Adult Continuous Regional Nerve Blocks for Acute Pain Management Clinical Guideline

Guideline information

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Summary of document:
This document sets out the HDUHB guideline for the management of patients with a nerve block catheter receiving local anaesthetics via

1. Manual bolus
2. Electronic pump
3. Single use Elastomeric pump

Scope:
This clinical guideline is for use with patients (over 16 years) to manage acute pain related to major surgery or chest injuries who have a regional nerve block catheter sited that is appropriate for local anaesthetic infusion.

To be read in conjunction with:
708 - Controlled Drugs Governance Policy (opens in new tab)
268 - Medicines Policy (Acute, Mental Health, Learning Disabilities and Community Services) (opens in new tab)
711 - Rib Fractures Management Guideline (opens in new tab)
795 - Management of Acute Pain in the Acute Hospital Setting Guideline (opens in new tab)

Patient information:

Owning group: Acute Pain MDT 3.10.2025

Executive Director job title: Interim Executive Director of Nursing, Quality and Patient Experience

Reviews and updates:
2.0 – Review
3.0 – Change to NRFit consumables (approved 24.11.204 but held until new machines in situ 20.2.2025)
3 – 3-yearly review 25.11.2025
4 - recent update from the suppliers of our rectus sheath kit (minor), so they have updated their surgical checklist which is included in appendix 4 (pages 21 and 22) 29.05.2026

Keywords
Rectus Sheath Catheters, Laparotomy, Pain, Chest Trauma, Rib Fractures

Glossary of terms
APT – Acute Pain Team
CAB – Clinician Activated Bolus
ESP – Erector Spinae Plane
LA – Local Anaesthetic
LAST – Local Anaesthetic Systemic Toxicity
NEWS – National Early Warning Score
PCA – Patient Controlled Analgesia
PNB – Peripheral Nerve Block
RSC – Rectus Sheath Catheter
PVB – Paravertebral Block

Contents

Introduction

Summary
This document provides guidance on the management of local anaesthetic (LA) nerve block infusion via regional nerve block catheters, for adult patients (over 16 years), for the treatment of post-operative pain or chest trauma. This guidance incorporates current guidance from the RCOA, NPSA and RA-UK on best practice including prevention of LA toxicity.

Key Points
LA infusions via regional nerve block catheters are effective in the management of acute pain after surgery or trauma. Registered Practitioners should be aware of:

- Drug-related side-effects and their management
- Indications and contraindications for LA infusions
- Complications relating to analgesia and their management
- Frequency of observations
- Criteria for stopping LA infusions
- Who to contact in an emergency
- Training required and competency assessment process

Scope

This clinical guideline is for use with patients (over 16 years) to manage pain related to major surgery or chest injuries who have a regional nerve block catheter sited that is appropriate for local anaesthetic infusion whether by an automated infusion device or manually by a suitably experienced/trained practitioner.

All registered practitioners caring for patients receiving a LA infusion must adhere to this guideline. To ensure patient safety, patients with LA Infusions should not leave the clinical area unless accompanied by a trained member of nursing staff.

Note: for patients receiving a continuous epidural infusion, please see separate guidelines.

Aim

The aim of this document is to:

- To provide all staff with guidance and education in the use of LA infusions via regional nerve block catheters
- To provide a framework to ensure the patient receives effective and safe analgesia.

Objectives

The aim of this document will be achieved by the following objectives:

- Promoting safe practice that is evidence based and standardised within the clinical areas.
- Providing clinical areas with appropriate education and information about this mode of analgesia.

Regional Nerve Block Catheters

This guideline encompasses all types of Regional Anaesthetic Nerve Block Catheter commonly inserted in HDUHB. Apart from the technical aspects of insertion, subsequent infusion protocol, and prescription, the aftercare and monitoring requirements are identical for all nerve block catheter care.

Only one type of nerve block should be used at one time due to the risk of LA toxicity.

Continuous nerve blocks should be used as part of a multi-modal approach to the patient's pain management. Patients will commonly be prescribed regular multimodal analgesia of paracetamol, with non-steroidal anti-inflammatory drug if no contraindications and often in conjunction with an intravenous PCA.

1. Rectus Sheath Block (and other Abdominal Wall Blocks)

Indications:

- Mid-line laparotomy incisions

Background:

The anterior branches of spinal segmental nerves T6-T11 innervate the rectus abdominis muscle and the skin of the abdominal wall over the rectus abdominis muscle, i.e., the midline.

