

Non Malignant and Non Traumatic Spinal Cord Compression Pathway

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.

Introduction

In June 2018 a theme was identified through the SIR&LG relating to patients suffering harm from cord compression events/incidents. A review of Serious Incidents highlighted four SIs with this theme.

As a result of these SIs it was agreed the Trust should develop a pathway for Non Malignant / Non Traumatic Spinal Cord Compression. There is already one in place for Malignant Spinal Cord Compression. A series of meetings and presentations to various groups followed and this pathway has been developed.

This guideline is for use by the following staff groups :

All Clinical Staff – Nursing and Medical

Lead Clinician(s)

Jules Walton	ED Consultant / Divisional Medical Director, Urgent Care
Tom Heafield	Consultant Neurologist
Rob Johnson	Consultant Radiologist & Clinical Director for Radiology
Sam Trigg	Senior Patient Safety Advisor

Approved by Clinical Governance Group on: 5th February 2019

Review Date: 5th February 2022

This is the most current document and should be used until a revised version is in place

Key amendments to this guideline

Date	Amendment	By:
5 th Feb 2019	Document Approved	CGG
February 2021	Document extended as per Trust agreement 11.02.2021	
July 2021	Document review date amended as per the Key Documents 3 year approval policy update.	Trust policy
April 2022	Opening times updated	Julia Rhodes/ Jules Walton

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Introduction

WAHT pathway for Non-Traumatic Spinal Pain

Pain felt in the back that has not developed as a result of direct trauma (within the last week) and is not the result of a significant fall from height.

Low back pain is a common condition affecting 4 out of 5 adults over the age of 16 years, the majority of which can be appropriately managed within the community setting.

However there are a number of orthopaedic and 'non-orthopaedic' diagnoses which should not be missed: -

Orthopaedic Diagnosis - cauda equina syndrome, spinal cord compression, nerve root entrapment, epidural abscess, discitis

Non-orthopaedic Diagnosis - aortic aneurysm, renal colic, pancreatitis, psoas abscess

Patients on **anticoagulants or having had recent epidurals** are at increased risk of haematomas which may compress the spinal cord or nerve roots.

