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Arbenigol Cymru (PGIAC)
Welsh Health Specialised
Services Committee (WHSSC)

Specialised Services Service Specification: CP178 Adult Neurosurgery

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Statement

Welsh Health Specialised Services Committee (WHSSC) will commission Adult Neurosurgery Services for people resident in Wales and in accordance with the criteria outlined in this specification.

In creating this document, WHSSC has reviewed the requirements and standards of care that are expected to deliver this service.

Welsh Language

WHSSC is committed to treating the English and Welsh languages on the basis of equality, and endeavour to ensure commissioned services meet the requirements of the legislative framework for Welsh Language, including the [Welsh Language Act \(1993\)](#), the [Welsh Language \(Wales\) Measure 2011](#) and the [Welsh Language Standards \(No.7\) Regulations 2018](#).

Where a service is provided in a private facility or in a hospital outside of Wales, the provisions of the Welsh language standards do not directly apply but in recognition of its importance to the patient experience the referring health board should ensure that wherever possible patients have access to their preferred language.

In order to facilitate this WHSSC is committed to working closely with providers to ensure that in the absence of a Welsh speaker, written information will be offered and people have access to either a translator or 'Language-line' if requested. Where possible, links to local teams should be maintained during the period of care.

Decarbonisation

WHSSC is committed to taking assertive action to reducing the carbon footprint through mindful commissioning activities. Where possible and taking into account each individual patient's needs, services are provided closer to home, including via digital and virtual access, with a delivery chain for service provision and associated capital that reflects the WHSSC commitment.

Disclaimer

WHSSC assumes that healthcare professionals will use their clinical judgment, knowledge and expertise when deciding whether it is appropriate to apply this document.

This document may not be clinically appropriate for use in all situations and does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

WHSSC disclaims any responsibility for damages arising out of the use or non-use of this document.

1. Introduction

This document has been developed as the Service Specification for the planning and delivery of Adult Neurosurgery Services for people resident in Wales.

This service will only be commissioned by the Welsh Specialised Services Committee (WHSSC) and applies to residents of all seven Health Boards in Wales.

1.1 Background

Neurosurgery includes the diagnosis, assessment and surgical elective and non elective management of disorders of the nervous system¹. The specialty developed initially through the treatment of patients with cranial trauma and intracranial mass lesions. Subsequent advances in microsurgical techniques, non-invasive imaging, neuro anaesthesia, intensive care, image-guided surgery and the introduction of sophisticated radio-oncological and interventional treatments have substantially enhanced and widened the scope of effective neurosurgical treatment.

Specialist elective and non elective care is provided by neurosurgeons with special interest training working in multi-disciplinary teams with colleagues, in the following specialties:

- Neurosciences
- Neuro-oncology
- Endocrinology
- Surgical disciplines including orthopaedic surgery, maxillofacial, plastic and orthopaedic surgery.
- Major Trauma.

Adult neurosurgery is provided within specialist neurosciences centres and includes:

- All adult neurosurgery activity
- All adult neuroradiology interventional procedures.

1.2 Aims and Objectives

The aim of this service specification is to define the requirements and standard of care essential for delivering a Neurosurgery Service for adults.

¹ <https://www.rcseng.ac.uk/careers-in-surgery/trainees/foundation-and-core-trainees/surgical-specialties/neurosurgery/>

The objectives of this service specification are to:

- detail the specifications required to deliver adult neurosurgery services for people who are residents in Wales
- ensure minimum standards of care are set for the use of adult neurosurgery services
- ensure equitable access to adult neurosurgery services
- identify centres that are able to provide adult neurosurgery services for Welsh patients
- improve outcomes for people accessing adult neurosurgery services.

1.3 Relationship with other documents

This document should be read in conjunction with the following documents:

- **NHS Wales**
 - All Wales Policy: [Making Decisions in Individual Patient Funding requests](#) (IPFR).
- **WHSSC policies and service specifications**
 - [Deep Brain Stimulation Commissioning Policy \(CP28\)](#), August 2020.
 - [Vagal Nerve Stimulation Commissioning Policy \(CP23\), August 2014.](#)
 - [Specialised Neuropsychiatry Rehabilitation Commissioning Policy \(CP128\)](#), February 2018.
 - [Specialised Neurological Rehabilitation Commissioning Policy \(CP140\)](#), February 2018,
 - [Specialised Spinal Cord Injury Rehabilitation Commissioning Policy \(CP141\)](#), February 2018.
 - [Stereotactic Radiosurgery Commissioning Policy \(CP22\)](#), June 2020.
 - [Major Trauma Service Specification \(CP188\)](#), February 2021.
 - [Spinal Services Operational Delivery CP241](#), June 2022.
- **National Institute of Health and Care Excellence (NICE) guidance**
 - [Spinal cord stimulation for chronic pain of neuropathic or ischaemic origin \[TA159\]](#), October 2008.
 - [Carmustine implants and temozolomide for the treatment of newly diagnosed high-grade glioma \[TA121\]](#), June 2007.
 - [Percutaneous vertebroplasty and percutaneous balloon kyphoplasty for treating osteoporotic vertebral fractures \[TA279\]](#), April 2013.
 - [Head Injury: assessment and early management \(CG176\)](#) September 2019

- [Metastatic spinal cord compression in adults: risk assessment, diagnosis and management \(CG75\)](#) November 2008
- [Epilepsies in children, young people and adults \(NG217\)](#), April 2022
- [Percutaneous vertebroplasty \(IPG12\)](#), September 2003
- [Deep brain stimulation for Parkinson's disease \(IPG19\)](#), November 2003
- [Endoscopic transsphenoidal pituitary adenoma resection \(IPG32\)](#) December 2003
- [Subthalamotomy for Parkinson's disease \(IPG65\)](#), June 2004
- [Lumbar subcutaneous shunt, \(IPG68\)](#), June 2004
- [Selective peripheral denervation of cervical dystonia \(IPG80\)](#), August 2004
- [Supraorbital minicraniotomy for intracranial aneurysm \(IPG84\)](#), August 2004
- [Stereotactic radiosurgery for trigeminal neuralgia using the gamma knife \(IPG85\)](#), August 2004
- [Coil embolisation of unruptured intracranial aneurysms \(IPG105\)](#), January 2005
- [Coil embolisation of ruptured intracranial aneurysms \(IPG106\)](#), January 2005
- [Auditory brainstem implants \(IPG108\)](#), January 2005
- [Direct C1 lateral mass screw for cervical spine stabilisation \(IPG146\)](#), January 2005
- [Balloon kyphoplasty for vertebral compression fractures \(IPG166\)](#), April 2006
- [Deep brain stimulation for tremor and dystonia \(excluding Parkinson's disease\) \(IPG188\)](#), August 2006
- [Therapeutic percutaneous image-guide aspiration of spinal cysts \(IPG223\)](#), August 2007
- [Lumbar infusion test for the investigation of normal pressure hydrocephalus \(IPG263\)](#), June 2008
- [Functional electrical stimulation for drop foot of central neurological origin \(IPG278\)](#), January 2009
- [Ultrasound guided regional nerve block \(IPG285\)](#), January 2009
- [Photodynamic therapy for brain tumours \(IPG290\)](#), March 2009
- [Percutaneous electrothermal treatment of the intervertebral disc annulus for low back pain and sciatica \(IPG544\)](#) January 2016
- [Extracranial to intracranial bypass for intracranial atherosclerosis \(IPG596\)](#), November 2017
- [Percutaneous closure of patent foramen ovale for recurrent migraine \(IPG370\)](#), December 2010

