University Hospitals Birmingham NHS
NHS Foundation Trust

Expanded Practice Protocol for the Care of a Continuous Epidural Infusion for the Management of Acute Pain

CONTROLLED DOCUMENT

CATEGORY:	**Procedural Document**
CLASSIFICATION:	**Clinical**
PURPOSE	**The purpose of this expanded practice protocol is to support registered practitioners to care for patients receiving a continuous epidural infusion for the management of acute pain.**
Controlled Document Number:	**239 (Formerly CP 09)**
Version Number:	**6**
Controlled Document Sponsor:	**Executive Chief Nurse**
Controlled Document Lead:	**Nurse Consultant Urgent Care/ Acute Pain**
Approved By:	**Executive Chief Nurse** **Executive Medical Director** **Nurse Consultant Urgent Care/ Acute Pain**
On:	**June 2013**
Review Date:	**May 2016**
Distribution: • **Essential Reading for:** • **Information for:**	**All registered practitioners who currently undertake the practice of caring for a continual epidural infusion for the management of acute pain and all registered practitioners who wish to expand their practice to include this skill.** **All registered clinical staff.**

EVIDENCE FOR PRACTICE

Continuous epidural analgesia is the administration of analgesic drugs (local anaesthetics with or without an opiate) into the epidural space via an indwelling catheter. The administration of analgesic drugs affects the nerve pathways and ensures that pain sensation in the region of the epidural is lessened or eliminated.

Epidural analgesia is highly effective and the combination of excellent pain relief and minimal side effects provides high patient satisfaction compared to other methods of analgesia. However epidural analgesia can cause serious life threatening complications and its safe management requires a safe co-ordinated multidisciplinary approach (Royal College of Anaesthetists, 2012).

Effective control of acute pain will improve respiratory function, encourage early mobilisation and thus reduce the risk of associated complications such as Deep Vein Thrombosis (DVT), Pulmonary Embolus (PE) and pneumonia. In addition, this will aid facilitation of early discharge.

Registered practitioners who have been assessed as competent to care for patients with epidural infusions, are able to provide safe, timely and holistic care to this group of patients leading to appropriate pain management, continuity of care and greater patient satisfaction.

A review of the expanded practice protocol has been undertaken as part of the Trust wide pain benchmarking (Thompson, 2012). No significant changes to the protocol have been made.

CONSENT

Although formal written consent is not required for minor procedures verbal consent for any care provided to the patient must be obtained where possible and this must be documented in the patient's notes. For further information regarding consent and mental capacity please refer to the following documents:

- Department of Health Reference Guide to Consent for Examination or Treatment (2009).
- The Trust's Policy and Procedural document for consent to examination or treatment (current version).
- *Mental Capacity Act (2005).*

INDICATIONS

Following the insertion of an epidural catheter, prescription and commencement of an epidural infusion by the anaesthetist, registered practitioners will provide care of epidural catheters in order to:

1. Control acute pain post operatively following:
    - upper and lower abdominal surgery
    - thoracic surgery
    - gynaecological surgery
    - lower limb surgery

2. Control acute pain following traumatic injury such as:
    - rib fractures
    - lower limb injuries
    - abdominal injuries

CONTRAINDICATIONS

In the following circumstances the care of a continuous epidural infusion in the management of acute pain will not be delivered by registered practitioners and the patient will be referred to the medical team:

- The patient refuses.
- The patient is under 16 years of age.

LIMITATIONS TO PRACTICE

In the following circumstances or if at any stage the registered practitioner becomes concerned about the patient's condition; the patient must be referred to the on-call anaesthetist or the Urgent Care/Acute Pain Team and the medical/surgical team.
The patient must be referred to the medical/surgical team if:

- The patient becomes hypotensive despite fluid replacement.
- The patient has a pain score of 2 or more despite all supplementary analgesia being given.
- The patient develops a respiratory rate < 8 breaths per minute or a sedation score of 3.
- The patient has a high block and /or severe leg weakness despite decreasing the epidural infusion rate or stopping the epidural infusion (see Appendix 4).
- The patient has signs of local and/or systemic sepsis including septicaemia.
- There is fresh oozing around the epidural site.
- The patient develops a coagulopathy.
- The patient develops symptoms and signs of an allergic reaction to local anaesthetic agents or opiates.
- The patient develops a severe headache.

