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Royal Cornwall Hospitals NHS Trust

Intravenous Analgesia for Adults in Recovery Areas – The Recovery Protocol Clinical Guideline

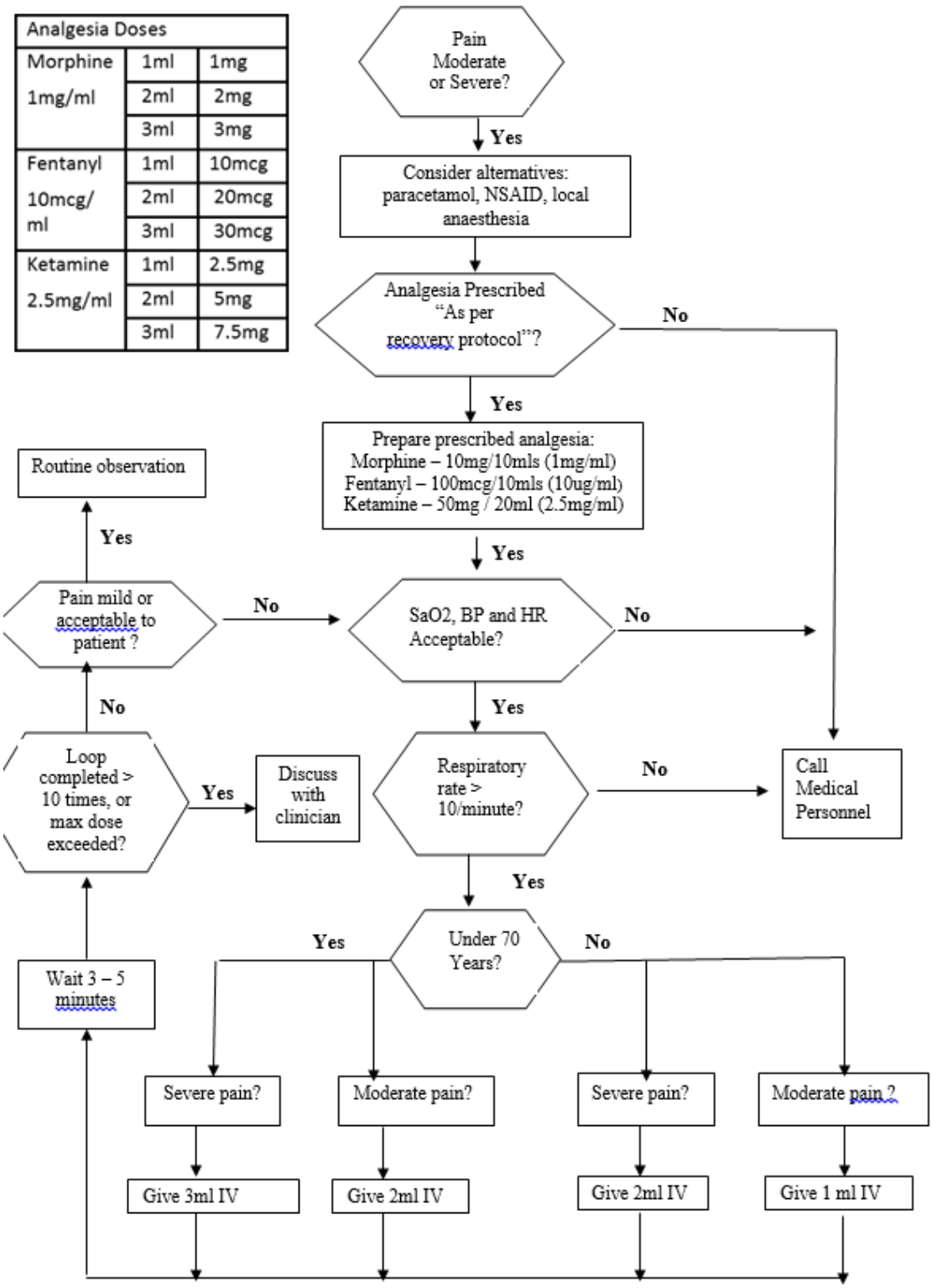
V3.0

November 2018

Summary.