- [Deep brain stimulation for intractable trigeminal autonomic cephalalgias \(IPG381\)](#), March 2011
- IPG416: Deep brain stimulation for refractory epilepsy
- [Deep brain stimulation for refractory epilepsy in adults \(IPG678\)](#), August 2020
- [Percutaneous venoplasty for chronic cerebrospinal venous insufficiency in multiple sclerosis \(IPG640\)](#), January 2019
- [Occipital nerve stimulation for intractable chronic migraine \(IPG452\)](#), April 2013
- [Peripheral nerve-field stimulation for chronic low back pain \(IPG451\)](#) March 2013.
- [Pipeline embolisation device for the treatment of complex intracranial aneurysms \(MTG10\)](#), January 2019
- [Guidance on the use of temozolomide for the treatment of recurrent malignant glioma \(brain cancer\) \(TA23\)](#), March 2016
- [Subarachnoid Haemorrhage casue by a ruptured aneurysm diagnosis and management \(NG228\) 23rd November 2022](#)
- [Rehabilitation after critical care illness in adults, Clinical guideline \(CG83\) published 25 March 2009](#)

- **Relevant NHS England policies**
 - [Specialised rehabilitation for patients with highly complex needs \(all ages\), D02/S/a \(2013\)](#).
 - [Complex Spinal Surgery \(all ages\), D14/S/a \(2013\)](#).
 - [Paediatric Neurosurgery Services, E09/S/a \(2013\)](#).
 - [Stereotactic Radiosurgery and Stereotactic Radiotherapy \(intracranial\) \(all ages\), D05/S/a](#).
 - [Neurointerventional Services for Acute Ischaemic & Haemorrhagic Stroke, 170034S, March 2018,](#)
 - [Adult Highly Specialised Pain Management Services, 170135S,](#)
 - [Complex Spinal Surgery Services \(all ages\) URN 1738 2021](#)
 - [Spinal Cord Injury Services \(Adults and Children\), 170119S, 2019](#)

- **Other published documents**
 - [Standards for Patients requiring Neurosurgical Care. The Society of British Neurological Surgeons](#)
 - National guidelines from professional bodies including:
 - The Society of British Neurological Surgeons (SBNS), [Vascular Guideline](#) May 2022 and [Cauda Equina Syndrome](#) December 2018, and
 - [Getting it Right First Time - National-Suspected-Cauda-Equina-Pathway February 2023](#)

2. Service Delivery

The Welsh Health Specialised Services Committee will commission the service of adult neurosurgery for people resident in Wales, in-line with the criteria identified in this specification.

2.1 Access Criteria

This service is for adults requiring neurosurgery, which includes:

- Neuro-oncology surgery
- Neurovascular surgery and Interventional neuro radiology
- Skull base surgery
- Neuromodulation and Functional neurosurgery including pain and epilepsy services
- Spinal surgery
- CSF disorders including Idiopathic Intracranial Hypertension (IIH), hydrocephalus and other disturbances of cerebro-spinal fluid flow
- Neuro-trauma.

Referrals are accepted from primary, secondary and tertiary care.

2.2 Service description

The neurosurgery service should ensure that all necessary resources are available to allow for the assessment, admission, investigation, treatment, on-going care and rehabilitation of neurosurgical patients to agreed national standards and within timescales appropriate to the patient's clinical need.

The Neurosurgery service should provide a full range of emergency services to meet the immediate needs of their catchment populations in line with published policies and where necessary, networked with other centres to ensure equitable access availability.

The Neurosurgery service should also provide a range of elective services to meet the immediate needs of their catchment populations. This can be delivered as part of a regionally networked agreement with other centres to ensure equitable access and availability.

Multi-professional teams should work together across disciplines and locations to achieve the optimal decision-making, treatment and clinical outcomes for patients.

Care should be provided in accordance with agreed national clinical guidelines.

Surgery and post-operative care should be undertaken in a dedicated neurosurgical environment with the appropriate technical support and equipment. Neuro high-dependency and intensive care beds should be available. Facilities for day-of-surgery admission and day-case surgery should be available.

Low-volume procedures should be managed in accordance with [Society of British Neurological Surgeons \(SBNS\) guidelines](#), concentrated within departments to the smallest number of surgeons possible to improve experience (often two).

2.2.1 Outpatient Clinics

The neurosurgery service provider should coordinate any associated in-patient, day care and outpatient services to ensure continuity of care.

Specialist Neurosurgery staff, equipment and care should be available irrespective of the care setting, for patients requiring Neurosurgery and admitted to hospital.

The neurosurgery service should deliver a comprehensive range of outpatient clinics to cover the range of services they provide, and should ensure:

- IT platforms for telephone based outpatients appointments and other technology to enable non face to face appointments are available.
- Outpatient consultation rooms are available to conduct face-to-face appointments.

Where possible one-stop outpatient clinics should be available to ensure that diagnostic and therapeutic interventions can be undertaken at the same time to optimise and deliver services in a timely manner.

2.2.2 Pre Assessment Clinics

The neurosurgery service should have a multi-disciplinary pre-operative clinic in place to optimise day of surgery admission rates².

2.2.3 Day Surgery Procedures

The neurosurgery service should provide a day care unit to treat minimally invasive procedures, such as, percutaneous treatments for trigeminal neuralgia.

² <https://www.gettingitrightfirsttime.co.uk/surgical-specialty/cranial-neurosurgery/>

People with Trigeminal Neuralgia who have failed all other treatments delivered locally may be treated by a specialist neurosurgical unit in NHS England³.

2.2.4 Neuro-Oncology Surgery Services

The neurosurgery service should provide neuro-oncology surgery services that can be delivered in accordance with [Improving outcomes for people with brain and other central nervous system \(CNS\) tumours, NICE Cancer Service Guidance \[CSG10\] June 2006](#). The neuro-oncology surgery services will be subject to peer review.

The neuro-oncology surgery service should be fully supported by the following staff:

- Neuro-oncologists
- Neuro-radiologists
- Neuro-pathologists
- Neuro-psychologists
- AHPs and clinical nurse specialists involved with the care of neuro-oncology patients as outlined in the [All Wales Cancer Network Peer Review](#).

The neuro-oncology surgery service should have a dedicated Neuro-oncology nursing team to support patients and their families when they have received a diagnosis of a brain or spinal tumour.

2.2.5 Neurovascular Surgery and Neuro Interventional Radiology Services

All Neurosurgical centres should have 24 hour access to a specialist neuroradiological opinion including access to interventional neuroradiologists (INR).

Services should comply with the service specification for Neurointerventional Services for Acute Ischaemic & Haemorrhagic Stroke⁴ and Subarachnoid haemorrhage. All neurosurgical centres providing a neurovascular service adopt the NHSE standards.

The Neurosurgical centre providing a neurovascular service should have a multi disciplinary team to allow rapid investigation and management of emergency cases. The Neuroradiology service should provide access to high quality, bi-planar digital subtraction angiography and back-up facilities in the event of equipment failure.

³ <https://whssc.nhs.wales/commissioning/whssc-policies/neurosciences/cp22-stereotactic-radiosurgery-for-adults-teenagers-and-young-adults-tya/>

⁴ <https://www.england.nhs.uk/wp-content/uploads/2018/03/d04-interventional-neuroradiology-specification.pdf>

Out of Hours service

The service will have appropriate arrangements in place to manage out of hours, time critical interventions such as subarachnoid haemorrhages.