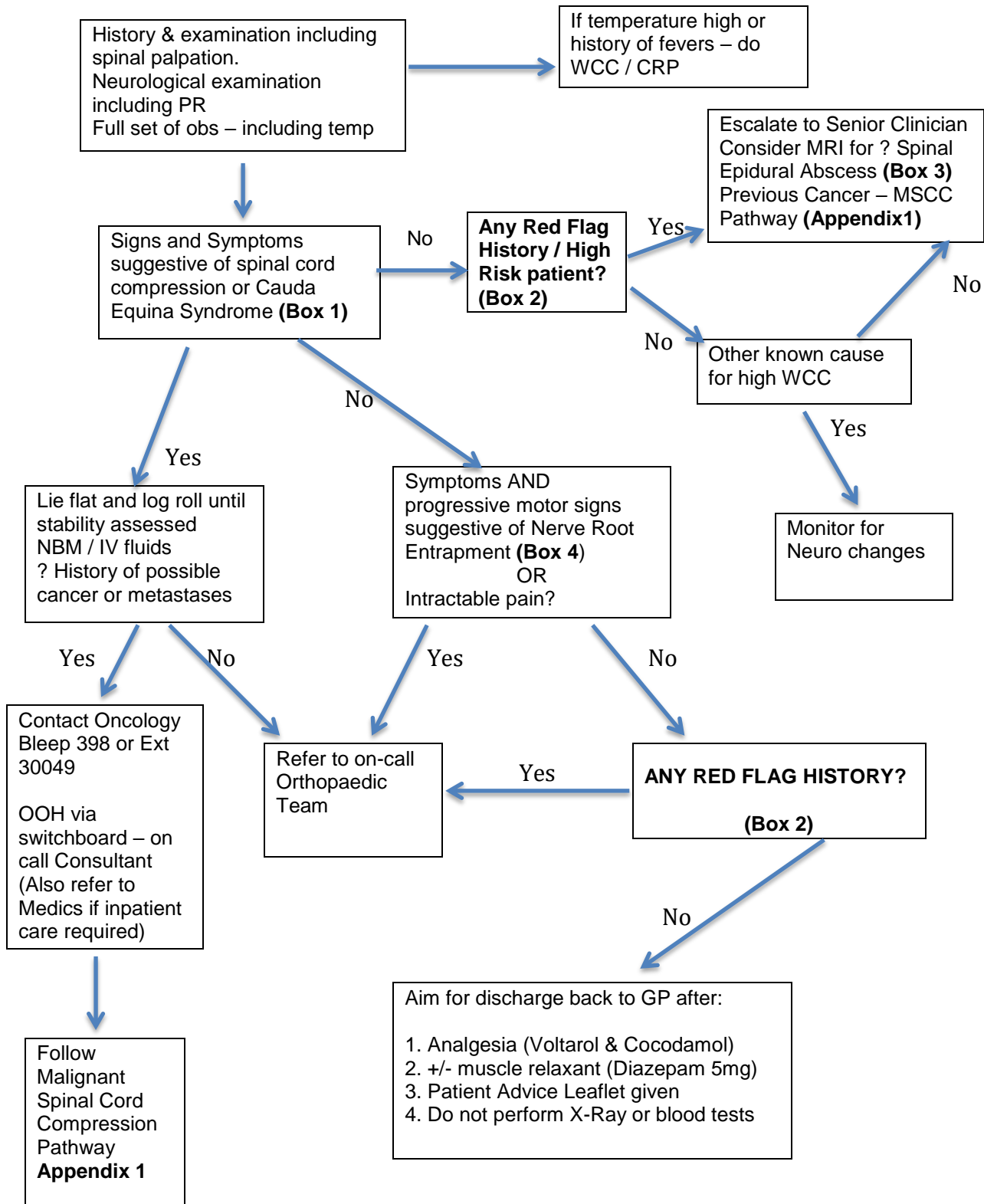
The flow chart below describes which patients should be referred to the on-call orthopaedic / medical teams and which may be managed in the ED and discharged back to the GP.

It is **not** the role of the ED to be arranging MRI scans.

Patients with low back pain may **not** be admitted to the observation ward under the care of the ED team

If patients are not fit for discharge after 4 hours they should be discussed with the most senior ED doctor present in the department before being referred to the orthopaedic team.

Details of Guideline

Flow Chart

Box 1. Neurological signs:

Patients may have severe pain but frequently have gait disturbance and CNS signs

Spinal Cord compression:

Weakness
Increased tone/spasticity, brisk reflexes extensor plantars, possible sensory level on trunk, dissociated sensory loss.
Urgency/retention
May have spinal shock

Conus/Cauda Equina Syndrome:

Bilateral neurological signs and symptoms
Flaccid weakness
Loss of reflexes
Sphincter disturbance (Bowel and Bladder/retention)
Altered sensation of perineum (Saddle anaesthesia)
Changed gait

Box 2. Red Flag History

- Previous **Cancer or Myeloma**
- Evolving Spinal pain/immobility
- Suspicion of Sepsis (Pyrexia confusion systemic symptoms)
- IVDU, Diabetes, steroids, Immunosuppression,
- Foreign travel
- Warfarin/anticoagulants
- Recent spinal surgery / procedure
- Weight loss or B symptoms
- New neurological signs
- Increasing pain at night or at rest or when lying flat
- Severe pain/disability unrelated to trauma
- Structural Spinal Deformity

Box 3. Spinal Epidural Abscess

- Fever sometimes confusion and immobility in the elderly/T2DM
- Cervical thoracic lumbar pain
- Neurological signs/disability –

Weakness/immobility often flaccid neurological findings sensory disturbance less prominent

Box 4. Nerve Root Entrapment

- Unilateral leg pain and back pain and Immobility
- Pain radiates to leg/ foot / toes
- Numbness & paraesthesia in same distribution
- may have focal weakness foot drop reflex loss

Assessment

- Carry out diagnostic triage
- X-rays are not routinely indicated in low back pain
- Consider psychosocial factors

