# Epidural analgesia in labour – Guideline for care

**Reference Number:**

**NHSCT/12/523**

**Target audience:**

This policy is directed to all obstetricians, midwives, anaesthetists working within maternity services

**Sources of advice in relation to this document:**

Caroline Keown, Lead Midwife  
Margaret Gordon, Assistant Director Acute Hospital Services

**Replaces (if appropriate):**

Legacy Causeway Guidelines of care of the woman with epidural in labour (including bladder care) 2006

**Type of Document:**

Directorate Specific

**Approved by:**

Policy, Standards and Guidelines Committee

**Date Approved:**

26 March 2012

**Date Issued by Policy Unit:**

10 May 2012

**NHSCT Mission Statement**

To provide for all the quality of services we would expect for our families and ourselves
Epidural analgesia in labour - Guideline for care

November 2011
Epidural analgesia in labour - Guideline for care

Purpose:
- To ensure safe administration of epidural analgesia to women in labour.
- To ensure the careful monitoring of vital signs during siting and administration of epidural analgesia.

The Scope:
This guideline will apply to all midwives involved in caring for women who are having epidural analgesia as a method of pain relief in labour.

Objectives:
To provide clear, concise guidance to all midwives by ensuring they follow the same guidance when caring for women in labour who have epidural analgesia as a method of pain relief.

Target Audience:
This policy is directed to all obstetricians, midwives, anaesthetists working within maternity services.

Indications:
- Provision of analgesia during labour
- Maternal request following adequate information about benefits and risks of the procedure
- No contraindications exist
- Adequate midwifery and anaesthetic staff available

Contra-indications:
- Patient refusal
- Inadequate staff for supervision
- Coagulation disorders
- Local sepsis or severe systematic sepsis
- Local anaesthetic allergy
- Following anaesthetic assessment, risk factor identified that excludes epidural administration

Potential complications:
- Inadequate analgesia
- Hypotension
- Motor block
- Urinary retention
- Respiratory depression
- Post Dural puncture headache
- Epidural haemotoma/abcess
- Pruitus
- Pressure ulcers
- Increased rate of instrumental delivery
Storage of Epidural infusion bags:
- Ready to administer epidural infusions should be stored in a designated area within a locked cupboard
- They are clearly labelled ‘For epidural use only’
- The infusion bags are colour coded ‘yellow’ to differentiate from other infusion bags

Prescribing:
- Only anaesthetic staff may prescribe epidural infusions.
- The anaesthetist must complete and sign the epidural prescription sheet (Appendix 5 for Antrim Area Hospital), which will include:
  a) Drugs prescribed
  b) Rate of infusion (starting rate and range)
  c) Bolus volume and lockout time
* The anaesthetist and attending midwife must ensure controlled drug register is completed in accordance with NHSCT ‘Operational Systems for Management and Administration of Controlled Drugs in CDS, AAH, 2010’ or ‘Operational Systems for Management and Administration of Controlled Drugs in Causeway Maternity Unit, 2010’

Administration:
Standard Epidural Maintenance Regime:
L-Bupivacaine 0.1% and Fentanyl 2 mcg/ml in a 250ml bag of saline.

No other solutions should be used for epidural infusions and no other medications should be added to the infusion bag.

Prior to Epidual Insertion:
1. Epidural trolley to be checked and stocked daily.
2. Any woman requesting epidural analgesia to have written and verbal information given to her and the birth partner on the effects, procedure and potential side effects. See Appendix 1.
3. Ensure that at least 12 hours has elapsed since the last dose of low molecular weight heparin was given before considering epidural analgesia.
4. If a woman has a history of elevated blood pressure, coagulation screen and platelet count must be taken prior to siting epidural.
5. Obtain Intravenous access (16/18g cannula) and commence 500mls of Hartmann’s solution via infusion pump at 5mls per hour.
6. Assist woman into gown if clothing restricts access to her back.
7. If a woman has syntocinon infusion in progress and is distressed, turn off infusion until epidural is insitu.
8. Take and record baseline maternal blood pressure and pulse prior to commencing procedure.
9. Commence continuous electronic fetal monitoring. Fetal well being must be monitored during siting of epidural
10. Assist woman into position requested by anaesthetist, support with pillows.
11. Prepare equipment and trolley for anaesthetist, open epidural pack and supply equipment and drugs as requested by anaesthetist.
Midwives role during procedure:
1. The insertion technique will be determined by the anaesthetist involved
2. Assist anaesthetist during procedure as required
3. Provide support to woman during procedure.