2.2.6 Skull Base and Pituitary Surgery

Skull base surgery is complex and can affect eyes, ears, nose and sinuses and all of the connections between the brain and the rest of the body (brainstem).

For skull base and pituitary surgery, the neurosurgery service should have access to a Multi-disciplinary team (MDT) comprising the following core specialists:

- Oncologists
- Radiologists
- Specialist nurses
- Physiotherapists
- Neuro-psychology
- Endocrinologist
- Audiologists
- ENT
- Maxillo Facial surgery
- Plastic surgery
- Ophthalmic surgery.

Some skull base or pituitary tumours can be managed with fractionated radiotherapy or stereotactic radiosurgery (SRS) (refer to [WHSSC Commissioning Policy CP22 Stereotactic Surgery for adults, teenagers and young adults for further information](#)).

2.2.7 Neurophysiology Services

The neurosurgery service should have access to neurophysiology services, that includes:

- Cerebral function
- Cranial nerve and spinal cord monitoring
- 24-hour video electroencephalography (EEG)
- Nerve conduction
- Electromyography (EMG) studies.

The secondary care Health Board provider currently commissions these services.

2.2.8 Neuromodulation and Functional Neurosurgery including Pain Management

The neurosurgery service should ensure that the Neuromodulation, Functional Neurosurgery and Pain Management service is supported by a multi-disciplinary team (MDT), which includes a:

- Specialist Neurosurgeon
- Pain Consultant (anaesthetist)
- Physiotherapist for Physiotherapy rehabilitation
- Clinical Neuropsychologist
- Neurorehabilitation Consultant

The MDT should discuss all referrals and treatment options prior to proceeding to Spinal Cord Stimulator (SCS).

The Neuromodulation, Functional Neurosurgery and Pain Management service should ensure they have interdependencies with the following services:

- The Pain Team at the tertiary centre.
- Engagement with local DGHs.
- Orthotics service for equipment provision.

2.2.9 Epilepsy Surgery

The neurosurgery service should provide a full range of comprehensive invasive diagnostic procedures as well as therapeutic procedures for epilepsy surgery.

The neurosurgery service providing epilepsy surgery should have capacity to undertake the work up for surgery as outlined below:

- Stage 1a Clinical Evaluation
- Stage 1b Non-surgical Assessment
- Stage 2 Surgical Assessment
- Stage 3 Epilepsy Surgery

The service should provide a standard post-operative assessment as follows:

- 1 x MRI scan
- 1 x Visual Fields assessment
- 1 x neuropsychiatry assessment
- 3 x neuropsychology visits (3 months, 6 months, 12 months).
(The Neuropsychologist provides pre and post op input)

There is also a requirement for ongoing monitoring in neurosurgical, neurology and neuropsychology follow-up to be managed, as part of the existing follow up capacity.

The neurosurgery service should undertake other procedures for epilepsy, such as:

- [Vagal Nerve Stimulation \(CP23\)](#), WHSSC Commissioning Policy (2014)
- [Deep Brain Stimulation \(for people aged 16 and over\) \(CP28\)](#), Commissioning Policy (2020)

2.2.10 Specialised Spinal Surgery

The neurosurgery service providing specialist spinal service should have access to:

- Spinal monitoring
- C Arm intraoperative x-ray
- CT
- Screening facilities (regarded as clinically indicated to include intradural, extra medullary intradural, intra medullary surgery, as well as complex high cervical / skull base malformations).

An Operational Delivery Network (ODN) specification has been developed which describes the Complex Spinal Surgery services commissioned by WHSSC.

2.2.11 Idiopathic Intracranial Hypertension (IIH)

The neurosurgery service providing an Idiopathic Intracranial Hypertension (IIH) service should have specialist input from the following services:

- Neurology
- Ophthalmology
- Dietetic services
- Respiratory services
- Psychology.

Idiopathic Intracranial Hypertension (IIH) service should have access to the use of optical coherence tomography and telemetric intracranial pressure devices for monitoring.

2.3 Facilities and equipment

The neurosurgery service should ensure that there is appropriate access to the following facilities and equipment:

Minimum Requirements for a Neurosurgical Centre - (Safe Standards from SBNS - 2000⁵)

Work force	1 Whole time equivalent (wte) Neurosurgeon for a full 24 hours Consultant led service per 200,000 population
Neurosurgical Beds	30 Neurosurgical Level 1 and 2 beds per million population to ensure timely and equitable access to inpatient care to maintain a safe service
Neurosurgical Intensive Care Unit Beds	Four Level 3 Neurosurgical Intensive Care unit beds per million population (equivalent to ten staffed ICU beds)
Theatres	As a minimum Two fully resourced operating theatres and immediate access to an emergency NCEPOD theatre. (National Confidential Enquiry into Patient Outcome and Death (NCEPOD)) Units serving a population of more than 2 million to have a minimum of four theatres
Radiology	24 hour access to a specialist Neuro radiological opinion 24 hour CT, CT Angiography and CT Perfusion Elective functional MRI scanning , intraoperative CT and MRI image guidance
Neurophysiology	Comprehensive Neurophysiology service including spinal cord monitoring 24hr, EEG and Nerve conduction
Neurovascular Services	Neurovascular services must have an MDT including Neurosurgeons and Interventional Neuro Radiologists
Neuro-oncology Services	Service should be delivered in accordance with NICE and fully supported by Neuro-oncologists, Neuro-radiologists, Neuropathologists and Clinical Nurse Specialists

2.3.1 Staffing

The neurosurgery service should ensure there is access to a broad range of professionals, and staffed appropriately for the size of the population.

Medical Staff

The neurosurgery service should ensure that there is a consultant neurosurgeon available 24 hours a day for advice.

⁵ <https://www.sbns.org.uk/>

Neurosurgery units should have sufficient numbers of consultant staff to run on-call rotas (covering cranial and spinal surgery either together or separately) at no more frequent than 1:6 ([Standards for Patients requiring Neurosurgical Care, SBNS](#)). There should be sufficient numbers to allow provision of sub-specialised care according to national guidelines.

Nursing staff

The neurosurgery service should ensure that neurosurgical wards and critical care units are staffed with the appropriate number and skill mix to provide safe standards of care ([Safe Staffing Benchmark BANN 2018](#)).

2.3.2 Specialist teams

As well as the staff described in section 2.1.1, the neurosurgery service should ensure there is a multi-disciplinary team (MDT) that includes:

- Interventional neuro-radiologists
- Neuroradiologists
- Neurophysiologists
- Neurologists
- Neuro oncologists
- Neuropathologists
- Vascular neurosurgeons
- Consultant neuro-intensivists
- Intensive care unit (ICU) nurses with specific training and expertise in the care of critically-ill neurosurgical patients.
- Clinical nurse specialists
- Consultant Neuropsychologists
- Allied health professionals who are involved in the care of neuroscience patients
- Non-consultant-grade clinical staff.

2.3.3 Referral Pathway and communication

The neurosurgery service should ensure that an online or a web-based referral system is in place. This is to allow for a more efficient and safer management of new emergency referrals, and to provide a robust auditable record of advice and care and to allow monitoring of delays in admission.

2.3.4 Ongoing Care and Rehabilitation

The neurosurgery service should ensure timely access to a full range of inpatient, outpatient and specialist neuro rehabilitation services.

