

A. Service Specification Annex

Service Specification Annex No:	Annex to: D04Sa Neurosciences Specialised Neurology Service Specification and D03Sa Neurosurgery (Adult)
Service	Neurointerventional Services for acute Ischaemic & Haemorrhagic Stroke
Commissioner Lead	<i>For local completion</i>
Provider Lead	<i>For local completion</i>
1. Scope	
1.1 Prescribed Specialised Service	
<p>This service specification covers the provision of interventional neuroradiology services and should be read as an annex to D04Sa Neurosciences Specialised Neurology Service Specification and D03Sa Neurosurgery (Adult).</p>	
1.2 Description	
<p>Neuroradiology is a subspecialty of Radiology which involves the investigation and treatment of patients with neurological diseases. Modern imaging requirements and the development of image guided interventions has resulted in a large increase in neuroradiology workload. It is important that this workload is managed safely within a service that is fit for purpose. Important integrated responsibilities include training and education, research and development and close working with colleagues in a wide variety of other specialties through multidisciplinary team (MDT) working.</p>	
2. The service	
<p>Imaging in the management of acute and chronic Neurological disease is reflected in increased demand for neuroimaging which is now required on a 24/7 basis.</p> <p>A combined interventional neuroradiology service must provide 6-7-day endovascular aneurysm treatment as well as stroke thrombectomy service. The requirements to do this include:</p> <ul style="list-style-type: none">• Immediate neurosurgical & neurocritical care support collocated on the same site as interventional neuroradiology• Robust arrangements must be in place to facilitate the discussion of all SAH aneurysm cases with a Consultant Neurovascular Neurosurgeon• A functioning neurovascular MDT for case review including M&M of SAH cases• Anaesthetic support such that 2 angiography suites can be staffed, if necessary, at the same time during daytime, (when it is much more likely to see two simultaneous patients requiring neurointervention.)	

24 hour access to the appropriate diagnostic modalities with staff cover to enable this service to be provided safely and robustly including:

Immediate/next available slot access to multislice CT (16 slice or greater)

- 24/7 access to a high field strength MRI scanner with Echo Planar Imaging and multichannel head coils.
- Additional equivalent CT and MR scanners should be available on site to support downtime and periods of increased demand.
- There should be appropriate access to high resolution biplane digital angiographic equipment with rotational 3D capability and appropriate software for image manipulation.
- On site access to an appropriate second angiographic facility to cover periods of down time is essential.
 - Preferably there should be 2 flat panel (or equivalent) angiographic systems routinely available on site to Neurointerventional services to allow for simultaneous coiling/thrombectomy procedures
- There should be appropriate IT infrastructure to include adequate access to home workstations for neurointerventionists and remote visualisation of imaging studies in support of a hub and spoke Neuroscience service models.
- Selection of patients for mechanical clot retrieval for treating acute ischaemic stroke should be done by clinicians experienced in the use of thrombolysis for stroke and in interpretation of relevant imaging.
- Selected patients must comply with the criteria for treatment within the policy. (insert link)
- The procedure should only be carried out by appropriately trained specialists with regular experience in intracranial endovascular interventions, with appropriate facilities and neuroscience support (*see 5.1 NICE IPG 548 Feb 2016 + published standards and training guidelines 5.2 White P et al and 5.3 Lenthall R et al Clin Radiol 2017*).
- Patients should be cared for on a ward with specialist expertise in the care of acute stroke (either a HASU ward or equivalent)
- Ensure that early secondary prevention interventions are commenced as appropriate and that advice on secondary prevention is included in handover documentation for patients transferring back to local services. (For patients who are discharged home or to community care the thrombectomy service must ensure that comprehensive secondary prevention assessment, investigation and treatment is arranged).

2.2 Care Pathways

Thrombectomy

Patients will be admitted to their nearest hyperacute stroke centre (HASU), undertake the initial investigations including CT or MR angiography, start treatment with intravenous thrombolysis if that is appropriate and then arrange critical transfer for thrombectomy for those who fulfil the criteria in the published policy. The patient would normally be transferred for local rehabilitation and inpatient care, if needed, within 24-72 hours.

SAH

Patients will be seen in their local emergency departments and either admitted for initial investigations to confirm the diagnosis and then urgently transferred to the neuroscience centre, or if the diagnosis is made in the emergency department transferred expeditiously to a neuroscience centre. Coiling or surgical clipping of an aneurysm should take place within 48 hours of the haemorrhage (or if delayed presentation within 48 hours of presentation) in good grade patients (see 5.4 *National Clinical Guideline for Stroke 5th edition, RCP London October 2016*). Where patients have residual neurological and/or cognitive deficits ongoing treatment will usually be undertaken in the local hospital, preferably on a stroke unit

All images need to be made immediately available to the neurointerventionist planning and delivering treatment.

