Reference Number: UHBOBS045 **Version Number: 2**	**Date of Next Review: 14/03/2021** **Previous Trust/LHB Reference Number:**

Epidural Guidance for Midwives

Introduction and Aim

To provide guidance to midwives caring for women that or considering or have epidural analgesia for labour and birth.

Objectives

Clear guidance for roles and responsibilities
Understanding of procedure and equipment required
Guidance on required care from when the woman is considering an epidural to removal of epidural

Scope

This policy applies to all healthcare professionals working with maternity, including those with honorary contracts

Equality Health Impact Assessment	*An Equality Health Impact Assessment (EHIA) has not been completed.*
Documents to read alongside this Procedure	*Obstetric Anaesthesia Guidance* *ANTT* *The Medicines Code* *Intrapartum Guidelines*
Approved by	*Maternity Professional Forum*

Accountable Executive or Clinical Board Director	*Ruth Walker, Executive Nurse Director*
Author(s)	*Stephen Morris, Consultant Anaesthetist* *Angharad Oyler, Operational Lead Midwife T2*

Summary of reviews/amendments

Version Number	Date of Review Approved	Date Published	Summary of Amendments
1	Dec 2013	*Dec 2013*	
2	MPF 15/7/19 Q&S 06/09/2019	09/09/2019	Reviewed and Amended by S Morris and A Oyler

Epidural analgesia:

1. Definition

A low concentration of local anaesthetic usually with an opioid, injected into the epidural space to provide pain relief.

2. Indications

- Woman requests epidural analgesia in labour.
- Blood pressure control in pre-eclampsia.
- Rarely, postoperative analgesia after caesarean section.
- Epidural should be offered to women who have experienced an intra uterine death.

3.1 Absolute contraindications

- Patient declines
- Abnormal coagulation
    - Platelet count < 100
    - Bleeding disorders (e.g. haemophilia, Von Willebrand)
    - Low molecular weight heparin (e.g. Enoxaparin (Clexane)) given within last 12 hours if on prophylactic dosing (<40mg) or within last 24 hours if on therapeutic dosing (>40mg)
    - Coagulopathy: APTT ratio or INR >1.4
    - Clopidogrel given within the last 7 days
- Local sepsis
- Allergy to amide local anaesthetics

3.2 Relative contraindications

- Systemic sepsis
- APTT ratio or INR 1.2-1.4
- Spinal surgery
- Raised intracranial pressure

Pre-eclampsia, coagulation, and regional blockade

Pre-eclampsia is associated with a coagulopathy that may range from a mild thrombocytopenia to DIC. This has implications for the use of neuraxial blockade in pre-eclamptic patients.

If the platelet count is >150,000, experience shows that coagulation will be normal. In reality, both the platelet count and coagulation screen are usually checked.

If relying on just the platelet count before inserting an epidural/spinal in a patient with severe pre-eclampsia, the result should not be more than 2 hours old.

If the platelet count is between100-150 and PT and APTT are within normal range, it should be safe to proceed with an epidural.

4. The Midwives role in facilitating informed decisions

The midwife should discuss the different forms of analgesia available for birth with the woman, ideally this should occur in the antenatal period, however this discussion can be revisited at any time, particularly when admitted in labour or induction of labour.

If a woman is contemplating regional analgesia, talk with her about the risks and benefits and the implications for her labour, (NICE)

The midwife should give the woman unbiased information regarding the effects of epidural analgesia on labour and delivery to ensure that the woman is able to make an informed decision.
Fetal wellbeing must be assessed and documented prior to commencement of the epidural procedure.

Information provided to woman about epidural analgesia, should include the following:

- It is available only in obstetric units.
- It provides more effective pain relief than opioids. It is not associated with long-term backache.
- It is not associated with a longer first stage of labour or an increased chance of a caesarean birth.
- It will be accompanied by a more intensive level of monitoring and intravenous access, and so mobility may be reduced. (NICE, 2014)
- It is associated with a longer second stage of labour and an increased chance of vaginal instrumental birth. (NICE, 2014) Increases the risk of instrumental delivery (65% in primigravida, Brocklehurst et al 2017)

5. The Anaesthetist role in facilitating informed consent

The anaesthetist should plan to attend the mother for an epidural within 30 minutes of request. If both trainees are busy, the cardiac anaesthetist or the on-call consultant can be called.

