Neurological Monitoring Associated with Obstetric Neuraxial Block, escalation and transfer guideline

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Target Audience:

People who need to know about this document in detail	All anaesthetic, obstetric and Midwifery staff working within CTM UHB
People who need to have a broad understanding of this document	As above
People who need to know that this document exists	As above

Integrated Impact Assessment:

Equality Impact Assessment Date & Outcome	**Date: October 2025**
	Outcome: No negative impact
Welsh Language Standard	Choose an item.
Date of approval by Equality Team:	(00/00/0000)
Aligns to the following Wellbeing of Future Generation Act Objective	Choose an item.

Disclaimer:
If the review date of this document has passed please ensure that the version you are using is the most up to date version either by contacting the author or CTM_Corporate_Governance@wales.nhs.uk

Contents

1. Purpose

This guideline has been produced to guide the neurological monitoring of obstetric patients who receive neuraxial analgesia or anaesthesia, in order to

- Support earlier detection of serious neurological complications and minimise harm.
- To ensure the safe, timely, and effective transfer of an obstetric patient with a suspected or confirmed lumbar spine epidural haematoma to a tertiary spinal surgery centre.

2. Background

Unexpectedly dense or persistent motor or sensory block may indicate serious underlying complications such as unintended intrathecal placement of an epidural catheter or very rarely, neurological pathology. Although most complications are relatively minor, serious neurological ones such as vertebral haematoma, infection and arachnoiditis may become permanent if not detected and managed rapidly – within 8–12 h in the case of epidural haematoma.

3. Neurological monitoring

3.1 During Labour

- The midwife caring for a woman with an epidural, should check the epidural block hourly, including motor block, as per the Princess of Wales Obstetric Epidural Monitoring & Assessment Chart or the Prince Charles Hospital Epidural Monitoring Chart.

- The midwife should alert the anaesthetist if a woman is unable to straight-leg raise (being able to raise the heel off the bed against gravity, even if not sustained). Although minor degrees of motor block are common, any woman with profound motor and sensory block should be assessed by the anaesthetist. Ongoing concern should be escalated using the Management and Escalation Flow Chart below.

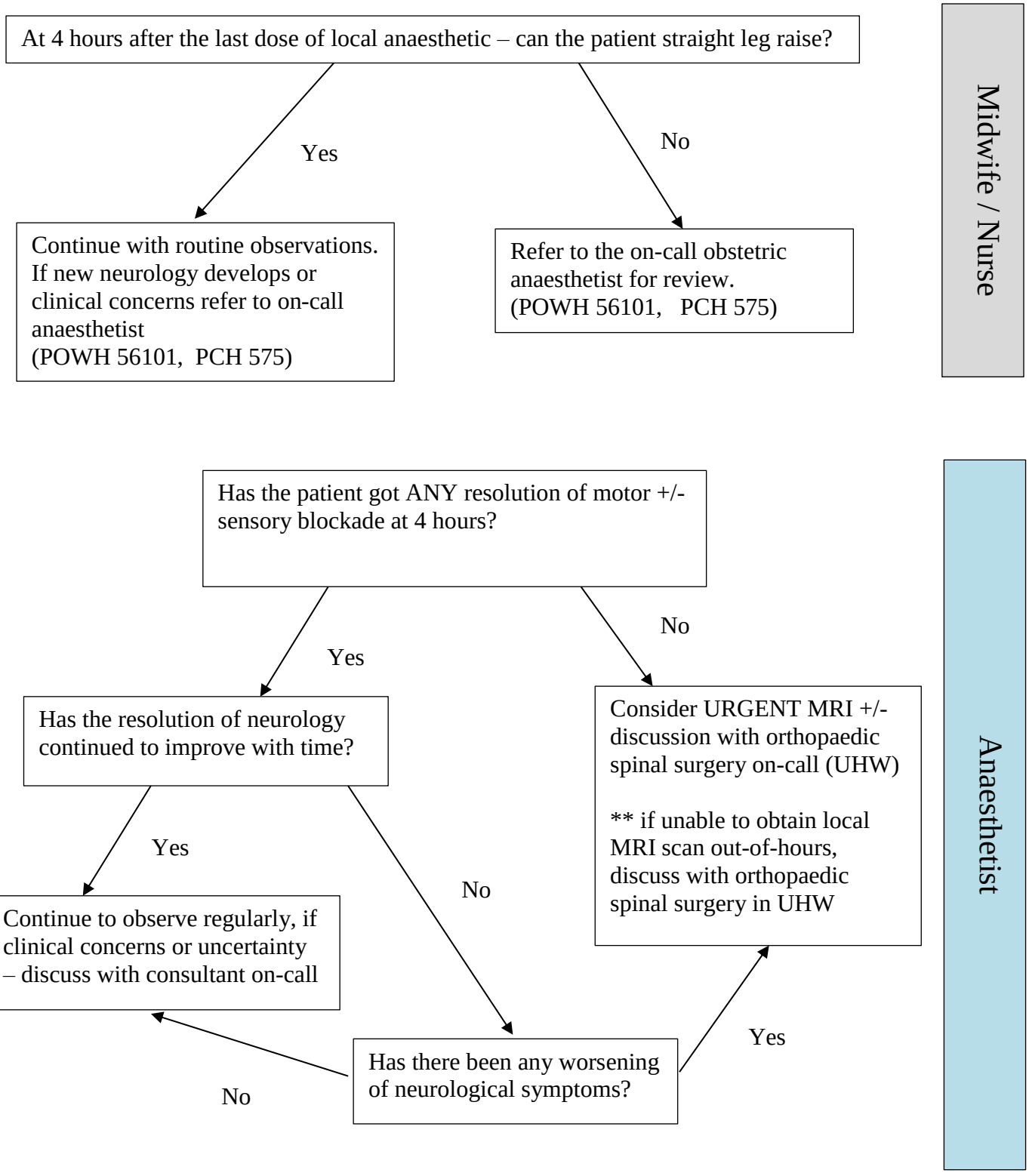
3.2 During the recovery phase after a spinal anaesthetic or epidural, or surgical epidural top-up for a procedure.