Following insertion of epidural:
- Assist anaesthetist in securing catheter to the woman’s back.
- Ensure epidural catheter and epidural infusion line are both properly labelled by the anaesthetist in accordance with Trust policy
- Assist woman into comfortable position with right or left lateral tilt with use of pillows.
- No women to be left unattended once epidural in situ.
- Record maternal pulse and blood pressure every 5 minutes for first 20 minutes following epidural being sited, then every 30 minutes (unless condition requires more frequent monitoring) throughout the duration of the epidural to monitor maternal well being and to enable any drop in blood pressure to be detected and treated appropriately. This can be recorded on print out from blood pressure monitoring device or manually on partogram.
- Anaesthetist will commence epidural bag (drug and dose) at prescribed rate.
- Check sensory block every 30mins using ice to monitor level of block (see Appendix 2 for guide to levels) and effectiveness of epidural analgesia, report any deviations from normal to duty anaesthetist. Record same on epidural monitoring form (Appendix 6 for Antrim Area Hospital)
- To ensure bladder care, insert size 12 Foley's self retaining catheter using aseptic technique and maintain on free drainage.
- Observe and record epidural infusion amounts, to ensure pump is delivering the correct prescribed amount. Change empty epidural bags when necessary with assistance from midwife in charge to ensure uninterrupted infusion.
- Observe woman’s pressure areas, change woman’s position hourly and record all position changes.
- Complete all relevant documentation in accordance with record keeping guidelines.
- If syntocinon infusion was turned off, recommence at half the rate and increase again as per unit guidance.
- If pain subsequently recurs during the use of the epidural infusion, a top up may be needed. So long as the epidural block shows approximately equal (but too low dermatomal level) effect then a midwife-initiated bolus may be given via the pump (Connect the blue bolus hand control and press button. Remove after bolus). See Appendix 3 for further details on bolus use. Monitoring must be increased to every 5 minutes for the next 20 minutes after a bolus administration.
When Epidural no longer required:

- Once the epidural analgesia is no longer required, turn off pump, wash hands and remove dressing from catheter insertion site.
- Gently remove the epidural catheter checking tip to ensure integrity, this is indicated by a complete ‘blue tip’.
- Record that this is completed in case notes.
- Dispose of catheter and remaining solution in infusion bag appropriately and record amount discarded in controlled drug register and patients notes.
- Remember all disposals of controlled drugs needs to be countersigned by appropriate professional as per Trust policy.
- Intravenous access to be maintained until full sensory power returns to lower limbs and patient fully mobile
- Urinary catheter to remain insitu for 12 hours from last top up or delivery as per NHSCT ‘Bladder care with epidural anaesthesia’ 2007.

Inform duty anaesthetist if:

a. Blood pressure falls to less than systolic 90mmHg
b. Level of block rises above Thoracic segment T6 during regular check of levels. Stop infusion pump immediately.

- Bolus dose fails to relieve the pain within 15 minutes, or if 2 previous successful bolus doses have been given and now a third is required.
- Any problems e.g. difficulty in breathing or itching

- Any marked leg weakness occurs without a more concentrated local anaesthetic having been used for top up.
- Delivery imminent in the case of twin delivery, breech delivery or any delivery where caesarean section is anticipated.

Responsibilities:
Assistant Director and Clinical Director are responsible for the dissemination and implementation of this guidance within the directorates.

Line managers are responsible for ensuring that staff have a working knowledge of and adhere to the guidance and that any amendments are disseminated.

All practitioners are responsible for familiarising themselves with and adhering to this guidance.

Equality, Human Rights and DDA:
The guideline is purely clinical/technical in nature and will have no bearing in terms of its likely impact on equality of opportunity or good relations for people within the equality and good relations categories.

Alternative formats:
This document can be made available on request on disc, larger font, Braille, audio-cassette and in other minority languages to meet the needs of those who are not fluent in English.
Sources of Advice in relation to this document:
The Policy Author, responsible Assistant Director or Director as detailed on the policy title page should be contacted with regard to any queries on the content of this policy.

References:


5. NHSCT (2010) Operational Systems for Management and Administration of Controlled Drugs in CDS, AAH

6. NHSCT (2010) Operational Systems for Management and Administration of Controlled Drugs in Causeway Maternity Unit

7. NHSCT (2010) Medicines management and administration Policy

8. NHSCT (2007) Bladder care with epidural anaesthesia


(Appendix 1)
EPIDURAL INFORMATION CARD
Epidurals in labour – what you need to know

(This card is a summary. Further information is available from www.oaaformothers.info
Please discuss anything that is not clear with your anaesthetist).

Setting up your epidural
- You will need to have an intravenous cannula and maybe a drip.
- While the epidural is being put in, it is important that you keep still and let the anaesthetist know if you are having a contraction.
- Usually takes 20 minutes to set up and 20 minutes to work.
- Some epidurals do not work fully and need to be adjusted or replaced.

