide a Level 2 Acute Stroke and Thrombolysis Service and commissioned by Airedale, Wharfedale and Craven CCG. The service currently admits approximately 350 confirmed strokes and 189 stroke mimics per annum. The ANHSFT Stroke Service currently comprises of:

<b>Ward 5 – Airedale General Hospital</b>
2 HASU Beds (stroke)
19 Ward Beds (Acute Stroke and Stroke Rehabilitation)
6 Ward Beds (Neuro-rehabilitation – non-stroke)
Rapid Access TIA Clinic

The average LOS for stroke patients is currently 12 days

#### Activity Data (2014/15 SSNAP)

<b>Bradford (2014/15 Data)</b>	<b>Airedale (2014/15 Data – YAS Excludes East Lancs work)</b>
951 calls suspected stroke	480 calls suspected stroke
631 confirmed strokes	320 confirmed strokes
73 thrombolysed	30 thrombolysed
68 (deceased)	25 (deceased)
320 stroke mimic (admission to AMU or discharged home)	160 stroke mimic (admission/discharged home) on average 50/50

#### Consultant Stroke Workforce Shortage and Clinical Outcomes

Evidence from Royal College of Physicians National Clinical Guidelines for Stroke (2012) indicate poorer clinical outcomes for those stroke patients who do not receive optimum care in the first 48 hours of onset of a stroke and some of the key recommendations are; immediate access to brain imaging; immediate assessment for thrombolysis; direct admission to a specialist stroke unit; immediate access to a stroke physician.

Since April 2014 Airedale NHS Foundation Trust (ANHSFT) have not been able to provide a 24/7 Stroke service or a viable Hyper Acute Stroke Unit (HASU) following the resignation of 2 of their 3 Stroke Consultants and long term sickness of the third member of the Consultant team. This has meant that some of the clinical outcomes that are important for stroke patients have deteriorated (SSNAP data accessed at: [www.rcplondon.ac.uk/projects/sentinel-stroke-national-audit-programme](http://www.rcplondon.ac.uk/projects/sentinel-stroke-national-audit-programme)). SSNAP data from Airedale during 2014 and early 2015 show significant poor performance compared to both National and West Yorkshire providers, in those indicators relating to the first 48 hours of stroke care, (see table 1). These are the standards directly relating to the services delivering the 24/7 critical care of stroke patients, namely 24/7 availability of a stroke consultant, access to rapid diagnostics, decisions on thrombolysis treatment and the care provided by HASU in the first 48 hours of stroke onset.

Significantly for Airedale, SSNAP indicators relating to acute stroke care and rehabilitation of stroke patients, traditionally compare favourably against other providers. This indicates that care provided to stroke patients after the first 48 hours of onset of a stroke is good. This care often does not directly depend on 24/7 access to a stroke consultant and is more an indicator of how well an acute stroke and rehabilitation unit functions, rather than how HASU functions.

Table 1 - SSNAP data (Oct-Dec 2014) 16 key indicators (HASU resilience review)

Standard	SSNAP target %	WY average %	ANHSFT %	BTHFT %
Proportion of patients scanned within 1 hour	50	30.2	18.3	46.0
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Proportion of patients who were assessed by a nurse trained in stroke management within 24h	N/A	82.3	62.7	87.3
Proportion of applicable patients who were given a swallow screen within 4h	N/A	63.4	51	68.0
Proportion of applicable patients who were given a formal swallow assessment within 72h	N/A	69.3	77	72.7
Compliance against the occupational therapy target	N/A	63.2	45.7	76.3
Compliance against the physiotherapy target	N/A	56.9	48.3	64.3
Compliance against the SALT target	N/A	23.4	27.3	68.7
Proportion of applicable patients receiving a joint H&SC plan on discharge	N/A	86.0	100	98.0
Proportion of patients treated by a stroke skilled early supported discharge ESD team	N/A	28.3	6	51.0
Proportion of applicable patients in AF on discharge who are discharged on ACs or with a plan to start AC	N/A	96.3	100	100

This table indicates that ANHSFT clinical outcomes fall short of expectations in the majority of indicators, but especially those indicators relating to the first 48 hours of stroke care.

Despite several recruitment attempts, Airedale has not been able to secure a stable stroke consultant workforce and since April 2014, Bradford Teaching Hospitals NHS Foundation Trust (BTHFT) has supported Airedale's Stroke service with the out of hours provision of thrombolysis where indicated and advice for some complex patients.

