NHS West Yorkshire
Integrated Care Board

NHS WEST YORKSHIRE INTEGRATED CARE BOARD					
Policy	**Routine referral for Spinal Surgery Assessment**			**WY ICB Ref**	Clinical Policy Team
First Issue Date	March 2019	**Current version:**	5 November 2024	**Last reviewed:**	January 2024
Review date	January 2027 (or as NICE guidance changes)	**Contact**	West Yorkshire Integrated Care Board wyicb-wak.clinicalpolicy@nhs.net		
Clinical Reviewer	West Yorkshire Association of Acute Trusts (WYAAT) Clinicians	**Approved by**	West Yorkshire Integrated Care Board (WY ICB) Transformation Committee		

Policy exclusions

- **Red Flags**
- **GP referrals**
- **Non degenerative spinal conditions (e.g. scoliosis)**

Policy inclusion criteria

Referrals for spinal surgical assessment will only be accepted by providers of spinal surgical services if the following criteria are met:

- The referral includes an attached appropriate spinal MRI demonstrating a suitable surgical target.
- Spinal injection should be trialled first, followed by review of outcome, and shared decision making discussion in the event of failure (updated in response to GIRFT guidance issued in 2023).
- Confirmation that the patient has had a pre-referral face to face review by an appropriately skilled spinal clinician such as an Advanced Practice Physiotherapist/other appropriate MSK clinician, incorporating a shared decision making conversation that touches on the pros and cons of surgical intervention, and consideration of peri-operative risk
- Confirmation that following the shared decision making discussion, the patient would be willing to consider such a surgical option if they were offered it.

  ***Note** - The requirement for a face to face assessment and shared decision making discussion should **only** be waived where symptoms, signs and scan results are consistent with pathology where MSK services are unlikely to be able to provide alternative conservative management, and surgery is the only realistic treatment option. Examples could include, but are not limited to:*

○ *Cervical spine pathology associated with myelopathy* ○ *Pathology directly related to previous spinal fusion surgery* *(Whilst face-to-face assessment is not required in such circumstances, the patient should still have had a discussion with a an appropriately skilled spinal clinician such as an Advanced Practice Physiotherapist/other appropriate MSK clinician, so that the patient is clear about the purpose of referral and is able to provide appropriate consent).* *Red flag referrals continue to be accepted into the service without prior review*	
Summary of evidence / Rationale	This policy is in line with NICE guideline NG59 which covers assessing and managing low back pain and sciatica in people aged 16 and over. It outlines physical, psychological, pharmacological and surgical treatments to help people manage their low back pain and sciatica in their daily life. The guideline aims to improve people's quality of life by promoting the most effective forms of care for low back pain and sciatica. The policy is also compliant with the National Low Back and Radicular Pain pathway 2017 and revised GIRFT guidance issued in 2023 in managing low back pain https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/01/Lumbar-Nerve-Root-Block-Epidural-pathway.drawio-1.html Plus, the updated pathway on suspected Cauda Equina National-Suspected-Cauda-Equina-Pathway-UPDATED-V2-October-2023.pdf (gettingitrightfirsttime.co.uk) (MRI within 4 hours)
Reference	• Low back pain and sciatica in over 16s: assessment and management: NG59 • National Low Back and Radicular Pain pathway 2017 • https://gettingitrightfirsttime.co.uk/wp-content/uploads/2023/01/Lumbar-Nerve-Root-Block-Epidural-pathway.drawio-1.html • National-Suspected-Cauda-Equina-Pathway-UPDATED-V2-October-2023.pdf (gettingitrightfirsttime.co.uk)