The appropriate Health and Safety risk assessments must have been completed for the clinical area.

CRITERIA FOR COMPETENCE

1. The registered practitioner must have demonstrated competence in the care of continuous epidural infusion for the management of acute pain according to this expanded practice protocol.

2. The registered practitioner must be competent in intravenous drug administration in accordance with the current version of the Expanded Practice Protocol CD No:232 (formerly CP03); Protocol for the Administration of Intravenous Drugs and Infusions.

3. The registered practitioner must provide evidence of competence in the safe handling, use and maintenance of the CADD Solis pump. This evidence must be kept by the ward/ department line manager.

4. The registered practitioner must have a working knowledge of and practice in accordance with the Trust Medicine Policy and associated procedural documents (current version).

5. Evidence of satisfactory supervised practice must be provided by the registered practitioner as witnessed by a practitioner who is already competent in the care of continuous epidural infusions for the management of acute pain (Appendix 1).

6. The number of supervised practices required will reflect the individual registered practitioner's learning needs.

7. Evidence of competence must be provided and a copy kept in the registered practitioner's personal file and in the department where the skill is practised (Appendix 2).

8. Registered practitioners new to the Trust, who have been performing this skill elsewhere, must read and understand this protocol. Evidence of appropriate education and competence must be provided and checked by the line manager before undertaking this expanded practice at the Trust. The decision whether the registered practitioner needs to complete Trust training and competence will be at the discretion of the registered practitioner's line manager.

9. In accordance with codes of professional practice, the registered practitioner has a responsibility to recognise, and to work within, the limits of their competence. In addition, the registered practitioner has a responsibility to practise within the boundaries of the current evidence based practice and in line with up to date Trust and national policies and procedural documents. Evidence of continuing professional development and maintenance of skill level will be required and confirmed at the registered practitioner's annual appraisal by the registered practitioner's line manager.

PROTOCOL AND SKILLS AUDIT

The Nurse Consultant Urgent Care/ Acute Pain or the Senior Urgent Care/ Acute Pain Nurse will lead the audit of the protocol with the support from the Practice Development Team. The audit will be incorporated into the Trust wide pain benchmarking process.

All audits must be logged with the Clinical Governance Support Unit.

CLINICAL INCIDENT REPORTING AND MANAGEMENT

Any untoward incidents and near misses must be dealt with by the appropriate management team. An incident form must be completed and in addition the Risk Management Team must be notified by telephone of any Serious Incidents Requiring Investigation (SIRI).

REFERENCES

Department of Health (2009) **Reference Guide to Consent for Examination or Treatment** 2nd edn. HMSO London

Mental Capacity Act 2005,
http://www.legislation.gov.uk/ukpga/2005/9/contents
[accessed 16.10.12]

Royal College of Anaesthetists (2012) **Best practice in the management of continuous epidural analgesia in the hospital setting**.
http://www.aagbi.org/sites/default/files/epidural_analgesia_2011.pdf
[Accessed 04.04.13]

Thompson, L. (2012) Pain Benchmarking Trust Report. University Hospitals Birmingham NHS Foundation Trust, Unpublished. Reference CAB-04456-12

University Hospitals Birmingham NHS Foundation Trust (current version) **Policy for consent to examination or treatment**, University Hospitals Birmingham NHS Foundation Trust.
http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm
[accessed 16.10.12]

University Hospitals Birmingham NHS Foundation Trust (current version) **Procedure for consent to examination or treatment**. University Hospitals Birmingham NHS Foundation Trust
http://uhbpolicies/Microsites/Policies_Procedures/consent-to-examination-or-treatment.htm
[accessed 16.10.12]

University Hospitals Birmingham NHS Foundation Trust (current version) **Medicines Policy** University Hospitals Birmingham NHS Foundation Trust.