Following acceptance for transfer it is the referring unit's responsibility to ensure a safe, rapid transfer, if necessary via ambulance or helicopter, as clinically indicated and according to the time critical nature of the treatment.

Please note that access to treatment will be guided by any applicable NHS England national clinical commissioning policies.

2.3 Interdependence with other Services

All interventional neuroradiology centres must be recognised by NHS England as one of their listed centres for interventional neuroradiology and specifically in accordance with the D04Sa Neurosciences Specialised Neurology Service Specification and D03Sa Neurosurgery (Adult) should have regard for the standards for providing safe acute ischaemic stroke thrombectomy services - 5.2 Multi-society Consensus Standards.

Most patients will be managed on the hyperacute stroke unit after intervention but a proportion will require (neuro)critical care admission.

2.4 Staff

All centres must have sufficient clinicians with appropriate competencies to be able to provide a 24/7 service (an extended hours 7 day service may be acceptable whilst working towards full 24/7 provision. Most eligible patients will present for treatment between 8 am and midnight

Any post for aneurysm interventional neuroradiology work should have at least two nominated procedural sessions per week. Neurointerventional operators should undertake a minimum of 40 cerebral endovascular interventions per annum, of which a reasonable proportion are thrombectomy (see 5.3 Training guidance).

Centres must have immediate access to:
Appropriately trained nurses

(Angio)Radiographers

- Staff training & competencies to be defined in local Trust SOPs/Service specifications

Anaesthetists & ODPs with neuroscience experience

Stroke pathway requirements (commissioned by CCGs)

HASU Centres will need access to CT angiography 24/7 (extended hours 7 days per week may be acceptable whilst working towards 24/7 access. (HASU will already have access to 24/7 CT)

Ambulance service agreement for critical patient transfers and

Acute and stroke rehabilitation services commissioned such that that they are available for patients to be transferred back for local care within 24 hours of request by the centre.

4. Outcomes and Applicable Quality Standards

Quality Statement – Aim of Service

This service specification has considered the current stroke pathway, the need to ensure that investigations and treatment such as thrombolysis are carried out immediately and without delay, that the clinical commissioning criteria for thrombectomy are applied though the availability of the required imaging and expert assessment and that any intervention itself is provided by specialists with the required training and experience within appropriate units. The specification also recognises the need for patients having thrombectomy to receive care on HASU wards or equivalent and to ensure that service are planned to ensure prompt transfer back to local inpatient or outpatient specialist rehabilitation services.

The objective is to ensure evidence based commissioning with the aim of improving outcomes for patients who experience a stroke and improve evidence based access to procedures as soon as possible after the onset of stroke symptoms.

- All centres must enter patients onto the Sentinel Stroke National Audit Programme (SSNAP) database, which is used to monitor and audit stroke treatment and outcomes
- SAH patients should also be entered into local or national databases used to monitor and audit SAH treatment and outcomes

5. Applicable Service Standards

Applicable National Standards

1. NICE- Mechanical clot retrieval for treating acute ischaemic stroke - Interventional procedures guidance [IPG548] Published date: February 2016
2. White P et al. Standards for providing safe acute ischaemic stroke thrombectomy services (September 2015). Clin Radiol

2016;10.1016/j.crad.2016.11.008

3. Lenthall R et al: BSNR training guidance for mechanical thrombectomy. Clin Radiol 2016; 10.1016/j.crad.2016.11.007
4. National Clinical Guideline for Stroke 5th edition. Royal College of Physicians of London October 2016

Draft for public consultation

Quality Indicators

Number	Indicator	Data Source	Outcome Framework Domain	CQC Key question
Clinical Outcomes				
101	% patients undergoing thrombectomy	SSNAP		
102	30 day mortality post mechanical thrombectomy	SSNAP	1,5	effective
103	Number of patients with post treatment symptomatic intracranial haemorrhage	SSNAP	1235	effective
105	Median disability score (mRS)at discharge	SSNAP	1,2,3,5	effective
106	Median disability score (mRS)at 6 months	SSNAP	2,3	effective
Patient Experience				
201	Patient receive written information	Self-declaration	4,	responsive , caring
202	There is a mechanism for patient feedback	Self-declaration	4	responsive , caring
Structure and Process				
301	There is specialist neurointervention team	Self-declaration	1,3,5,	effective, safe
302	All neurointerventionists meet the minimum required procedures	Self-declaration	1,3,5,	effective, safe
303	There is a 24/7 rota	Self-declaration	1,3,5,	effective, safe
304	There are angiographic facilities	Self-declaration	1,3,5,	effective, responsive
305	There is 24/7 access to diagnostics	Self-declaration	1,3,5,	effective, responsive
306	There are processes in place for rapid transfer and review of imaging	Self-declaration	1,3,5,	effective
307	There are clinical guidelines in place	Self-declaration	1,3,5,	effective safe
308	There are patient pathways in place	Self-declaration	1,3,5	effective, safe

Date published: *<insert publication date>*