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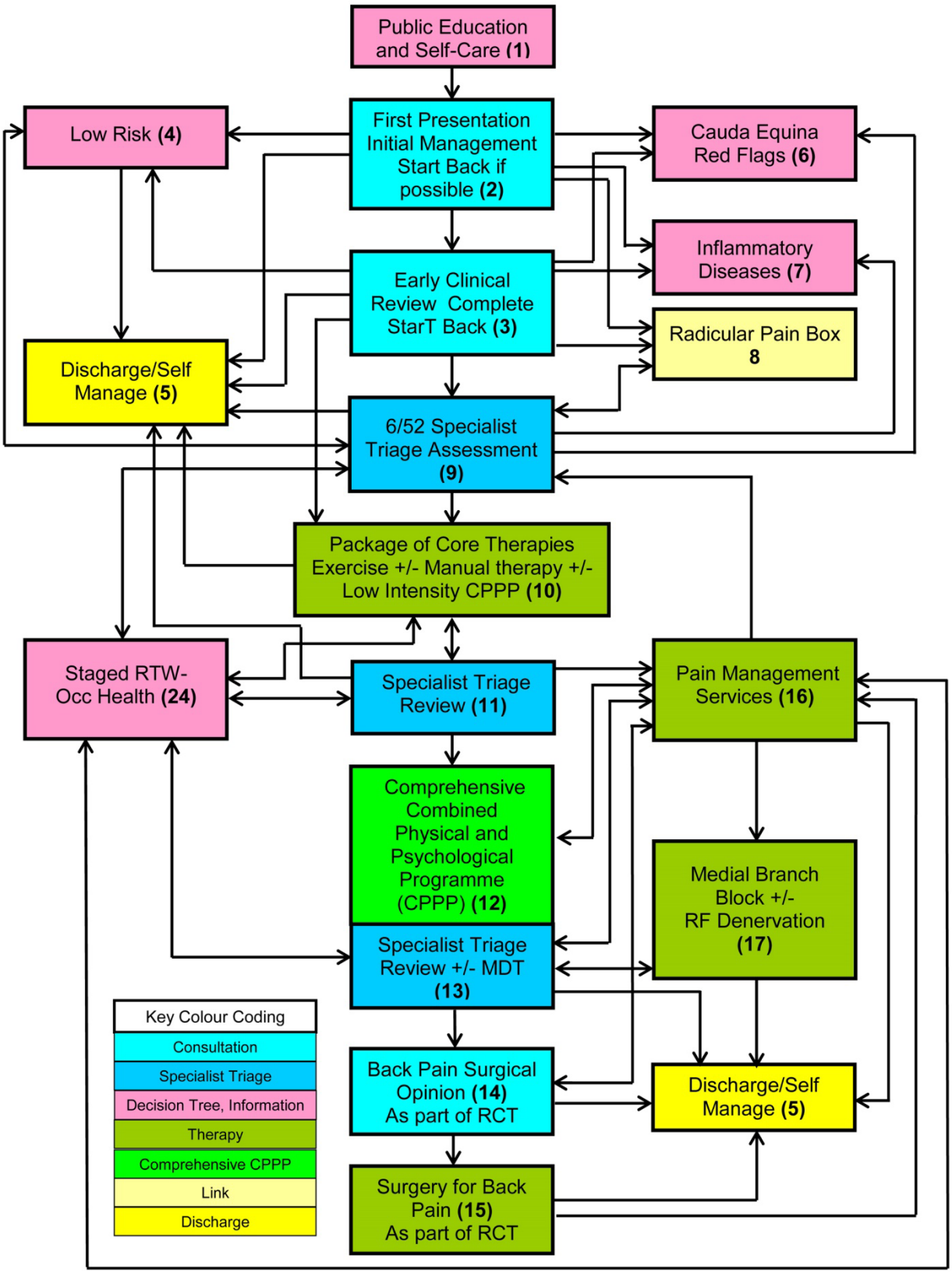
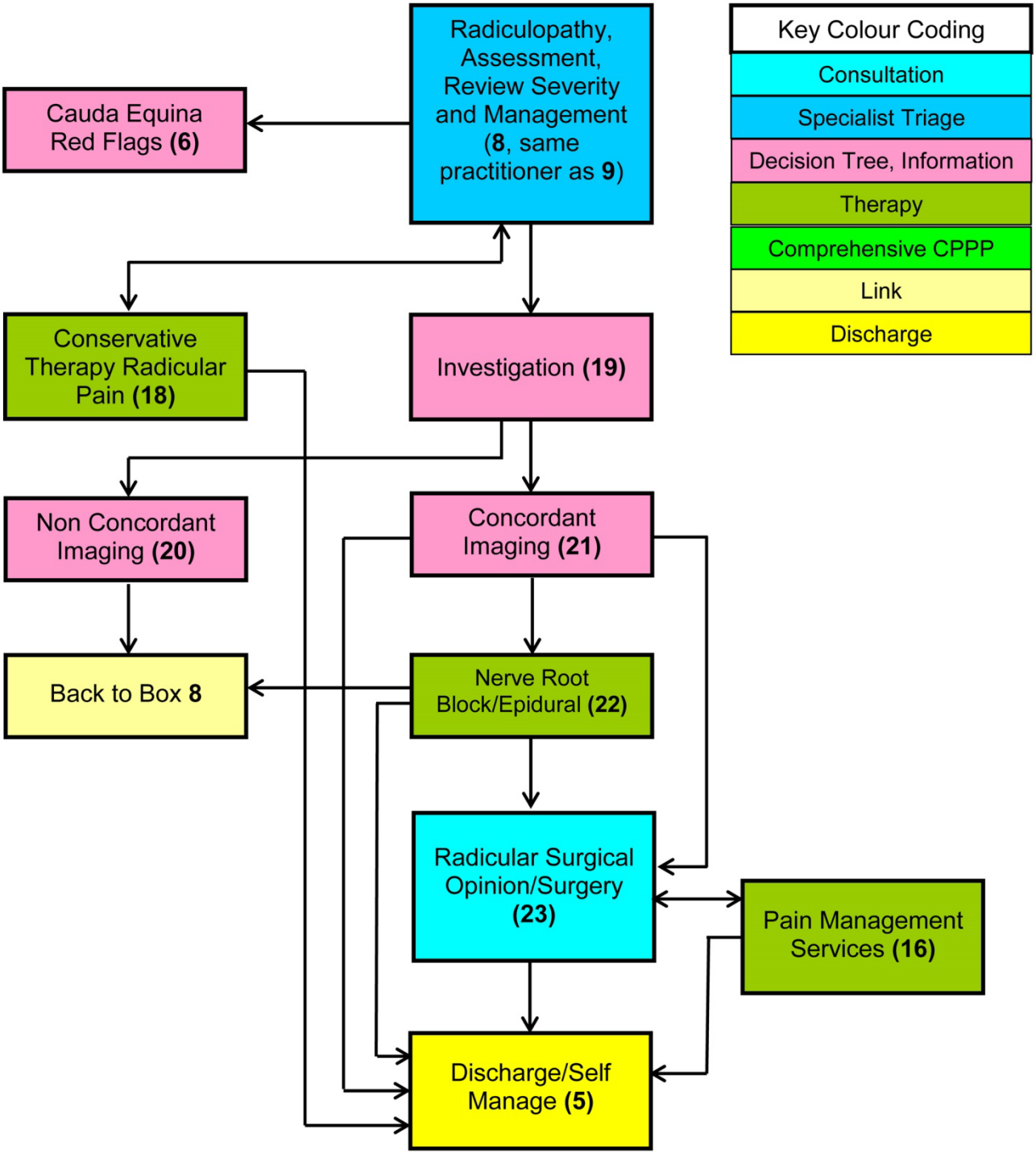
Appendix 1