Drug therapy

- Prescribe analgesia at regular intervals (not prn)
- Start with paracetamol. If inadequate, substitute NSAIDS, and then codydramol. Finally consider **short** course of muscle relaxants e.g. diazepam or baclofen.
- Avoid narcotics if possible

Bed rest

- **Do not** recommend or use bed rest as a treatment for simple back pain
- Some patients may confine themselves to bed for a few days because of the pain but this should not be considered a treatment

Advice on staying active

- Advise patients to stay as active as possible and to continue normal daily activities
- Advise patients to increase their physical activities gradually over the next few weeks
- If patient is working advise them to return to work as soon as possible

Simple backache

- Give positive messages e.g. simple backache, nothing to worry about, no sign of serious damage or disease

Nerve root pain

- Give guarded positive messages e.g. no cause for alarm, no sign of disease, conservative should suffice but may take a month or two

Both these categories of patient should be referred back to their GP for further management

Spinal Epidural Abscess may cause the following symptoms/signs:

- Fever and back/neck pain
- Neurological changes (decreased sensation/weakness)

High risk patients are those with known blood infections, recent surgery/procedure involving the spine and intravenous drug users.

Any patient with these symptoms/signs should be escalated to a senior doctor for consideration of further investigations

WHAT NOT TO MISS.

A Neurological approach to patients with new onset weakness with or without spinal pain and sensory disturbance (not comprehensive)

History

Age/sex
 Rate of progression
 Extent of developed disability
 Localization and extent of pain treated or otherwise
 Any Bladder or Bowel disturbance
 Past Medical History Esp. Cancer
 Drug history Esp. IVDU and Warfarin Foreign travel
 Family history

Neurological examination

Confusion/Delirium/ GCS
 Cranial nerve findings
 Limb weakness MRC score
 Upper motor neurone
 Or Lower motor neurone deficit
 Sensory disturbance focal root cord distribution
 Ataxia/cerebellar signs/sensory ataxia
 Reflexes present symmetrical brisk or lost
 Plantar responses

Question – what is the speed of this disability/pain?

What is the deficit?

Where is the lesion? Is there a cord lesion/neuropathy/radiculopathy

What is the likely cause?

HAVE A HIGH INDEX OF SUSPICION FOR METASTATIC CORD COMPRESSION / EPIDURAL SEPSIS

In the presence of a new deficit and UMN or LMN signs request MRI Spine
 Discuss with neurology and radiology to ID the spinal target.

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Treatable Lesions not to miss:

Cord lesions – cervical thoracic metastatic cord compression/myeloma
Sepsis especially Epidural sepsis including TB

Conus/Cauda equina lesions – bilateral signs bilateral sensory loss and bladder disturbance

Neuropathies: LMN findings weak areflexic sensory loss
GBS/AIDP 50% have severe spinal pain and disabling weakness with sensory disturbance

Myopathies:




Metabolic Autoimmune paraneoplastic myopathies are disabling. Rapid symmetrical weakness mostly proximal may be neuropathic or myopathy check CPK rely on neurological findings

If there is a new spinal cord lesion in any patient please discuss with Neurology

Diagnostic Imaging Guidance for Spine

If the patient has signs and symptoms associated with the following red or amber flags patients should be referred, using the appropriate pathway, within 24 hours. All other patients should be managed in accordance with the recommendations for spine diagnostics below.

RED FLAGS – immediate referral recommended

-  **Acute Cauda Equina Syndrome** – Urgent referral to **specialist spinal provider**
-  **Dropped Foot** – Urgent referral to **specialist spinal provider**
-  **Metastatic Spinal Cord Compression (MSCC)** – Urgent referral to **MSCC coordinator** (Acute Oncology Service (AOS) Nurse Monday to Friday, 9.00am – 5.00pm, obtainable on Bleep 398/ 491 or the Oncology Consultant on-call out of hours via WAHT switchboard, Tel. 01905 763333)

AMBER FLAGS – referral recommended within 24 hours

-  **Suspected Metastases** – Urgent referral to **MSCC coordinator** (as above)

Rationale - The NICE pathway for management of suspected metastases or MSCC is clear that all patients should be referred to the MSCC coordinator within 24 hours; the MSCC coordinator will be responsible for determining appropriate investigations and management within a timely manner depending on the presenting circumstances.

