Doncaster and Bassetlaw Teaching Hospitals NHS Foundation Trust

Policy for the Administration of Epidural Analgesia (For use in Adult Areas excluding Maternity & Obstetrics)

This procedural document supersedes: PAT/MM 12 V.2 – Policy for the Administration of Epidural Analgesia (For use in Adult Areas excluding Maternity & Obstetrics)

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Target audience:	Clinical areas excluding Obstetrics where adult patients receive Epidural Infusions for Pain Management

AMENDMENT FORM

Please record brief details of the changes made alongside the next version number. If the procedural document has been reviewed **without change**, this information will still need to be recorded although the version number will remain the same.

Version	Date Issued	Brief Summary of Changes	Author
V 3.0	March 2024	Changes throughout to reflect change in epidural pump device and NRFit compliance	Sister Ailsa Woodhouse and Dr Raj McNab
V 2.0	November 2021	Changes throughout. Please read fully	Sister Ailsa Woodhouse and Dr Raj McNab
V 1.0	June 2021	This is a new policy	Sister Ailsa Woodhouse and Dr Raj McNab

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1 INTRODUCTION

This policy sets out the framework for the safe and effective delivery of epidural analgesia via an infusion device for patients requiring this method of analgesia within a surgical setting. It covers the expectations and standards required from different groups of staff who will be involved in this process.

This policy does not cover the use of epidurals within the maternity setting. Please refer to the Epidural Anaesthesia in Labour policy MSG83.

https://extranet.dbth.nhs.uk/document/msg-83-epidural-anaesthesia-in-labour/

Epidural analgesia is an effective invasive technique where analgesic drugs are injected or infused into the epidural space. Epidurals are sited in either the thoracic or lumbar regions of the spine.

Thoracic epidural analgesia is an effective way of providing pain relief following major surgery or trauma. Improved analgesia has been reliably demonstrated in patients having thoracic and abdominal surgery and leads to improved pulmonary function, mobility, improved compliance with physiotherapy, improved gut function and higher patient satisfaction.

This method of pain relief is achieved by the administration of opioid analgesics and/or a local anaesthetic agent via a catheter inserted into the epidural space. The catheter may be inserted at different spinal cord levels in order to block the appropriate nerve roots supplying the site of pain.

2 PURPOSE

To promote the safe and effective management of patients receiving an epidural for Pain Management (National Patient Safety Agency (2007) and following the Patient Safety Alert (21) Ensuring Safer Practice for patients receiving epidural injections/infusions.

It is intended to assist both medical and nursing staff to provide safe and effective management of an Epidural infusion and to ensure patients receive continuity of analgesia.

This policy should be read in conjunction with the policy for 'Safe and Secure Handling of Controlled Drugs part B': https://www.dbth.nhs.uk/document/patmm1b/

3 DUTIES AND RESPONSIBILITIES

3.1 All nursing staff

All nursing staff must:

- Activate the epidural care plan on Nervecentre when the patient is admitted to the ward
- Ensure that the patient is referred to the Inpatient Pain Team on Nervecentre if they have not already been referred or reviewed
- Ensure that they are competent in the setting up/use of the epidural pump when caring for a patient with an epidural, in accordance with completion of the Competency Assessment Package
- Maintain contemporaneous records pertaining to observations and pump monitoring
- Staff will receive practical instruction on using the equipment from the Inpatient Pain Team or clinical educators
    - Quick reference guide leaflets are available from the Inpatient Pain Team
    - Quick reference guides act as an aide-memoir and do not replace training
    - Familiarisation to the operator's manuals (available in the relevant clinical areas/ wards) is essential

3.2 The senior nurse in charge of the clinical area

- Ensure their ward staff has been appropriately trained in the use and troubleshooting of epidurals and have an identifiable Pain Link Nurse
- The registered nurse/healthcare professional must demonstrate competency in management of epidural infusions using the identified equipment in accordance with the Trust policy CORP/PROC 4 v7 – Medical Devices Management and Training Policy
- In collaboration with the matron and other relevant professionals, must investigate all adverse clinical incidents in relation to inadequate analgesia to prevent their future occurrence

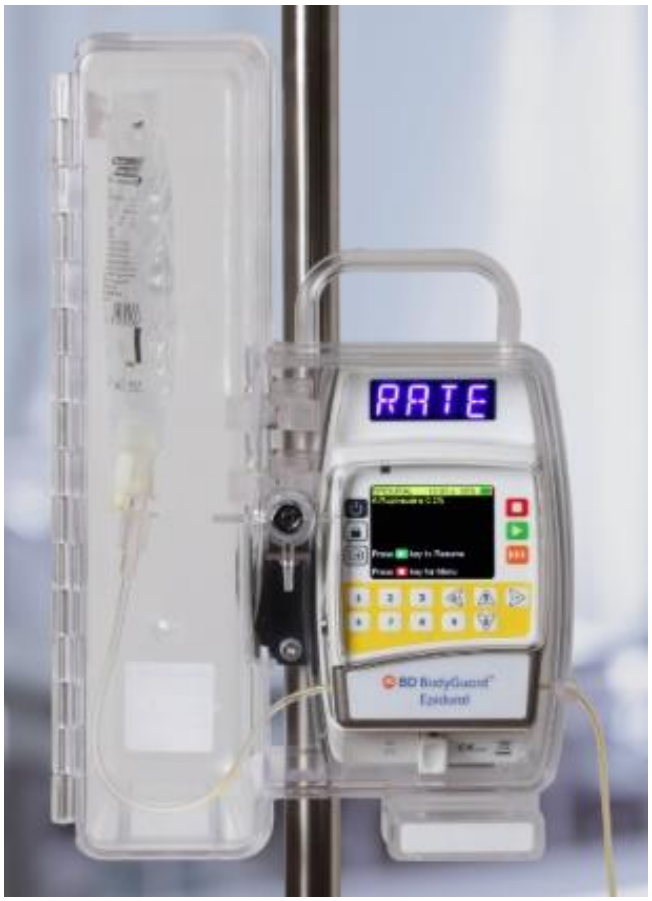
3.3 The prescriber

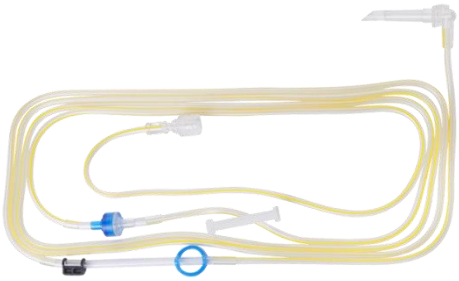
It is the responsibility of the prescriber to ensure that an epidural is a suitable analgesic route for the patient. This decision will be based upon clinical condition of the patient requiring the need for a readily available pain relief. The analgesia prescription must be completed by an appropriate prescriber and be signed and dated. This is required on WellSky and the paper prescription.

4 EPIDURAL INFUSIONS

4.1 Equipment

Epidural analgesia is only to be administered using a BD BodyGuard epidural pump with a dedicated yellow striped administration designated “For Epidural Use Only”. Non-luer connectors (NRFit™) should be used for all epidural giving set connections. Administration sets must be NRFit™, only NRFit™ connectors are to be used for epidural drug administration.





5 DRUGS AND PROTOCOLS

At DBTH NHS FT we have opted for the BD BodyGuard epidural pump as the pump for use with patient receiving epidural analgesia. These pumps are all programmed with the DBTH dataset that contains all the protocols for all areas of the trust.

There are multiple protocols programmed onto the pump. They are specific to different areas in the trust. All of the pumps have the same programming so can be used in any area if needed.