2.3.5 Repatriation

The neurosurgery service should ensure that there are robust mechanisms in place for the repatriation of patients to their local secondary and primary care setting.

Patients declared fit for transfer/discharge should be repatriated to their referring hospitals within 48 hours.⁶

2.3.6 Transitional Care Arrangements

The neurosurgery service should ensure that for people aged 16 and over and are transitioning from Paediatric services there is a transitional care programme in place that leads to a transfer of care to an appropriate adult Neurosurgeon and Neurosurgery MDT service under a shared care arrangement.

All transition arrangements should be in line with [Transition from children's to adults' services for young people using health or social care services NICE guidance NG43](#).

2.3.7 Information and Education

The neurosurgery service should ensure that there is a programme of continuing education for all staff within the neurosurgical unit. This is to achieve a full understanding of, and compliance with local protocols, patient care pathways and national guidelines, to ensure competence and to maintain a uniformly high standard of care.

2.3.8 Clinical Standards

Providers will work to the following clinical and quality standards.

- [NHS England Service Specification: Neurosurgery \(Adults\)](#)⁷
- NICE guidance (as listed in section 3.2)

2.4 Interdependencies with other services or providers

The neurosurgery service should have the following available support:

Co-located services (to be provided on the same site):

- neurology
- neuro-anaesthetics
- neuro-critical care and high dependency care
- neuropathology

⁶ <https://gov.wales/sites/default/files/publications/2019-07/nhs-wales-policy-for-the-repatriation-of-patients.pdf>

⁷ <https://www.england.nhs.uk/wp-content/uploads/2019/02/Neurosurgery-Service-Specification.pdf>

- neuroradiology
- neurophysiology
- neuropsychology

Interdependent Services (may be required but not necessarily co-located with neurosurgery):

- oncology
- pain management
- otolaryngology
- maxillofacial surgery
- endocrinology
- plastic surgery
- orthopaedic surgery
- neuropsychology
- neuropsychiatry
- general medicine and surgery
- cardiology and renal medicine
- ophthalmology
- vascular services

2.5 Exclusion Criteria

Children aged 0-15 years old are not covered by this service specification.

The following services for adults are excluded from this specification:

- Discharges or transfers with a diagnosis of minor head injuries not requiring neurosurgical intervention.
- Peripheral nerve surgery for radial nerve entrapment, tarsal tunnel syndrome or common peroneal nerve entrapment.

2.6 Acceptance Criteria

The service outlined in this specification is for patients ordinarily resident in Wales, or otherwise the commissioning responsibility of the NHS in Wales. This excludes patients who whilst resident in Wales, are registered with a GP practice in England, but includes patients resident in England who are registered with a GP Practice in Wales.

2.7 Patient Pathway (Annex i)

All consultant finished consultant episodes (FCE'S) attributed to consultants within Specialty Code 150 are considered specialised and form part of this service description with the exceptions listed in section 2.4.⁸

⁸ <https://www.england.nhs.uk/wp-content/uploads/2019/02/Neurosurgery-Service-Specification.pdf>

2.8 Service provider/Designated Centre

- University Hospital of Wales
Cardiff and Vale University Health Board
Heath Park
Cardiff
CF14 4XW
- The Walton Centre NHS Foundation Trust
Lower Lane
Fazakerley
Liverpool
L9 7LJ
- Queen Elizabeth Hospital Birmingham
Mindelsohn Way
Edgbaston
Birmingham
B15 2TH
- Royal Stoke University Hospital
University Hospitals of North Midlands
Newcastle Road
Stoke-on-Trent
ST4 6QG
- Betsi Cadwaladr University Health Board
Betsi Cadwaladr UHB has a service level agreement with University Hospital of North Midlands NHS Trust for major trauma. This agreement includes the provision of non-elective neurosurgery for complex isolated head injuries.

2.9 Exceptions

If the patient does not meet the criteria for treatment as outlined in this policy, an Individual Patient Funding Request (IPFR) can be submitted for consideration in line with the All Wales Policy: Making Decisions on Individual Patient Funding Requests. The request will then be considered by the All Wales IPFR Panel.

If the patient wishes to be referred to a provider outside of the agreed pathway, and IPFR should be submitted.

Further information on making IPFR requests can be found at: [Welsh Health Specialised Services Committee \(WHSSC\) | Individual Patient Funding Requests](#)

3. Quality and Patient Safety

The neurosurgery service will work to written quality standard and provide monitoring information to the lead commissioner. The quality management systems must be externally audited and accredited.

The neurosurgery service will enable the patients, carers and advocates informed participation and to be able to demonstrate this. Provision should be made for patients with communication difficulties.

The neurosurgery service should ensure there is a nominated lead for clinical governance, audit and quality improvement. The Society of British Neurological Surgeons (SBNS) produced a Care Quality Statement, which all Neurosurgical centres are expected to adhere to.⁹

The neurosurgery service should ensure that there are necessary administrative and informatics support available to take part in all local and national audits and quality improvement initiatives.

The performance of neurosurgery service including measures of effectiveness of care, compliance with guidelines and prevention of avoidable morbidity and mortality will be audited, benchmarked against national norms and the results used to promote service development and improvements.

The neurosurgery service is mandated to engage with the National Neurosurgical Audit Programme (NNAP) and any current SBNS nationally approved registries.

Currently these include:

- National Neurosurgery Audit Program
- Trauma Audit and Research Network (TARN)
- British Spine registry
- Vestibular schwannoma registry
- Stereotactic radiosurgery/radiotherapy dashboard
- Shunt registry
- Vascular Registry
- Neuromodulation Registry.

The Neurosurgery service will adopt relevant, nationally agreed guidelines for the acceptance of patients. Acceptance protocols based on clinical and radiological criteria may be agreed locally.

⁹ <https://www.sbns.org.uk/index.php/policies-and-publications/>

The protocols will be set out in a Directory of Services that will highlight the unit's specialised services and will include details of how to refer to a specific service.

3.1 Quality Indicators (Standards)

Locally defined outcomes

The '[Standards for Patients requiring Neurosurgical Care](#)'¹⁰ are a set of standards developed by the Society of British Neurosurgeons and the Regional Specialised Services Commissioning Group. These locally defined standards must be met by commissioned providers in the delivery of neurosurgery services. The document contains 68 general standards of care of which 11 are considered core:

Core Standards¹¹

1. Each patient's perceptions, expectations, and needs will be addressed to maximise the benefit from neurosurgical care.
2. Patients will be cared for in an appropriate environment and account taken of their special needs, which will vary according to their clinical condition.
3. The neurosurgical needs of the population will be met by adequately resourced Neurosurgical Units and Multi-disciplinary Neuroscience Centres.
4. A specialist multi-disciplinary team will be available to meet the needs of the population served.
5. Sufficient staff and facilities will exist for patients to gain admission and to remain in a neurosurgery unit for as long as clinically necessary.
6. Sufficient staff and facilities will exist for both emergency and routine theatre care.
7. The neuro-critical care service will be designed and developed around the needs of the patient as an individual.
8. Adequate neuro-critical care resources will be available to allow assessment, admission, investigation and treatment to agreed standards at times appropriate to the patient's need.
9. There will be an audit process assessing outcome, to include effectiveness of care, compliance with guidelines and avoidable distress, disability and death.
10. Sufficient staff and facilities will be available for post-acute neurosurgery episodes of care.
11. Patients will receive specialist neurosurgical follow-up for as long as necessary.