RSC are placed by the surgeon or anaesthetist within the sheath of the rectus abdominis muscle, through which course the anterior branches of the spinal segmental nerves T6-T11. One catheter is placed on each side, NRFit bilateral rectus sheath catheters are used in the health board. LA drugs work by blocking nerve impulses that are transmitted by sensory, sympathetic and motor nerves.

Rectus Sheath Blocks can provide equivalent analgesia in most situations to epidural anaesthesia provided they are combined with intrathecal diamorphine and a PCA. They should be strongly considered in patients unable to have a neuraxial block.

Catheters may also be placed in adjacent muscle planes such as Transversus Abdominus Plane (TAP) or Quadratus Lumborum (QL) if the patient does not have a viable rectus muscle due to hernias or multiple abdominal operations. These may not be quite as effective as a Rectus Sheath Catheter but are identical in terms of aftercare and prescription.

Patients may also require additional bolus dose of LA as prescribed. Monitoring of the patient following additional bolus dose is described in Section 'Monitoring and Nursing Care'.

Mode of Delivery:

Electronic Intermittent Auto Bolus (Preferred) – Bodyguard Pain Manager
OR
Continuous infusion by single use pump – NRFit CareVis VariO Plus (current practice at BGH).

2. Erector Spinae Plane (ESP) and Paravertebral Blocks (PVB)

Indications:

- Multiple unilateral rib fractures
- Open subcostal surgical incisions e.g. Open nephrectomy or Cholecystectomy
- Complex breast surgery

Background:

Refer to HDUHB 711 - Rib Fractures Management Guideline (opens in a new tab) for more details. This details a risk scoring system (STUMBL) which helps to guide which patients need a nerve block. This is used in conjunction with assessing ability take deep breaths and cough effectively alongside pain scores at rest and on deep breathing. Patients unable to cough and breathe effectively are at a

high risk of developing pulmonary complications and benefit from regional anaesthesia within 24 hours of presentation.

The intercostal nerves T1-T12 innervate the chest wall. ESP's and PVB's target these nerves at multiple levels and can provide effective analgesia for the indications listed above and are usually the first line interventional option for the management of rib fracture pain in preference to an epidural given their more favourable risk profile. ESP's in particular can often be performed safely when other procedures may be contraindicated. PVB's are a technically more challenging procedure but provides denser analgesia with better visceral coverage. They may be a better option than ESP's for surgical incisions as detailed above, but the decision on which to perform will be at the discretion of the anaesthetist.

ESP's or PVB's are inserted by an anaesthetist under ultrasound guidance and a catheter is placed in the desired location (NRFit epidural catheter or dedicated NRFit regional anaesthesia catheter kit when available). LA drugs work by blocking nerve impulses that are transmitted by sensory, sympathetic and motor nerves. Comprehensive training beyond the scope of this document is required in order to be able to deliver these interventions and local training processes are well established.

Mode of Delivery:
Electronic Intermittent Auto Bolus (Preferred) – BodyGuard Pain Manager
OR
Continuous infusion by single use pump – NRFit CareVis VariO Plus (current practice at BGH).

Patients may also require additional bolus dose of LA as prescribed. Monitoring of the patient following additional bolus dose is described in Section 'Monitoring and Nursing Care'.

3. Femoral, Fascia Iliaca and Sciatic Nerve Blocks

Indications:

- Patients with a fractured neck of femur where a delay to operating is anticipated
- Major foot and ankle surgery
- Management of pain after lower limb amputation

Femoral nerve or fascia iliaca blocks are well established as the analgesic modality of choice for patients with fractured neck of femur, predominately administered as a one-off block, without catheter insertion. There are clear benefits to minimising opioid consumption in this patient population. Where a delay to surgery is anticipated due to e.g. need for medical optimisation, specific surgical equipment needs ordering or lack of operating list time, catheters can be inserted under ultrasound guidance to reduce the need for patients to receive multiple injections. Under these circumstances the patients should be transferred to an appropriately trained clinical area. This should provide better pain relief and reduce the discomfort and risk from having to receive repeated single shot blocks.

Sciatic nerve blocks are used for foot and ankle surgery, and a catheter (NRFit epidural catheter or dedicated NRFit regional anaesthesia catheter kit when available) can be placed by an Anaesthetist under ultrasound guidance in order to provide an extended duration of analgesia. Occasionally, patients in Hywel Dda undergo major lower limb amputation. Postoperative pain is extremely difficult to control with systemic analgesia alone and failure to poor pain control is associated with a high incidence of chronic and phantom limb pain. Sciatic nerve block catheters can be placed under direct vision by the surgeons during amputation or under ultrasound guidance by an Anaesthetist.

