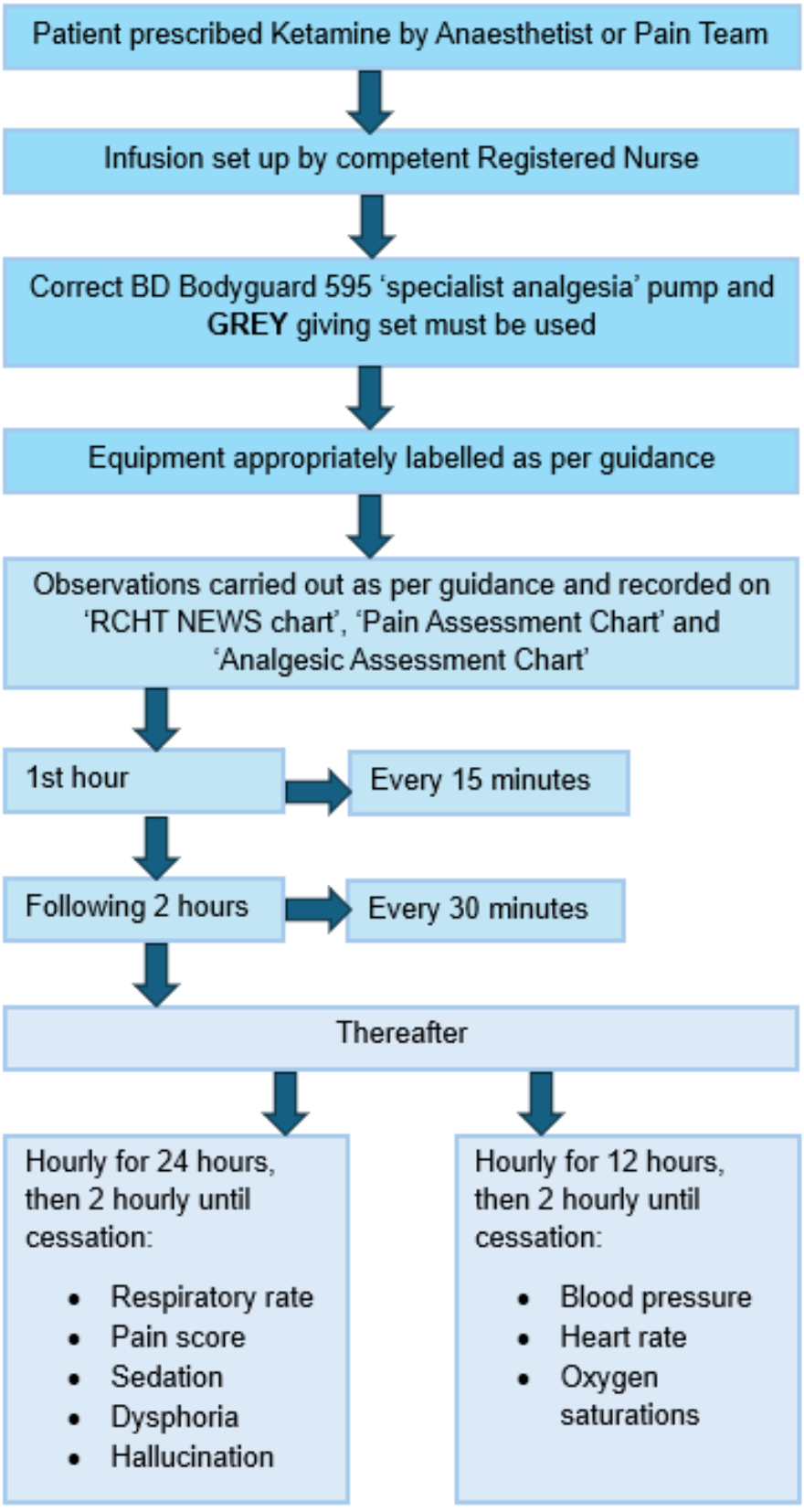
Royal Cornwall Hospitals
NHS Trust

Intravenous Ketamine Infusion Nursing Care Clinical Guideline

V7.0

August 2025

Summary


Patient prescribed Ketamine by Anaesthetist or Pain Team
Infusion set up by competent Registered Nurse
Correct BD Bodyguard 595 'specialist analgesia' pump and GREY giving set must be used
Equipment appropriately labelled as per guidance
Observations carried out as per guidance and recorded on 'RCHT NEWS chart', 'Pain Assessment Chart' and 'Analgesic Assessment Chart'
1st hour
Every 15 minutes
Following 2 hours
Every 30 minutes
Thereafter
Hourly for 24 hours, then 2 hourly until cessation:
Respiratory rate
Pain score
Sedation
Dysphoria
Hallucination
Hourly for 12 hours, then 2 hourly until cessation:
Blood pressure
Heart rate
Oxygen saturations