¹⁰ <https://www.sehd.scot.nhs.uk/nationalframework>

¹¹ www.england.nhs.uk/wp-content/uploads/2018/08/Neurosurgery-adult.pdf

3.2 National Standards

The following guidelines are applicable and will be met by the commissioned Providers of neurosurgery services:

- IOG: Brain/Central Nervous System (CNS) Brain tumours¹²

Providers of neurosurgery will contribute and comply with the following national audits and guidelines:

- NICE Improving Outcomes Guidance (IOG)¹³
- NCEPOD recommendations¹⁴
- NCEPOD Subarachnoid Haemorrhage Study¹⁵
- Subspecialty national audits^{16,17} e.g. Vestibular Schwannoma Audit
- Compliance with national access and time to treatment targets¹⁸
- PHE National Surgical site infections audit¹⁹ - (NHSE Providers only)

3.3 Other quality requirements

- Serious incidents are to be reported externally to Strategic Executive Information System (StEIS), Welsh Government or equivalent must be shared with WHSSC at the time of reporting.
- Compliance with safety notices²⁰ e.g. NRLS Rapid Response Reports.
- Annual information to be received from neuroscience centres regarding:
 - number of serious incidents reported externally
 - number of concerns received, response timescales, lessons learnt and action plans.
- The neurosurgery service should have a recognised system to demonstrate service quality and standards.
- The neurosurgery service should have detailed clinical protocols setting out nationally (and local where appropriate) recognised good practice for each treatment site.
- The quality system and the treatment protocols within the neurosurgery service will be subject to regular clinical and management audit.

¹² <https://www.nice.org.uk/guidance/csg10>

¹³ <https://www.nice.org.uk/guidance>

¹⁴ <https://www.ncepod.org.uk/recommendations>

¹⁵ <https://www.ncepod.org.uk/2013sah.html>

¹⁶ <https://www.nnap.org.uk/>

¹⁷ <https://www.sbns.org.uk/index.php/audit/>

¹⁸ www.england.nhs.uk/rtt

¹⁹ <https://www.gov.uk/guidance/surgical-site-infection-surveillance-service-ssiss>

²⁰ <https://report.nrls.nhs.uk/nrlsreporting/>

- The neurosurgery service is required to undertake regular patient surveys and develop and implement an action plan based on findings.

4. Performance monitoring and Information Requirement

4.1 Performance Monitoring

WHSSC will be responsible for commissioning services in line with this policy. This will include agreeing appropriate information and procedures to monitor the performance of organisations.

For the services defined in this policy, the following approach will be adopted:

- Service providers to evidence quality and performance controls.
- Service providers to evidence compliance with standards of care.

WHSSC will conduct performance and quality reviews on an annual basis

4.2 Key Performance Indicators

Commissioned providers will be expected to monitor against the full list of clinical quality and patient experience indicators described below in Tables 1, 2 and 3.

The neurosurgery service will be required to align services with the NHS Wales Quality and Safety Framework (Welsh Government 2021)²¹.

The neurosurgery service should also monitor the appropriateness of referrals into the service and provide regular feedback to referrers on inappropriate referrals, identifying any trends or potential educational needs.

In particular, the neurosurgery service will be expected to monitor against the following target outcomes, which are aligned with NHSE Outcomes Framework domains. These domains are identified below:

- Domain 1 Preventing people from dying prematurely
- Domain 2 Enhancing quality of life for people with long-term conditions
- Domain 3 Helping people to recover from episodes of ill health or following injury
- Domain 4 Ensuring people have a positive experience of care
- Domain 5 Treating and caring for people in safe environment and protecting them from avoidable harm

²¹ https://www.gov.wales/sites/default/files/publications/2021-09/quality-and-safety-framework-learning-and-improving_0.pdf

Table 1: Domain 1,2 and 3 - Clinical Outcomes

Indicator	Description	Reporting arrangements
101	Percentage of all transferred subarachnoid haemorrhage patients transferred to Neurosurgical Centre within 24 hours of initial admission.	Annually
102	Percentage of Aneurysmal SAH intervention within 48 hours of admission to the Neurosurgical Centre.	Annually
103	Percentage of Shunt procedures captured in UK Shunt registry.	Annually
104	Percentage of patients undergoing elective vestibular schwannoma resection recorded in the National vestibular schwannoma audit.	Annually
105	Percentage of neurosurgical consultants validating audit data for their elective mortality rates (consultant outcome publication).	Annually
106	Percentage of elective surgery patients treated on the day of admission (excluding day cases).	Annually
107	Neurosurgical shunt implant six month surgical site infection rate.	Bi-annually
108	Neurosurgical cranioplasty implant six month surgical site infection rate.	Bi-annually
109	Spinal cord stimulation implant six month surgical site infection.	Bi-annually
110	Neurosurgical deep brain stimulation implant surgical site infection (SSI) rate.	Annually
111	Thoraco-lumbar spinal instrumentation implant six month surgical site infection (SSI) rate.	Annually
112	% patients transferred to another centre due to lack of resources - staff and beds	Annually

Table 2: – Domain 4 - Patient Experience

Indicator	Description	Reporting Arrangements
201	Patients are provided with information	Self – declaration Annually
202	The service acts on feedback from patients, family or carers	Self declaration Annually
203	The service collects PROM and PREMS	Self-declaration Annually

Table 3: - Domain 1,2 and 5 - Structure and Process

Indicator	Description	Reporting Arrangements
001	There is a multi-disciplinary specialist team	Self declaration Annually
002	There is multi-disciplinary decision making prior to definitive treatment	Self declaration Annually
003	There are 24/7 rotas in place	Self declaration Annually
004	There is a competency based training programme	Self declaration Annually
005	There is a seven-day clinical standards policy	Self declaration Annually
006	There are specified day case beds for day case surgery	Self declaration Annually
007	There are clinical guidelines in place	Self declaration Annually
008	There are clear patient pathways in place	Self declaration Annually
009	Data Collection	Self declaration Annually

4.3 Date of Review

This document is scheduled for review before 2026, where we will check if any new evidence is available.

If an update is carried out the policy will remain extant until the revised policy is published.

5. Equality Impact and Assessment

The Equality Impact Assessment (EQIA) process has been developed to help promote fair and equal treatment in the delivery of health services. It aims to enable Welsh Health Specialised Services Committee to identify and eliminate detrimental treatment caused by the adverse impact of health service policies upon groups and individuals for reasons of race, gender re-assignment, disability, sex, sexual orientation, age, religion and belief, marriage and civil partnership, pregnancy and maternity and language (Welsh).

This policy has been subjected to an Equality Impact Assessment.

The Assessment demonstrates the policy is robust and there is no potential for discrimination or adverse impact. All opportunities to promote equality have been taken.

6. Putting Things Right

6.1 Raising a Concern

Whilst every effort has been made to ensure that decisions made under this policy are robust and appropriate for the patient group, it is acknowledged that there may be occasions when the patient or their representative are not happy with decisions made or the treatment provided.

The patient or their representative should be guided by the clinician, or the member of NHS staff with whom the concern is raised, to the appropriate arrangements for management of their concern.

If a patient or their representative is unhappy with the care provided during the treatment or the clinical decision to withdraw treatment provided under this policy, the patient and/or their representative should be guided to the LHB for [NHS Putting Things Right](#). For services provided outside NHS Wales the patient or their representative should be guided to the [NHS Trust Concerns Procedure](#), with a copy of the concern being sent to WHSSC.