Mode of Delivery:
Electronic Intermittent Auto Bolus – BodyGuard Pain Manager
OR
Continuous infusion by single use pump – NRFit CareVis VariO Plus

4.0 Brachial Plexus Blocks e.g. Interscalene, Infraclavicular
Indication:
- These may be infrequently required for complex upper limb surgery.

Mode of delivery:
Continuous infusion by single use device only – NRFit CareVis VariO Plus
Max infusion rate 4 mL an hour with PCA bolus 2mL and 30 minute-lock out (PPH)

DO NOT use with Bodyguard pump with the Intermittent Bolus regimen. This would deliver an excessive volume of LA for these types of nerve block, with a risk of respiratory compromise due to phrenic nerve involvement.

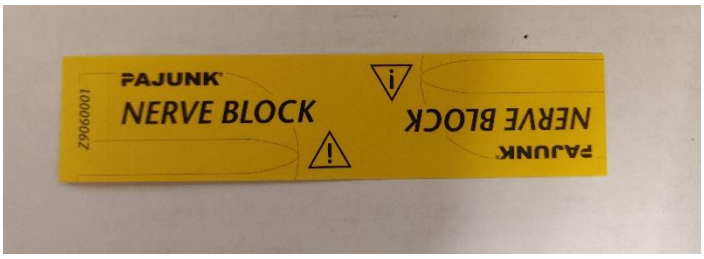
Insertion Procedures

1. Rectus Sheath Catheter (RSC)
- RSC will be inserted in theatre either under direct vision by the operating surgeon (or by the anaesthetist under ultrasound guidance) using existing dedicated NRFit Rectus Sheath kits**.** (See Appendix 4)
- The RSC will be placed within the Posterior Rectus Sheath. https://www.youtube.com/watch?v=Xq-H3SLLwO0&has_verified=1 . (Opens in new tab).
- The number and location of catheters must be recorded and must be clearly labelled with the RSC labels included in the pack. Date and time of insertion should be documented.

- Catheters are secured using rectus sheath kit dressings dressing and secured to the abdominal wall.
- Bacterial Filters must be used and are contained within the RSC kits
- Connections should be secured to minimise risk of disconnection
- Date and time of insertion should be documented
- Patients should be nursed on wards where staff are trained in post-operative care regional nerve block catheter management
- All prescriptions are the responsibility of the prescriber
- See section 'Removal of Nerve Block Catheters' on removal instructions

2. Erector Spinae Plane and Paravertebral Block
- These blocks will be inserted by an anaesthetist under ultrasound guidance in a clean, monitored environment, ideally theatres or critical care unit.

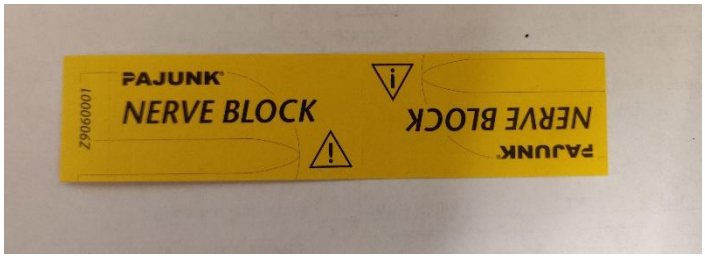
- Full surgical scrub is mandatory for catheter insertion
- The choice of which type of catheter to use is at the discretion of the Anaesthetist, and what equipment is currently available. It is acceptable to use a 16G or 18G NRFit Tuohy epidural kit or dedicated NRFit regional anaesthesia catheter kit when available, provided the catheter is clearly labelled as a nerve block e.g. as below.