1. Aim/Purpose of this Guideline

1.1. Nursing guidelines for the safe administration of intravenous ketamine infusion.

1.2. This version supersedes any previous versions of this document.

Data Protection Act 2018 (UK General Data Protection Regulation – GDPR) Legislation.

The Trust has a duty under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 to ensure that there is a valid legal basis to process personal and sensitive data. The legal basis for processing must be identified and documented before the processing begins. In many cases we may need consent; this must be explicit, informed, and documented. We cannot rely on opt out, it must be opt in.

Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 is applicable to all staff; this includes those working as contractors and providers of services.

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Royal Cornwall Hospital Trust rch-tr.infogov@nhs.net

2. The Guidance

2.1. **Definition**

2.1.1. Ketamine is an anaesthetic agent with analgesia properties.

2.1.2. A low dose ketamine infusion provides safe and effective analgesia.

2.1.3. Ketamine may be used as a separate infusion alongside other opioids (morphine, fentanyl) to improve pain relief.

Professional Responsibility

2.2. **Ketamine must only be prescribed on the advice of an anaesthetist or the pain team.**

2.2.1. The infusion must only be set up and changed within the prescribed limits by a registered nurse competent in the administration of IV drugs and the use of BD Bodyguard pumps.

2.2.2. Prescriptions may only be altered by an anaesthetist or a member of the Pain Team.

2.2.3. Only an anaesthetist may deliver a Ketamine bolus.

2.2.4. Ketamine must be ordered from pharmacy on a named patient order form when the patient is outside of theatre/recovery.

2.2.5. Ketamine is a controlled drug. It should be recorded and stored in the controlled drug cupboard as per RCHT guidelines.

2.2.6. Staff must be competent in the administration of IV drugs and attend a mandatory pump update and practical session 3 yearly.

2.3. Indications for use

2.3.1. Where pain is inadequately controlled by opioids alone.

2.3.2. When opioid tolerance has developed, i.e. patient requiring increasing doses of opioids.

2.4. Contraindications

2.4.1. Patient not consenting.

2.4.2. Previous adverse effects to Ketamine.

2.4.3. Patients who have unstable heart disease, psychosis or raised intracranial pressure.

2.4.4. Severe hypertension.

2.4.5. Allergy to ketamine or any of its excipients.

2.4.6. Raised intraocular pressure.

2.4.7. Severe ischaemic heart disease.

2.4.8. Stroke.

2.4.9. Relative contraindications – pregnancy and breastfeeding.

2.5. Side Effects

Ketamine side effects are dose related and therefore analgesic-dose ketamine is usually started at low dose and titrated. Hallucinogenic and dysphoric reactions are more common in the critical care population.

2.5.1. Common side Effects

Anxiety, abnormal behaviour, confusion, diplopia, hallucinations, increased muscle tone, nausea, vomiting, sleep disorders, tonic clonic movements, nystagmus.

2.5.2. Uncommon Side Effects

Decreased appetite, arrhythmias, hypotension, respiratory disorders**.**

2.6. Equipment

2.6.1. Only designated BD Bodyguard infusion pumps 595 (blue front) labelled ‘Specialist Analgesia’ in red and dedicated grey ‘BodyGuard Microset’. Anti-syphon infusion lines must be used.

2.6.2. BD Bodyguard 595 ‘Specialist Analgesia’ pumps and dedicated grey BodyGuard Microset anti syphon infusion lines can be located from general recovery.

2.6.3. **Lines should be changed after 72 hours.**

2.6.4. The asset number on the Ketamine/Specialist analgesia pump must be recorded in patient notes or on analgesic assessment charts.

2.6.5. The Pain Team must be informed of the commencement of an infusion, via a referral on Maxims, as to ensure a timely review.