6.2 Individual Patient Funding Request (IPFR)

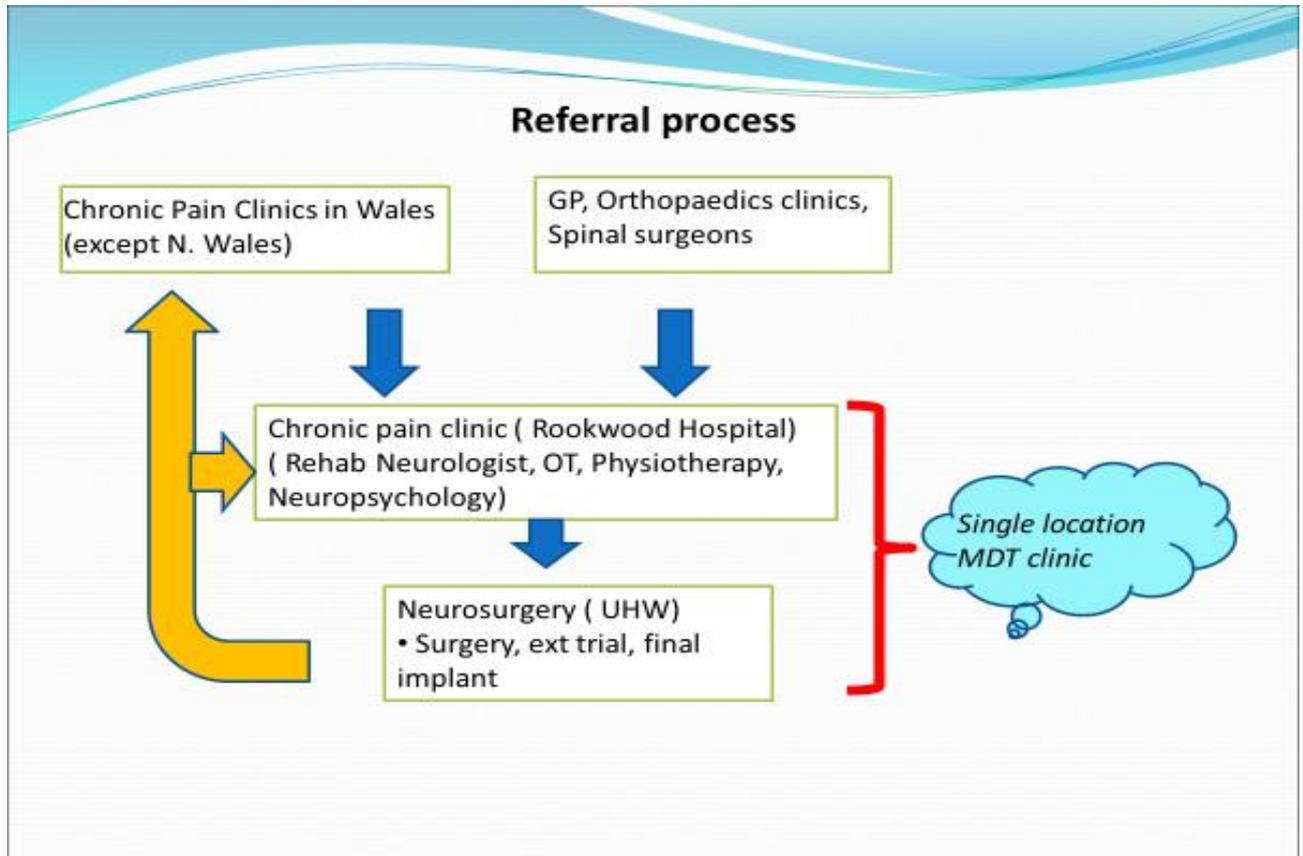
If the patient does not meet the criteria for treatment as outlined in this policy, an Individual Patient Funding Request (IPFR) can be submitted for consideration in line with the All Wales Policy: Making Decisions on Individual Patient Funding Requests. The request will then be considered by the All Wales IPFR Panel.

If an IPFR is declined by the Panel, a patient and/or their NHS clinician has the right to request information about how the decision was reached. If the patient and their NHS clinician feel the process has not been followed in accordance with this policy, arrangements can be made for an independent review of the process to be undertaken by the patient's Local Health Board. The ground for the review, which are detailed in the All Wales Policy: Making Decisions on Individual Patient Funding Requests (IPFR), must be clearly stated

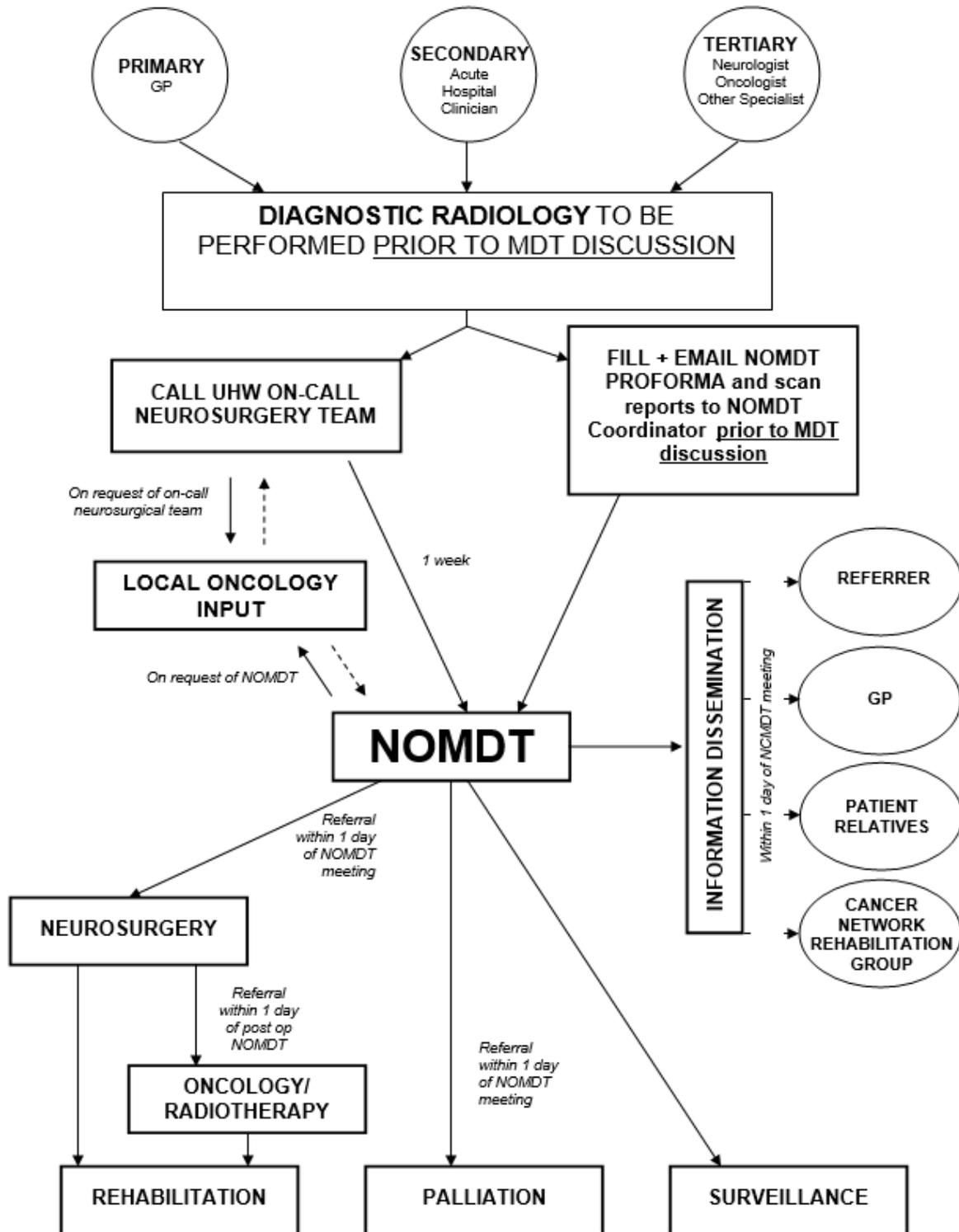
If the patient wishes to be referred to a provider outside of the agreed pathway, and IPFR should be submitted.