- Catheters are secured using Epifix or similar dressing and taped to the abdominal wall.
- Bacterial Filters must be used and are contained within the nerve block kits.
- Connections to filters are secured to minimise risk of disconnection
- Date and time of insertion should be documented
- Patients should be nursed on wards where staff are trained in Regional nerve block catheter management
- All prescriptions are the responsibility of prescriber.
- See section 'Removal of Nerve Block Catheters' on removal instructions

3. Femoral, Fascia Iliaca and Sciatic Nerve Blocks

- These blocks will be inserted by an anaesthetist under ultrasound guidance in a clean, monitored environment, ideally theatres or critical care unit, but there may be situations where this may be required in ED or on a Trauma Ward, **under these circumstances, do not set up as an infusion until transferred to designated ward.**
- Ensure strict aseptic precautions are taken
- Full surgical scrub is mandatory for catheter insertion
- Sciatic catheters may be inserted under direct vision by surgeons in the case of lower limb amputation
- The choice of which type of catheter to use is at the discretion of the Anaesthetist, and what equipment is currently available. It is acceptable to use a 16G or 18G NRFit Tuohy epidural kit or dedicated NRFit regional anaesthesia catheter kit when available provided the catheter is clearly labelled as a nerve block e.g. as below.



- Catheters are secured using Epifix or similar dressing and taped to the abdominal wall.
- Bacterial Filters must be used and are contained within the nerve block kits.
- Connections to filters are secured to minimise risk of disconnection

- Date and time of insertion should be documented
- Patients should be nursed on wards where staff are trained in regional nerve block catheter management
- All prescriptions are the responsibility of prescriber.
- See section 'Removal of Nerve Block Catheters' on removal instructions.

4.0 Brachial Plexus (upper limb) catheters should **not** be attached to the Bodyguard pump with the Intermittent Bolus regimen as this would deliver an excessive dose of LA for these types of nerve block (see prescribing section below)

Equipment

- Bodyguard Pain Manager Pump (configured for Regional Nerve Block). Level 1 and 2 access codes to prevent unauthorised changes of pump parameters

- Bodyguard Pain Manager NRFit yellow dedicated epidural giving sets should be used to (NPSA 2007)

- Single use Pump – NRFit CareVis Vario Plus

- A 'stop before you inject' moment to pause and confirm the route of administration should be performed. (RAUK, NPSA 2010)

Prescription

Loading doses:

- Initial loading doses should be prescribed on the Adult Regional Nerve Block Prescription, Monitoring and Assessment Chart (See Appendix 1a).For rectus sheath catheters, loading doses of 0.25% levobupivicaine 20 mLs per side are given.

- For patients <50kg lean body weight, reduce volume of initial loading doses, maximum 2mg/kg e.g. 10 mLs per side.

- The Bodyguard Pain Manager Auto-bolus should be established before leaving recovery and auto-bolus delayed for 2 hours.

- In BGH the single use device should be commenced in recovery, 2 hours after initial loading dose. This interval may be reduced after discussion with the responsible anaesthetist.

- For patients who are undergoing abdominal surgery where intravenous lidocaine is administered by the anaesthetist intraoperatively, it is recommended that intravenous lidocaine should not be used at the same time as, or within the period of action of, other local anaesthetic interventions (Foo et all, 2020). This includes not starting intravenous lidocaine within 4 hours after any nerve block, fascial plane blocks or infiltration and not administering local anaesthetic via the nerve block until 4 hours after discontinuing an intravenous lidocaine infusion (Foo et all, 2020).

Ventilated patients:

- Continuous regional nerve blocks in ventilated ICU patients can be used the same as any other patient. The lack of verbal feedback to detect LA toxicity is absent, however these patients are fully monitored, and it would be expected that any haemodynamic instability or cardiac arrhythmias would be identified and dealt with promptly.

- It is suggested that these patients should receive a bolus dose prior to a sedation hold, or attempted extubation if an infusion has not already been commenced. If the patient's targeted sedation level is anything other than RASS -5, then consideration should be made to also starting the infusion regimen in addition to the initial bolus (with an adequate interval as detailed above) as these patients still experience pain despite being sedated and good analgesia will reduce the anaesthetic and opioid dose required for sedation.

Electronic Device: Bodyguard Pain Manager

- Regional Nerve Block infusion will be prescribed on the 'Adult Regional Nerve Block Prescription, Monitoring and Assessment Chart Appendix 1 The electronic device prescription should be dated and signed by the prescribing anaesthetist on the chart and single use pump crossed off.