It is well recognised that there is a national shortage of trained stroke consultants. The British Association of Stroke Physicians, (BASP), calculate that there is a national shortfall of 163 stroke consultants posts across the whole of the UK, or a 46% shortfall in what is required to deliver stroke services. At the time of publication of this report, 40 Stroke Medicine trainees are registered for completion of specialist training by 2014; however it is important to note that this will not automatically convert to 40 whole-time-equivalent stroke physicians as most stroke physicians will share their time with another specialty. BASP strongly recommends that, as a continuation of the 2008 English Department of Health initiative, an extra 30 Stroke Medicine trainee places should be created per year in the UK for the next 4 years. This will address the current shortfall by providing an additional 120 Stroke Specialists. The distribution of these trainee posts should be determined on a population basis with sensitivity to the existing specialist resource. A forward view looking at the availability trainees and the number of graduates taking medicine suggests that this is unlikely to be delivered.

With the knowledge of the national shortage of stroke consultants in mind, it is unrealistic to plan for a service that requires both hospitals to have 6 Consultants, (the number required in order to sustain viable 24/7 consultant cover). It is clear from this that there is no viable short- medium term fixes to address this shortage and in turn no realistic prospect of doubling the current numbers of Stroke Consultants across Bradford and AWC.

The 10CC resilience model has also indicated that the majority of single site HASU's within West Yorkshire will find it difficult to sustain services beyond 5 years. Working models provided by 10CC indicate that over the next 5 years providers would require a material uplift in Consultant Stroke Physicians, Specialist Nursing and Therapy staff to deliver this model. Coupled with the workforce issues highlighted above this may not be affordable within the current tariff for Stroke services.

## **Interim arrangements**

Currently ANHSFT provide HASU and thrombolysis for patients presenting with stroke during Mon-Fri 8am-6pm. Outside of these hours and at weekends, confirmed stroke patients are transferred by emergency ambulance to BTHFT for thrombolysis (if appropriate). This arrangement is seen as temporary in nature and is not a sustainable solution because:

- It carries with it a high risk rating for quality and safety (see quality & safety impact below) which is being managed currently and is on the AHFT corporate risk register
- It does not improve clinical outcomes significantly
- It does not meet national HASU resilience model
- It does not meet the increase in stroke admissions
- It is not a sustainable model
- It does not have the approval of each of the provider Trust Boards
- It does not have the approval of the NHSE Medical Director
- It has been approved by the Strategic Stroke Network only as a temporary measure

## **4. Proposed future model - One-site HASU with collaborative working and 2 Acute Stroke Units**

This model will deliver the minimum for patients within Bradford and Airedale:

- 24/7 Hyperacute stroke and thrombolysis.
- 7 day acute stroke
- 7 day TIA service
- Monday-Friday therapy and rehabilitation provision

All patients from Airedale, Wharfedale and Craven presenting with a suspected stroke (ie FAST positive) will be conveyed directly to BTHFT where they will receive appropriate diagnostics, treatment and care within the Emergency Department. Patients with confirmed stroke will then be transferred directly to HASU on the main hospital site and remain there to receive a period of critical care. For the majority of patients this will be for the first 24-72 hours of their care.

ANHSFT would continue to provide an Acute Stroke Unit (ASU) and Rehabilitative Stroke Unit and patients would be repatriated to this unit from Bradford as soon as appropriate after their initial care in the HASU. The ANHSFT Stroke Service would be configured to continue to provide acute stroke care for patients whom no longer require daily review (post HASU) and stroke rehabilitation.

If HASU is not required an appropriate plan of care will be implemented by a medical consultant and repatriation to an appropriate service at ANHSFT will be organised and accepted at the earliest opportunity.

Working on HASU average length of stay of 48 hours, it is estimated that to accommodate the anticipated number of admissions to Bradford Stroke Service will require an additional 2 HASU beds and 1 ASU bed. This will require some minor building work on the current stroke unit.