Intravenous Analgesia for Adults in Recovery Areas – "THE RECOVERY PROTOCOL"

Analgesia Doses		
Morphine 1mg/ml	1ml	1mg
	2ml	2mg
	3ml	3mg
Fentanyl 10mcg/ml	1ml	10mcg
	2ml	20mcg
	3ml	30mcg
Ketamine 2.5mg/ml	1ml	2.5mg
	2ml	5mg
	3ml	7.5mg



1. Aim/Purpose of this Guideline

1.1. To provide safe and efficient administration of Analgesia in High Dependency Areas.

1.2. **Data Protection Act 2018 *(GDPR) Legislation***

This policy does not relate to or contain information relating to the handling of or entries in health or corporate records.

2. The Guidance - General Principles

2.1. Nursing staff holding a current IV Certificate may administer intravenous analgesia in High Dependency Areas.

2.2.2. Analgesia will be administered in accordance with this document**.**

2.2.3. The prescribing clinician must indicate on the drug chart the analgesic, the maximum dose and that the recovery protocol is to be used:

- "Morphine up to 20mg as per recovery protocol" and/or
- "Fentanyl up to 200 micrograms as per recovery protocol" and/or
- "Ketamine up to 50mg as per recovery protocol"

2.2.4. Naloxone should be available at all times.

2.2.5. This protocol should not be used in paediatric patients

2.2.6. This protocol does not cover the administration of any other medication

2.3. Activation of Policy

2.3.1. The prescribing clinician must indicate on the Drug chart that the "recovery protocol" is to be used

2.3.2. The patient must be attached to a device to monitor oxygen saturation, pulse, ECG and blood pressure

2.3.3. The patient must be in a clinical setting that allows one-to-one nursing and prompt assistance

2.4. Use of Policy

2.4.1. Once the policy has been activated, the attached flow chart is followed

2.4.2. A senior clinician must review patients whose pain remains uncontrolled after 10 boluses or maximum prescribed dose.

2.5. Observations

2.5.1. The patient must be attached to a device to monitor oxygen saturation (SaO_2), pulse, ECG and blood pressure (BP)

2.5.2. Observations are to be performed as described in the attached flow chart

2.5.3. Observations specified in this policy will be performed in addition to other routine observations

2.5.4. No patient is to be left behind closed curtains after IV opioids or ketamine have been administered unless the nurse remains with the patients at all times

2.5.5. All patients who have received IV opioids or ketamine according to this protocol must remain in clear view of nursing staff for a minimum of 15 minutes after the last bolus has been given.

2.5.6. A minimum of one nurse must remain in the area at all times whenever IV opioids or ketamine have been administered

2.5.7. Supplemental mask oxygen must be administered and oxygen saturation monitored continuously by pulse oximetry.

2.6. Preparation of Drugs

- **Morphine:** 10 mg of morphine diluted to 10ml (1mg/ml) with sodium chloride 0.9%.
- **Fentanyl:** 100mcg of fentanyl diluted to 10ml (10microgram/ml) with sodium chloride 0.9%
- **Ketamine:** 50mg of ketamine diluted to 20ml (2.5mg/ml) with sodium chloride 0.9%

Ensure that the syringe is labelled appropriately.

2.7. Administration of Drugs

2.7.1. Administer doses of 1 – 3ml in accordance with the flowchart provided with this guideline

2.7.2. The minimum advised interval between drug administrations is 3 minutes for fentanyl; 5 minutes for morphine or ketamine

2.7.3. Flush cannula when pain control is achieved

See Appendix 3 for notes on medications

2.8. Use of Naloxone

Naloxone is a pure opioid antagonist that should be needed only rarely if the protocol is followed. Naloxone is usually titrated to effect

2.9. Indications for the use of Naloxone

2.9.1. Respiratory rate less than 6 breaths per minute following the use of opioid analgesics

2.9.2. Any other situation where ventilation is judged to be inadequate, whether by pulse oximetry or clinical assessment, following the use of opioid analgesia

2.10. Preparation of Naloxone

Naloxone 400micrograms (0.4mg) should be diluted to a total of 4ml with sodium chloride 0.9%. Strength of the resulting solution is 100microgram/ml.

2.11. Administration of Naloxone

2.11.1. 1ml increments (100micrograms) should be given IV at 2 minute intervals until:

- The respiratory rate is above 6 breaths per minute, and
- Adequate ventilation has returned (clinical judgement, pulse oximetry).