- The following standard solutions and configurations are used with the Bodyguard Pain manager:

Regional Nerve Block Catheter Infusion via Electronic Device: Bodyguard Pain Manager	
Local Anaesthetic	Levobupivacaine 1.25mgs/ml (0.125%) Ready to use bag
Bag size	200mls
Infusion	**Infusion rate**: l mL hour **Auto bolus**: 20mLs **Lock out:** 120 minutes Above infusion appropriate for all patients > 30kg
Clinician Activated bolus. (Only by staff who have received extended training)	Levobupivacaine 1.25mg/mL via pump 20mls every 6 hours if required (only to be given 6-hours after initial bolus dose) **Not to be administered if <50kg – cross off section**

- Premixed bags of Levobupivacaine are available to prevent risk of drug error (NPSA 2007)

- Levobupivacaine bags must be stored in separate cupboards away from other intravenous drugs and infusions (NPSA (2007) (21)

- Please note that these bags are also used for epidural infusions, so they are labelled 'For Epidural Use Only'

- The regional nerve block prescription chart with the standard auto-bolus protocol via the Bodyguard Pain Manager can be used interchangeably for the following nerve block catheters:

    - Rectus Sheath (or variations e.g. TAP, Quadratus Lumborum etc)
    - Erector Spinae Plane
    - Paravertebral
    - Femoral Nerve/Fascia Iliaca
    - Sciatic Nerve

- It must **not** be used for Brachial Plexus catheters i.e. Interscalene, Superior trunk, Infraclavicular, please see prescription for single use pump below.

Single use pump (CareVis VariO Plus) prescription on Adult Regional Nerve Block Prescription Chart (See Appendix 1).

- It has been agreed locally that Bronglais General Hospital will continue to use NRFit single use elastomeric devices for Rectus Sheath Block Catheters.

- Regional Nerve Block infusion to be prescribed on the 'Adult Regional Nerve Block Prescription, Monitoring and Assessment Chart (See Appendix 1).The single use pump prescription should be dated and signed by the prescribing anaesthetist on the chart, the electronic device and clinician activated bolus crossed off. See below for single use pump prescription.

- The regional nerve block prescription chart with the single use pump can be used interchangeably for the following nerve block catheters:

    - Rectus Sheath (or variations e.g. TAP, Quadratus Lumborum etc)
    - Erector Spinae Plane
    - Paravertebral
    - Femoral Nerve/Fascia Iliaca
    - Sciatic Nerve
    - **Brachial Plexus (upper limb): reduced rate, see table below.**

Regional Nerve Block Catheter Infusion via Single use pump CareVis VariO Plus	
Local Anaesthetic	Levobupivacaine 1.25mgs/ml (0.125%) 200mL bags
Filled volume	Minimal fill volume: 360 mL (prescribe fill volume) Maximum fill volume: 600 mL
Infusion rate	**Infusion Rate:** 2 -14mL/hr (prescribe rate) **Patient Bolus:** 2 mL **Lock out:** 30 minutes
Block specific suggested rates via single use pump	**Plane blocks e.g. Rectus Sheath and ESP:** 14 mL hour with PCA, 2 mL and 30-minute lock out. Reduce to 10 mL hour if <50kg **Plexus blocks e.g. Brachial Plexus (upper limb):** 4 mL with PCA, 2 mL and 30-minute lock (PPH at present)

Procedure for Administration of a Manual Bolus via the Regional Nerve Block Catheter

Where possible patients should have the dedicated nerve block infusion device set up. If a pump is not available, a manual bolus may be given to administer the levobupivacaine by an Anaesthetist or APT.

- Ensure the patient has intravenous access at all times
- Check patient's identity against medication chart
- Check for allergies
- Check for any signs of migrations, leakage and infection
- Do not proceed if there are any concerns and contact the patient's surgical team, or on-call anaesthetist.
- Prepare the drugs in a sterile manner for administration and ensure prescribed on drug administration record
- Gloves must be worn and an aseptic non touch technique should be used when administering a bolus
- Ensure a bacterial filter is in situ
- Attach the NRFit syringe to the catheter filter and aspirate for blood using a low force for 30 seconds
- If blood is present, do not administer the bolus. Inform the on-call anaesthetist
- If no blood is aspirated, inject 5mL of 2.5mg/ml (0.25%) Levobupivacaine over 2 minutes, will need to be prescribed on drug administration chart.
- Wait 3 minutes.
    - Ask the patient to inform you of symptoms of local anaesthetic toxicity e.g. double vision, tinnitus, numb mouth or metallic taste.
    - If the patient exhibits no signs or symptoms of local anaesthetic toxicity then inject the rest of the Levobupivacaine 2.5mg/ml over 5 minutes, aspirating after each 5ml increment.
    - Remove the syringe and replace with a new sterile cap
    - Sign prescription chart
    - Instruct the nursing staff to monitor the patient vital signs (at 5,10,15, and 30 minutes) and for signs of local anaesthetic toxicity