NICE Guideline CG75 Metastatic spinal cord compression in adults: risk assessment, diagnosis and management (2008)

NICE Pathway Metastatic spinal cord compression overview (October 2017)

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Diagnostic Imaging

Spine diagnostics (with or without radicular pain):

- Do not offer imaging MR in a primary care setting, follow Advanced Physiotherapy Practitioner Service (APP) pathway (Formerly ICATS)
- X-ray may be necessary in sudden onset acute pain to assess for the possibility of acute vertebral collapse in the elderly patient only; do not routinely offer X-ray in a primary care setting.
- MRI (or CT if there are MRI contraindications) is available through the musculoskeletal interface clinic or secondary care setting if the result is likely to change management

(See GP letter re MRI scans Appendix 2)

Rationale - Imaging does not often change the initial management and outcomes of someone with back or neck pain. This is because the reported imaging findings are usually incidental or degenerative and not necessarily related to the person's symptoms. The majority of pain resolves with conservative management. National recommendations advise that imaging is not necessary unless the outcome will change management and where there are new or changed signs and symptoms which could suggest alternative diagnoses and may be an indication of possible serious underlying pathology. This decision should be made in a secondary/specialist care setting.

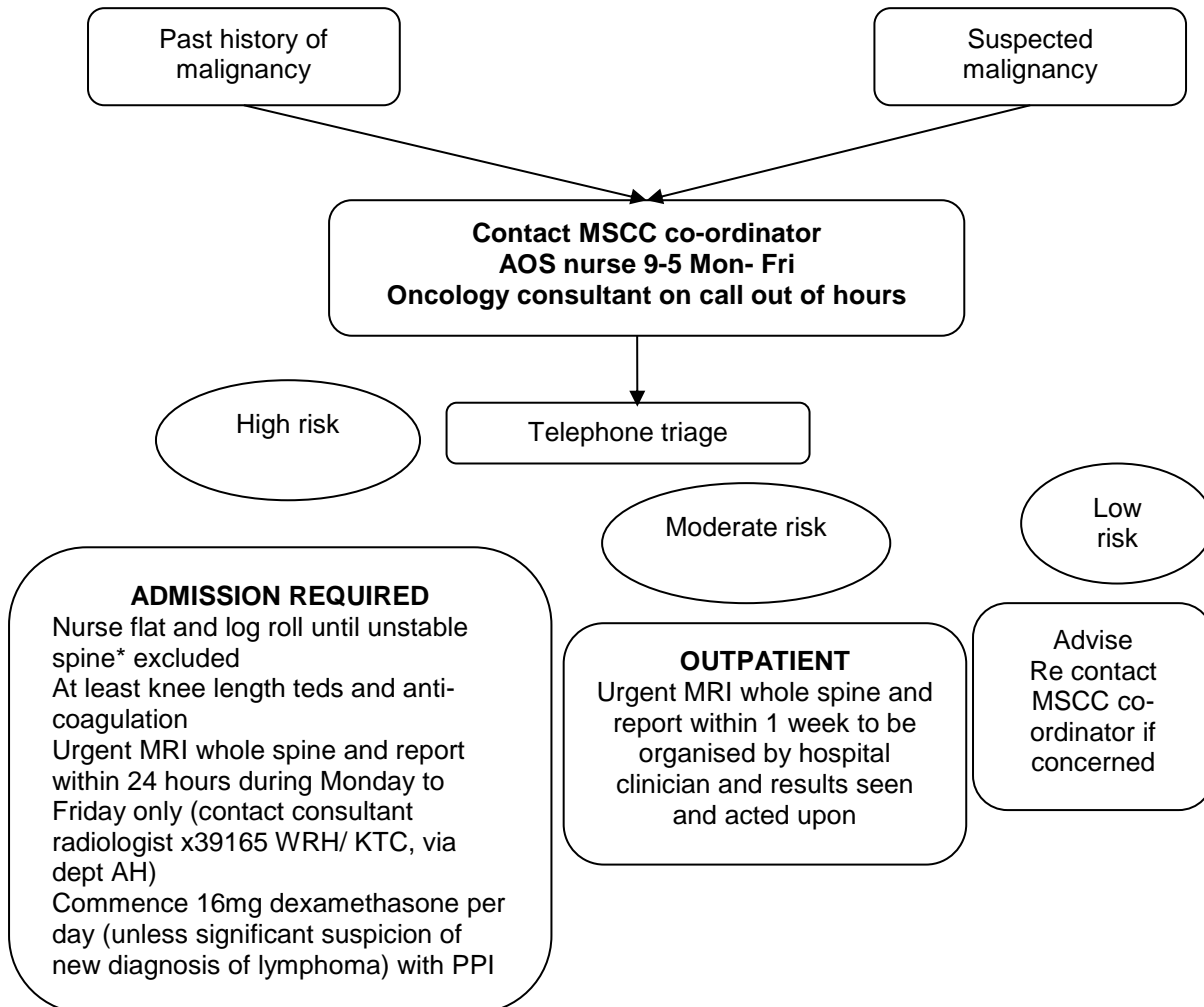
National Low Back and Radicular Pain Pathway 2017 NHS England