Back pain pathway flowchart (from the National Low Back and Radicular Pain Pathway 2017)



Appendix 2

Radicular pain pathway flowchart (from the National Low Back and Radicular Pain Pathway 2017)



Appendix 3 – Red Flags

Spinal Pathway – Red Flag Signs / Cauda Equina and consequent investigations

1. Spinal Red Flags

Patient with moderate / severe back pain plus:

- Previous cancer, especially breast, lung, prostate, kidney, and thyroid:
    - investigations – MRI, Bloods FBC, ESR, Bone Profile, PSA etc.

- Systemic symptoms, weight loss, underlying malignancy:
    - investigations – MRI, Bloods FBC, ESR, Bone Profile, PSA etc.

- Patients who have lost height / use of long-term steroids Osteoporotic vertebral collapse, other vertebral collapse:
    - investigations – X-ray, consider MRI (+DEXA), consider Myeloma Screen

- Possible infection Discitis, Tuberculosis, IV Drug users:
    - investigations – consider MRI, Bloods FBC, ESR, CRP

- Widespread neurological signs, Myelopathy, Cauda Equina:
    - investigations – Urgent MRI

- Trauma – low velocity - fracture / osteoporotic collapse / other vertebral collapse:
    - investigations – X-ray, consider MRI

- Severe back pain under the age of 20 should raise suspicions especially if non sport or injury related. Underlying malignancy, investigate early:
    - investigations – FBC, ESR, Bone Profile, MRI

- Thoracic pain if severe – underlying malignancy, osteoporotic vertebral collapse:
    - look for pointers from the history, e.g. steroid use, night pain, severe spinal tenderness take a good history of previous medical problems
    - investigations – MRI, FBC, ESR, Bone Profile, PSA

2. Suspected Serious Pathology, including Cauda Equina

GP information

Cauda Equina is a rare condition but can cause very serious harm. Where Cauda Equina is suspected:

Refer Immediately to ED at Local DGH for same day MRI.