5.1 Drugs

The protocols specify what drug to use and are only to be used with the drugs that they are designed for. There are 2 emergency use protocols which are only to be used in case of supply issues, they are not for routine use. If there are supply issues with drugs, communication will be sent out and a SOP released for emergency protocol use. Once any supply issues have resolved will go back to the standard protocols.

There are 3 standard drug formulations:

- Standard mixed epidural – 250ml premixed bag for epidural infusion that contains Bupivacaine 0.1% and Fentanyl 2mcg/ml

- Plain epidural – 250ml premixed bag for epidural infusion that contains Bupivacaine 0.25% only

- Diamorphine only – This bag will need to be specifically made up for use by putting 20mg of Diamorphine into 500ml Saline 0.9%

5.2 Opioids

- Conscious levels need to be regularly monitored and documented using the AVPU scale within the Nervecentre eObs module during cross over period when using epidural administered fentanyl and oral/subcutaneous morphine
- Fentanyl will take approximately 3 hours to clear safely from the patient's system
    - **This is cautionary advice not a reason to omit analgesia**

5.3 Protocols

Protocols on the pumps are labelled A to Z. The pump will display the protocol and ask for confirmation prior to commencing.

Do not change any elements of the protocols unless on direct advice of the Inpatient Pain Team or a senior anaesthetist (Consultant or SAS doctor).

Please inform the Inpatient Pain Team of any protocol changes or discrepancies.

- **Protocols A to E are for general ward use only and should not be used in Obstetric areas**
    - NB at present protocols B and C are not in use. When they come in to use in the future further information and guidance will be released
- **Protocol O if for Obstetric use only and should not be used on general wards**
    - See MSG83 Guidelines for Epidural Analgesia in Labour
- **Protocols Y and Z are for emergency use only and should not be routinely used**

Below is a list of the protocols in more detail:

- A -Continuous mixed, Bupiv 0.1%/Fent 2mcg

  - Continuous rate in ml/h (0-16ml/h)
  - Standard epidural mix bag
  - No PCEA function
  - Max clinician bolus 10ml
  - Max hourly dose 26ml

- B - Cont mix + PCEA 3ml, Bupiv 0.1%/Fent 2mcg
  - Continuous rate in ml/h (0-14ml/h)
  - Standard epidural mix bag
  - PCEA 3ml bolus with 15min lockout
  - Max clinician bolus 10ml
  - Max hourly dose 26ml

- C - Cont mix + PCEA 2ml, Bupiv 0.1%/Fent 2mcg
  - Continuous rate in ml/h (0-8ml/h)
  - Standard epidural mix bag
  - PCEA 2ml bolus with 15min lockout
  - Max clinician bolus 10ml
  - Max hourly dose 18ml

- D - Continuous plain, Bupivacaine 0.25%
  - Continuous rate in ml/h (0-12ml/h)
  - Plain epidural mix bag – Bupivacaine 0.25% (no opioid)
  - No PCEA function
  - Max clinician bolus 10ml
  - Max hourly dose 22ml

- E - Diamorphine only, Diam 20mg/500ml NSal
  - Need to prepare a bag with 20mg of Diamorphine in 500ml Saline 0.9%
  - Continuous rate in ml/h (0-16ml/h)
  - No PCEA function
  - No clinician bolus function
  - Max hourly dose 16ml

- O - Obstetrics PIB+PCEA, Bupiv 0.1%/Fent 2mcg
  - Programmed Intermittent Bolus + PCEA
  - This program will automatically deliver 7ml as a bolus every hour
  - PCEA of 7ml with 20min lockout
  - Max hourly dose 21ml

- Y – Emergency nerve/CWI, As per SOP ml/h
  - For emergency use only
  - Continuous rate in ml/h (0-14ml/h)
  - Max clinician bolus 10ml
  - Max hourly dose 24ml

- Z – Emergency epidural, As per SOP ml/h
    - For emergency use only
    - Continuous rate in ml/h (0-16ml/h)
    - Max clinician bolus 10ml
    - Max hourly dose 26ml

6 INDIVIDUAL PATIENT FACTORS

6.1 Contraindications and common side effects

Absolute contraindications:

- Patient refusal
- Infection at the site of catheter insertion
- Current coagulopathy and anti-coagulant therapies - Advice from Haematology must be sought
- Raised intracranial pressure
- Allergy to agents prescribed in the epidural
- Lack of appropriately trained medical/nursing personnel available

Relative Contraindications:

- Cognitive impairment (please refer to **6.3**)
- Hypotension
- Immunocompromised patients
- Dissatisfied patients and unrealistic expectations

Common side effects include:

- Urinary retention
- Motor block
- Incomplete analgesia
- Pruritus

Motor block monitoring to be regularly conducted to ensure safe and effective analgesic levels. These must be documented after each assessment by performing a Nervecentre epidural care plan assessment. Refer to section 9.2.

6.2 Chronic pain patients

In patients on long-term opioids continue the opioids (e.g. Buprenorphine or Fentanyl patches) while the patient has their epidural.

6.3 Patients Lacking Capacity

Sometimes it will be necessary to provide care and treatment to patients who lack the capacity to make decisions related to the content of this policy. In these instances, staff must treat the patient in accordance with the Mental Capacity Act (MCA 2005):

- A person lacking capacity should not be treated in a manner which can be seen as discriminatory
- Any act done for, or any decision made on behalf of a patient who lacks capacity must be done, or made, in the person's Best Interest (see below)
- Further information can be found in the MCA policy, and the Code of Practice, both available on the Extranet

There is no single definition of Best Interest. Best Interest is determined on an individual basis. All factors relevant to the decision must be taken into account, family and friends should be consulted, and the decision should be in the Best Interests of the individual.

Please see Section 5 of the MCA code of practice for further information.

7 DOCUMENTATION OF CONTROLLED DRUGS

This policy must be read in conjunction with the Trust policy for the Safe and Secure Handling of Medicines – Controlled Drugs - PAT/MM 1 B.

- Infusion bags/syringes must be clearly labelled with '**For epidural use only'**
- Minimise confusion between types and strengths of epidural infusions by:
    - Rationalising the range of infusions available
    - Maximising the use of ready to administer epidural infusion preparations
- Reduce the risk of the wrong medicine selection by storing epidural infusions in a separate cupboard/refrigerator from those holding Intravenous Infusions
- Use clearly identifiable epidural giving sets and catheters that distinguish them from IV routes
- Non-luer connectors (NRFit™) should be used for all epidural giving set connections
- Use specific infusion pumps for epidural infusions that are easily distinguishable from other types of infusions
- A second practitioner independently confirms that the correct product, line and connection port has been selected and prepared and that the administration method is correct
- The amount of drug remaining in the bag must be documented as detailed in the "controlled drug transfer section" of the prescription (WPR 31320) when patients are transferred to and between wards
- Transfer to wards – It is the responsibility of the registered nurse to sign the "controlled drug transfer section" of the prescription (WPR 31320) when patients are transferred to other areas (see Trust Policy PAT MM1 https://www.dbth.nhs.uk/document/patmm1b/ - Transfer from Theatres to Wards or Between Wards on p.39)

8 PERSONS AUTHORISED TO ADMINISTER CLINICIAN BOLUS

Authorisation to administer clinician bolus:

- Only persons who have demonstrated that they are competent to, have completed their intravenous and epidural training package can administer a Clinician Bolus

- The level 2 code will be given on an individual basis to those competent in epidural bolus Nursing staff can deliver a maximum of 2 boluses within 3 hours

9 PATIENT CARE

9.1 Pain assessment

Self-reporting of pain should be used whenever appropriate as pain is an individual and subjective experience. Regular assessment of pain leads to improved acute pain management (Gould et al 1992, Level 3). Best practice requires the documentation of pain assessment scores at rest, on movement and deep breathing and coughing. Currently the trust uses the numerical pain scale (0-10) documented on Nervecentre. When referring to the Inpatient Pain Team please also complete the Functional Activity Score in the Nervecentre referral.