Before establishing epidural analgesia, the anaesthetist should explain the procedure and common complications to the patient to obtain an informed consent and this should be documented in the woman’s notes.

- Technical difficulty
- Accidental dural puncture & risk of severe headache
- Increases the risk of instrumental delivery (65% in primigravida)(Brocklehurst et al 2017)
- Incomplete analgesia, including need for re-siting
- Nerve damage and infection should be mentioned as rare complications.
- It will be accompanied by a more intensive level of monitoring and intravenous access, and so mobility may be restricted. (NICE, 2014)
- Still isotonic drinks or water only and plain biscuits or toast

N.B If a woman is transferred from the MLU to delivery suite for an epidural the midwife should inform the delivery suite coordinator and the senior obstetrician prior to insertion of the epidural so that a full antenatal review can be undertaken.

6. Equipment

An intravenous cannula must be in situ at all times whilst the patient is receiving epidural analgesia. A bacterial filter must always be in place on the epidural catheter. Epidural syringes, once checked, should be labelled with the patient's addressograph.

7. Designated clinical areas

Patients with an epidural catheter *in situ* must remain on the 2nd floor delivery suite, when labour is complete and no further intervention is required the epidural catheter should be removed, it must be removed prior to transfer from delivery suite. (Procedure for removal of epidural catheters below.)

The obstetric anaesthetists will provide education for midwifery staff relating to the care of patients receiving epidural analgesia. Midwives who have had training in other maternity units must undergo at least a refresher session at UHW prior to providing top-ups.

All women receiving epidural analgesia must receive 1:1 care by a qualified midwife.

Following the epidural teaching session midwives must perform supervised epidural top-ups until they are competent and happy to proceed unsupervised. This is after 5 top-ups. Top-ups can be supervised by a Consultant or senior trainee anaesthetists and Band 7 midwives experienced in the procedure. **(Appendix1)**

8. Initiating treatment and monitoring of patients whilst receiving epidural analgesia

Epidural catheters are inserted either in theatres or a delivery room. Occasionally patients may be returned to recovery with an epidural catheter in situ.

Epidural analgesia should only be initiated if the patient is in established labour or with the agreement of consultant obstetrician. However there may be occasions where women may have severe pain in the latent phase of labour and epidural analgesia may be appropriate and in which case epidural analgesia must not be denied (NICE 2014)

It is important that the midwife conveys any fetal or CTG concerns to the anaesthetist prior to or during the initiation of epidural analgesia so that the procedure can be paused if necessary.

For multiparous patients who are progressing quickly and requesting an epidural it may be useful to have a recent vaginal assessment to ensure that the woman will benefit from the epidural.

Women should be encouraged to drink clear fluids after receiving an epidural, to a level to quench their thirst, and documented on a fluid balance chart, this includes still (ie not fizzy) isotonic sports drinks, women can also eat plain biscuits and dry toast.

9. Fetal monitoring prior to epidural insertion

9.1 Maternal or fetal risk factors present: 10-15 of normal CTG analysis is required before an epidural is inserted.

9.2 No additional risk factors (e.g. transfer from MLU for epidural analgesia only):

- Assess maternal and fetal parameters (blood pressure, pulse rate, temperature, progress of labour, liquor) and confirm normality of the CTG.
- Request obstetric review if there are any abnormalities or delay.
- If there is any delay in transfer to the CLU CTG monitoring should start on the MLU. If transfer from the MLU is facilitated without delay, commence CTG monitoring immediately upon arrival, and call the anaesthetist.

- 10-15 minutes of a normal CTG is required prior to epidural insertion but this can be done whilst the anaesthetist obtains an informed consent from the woman, inserts an intravenous cannula and takes routine bloods.
- An epidural alone is not an indication for a fetal scalp electrode, please refer to the Fetal Surveillance Bundle.
- Do not routinely perform an ARM prior to epidural insertion if all aspects of fetal and maternal well-being have been ensured.
- Intermittent Doppler monitoring during epidural insertion is acceptable, provided normality of the CTG has previously been established.
- If the epidural procedure is not completed within 30 minutes of starting, CTG monitoring should be re-started until normality is confirmed and whilst awaiting more senior anaesthetic help.

10 Preparation prior to epidural insertion

The anaesthetist should be assisted by an ODP, in exceptional circumstances when an ODP is not available to assist the anaesthetist, an additional midwife should be allocated to assist the anaesthetist in the insertion of an epidural.