2.12. Use of Naloxone – General Points

2.12.1. Whenever naloxone is used medical assistance should be requested immediately.

2.12.2. Supplementary oxygen must always be given whenever ventilation is judged to be inadequate.

2.12.3. Severe respiratory depression may require ventilation by bag and mask.

2.13. Management of Respiratory Depression during Administration of IV Opioids

Ensure an opened airway, assess breathing and circulation

2.13.1. **No pulse**: Administer Basic Life Support

- Activate emergency alarm or dial 2222
- Administer Naloxone 0.4mg IV

2.13.2. **No breathing** Ventilate by bag and mask

- Activate emergency alarm or dial 2222
- Administer naloxone 0.4mg IV

2.13.3. **Respiratory depression, patient breathing and pulse present:**

- Give supplemental oxygen by mask
- Administer IV naloxone as described in section 6 of this protocol
- Call for medical assistance

3. Monitoring compliance and effectiveness

Element to be monitored	Adherence to RCHT guidelines
Lead	Acute Pain Lead
Tool	Regular audits and regular surveillance will occur throughout the year and reported to the regular acute pain meetings and appropriate governance meetings. The first 50 uses of ketamine will be audited – see appendix 4
Frequency	Yearly audit as required by NPSA guidelines will be undertaken
Reporting arrangements	The committee reviewing the cases will be the Anesthesia Directorate. Cases will be discussed at audit meetings and the details will be recorded in the minutes.
Acting on recommendations and Lead(s)	See Above.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within a month. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders.

4. Equality and Diversity

4.1. This document complies with the Royal Cornwall Hospitals NHS Trust service Equality and Diversity statement which can be found in the 'Equality, Diversity & Human Rights Policy' or the Equality and Diversity website.

4.2. Equality Impact Assessment

The Initial Equality Impact Assessment Screening Form is at Appendix 2.

Appendix 1. Governance Information

Document Title	Intravenous Analgesia for Adults in Recovery Areas – The Recovery Protocol Clinical Guideline V3.0			
Date Issued/Approved:	24-08-2018			
Date Valid From:	November 2018			
Date Valid To:	November 2021			
Directorate / Department responsible (author/owner):	Dr Keith Mitchell Consultant Anaesthetist			
Contact details:	01872 252792			
Brief summary of contents	A guideline for the provision of safe and efficient analgesia administration in Recovery areas.			
Suggested Keywords:	Recovery, Theatres, Acute Pain, Opioids Ketamine analgesia			
Target Audience	RCHT	CFT	KCCG	
	✓			
Executive Director responsible for Policy:	Chief Operating Officer			
Date revised:	23 04 2018			
This document replaces (exact title of previous version):	Intravenous Opioids for Adults in Recovery Areas – "The Recovery Protocol" V2.0			
Approval route (names of committees)/consultation:	Anaesthetic Dept Governance Meeting 16/1/18 Medication Practice Committee 6/4/18			
Divisional Manager confirming approval processes	Susan Bracefield			
Name and Post Title of additional signatories	Speciality leads of General Anaesthesia Critical Care and Pain			
Name and Signature of Divisional/Directorate Governance Lead confirming approval by specialty and divisional management meetings	Susan Bracefield			
	Name: Alison Moore			
Signature of Executive Director giving approval	Mark Daly			
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet & Intranet	✓	Intranet Only	

Document Library Folder/Sub Folder	*Clinical / Anaesthesia*
Links to key external standards	*AAGBI Royal College of Anaesthetists British Pain Society*
Related Documents:	• Administration of Intravenous Drugs (Peripheral and Central) • Guidelines for the assessment and documentation of Pain (Adults). G15 viii • Guidelines for the administration of Hourly opiates. G15 (vi) • Guidelines for Intravenous Morphine Administration in Clinical Areas G17 • Opioids in recovery "The Recovery Protocol" – This is an updated and renamed version of this policy National Documents: • Association of Anaesthetists: 2002: Immediate Post-anaesthetic Recovery • 2006: Controlled Drugs in Perioperative Care. 2007 NPSA Patient Safety Alert 20 – Promoting Safer Use of injectable Medicines
Training Need Identified?	Training supplied via meeting 14/11/18 and by email cascade

Version Control Table

Date	Version No	Summary of Changes	Changes Made by *(Name and Job Title)*
31 Oct 11	V1.0	Initial Issue	Keith Mitchell Consultant Anaesthetist
14 Jan 15	V2.0	Review & Updated Formatting	Keith Mitchell Consultant Anaesthetist
23 Apr 18	V3.0	Addition of ketamine to available analgesics Renaming and Additional text to reflect this addition	Keith Mitchell Consultant Anaesthetist

This document is to be retained for 10 years from the date of expiry.
This document is only valid on the day of printing

Controlled Document

This document has been created following the Royal Cornwall Hospitals NHS Trust Policy for the Development and Management of Knowledge, Procedural and Web Documents (The Policy on Policies). It should not be altered in any way without the express permission of the author or their Line Manager.