NICE Guideline Low Back Pain and Sciatica Pathway 2016 (NG59)

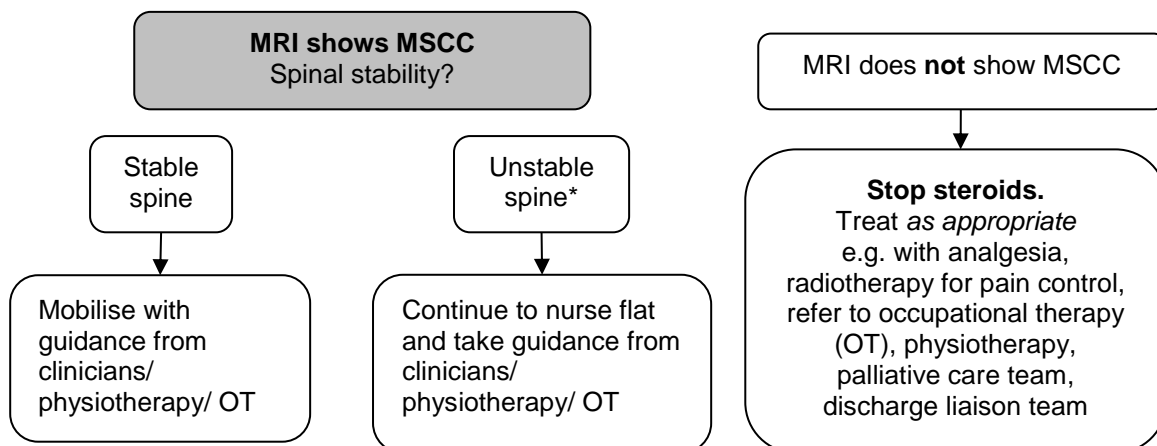
NICE Clinical Knowledge Summaries Non Specific Neck pain (last revised in April 2015)

Appendix 1.

Malignant spinal cord compression (MSCC)
ADULTS as per NICE guidance CG 75 & read with appendix 1



*Unstable spine: worsening neurology/ severe mechanical back pain on load bearing and/or radiological evidence of new kyphosis/ vertebral body collapse at level of disease



Malignant spinal cord compression (MSCC)

Appendix 1

• What clinical information might help make a diagnosis of MSCC?

Cancer diagnosis?

Known bone metastases?

Any recent spinal imaging? If yes, what did it show?