Epidural observations should include: pulse, blood pressure, respiratory rate, oxygen saturations, conscious level (AVPU), pain score, nausea/vomiting score and sensory levels/motor block checked as stated in this policy. The rate of epidural infusion and drugs checked against prescription at must be checked at the beginning of every shift and 4 hourly thereafter.

9.2 Assessing and monitoring

- Assessment of sensory and motor block must be performed by an appropriately trained member of staff who has completed the epidural training package and use the Bromage Scale (appendix 1). **This assessment must take place as frequently as outlined in section 9.3.**
- Each registered nurse/practitioner will have the appropriate knowledge and skills to safely manage patients receiving an epidural and perform replacement bag changes
- Patients with epidurals should not be nursed on wards where there is insufficient trained staff or where staff are unable to maintain their skill and competence
- The nurse in charge of the clinical area is responsible for ensuring that only competent nurses/practitioners undertake epidural administration and undergo regular re-assessment
- Two competent staff must verify the epidural infusion device programme and the bag label against the prescription at commencement of the infusion, every bag change and after any alteration to the infusion. This should be documented accordingly.
- The epidural which is prepared for administration shall be administered as per professional guidance of the administration of medicine in Health Care Settings immediately by the person who has prepared the epidural or in their presence (RCN 2019)
- Compatible and appropriately prescribed intravenous fluids should be administered for the duration of the epidural
- Documentation of the epidural data must occur on the Trusts infusion chart

Checking of the pump settings must occur at the start of each shift and 4 hourly thereafter. This must be clearly documented on the infusion chart and WellSky.

9.3 Observations

- The Nervecentre eObs system must be manually set to the appropriate minimum time to ensure observations are performed safely whilst an epidural is in situ
- Motor block observations to be performed for the duration of the epidural, whether infusing or not
- Cold anaesthetic spray must be readily available to conduct the sensory block testing
- Epidural site to be reviewed for the duration of the epidural whether infusing or not
- Epidural site to be monitored and Nervecentre epidural care plan assessment to be completed until 24 hours post removal of catheter

The frequency for <u>all</u> the above observations should be:

In Recovery

- **¼ hourly for the first hour**
- **½ hourly for one hour**

On return to the ward

- **Every 30 minutes for the first 2 hours**
- **Hourly for the next 12 hours if stable**
- **4 Hourly for the duration of the epidural and for 24 hours after the epidural has been discontinued**

After a bolus

- **15 minutes for 1 hour**
- **30 minutes for 1 hour and if remains in normal limits standard hourly and 4 hourly observations**

The epidural care plan on Nervecentre will provide prompts to assist with epidural observations including Bromage and sensory blocks

Informed verbal consent must be obtained from the patient to undertake observations.
When a patient refuses, give clear explanations of the importance of observations and why they are necessary. Always document refused consent and refer to Trust Mental Capacity Act policy (PAT/PA 19) via https://www.dbth.nhs.uk/wp-content/uploads/2024/03/PAT-PA-19-9-MCA-policy-Final-Feb-2024.pdf

Repeat attempts to undertake observations at frequencies stipulated in this policy.

9.4 Pump observations

This information should be recorded, as a minimum, once per shift and when the epidural bag or prescription is changed.

- Check both paper prescription and WellSky prescription against the infusion bag once per shift

- Document any change in the prescription including a clinician bolus
- Check for leaks from, or obstruction to, the giving set
- Ensure the correct dedicated epidural giving set is being used (to be replaced after 72 hours)

9.5 Discontinuing epidural

- Consider stopping after 72 hours for major abdominal and vascular surgery
- Consider stopping after 48 hours for orthopaedic, urology and gynaecological surgery
- Assess whether epidural is aiding/hindering recovery at this stage – **If epidural still overall beneficial for the patient, it may be continued further**
- Assess analgesia needed for effective pain management post removal and ensure that this is prescribed appropriately prior to removal

If appropriate to discontinue use step down analgesia:

- Ensure analgesia is prescribed on a regular basis
  Where prescribing slow-release opioids as stepdown analgesia, e.g Targinact (bowel surgery), oxycodone modified release (MR) or morphine MR, please ensure a stop date is provided. This is usually only 2 days following initiation.
- Morphine Protocol PRN (Gold Standard) or alternatively patients can be given Oxycodone Protocol PRN if unable to tolerate Morphine. Standard dose and reduced dose protocols are available on WellSky for each of these drugs.

Assess and document pain scores and functional activity scale during performance of observations

9.6 Stopping the infusion

- Aim to stop infusion in a morning. Patient's perceptions and coping mechanisms are better during the daytime. Support can be sought from the Inpatient Pain Team available Monday-Friday 08:00 – 16:00 hours
- Halve the infusion rate and monitor pain scores
- Commence step down analgesia at this time
- Stop the infusion 1 hour after a step down analgesic has been administered

9.7 Managing pain after stopping epidural

- Regular pain scoring when carrying out vital signs and AVPU (Alert, Verbal, Pain, Unresponsive)
- Regular multi modal range of analgesia +/- Morphine
- Conscious levels need to be regularly monitored during cross over period when using epidural administered Fentanyl and oral/SC Morphine. Fentanyl will take approximately 3 hours to clear safely from the patient's system
    - **NB: This is cautionary advice not a reason to omit analgesia**

***Pain bundles (aka protocols) are available on WellSky for specific surgeries following Enhanced Recovery Programme i.e Gastroenterology, Orthopaedics, Gynaecology**

10 EPIDURAL CATHETER REMOVAL

Epidural catheters should be removed as soon as possible following successful discontinuation of infusion. Before removing the epidural catheter, it is your responsibility to assess and if necessary to check the patient's coagulation.

Epidural catheters can only be removed if:

- It is at least 12 hours post administration of last prophylactic Low Weight Molecular Heparin (i.e. Dalterparin) dose
- It is at least 4 hours before next dose of prophylactic Low Weight Molecular Heparin (i.e. Dalteparin) is due
- If the patient is low risk and has no obvious reasons for deranged clotting
- INR/APTR is only required to be checked routinely if there are concerns about coagulation such as: recent oral anticoagulants, IV Heparin, active bleeding, recent massive transfusion, liver impairment, sepsis, emergency theatre case (**this list is not exhaustive**)
- If there are **any** concerns that coagulation may be deranged, then the patient needs bloods including FBC and Coagulation screen (PT/INR/APPT/APPTR)
    - If bloods taken for this reason, they **must** be reviewed and within acceptable limits for epidural catheter removal (INR ≤1.4 **and** APPTR ≤1.4)

10.1 Anticoagulation advice for epidural removal

- NB: Patients should **not** be on oral anticoagulants whilst epidural in situ
- Clopidogrel should be stopped for at least 7 days prior to insertion or removal of catheter
- Rivoraxaban/Apixaban stopped for 48 hours if normal renal function
- If renal function abnormal and patient has been on oral anticoagulants discuss with pain team or anaesthetist on call
- Should not recommence oral anticoagulants for at least 6 hours after removal of epidural catheter

