

NEURAXIAL (INTRATHECAL OR EPIDURAL) OPIOID – SINGLE DOSE MORPHINE ONLY

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Safe and effective administration of single dose neuraxial (intrathecal or epidural) morphine for optimal management of pain

2. PATIENT

- Postpartum woman - post caesarean section.
- Woman with prior complex pain issues requiring management of acute pain .
- Woman having abdominal or pelvic procedures that may benefit from neuraxial analgesia

3. STAFF

- Acute Pain Service (APS)
- Anaesthetists and anaesthetic trainees
- Registered nurses (RNs) and midwives (RMs)

4. EQUIPMENT

- nil

5. CLINICAL PRACTICE

Precautions

- Be aware the following factors may increase the risk of sedation and respiratory depression:
 - Co-existing conditions e.g., obesity, sleep apnoea
 - >65 years of age and opioid naïve
 - Concurrent opioid or sedative medications (e.g., regular slow-release opioids, patient-controlled analgesia (PCA))
 - History of adverse events after opioid administration
 - Drug dose – refer to dosage in Appendix 1

Asepsis and infection control

- Adhere to infection control guidelines including the “5 Moments of Hand Hygiene” throughout the procedure.
- Administer neuraxial morphine via a sterile, single-use syringe using a ‘no touch’ technique

Safety

- Ensure any intrathecal medications being administered are **preservative-free**. The 500 microgram(mcg) morphine hydrochloride (preservative free) vials provided by pharmacy are for INTRATHECAL use only.
- Avoid drug administration errors in the neuraxial space - vigilance is essential.

Prescribing and documentation

- Be aware prescribing and administration must only be performed by anaesthetists or specialist pain physicians
- Document on the NSW Health Neuraxial Opioid Single Dose (Adult) Chart OR the NSW Health PCA form- Document route, dose, date and time of administration on the anaesthetic chart, as well.

- Alert other clinicians that neuraxial morphine has been given by placing an Intrathecal or Epidural label/sticker on the anaesthetic chart.
- Ensure an analgesia plan is in place to complement neuraxial morphine. Multimodal analgesia regimens that include a variety of non-opioid analgesia agents are recommended for all patients, as tolerated. As the onset interval, efficacy, and duration of effect of neuraxially administered morphine varies between patients, it is appropriate to prescribe additional opioid analgesia, via other routes of administration, for patients expected to experience severe pain. Immediate release PRN oral formulations should be given in preference to PCA or regular dosing regimens of slow release long-acting opioids. The prescriber must undertake a risk–benefit analysis to determine the safety of the latter regimens. If slow-release opioids are prescribed, the timing of the first dose should be specified to occur not less than six hours following the administration time of the neuraxial morphine.
- Select appropriate frequency of observations for the woman by ticking the box corresponding to:
 - hourly for six hours (postnatal)
 - hourly for 12 hours (gynaecology/oncology).
- Monitor particularly for the adverse events of most concern - sedation, airway obstruction and respiratory depression. Morphine given via the neuraxial (spinal or epidural) route has a long duration of action and can provide excellent analgesia for up to 24 hours. There is however the potential for delayed complications through drug migration to and or within the Cerebral Spinal Fluid (CSF).
- Indicate necessity for supplemental oxygen. The chart defaults for ALL patients to have supplemental oxygen however, in general, a postpartum woman will not require supplemental oxygen.
- Administer supplemental oxygen for 24 hours to woman prescribed PCA or slow-release opioids.
- Prescribe naloxone for respiratory depression and sedation as instructed on NSW Health Neuraxial Opioid Single Dose (Adult) Chart

Dosing

- Prescribe on NSW Health Neuraxial Opioid Single dose (Adult) Chart
- Administer by an anaesthetist peri-operatively
- Refer to Appendix 1

Patient Management

- Supply woman with Epidural Pain Relief (Post-Operative) leaflet. (Appendix 4)
- Apply oxygen at 2-4 litres per minute via nasal prongs or 6 litres per minute via mask at all times unless otherwise ordered (e.g., postpartum woman).
- Ensure naloxone is available on the ward and is prescribed for sedation or respiratory depression on the NSW Health Neuraxial Opioid Single Dose (Adult) Chart
- Ensure naloxone for other purposes e.g. (nausea or pruritus) is prescribed separately on eMEDS.
- Do not administer other opioids or sedatives unless prescribed by an anaesthetist. (e.g., PCA)
- Maintain intravenous access for a minimum of 24 hours post neuraxial morphine opioid dose.

Observations

Refer to Appendix 2

Adverse Events and Their Management

Refer to Appendix 3

6. DOCUMENTATION

- NSW Health Neuraxial Opioid Single dose (Adult) Chart
- Medical record – paper and electronic
- eMEDS
- NSW Health Standard Adult General Observation Chart (SAGO)
- NSW Health Standard Maternity Observation Chart (SMOC)

7. EDUCATIONAL NOTES

Definitions

- **Neuraxial Drug Delivery** - refers to administration of medication into the epidural or intrathecal space.
- **Epidural space** - lies between the dura mater and the vertebrae (bone and ligaments) of the spinal canal. It contains nerve roots, blood vessels, fat, and loose connective tissue.

- **Intrathecal space** is the space surrounding the spinal cord and contained by the dura mater through which cerebral spinal fluid (CSF) flows. Also called the subarachnoid space or spinal sac.

Patient Education

The patient should be educated by the prescribing anaesthetist regarding:

- Anticipated duration of action and any potential adverse events.
- Breakthrough analgesia, antiemetics, or antipruritic therapy.

Nursing and Midwifery Education

- RN/RM to participate in the “Opioids for Acute Pain” session plus the “Neuraxial Morphine” session which are facilitated by the APS.

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Accreditation of Staff to give in specific units
 - Epidural Analgesia – non-Maternity
 - Epidural Analgesia - Maternity
- Epidural Analgesia – Maternity
- Epidural Analgesia – RHW Guidelines
 - Naloxone – guidelines for use of naloxone HCL for the treatment of opioid induced over sedation, respiratory depression, Pruritus and Nausea.
 - Medication: Schedule 4 (D) and Schedule 8
 - Patient with Acute Condition for Escalation (PACE): Management of the Deteriorating ADULT and MATERNITY inpatient

9. NATIONAL STANDARD

- Standard 4 – Medication Safety

10. RISK RATING

- High

11. REFERENCES

1. NSW Health Policy PD2013_043, Medication Handling in NSW Public Health Facilities. (2013)
2. Australian and New Zealand College of Anaesthetists and Faculty of Pain Medicine. Acute Pain Management: Scientific Evidence. Approved by the NHMRC 2016 (fourth Edition)
3. Practice Guidelines for the prevention, detection and management of respiratory depression associated with neuraxial opioid administration; *Anaesthesiology* Vol 110:218-30, no 2 Feb 2009.
4. Risks and side-effects of intrathecal morphine combined with spinal anaesthesia: a meta-analysis; Gehling, M and Tryba, M. *Anaesthesia* 2009, 64, pages 643-651.
5. The American Society of Anaesthesiologists, Inc. Lippincott Williams & Wilkins, Inc. *Practice guidelines for the prevention, detection and management of respiratory depression associated with neuraxial opioid administration. An update report by the American Society of Anaesthesiologists Task Force on neuraxial opioids.* *Anaesthesiology* 2009; 110: 218-30.
6. NSW Agency for Clinical Innovation. *Neuraxial Opioid Single Dose Observation Chart (Adult): Explanatory note.* 2014

REVISION & APPROVAL HISTORY

Reviewed and endorsed Therapeutic & Drug Utilisation Committee April 2022
 Approved Quality & Patient Care Committee 21/04/2022
 Reviewed and endorsed Therapeutic & Drug Utilisation Committee 25/9/19
 Approved Quality & Patient Care Committee July 2017
 Reviewed and endorsed Therapeutic & Drug Utilisation Committee 13/6/17
 Approved Quality & Patient Safety Committee 17/9/15
 Previous title *Neuraxial (Intrathecal or Epidural) Analgesia – Single Dose Morphine Only*
 Reviewed and endorsed therapeutic & Drug Utilisation Committee 11/8/15
 Approved Quality & Patient Safety Committee August 2012 (titled “*Neuraxial (intrathecal and/or epidural) Opioid Analgesia*”)
 Approved Quality & Patient Safety Committee 18/8/11
 Endorsed Therapeutic & Drug Utilisation Committee 14/6/11
 Replaced previous title *Intrathecal = Subarachnoid = Spinal Analgesia*
 Approved Quality Council 15/12/03
 Endorsed Therapeutic & Drug Utilisation Committee 21/10/03

APPENDIX 1

STANDARD DOSING

Drug Single Dose Only	Average Dose	Route of Administration	Anticipated Duration of Action
Morphine	2 mg	Epidural	Up to 24 hours
Morphine	100 micrograms	Intrathecal	Up to 24 hours

APPENDIX 2

OBSERVATIONS

- Observations to be recorded on the NSW Health Neuraxial (Intrathecal or Epidural) Opioid Single Dose (Adult) Chart

OBSERVATION	FREQUENCY (POST NATAL)	FREQUENCY (GYNAE & GYNE/ONC)
Pain Score	Every 1 hour for the first 6 hours Then every 2 hours for up to 24 hours post dose	Every 1 hour for the first 6 hours Then every 2 hours for up to 24 hours post dose
Sedation		Every 1 hour for the first <u>12</u> hours Then every 2 hours for up to 24 hours post dose
Respiratory Rate		
Oxygen		Every 1 hour for the first 6 hours Then every 2 hours for up to 24 hours post dose
Motor Block Assessment		
Nausea, vomiting, pruritus		

APPENDIX 3

ADVERSE EVENTS AND THEIR MANAGEMENT

Adverse Event	Management
<p>Inadequate Analgesia Neuraxial Morphine may take between 1 to 6 hours to reach full analgesic effect</p>	<ul style="list-style-type: none"> • Give breakthrough (immediate release) analgesia if ordered • If an additional opioid is administered, perform and record pain, sedation, respiratory rate 1/24 for 4 hours after each opioid dose. • Notify APS if breakthrough dose does not provide adequate analgesia
<p>Increased Sedation</p>	<p>Sedation Score 2 (Constantly drowsy, unable to stay awake)</p> <ul style="list-style-type: none"> • Cease administration of all opioids. • Give oxygen • Check respiratory rate frequently • YELLOW ZONE - Activate a Clinical Review <p>Sedation Score 3 (Difficult to rouse)</p> <ul style="list-style-type: none"> • Cease administration of all opioids. • Give oxygen • Check respiratory rate • RED ZONE - Activate a Rapid Response • Give naloxone as prescribed OR as per naloxone LOP <p>Sedation Score 3 (Unresponsive)</p> <ul style="list-style-type: none"> • Cease administration of all opioids. • Give oxygen • Check respiratory rate • RED ZONE - Activate a CODE BLUE • Give naloxone as prescribed OR as per naloxone LOP
<p>Respiratory Depression</p> <ul style="list-style-type: none"> • Peak 6-12 hours post dose • Increased risk with additional opioid or sedative 	<p>If Respiratory Rate is between 6-10 rpm</p> <ul style="list-style-type: none"> • Cease administration of all opioids. • Give oxygen via mask and support airway if necessary • Assess sedation level and if possible, encourage patient to breathe deeply • YELLOW ZONE - Activate a Clinical Review <p>If Respiratory Rate ≤ 5</p> <ul style="list-style-type: none"> • Cease administration of all opioids including PCA • Give oxygen at 10L/min via Hudson mask and support airway if necessary • RED ZONE - Activate a Rapid Response or /CODE BLUE • Give IV naloxone as prescribed on PCA chart OR as per naloxone LOP
<p>Motor Block</p>	<ul style="list-style-type: none"> • If motor function has not returned within 6 hours, contact APS or anaesthetist
<p>Nausea and Vomiting</p>	<ul style="list-style-type: none"> • Ensure antiemetic's are prescribed and offered as frequently as the PRN order permits. • If one antiemetic does not work proceed to alternative or page APS for advice.

	<ul style="list-style-type: none"> • Anti-emetics should be ordered and recorded on eMEDS and on the pain chart in the observation comments section. • Any patient requiring more than 2 doses of antiemetic may need a regular dose ordered on eMEDS. • Identify if the woman is hypotensive and check their fluid balance
Pruritus (itch)	<ul style="list-style-type: none"> • Low dose naloxone as per LOP • Antihistamines may be effective but will increase the risk of respiratory depression due to their sedative effect. • Refer to APS if treatment ineffective.
Severe headache or signs of Dural puncture	<ul style="list-style-type: none"> • Contact APS or anaesthetist
Urinary Retention	<ul style="list-style-type: none"> • Contact the woman's primary care team
Constipation	<ul style="list-style-type: none"> • Prophylactic aperients therapy is beneficial. • Contact the woman's primary care team

APPENDIX 4

EPIDURAL PAIN RELIEF (POST-OPERATIVE)



1. What is an epidural?

An epidural is an injection of local anaesthetic or pain-relieving drugs (or both) into the lower back to block the nerves that come from the abdomen and the surrounding organs and muscles.

2. An anaesthetist:

An anaesthetist will insert your epidural. An anaesthetist is a medical doctor who requires an additional 5-7 years of post-graduate training and exams to qualify as a “specialist anaesthetist”. The RHW has both specialist anaesthetists and anaesthetists-in-training, known as a registrar. You may choose to have the anaesthetic specialist attend to you; this however will incur an additional cost.

3. Insertion of an epidural:

Before the operation, while you are in the anaesthetic bay, your anaesthetist will ask you to sit up or lie on your side. An intravenous “drip” will be inserted into your arm which is necessary for hydration. The anaesthetist will explain the procedure to you. A small amount of local anaesthetic is injected under the skin on your lower back, then the epidural catheter is placed into your lower back via a needle. The needle is then removed, and the epidural catheter is left in the lower back and is taped to your back. It is important to keep still at all times during the insertion.

4. How we use an epidural:

The choice of anaesthetic technique will be decided by you and your anaesthetist based on your individual needs. The technique will be fully explained to you prior to the procedure.

You may be offered a general anaesthesia (GA) where you will be asleep for the whole procedure or you may be offered neuraxial anaesthesia (e.g., spinal or epidural) where you will be awake and relaxed but be completely numb and pain free in the lower abdomen, legs, and feet, for the whole procedure. Sometimes an anaesthetist will insert an epidural prior to a GA. In this case the intention of the epidural is for post-operative pain relief.

After your anaesthetic you will need ongoing pain relief. There are many ways we can achieve this. For the purposes of this leaflet, we will focus on the use of epidural for ongoing pain relief.

If you have had a general anaesthetic (plus insertion of an epidural) OR neuraxial anaesthesia you may be given the option of epidural pain relief. There are two different ways we can achieve this:

1. **Continuous epidural infusion:** after the operation pain relieving drugs will be administered through the epidural catheter which may continue from a few hours to several days. Whilst you are receiving the epidural pain relief a registered nurse/midwife will closely monitor you to ensure you are receiving adequate pain relief and are being observed for any complications.

2. **Single injection of an opioid medication (e.g., morphine or fentanyl):** toward the end of the procedure your anaesthetist will inject a small amount of opioid into the epidural space. In Recovery the nurse will remove the epidural catheter. The opioid medication will start to work soon after and will provide pain relief for up to 24 hours. A registered nurse will closely monitor you to ensure you are receiving adequate pain relief and are being observed for any complications.

5. Potential complications:

Minor

- A decrease in blood pressure which can be treated with intravenous fluids
- Legs that feel heavy, weak, and numb. This means you will have to remain in bed following insertion of the epidural and until you have gained full feeling in your legs
- You will require a bladder catheter as you will find it difficult to pass urine
- Shivering
- Itching
- Backache – for a day or two afterwards due to bruising from the needle. There is no association with long-term back pain from epidurals

Serious

- Headache – may be seen in about 1 in 100 women with an epidural following an accidental dural puncture (puncture of sac of fluid around the spinal cord). Approximately 48% of women will have a headache from day 1 to 1 week if they have suffered a dural puncture.
- “Spinal block” resulting in a fall in blood pressure, a decreased level of consciousness and difficulty breathing may be seen. To avoid this the anaesthetist will give a test dose to ensure the epidural catheter is in the right position
- Nerve damage – affects 1 in 3,000 women (with or without an epidural) with temporary nerve damage resulting in some leg weakness and/or a patch of numbness. Virtually all these cases heal spontaneously within 4-5 weeks. Permanent nerve damage is rare.
- Abscess/Haematoma – is a collection of pus or blood in the epidural space that can cause nerve damage. This is very rare affecting about one in 100,000 women
- Paraplegia – the incidence of paraplegia in modern practice is now very rare and is less than 1 in a million

TALK TO AN ANAESTHETIST AND ASK QUESTIONS

You may write down any questions you have at the end of this page.

I _____ have read this information and I understand what an epidural entails.

Please note: Signing this form does not make an epidural compulsory nor will one be performed on you without your agreement.

SIGNATURE _____