

Pain Service Guidelines

**Acute
Pain**

**Chronic
Pain**

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Aims of the Pain Service	3
Benefits of Effective Acute Pain Management	3
Staff	4
Referrals to the Pain Service	5
Outpatient Referrals	
Roles and Duties of the Pain Registrar	6
The pain round Monday to Friday.	
Standard Pain Therapies	7
Paracetamol	
NSAID's	
As Required ('PRN') therapies	
Nursing observation Policy	
Antiemetics	
Opioid Analgesia	10
Oxycodone IR Dosage	
Regular Oxycodone CR	
Opioid safety tips	
Patient Controlled Analgesia	12
Fentanyl PCA	
Epidural Analgesia	13
Epidural Infusion	
Patient Controlled Epidural Analgesia	14
PCEA Bupivacaine plus Fentanyl	14
PCEA Pethidine	
Troubleshooting an epidural	16
Epidural Failure	
Epidural Hypotension	
Leg Weakness	
Infection and abscess	
Altered sensory function post epidural analgesia	
Removing Epidural Catheters	
Ketamine	21
Ketamine Infusion	
Neuropathic Pain	22
Dosing for neuropathic agents	

Aims of the Pain Service

The Pain Service at Joondalup Health Campus (JHC) has many roles, including:

1. Provision of safe and effective pain management for acute severe pain
2. Multimodal therapies for chronic pain
3. Improve recovery after surgical procedures and trauma
4. Education of medical and nursing staff in pain management
5. Quality assurance in relation to pain management

Benefits of Effective Acute Pain Management

1. Basic human right
2. Reduces post injury complications (Chest infection, DVT, pressure sores, ileus)
3. Reduces 'acute stress response' (eg cardiovascular, metabolic-AMI, cortisol, BSL) and psychological stress (pain, anxiety, PTSD)
4. May reduce transition from acute to chronic pain ('protective analgesia') which occurs in up to 20% of patients.

Staff

Name	Role	Contact
Mandy Lison-Pick	CNS Pain Service	page 0908
Liz Smith	CN Pain Service	page 0908
Angela Libby	CN Pain Service	Page 0908

Referrals to the Pain Service

All referrals to the pain service need to be in writing from the treating team. Whilst the Pain Service requires this, the exact manner in which it can be done is flexible. This can include consultation forms, the purple APS form, or a written plan in the progress notes as valid referrals.

Common referrals include

1. Acute post operative pain
2. Obstetric labour pain management
3. Acute medical pain syndromes
4. Chronic pain management in an inpatient
5. Failure to obtain analgesia using standard protocols

The standard point of contact for all referrals is the pain registrar, on the 0400 page.

Outpatient Referrals

Referrals to the outpatient service also require a written referral letter from either the inpatient team or from a doctor in the community who normally treats this person.

Roles and Duties of the Pain Registrar

The pain registrar is typically rostered 0800-1800 Monday to Friday. On evenings, nights, weekends and public holidays, the junior registrar who holds the 0400 page is responsible for providing this cover.

On arrival at Joondalup Health Campus, it is courteous to page the night registrar to relieve them of the 0400 page. This should occur at approximately 0800 hours.

The role of the 0400 pain registrar includes:

- Daily pain rounds with the pain consultant & nurse
- Labour ward coverage (when required).
- MET team response
- Recovery room medical cover where required.
- Pain and perioperative assessments where required.
- Tea relief/assistance in theatres when requested

Although the normal reporting line of the pain registrar is to the pain consultant, the duty anaesthetist may direct the pain registrar to other duties if clinical need dictates.

The pain round Monday to Friday.

On normal working days the pain registrar should attend the pain round. This normally starts around 0830 hours. Patients need to be reviewed in the morning by the pain team, in particular to facilitate prompt discharge of surgical patients.

All private patients should, where possible, be seen by a consultant. Where necessary, patients may require further review during the afternoon or evening if their pain management is proving difficult.

Standard Pain Therapies

Effective acute pain management uses a stepped, multi-modal approach.

Paracetamol

Regular dosing with basic analgesic agents will manage most mild to moderate acute pain. This level of treatment does not require pain service intervention. All patients on the pain service should receive these therapies unless contraindicated:

Paracetamol 1g QID Oral

The dosage may need to be reduced in the elderly or those with liver dysfunction, or if the body weight is very low (<47 Kg)

NSAID's

If required, and no contraindications are present (eg renal, cardiovascular or peptic ulcer disease) then NSAID's may be added.