WHO Performance status:	0	Normal activity (work normally)
	1	Some limitation in activity (light work)
	2	Spending < half the day in a chair/ bed (can't work)
	3	Spending > half the day in chair/ bed
	4	Bedbound

Spinal pain:

- Unremitting pain in the thoracic or cervical spine
- Progressive lumbar spinal pain
- Unremitting lower spinal pain
- Spinal pain aggravated by spinal load bearing or straining (e.g. at stool, or when coughing or sneezing)
- Localised spinal tenderness
- Nocturnal spinal pain preventing sleep
- Radicular thoracic pain

Neurological symptoms:

- Limb weakness
- Difficulty walking
- New unexplained sensory loss
- Bladder or bowel dysfunction
- Cauda equina syndrome

Neurological signs of cord or cauda equina compression? If so, what are they?

• How quickly should an MRI be performed?

Moderate risk e.g. symptoms suggestive of spinal metastases: *Urgent MRI and report within 1 week*

High risk e.g. symptoms suggestive of spinal metastases plus neurological symptoms or signs suggestive of MSCC: *Admit patient and urgent whole spine MRI and report within 24 hours*

When requesting the MRI scan please state: NICE guidance for cord compression and state whether moderate or high risk, followed by full clinical information to allow radiology to correctly triage the patient. Please categorise all requests as **urgent** (not routine or cancer 2ww).

- **When is MRI available?**

Alex Mon-Fri 9-5pm
KTC Mon-Fri 9-5 pm
WRH seven days a week 8-4pm for in-patients and some out-patients

Patients should be transferred over to WRH at weekends for whole spine MRI if there is suspicion of MSCC

Phone numbers: WRH MRI x39569 radiographers, x 39165 duty radiologist
AH/ KTC MRI duty radiologist via the department

- **When can the patient mobilise?**

As soon as the clinical decision has been taken that the spine is NOT unstable. This will likely be a decision taken by the responsible clinician, in conjunction with the oncologists, radiologists and physio/ OT. Advice may also be sought from the neurosurgical team at UHCW (University Hospitals Coventry and Warwick) or from the MSCC MDT Friday 8-9am (oncologists from AWH video link to UHCW)

- **Are there any patient information leaflets that you can use?**

Yes, please see the MSCC information on the MacMillan cancer website www.macmillan.org.uk – or direct patients to the MacMillan pods in the hospital

- **Any further questions?**

Please contact the oncologists or radiologists if you have any queries about someone with possible MSCC

Appendix 2.

A joint letter from NHS Redditch and Bromsgrove CCG and NHS Wyre Forest CCG Worcestershire Acute Hospitals NHS Trust

Date: 30th October 2018

Dear Doctors,

Re: GP Direct Access for MRI scans

With reference to the current arrangements for direct access MRIs and in the context of the recent confusion over GP direct access, the CCGs are mindful that we wrote to GP colleagues on the 24th August 2018, to confirm that access to MRI had been reinstated at least until the end of October 2018 and so it is now timely to provide you with an update on the situation.

Our work to implement a countywide integrated MSK service, with triage, is progressing and the CCGs have identified additional resources to drive the project forward with the engagement and support of all stakeholders. This NHSE mandated countywide MSK ICATS triage service will be implemented from the 7th January 2019 and all GPs will need to use it to access the full range of MSK services. In this interim period it has been agreed that there will be no change to current arrangements for requesting of imaging.

The CCGs have been and continue to work closely with the Trust on the issues around diagnostic performance and access to tests, both externally for GPs but also for internally generated demand from within the Trust.

It does remain the case that the Radiology Department is continuing in its efforts to manage the increasing demand for diagnostics both from internal sources and external sources. With regard to internal demand the Radiology Department is reviewing its processes for accepting internal hospital based requests in an effort to prioritise its most urgent demands.

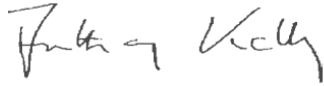
With regard to external demand the CCGs and the Trust have reviewed previous diagnostic criteria for MRI access that have been used in Worcestershire and have identified the criteria attached as Appendix One as being a helpful set of criteria to apply when considering MRI requests. The criteria have been reviewed by the Clinical Innovation Group and approved by the Clinical Executive Joint Committee, as well as by Worcestershire Acute Hospitals Trust.