University Hospitals Birmingham NHS Foundation Trust (current version) **Expanded Practice Protocol for the Administration of Intravenous Drugs and Infusions by Registered Practitioners.** University Hospitals Birmingham NHS Foundation Trust.

BIBLIOGRAPHY

Dougherty, L. Lister, S (Eds) (2011) **The Royal Marsden Hospital Manual of Clinical Procedures** (8th Edition). Blackwell Publishing, Oxford.
http://www.rmmonline.co.uk/
[Accessed 11.04.13]

Nimmo, M. (2004) Benefit and outcome after analgesia. Continuing Education in Anaesthesia. **Critical Care and Pain**. 4(2) 44-47.

Pasero, C. (2003) Epidural Analgesia for Postoperative Pain: Excellent analgesia and improved patient outcomes after major surgery. **American Journal of Nursing**. 103(10) pp62-64.

Royal College of Anaesthetists (2009) **The 3rd National Audit of Major Complications of Central Neuraxial Block in the United Kingdom.** http://www.rcoa.ac.uk/nap3
[Accessed 11.04.13]

University Hospitals Birmingham NHS Foundation Trust Risk Assessment Documentation http://uhbhome/Resources/RiskAssessmentDocs/Home.aspx
[Accessed 11.04.13]

Weetman, C. (2006) Use of epidural analgesia in post-operative pain management. **Nursing Standard.** 20(44) pp54-64.

PROTOCOL SUBMISSION DETAILS

Protocol reviewed by:

[redacted]

Nurse Consultant
Anaesthetics - Consultant
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Practice Development Nurse
Lead Nurse Standards
Associate Director of Pharmacy

Protocol Submitted to and approved by:

Executive Chief Nurse

Date:

Executive Medical Director

Date:

Nurse Consultant Urgent Care/ Acute Pain

Date:

[redacted]

Appendix 1

UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST

EVIDENCE OF SUPERVISED PRACTICE

To become a competent practitioner, it is the responsibility of each registered practitioner to undertake supervised practice in order to care of a continuous epidural infusion for the management of acute pain in a safe and skilled manner.

Name of Registered Practitioner: ……

DATE	DETAILS OF PROCEDURE	SATISFACTORY STANDARD MET	COMMENTS	PRINT NAME, SIGNATURE & DESIGNATION
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		
		Yes / No		

Appendix 2

UNIVERSITY HOSPITALS BIRMINGHAM NHS FOUNDATION TRUST

CRITERIA FOR COMPETENCE

END COMPETENCE: CARE OF A CONTINUOUS EPIDURAL INFUSION FOR THE MANAGEMENT OF ACUTE PAIN.

Date(s) of Education and supervised practice: ……

Name of Registered Practitioner (print): …… Clinical Area / Department: …….

Name of Supervisor (print): ……

Element of Competence To Be Achieved	Date Achieved	Registered Practitioner Sign	Supervisor Sign
Discuss and identify • indications, • contraindications • limitations for care of a continuous epidural infusion for the management of acute pain according to this expanded practice protocol.			
Provide evidence of competence in intravenous drug administration in accordance with the current version of the Expanded Practice Protocol CD No:232 (formerly CP03) Protocol for the Administration of Intravenous Drugs and Infusions			
Describe the location of an epidural catheter in relation to anatomical structures of the body.			
Describe the potential hazards associated with insertion of an epidural catheter.			
Demonstrate the safe preparation of drugs used in the delivery of epidural analgesia. (Supervised practice must include correct administration of controlled drugs).			