10.2 Equipment needed to remove epidural catheter

- Disposable apron
- Dressing trolley
- Alcohol gel
- Sterile pack
- Sterile gloves disposable gloves
- Sterile dressing
- Clinical waste bag

10.3 Removing epidural catheter procedure

- Wash hands with soap and water
- Apply apron and prepare the dressing trolley

- Decontaminate hands using alcohol gel and prepare the sterile pack using aseptic non-touch technique
- Decontaminate hands using alcohol gel and apply sterile gloves
- Remove catheter in one smooth movement - **ensure blue tip intact**
- Observe site for redness/exudates
    - **If present or patient spiking temperatures or raised white cell count send tip to microbiology for MC&S**
- Cover site with sterile dressing
- Dispose of clinical waste
- Remove PPE and wash hands with soap and water
- Ensure patient is comfortable
- Document removal of epidural catheter and any findings in patients' medical/nursing notes
- Redress daily observing the site throughout the healing process
- Continue Nervecentre epidural care plan for 24 hours post removal of catheter
- Ensure epidural pump turned off, appropriately cleaned/decontaminated then returned to the area where it came from (eg. Theatre recovery area)

11 PATIENT SAFETY

Epidural analgesia can have serious, potentially life changing and life-threatening complications. Practitioners should be aware of the following and how to respond if these occur:

11.1 Over Sedation/Respiratory Depression

Increasing sedation may be a sign of impending respiratory depression. If there is concern as to whether the patient asleep or sedated, attempts must be made to rouse the patient.

If the patient is Alert or responding to Voice:

- Maintain oxygen therapy, monitor saturation levels
- Reposition patient
- Encourage deep breathing exercises
- Document respiratory rate, reassess accordingly, act appropriately
- Monitor and document conscious levels **(Alert, Voice, Pain, Unresponsive)**

If conscious levels only respond to Voice/Pain or Respiratory rate <8 you must:

- **Stop Epidural infusion**
- **Call Parent Team**
- **Call 2nd on call Anaesthetist bleep 1195**
- **Call Inpatient Pain Team bleep 1449 (Monday to Friday 08.00 – 16.00 hours)**
- **Consider epidural drug related cause for patient's condition e.g. opioid sensitivity or high block**
- **Consider need for Naloxone if opioid excess/sensitivity possible (See appendix 3)**
- **Consider other causes for decreased responsiveness and/or respiratory rate**

11.2 Epidural Haematoma/Abscess

Epidural haematoma or epidural abscess are neurosurgical emergencies and need prompt recognition and management. See appendix 4 and 5 for flowcharts on management.

Both can develop up to 7 days following an epidural or post removal of catheter and in rarer cases beyond this time. Epidural abscess or haematoma are extremely rare but can occur and potentially cause catastrophic effects such as paralysis. **The presence of either needs urgent recognition and treatment to ensure the best outcome.** Delay in managing these patients could lead potentially to permanent spinal cord injury. There are increased risks of these complications with multiple attempts of insertion, current anticoagulation therapy, sepsis or conditions where immunity maybe impaired, for example diabetes. **Any clinical suspicion requires urgent assessment by the parent team and involvement of the Inpatient Pain Team** (available Monday to Friday 08:00 am – 16:00 hours) and/or the 2nd on call anaesthetist. An urgent MRI scan of the spine may be required in accordance with Appendix 6 – Protocol for urgent MRI. This guidance is also available on the Hive.

Throughout the duration of the epidural catheter:

- Monitor for unremitting unexplained back pain - Document this and bring to the attention of the parent team and Inpatient Pain Team
- Monitor the epidural site 4 hourly as a minimum
- Ensure it is clean with no signs of discharge or new blood
- Ensure it is dressed appropriately with clear, dry smooth dressing
- Monitor for irritation, redness or swelling

If you suspect an epidural haematoma or epidural abscess, please contact the parent team for urgent assessment and inform the Inpatient Pain Team (Monday to Friday 08:00 am – 16:00 hours) and/or the 2nd on call anaesthetist for further assistance.
Refer to appendix 4 or 5 for the appropriate algorithm.

11.3 Low blood pressure/hypovolaemia

Always consider other peri-operative causes e.g Hypovolaemia secondary to blood/fluid loss

- All patients with an epidural should have a patent cannula is present and IV fluids running (Minimum 1L in 12h, preferably Hartmann's)
- Monitor blood pressure as per protocol. If blood pressure is outside acceptable limits then:
    - Consider the patient's position e.g lie the patient flat
    - Assess the need for fluid management/fluid boluses
    - Increase monitoring frequency
    - Contact Parent Team for patient assessment
- If blood pressure not improving or not responding to fluid boluses, they will need referral to 2nd on call anaesthetist (bleep 1195) and/or Critical Care Outreach for specialist input
    - Please discuss with Inpatient Pain Team during working hours
    - Please discuss or refer patients in a timely manner to avoid excessive amounts of IV fluid being administered
    - May need transfer to DCC for blood pressure support if recommended by 2nd on call anaesthetist or Critical Care Outreach Team

11.4 Nausea/Vomiting

- Monitor nausea scores as art of epidural infusion observations
- Treat nausea score that is >1
- Administer anti emetic per protocol
- Reassess the nausea score 30 minutes following intervention
- Monitor and manage the patient's potential to become dehydrated/hypovolemic secondary to excessive vomiting and reduced oral intake
- Consider causes of nausea and vomiting e.g medication, pain, anxiety, hypovolaemia or bowel related causes

11.5 High Block

Features of a block that is too high include:

- Droopy eyelids/double vision
- Weakness/tingling in arms
- Tingling around the mouth
- Numbness in chest wall above T4 (nipple level)
- Difficulty in breathing

11.6 Management of high block

- Reposition patient upright in to sitting position if possible
- Monitor all observations frequently throughout the episode until the block level had reduced
- Consider reducing rate or stopping epidural infusion
- Contact Inpatient Pain Team for support (bleep 1449 available Monday to Friday 08:00 hours – 16:00 hours) and/or 2nd on call Anaesthetist (bleep 1195)

11.7 Motor block

A dense motor block can be common during the first few hours post insertion due to the loading dose and volume administered intra-operatively. This dense block should regress once a reduced strength and a lower rate infusion has commenced.

A **persistent motor block** is unpleasant for the patient and can lead to an increased risk of developing deep vein thrombosis or pressure sores due to reduced mobility. In addition to this it may be related to an epidural abscess or haematoma developing

11.8 Persistent motor block management

- **A persistent motor block may indicate intrathecal migration or abscess or haematoma formation (See appendix 4 and 5)**
- **STOP the infusion**
- **Urgent assessment by medical staff (within the Parent Team) is required with possible escalation to the 2nd on Call anaesthetist bleep (1195) for specialist advice**
- **Reassess block at 15 minute intervals and document appropriately**
- **Discuss with the Inpatient Pain Team (available Monday – Friday 08:00 – 16:00 hours)**

11.9 Pruritus

Pruritus is troublesome itching following the delivery of opioids via the epidural/intrathecal route. It is unrelated to histamine release, or the dose of the drug given; it can last for up to 30 hours after opioid administration. It can be severe and prolonged and very distressing for the patient.

- Consider administration of low dose intravenous naloxone (0.1mg)
    - This does not adversely affect analgesic effect
- Consider changing to the Local Anaesthetic only infusion
- Consider a reduced rate infusion
- Severe cases may warrant a complete review of pain management methods

11.10 Intrathecal migration

Intrathecal migration is the movement of the epidural catheter into the intrathecal space. Within this space there is much greater effect of local anaesthetics within the cerebrospinal fluid. This can potentially be fatal if unrecognised or untreated. Therefore due vigilance should be kept for changes in the patient's clinical condition.