Monitoring and Nursing Care

- Close monitoring is essential not only to detect potential complications from the surgery but also any adverse reactions from the local anaesthetic agents (NPSA 2007)
- Patients should be nursed in an area where there is adequate monitoring and trained/competent staff.
- Observations should be recorded on the National Early Warning Score chart (NEWS) and the 'Adult Regional Nerve Block Supplementary Prescription Chart' (See Appendix 1).
- Intravenous access must be maintained whilst the infusion is in progress and cannula site checked and documented on the HDUHB Intravenous Care Bundle.

Clinical Observations:

When a patient is receiving a LA infusion, please complete the following observations on the NEWS chart:

Observations on NEWS	Frequency on starting LA infusion	After a LA, Clinician Bolus
Blood pressure Heart rate Sedation Score Pulse Temperature	• ¼ hourly for 1 hour • ½ hourly for 2 hours • 1 hourly for 4 hours • 2 hourly for 24 hours • 4 hourly thereafter (unless the patient's condition changes)	5, 10, 15, 30 minutes Observe patient for signs of Local Anaesthetic toxicity (on supplementary chart)
Pain Score	2 hourly	30 minutes after bolus

Nerve Block Specific Monitoring

When a patient is receiving a LA infusion, please complete the following observations on the Regional Nerve Block Supplementary Chart:

Observations recorded on regional nerve block chart	Frequency on starting LA infusion
Electronic Nerve block pump observations Volume infused Total No of Auto bolus given Total No of CAB given	2 hourly and 2 RN to check and counter sign: • At start of infusion • Every shift change • Transfer between areas • Bag changes or boluses
Single use Pump observations Volume remaining	2 hourly
Pain Score Confirm the patient is able to take a deep breath	2 hourly
Regional Nerve Block site Catheter connection check	8 hourly. Please check site and connections following patient activities, such as mobilising
Signs of Local Anaesthetic Systemic Toxicity (LAST)	2 hourly Following a CAB record at 5,10,15,30 minutes (ON NEWS)

- At night (i.e. 22:00-06:00) after the first 24-hours post catheter insertion, the patients sleep pattern should not be disturbed 2-houlty to assess LAST and pain, unless there is a cause for concern. All other observations to continue as above.

Recognition and Management of Local Anaesthetic Toxicity

There is a risk of local anaesthetic systemic toxicity (LAST) with bolus administration, especially if there is rapid absorption or inadvertent intravenous administration. (NPSA 2007).

This is very rare, but it is important that the signs are recognised, and prompt treatment administered to minimise risk of death or permanent harm to patients.

Refer to The Association of Anaesthetists of Great Britain and Ireland safety guideline 'Management of Severe Local Anaesthetic Toxicity' AAGBI 2023 Appendix 2 – AAGBI Guidelines for the Management of Local Anaesthetic Toxicity

Troubleshooting

Problem	Action
Severe pain / unable to deep breathe or cough	• Check nerve block catheter connection, position and check line clamp is open • Ensure balanced analgesia prescribed and given • Contact the Anaesthetist or APT or RN with extended competencies to administer a CAB via pump (Maximum 4 bolus doses in 24 hours) • Monitor for signs of LAST as per monitoring chart • Re assess pain score 20 minutes after a bolus
Inadequate pain control	• Check nerve block catheter position and connections • If patient has PCA check compliance • Ensure patient has had the benefit of other prescribed analgesia • If pain persists, contact the APT / on-call anaesthetist
Leakage	• If the patient is comfortable, dressings should be reinforced • If the patient reports moderate/severe pain, assess to consider top-up (designated/trained staff). If minimal analgesic effect, convert to alternative analgesia • Rectus sheath catheters can leak on one side. Contact APT/on-call anaesthetist/surgical team who will assess if it may be acceptable to continue a unilateral infusion.
Catheter occlusion	• Check for any kinks and correct accordingly • If occlusion alarm persists, APT/contact anaesthetist / surgical on-call to check the patency of the RSC to the patient.