The woman should be positioned on the flat portion of the bed, with her feet flat (if possible) on a stool. Adjust the bed height so that the patient's knees are still higher than her hips and give her a pillow to curl over.
Wash hands thoroughly and ensure epidural trolley is clean.
Open all packs and solutions aseptically.

Equipment (usually set up on top of epidural trolley and brought to the bedside by the ODP):

- Sterile pack
- Chlorhexidine 0.5% in 70% alcohol
- 10ml 1% lidocaine
- 2 x10ml amps of N/Saline
- Portex epidural minipack
- "Lock-it" device to secure catheter
- Occlusive transparent epidural dressing
- Mefix tape 4 inch and 2 inch

The anaesthetist will also need to be provided with:
Sterile gown
Sterile gloves
Hat and mask

11 Skin decontamination

Spray Chlorhexidine liberally from mid-thorax to sacrum.
Rub in a circular motion for 30 seconds using sponge or swab in forceps, starting at the insertion point and working outwards.
Repeat spray and leave to dry for at least 2 minutes

Placement of an epidural catheter should be completed within approximately 20 minutes after starting, or after 3 attempts. If a trainee is having difficulty and taking longer than this, they should stop and seek senior assistance. If the midwife feels they have persisted long enough and are having difficulty, it is appropriate for them to suggest seeking assistance or to escalate as appropriate.

If there are any concerns regarding fetal wellbeing during the procedure, this must be conveyed to the anaesthetist so that the procedure can be paused if necessary to take appropriate action which may include change of position.

During establishment of regional analgesia or after further boluses (10 ml or more of low-dose solutions),

- Measure blood pressure every 5 minutes for 15 minutes.
- If the woman is not pain-free 30 minutes after each administration of local anaesthetic/opioid solution, recall the anaesthetist. (NICE, 2007)

Sometimes the anaesthetist will use a combined spinal and epidural technique (CSE) if a woman if distressed and is unable to sit still long enough for an epidural to be sited safely. If this is performed as two separate injections – a spinal injection then followed by an epidural insertion once the spinal is effective – it is important to monitor the blood pressure (see below under “Top-up procedure”) as soon as the spinal is completed.

All women having epidural analgesia for labour should be prescribed ranitidine

The anaesthetist will establish epidural analgesia, 20 min after completion of epidural, assess the effect of the block and when the woman is comfortable, the midwife may begin top-ups 1 hour after the last dose is given to establish the analgesia.

It is the responsibility of the midwife to ensure appropriate monitoring of fetal wellbeing and the joint responsibility of midwife and anaesthetist to ensure maternal wellbeing during the procedure.

In the event of a spinal/intrathecal catheter, an anaesthetist **must** provide top-ups. These catheters must be labelled as "Spinal Catheter, Top-up by Anaesthetist only" (stickers available on epidural trolley).
Observations must be undertaken every 15 mins whilst the spinal is effective.

12. Testing the height of the block

Use an ice cube to test for lack of cold discrimination before and 10 minutes after each top-up.
Important levels:

Little toe	S1
Big toe	L5
Groin	T12/L1
Umbilicus	T10
Mid-point	Between umbilicus and xiphoid T8
Xiphoid	T6
Nipple	T4

For complete analgesia in labour, the block must extend from T10 to S5. In practice we test the S1 root, since if the little toe is numb, the perineum will also be.

13. Prescription

Epidural analgesia **must** be prescribed on the patient's prescription chart as:

Drug	0.1% Bupivacaine + Fentanyl 2mcg/ml
Dose	10mls
Route	Epidural
Frequency	Maximum Hourly.

Prescription stickers are used on delivery suite.

N.B more frequent top ups must **only** be performed by the anaesthetist.

Prefilled 50ml syringes of epidural solution are available.
No other systemic opioids (strong or weak) should normally be prescribed whilst the patient is receiving epidural analgesia. Occasionally patients may receive a local anaesthetic, only epidural with a concurrent prescription of an opioid via an alternative route should be administered.

The epidural syringe is stored as a controlled drug, and it should be signed out by two qualified health care practitioners (Midwife, nurse, ODP). The epidural book should be then be taken to the room and when checked and administered should be signed by both the midwife and the anaesthetist.