Appendix 2. Initial Equality Impact Assessment Form

This assessment will need to be completed in stages to allow for adequate consultation with the relevant groups.

<table>
<tr><td colspan="7">Name of the strategy / policy /proposal / service function to be assessed
Intravenous Analgesia for Adults in Recovery Areas – The Recovery Protocol Clinical Guideline V3.0</td></tr>
<tr><td colspan="3">Directorate and service area:
Anaesthetic and Theatre Division</td><td colspan="4">Is this a new or existing Policy?
Existing</td></tr>
<tr><td colspan="3">Name of individual completing assessment:
Keith Mitchell</td><td colspan="4">Telephone:
01872 252792</td></tr>
<tr><td>1. Policy Aim*

Who is the strategy / policy / proposal / service function aimed at?</td><td colspan="6">Post-operative patients, in the recovery room</td></tr>
<tr><td>2. Policy Objectives*</td><td colspan="6">Allow rapid control of postoperative pain</td></tr>
<tr><td>3. Policy – intended Outcomes*</td><td colspan="6">rapid control of postoperative pain</td></tr>
<tr><td>4. *How will you measure the outcome?</td><td colspan="6">For opioids – usage well established. Collect case reports regarding issues – direct feedback (email etc); Datix
For ketamine – audit first 50 cases – see appendix 5
Plus collect case reports regarding issues</td></tr>
<tr><td>5. Who is intended to benefit from the policy?</td><td colspan="6">Post-operative patients, in the recovery room</td></tr>
<tr><td rowspan="3">6a Who did you consult with

b). Please identify the groups who have been consulted about this procedure.</td><td>Workforce</td><td>Patients</td><td>Local groups</td><td>External organisations</td><td>Other</td><td></td></tr>
<tr><td>Y</td><td>N</td><td>N</td><td>N</td><td></td><td></td></tr>
<tr><td colspan="6">Please record specific names of groups
Anaesthetists; recovery nurses</td></tr>
<tr><td>What was the outcome of the consultation?</td><td colspan="6">Agreed to go ahead with policy</td></tr>
</table>

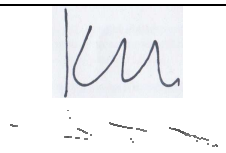
7. The Impact
Please complete the following table. **If you are unsure/don't know if there is a negative impact you need to repeat the consultation step**.

Are there concerns that the policy could have differential impact on:

Equality Strands:	Yes	No	Unsure	Rationale for Assessment / Existing Evidence
Age		✓		Older people are more sensitive to the effects of opioid/ketamine – both analgesia and respiratory depression. The bolus dose for patients over 70 is therefore smaller than for younger patients. Ref: Managing Pain in Older Adults: The Role of Opioid Analgesics Clin Geriatr Med. 2016 Nov; 32(4): 725–735
Sex (male, female, trans-gender / gender reassignment)		✓		The effects of analgesics are modestly affected by size – larger people require more drugs to have the same effect. This pertains to all medications whose dose is not adjusted for the patient's size. Smaller people will therefore experience a slightly higher rate of pain relief and, reciprocally, a slightly lower margin of safety.
Race / Ethnic communities /groups		✓		
Disability - Learning disability, physical impairment, sensory impairment, mental health conditions and some long term health conditions.		✓		
Religion / other beliefs		✓		
Marriage and Civil partnership		✓		
Pregnancy and maternity		✓		
Sexual Orientation, Bisexual, Gay, heterosexual, Lesbian		✓		

You will need to continue to a full Equality Impact Assessment if the following have been highlighted:

- You have ticked "Yes" in any column above and
- No consultation or evidence of there being consultation- this excludes any *policies* which have been identified as not requiring consultation**. or**
- Major this relates to service redesign or development

8. Please indicate if a full equality analysis is recommended.	**Yes**		**No**	**X**
9. If you are **not** recommending a Full Impact assessment please explain why. Effect is very small. Dosing according to sex and weight is complicated and onerous. Any benefits will be outweighed by the dangers and difficulties associated with having to adjust dosage by patient characteristics, beyond a simple cut-off for age, which is included. Furthermore, it is not clear who benefits from the differential effect, as the more effective a dose in terms of pain relief, the more risk is involved in terms of side effects. Finally, this policy has been in use for many years and is effective in all patient groups – to tinker with it would be unnecessary and potentially hazardous.				
Signature of policy developer / lead manager / director (Dr K I Mitchell)		Date of completion and submission 14/5/18		
Names and signatures of members carrying out the Screening Assessment	1. Dr Keith Mitchell 2. Human Rights, Equality & Inclusion Lead			