Where MRI confirms Cauda Equina immediately to On-call Neurosurgery @LGI

- Incidence ~ 1:50,000
- Severe back pain (but not always)
- Pain in one leg (unilateral) or both legs (bilateral) that starts in the buttocks and travels down the back of the thighs and legs (sciatica)
- Numbness in the groin or area of contact if sitting on a saddle (perineal or saddle paraesthesia)
- Lower extremity muscle weakness and loss of sensations
- Reduced or absent lower extremity reflexes
- Inability to urinate (urinary retention)
- Difficulty initiating urination (urinary hesitancy)
- Decreased sensation when urinating (decreased urethral sensation)
- Inability to stop or control urination (urinary incontinence) Inability to stop or feel a bowel movement (faecal incontinence)
- Constipation – note on its own this is not a red flag (remember analgesia codeine opiates)
- Loss of anal tone and sensation always do a PR

History + Examination Hints and Tips Low back pain +/- sciatica

Age:

- < 20 Severe malignancy / rheumatological
- < 20 Extension related + Sport Spondylolysis
- 20-55 More mechanical disc / soft tissue
- > 55 Spinal Stenosis, Facet Joint, Hip Joint Arthritis, disc

Causes:

- Any number lifting pulling bending -> More mechanical disc / soft tissue
- Sometimes no cause
- Postural / ergonomic / obesity / lack of activity
- If associated with > 45 min am stiff > 3 months < 40 yrs at first onset possibly rheumatologic

Duration:

- How long have you had the problem? Days, Months, Years
- Is this first time?
- Several episodes of pain before -> Disc / Mechanical

Pain location:

- Below gluteal fold Nerve root compression / lower limb problem
- Buttock + Groin referred to the knee = possible hip joint
- Above the L5 spinous process Not SIJ

Pain:

- Improving / staying same? -> Wait before investigate
- Worsening? Investigate early

What makes pain better or worse?

- Worse sitting -> Disc
- Worse Standing -> Disc / Spinal Stenosis
- Worse Walking -> Disc prolapse / spinal stenosis / Hip joint
- Easier sitting -> Spinal Stenosis
- Easier walking -> Mechanical >>> Rheumatological

How far can you walk?

- Has walking distance deteriorated quickly -> Severe Stenosis / Large Disc -> Investigate early

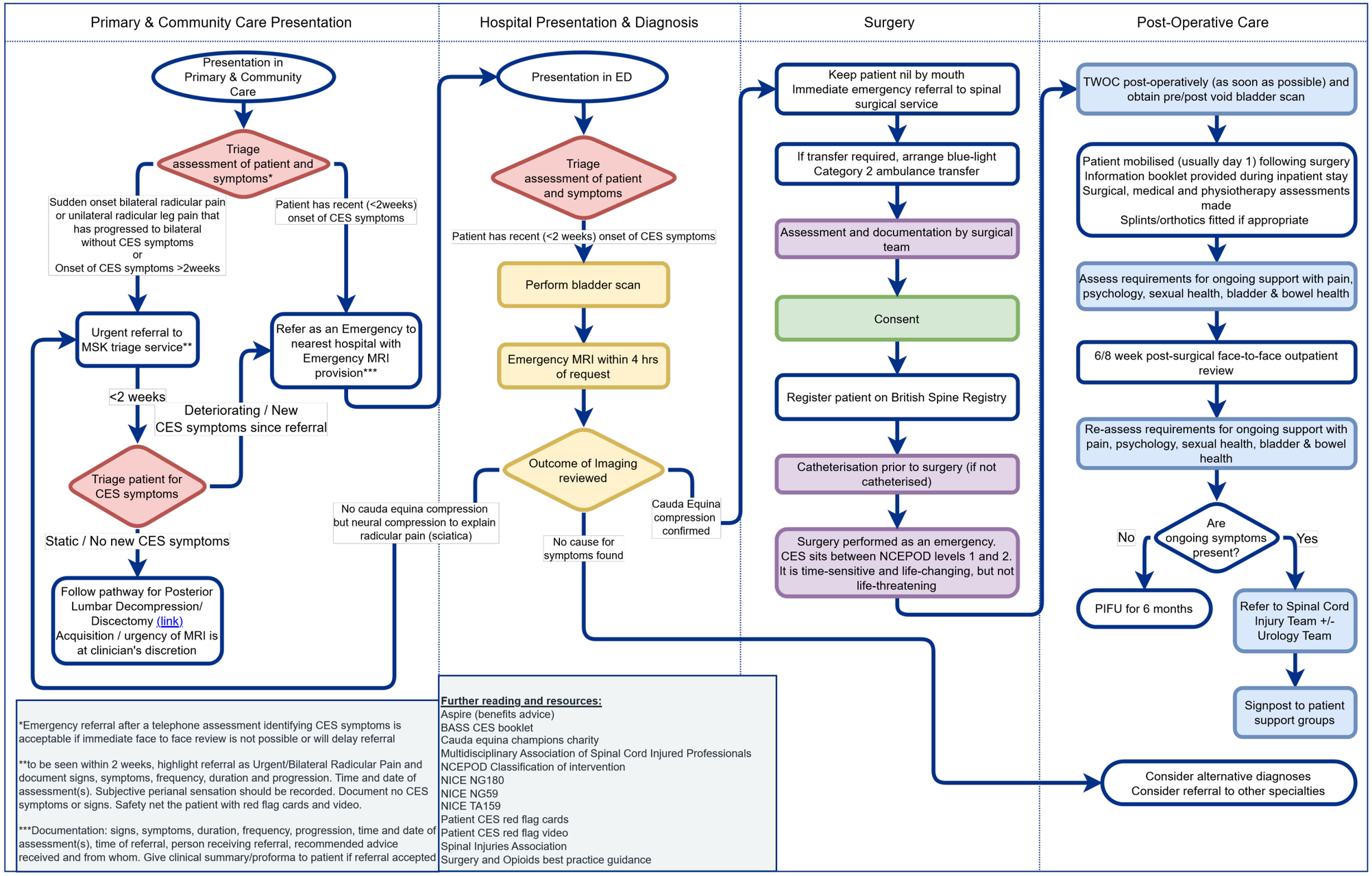
Neurological symptoms:

- Mild Sciatica to knee: Wait before Investigating
- Moderate Pain Dermatomal
- Severe dermatomal pain: Investigate early
- Very Severe Sciatica and bowel / urinary sx: Investigate / Refer Immediately

Appendix 4

Suspected Cauda Equina Syndrome Pathway

Spinal Services



*Emergency referral after a telephone assessment identifying CES symptoms is acceptable if immediate face to face review is not possible or will delay referral

**to be seen within 2 weeks, highlight referral as Urgent/Bilateral Radicular Pain and document signs, symptoms, frequency, duration and progression. Time and date of assessment(s). Subjective perianal sensation should be recorded. Document no CES symptoms or signs. Safety net the patient with red flag cards and video.

***Documentation: signs, symptoms, duration, frequency, progression, time and date of assessment(s), time of referral, person receiving referral, recommended advice received and from whom. Give clinical summary/proforma to patient if referral accepted

Further reading and resources:

Aspire (benefits advice)
BASS CES booklet
Cauda equina champions charity
Multidisciplinary Association of Spinal Cord Injured Professionals
NCEPOD Classification of intervention
NICE NG180
NICE NG59
NICE TA159
Patient CES red flag cards
Patient CES red flag video
Spinal Injuries Association
Surgery and Opioids best practice guidance

Suspected Cauda Equina Syndrome Pathway

Spinal Services

Triage

CES does not have a set clinical pattern, no single red flag or combination of flags has good diagnostic accuracy.
Negative physical tests do not rule out CES if positive subjective symptoms are present.

If patient presents back or leg pain and recent onset **(within 2 weeks)** of **ANY** of the following, further information should be gained:

New (within 2 weeks) difficulty initiating micturition or impaired sensation of urinary flow

New (within 2 weeks) altered perianal, perineal or genital sensation S2-S5 dermatomes - area may be small or as big as a horses' saddle (subjectively reports or objectively tested)

Severe or progressive neurological deficit of both legs, such as major motor weakness with knee extension, ankle eversion, or foot dorsiflexion

New (within 2 weeks) loss of sensation of rectal fullness

New (within 2 weeks) sexual dysfunction (achievement of erection or ability to ejaculate, loss of vaginal sensation)

Note - Low back pain with sexual dysfunction as the only other feature is unlikely to be due to CES

Warning Signs

Sudden onset Bilateral Radicular Leg Pain or unilateral radicular leg pain that has progressed to bilateral leg pain (sciatica) may be a warning symptom that CES may occur.