Inflamed site/ Exudate	• Do not top up • Ask surgical/anaesthetic/APT to review • Consider alternative analgesia and catheter removal • Send catheter tip for C&S if infection suspected
Electronic device only – air in line alarm	• Ensure potential minimised by: ➢ Inverting the bag when setting up or on bag changes and expelling air bubble into infusate ➢ Ensure prompt bag changes when near end of infusion alarms occur • Should air-in-line alarms occur, an appropriately trained practioner should be contacted to disconnect infusion line from filter/patient and prime using aseptic-non-touch technique

Removal of Nerve Block Catheters

- **The duration of treatment may be determined by the prescriber, or its discontinuation may be at the discretion of the clinical team. Typical duration is 3-4 days, and should not be more than 5 days without explicit instruction from an Anaesthetist or the APT.**
- **Catheters should not be removed within 12 hours after receiving prophylactic LMWH or 24 hours of therapeutic doses of LMWH, unless instructed otherwise by an Anaesthetist.**
- **Seek advice from APT or Anaesthetist regarding timing of removal if taking BD dosing of LMWH or any anticoagulants or antiplatelet other than prophylactic LMWH or Aspirin.**
- Consider alternative analgesic options at time of removal
- The catheter should be removed sooner if leakage or infection occurs
- Catheters should be removed using an aseptic non-touch technique by a Registered Practitioner (Usually the nursing staff involved in the care of the patient) who have been assessed as trained/competent.
- If there is any resistance, stop procedure and contact the APT/on-call anaesthetist/surgical team.
- Ensure the blue/black tip is intact at the end of the catheters and document this in the notes.
- After removal of the dressing, remove the catheter with gentle traction.
- Apply a non-occlusive dressing for at least 24 hours.
- Two Practitioners to sign and witness regional nerve block tip intact after removal and sign on the regional nerve block prescription chart (See Appendix 1).
- If there is any evidence of infection at the site, or the patient is pyrexial, consider sending the tip for microbiology culture

Roles

Professional Responsibility

The acute pain team are accountable to the Medical Director and Director of Nursing to ensure:

- Dissemination of this guideline document to wards, departments and clinical leaders as appropriate
- Maintenance and review of this guideline document

- Providing awareness sessions for anaesthetists at induction, where service available
- Training and development of staff in line with this guideline and procedures, where service available
- Monitoring of standards in clinical practice, where service available

Training Requirements

All staff who are eligible to use this guideline must have undertaken the following training programmes:

- Management of Regional nerve block catheters / Local anaesthetic toxicity training
- Immediate Life Support [ILS] training course
- HDUHB IV drug administration
- Medical Device Training for:
  - Electronic Infusion Device (Currently BD Bodyguard Pain Managers)
  - Single use pump (Currently NRFit CareVis VariO Plus)

- Periodic reassessment may be necessary to demonstrate continued competency, 3-yearly updates are recommended within competency documents but can be more frequent if required. Users have a professional responsibility and a duty of care to ensure they maintain their competency in-line with their professional codes of conduct. 733 - Medical device Training, Safe use and operations procedure :- (opens in a new tab)
- There is additional training required for those working in departments where BD Bodyguard Pain Managers are set up. Practitioner pre – requisites for level 1 access to operate the BD Pain Manager pump. Registered practitioners who meet the following criteria can:-
  - Access the menu options
  - Change infusion bags – This will be done by all nurses who have undergone the above training programme
  - Deal with pump alarms
- Set up LA infusion – This will usually be done by Recovery staff or a practitioner with extended competencies; ward staff will not be expected to do this component

- Registered Practitioner (To include Anaesthetists, Anaesthesia Associates, Acute Pain Team and Nurses who have undergone extended competency assessment) with level 2 access code can:-
  - Administer a prescribed ‘Clinician Activated Bolus’ following competency assessment.

Implementation

Training for staff	Yes
If yes, who will provide training	Acute Pain Team
When will training be provided	Acute Pain Team delivered ward based training, with one-to-one assessment of competency for the regional nerve block pump

Monitoring / Audit

When will this guideline be audited?	Continuously by APT. Annual audits will need to be conducted in relation to storage of LA drugs and labelling of Regional Nerve Block equipment (NPSA 2007) Data will be collected on the number and type of nerve blocks managed by each location to facilitate future quality improvement work.
Who will be responsible for auditing this guideline?	APT, anaesthetists and staff within clinical areas that manage LA infusions
Are there any other specific recommendations for audit?	Staff competency assessed following attendance on the Regional Nerve Block teaching session. Practical competencies assessed by APT or senior ward staff who have received training and Clinical Education Teams against this guideline

Further Information / Assistance

For advice from 08:00-16:00 Monday-Friday, except periods of leave and bank holidays, the **clinical nurse specialist for acute pain** should be contacted.