**The timeline for the completion of this work can be found later in the paper.**

The Consultant workforce would be amalgamated to provide a 1:6 or 7 rota and provide 7 day ward rounds. This will provide the standard for meeting consultant delivered 24/7 HASU stroke care, thrombolysis, 7 day HASU and ASU ward rounds (the latter with the aid of telemedicine). It will also

provide the additional resilience required to deliver HASU. BASP and Regional Stroke Networks indicate that in order for HASU's to be resilient in their consultant cover, they require a minimum of 6 stroke consultants contributing to a 24/7 rota.

The stroke services across the 2 sites will become one integrated service, with one overall clinical lead, one set of local clinical governance arrangements and one integrated clinical pathway. Stroke patients that are repatriated to ANHSFT will be under a named on-site stroke consultant.

It is important to point out that in the proposed model, BTHFT will be admitting over 900 confirmed stroke case per year and the developments below to support the stroke pathway will be essential to ensuring a service of this size delivers the best possible clinical outcomes 24/7.

#### **a) Development of the Stroke Responder Team**

A nurse led Stroke Responder Team within the Emergency Department. A team of nurses with the specialist training in the early identify, treatment and care of strokes would improve the service provided within the Emergency Department and therefore improve experience, care and overall patient outcomes.

#### **b) Development of a 7 day Therapy service.**

Currently both sites have staff for a 5 day therapy service to their stroke units as described in the National Clinical Guidelines for Stroke (Fourth Edition). However this falls short of the 7 day service mandated by SSNAP and the Regional Stroke Assurance Framework and is recommended for those services with over 900 stroke admissions per annum.

#### **c) Neuro-Rehabilitation Services**

In support of this reconfiguration of the stroke services across Bradford and Airedale, there is an opportunity to change the configuration of Neuro-rehabilitation services, particularly for those patients with specialist rehabilitation needs such as patients with a brain injury and some specialist long term neurological patients.

Neurology is an associated service currently co-located with stroke on Ward 9, there may be options to look at the location of inpatient Neurology between Bradford and Airedale to enhance this service and make optimal use of inpatient capacity across the two Trusts.

Utilising capacity in ANHSFT and the specialist skills that are available there will not only increase HASU capacity at BTHFT but also provide an improved service for this group of patients with complex needs.

Ensure there is minimal impact on critical care beds at BTHFT by ensuring appropriate HASU (level 2) capacity is commissioned.

#### **d) Community Stroke Nursing and Information Service**

BTHFT has, for several years, had a Community Stroke Nursing Team in place which as a service provides advice, information and support post discharge to patients. The Trust has also recently been commissioned by Bradford CCG's in order to deliver a Community Stroke information service to the population of Bradford.



It is understood that there is currently no dedicated community nursing provision for stroke patients in the Airedale, Wharfedale and Craven CCG footprint and this needs to be resolved to ensure patients at this end of the patch have access to early supported discharge.

YAS will need to provide assurance of timely transfer of patients being repatriated and confirm costs

#### **Infrastructure (Bed) Requirements (BTHFT)**

The following additional beds will be required:

<b>Type of Bed</b>	<b>Number Required</b>
HASU	2
ASU	1

#### **Staffing Requirements (BTHFT)**

<b>Staff Group</b>	<b>Current</b>	<b>Proposed</b>	<b>Add WTE Required (Above Current)</b>
Nursing (HASU)	10.5	17.5	7.00
Nursing (Acute)	10.87	11.95	1.09
Nursing (Rehab)	18.99	18.99	-
Physiotherapy	3.20	3.54	0.34
Occupational Therapy	2.40	2.66	0.26
SALT			-
Dietician	0.40	0.44	0.04

In the event that BTHFT are not able to recruit sufficient skilled nurses in time, it is likely that ANHSFT will support the HASU and ASU across both sites until such time that sufficient nurse numbers can be recruited to.

## PEST Analysis

Political	Economical
<p><b>West Yorkshire HASU review</b> Supports the national model</p> <p><b>Measured Clinical outcomes (SSNAP)</b> Potential for improving data but collection may be difficult. However across the 2 sites SSNAP data will improve with improved clinical outcomes (see options appraisal below)</p> <p><b>Strategic Stroke Network</b></p> <p><b>Future workforce implications based on known pressures in the system</b> Integrated clinical model which will provide more resilience. Less impact on future medical and nursing across patch. Therapy future workforce planning still required</p> <p><b>Sustainability of model</b> Medium term sustainability (5-10 years).</p>	<p><b>Overall impact on local health economy</b> TBD</p> <p><b>Affordability</b> TBD</p> <p><b>Timescales for delivery</b> September-October 2016</p>
Social	Technological
<p><b>Patient experience</b> Medium impact. Patients will have their stroke care across 2 sites but patients will experience improved and more consistent care for hyper acute and thrombolysis.</p> <p><b>Demographic health changes</b> Resilient to increases in stroke admissions</p> <p><b>Access to services</b> Improved access to thrombolysis and hyper-acute stroke units and high risk TIA service</p>	<p><b>Potential for use of telemedicine and remote consultation</b> High – cross-site working for hyper-acute and acute decision making and use of TM</p> <p><b>Impact on YAS</b> High. This will have a bigger impact on YAS logistics</p>