- The anaesthetist should inform the woman at the end of the operative procedure that she should be able to lift her leg straight up off the bed, four hours after the spinal or epidural top up.

- A yellow coloured wristband should be placed on the woman's wrist with the time that she should be able to straight leg raise as a reminder to her and the staff.

- If the woman is unable to straight-leg raise at 4 h from the last dose of epidural/spinal local anaesthetic, the anaesthetist should be called by the midwife to assess whether the woman's care should be escalated to investigate the possibility of reversible causes of neurological injury - refer to the Management and Escalation Flow Chart below.

Neuraxial Monitoring Flow Chart



4. Initial Recognition

4.1 Clinical Suspicion

Suspect spinal epidural haematoma / neurological complication in any patient with:

- Unexpectedly dense or persistent motor block
- Worsening of motor block after partial recovery
- Severe or worsening back pain post-neuraxial block
- Sensory loss, or paraesthesia
- Bladder or bowel dysfunction
- Signs of cauda equina syndrome

4.2 Initial Assessment

- Conduct a thorough neurological examination
- Inform the on-call consultant anaesthetist and obstetric consultant immediately
- Urgently obtain MRI spine
- Withhold LMWH until epidural haematoma has being excluded
- Ensure the patient is nil by mouth in case of urgent surgery

5. Imaging and Diagnosis

5.1 Urgent MRI Spine

- MRI is the gold standard for diagnosis
- Ensure rapid access through escalation to radiology
- Do not delay referral while awaiting MRI if suspicion is high
- If MRI is unavailable out of hours – Urgent University Hospital of Wales (UHW) orthopeadic spinal referral and transfer for MRI to UHW – Do not transfer to a hospital for MRI which does not have spinal surgery on site

6. Coordination of Transfer

6.1 Notify the Tertiary Centre

- Contact the on-call Orthopaedic Spinal team at University Hospital of Wales by telephone through switchboard
- Provide:
  - Clinical summary
  - Neurological findings
  - MRI findings (if available)
  - Maternal status (including obstetric and neonatal considerations)

6.2 Multidisciplinary Team Involvement and communication

- Upon acceptance of the spinal referral, communication with the receiving hospital should include
  - Resident/Consultant Obstetric Anaesthetist
  - Resident/Consultant Obstetrician
  - Neonatologist

- Communicate the need for urgent transfer with the
  - Local band 7 midwife in charge
  - Local Obstetric consultant
  - Local Neonatal team.

6.3 Communication

- Use SBAR (Situation, Background, Assessment, Recommendation) format
- Document all conversations and decisions clearly
- Ensure patient and family are informed

7. Transfer Arrangements

7.1 Mode of Transport

- Request an urgent time critical 999 ambulance.
- Communicate the time critical nature of the transfer to the transfer team.
- Transfer with appropriate clinical escort
- Agree the destination ward with receiving MDT prior to transfer (Theatre/Spinal Surgery ward/Labour ward) and communicate it with the transfer team.
- Communicate the time critical nature of the transfer to the local band 7 midwife and ask them to inform the on call anaesthetist if there is any delay in transfer.

7.2 Documentation and Equipment

- Copy of medical records, imaging, and referral letter

8. Obstetric Considerations

- Ensure neonatal care is coordinated if infant is in hospital

9. After Transfer

- Ensure handover to receiving surgical and obstetric teams
- Continue multidisciplinary care
- Notify Risk Management and complete clinical incident report

10. Review and Audit

- Each transfer should be reviewed locally

Reference

Safety guideline: neurological monitoring associated with obstetric neuraxial block 2020 - Association of Anaesthetists