2.6.6. The infusion bag must be labelled with a: ‘Drugs added to this infusion’ label.

2.6.7. The Ketamine infusion line must be clearly labelled with specialist analgesia labels.

2.6.8. A separate cannula should be used.

2.6.9. Care of IV cannula as per RCHT guidelines.

2.7. **Protocols**

2.7.1. Ketamine should be prescribed as: 500mg Ketamine in 100ml sodium chloride 0.9% to give a concentration of 5mg per ml at a rate of 1-5ml/hr.

2.7.2. Protocol A must be used on the pump.

2.8. **Monitoring and Management:**

2.8.1. Patients should be nursed in an area where there is adequate monitoring and competent staff.

2.8.2. Patients should have supplemental oxygen prescribed for the duration of the infusion to saturations target appropriate for the patient. Increasing oxygen requirements should prompt medical review with particular focus on assessment for concurrent opioid toxicity.

2.8.3. If Opioids are used alongside Ketamine, Naloxone for treatment of opioid toxicity must be prescribed on the electronic or paper prescription chart.

2.8.4. Patients may mobilise.

2.8.5. Ketamine BD Bodyguard 595 pump keys should be kept with the controlled drug keys.

2.8.6. Review the need for the Ketamine infusion daily.

2.8.7. The infusion rate should not be increased more frequently than hourly and should never exceed 5ml per hour.

2.8.8. Regular paracetamol and NSAIDs (unless contraindicated) should continue.

2.8.9. Pain scores and observations must be recorded on RCHT NEWS charts and Analgesic Assessment Chart or electronic equivalences.

2.8.10. Adequate alternative analgesia must be available prior to discontinuing infusion.

2.9. **Observation Frequency**

Monitoring Parameter	**1st Hour**	**Following 2 Hours**	**Thereafter**
Respiratory rate	Every 15 minutes	Every 30 minutes	Hourly for 24 hours, then 2 hourly until cessation.
Blood pressure	Every 15 minutes	Every 30 minutes	Hourly for 12 hours, if stable then 2 hourly until cessation.
Heart rate / Oxygen saturation	Every 15 minutes	Every 30 minutes	Hourly for 12 hours, if stable then 2 hourly until cessation.
Pain score at rest	Every 15 minutes	Every 30 minutes	Hourly for 24 hours, then 2 hourly until cessation.
Sedation, Dysphoria and Hallucinations	Every 15 minutes	Every 30 minutes	Hourly for 24 hours, then 2 hourly until cessation.

2.10. **Infusion Monitoring**

2.10.1. Ketamine infusion rate recorded on RCHT Analgesia Assessment Chart or electronic equivalence. Drug wastage to be recorded in the ward wastage book as per RCHT controlled drug guidelines.

2.10.2. Diluted and or manipulated drug to be disposed of in a denaturing kit.

2.11. **Treatment of Problems**

2.11.1. **Blood Pressure**

2.11.1.1. Ketamine stimulates the cardiovascular system, so usually causes a rise in blood pressure.

2.11.1.2. If hypotensive with systolic BP <90mmHg: continue Ketamine, if indicated and manage hypotension as usual.

2.11.1.3. If patient becomes hypertensive, discontinue Ketamine.

2.11.2. **Respiration**

2.11.2.1. Low dose Ketamine does not usually depress respiration. If respirations <8 breaths a minute and sedation score 3, stop infusion.

2.11.2.2. Seek urgent medical assistance.

2.11.2.3. Give 100% Oxygen via reservoir mask whilst waiting for medical review. If given alongside opioids, consider giving Naloxone.

2.11.2.4. If Ketamine has been given alongside opiates and respiratory rate <8 and/or sedation score 3, give Naloxone. Naloxone should be given in increments of 100mcg every 5 minutes.

2.11.3. **Sedation**

2.11.3.1. If sedation score 2-3, stop Ketamine infusion and seek medical assistance. If opioids have been used as well as Ketamine, consider giving Naloxone.