During Epidural Observations, you need to monitor for:

- A fall in the patients' blood pressure
- Deterioration of conscious level
- Reduced respiratory effort
- Dense motor block
- Unexplained high sensory block
- The epidural insertion site

If at any time you suspect and intrathecal migration:

- **Stop the epidural infusion**
- Monitor patient for signs of deterioration
- Call the patient's Parent Team for urgent review
- Call 2nd on call Anaesthetist (available 24 hrs)
- Call Inpatient Pain Team (Monday to Friday 08.00am – 16.00pm Bleep 1449)

If a catheter is deemed to have migrated into the intrathecal space it can still be used but only by means of direct top up by an anaesthetist. The catheter must be clearly labelled as "Intrathecal catheter" and BD Bodyguard epidural pumps should **NOT** be used.

12 TRAINING AND SUPPORT

- A designated link nurse for each ward using epidurals must be identified
- The Link nurse must attend the Pain Link Nurse Study days

The following are the minimum requirements of training to be undertaken before an individual is deemed competent/trained in setting up, administering and monitoring the epidural:

- Trust IV package completed – epidural connections can only be made if the individual is IV trained
- Trust Anaphylaxis training completed
- Training for the BD Bodyguard pump must be completed
- Undertake a period of training and assessment of both theoretical knowledge and practical experience of setting up, monitoring and attaching the epidural
- The Epidural Clinical Skills Package (CAP) must be completed

The Inpatient pain team are available on Bleep 1449 or extension 642187 Monday to Friday 08.00 – 16.00 and are available to give specialist advice, support and provide appropriate training and education when required.

Epidurals must only be nursed in clinical areas where appropriately trained staff are available at all times. Wards appropriate to accept epidurals are Recovery areas, Surgical wards, Department of Critical Care, Orthopaedics wards, Gynaecology wards (DRI) and B5 (BDGH).

Please refer all epidurals to the Inpatient Pain Team using Nervecentre

13 MONITORING COMPLIANCE WITH THE PROCEDURAL DOCUMENT

What is being Monitored	Who will carry out the Monitoring	How often	How Reviewed/ Where Reported to
Compliance with the protocols (Appendix 1)	Ward manager	Monthly	Via local clinical governance group
Incidents – via the adverse incident reporting system.	Ward managers and Matrons	On individual incident basis	DATIX, department clinical governance, divisional clinical governance
Complaints – via the complaints procedure	Ward managers and Matrons	On individual complaint basis	Department clinical governance, divisional clinical governance

14 DEFINITIONS

14.1 Epidural

Epidural analgesia is one of the most effective techniques available for the management of acute pain (Macintyre and Ready, 2001). It is an invasive technique where analgesic drugs are injected or infused into the epidural space Epidurals are sited in either the thoracic or lumbar regions of the spine.

14.2 Multi-modal analgesia

Multi-modal (balanced) analgesia refers to the use of various drugs and modalities to achieve balanced analgesia. This includes using oral, parental or topical drugs as well as utilising regional anaesthetic techniques such as epidurals, nerve blocks and continuous nerve catheter or wound infusions of local anaesthetics.

The first step on the World Health Organisation (WHO 2002) analgesic ladder consists of non-opioid simple analgesics. The main drugs are Paracetamol and Non-Steroidal Anti-inflammatory Drugs (NSAID's) e.g. Ibuprofen. These drugs should be given regularly unless they are contraindications for their use.

Of the NSAID's low dose Ibuprofen (e.g. 1200mg daily or less) has low GI toxicity and does not increase the risk of myocardial infarction (McCarthy 1999). This is 1st line drug to use. When these drugs are prescribed and administered regularly, they provide multi-modal (balanced) analgesia.

NB: NSAID's should be prescribed at the lowest effective dose, and the shortest duration of treatment necessary to control pain e.g. the time limited prescription for post-operative analgesia is 72 hours then a review by the Inpatient Pain Team or parent team is needed to decide whether to extend the course or not

Modified release opiates (Oxycodone MR or Targinact) can be prescribed regularly for a short duration (usually 2 days) then must be stepped down to either Tramadol, Dihydrocodine or Codeine regular. By taking advantage of the synergistic effects of the drugs with the differing modes of action we avoid the side effects of using opioids excessively.

15 EQUALITY IMPACT ASSESSMENT

The Trust aims to design and implement services, policies and measures that meet the diverse needs of our service, population and workforce, ensuring that none are disadvantaged over others. Our objectives and responsibilities relating to equality and diversity are outlined within our equality schemes. When considering the needs and assessing the impact of a procedural document any discriminatory factors must be identified.

An Equality Impact Assessment (EIA) has been conducted on this procedural document in line with the principles of the Equality Analysis Policy (CORP/EMP 27) and the Complaints, Concerns, Comments and Compliments Resolution and Learning Policy (CORP/EMP 4)

The purpose of the EIA is to minimise and if possible, remove any disproportionate impact on employees on the grounds of race, sex, disability, age, sexual orientation or religious belief. No detriment was identified. See Appendix 8.

16 ASSOCIATED TRUST PROCEDURAL DOCUMENTS

- Epidural Anaesthesia in labour – MSG83
- Equality Analysis Policy - CORP/EMP27
- Complaints, Concerns, Comments and Compliments Resolution and Learning – CORP/COMM4
- Medical Devices Management and Training Policy – CORP/PROC4 v7
- Mental Capacity Act 2005 Policy and Guidance, including Deprivation of Liberty Safeguards (DoLs) – PAT/PA19
- Physiological Observations and prevention of deterioration in the acutely ill adult - PAT/T 33
- Hand hygiene PAT/IC5
- Patient Identification policy PAT/PS7
- Standard Infection Prevention and Control Precautions Policy PAT/IC19
- Safeguarding Adults Policy PAT/PS8
- Consent to Examination or treatment policy PAT/PA2
- Resuscitation PAT/EC1
- Privacy and Dignity Policy - PAT/PA28
- Safe and Secure Handling of Medicines – Controlled Drugs – PAT/MM1B

17 DATA PROTECTION

Any personal data processing associated with this policy will be carried out under 'Current data protection legislation' as in the Data Protection Act 2018 and the UK General data Protection Regulation (GDPR) 2021.

For further information on data processing carried out by the trust, please refer to our Privacy Notices and other information which you can find on the trust website:
https://www.dbth.nhs.uk/about-us/our -publications/information-governance/