Keep one copy and send a copy to the Human Rights, Equality and Inclusion Lead
c/o Royal Cornwall Hospitals NHS Trust, Human Resources Department, Knowledge Spa, Truro, Cornwall, TR1 3HD

This EIA will not be uploaded to the Trust website without the signature of the Human Rights, Equality & Inclusion Lead.

A summary of the results will be published on the Trust's web site.

Signed __ Dr Keith Mitchell ___

Date ____24/08/2018_____

Appendix 3 – Notes on Drugs and their administration

Morphine and Fentanyl
Morphine and fentanyl are opioid analgesics. They exert their effect by mimicking endogenous (natural) pain-reducing neurotransmitters.
Side-effects include reduced consciousness, respiratory depression, itching and constipation. Repeated use induces tolerance to these drugs.
Opioids are contra-indicated in patients with true allergy to the drug. This is very rare. Adverse reaction to these medications is quite common. These medications are commonly prescribed and administered to patients despite their appearance in the "allergies" section of drug administration charts. Such prescription should prompt enquiry as to the nature of the "allergy" prior to administration of the drug where applicable.
Fentanyl reaches peak effect more rapidly than morphine, wears off more rapidly, and is safer to administer where renal function is poor.

Ketamine
Ketamine is a dissociative anaesthetic agent, which has analgesic properties in sub-anaesthetic doses. Its principle site of action is in the dorsal horn of the spinal cord where it blocks the N-methyl D-aspartate (NMDA) receptor complex.
Ketamine hydrochloride solution for injection is licensed in the UK as an anaesthetic agent for diagnostic and surgical procedures in children and adults. Although ketamine (in any preparation) is not currently licensed in the UK for treating pain, its use is well established.
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Side effects include reduced consciousness, hallucinations, visual disturbance, nausea and excessive salivation. It may cause raised blood, intra-ocular or intracranial pressure, and is relatively contra-indicated where these conditions are present. Ischaemic heart disease is a relative contra-indication.

There is no specific antidote to ketamine. If side effects occur, stop administration and treat symptomatically.

It is permissible to administer ketamine alongside either fentanyl or morphine, so long as the attached timing schedule is followed for each drug. This would normally be undertaken if pain is severe, and after discussion with the prescriber.

Naloxone
Naloxone antagonises the effect of morphine and fentanyl, but not of ketamine.
Reversal of the effects of opioids with naloxone may cause:

- Rapid and severe return of pain
- Tachycardia and hypertension, with a risk of cardiovascular complications
- Convulsions

Risk of these complications is reduced by titrating the dose given.

Appendix 4 – Audit for introduction of ketamine to protocol

This form is for audit purposes, and will not be added to the patient's notes.

INTRAVENOUS KETAMINE IN RECOVERY – INTRODUCTION AUDIT

Attach patient label

Date:

Description of operation:

Please list the intravenous analgesics already given in recovery before ketamine commenced
Iv morphine in recovery [ ] Total dose:
Iv fentanyl in recovery [ ] Total dose:

Patient's pain score before giving ketamine (0 – 10) _____

Total volume of ketamine 2.5mg/ml administered: _____ml

Patient's pain score after giving ketamine (0 – 10) _____

Did the patient experience any side effects that you think were caused by administration of ketamine? Please describe symptom, severity and management

Were there issues regarding administering ketamine? For instance, unavailable drug, unwilling staff, issues regarding prescription?

Please give your impression of this treatment for uncontrolled postoperative pain (tick one)

Made matters worse [ ]
Made no difference [ ]
Improved pain modestly [ ]
Improved pain considerably [ ]

Please complete this audit form and place it in the pain folder in the recovery area

INTRAVENOUS KETAMINE IN RECOVERY – INTRODUCTION AUDIT

This section to be completed by pain team

List all analgesia prn drugs & doses administered in the 6 hours after patient ready to leave recovery (see over for time)

Was medical help called owing to uncontrolled pain? (Yes or no)?

Ask the patient:

Since you returned to the ward yesterday, has your pain been well controlled? Choose between (tick response)

Very well

Quite well

Quite badly

Very badly