Advantages of an epidural
- Usually provides excellent pain relief.
- Sometimes a spinal is given first for a quicker effect.
- The dose or type of local anaesthetic can sometimes be altered to allow you to move around the bed. This is a low-dose (or mobile) epidural.
- In general epidurals do not affect your baby.
- Can be topped up for caesarean section if required.

Possible problems with your epidural
- Repeated top-ups with stronger local anaesthetic may cause temporary leg weakness and increase the risk of forceps or ventouse delivery.
- The epidural may slow down the second stage of labour slightly.
- You may develop low blood pressure, itching or a fever during the epidural.
- The epidural site may be tender but usually only for a few days. Backache is NOT caused by epidurals but is common after any pregnancy.

The other side of this card gives important risks of epidurals

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Dermatome Map of the Body (Appendix 2)

Levels of principal dermatomes

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C5</td>
<td>Clavicles</td>
</tr>
<tr>
<td>C5, 6, 7</td>
<td>Lateral parts of upper limbs</td>
</tr>
<tr>
<td>C8, T1</td>
<td>Medial sides of upper limbs</td>
</tr>
<tr>
<td>C6</td>
<td>Thumb</td>
</tr>
<tr>
<td>C6, 7, 8</td>
<td>Hand</td>
</tr>
<tr>
<td>C8</td>
<td>Ring and little fingers</td>
</tr>
<tr>
<td>T4</td>
<td>Level of nipples</td>
</tr>
<tr>
<td>T10</td>
<td>Level of umbilicus</td>
</tr>
<tr>
<td>T12</td>
<td>Inguinal or groin regions</td>
</tr>
<tr>
<td>L1, 2, 3, 4</td>
<td>Anterior and inner surfaces of lower limbs</td>
</tr>
<tr>
<td>L4, 5, S1</td>
<td>Foot</td>
</tr>
<tr>
<td>L4</td>
<td>Medial side of great toe</td>
</tr>
<tr>
<td>S1, 2, L5</td>
<td>Posterior and outer surfaces of lower limbs</td>
</tr>
<tr>
<td>S1</td>
<td>Lateral margin of foot and little toe</td>
</tr>
<tr>
<td>S2, 3, 4</td>
<td>Penneum</td>
</tr>
</tbody>
</table>
Administration of Top up doses for Epidurals in Delivery Suite

Top ups
Occasionally in spite of the steady infusion the block height may not reach the desired T8 height and the pain of contractions may persist. It may then be necessary to give extra doses of the mixture (known as giving a ‘top up’ or ‘bolus dose’) to bring the block height up. A dose of approximately 6 ml of the mixture may be used for this.

How to test the level of the block
A comparison is made between the unblocked skin and the blocked skin, using an ice cube. This is run slowly up each side of the abdomen until a level is reached where it feels as cold as it felt on their shoulder or neck. Do not ask ‘do you feel this’ as light touch will nearly always be maintained when dilute solutions are used. It is the return of the ‘ice cold’ sensation which is noted. Occasionally ‘missed segments’ or even ‘unilateral blocks’ may occur. These may be seen on ice testing or may be described by the patient. A unilateral cold foot is another pointer to unilateral epidural. This problem might not respond to a simple bolus top up, and may require the anaesthetist to work with the catheter. Similarly missed sacral roots could lead to pain in the birth canal area.

When to give a top up
Top up epidural when the following criteria are met:-

1. Patient is experiencing painful contractions in spite of a running epidural infusion
2. The block is tested and shown to be below T8 on both sides (if it is markedly different on the two sides, call the anaesthetist)
3. No top ups have been given within the last hour
4. All observations are stable

If the above criteria are not met, call the anaesthetist.
If a third top up is required this should be discussed with the anaesthetist

How to give a top up
1. Check the pump is set to the prescribed settings (pushing the ‘i’ repeatedly interrogates the pump. The settings (example settings below may vary) include:
   -infusion rate: 10 ml/hr
   -bolus dose: 6ml
   -lockout interval: 30 minutes
2. Press the orange bolus button. The screen then displays the progress of the bolus.
3. Note time and document the giving of the bolus (on the anaesthetic printout sheet)
4. Check cardiovascular observations as per standard protocol
5. Check block level after 15 minutes
6. If inadequate improvement in pain relief after this, inform anaesthetist.
Principles of epidural analgesia

Epidural infusions are used to provide analgesia during labour and delivery. Mixtures of local anaesthetic and opioid are used, aiming for the maximum analgesia with the minimum degree of muscle weakness. The routine mixture used is:

Chirocaine 0.125% with Fentanyl 2 micrograms per ml.

This mixture is usually infused at a steady rate of 10 ml per hour following initiation of the block. We aim to keep the ‘block height’, as tested with ice, to around T8 – ie a couple of inches above the umbilicus. This should result in relief of uterine contraction pain.