Typical prescriptions (Celecoxib is most preferred):

Celecoxib 100mg BD Oral

OR

Naproxen 500mg BD Oral

OR

Ibuprofen 400mg TDS Oral

As Required ('PRN') therapies

These additional treatments do not require pain service intervention, but are commonly charted by the pain service for analgesia as part of their step down therapy and discharge management.

They are normally prescribed to start when advanced techniques, such as patient controlled intravenous analgesia, are discontinued. They can be charted in advance with instruction to be given when the technique is discontinued.

Tramadol 50mg 2hrly Oral PRN

AND/OR

Oxycodone IR * mg 2hrly Oral PRN

*** Dosage of oxycodone is variable, see below.**

In the step down period Buprenorphine can be used as a 4 hourly PRN, particularly if the person is nil by mouth.

Buprenorphine 200-400 mcg 4hrly S/L PRN

Nursing observation Policy

JHC has a policy that all people receiving up to 2 hourly PRN opioids are reviewed routinely by nurses at one hour following the dose (safety check).

When more than three doses in a seven hour period are required the nursing staff will ask the medical staff to consider referral to the pain service.

Antiemetics

There are several anti-emetics available. These are best given intravenously where nausea is present. Sublingual administration is a reasonable alternative. A typical starting regime would include:

Ondansetron 4mg 6hrly IV/SL PRN

Metoclopramide can also be used, either as well as or occasionally in place of ondansetron.

Metoclopramide 10-20mg 6hrly IV/O PRN

Other agents may be prescribed by the pain service in the event of severe or persistent nausea.

Opioid Analgesia

Opioid analgesia is a mainstay of severe acute pain management. It has a much more limited role in chronic pain states. The preferred PRN opioid for severe pain is oxycodone immediate release (IR).

Oxycodone IR Dosage

The best predictor of oxycodone dosage requirement is a combination of pain severity and the age of the patient.

Typical daily requirements are approximately 100mg - age. Reasonable dosing regimes for pain relief are:

Younger pain patients (age < 40)

Oxycodone IR 10-20mg 2hrly Oral PRN

Older pain patients (age 40 - 70)

Oxycodone IR 5-10mg 2hrly Oral PRN

Elderly pain patients (age > 70)

Oxycodone IR 2.5-5mg 2hrly Oral PRN

Regular Oxycodone CR

Controlled release (CR) opioids should not be used routinely in acute pain management as there is a risk of narcotisation. In some cases CR opioid may be required to reduce the amount of PRN opioid used in 'step down' or for chronic pain management.

The preferred CR oral opioid for background analgesia is oxycodone CR (Brand name: "Oxycontin"). The amount required is variable and needs to be tailored to the patient. This is particularly useful when PRN usage is high, or where the person has gaps in analgesia (e.g., at night). The dosage should be based on total PRN usage of opioid. Even in young people, it is rare to go above 40mg BD.

Oxycodone CR 5-40mg BD Oral

**** Wide dose range - seek advice if unsure.**

Opioid safety tips

1. Sedation is the first marker of narcotisation: the sedation score goes down before the RR does.
2. Be especially careful in the elderly, children, the obese, those with respiratory disease (obstructive sleep apnoea, COPD) and renal impairment.
3. Beware of mixing sedatives, especially benzodiazepines with opioids and mixing different types of opioids, also by various routes-higher risk of sedation and respiratory depression.
4. Avoid the oral route unless absolutely reliable (eg NGTs); CR drugs (eg oxycontin® CR) may be 'dumped' in the ileostomy bag and not be absorbed.

Patient Controlled Analgesia

Patient controlled intravenous analgesia (PCA) is a standard therapy for severe pain. This requires a specialised pump that is only provided by the pain service. All patients using a PCA pump should remain under the care of the pain service.

Many medications can be used for PCA pumps. The preferred opioid at JHC is Fentanyl, with the following settings:

Fentanyl PCA

Bolus dose 20 mcg

Lockout 5 minutes

No maximum limits on the pump

The PCA bolus dosage can be increased where pain is very severe. Inability to control pain with a PCA should lead to consideration of other adjuncts and techniques.

Epidural Analgesia

Epidural techniques use local anaesthetic applied directly to the nerve roots. It is one of the most effective methods of providing analgesia for surgical and labour pain. Epidural analgesia can be managed either as a continuous infusion or in a patient controlled device.