Bleep numbers

WGH 2169 GGH 188 PPH 737

Out of hours the **on-call anaesthetist** can be contacted through relevant switchboard.

Bleep numbers

WGH 2315 GGH is 011 PPH 604

There is currently no clinical nurse specialist in BGH – please contact the On Call Anaesthetist via switchboard.

References

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   NICE: Interventional Procedures (IPG) IPG 285 **Ultrasound-guided regional nerve block**

   NICE: CG 124 **- Hip fracture: management. [2011]**

Appendix 1 – Adult Regional Nerve Block Prescription Chart

And

Appendix 2 – AAGBI Guidelines for the Management of Local Anaesthetic Toxicity (page 8 of Nerve Block Prescription Chart)

Adult regional nerve block prescription chart and AAGBI Guidelines for the management of local anaesthetic toxicity (opens in a new tab)

Appendix 3 – Levobupivacaine 0.125% 200ml Order Form

Hywel Dda University Health Board

LEVOBUPIVACAINE REQUISITION

Ward:_____

Drug	Quantity
Levobupivacaine 0.125% Epidural injection 1.25mg/ml 200ml bag	

Ordered by: _____ Date:_____

Dispensed by:_____ Date:_____

Accepted on to ward by:_____

Please take to ward as soon as dispensed.
No other items to be delivered at the same time*

LEVOBUPIVACAINE REQUISITION

Ward_____

Drug	Quantity
Levobupivacaine 0.125% Epidural injection 1.25mg/ml 200ml bag	

Ordered by: _____ Date:_____

Dispensed by:_____ Date:_____

Accepted on to ward by:_____

Please take to ward as soon as dispensed.
No other items to be delivered at the same time*

Appendix 4: Rectus Sheath NRFit Catheter – Surgical Checklist (contents of pack/in)

PAJUNK

RECTUS SHEATH CATHETER – SURGICAL CHECKLIST

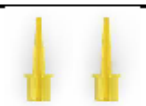
A – CONTENTS OF PACK/IN Date:

COMPONENT	IMAGE	DESCRIPTION	CHECKED IN (tick)
Rectus sheath catheter yellow labels X 2 NRFit® label yellow X 1		**2 x Stickers Rectus sheath catheter yellow** **1 x NRFit® label yellow**	
Catheter clamps NRFit® X 2		**2 x Catheter clamps (white body yellow clamp) NRFit®** 2 components per clamp - Clamping adaptor - Yellow male cap	
Tuohy NRFit® Introducing Needle X 1		**1 x Introducing needle NRFit®** 4 components - Plastic protective sheath - Needle - Plastic stylet - Wings	
Catheter X 2		**2 x Catheters with black markings in plastic wrapping** 3 components per catheter - Catheter tube - Yellow catheter introducer - Perforated plastic packaging	
Y-Connector NRFit® X 1		**1 x Y-Connector NRFit®** 2 components - Y-Connector - Yellow male hub cap	
Filter NRFit® X 1		- **1 x Flat filter NRFit®**	
FixoLong X 1		**1 x FixoLong** 3 components - Filter holder - Dressing - 2 x paper dressing backing	
Dressing X 2		**2 x Catheter sheath dressings (green and white)** 5 x paper dressing backings per dressing.	
Yellow NRFit® male cap X 1		**1 x Spare** Yellow NRFit® male cap - (loose in box)	

Appendix 4: Rectus Sheath NRFit Catheter – Surgical Checklist (Items returned/out)

PAJUNK®
Real People. Real Care.

B – ITEMS RETURNED/OUT

COMPONENT	IMAGE	DESCRIPTION	CHECKED (tick)
NRFit© label yellow X 1		NRFit© label yellow X 1 Rectus sheath label back part yellow X2	
Tuohy NRFit© Introducing Needle Set X 1		1 x Introducing needle NRFit©. 4 components - Plastic protective sheath yellow - Needle - Plastic stylet - Wings	
4 x male yellow NRFit© caps		4 x Male yellow NRFit© caps	
Yellow catheter introducers X 2		2 x Catheter introducers yellow	
Catheter packaging X 1		Clear plastic packaging 2 x Perforated: Up to 4 pieces	
FixoLong X 1		1 x FixoLong backing - 2 x paper dressing backing	
Back of dressing X 2		2 x Catheter sheath dressing backings - 5 x paper dressing backings (per dressing)	