When working properly an epidural will provide the best form of analgesia available for childbirth, with minimal sedation to either mother or baby.

HOWEVER: Possible problems can occur with epidurals which must be watched for and managed properly:

1. Patchy or unilateral block: If parts of the nerve supply to the uterus or birth canal do not receive enough of the local anaesthetic mixture then that part will continue to feel pain. Even though the other parts are blocked the remaining unblocked area will make the patient experience severe pain. This can be spotted by ice testing (see front page) and will need the anaesthetist to adjust the epidural catheter.

2. High blocks / low blood pressure. The anaesthetic has the effect of lowering the BP by blocking sympathetic nerve output. The higher the block, the lower will be the BP. For labour the block needs to be up to T8. If it does go higher than T6 the infusion should be stopped and the anaesthetist informed.

3. Very rarely ‘Total Spinal’ block may occur where the block extends to the cervical root level. Blood pressure may be very low, the patient may have difficulty breathing and may go unconscious. This is a medical emergency, and requires immediate treatment. The ‘ABC’ treatment for collapsed patients may be required.

4. The normal maternal ‘supine hypotension’ seen in parturients is markedly increased by an epidural. Therefore the fully supine position should be avoided.

5. The incidence of pressure sores is increased when epidurals are used. We should be alert to this and maintain an appropriate bed surface, and use regular position changes.

In spite of the above, provided we manage the epidurals well and never leave the mother with an epidural unattended, epidurals are a very successful form of pain relief for labour pain.
Antrim Area Hospital
REGIONAL ANALGESIA for OBSTETRICS
Wednesday, 29 December, 2010
2:30 pm
EPIDURAL

| Patient Label |

Pain - 0
Cx 3 cm
Prior analgesia Entonox
Intr Pts choice for analgesia from start of labour

**Verbal Consent** obtained in the setting of a patient (alert) + partner & midwife present

Discussion included:
- A. Failure 1:8, Headache 1:100, pressure sores 1:200, Hypertension 1:50.
- Permanent nerve injury 1:10000
- Ep. Abscess 1:500,000, Meningitis 1:100,000, Ep. Haematomyoma 1:170,000, Paralysis 1:250,000

OAA leaflet read by Pt. Yes

**Technique:** Chlorhexidine, drape, gown, gloves, mask
Pts position: Sitting up
1% Lidocaine (5-10ml) to skin

**Approach:** Midline
Site: L3/4
Needle: 18G Standard Tuohy
Skin punctures: 1
Sites attempted: 1

**LOR to Saline**
Depth of ep. space: 4.5 cm
4 cm ep. cath inserted

**Paraesthesia:** No
loc. N/A
cavity N/A
Catheter aspirated? Yes

Initially: LEVObupivacaine 0.25% Test 4 ml Total Dose 10 ml plus opioid: Alfentanil 300mcg given 8 minutes ago

BP following induction of block. Remaining stable

**Problems:** None

N/A

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**Continuous EPIDURAL Infusion + midwife delivered bolus PRESCRIPTION**

<table>
<thead>
<tr>
<th>LEVObupivacaine 1mg/ml (0.1%)</th>
<th>FENTANYL 2 microgram/ml</th>
<th>0.9% saline</th>
<th>220 ml Infusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Rate</td>
<td>Rate (Range)</td>
<td>Dose: 6 ml</td>
<td>Lockout 30 mins</td>
</tr>
<tr>
<td>12 ml/hour</td>
<td>8 to 14 ml/hour</td>
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</tbody>
</table>

**Administration Record**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Vet Instruct</th>
<th>Rate</th>
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<tbody>
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</table>

<table>
<thead>
<tr>
<th>Bolus: ml/time</th>
<th>0.9% Place</th>
<th>Ice level R/L</th>
<th>leg power R/L</th>
<th>Pain score</th>
<th>Initials</th>
</tr>
</thead>
<tbody>
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**Bag Lot No.**

<table>
<thead>
<tr>
<th>Volumes ml</th>
<th>Time</th>
<th>Date</th>
<th>Initials</th>
<th>Signature</th>
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<tbody>
<tr>
<td>1</td>
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Procedure carried out by Dr Greg Furness
### Administration Record

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Vol Infused</th>
<th>Rate</th>
<th>Bolus mL/ time</th>
<th>Ice level R/L</th>
<th>Leg power R/L</th>
<th>Pain score</th>
<th>Initials</th>
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<th>Ice level R/L</th>
<th>Leg power R/L</th>
<th>Pain score</th>
<th>Initials</th>
</tr>
</thead>
</table>

Epidural catheter removed complete: Date _____ / _____ / 20 _____ Time ____ : ___________ Initials _______.

(Appendix 6)