Further information on making IPFR requests can be found at: [Welsh Health Specialised Services Committee \(WHSSC\) | Individual Patient Funding Requests](#)

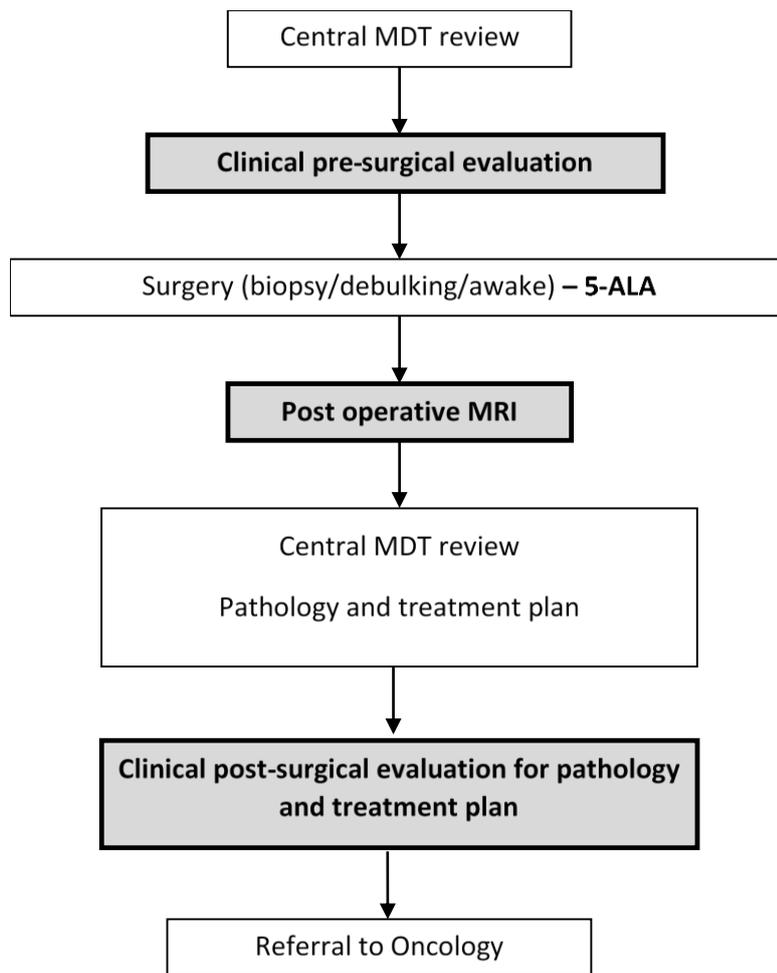
Annex i Patient Pathway Neuromodulation



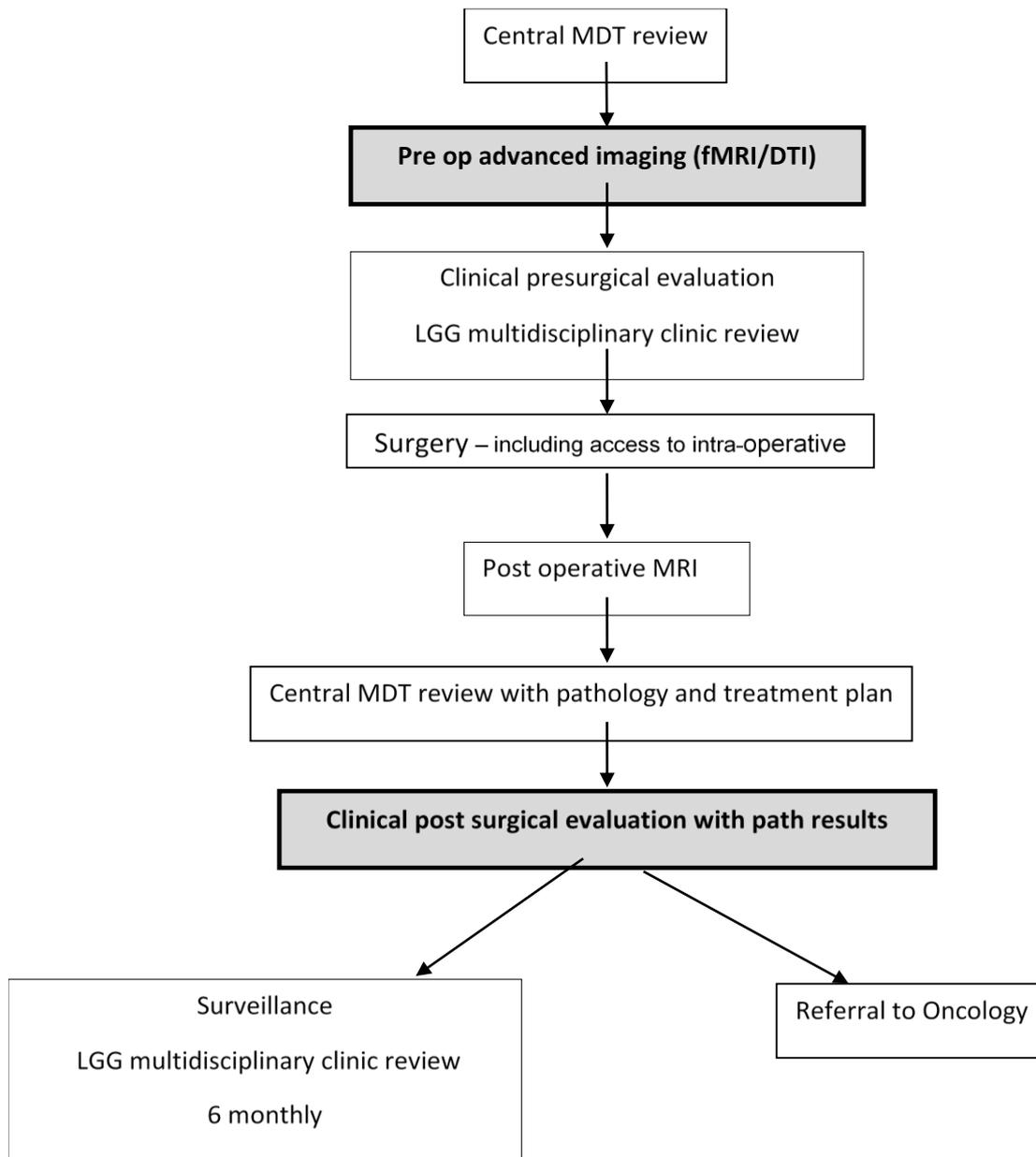
Neuro – oncology Pathway



High Grade Surgery Pathway (Neuro Oncology)