To help the Acute Trust's radiology department manage the ever increasing demand and provide a timely service for your patients, we respectfully request that all requesting clinicians read and use the attached guidelines. This is an interim measure between now and the implementation of a full pathway.

The Radiology Department will use the criteria to monitor and reject requests that do not meet these criteria. The response, by the Radiology Department to rejected requests will be quick and will include a rationale as to why requests have been denied.

If you would like advice before making a request please would you contact the consultant radiologist on duty on WRH ext 39165 for clinical queries (not dates, bookings etc). This service is available 0900-2030 365 days per year.

Yours faithfully,



Dr Anthony Kelly
Orthopaedic Clinical Lead, Worcestershire CCGs and Chair of South
Worcestershire CCG



Dr Graham James
Deputy Chief Medical Officer & Consultant Oral and Maxillofacial Surgeon



Dr Robert Johnson
Consultant Radiologist & Clinical Director for Radiology

Appendix One – Royal College of Radiologists Clinical Criteria for MRI

The list below represents abridged guidelines on situations where MRI may or may not be specifically indicated and is based on the Royal College of Radiologists publication “Making the Best use of a Department of Clinical Radiology”.

These guidelines represent the opinion of experienced specialist radiologists and help to outline a number of clinical presentations and situations where MRI scanning may be of value and others where the investigation may not be indicated.

In circumstances where there is clinical doubt or symptoms are severe, unremitting or progressive, urgent assessment by an appropriate specialist clinician should be considered.

Area and Symptoms	Indicated or not
Lumbar Spine	
Sciatica less than 6 weeks with no adverse features (no red flag symptoms or signs)	MRI not usually indicated RCGP guidelines indicate that conservative management is appropriate in sciatica without adverse features, MRI reserved for sciatica which does not resolve within the 6 week period.
Sciatica failed conservative management	MRI indicated Clinico-radiological correlation is important, as a significant proportion of disc herniations demonstrated on MRI are asymptomatic
Low Back Pain with adverse symptoms or signs	MRI spine indicated. Sphincter or gait disturbance Saddle anaesthesia Severe progressive motor loss Widespread neurological deficit Previous carcinoma Systemically unwell weight loss HIV, IV drug abuse Steroids Structural deformity
Acute Cauda Equina	MRI indicated (Urgent referral via Neurosurgery/specialist orthopaedic route) Sphincter or gait disturbance Saddle anaesthesia
Mid line chronic low back pain—without progression	Not usually indicated. In the absence of focal or neurological signs, asymptomatic chronic degenerative changes are a common finding. A trial of non interventional treatment (exercise, physiotherapy, chiropractor treatment may be appropriate)
Chronic facet joint symptoms and signs – but without radiation down leg	MRI not usually indicated. Non-invasive treatment is often effective. MRI should be reserved for cases with atypical symptoms.

Thoracic Spine	
Isolated Chronic Back Pain - Without adverse features or radiation	MRI Not Usually Indicated. MRI very rarely identifies treatable lesions in the absence of focal features. Imaging is rarely useful in the absence of neurological signs or pointers of metastases or infection
Thoracic pain with radicular radiation - long tract signs or persistent symptoms.	MRI Thoracic Spine Indicated In adults thoracic radicular pain may be an early sign of impending cord compression. Acute thoracic pain in elderly patients may require more urgent referral for imaging to assess for vertebral collapse. Plain radiographs are often adequate with MRI reserved for complex cases.
Cervical Spine	
Neck pain with brachalgia and/or neurological signs	MRI Cervical spine Indicated In patients where pain affects lifestyle, is unresponsive to conservative treatment or there are adverse features (eg long tract signs). MRI is most useful where there are single root symptoms and signs, and least useful where symptoms and signs referable to multiple dermatomes.
Acute Neck pain	MRI not Usually Indicated Severe or adverse features only. Most neck pain resolves on conservative treatment. Degenerative changes are invariably seen on MRI beginning early middle age and are often unrelated to symptoms.
Chronic Neck Pain	MRI Not Usually Indicated Degenerative changes are invariably seen on MRI beginning early middle age and are often unrelated to symptoms.
Hip	
Hip Pain	MRI Pelvis Not Usually Indicated (5) X-ray or MRI only if symptoms and signs persist or there is a complex history. X-Ray usually 1 st line investigation.
Hip pain with suspected avascular necrosis	MRI Hip Indicated X-Ray usually 1 st line investigation.