Element of Competence To Be Achieved	Date Achieved	Registered Practitioner Sign	Supervisor Sign
Demonstrate knowledge of the Trust Medicines Policy and associated procedural documents (current versions).			
Demonstrate the safe use of equipment used for epidural administration of analgesia. This must include evidence of competence in the safe handling, use and maintenance of the CADD Solis pump.			
Demonstrate accurate provision of information to the patient regarding their epidural in a way that the patient understands.			
Demonstrate maintenance of the patient's privacy and dignity throughout the procedure.			
Demonstrate the correct assessment of the patient using the Trust observation chart and Bromage Scale.			
Identify the potential hazards and complications associated with administration of drugs via an epidural.			
Describe the observations which must be made to identify potential complications and describe what action should be taken in the event of complications occurring.			
Demonstrate a working knowledge of the management of leg weakness associated with epidural analgesia (Appendix 4).			
Demonstrate knowledge of how to contact the Urgent Care/ Acute Pain Team, first on-call anaesthetist and the clinical team in charge of the patient's care.			

Element of Competence To Be Achieved	Date Achieved	Registered Practitioner Sign	Supervisor Sign

Demonstrate safe and effective hand-over between theatre/recovery staff and ward staff.			
Demonstrate safe infection control practices throughout the procedure. To include: • Standard precautions • Aseptic non touch technique (where applicable)			
Demonstrate correct removal of epidural and safe disposal of equipment.			
Demonstrate correct cleaning of an epidural site when epidural removed and application of dressing.			
Demonstrate a working knowledge of the Trust's policy for consent to examination or treatment.			
Demonstrate a working knowledge of the *Mental Capacity Act*			
Discuss accountability in relation to the NMC Code: Standards of conduct, performance and ethics for nurses and midwives (2008).			
Demonstrate accurate record keeping.			
Discuss any health and safety issues in relation to this expanded practice			
Demonstrate an understanding of the incident reporting process.			

I declare I have expanded my knowledge and skills and undertake to practice with accountability for my decisions and actions.
I have read and understood the protocol for **the care of continuous epidural infusion for the management of acute pain.**
Signature of Registered practitioner: ..... **Print name**: …….
Date: ……

I declare that I have supervised this registered practitioner and found her/him to be competent as judged by the above criteria.
Signature of Supervisor: …… **Print name:** ……
Date: ……..…….

A copy of this record should be placed in the registered practitioner's personal file, a copy must be stored in the clinical area by the line manager and a copy can be retained by the individual for their Professional Portfolio.

Guidelines for best practice related to continuous epidural infusion
Management of epidural infusions

1. Under no circumstances must an epidural infusion be administered by any means other than via an epidural catheter.

2. Only registered practitioners assessed as competent against this expanded practice protocol (Appendices 1 and 2) can administer drugs via the epidural route as prescribed.

3. A transparent dressing must be secured over the insertion site to allow inspection for signs of leakage, bleeding, redness, swelling or catheter migration, at least once per shift. Refer to the Urgent Care/Acute Pain Team or on call anaesthetist and the clinical team in charge of the patient's care if any of these signs occur. An adhesive dressing should be used to fix the edges of the transparent dressing and to fix the remaining length of catheter up the patient's back to the shoulder. This will further minimise the risk of displacement.

4. A Trust agreed epidural bacterial filter must always be in place between the epidural catheter and infusion line. This must be visible to allow regular inspection for signs of leakage and to ensure that connections have not become loose. If the bacterial filter becomes completely detached from the epidural catheter, the catheter must be removed by the competent registered practitioner. If either occurs, inform the Urgent Care/Acute Pain Team or on call anaesthetist and the clinical team in charge of the patient's care immediately.

5. The epidural infusion line and epidural catheter must both be labelled using the Trust epidural line flag to avoid inappropriate use and administration of other opiate analgesics whilst epidural infusion in progress. The epidural infusion must be prescribed on the Prescribing, Information and Communication System (PICS). A CADD Solis pump must be used for the infusion.

6. Oxygen must be administered during the continuous epidural infusion according to the patient's needs and as prescribed.