14. Midwife top-up procedure

The filter on the end of the epidural catheter is a bacterial filter so a clean, rather than sterile technique is required. Avoid unnecessary contact with the end of the syringe or the filter and ensure both are capped off immediately after the top-up. ANTT should be used. The Epidural syringe should be kept in a green tray in the room, labelled with the woman's details on a hospital sticker.

The midwife should document the of care of the woman with an epidural in the maternal notes and top-up'prescription chart

Midwives must not top up more frequently than on an hourly basis.

Midwives should top-up "on demand" when mothers feel the contractions becoming more noticeable rather than hourly.

It is important that the top-up is given in a timely manner when the woman feels that sensation is returning to ensure that adequate pain relief is maintained rather than waiting until the woman is in pain.

Failure to provide timely top-ups can result in the epidural wearing off and the woman having sudden onset of pain which can take time and require additional analgesia to resolve.

Hourly top-ups of 10 mls may be necessary of the standard epidural mixture but would not be recommended if:

- There is evidence of motor block in the legs - seek advice from anaesthetist
- The level of block to ice is above T8 - withhold top-up until level below T8

15. Top up Procedure

- Check level of block with ice
- Check patency of IVI
- Check blood pressure
- Sit patient forward and inspect site, to check integrity of dressing and look for fluid under dressing
- Check SLR (straight leg raise)
- Clean port - in line with ANTT

- Aspirate filter and observe for blood or CSF (it is normal to see 0.5-1.0 ml of fluid from the dead space of the catheter appear in the syringe)
- Inject 10mls of epidural mixture
- Check blood pressure every 5 minutes for 15 minutes and document in notes
- Recheck SLR
- Assess pain relief
- Recheck level of block with ice after 15 minutes and document on anaesthetic chart

16. Maternal Observations

All maternal observations should be recorded on the MEOWS chart. The fulln clinical picture should be evaluated to decide on the frequency of the observations and not the presence of an epidural alone. Recordings of BP, HR, SpO2. RR and Temperature should be undertaken for all women with an epidural.

17. Management of complications or side-effects

Problem	Action
Inadequate analgesia	If < 60 minutes since last top-up, call anaesthetist
Hypotension	Open IVI, turn patient into left lateral position, consider oxygen if conscious level decreased, locate Ephedrine, call anaesthetist. If systolic BP <90, pull the buzzer and manage as above
Excessive motor block	Check SLR before and after each top-up. Sudden development of motor block may indicate an accidental spinal injection. Action as for 'hypotension' above
Catheter disconnection	If the disconnection is witnessed, wrap the end of the epidural catheter in a sterile swab and call anaesthetist immediately. The end can be cut and re-sterilised. If you are unsure when the disconnection occurred, the catheter will have to be removed
Respiratory rate <10/minute	Do not give further top-ups. Remain with the patient. Call anaesthetist, locate Naloxone

18. Mobilisation of mothers receiving epidural analgesia for labour

Epidural analgesia need not prevent the patient from getting out of bed, walking around, sitting in a chair and using the toilet. However, it is important that the extent of local anaesthetic blockade is such that the patient has sufficient strength in her legs and does not suffer postural hypotension.

Which Patients?

Any patient with an epidural unless there is an obstetric indication for remaining in bed.

Continuous CTG is not an indication for remaining in bed as the patient can stand by the bed or sit in a chair.

When assessing effect of the block prior to the woman mobilising with the epidural the following must be considered.

Adequate pain relief
Strong sustained ability to straight leg rise
Patient feels that her legs will support her weight.

• Ask the patient to gently place her feet on the floor. If she feels that her feet feel “like cotton wool” then this usually indicates that it is unsafe for her to walk.
• Standing and first steps should be attempted initially with the anaesthetist and midwife until the patient is confident that her legs will support her weight. The patient should do a deep knee bend (femur to approximately 45 degrees to vertical) under supervision (anaesthetist and midwife by the patient’s side).
• Maternal BP should be monitored every 30 min unless required more frequently.
• Epidural analgesia should be maintained by intermittent top-ups of solution. This can be administered with the patient on the bed or sitting in a chair. Epidural analgesia alone is not an indication for continuous fetal heart rate monitoring throughout labour, but a CTG should be commenced with each top-up for a minimum of 10 min.