18 REFERENCES

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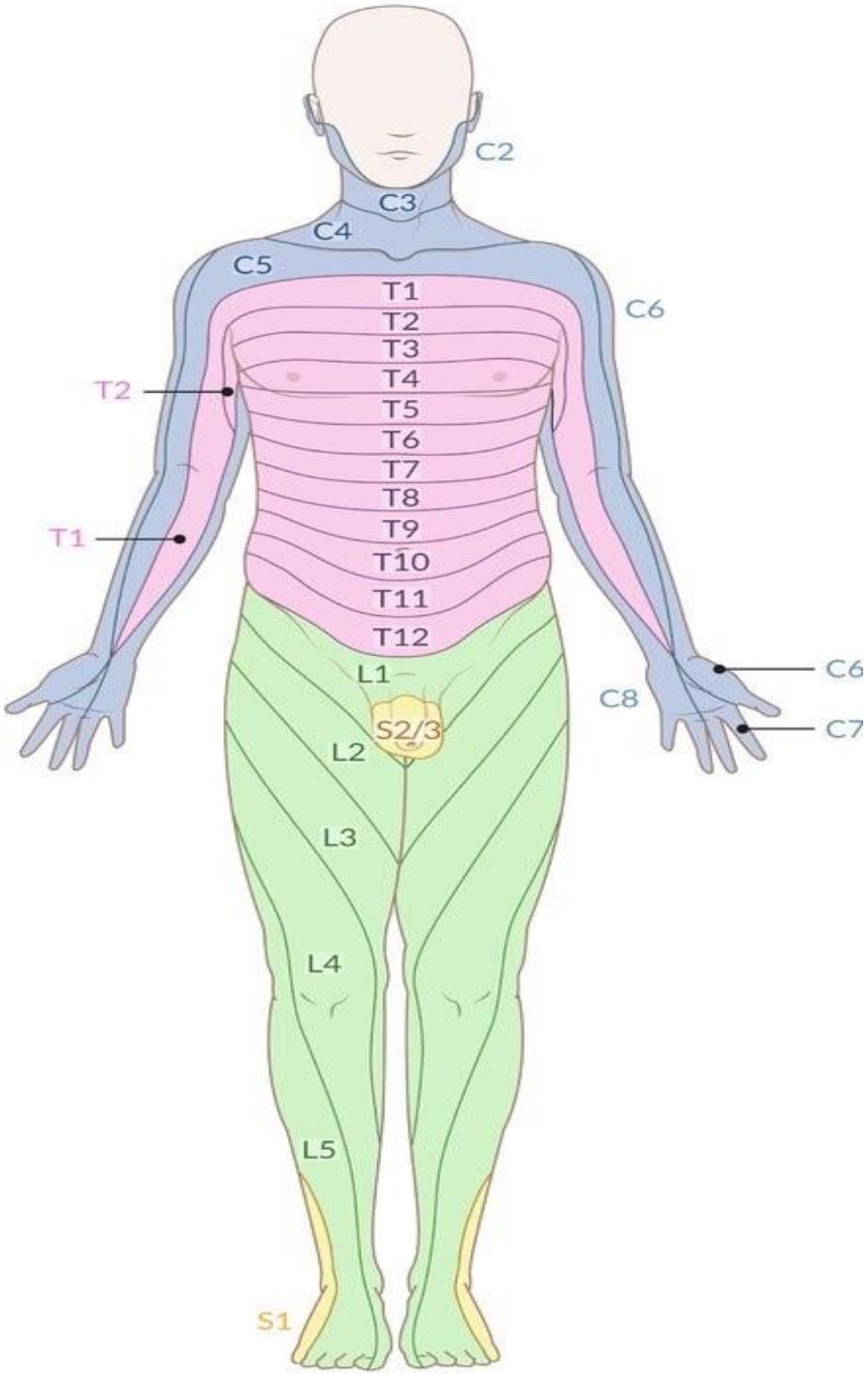
19 APPENDIX 1 – BROMAGE SCALE

Please note that there are several versions of the Bromage scale in literature. At this trust we use the following definitions:

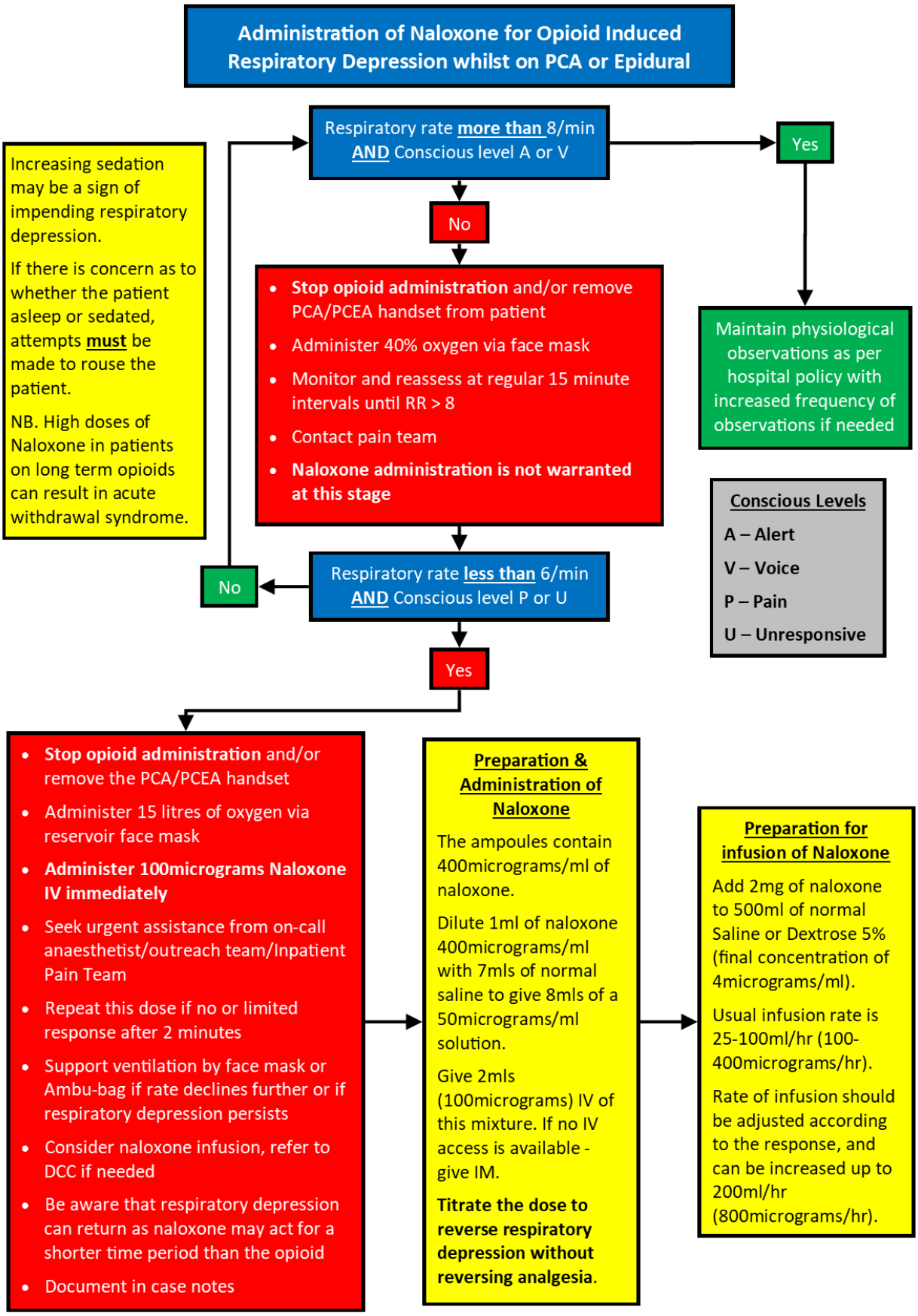
Bromage scale		
Grade	**Criteria**	**Degree of Block**
0	Free movement of knees and feet	Nil (0%)
1	Just able to flex knees with free movement of feet	Partial (33%)
2	Unable to flex knees but with free movement of feet	Almost Complete (66%)
3	Unable to move feet or knees	Complete (100%)