7. Assess and document all clinical observations including block, Bromage Scale and infusion rate on PICS. Ensure fluid balance is completed. Ensure all patients have intravenous (IV) access and are adequately hydrated. If the patient becomes profoundly hypotensive despite fluid replacement increase frequency of observations, check block, call for help, contact the Urgent Care/Acute Pain Team or on call Anaesthetist and the clinical team in charge of the patient's care immediately.

8. Assess and document pain and sedation score alongside clinical observations. If the patient is in pain, administer supplementary analgesia as prescribed. Check the block and consider repositioning the patient. Troubleshoot the epidural line- check connections and ensure catheter is still in the correct position. Following this, and if patient's pain score remains greater than 2, contact the Urgent Care/Acute Pain Team or on call anaesthetist and the clinical team in charge of the patient's care and record on PICS and in the patient's notes.

9. If the sedation score is 3 and respiratory rate < 8 breaths per minute, stop the infusion and apply high flow oxygen. Call for help and contact the Urgent Care/Acute Pain Team or on call anaesthetist and the clinical team in charge of the patient's care immediately and prepare IV naloxone.

10. Assess measure and document block using ethychloride spray together with the Bromage Scale. If block is unilateral tilt patient onto unaffected side. If the block extends above T5 or the patient is unable to move their legs, sit patient up and stop the infusion. When sensation returns and block falls re-commence infusion at a lower rate. Contact the Urgent Care/Acute Pain Team or on anaesthetist for advice immediately. Record on PICS and in the patient's notes.

11. Observe for other signs listed in limitations to practice. If any occur please refer patient to Urgent Care/Acute Pain Team or on call anaesthetist for advice immediately.

12. The epidural infusion line and bag must be changed, as a minimum every 72 hours.

13. Each time the syringe/bag is changed ensure that the infusion line is connected to the epidural catheter, and labelled appropriately.

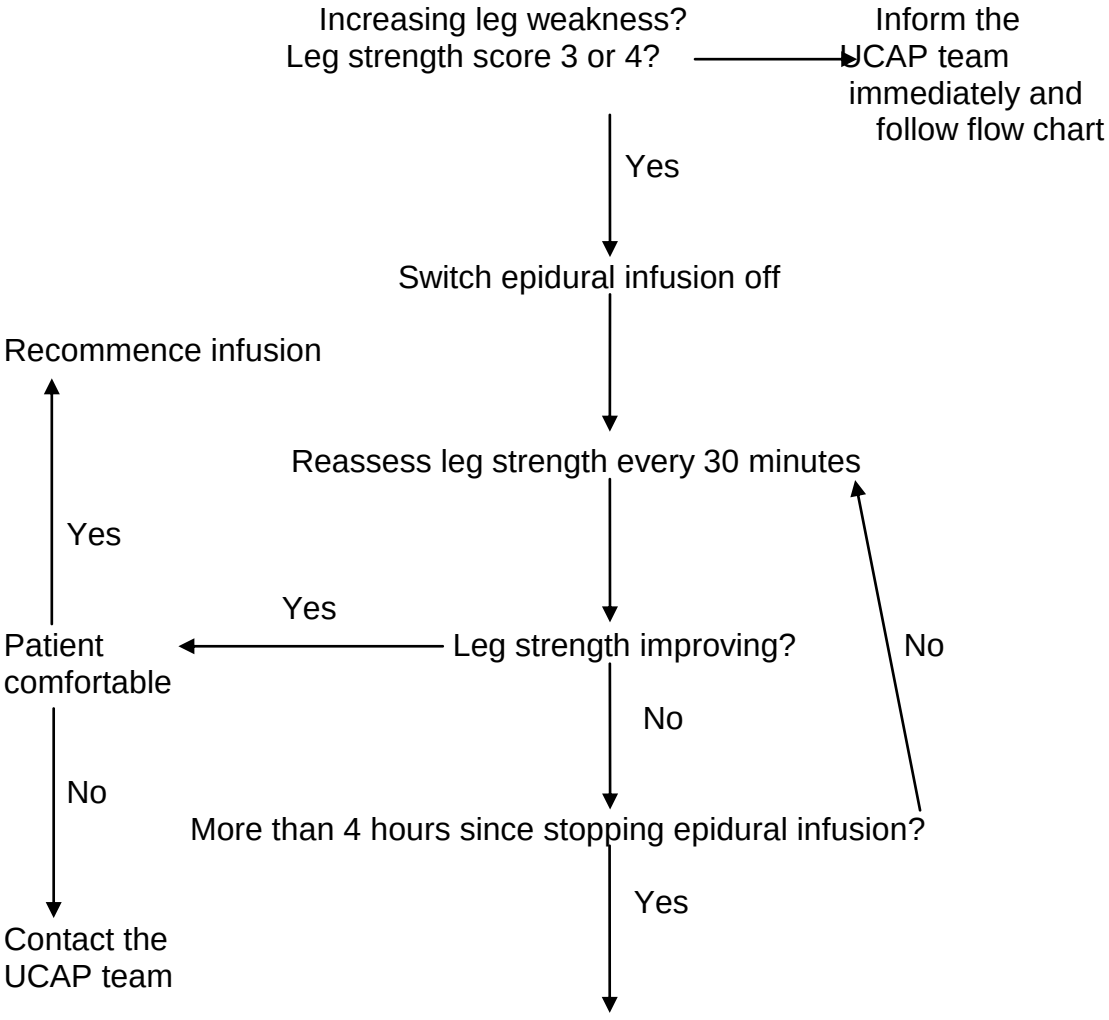
14. Review and provide appropriate on going care to the patient's pressure areas whilst the epidural infusion is in progress according to the patient's needs and document all care provided.