19. Maternal position in labour

Patients may sit or lie on their sides, but should not lie flat on their backs. If a patient needs to lie on her back for vaginal examination, ensure the uterus is displaced to the left avoid aortocaval compression. Encourage regular position changes to minimise risk pressure area damage particularly heels and ischial spines. The waterlow risk assessment must be undertaken and skin bundle completed.

The benefits of mobilising should be discussed and encouraged with women to improve the chance of having a spontaneous vaginal birth (see assessing effect of block and mobilising in labour)

Women should also be advised that adopting the left lateral position as opposed to sitting upright during the passive second stage of labour reduces the risk of needing an assisted delivery. (Brocklehurst, 2017)

20. Bladder care

Women should be encouraged to empty their bladder every 4 hours after epidural insertion. If spontaneous voiding is not possible, an in-out urinary catheter should be passed. Bladder distension may cause supra-pubic breakthrough pain.

Once epidural analgesia has been established it should be continued throughout labour and delivery until completion of perineal repair. Perform continuous cardiotocography for at least 30 minutes during establishment of regional analgesia and after administration of each further bolus of 10 ml or more. **[NICE 2007, amended 2014]**

21. Removal of epidural catheter

Midwives, Nurses and ODP's are responsible for removing the epidural catheter after delivery (see "Anticoagulation, epidurals and removal of catheters" below).

- Position the patient on her side
- Remove the dressings and pull gently on the epidural catheter with a constant force.
- If there is any resistance, ask the woman to curl up and try again, If these manoeuvres fail, ask the obstetric on-call anaesthetist for assistance
- Ensure blue tip is visible after removal and documented
- If the blue tip is absent the anaesthetist must be informed.
- If the woman is on the sepsis pathway the epidural catheter tip should be sent to the lab for culture and sensitivity

22. Thromboprophylaxis after delivery

The first dose of Enoxaparin (Clexane) can be safely given 6 hours following the insertion of a spinal and 6 hours from removal of an epidural catheter. If a patient receives any form of heparin whilst an epidural catheter is still in situ, the following should be followed before removing the catheter:

- 20mg-40mg Enoxaparin Wait 12 hours
- > 40 mg Enoxaparin Wait 24 hours
- Heparin infusion: Stop infusion, check APTT after 90 minutes.

References :-

BJOG 2009; 116:1622–1632 Associations of drugs routinely given in labour with breastfeeding at 48 hours: analysis of the Cardiff Births Survey. S Jordan, S Emery, A Watkins, JD Evans, M Storey, G Morgan

Brocklehurst. P, 2017. Upright versus lying down position in second stage of labour in nulliparous women with low dose epidural: BUMPES randomised controlled trial BMJ; 359:j4471

National Institute of Clinical Excellence, 2007: Intrapartum Care for Healthy Women and Babies, Clinical Guideline 190.

National Institute of Clinical Excellence, amended 2014: Intrapartum Care for Healthy Women and Babies, Clinical Guideline 190.

APPENDIX 1 Midwives Competencies, Epidural Top-ups

Midwife's Name: _____

Objective 1	**Brief Description of evidence**	**Assessment by relevant person**	**Comments**
To be familiar with the scope of practice and Midwives Rules and standard. Appreciate its implications for practice	Band 7 Delivery Suite midwife/Practice Facilitator: Signature	Midwife signature Band 7 Delivery Suite midwife/Practice Facilitator: Signature	
Objective 2			
To undertake the procedure with due regard to all aspects of health and safety	Band 7 Delivery Suite midwife/Practice Facilitator: Signature	Midwife signature Band 7 Delivery Suite midwife/Practice Facilitator: Signature	
Objective 3			
To attend relevant seminar on Topping up epidurals for women in labour	Seminar includes:- a) Advantages of this method of pain relief b) Anatomy of the spinal column and cord c) Relevant physiology d) Drugs used for epidural " top-ups" e) Common side effects/complications and their treatment f) Assessing level of block g) Monitoring of women	Midwife signature: Anaesthetist Signature:	

	h) Documentation **Date attended**		
Objective 4			
To conduct the procedure according to agreed local policy for "topping up" for women in labour	The midwife should be assessed in carrying out the procedure until the midwife and the assessor are satisfied that the required standard has been met The number of witnessed top-ups will vary with each individual	Anaesthetist Signature: Anaesthetist Signature: Anaesthetist Signature: Anaesthetist Signature: Midwife signature:	