20 APPENDIX 2 – DERMATOME MAN AND SITES OF INSERTION

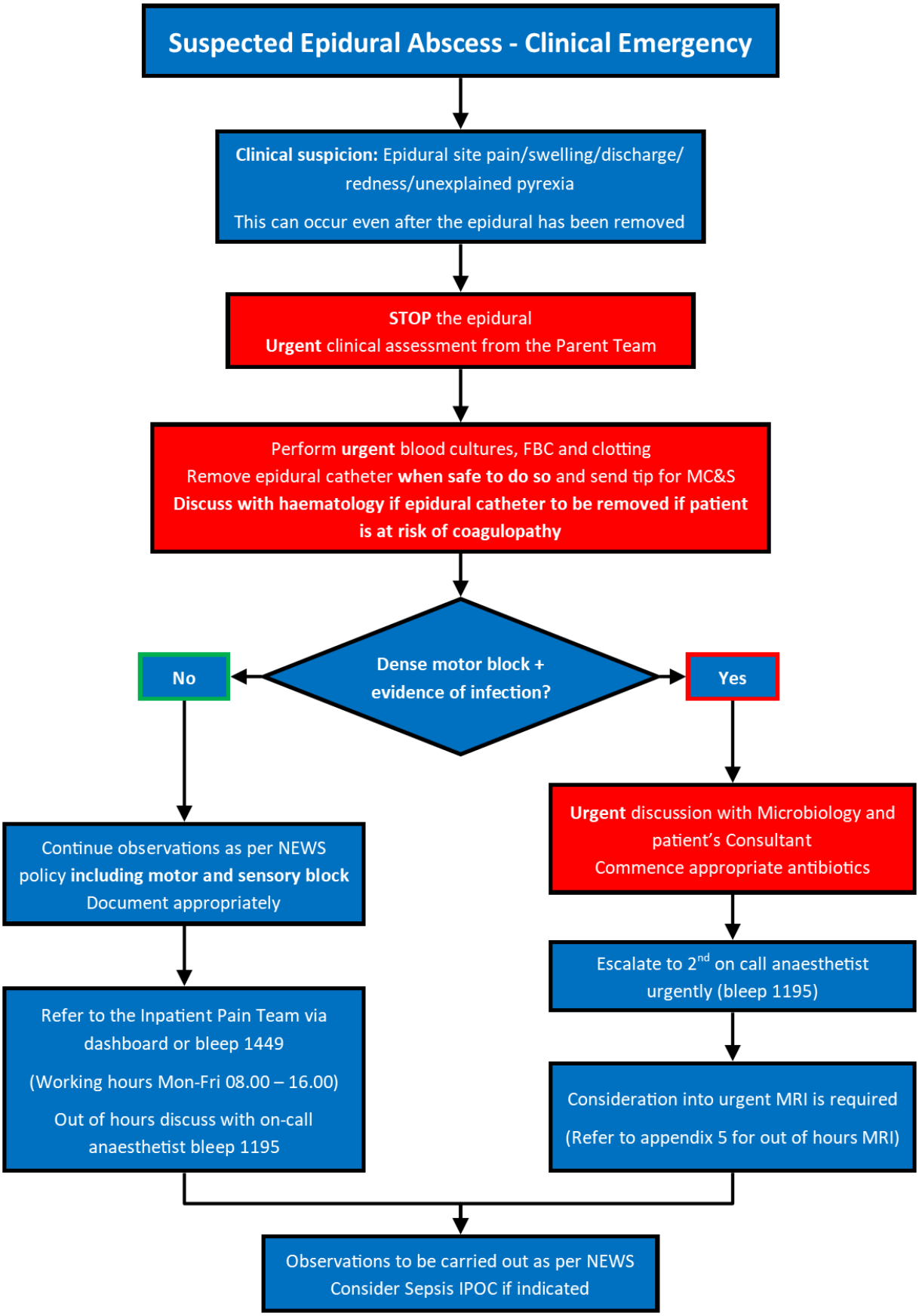


Operation type	Epidural insertion site
Laparotomy	T6 – T11
Hips	T12 – L1
Knees	L2 – L4