Sudden Onset Bilateral Radicular Leg Pain (sciatica) or unilateral radicular leg pain that has progressed to bilateral WITHOUT CES symptoms requires urgent referral (2 week wait) to MSK triage service . Please highlight referral as Urgent/Bilateral Radicular Pain and document no CES symptoms/signs. Safety net the patient with access to the video and card.

Please send clear details of assessment of patient and examination findings. Please document symptoms and a physical examination of power and sensation in the lower limbs. A digital rectal examination is not necessary but subjective perianal sensation should be recorded.

Safety Netting - video and card

Consent

Consider the following consent process:

1. British Association of Spinal Surgeons (BASS) Three-legged Stool Model for Consent
2. Royal College of Surgeon's Consent: Supported Decision-Making checklist
3. Learning from Litigation Claims

Three-Legged Stool Model for Consent

1. Information Booklets written and illustrated at a level a reasonable patient can comprehend, with a reading age of usually no more than 10 years. In addition, GIRFT recommends where possible some evidence that the patient has read and understood the information be collected by the surgeon.
2. Patient-centred dialogue including the risks of the proposed treatment, about which a reasonable patient in this patient's position, would need and want to know. This dialogue must be documented and recorded in the hospital records and ideally a copy in letter form sent to the patient and General Practitioner. GIRFT would recommend that the dialogue should also include the full list of information which should be provided by the surgeon which incorporates the recommendations of the Royal College of Surgeons.
3. Procedure specific and surgeon-guided consent form, along with the NHS or individual hospital form and to gain consent for use of surgical outcome data where appropriate. This should enable the patient to be aware of factors related to a specific procedure or specific surgical technique for a procedure.

Bass info booklet

Consent form

Diagnostics

Bladder Scan

A bladder scan is a useful adjunct in the assessment of a patient with suspected CES. Bladder scans should NOT be used in isolation or as a discriminator in deciding to request an MRI or undertake emergency surgery. 60% of patients that underwent emergency decompressive surgery for CES had a PVR of <200ml (Woodfield et al, 2023).

If a patient is **unable** to void then undertake a bladder scan and if > 600ml, catheterise the patient and document if sensate and perform a catheter tug.

If a patient is **able** to void, carefully document the following:-

Pre void volume

Post Void Residual volume (PVR)

If PVR >200ml in a patient with suspected CES then CES is 20 times more likely.

If PVR>600ml catheterise and document if sensate and catheter tug. This avoids damage to the bladder (blown bladder)

Imaging

MRI Imaging is a critical diagnostic investigation in the management of patients with suspected CES, an emergency MRI for suspected CES should be undertaken within 4 hours of referral at the hospital where the patient presented. The following should be noted:

- standard sequences should be acquired;
- discussion with the on-call spinal surgical service is not required prior to the MRI and may lead to unwarranted delay;
- keep the patient to clear fluids only if requesting an emergency scan in case emergency surgery is required;
- an emergency MRI scan must take precedent over any routine or elective MRI cases;
- request for an MRI should be discussed in ED with a senior decision maker (SD4 or above/Consultant) before referral;
- if there is an absolute contradiction to MRI scanning, a CT scan or CT Myelogram may provide satisfactory imaging;
- if an Emergency MRI scan is to be undertaken between **12:00am and 07:00am**, the regional on-call spinal surgical team should be contacted to confirm the scan should still go ahead. If MRI is delayed between these hours, the first slot on the scanner should be utilised;
- on-Call Surgical Teams are happy to review out-of-hours MRI scans before a radiologist report;
- Webpacs Links should be available to the surgical team to access imaging at different geographical sites within their network (Image Exchange Portals can cause delay).

Woodfield et al (2023) 'Presentation, management, and outcomes of cauda equina syndrome up to one year after surgery, using clinician and participant reporting: a multi-centre prospective cohort study', *The Lancet*, 24 (100545). DOI: https://doi.org/10.1016/j.lanepe.2022.100545

MRI safety checks, protocols, reporting and provision

Suspected Cauda Equina Syndrome Pathway

Spinal Services

MRI safety checks, protocols, reporting and provision

MRI Safety Checks

Patient should arrive in the MRI department with all necessary information to allow a final MR safety check to take place

The MRI department should be informed about all previous surgeries, implants and metallic foreign bodies that the patient has at the earliest opportunity so that the safety of these can be established:

MHRA Implant safety guidance

MRI department should have a procedure in place to establish patient safety when the patient is unable to complete their own safety questionnaire

Where a patient has a contraindication to MRI (e.g., an MR unsafe implant) the hospital should have a local policy for managing these patients without an MRI scan. CT might be a contingency imaging strategy

A local policy should also be in place to cover scanning of pregnant patients. Further guidance on scanning pregnant patients is available in the MHRA guidelines.