## SWOT Analysis

Strengths	Weaknesses
<p>Improved resilience  Improved clinical outcomes (data from London and other models)  Improved SSNAP data  Meets expectations of HASU review and national models]  Can be delivered in 2016</p>	<p>Patient and carer groups may not see benefits  Care across 2 organisations may lead to inequality  Door to needle time may increase for those patients travelling from North Yorkshire to BTHFT. However, in London a larger service volume and improved access to key services offset the extra transport times.</p>
Opportunities	Threats
<p>Improved cross provider working and an integrated clinical model  Use of technology and TM  Benefits for staff to work collaboratively</p>	<p>Recruitment to increased nursing numbers on BTHFT site may be rate limiting (lack of nurses available)  YAS and logistics unknown  Stroke mimics will place pressure on HASU provider  Self-presenters to ANHSFT ED will need transferring indirectly.  Tariff share will require review</p>

## 5. Appraisal of proposal model and current interim arrangements against clinical outcomes

Scored against how likely it would improve clinical outcome across the patch for both Airedale and Bradford patients. Clinical outcomes are based on a basket of 16 SSNAP indicators as defined by the 10CC HASU resilience work.

0 = worse

1 = no improvement

2 = slight improvement

3 = significant improvement

Standard	Interim arrangement	Proposed model
Proportion of patients scanned within 1 hour	1	3
Proportion of patients scanned within 12 hours	1	3
Proportion of patients directly admitted to a stroke unit within 4 hours of attending ED	1	3
Proportion of all stroke patients given thrombolysis	1	3
Proportion of eligible patients given thrombolysis	1	3
Proportion of applicable patients directly admitted to a stroke unit within 4h AND who either receive thrombolysis	1	3
Proportion of patients assessed by a stroke specialist consultant physician within 24h	1	3
Proportion of patients who were assessed by a nurse trained in stroke management within 24h	1	2
Proportion of applicable patients who were given a swallow screen within 4h	1	3
Proportion of applicable patients who were given a formal swallow assessment within 72h	1	2
Compliance against the occupational therapy target	1	1
Compliance against the physiotherapy target	1	1
Compliance against the SALT target	1	1
Proportion of applicable patients receiving a joint H&SC plan on discharge	1	1
Proportion of patients treated by a stroke skilled ESD team	1	2
Proportion of applicable patients in AF on discharge who are discharged on ACs or with a plan to start AC	1	1
Total score	16	35

Comparison of proposed model and interim arrangements against key indicators

	<b>Interim arrangement</b>	<b>Proposed model</b>
Improves clinical outcomes (SSNAP see table above) (Score out of 10)	1	8
Will meet local support from patients and families (score out of 10)	8	6
Has Clinical and Trust Board agreement from both Trusts (score out of 5)	1	5
Provides solution for Sustainable services across both sites (score out of 10)	2	8
Meets agreed national and local HASU resilience model (score out of 10)	4	10
Impact on YAS and patient transfers (score out of 5; 1= high impact)	3	1
Impact on costs for both sites (score out of 5; 1 = high impact)	3	2
Ease of implementation (score out of 5)	5	4
<b>Total</b>	<b>27</b>	<b>44</b>