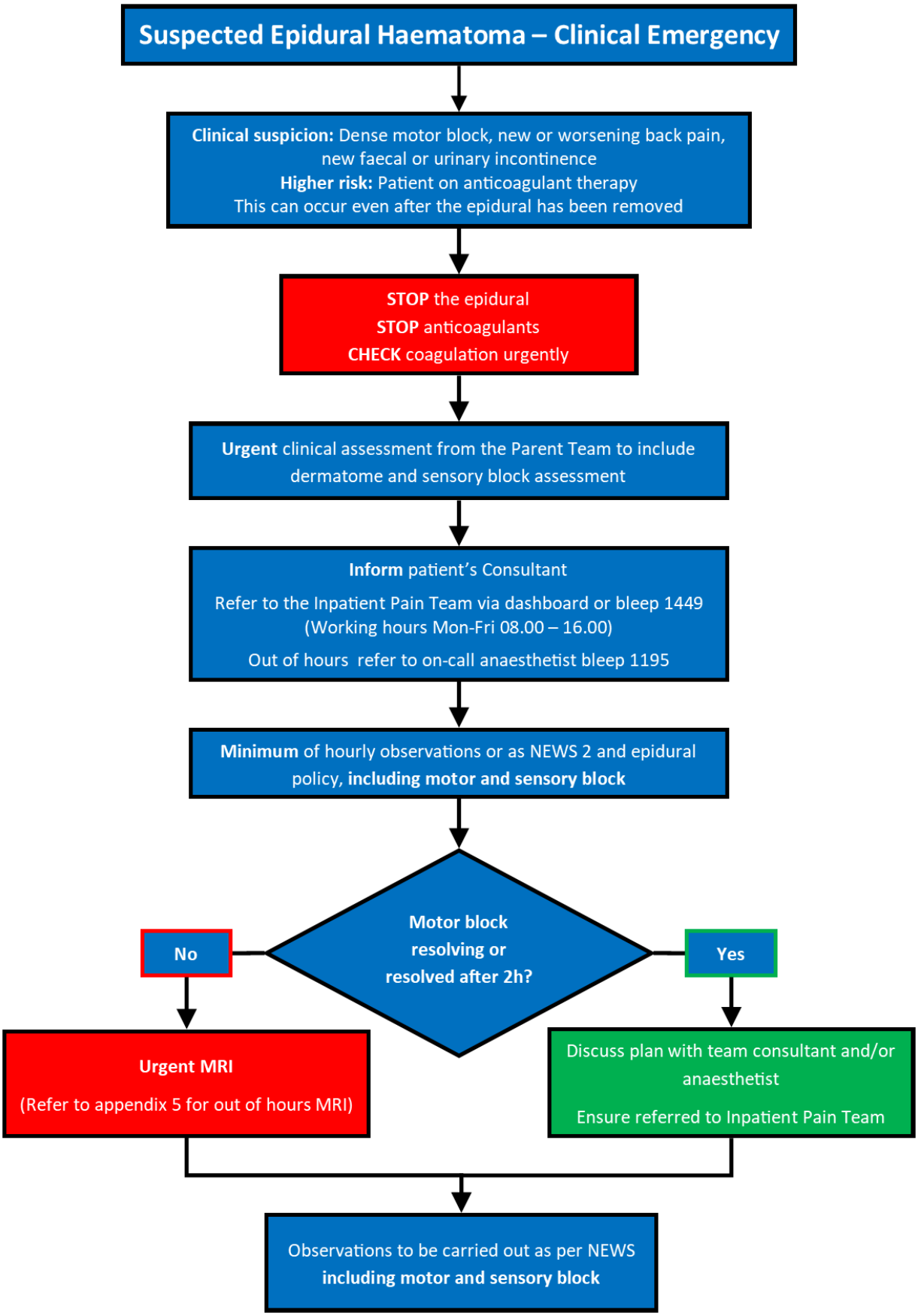
21 APPENDIX 3 - GUIDELINES FOR ADMINISTRATION OF NALOXONE



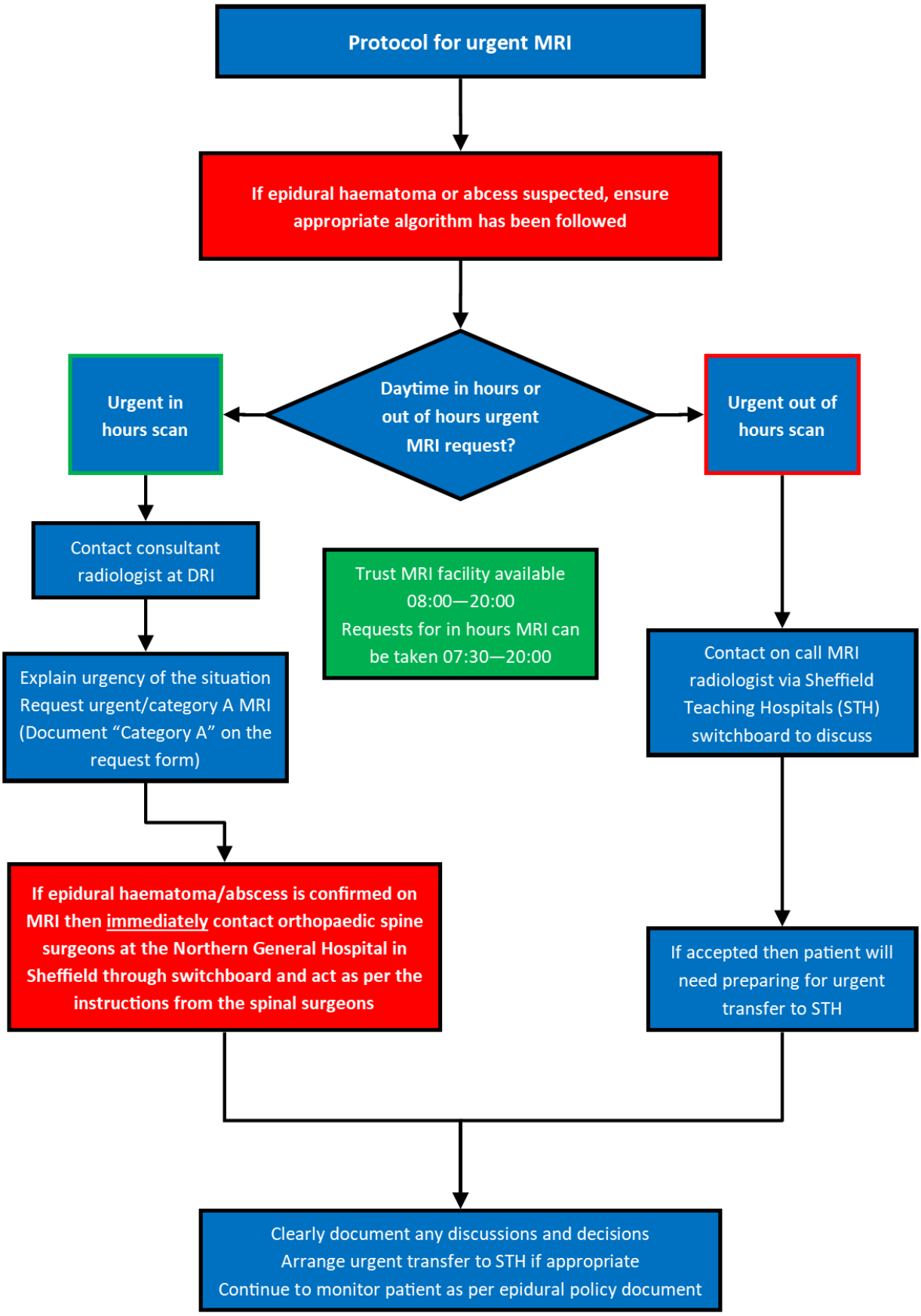
22 APPENDIX 4 – SUSPECTED EPIDURAL ABSCESS



23 APPENDIX 5 – SUSPECTED EPIDURAL HAEMATOMA



24 APPENDIX 6 – PROTOCOL FOR URGENT MRI



25 APPENDIX 7 – DISPOSAL OF CONTROLLED DRUGS

This policy must be read in conjunction with the Trust policy for the Safe and Secure Handling of Medicines – Controlled Drugs - PAT/MM 1 B.

Record the surplus opioid in the CD register with a witness and sign the CD register.
Any surplus opioid remaining after the epidural has been discontinued shall be measured and disposed of by adding directly to an approved **Controlled drug Disposal Kit.** To be returned to pharmacy for disposal with the pharmaceutical waste.

A separate entry shall be made in the ward Controlled Drug Record book under the heading e.g. "Morphine Sulphate 100mg/50ml as PCA syringes waste" or the name of the opioid wasted. The entry shall record:

- Date and time of disposal
- Patients name
- The volume remaining in the syringe which is waste
- The signature of the nurse disposing of the solution
- The signature of the nurse witnessing the disposal

Return the pump, complete with patient demand button if present, to recovery. If it cannot be returned immediately, ensure it is plugged in.

All pumps must be handled with care. Any damage incurred will be charged to the ward responsible.

Epidural and pain assessment with Nervecentre epidural care plan documentation should be continued regularly (4-hourly) for the next 24 hours then "routine monitoring" can be resumed as per Trust policy (PAT/T 33).

26 APPENDIX 8 - EQUALITY IMPACT ASSESSMENT PART 1 INITIAL SCREENING

Service/Function/Policy/ Project/Strategy	Care Group/Executive Directorate and Department	Assessor(s)	New or Existing Service or Policy?	Date of Assessment
Acute Pain – Administration of Epidural Analgesia (Adult Inpatients)	Anaesthetics	Ailsa Woodhouse & Dr Raj McNab	Existing	April 2024

1) Who is responsible for this policy? Ailsa Woodhouse (Lead Nurse) & Dr Raj McNab (Consultant Anaesthetist)

2) Describe the purpose of the service / function / policy / project/ strategy? It is intended to benefit nursing/medical staff to provide safe and effective epidural analgesia within general ward areas excluding maternity. This is to ensure continuity of effective analgesia and safety of the patient

3) Are there any associated objectives? National Patient Safety Agency, Essence of Care, NICE Guidance, move to NRFit equipment

4) What factors contribute or detract from achieving intended outcomes? – Staff knowledge and skills in the ability to prescribe, assess and use of the pump.

5) Does the policy have an impact in terms of age, race, disability, gender, gender reassignment, sexual orientation, marriage/civil partnership, maternity/pregnancy and religion/belief? No

- If yes, please describe current or planned activities to address the impact [e.g. Monitoring, consultation] –

6) Is there any scope for new measures which would promote equality? [any actions to be taken] No

7) Are any of the following groups adversely affected by the policy?

Protected Characteristics	Affected?	Impact
a) Age	No	
b) Disability	No	
c) Gender	No	
d) Gender Reassignment	No	
e) Marriage/Civil Partnership	No	
f) Maternity/Pregnancy	No	
g) Race	No	
h) Religion/Belief	No	
i) Sexual Orientation	No	

8) Provide the Equality Rating of the service / function /policy / project / strategy – tick outcome box

Outcome 1 ✔	Outcome 2	Outcome 3	Outcome 4

*If you have rated the policy as having an outcome of 2, 3 or 4, it is necessary to carry out a detailed assessment and complete a **Detailed Equality Analysis form in Appendix 4**
Date for next review: March 2027
Checked by: Ailsa Woodhouse Date: 10/4/2024