MRI Protocol

A sagittal T2 weighted sequence is the single MRI sequence needed to screen for and demonstrate cauda equina compression. The 24/7 Cauda Equina Syndrome MRI screening protocol should prioritise this sequence. This is typically a 2D turbo spin echo sequence. There is indication in the literature that a limited emergency MRI protocol is effective for safely excluding compressive CES. Further imaging within the scan session should not be required for screening purposes.

If CE compression identified:
acquire additional images, axial T2 weighted and sagittal T1 weighted sequences
If no CE compression identified: perform a single T2 sagittal sequence covering the cervical and thoracic spine

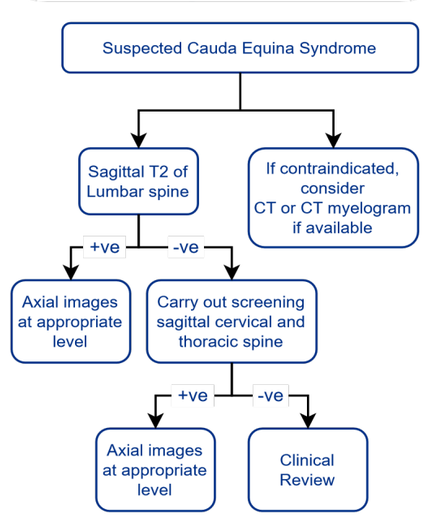
MRI units should have:
Shorter sequences CES MRI protocol for patients unable to lie still for a standard scan
Low Specific Absorption Rate (SAR) protocol set up to reduce SAR levels for those patients with MR Conditional implants and a Metal Artefact reduction protocol (MAR) set up to reduce the artefact from any metal within the imaged area

Reporting

To avoid delay On-call surgical teams are happy to review out of hours MRI scans without a radiologist report.

Webpacs Links should be available to the surgical team to access imaging at different geographical sites within their network (Image exchange portals can cause delay).

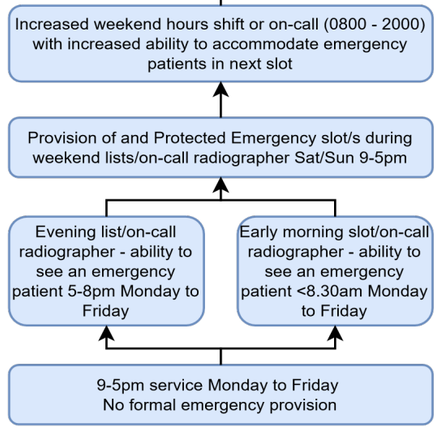
The reporting of these examinations needs to be clearly defined in the SOP, either using on call local radiologists or reporting radiographer of an appropriate competence to sign off the examination or where no local service is provided, clear local protocols with outsourcing reporting companies need to be established. This will allow a rapid 24/7 production of the report, which should be made available to the referring clinical within 1 hour.



Service provision and development

A gap analysis should be undertaken which includes a plan to progress from whichever level of service the department is providing currently to the provision of a 24/7 service

In the first instance there should be protected daily slots to scan patients with suspected cauda equina syndrome, or other emergency scans.



Suspected Cauda Equina Syndrome Pathway

Spinal Services

Surgical assessment, documentation, timing & technique

Assessment & Documentation by Surgical team	Surgical timing	Surgical technique	Post-operative management
It is imperative that a time-stamped, documented review of history and examination is made by the surgical team prior to surgery. Consent patient for surgery (the BASS information booklet on CES and consent form are helpful). Register patient on British Spine Registry	Surgery for patients with MRI-proven Cauda Equina Syndrome incomplete symptoms (CESI) should be undertaken as quickly as possible as an NCEPOD E1/E2 emergency. It is time-sensitive and life-changing but not life-threatening. Any reason for delay should be documented. Timing of surgery for patients who present with painless urinary retention and overflow incontinence is at the discretion of the operating surgeon. Surgery should still in this instance be undertaken within 24 hours of MRI imaging. Whilst it is accepted that patients with painless urinary retention and overflow incontinence have a poorer prognosis around 70% of these patients will benefit from decompression.	Patients should be catheterised before the start of surgery avoiding distention of the bladder which can cause damage. Total laminectomy / Hemilaminectomy & Laminotomy techniques are all acceptable. Complication rates in CES decompressive surgery are 6 times higher than non-CES decompressive surgery. Therefore, surgeons in training undertaking this surgery should have appropriate levels of supervision related to their level of training and competency. Surgery undertaken where anaesthesia would start between the hours of midnight and 07:30 must have consultant on-call sanction.	**Post-operative care**