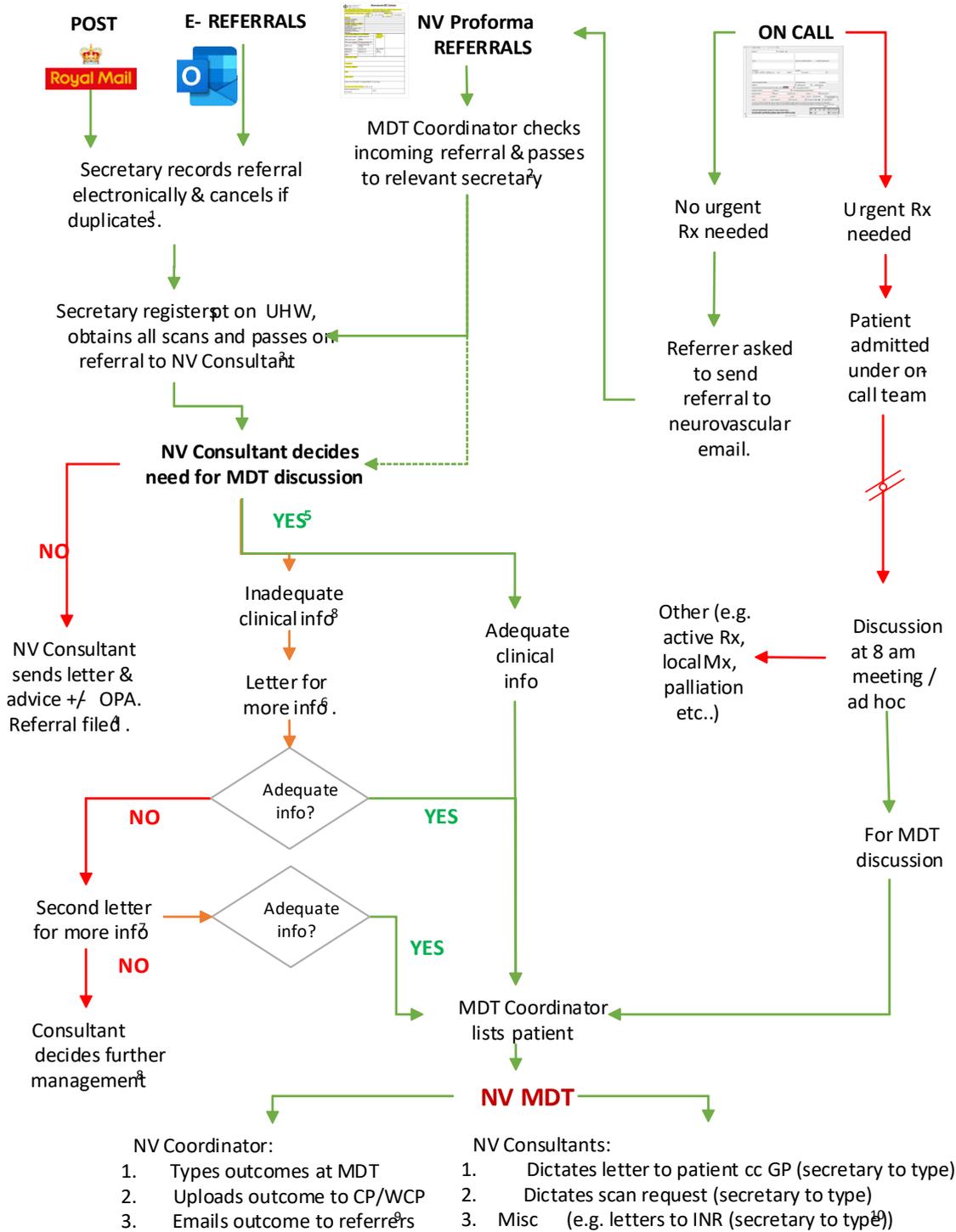
Low Grade Surgery Pathway (Neuro Oncology)



Neurovascular Services



WALES NEUROVASCULAR SERVICES STANDARD OPERATING PROCEDURE NO: [redacted] Neurovascular Referrals Pathway



Version 2.0 3rd September 2020

Annex ii Codes

HRG codes as appropriate to the main specialty code 150.

Code Category	Code	Description
General Neurosurgery		
OPCS	A01 - A10 A29 - A42 B01.4 B06	All Cranial operation (Includes all intrinsic lesions, intracranial pituitary and pineal, cranial nerve, meninges and sub/extra dural ops)
OPCS	V22 - V47 A44 - A51	All spinal operations
Neurovascular		
OPCS	A05	Primary intracerebral haematomas
OPCS	L75.1 L75.3 - L75.6	AVM Transluminal procedures for AVM
OPCS	L33	Intracranial aneurysm (open)
OPCS	L35	Transluminal procedures for aneurysms (interventional)
Functional Neurosurgery		
OPCS	A01	Epilepsy
OPCS	A09 A03	DBS Ablation
OPCS	A32	Neurovascular decompression
OPCS	A48.3 - A48.7	Insertion and maintenance of spinal cord stimulators
Neuro-Oncology		
OPCS	A02	Low grade intrinsic tumours
OPCS	A02	High-grade intrinsic tumours
Skull-Base		
OPCS	A38 A42	Meningiomas
OPCS	B01 B04	Pituitary and sellar tumours
OPCS	A29.5	Acoustic neuromas

Annex iii Abbreviations and Glossary

Abbreviations

AWMSG	All Wales Medicines Strategy Group
IPFR	Individual Patient Funding Request
SMC	Scottish Medicines Consortium
WHSSC	Welsh Health Specialised Services
AHP	Allied Health Professionals
BANN	British Association of Neuroscience Nurses
CNS	central nervous system
CT	computed tomography
EEG	electroencephalogram
EMG	electromyography (an electrodiagnostic medicine technique for evaluating and recording the electrical activity produced by skeletal muscles)
HDU	high dependency unit
ICU	intensive care unit
MDT	multi-disciplinary team
MRI	magnetic resonance imaging
MTG	medical technology group
NCEPOD	National Confidential Enquiry into Patient Outcome and Death
NRLS	National Reporting and Learning System
RTT	referral to treatment times
SBNS	Society of British Neurological Surgeons
StEIS	Strategic Executive Information System
TA	Technical advice
TARN	Trauma audit and research network

Glossary

Individual Patient Funding Request (IPFR)

An IPFR is a request to Welsh Health Specialised Services Committee (WHSSC) to fund an intervention, device or treatment for patients that fall outside the range of services and treatments routinely provided across Wales.

Welsh Health Specialised Services Committee (WHSSC)

WHSSC is a joint committee of the seven local health boards in Wales. The purpose of WHSSC is to ensure that the population of Wales has fair and equitable access to the full range of Specialised Services and Tertiary Services. WHSSC ensures that specialised services are commissioned from providers that have the appropriate experience and expertise. They ensure that these providers are able to provide a robust, high quality and sustainable services, which are safe for patients and are cost effective for NHS Wales.

StEIS

This is a system which enables electronic logging, tracking and reporting of Serious Incidents between Trusts and Commissioners.

NRLS

This is a central database of patient safety incident reports. All information submitted is analysed to identify hazards, risks and opportunities to continuously improve the safety of patient care.

Multi-Disciplinary Team (MDT)

A Multi-disciplinary Team is a mixture of team of named healthcare professionals (eg Doctors, nurses, Allied Health Professionals (AHP) etc) who are responsible for discussing and arranging facilitating communication and coordinating care for patients.