2.11.3.2. If the sedation persists, contact the Anaesthetist on call or Inpatient Pain Team for advice.

2.11.4. **Nausea**

2.11.4.1. Give regular anti-emetics.

2.11.4.2. If persistent nausea and vomiting after 2 anti-emetics, seek medical review.

2.11.4.3. Avoid the use of neuroleptic drugs such as Droperidol or Chlorpromazine.

2.11.4.4. If persistent despite anti-emetics, stop infusion or decrease rate and review.

2.12. **Support mechanisms**

2.12.1. Pain services Monday-Friday 08:30 to 16:30. Pain Specialist Nurses on bleep 3233.

2.12.2. Out of hours; on call anaesthetist via switchboard.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Adherence to the guideline
Lead	Inpatient Pain Team
Tool	The patient will be reviewed daily by the Inpatient Pain Team or on-call Anaesthetist. Adherence to the guideline will be recorded on the acute pain form (paper CHA 2602 or electronic hospital database) and in the medical notes. Datix reports will be investigated.
Frequency	The pain forms/electronic forms will be audited annually.
Reporting arrangements	The audit will be presented to the inpatient pain lead at inpatient pain meetings, who will review the report and identify any actions. This will be documented in the inpatient minutes.
Acting on recommendations and Lead(s)	The Inpatient Pain Team will act on recommendations made by the Inpatient Pain Lead. Required actions will be identified and completed within a specified timeframe documented in the minutes of the inpatient pain meeting.
Change in practice and lessons to be shared	Required changes to practice will be identified and actioned within the required time frame identified in the inpatient minute action log. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all 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 And Inclusion 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

Information Category	Detailed Information
Document Title:	Intravenous Ketamine Infusion Nursing Care Clinical Guideline V7.0
This document replaces (exact title of previous version):	Intravenous Ketamine Infusion Nursing Care Clinical Guideline V6.1
Date Issued/Approved:	August 2025
Date Valid From:	August 2025
Date Valid To:	August 2028
Directorate/Department responsible (author/owner):	Jessica Forsyth, Pain Specialist Nurse
Contact details:	01872 252170
Brief summary of contents:	Guidelines for nursing care of patients with Intravenous Ketamine Infusions.
Suggested Keywords:	Ketamine, Intravenous infusion.
Target Audience:	**RCHT:** Yes **CFT:** No **CIOS ICB:** No
Executive Director responsible for Policy:	Chief Medical Officer
Approval route for consultation and ratification:	Pain consultants. Inpatient pain team meeting. Anaesthetic Governance.
Manager confirming approval processes:	ACCT Care Group Manager: Doug Riley
Name of Governance Lead confirming consultation and ratification:	ACCT Governance Lead: Suzanne Barber
Links to key external standards:	None
Related Documents:	RCHT Guidelines for the use of Ketamine as an Adjuvant Analgesic (for anaesthetic use only). Pasero, C. and McCaffery, M. (2005) Ketamine. American Journal of Nursing. April 105 (4): pp60-64 Schmid R.L. Sandler A.N. and Katz, J. (1999). Use and efficacy of low dose Ketamine in the

Information Category	Detailed Information
	management of acute post-operative pain; a review of current techniques and outcomes. Pain, August 82: pp111-125 RCHT Controlled drug policy.
Training Need Identified?	Yes: Registered Nurse competent in administering intravenous medication. Registered Nurse competent in the use of McKinley infusion pumps and maintain competency by regular use and attending a 3 yearly update.
Publication Location (refer to Policy on Policies – Approvals and Ratification):	Internet and Intranet
Document Library Folder/Sub Folder:	Clinical / Pain

Version Control Table

Date	Version Number	Summary of Changes	Changes Made by
		Previous version history unknown.	
20/07/2012	V2.0	Amended page 2 and 3 • A McKinley 595 'Specialist Analgesia' pump and dedicated clear BodyGuard Microset anti siphon infusion line can be located from general recovery. • Added Pain Assessment Chart to Pain Score and observations.	Sharon Dunstan, Senior Pain Specialist Nurse.
08/04/2013	V3.0	Section 2.10 protocol and prescription has been simplified to one prescription and protocol. MEWS chart changed to NEWS chart or Analgesia Assessment Chart where appropriate.	Jayne Thomas, Pain Specialist Nurse.
08/03/2016	V4.0	2.21 Colloid changed to crystalloid in line with anaesthetic guideline for ECHT. Change of contact bleep number. Transferred onto new template.	Jayne Thomas, Pain Specialist Nurse.
16/05/2019	V5.0	Transferred onto current hospital template 2.10.1 Wording changed.	Sarah Medlicott, Pain Specialist Nurse
10/05/2022	V6.0	• Transferred onto current hospital template. • Terminology: Acute pain team changed to Inpatient pain team. • Where paper documentation charts are	Sarah Medlicott, Pain Specialist Nurse