Consent

BASS info booklet

Consent form

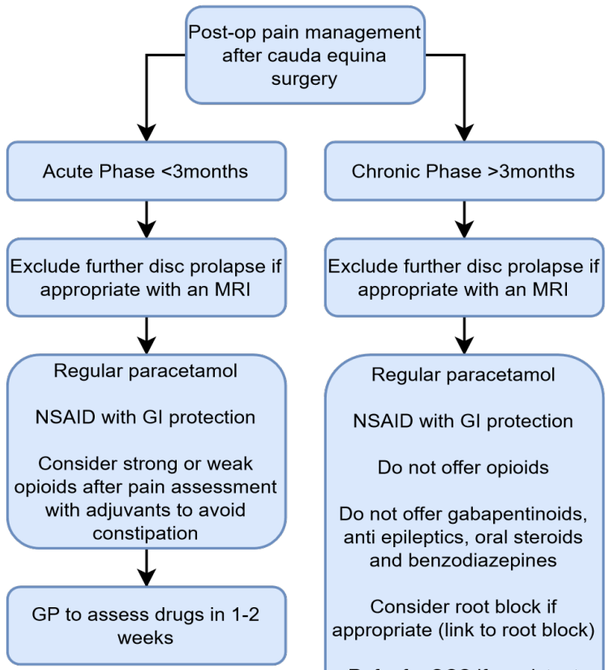
Suspected Cauda Equina Syndrome Pathway

Spinal Services

Management of ongoing symptoms

All patients undergoing surgical intervention for cauda equina syndrome that have ongoing symptoms post-operatively should be referred to the regional spinal cord injury unit through the The National Spinal Cord Injury Database https://www.nscisb.nhs.uk/

Pain



Urinary Function

All patients should be catheterised as soon as possible following decision to operate

Trial without catheter (TWOC) as soon as possible post-operatively and pre/post void bladder scan obtained.

If the post void bladder scan is <100ml: no catheter required at discharge

If pre void bladder scan is >500ml (with no sensation to void) OR patient hasn't voided for 6 hours: re-catheterise with long term catheter (flip/flow) and referral to local services to learn self-catheterisation

DO NOT TWOC AGAIN at this stage

Flip/flow should be opened as a minimum every 4 hours including overnight (shorter time frames may be necessary drinking dependent, aiming for a bladder volume <500ml). DO NOT rely on sensation/urge to void as a trigger to open flip/flow/self-catheterise

Best practice is to teach a patient (where possible) ISC as quickly as possible post-surgery

Failed TWOC must have follow-up with regional SCI or locally agreed urology service

Bowel function

All patients should be advised by medical/nursing team about potential for bowel issues. Immediate use of an information booklet as an inpatient is advised.

Prescribe bowel stimulants and a softener in the acute postoperative phase e.g., senna (stimulant) & sodium docusate (softener)

Patients should be educated to undertake digital rectal stimulations (DRS) followed by digital rectal evacuation (DRE)

Published Guidelines should be followed

Patients who have bowel issues must have follow-up with SCI service

All patients must have bowel function re-assessed as part of their surgical outpatient appointment and referral to local services or SCI service if an issue

MACSIP Guidelines

Psychological support

All patients should be advised by medical/nursing team about how cauda equina syndrome can affect other areas of life. Immediate use of an information booklet as an inpatient is advised:

BASS info booklet

Patients should be signposted to support groups:

Spinal Injuries Association (SIA)

Aspire (Benefits Advice)

Cauda Equina Champions Charity

Patients with ongoing cauda equina symptoms should be contacted by SCI psychology services.

Sexual function

All patients should be advised by medical/nursing team about potential for sexual dysfunction

Patients should be signposted to support groups

Cauda Equina Champions Charity

Spinal Cord Injury Association (SIA)

Patients who have sexual dysfunction must have follow-up with SCI service

All patients should have sexual function re-assessed as part of their surgical outpatient appointment and referral to local services or SCI service if an issue

It is worth trialling a Phosphodiaesterase-5 inhibitor such as Tadalafil/Sildenafil in both men & women