**Quality and Safety Impact Assessment**

Interim arrangement	Strengths	Weaknesses	Risk Rating:
Quality	<ol style="list-style-type: none"> <li>1. Fast access during working hours</li> <li>2. Local service for the population of Airedale during the Hyper Acute phase of stroke care</li> </ol>	<ol style="list-style-type: none"> <li>1. Not 24/7 service</li> <li>2. Patients will receive one of two care locations dependent upon the times they present</li> </ol>	Likely (4) Moderate (3) RR = 12
Safety	<ol style="list-style-type: none"> <li>1. Patients living locally to Airedale will benefit from faster 'time of onset to needle' times for those presenting OOH and at weekends</li> <li>2. HASU weekend ward rounds</li> </ol>	<ol style="list-style-type: none"> <li>1. Virtually impossible to run HASU ward rounds on both sites due to the numbers on the rota and the highly unlikely possibility of recruiting to the numbers required to safely function such a rota</li> <li>2. Low numbers of thrombolysis will decrease the efficiency of the system due to the infrequent throughput</li> <li>3. The critical 4 hour window for thrombolysis will be missed for some Airedale patients dependent upon the time they present</li> </ol>	Likely (4) Major (4) RR = 16

Proposed	Strengths	Weaknesses	Risk Rating:
Quality	<ol style="list-style-type: none"> <li>1. LoS for Hyper Acute patients will decrease</li> <li>2. Increase in skilled staff due to consistency and higher numbers of patients requiring thrombolysis</li> </ol>	<ol style="list-style-type: none"> <li>1. Increased distance for patients and families for those during the hyper acute phase</li> <li>2. Some staff at AGH will lose skills for managing hyper acute stroke patients, although there will be the option of working across the two hospital sites</li> </ol>	Possible (3) Moderate (3) RR = 9
Safety	<ol style="list-style-type: none"> <li>1. Increased thrombolysis rate</li> <li>2. Improved 'door to needle' times</li> <li>3. Improved resilience for the HASU service</li> <li>4. Improved access to diagnostics out of hours</li> </ol>	<ol style="list-style-type: none"> <li>1. Unlikely that in-patients at Airedale who have a stroke will get access to a skilled hyper acute service</li> <li>2. Time of onset to needle times will be increased for a proportion of Airedale patients dependent on their geographical location</li> </ol>	Unlikely (2) Major (4) RR = 8

## Appendix 1

### British Association of Stroke Physicians Service Development and Quality Committee, 2005

#### Stroke Service Specification

This specification describes the characteristics of a stroke service that would satisfy the basic minimum requirements of the National Service Framework for Older People (NSF; Stroke chapter) in England (Level 1), but also describes those characteristics considered to indicate a service level beyond that minimum specification and thus eligible for accreditation as a Stroke Centre (Level 2 or Level 3). In assessing the quality of any stroke service, this specification should be considered with the results from national audit (National Sentinel Audit of Stroke or Scottish Stroke Care Audit).

A **Level 1 Stroke Service** comprises the basic minimum level of provision in any acute Trust providing care to patients with stroke, and includes all of the following components:

<b>Acute Stroke Service</b>
Medical cover for in-patients 24 hours a day
CT available on site 24 hours a day, with >75% of stroke patients scanned within 48 hours of onset
MRI available during working hours
Stroke consultant physician opinion available on site
Carotid ultrasound available at same or other site
Local availability of routine investigations e.g. cardiac echo
Emergency access to neurosurgery and interventional neuroradiology
Access to vascular surgeons
<b>Stroke Unit</b>
Adequate staffing levels incl. Medicine <sup>1</sup>
Multidisciplinary team includes nursing, physiotherapy, occupational therapy, speech and language therapy and social work

Access to clinical psychology, dietetics, pharmacist
Specialist nursing expertise e.g. tissue viability, continence
Weekly multidisciplinary rehabilitation meetings
Provision for gastrostomy insertion within one week of referral if required
Sufficient sessional commitment from Stroke Physician <sup>2</sup>
All patients on the Stroke Unit under the care of a Stroke Physician
Stroke unit admission rate of at least 50% (for primary diagnosis of stroke) <sup>3</sup>
Structured training and supervision available for all disciplines of staff
<b>Neurovascular Clinic</b>
Stroke/Neurovascular Clinic (in which patients are assessed by a Consultant Physician with specialist interest in Stroke) with a waiting time of <4 weeks, all investigations complete within 8 weeks
Access to the full range of relevant out-patient investigations
CT brain scanning available for outpatients presenting within 14 days
MRI scanning available for outpatients presenting beyond 14 days
<b>Stroke Rehabilitation</b>
Multidisciplinary domiciliary rehabilitation or Day Hospital
Rehabilitation provision for stroke patients of working age within same or adjacent hospital/Trust <sup>4</sup>
<b>Managerial/Audit</b>
Existence of NSF Implementation Plan <sup>5</sup>
Participation in National Audit
Presence within the trust of a nominated Lead Clinician for Stroke
<b>Consultant Post</b>
Adequate sessional commitments devoted to stroke <sup>2</sup>