Date	Version Number	Summary of Changes	Changes Made by
		required, the addition of electronic equivalence has been added to reflect new electronic assessment charts.	
26/06/2023	V6.1	• All references to the 'McKinley 595' pumps replaced with 'BD Bodyguard' 595 pumps • 2.5 grey front pump changed to blue-fronted pump.	Sarah Medlicott, Pain Specialist Nurse
17/06/2025	7.0	• Transferred to current hospital template. • Flow chart re-formatted. • Inpatient Pain Lead changed to Dr Neil Roberts. • 'Stroke' added to Contraindications. • Lines should be changed every 72 hours **(changed from 48 hours).** • The asset number on the Ketamine/Specialist analgesia pump must be recorded in patient notes or on analgesic assessment charts **(changed from pink forms).** • Registered Nurse completion of Ketamine: Low Dose Intravenous use via a Continuous Infusion (Online Theory) via ESR **(deleted – no longer in use).** • Patients should have supplemental oxygen prescribed for the duration of the infusion. Increasing oxygen requirements should prompt medical review with particular focus on assessment for concurrent opioid toxicity. **(Changed from 'patient should remain on prescribed oxygen').** New paragraph added 2.4 to list side effects and subsequent renumbered. • If Opiates are used alongside Ketamine, Naloxone must be prescribed on the electronic or paper prescription chart. **(Changed from 'Naloxone must be prescribed on the electronic or paper prescription chart'.)** • The infusion rate should not be increased more frequently than hourly and should never exceed 5ml per hour. **(Added to 'Monitoring and Management.'** • Diluted and or manipulated drug to be disposed of in a denaturing kit. **(Changed**	Jessica Forsyth, Pain Specialist Nurse

Date	Version Number	Summary of Changes	Changes Made by
		from 'Drug to be disposed of in a denaturing kit.)	

All or part of this document can be released under the Freedom of Information Act 2000.

All Policies, Strategies and Operating Procedures, including Business Plans, are to be kept for the lifetime of the organisation plus 6 years.

This document is only valid on the day of printing.

Controlled Document.

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

Appendix 2. Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form

The EIA process allows the Trust to identify where a policy or service may have a negative impact on an individual or particular group of people.

For guidance please refer to the Equality Impact Assessment Policy (available from the document library) or contact the Equality, Diversity, and Inclusion Team rcht.inclusion@nhs.net

Information Category	Detailed Information
Name of the strategy/policy/proposal/service function to be assessed:	Intravenous Ketamine Infusion Nursing Care Clinical Guideline V7.0
Directorate and service area:	Pain Services. Anaesthetics, Critical Care and Theatres Care Group.
Is this a new or existing Policy?	Existing
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Jessica Forsyth, Pain Specialist Nurse
Contact details:	01872 252170

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	Administration of intravenous Ketamine via a McKinley BodyGuard 595 pump.
2. Policy Objectives	Available to nursing and medical staff to ensure safe use of Intravenous Ketamine via a McKinley BodyGuard 595 pump.
3. Policy Intended Outcomes	To standardise practice and ensure safe management. Administration of intravenous Ketamine via a McKinley BodyGuard 595 pump.
4. How will you measure each outcome?	Reduced Datix reports received. Patient satisfaction regards to pain control.
5. Who is intended to benefit from the policy?	Patients, medical and nursing staff.

Information Category	Detailed Information
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: No • Patients/visitors: No • Local groups/system partners: No • External organisations: No • Other: Yes
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/groups:** Practice Development on initial issue. Inpatient pain team and all Pain consultants upon each review. ACCT Governance.
6c. What was the outcome of the consultation?	Any changes recommended have been discussed and the guideline amended as appropriate.
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:** No

7. The Impact

Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	No	Available to all adults following clinical assessment.
Sex (male or female)	No	Available to all genders if considered an appropriate treatment.
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	Available to all if considered an appropriate treatment.
Race	No	Available to all if considered an appropriate treatment.
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	Available to all if considered an appropriate treatment.
Religion or belief	No	Available to all if considered an appropriate treatment.

Protected Characteristic	(Yes or No)	Rationale
Marriage and civil partnership	No	Available to all if considered an appropriate treatment.
Pregnancy and maternity	No	Available to all if considered an appropriate treatment.
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	Available to all if considered an appropriate treatment.

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Jessica Forsyth, Pain Specialist Nurse

If a negative impact has been identified above OR this is a major service change, you will need to complete section 2 of the EIA form available here:
Section 2. Full Equality Analysis