Epidurals should only be managed by the pain service.

Epidural Infusion

Ropivacaine 2mg/ml - 200ml bag

Fentanyl 4mcg/ml premixed by manufacturer

Infusion rate: 5-12 ml/hour

The general principle of epidural analgesia is to find a rate of infusion that provides suitable analgesia and maintain this rate.

Patient Controlled Epidural Analgesia

PCEA is based on the principle of the patient being able to self-administer boluses of epidural drugs via electronic or mechanical pumps. This has been shown to be effective and safe. PCEA reduces the risks of dense motor block or persistent autonomic block with its cardiovascular consequences. At JHC, PCEA is mostly used for obstetric analgesia.

PCEA Bupivacaine plus Fentanyl

The decision to use PCEA in labour resides with the patient and the anaesthetist and a brief discussion after epidural insertion is expected to offer the patient a choice of PCEA or midwife administered boluses.

Pump: Go Med mechanical pump

Solution: Premix Bupivacaine/Fentanyl

0.125% Bupivacaine + 5mcg/ml fentanyl

Dose: 4 ml (5mg Bupivacaine + 20mcg fentanyl)

Lockout: 15 minutes

The dosing volume and lockout times are fixed on the Go Med mechanical pumps.

PCEA Pethidine

PCEA pethidine is a widely practiced technique for post caesarean analgesia in most academic units. At JHC, spinal anaesthesia is the standard practice for caesarean delivery. However, if an epidural catheter is in situ during labour and the patient needed a caesarean, it is common practice to leave the catheter in situ for post operative analgesia. PCEA pumps are set up by the anaesthetic team, although the recovery and midwifery staff may also do this on occasion.

Pump: Go Med mechanical pump.

Solution: 5mg / ml Pethidine

(300 mg of pethidine mixed with saline to total volume of 60 ml)

Dose: 4 ml (20mg Pethidine)

Lockout: 15 minutes

As with labour PCEA, no changes can be made to the volume and dosing interval via the pump we use at JHC.

Troubleshooting an epidural

Epidural Failure

On occasions there will be significant pain despite an epidural being used. If pain does not respond to a test dose bolus of local anaesthetic (+/- adjuncts), then consideration needs to be made that the epidural placement has failed.

Epidural test dose

Lignocaine 1% 4-6ml epidurally

Reasons for failure include:

- Wrong level of epidural to cover pain
- Migration of the epidural (Has it fallen out?)
- Unilateral block (especially if >3cm catheter in space)
- Leakage/disconnection/pump problem

It should take no longer than 30 minutes to make one of the following decisions with an ineffective epidural (do not 'experiment' for a long period of time—a poorly functioning epidural is a 'pain emergency');

-Continue with the epidural after 'rescue' eg higher rate.

-Discontinue the epidural and convert to an alternative technique e.g. PCA.

-In some cases, start a 'combination technique' eg epidural ropivacaine (only) and PCA fentanyl (e.g. patchy or unilateral block).

Epidural Hypotension

Side effects of epidural local anaesthetics include hypotension.

This is due to systemic vasodilatation with or without bradycardia, due to sympathetic blockade.

Hypotension can be managed with fluid administration and occasionally pressor support (in a critical care area). Fluid therapy is useful but can lead to volume overload when the cause of the hypotension is vasodilation rather than losses.

Pain should not be a cure for hypotension. Stopping the infusion will lead to the pain returning, which raises blood pressure, and this should only be done if the patient has become very haemodynamically unstable.

When severe hypotension is seen, migration of the epidural catheter into the intrathecal space may have occurred. In these instances a dense block is usually seen. Consider aspirating the catheter for cerebrospinal fluid (CSF).

Other causes of severe hypotension need to be considered, such as:

- Bleeding
- Fluid shifts
- Myocardial infarction
- Dysrhythmias
- Sepsis
- Drug therapies.

Consider withholding vasodilating antihypertensives, particularly angiotensin converting enzyme and angiotensin II receptor inhibitors.

Leg Weakness

Leg weakness will impair mobilisation and is a sign of potential haematoma or abscess. No patient should be left with leg weakness. If leg weakness develops then the epidural infusion should be stopped and a review of the leg weakness should be performed hourly (neurovascular observations) until recovery. If the weakness does not resolve within 2 hours, then a spinal compressive lesion needs to be considered. MRI can identify compressive lesions within the vertebral canal better than CT scan and is the investigation of choice. Early recognition is essential in preventing permanent injury.

Infection and abscess

Infection of the epidural can be superficial or deep. All infections carry a risk of permanent neurological injury, as well as the generalised risks of sepsis.

Any signs of erythema, back pain, limb weakness, bladder or bowel dysfunction or pyrexia need to be considered an indication of potential epidural infection or abscess.

Altered sensory function post epidural analgesia

Persistent focal numbness and altered sensory function is a common issue after labour epidurals. It is usually multifactorial, and birth-related reasons are commonly the culprits.

Things to consider:

- Spinal/epidural compressive lesions (abscess/haematoma).
- Details of epidural insertion, any numbness or paraesthesia or shooting radicular pain.
- Mode of onset, timing and progression
- Anatomical distribution (if perineal/ saddle distribution, consider cauda equina compression early).

Late onset focal sensory dysfunction is not uncommon after complicated vaginal birth, malpresentation and instrumental deliveries, these issues have to be sought and discussed with patient.

A referral to the Perioperative/ pain clinic is a standard of care to make sure these issues are addressed by a specialist.

Removing Epidural Catheters

All epidurals require daily review by the pain team for site tenderness or erythema.

It is common for epidural catheters to pass through an epidural vein, masking bleeding until the catheter is removed.

Make sure the patient is not receiving any form of systemic anticoagulation such as heparin infusion, high doses of low molecular weight heparin, warfarin, clopidogrel or rivaroxaban. Beware following liver surgery (coagulopathy), obstetrics (pre-eclampsia) and in vascular patients (frequently anticoagulated).

Epidurals should not be removed until 12 hours have passed since the last dose of any low molecular weight heparin, or 6 hours for standard subcutaneous heparin. Further heparin doses should not be given for 2 hours after the catheter is removed to allow clot formation.

Where the amount of residual pain is unclear, the analgesic infusions can be stopped prior to removal of the catheter to gauge the efficacy of the step down analgesia.

Epidural catheters generally should not be kept in longer than 72 hours without a strong clinical indication. The rate of infection of epidural catheters rises markedly after 48-72 hours.

Ketamine

Ketamine is useful as an adjunct for managing severe acute pain as well as having a role in the management of opioid resistant pain, neuropathic and visceral pain. It should not be used routinely, but reserved for when analgesia is problematic.

Ketamine is short acting and needs to be given by infusion. The dosing required is considerably lower than that required for anaesthesia.

Ketamine Infusion

Ketamine 200mg in 200ml saline

Rate: 0.1 mg/kg/hr

Typical rate 70kg person is 5 -15 ml/hr

Ketamine is hallucinogenic and patients may note strange dreams, hallucinations or dysphoria. For this reason it is best to start at a lower rate and build up if analgesia is inadequate.

Neuropathic Pain

Neuropathic pain is different both qualitatively ('electrical qualities', allodynia/hyperalgesia on examination) to the patient as well as requiring different treatment modalities. Common causes of acute neuropathic pain include post amputation (stump and phantom), radiculopathy (sciatica), post inguinal hernia or thoracotomy pain.

Ketamine and tramadol work well in neuropathic pain and can be given intravenously or orally.

Oral agents used commonly at JHC include amitriptyline and pregabalin.

Dosing for neuropathic agents

Use of these agents is best done under consultant supervision from the pain service. Typical dosage regimes include:

Amitriptyline 10-20mg Nocte Orally

Amitriptyline is sedative in nature and also has significant anticholinergic side effects including cardiac dysrhythmias, dry eyes, dry mouth, constipation and urinary retention. The beneficial pain modulatory effects occur within days.

Pregabalin 75mg BD Orally

Increasing after several days to

Pregabalin 150mg BD Orally

Increasing again in severe pain after several days to:

Pregabalin 300mg BD Orally

Pregabalin doses should be reduced by at least 50% in the elderly (25 and 50 mg capsules available) and in patients with renal impairment (can accumulate).

Common adverse events include dizziness, drowsiness. Less common adverse reactions include ataxia, confusion, euphoria, constipation and oedema. Rarely marrow suppression, rhabdomyolysis and pancreatitis have been reported.

Palliative Care Pain

Palliative care pain management is generally managed at Joondalup under the palliative care team

An ambulatory palliative care service is available in the community on:

Palliative Ambulatory Services

(08) 9340 6390

Notes



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