15. Epidural catheters should be removed within 5 days of insertion. On removal ensure the integrity of the catheter, paying particular attention to the tip. Catheter removal should occur at least 12 hours after the last dose of low molecular weight Heparin has been administered. Ensure alternative analgesia is prescribed and has been administered. If on removal of the epidural catheter the site is red, painful or shows signs of infection, swab site and send both the swab and the tip of the epidural catheter for microbiological culture and antibiotic sensitivity. Inform the Urgent Care/Acute Pain Team or on call anaesthetist and the clinical team in charge of the patient's care immediately.

Appendix 4

MANAGEMENT OF LEG WEAKNESS WITH EPIDURAL ANALGESIA

All patients receiving epidural analgesia must have their leg strength assessed according to the patients' needs, but on a minimum of 8 hourly basis, using the Bromage scale. Thoracic epidural analgesia should not cause profound leg weakness. Increasing leg weakness usually means the infusion rate is too high. However, it may mean that the patient is developing an epidural haematoma. If not diagnosed and treated promptly, this will lead to paraplegia. Use this algorithm to help differentiate and discuss management with the on call anaesthetist.



Suspect an epidural haematoma. Proceed as follows:

Between 08.00-20.00hrs contact a member of the Urgent Care/Acute Pain (UCAP) Team who, with the medical/surgical team in charge of the patient's care and/or the on anaesthetist, will make arrangements for an urgent spinal MRI scan through the neuro-radiology department and liaise with the neurosurgical registrar on call (bleep 1137).

Between 20.00-.08.00 contact the on call anaesthetist directly (bleep 1134 or 2203) who will, with the medical/surgical team in charge of the patient's care, arrange an urgent spinal MRI scan through the on call neuro-radiographer and neurosurgical registrar. **DO NOT DELAY THESE ACTIONS.**

An epidural haematoma has to be evacuated within 8 hours of the onset of symptoms for your patient to have the best chance of recovery of neurological function.

Description of the Bromage Scale:

The Bromage scale is graded as set out in the table below. This must be recorded on PICS.

Grade	Criteria
1	Free movement of legs and feet
2	Just able to flex knees with free movement of feet
3	Able to move feet only
4	Unable to move legs or feet

Contact Details:

Urgent Care /Acute pain team	X 14274/5/6 or Bleep/ call through switch
On call anaesthetist	Bleep 1134 or 2203