Sufficient medical junior staff support for the in- and outpatient workload

A **Level 2 Stroke Centre** provides all the components of a Level 1 Stroke Service, plus all the additional features in at least four out of the five following categories:

<b>Acute Stroke Service</b>
Carotid ultrasound available at same site
Access to specialised investigations e.g. TOE, cerebral angiography
<b>Stroke Unit</b>
Stroke unit admission rate of at least 70% (for primary diagnosis of stroke) <sup>3</sup>
At least 75% of stroke unit admissions arrive on the unit within 24 hours of admission to hospital
Protocols for the prevention and management of venous thrombosis, fever, hyperglycaemia, nutrition and feeding
<b>Neurovascular Clinic</b>
Weekly Stroke/Neurovascular Clinic (in which patients are assessed by a Consultant Physician with specialist interest in Stroke) with a waiting time of <2 weeks, all investigations complete within 4 weeks
Referral protocol for Neurovascular Clinic available to all local GPs
Guidelines for secondary vascular prevention widely available <sup>6</sup>
Referral protocol for carotid endarterectomy agreed with local vascular surgeons
<b>Stroke Rehabilitation</b>
Specialist stroke community rehabilitation <sup>7</sup>
Capacity for follow-up of all stroke patients
Capacity for follow-up of all patients treated with gastrostomy
Established liaison with voluntary sector organisations

<b>Managerial/Audit</b>
Evidence of change in response to National Audit findings
Evidence of local audit, and practice change in response to the findings

A **Level 3 Stroke Centre** meets the criteria for a Level 2 Stroke Centre, plus provides at least four of the following additional features:

<b>Stroke Unit</b>
Stroke unit admission rate of at least 90% (for primary diagnosis of stroke) <sup>3</sup>
Facility for direct referral and admission to Stroke Unit from home or Emergency Department
Thrombolysis protocol for ischaemic stroke presenting within 3 hours, with SITS-MOST participation
<b>Neurovascular Clinic</b>
Stroke/Neurovascular Clinic (in which patients are assessed by a Consultant Physician with specialist interest in Stroke) with a waiting time of <1 week, all investigations complete within 2 weeks
<b>Consultant Post</b>
Other specialist non-medical expertise available locally e.g. Stroke Specialist Nurse, Stroke Nurse Consultant
24-hour access to Consultant Stroke Physician advice
<b>Research/Audit</b>
Routine outcome measurement in all stroke in- and out-patients
Involvement in stroke-related research

## Notes

1. The minimum staffing levels on the Stroke Unit should be: 8.0 trained or untrained nurses/10 beds; 1.0 junior doctors/10 beds for an acute unit; 0.9 sessions of physiotherapy/bed; 0.7 sessions of occupational therapy/bed; 0.35 sessions of SALT/bed.
2. The minimum timetabled commitment to Stroke in the consultant job plan should be: 1.0 sessions/10 beds for the in-patient Stroke service, 1.5 sessions/week for the out-patient Neurovascular Clinic.
3. The most objective and reliable measure of the level of Stroke Unit provision comes from the expression of the total number of bed days spent by patients with a primary diagnosis of stroke on a Stroke Unit as a proportion of the total number of bed days spent in the hospital as a whole by patients with a primary diagnosis of stroke. This proportion should reach the thresholds of 50%, 70% and 90% corresponding with the successive levels of Stroke Service.
4. This would include at the least the capacity to refer to a Consultant in Neurological Rehabilitation and access to a local young disabled rehabilitation facility, unless the Consultant Stroke Physician had themselves received accredited training in the specialty.
5. In Scotland, involvement with a Stroke Managed Clinical Network.
6. The NSF in England also specifies the use in primary care of registers for the *primary* prevention of stroke in those at risk. Requirements for this standard are beyond the scope of this specification.
7. The definition of specialist stroke rehabilitation is not made clear in the Stroke section of the NSF in England, but at a minimum this should represent a multidisciplinary team for whom stroke patients make up at least one third of the caseload.