Knee	
Acute Knee Pain – Following trauma or accident, in previously non-symptomatic joint.	MRI Knee Indicated Especially under the age of 50 and without signs of osteoarthritis X-Ray usually 1 st line investigation.
Long-Standing Knee Pain – (18-50 Year Old)	MRI Knee Indicated Particularly for suspected ligament or meniscal injury.
Long-Standing Knee Pain – (Over 50 years Old)	MRI Knee Indicated – (Following X-Ray) In patients over 50 a plain film should be performed before requesting MRI as this can highlight joint degeneration, when MRI may not be indicated.
Ankle and Foot	
Ankle and foot Symptoms	Specialist Referral MRI should be used selectively and normally only requested by a specialist clinician.
Shoulder	
Non localised shoulder pain	MRI not usually indicated
Shoulder impingement syndrome, shoulder instability, rotator cuff tear	Specialist referral. MRI may be useful. This is usually a clinical diagnosis. Imaging only indicated after initial conservative management or if invasive treatment being considered.
Elbow	
Elbow Symptoms	Specialist Referral Usually reserved for when surgical intervention is being considered.
Wrist	
Wrist Symptoms	Specialist Referral Usually reserved for when surgical intervention considered.
Brain	
Headache	MRI Brain Indicated - Although MRI should be used selectively and normally only requested by a specialist clinician. Imaging in chronic headache without focal neurology is usually unrewarding.

Monitoring Tool

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: <i>(Responsible for also ensuring actions are developed to address any areas of non-compliance)</i>	Frequency of reporting:
	WHAT?	HOW?	WHEN?	WHO?	WHERE?	WHEN?
Pg 4 Flow Chart	That the pathway is followed for patients who present with back pain and/or symptoms as described, to prevent delayed or missed diagnosis of non-malignant / non-traumatic cord compression conditions	1.Audit of compliance 2.Review / thematic analysis of cord compression incidents	Monthly	To be confirmed	To be confirmed.	Quarterly.

References

- NICE Guideline CG75 Metastatic spinal cord compression in adults: risk assessment, diagnosis and management (2008)
- NICE Pathway Metastatic spinal cord compression overview (October 2017)
- National Low Back and Radicular Pain Pathway 2017 NHS England
- NICE Guideline Low Back Pain and Sciatica Pathway 2016 (NG59)
- NICE Clinical Knowledge Summaries Non Specific Neck pain (last revised in April 2015)

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Contribution List

This key document has been circulated to the following individuals for consultation;

Designation
Consultant Neurologist, UHB/WAHT
Consultant ED
Consultant Radiologist & Clinical Director for Radiology
Divisional Medical Director, Urgent Care
Consultant Oncologist / MSCC lead
Surgical Care Practitioner Trauma and Orthopaedics
Orthopaedic Consultant
MSK Transformation Programme Lead , CCG
Consultant Clinical Oncologist and Joint Clinical Lead for Oncology, WAHT

This key document has been circulated to the chair(s) of the following committee's / groups for comments;

Committee
Serious Incident Review and Learning Group
Trauma and Orthopaedic Directorate Governance Meeting
Diagnostic Pathways, Neurology - CCG and WAHT collaboration
Urgent Care Divisional Governance Meeting

Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	Does the policy/guidance affect one group less or more favourably than another on the basis of:		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
2.	Is there any evidence that some groups are affected differently?	No	
3.	If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?		
4.	Is the impact of the policy/guidance likely to be negative?	No	
5.	If so can the impact be avoided?		
6.	What alternatives are there to achieving the policy/guidance without the impact?		
7.	Can we reduce the impact by taking different action?		

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	No
2.	Does the implementation of this document require additional revenue	No
3.	Does the implementation of this document require additional manpower	No
4.	Does the implementation of this document release any manpower costs through a change in practice	No
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval.