

Clinical Guideline for the Neuraxial use of Morphine in Adult Patients:

Royal Sussex County Hospital and Princess Royal Hospital; including Sussex Orthopaedic Treatment Centre (SOTC)

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	management>>analgesia guidelines)
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Table of Contents

Clinical Guideline for the Neuraxial use of.....	1
Morphine in Adult Patients:.....	1
Royal Sussex County Hospital	1
Princess Royal Hospital (including SOTC)	1
1.0 Introduction	3
2.0 Purpose	3
3.0 Definitions	3
4.0 Responsibilities, accountabilities and duties	3
5.0 Guideline	4
Frequency of observations (minimum acceptable).....	6
6.0 Training Implications	7
7.0 Monitoring Arrangements	8
8.0 Due Regard Assessment Screening.....	8
9.0 Links to other Trust Policies	9
References	9
Appendix 1 - Summary	10
Appendix 2	11
Appendix 3 - Audit for the use of spinal / epidural morphine in adult patients	12
Appendix 4- Due Regard Assessment.....	13

1.0 Introduction

This guidance describes the care required to ensure safe and effective analgesia for postoperative patients who receive neuraxial Morphine (via intrathecal or epidural routes).

The use of Fentanyl or Diamorphine in central neuraxial blockade is familiar to most anaesthetists and staff who look after patients post-operatively: as a method of providing postoperative pain relief.

A national shortage of Diamorphine has necessitated the need to introduce an alternative opioid to provide analgesia via the intrathecal or epidural route of administration.

2.0 Purpose

'Preservative free' Morphine has been successfully used in other NHS Trusts and its introduction to University Hospitals Sussex NHS Trust (UHSussex) RSCH and PRH sites, serves to provide an alternative to Diamorphine or as an adjunct to Enhanced Recovery After Surgery (ERAS) programmes.

This method of analgesia may be considered for patients who have had spinal or epidural anaesthesia and:

- May experience moderate or severe post-operative pain.
- Are likely to be able to tolerate oral analgesia 18 - 24 hours after the administration of spinal anaesthesia.

This guidance also includes the use of preservative free morphine for Obstetric patients

3.0 Definitions

Intrathecal: the fluid-filled space between the thin layers of tissue that cover the brain and spinal cord.

Epidural: space outside the thick outer membrane which surrounds the spinal nerves and intrathecal/spinal space

4.0 Responsibilities, accountabilities and duties

4.1 Chief Executive

The Chief Executive will be aware of his/her legal duties as the responsible person for meeting best practice standards. They will be aware of the performance of the

Trust in meeting all regulations and recommendations and will ensure that adequate resource is provided for appropriate action to be taken.

4.2 Anaesthetic Department, Allied Theatres Practitioners and Acute Pain Service (APS)

The Anaesthetic Department, Recovery staff and APS are responsible for the safe management and recovery of patients receiving drugs via the intrathecal / epidural route following appropriate training.

4.3 Ward nursing staff & midwives

Registered surgical nursing staff & midwives, who are trained as competent, are responsible for monitoring patients who have received Morphine via the intrathecal route or epidural route.

5.0 Guideline

5.1 Types of surgery

A single shot intrathecal dose of preservative free Morphine at the lumbar L3/4 level provides postoperative analgesia for approximately 24 hours after surgery. It is beneficial for patients who have small abdominal incisions (e.g. laparoscopic urological, gynaecological and colorectal procedures), and lower segment caesarean section (LSCS), but is not advocated for patients undergoing major laparotomy.

An epidural may be sited to provide analgesia following a general surgical case. Prior to removal of the epidural catheter, a bolus dose of preservative free Morphine can be considered, to provide additional analgesia for the following 24 – 36 hours.

An epidural sited for labour analgesia can be used to provide anaesthesia for LSCS. At the end of surgery, a bolus dose of preservative free Morphine can be administered via the epidural route, to provide postoperative analgesia for 24 - 36 hours after surgery.

5.2 Storage

Preservative free Morphine is stored as per the controlled drug (CD) policy in yellow storage bags to prompt its use for intrathecal / epidural route. Preservative free Morphine should be stored on a separate shelf to Morphine for intravenous use. Yellow trays are used in anaesthetic practice to prepare items for regional or neuraxial use, differentiating them from items intended for intravenous use.

5.3 Administration

Neuraxial Morphine will be given by an **anaesthetist** for surgery. In some cases the addition of up to 25 micrograms of intrathecal Fentanyl plus Bupivacaine 0.5% 1-3mLs will provide analgesia within 10 minutes for up to 24 hours.

If the epidural route is used during caesarean, preservative free Morphine is administered following delivery and cord clamping.

CARE MUST BE TAKEN THAT THE PRESERVATIVE FREE FORMULATION OF MORPHINE IS ADMINISTERED INTRATHECALLY or EPIDURALLY.

5.4 Dosages

Suggested dose PF Morphine	General Surgery	Obstetrics [LSCS]
Intrathecal	0.1 – 0.2mg (100 – 200 micrograms)	0.1 – 0.15mg (100-150 micrograms)
Epidural	Age <65 years: 2 – 3 mg Age 65-75 years: 1 – 2 mg Age >75 years: 1 mg or avoid	1 - 2.5 mg

There is a dose dependent increased risk of delayed respiratory depression and a slightly higher incidence of pruritus and nausea/vomiting.

Reduce dose / avoid in the elderly, COPD, morbid obesity, sleep apnoea, liver and renal failure.

The onset of analgesia with intrathecal Morphine is 30 - 60 minutes, peak effect 5 - 7 hours.

Analgesia and adverse effects, including respiratory depression, may occur at any time up to 24 hours after administration.

5.5 Prescription

If Morphine is utilised intra-operatively, the anaesthetic chart must include the dose, route and timing of administration.

If Morphine has been administered, post-operatively the prescription chart must include:

- The dose of intrathecal or epidural Morphine and time of administration (sticker available).
- Naloxone 100 - 200 micrograms intravenously (IV/IM), followed by 100 microgram increments as necessary, for respiratory depression (Appendix 2).

In addition:

- Oxygen 1 - 5 litres / minute PRN
- Oral opioids should be prescribed as **PRN ONLY** for the first **24 hours after a dose of intrathecal or epidural Morphine**. This includes dihydrocodeine.
- **Caveat:** for specific cases where there is a need not to disrupt a patient's established pre-operative opioid regime, for example to prevent withdrawal, methadone treatment or some transdermal patches, it may be appropriate to continue regular opioids during the initial 24hour window.
- This will be considered by the prescribing anaesthetist, and the dose of neuraxial morphine adjusted accordingly.

5.6 Monitoring

For the first 24 hours, patients should be nursed with the head at least 10 degrees up (i.e. not flat) to prevent the spread of opioid rostrally in the cerebrospinal fluid (CSF).

Patients should have an IV cannula until stable enough for 4 hourly observations. Measurement of pulse rate, blood pressure, pain score, sedation score (AVPU) and respiratory rate **MUST** be undertaken and recorded according to current practice for minimal observation for postoperative patients on the ward on the NEWS / MEOWS chart / patienttrack e-obs system.

Frequency of observations (minimum acceptable)

Recovery

- Patients will be recovered as per recovery protocol

Ready for discharge to the ward

- A full set of observations taken just before transfer

Post Surgical / Post-Natal Ward

- Observations 2 hours after transfer
- Observations 4 hours after transfer
- Observations 4-hourly until 24 hours post-surgery

Sedation & respiratory depression are potential complications and require an increase in the frequency of observations (follow algorithm in Appendix 2):

Particular observations that require closer monitoring:

- **Sedation score** 2,3 or 4 (or V,P,U on the AVPU scale)
(However if the patient is asleep with a respiratory rate >10/minute and there are no periods of apnoea – see below - then the patient need not be woken)
- **Respiratory Rate** <10/min (or noisy, periods of apnoea, partially obstructed breathing)

- **Oxygen saturation** on pulse oximetry < 94%

Always use Naloxone with caution in patients with severe cardiac problems and chronic opioid use. Consider one microgram / kilogram (KG) increments in low weight patients.

The anaesthetist must be informed of any opioid-related complications during the first 24 hours following the administration of intrathecal morphine.

RSCH	
1 st On-call anaesthetist	Bleep 8235
Obstetric anaesthetist:	Bleep 8140
PRH	
On-call anaesthetist	Bleep 6442
Obstetric anaesthetist:	Bleep 6327

5.7 Discharge from hospital

The use of neuraxial morphine should be avoided in day-case procedures.

Patients can be discharged 18-24 hours following a dose of intrathecal or epidural Morphine, providing their sedation score and respiratory rate are within normal limits and they are tolerating oral opioids (if applicable).

Patients are suitable for nurse or midwife lead discharge providing the above, and all other relevant, criteria are met.

Breast feeding after neuraxial morphine is considered safe.

6.0 Training Implications

Introducing the use of preservative free morphine, via intrathecal or epidural routes, requires a period of education and reflective practice as we gain more experience in its use for all members of the Multidisciplinary Team.

All nurses and midwives looking after patients on surgical/obstetric wards are trained to monitor patients following spinal / epidural anaesthesia and administration of post-operative opioids. There should be regular updates to the Trust training.

7.0 Monitoring Arrangements

Measurable Objective	Monitoring/Audit Method	Frequency	Responsibility for performing monitoring	Where is monitoring reported
Ensuring staff complete documentation accurately	Patient/Chart audit (Appendix 3) Observation on ward rounds/ Continuously	Annual Daily	APS Ward Managers, Clinical Matrons	QSPE meetings; Directorate Audit Lead Datix Clinical effectiveness
Ensuring all staff who look after patients following intrathecal / epidural morphine receive appropriate training	Recording attendance at training on IRIS + old databases Teaching attendance logs.	Continuously	APS Ward Managers Clinical Educators Training Dept IRIS	Databases, Ward managers and APS
Reporting poor practice and documentation	Acute Pain ward / labour ward follow ups	Continuously	APS, Ward Managers, Clinical Educators, Clinical matrons	Datix

8.0 Due Regard Assessment Screening

As an NHS organisation, UHSussex is under a statutory duty to set out arrangements to assess and consult on whether their policy and function impact on equality with regard to race, ethnic origin, nationality, gender, culture, religion or belief, sexual orientation, age, marriage and civil partnership status, pregnancy and maternity status and disability. A review of the assessed impact of this guidance against these criteria can be seen (Appendix 4). Prior to performing an anaesthetic (spinal or epidural) with morphine anaesthetists must gain consent: complying with the Trust Mental Capacity Act and Consent to Examination or Treatment policies.

9.0 Links to other Trust Policies

- Policy for the Safe and Secure Handling of Medicines
- Intravenous Therapy Administration for Adults
- Peripheral Intravenous Cannulation of Adults
- Standard Principles of Infection Prevention & Control
- Policy for Consent to Examination or Treatment
- Mental Capacity Act policy
- Supporting Staff and Patient's Language and Communication Needs Policy
- MP050 Caesarean Section
- MP051 Recovery after obstetric surgery
- Acute Post-Operative Pain Guideline

References

DeSousa KA, Chandran R (2014) Intrathecal morphine for postoperative analgesia: Current trends *World Journal of Anaesthesiology* 3(3): 191-202

Hindle A. (2008) Intrathecal opioids in the management of acute postoperative pain *Continuing Education in Anaesthesia Critical Care & Pain*, Volume 8, Issue 3, Pages 81–85, <https://doi.org/10.1093/bjaceaccp/mkn016>

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Mugabure Bujedo, Borja & Santos, Silvia & Azpiazu, Amaia (2012) A review of epidural and intrathecal opioids used in the management of postoperative pain *Journal of opioid management*. 8. 177-92. 10.5055/jom.2012.0114

Martinez-Velez A, Singh P. Epidural Morphine. [Updated 2020 Mar 6]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan Available from: <https://www.ncbi.nlm.nih.gov/books/NBK541073>

<https://www.clinicalkey.com/#!/content/book/3-s2.0-B9780323401968000152>

Appendix 1 - Summary

- Preservative free intrathecal / epidural morphine remains in the cerebrospinal fluid (CSF) for longer when compared to intrathecal / epidural diamorphine or fentanyl. This is because morphine is more water soluble (stays in CSF) and less lipid soluble than diamorphine (to cross into spinal cord tissue).
- There is a dose dependent increased risk of delayed respiratory depression and a slightly higher incidence of pruritus (itching) and nausea/vomiting

CARE MUST BE TAKEN THAT THE PRESERVATIVE FREE FORMULATION OF MORPHINE IS ADMINISTERED INTRATHECALLY or EPIDURALLY.

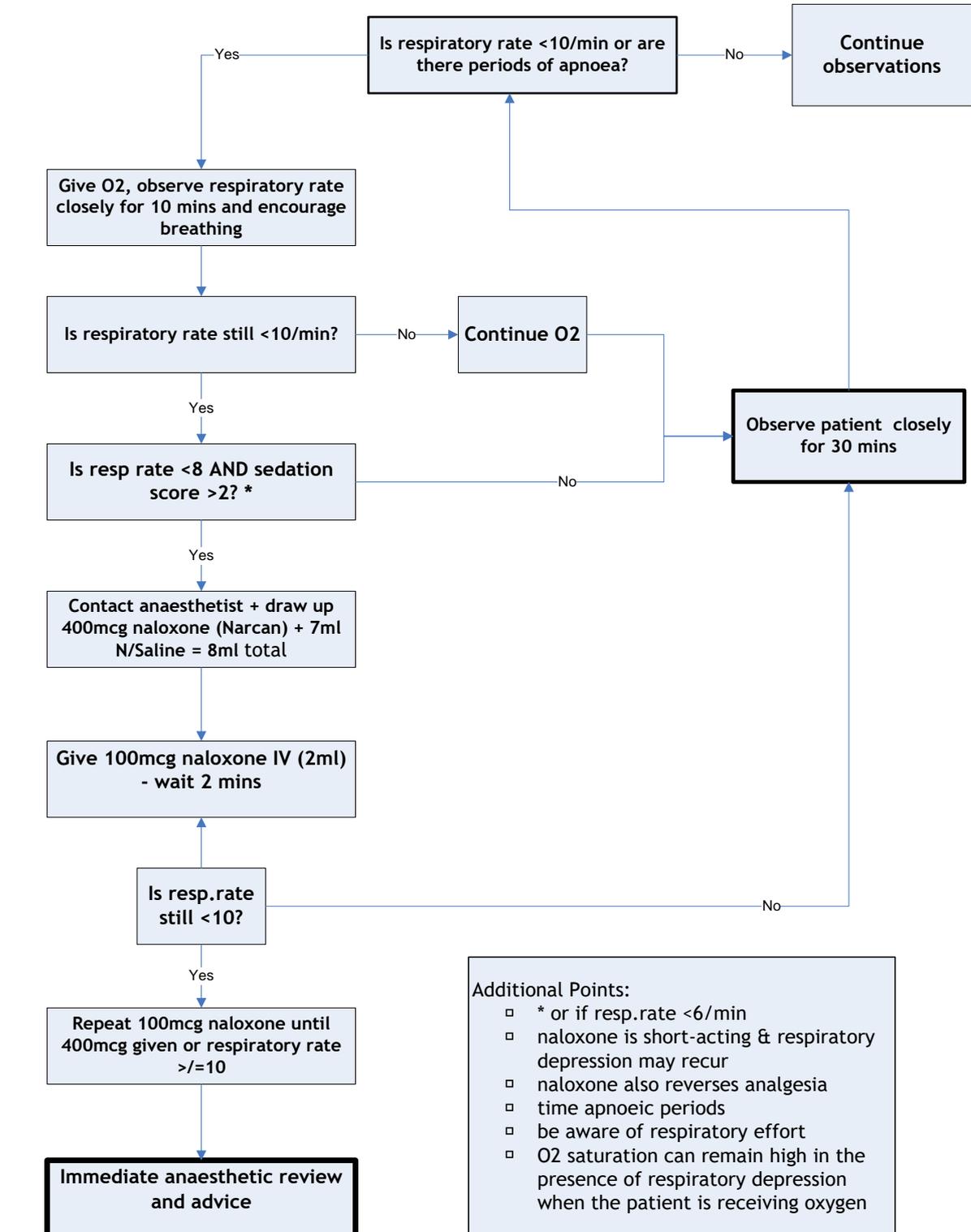
- Recommended dosage:

Suggested dose PF Morphine	General Surgery	Obstetrics [LSCS]
Intrathecal	0.1 – 0.2mg (100 – 200 micrograms)	0.1 – 0.15mg (100-150 micrograms)
Epidural	Age <65 years: 2 – 3 mg Age 65-75 years: 1 – 2 mg Age >75 years: 1 mg or avoid	1 - 2.5 mg

- **Consider higher doses for opioid tolerant patients**
- The average duration of analgesia is 18 - 24 hours following these recommended doses, and side effects are rare
- **Naloxone** should always be prescribed for the postoperative period
- **No regular opioids to be prescribed for the 1st 24 hours following administration of intrathecal / epidural morphine: a dose should only be given as required (PRN).** *Exceptions as per section 5.5 above, to avoid withdrawal (p5)*

Appendix 2

Protocol for opioid- induced respiratory depression



Appendix 3 - Audit for the use of spinal / epidural morphine in adult patients

Name.....
DOB.....
Hospital No.....

Operation.....

Post-operative ward.....

Intrathecal morphine dose:

- 50mcg 100mcg
 150mcg 200mcg

Other.....mcg

Adjunct: Heavy bupivacaine 0.5%mL

Epidural morphine dose:

- 1 mg 1.5 mg
 2 mg 2.5 mg

Other.....mg

Other.....

Recovery:

Maximum pain score...../10

Nausea ? Yes No

Vomiting ? Yes No

Pruritus ? Yes No

Respiratory Depression ? Yes No

Other information.....

Review within 24 hours:

Maximum pain score...../10

Additional opioids required? Drug.....Total dose.....

Nausea? Yes No

Vomiting? Yes No

Pruritus? Yes No

Sedation? Yes No

Respiratory depression? Yes No

Other information.....

Appendix 4- Due Regard Assessment - To be completed and attached to any policy when submitted to the appropriate committee for consideration and approval

		Yes/No	Comments
1	Does the document/guidance affect one group less or more favourably than another on the basis of:		
	• Age	No	
	• Disability	Yes	Competence to consent through cognitive impairment. Ability to verbalise pain and inability to move might affect the safety of having intrathecal morphine.
	• Gender	No	
	• Gender identity	No	
	• Marriage and civil partnership	No	
	• Pregnancy and maternity	No	
	• Race	Yes	If English is not the first language then an interpreter may be required for safety (see under disability). See 'Supporting Staff and Patient's Language and Communication Needs' Policy.
	Religion or belief	No	
	Sexual orientation including lesbian, gay and bisexual people	No	
2	Is there any evidence that some groups are affected differently and what is/are the evidence source(s)?	No	
3	If you have identified potential discrimination, are there any exceptions valid, legal and/or justifiable?	No	
4	Is the impact of the document/guidance likely to be negative?	No	
5	If so, can the impact be avoided?	No	
6	What alternative is there to achieving the document/guidance without the impact?	No	
7	Can we reduce the impact by taking different action and, if not, what, if any, are the reasons why the policy should continue in its current form?	No	
8	Has the policy/guidance been assessed in terms of Human Rights to ensure service users, carers and staff are treated in line with the FREDA principles (fairness, respect, equality, dignity and autonomy)		

If you have identified a potential discriminatory impact of this policy / guidance, please refer it to the Anaesthetic Dept, together with any suggestions as to the action required to avoid/reduce this impact. For advice in respect of answering the above

questions, please contact the anaesthetic department at extension 4307.