Royal Cornwall Hospitals
NHS Trust

Patient Controlled Analgesia (PCA) Adult Clinical Guideline

V10

April 2025

Summary

PCA Competency

1. Theory

Undertake PCA theory via clinical skills.net and successfully complete assessment

2. New user pump training

Attend face to face session with pain team booked via ESR

3. Supervised practice

- Undertake 1 witnessed practice, signed off by a current competent staff member.
- Return the clinical competency sheet to rcht.painspecialistnurses@nhs.net

Successful completion of all three elements required to gain the clinical competency in the Skill.

Clinical competency updated on ESR

Observations:

BP, HR, RR, Oxygen saturations, Temperature, Sedation and pain score every

⇨ 15 minutes for 1 hr, then

⇨ Every 30 minutes for the next 2 hours.

RR, sedation and pain scores must be recorded hourly until 24 hours post-op and then every 2 hours until the PCA is ceased.

The frequency of other observations may be reduced after 12 hours unless otherwise clinically indicated.

PCA Wards:

- Critical Care.
- Eden.
- Enhanced Post Operative Care Unit (EPOC).
- Emergency Surgical Unit (ESU).
- Pendennis.
- Planned care unit.
- Recovery.
- St Mawes.
- St Michaels Hospital.
- Trauma Ward.
- Wheal Coates ward.

1. Aim/Purpose of this Guideline

1.1. To provide a guide to enable safe and appropriate care of Adults with Patient Controlled Analgesia.

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.

For more information about your obligations under the Data Protection Act 2018 and UK General Data Protection Regulations 2016/679 please see the Information Use Framework Policy or contact the Information Governance Team.

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

2. The Guidance

2.1. An explanation should be given to patients by an anaesthetist and/or nursing staff. Patients should be directed to download the "Managing pain after your surgery" (British pain society 2022) patient information booklet pre-operatively. This leaflet is available in alternative forms if required. PCAs should only be used in areas with adequately trained and competent staff. If a PCA is requested out of hours, this should be done in consultation with the on-call anaesthetist and should only be managed and set up in surgical, trauma and orthopaedic, or critical care areas. For patients with chest trauma, if a PCA is required, they can be set up on the wards identified in the current chest wall pathway, ensuring appropriate PCA training has been carried out.

2.1.1. Prior to setting up a PCA, ensure the pump service record is in date. If the pump has not been serviced within a year, it should be returned to medical physics for servicing and an alternative pump used.

2.1.2. Only a BD Plastipak 50ml luer lock syringe should be used in the PCA device.

2.1.3. PCA Prescriptions: The trust routinely uses 2 opioids in a PCA; Morphine 50mg/50ml (prediluted) and Fentanyl 500mcg/50mls. These can be prescribed under the PCA protocol in the electronic prescribing platform and selecting the appropriate opioid.

2.1.3.1. The standard Morphine prescription is 1mg morphine bolus with a five minute lockout period

2.1.3.2. The standard Fentanyl prescription is 10mcg bolus with a 5 minute lockout period.

2.1.3.3. Any alterations to the above prescription should be recorded in the prn notes of the prescription.

2.1.3.4. In **exceptional** circumstances an Oxycodone PCA can be considered. **This is not to be used as first line treatment**. A concentration of 50mg Oxycodone for injection diluted with Normal Saline to achieve a concentration of 50mg/50mls. A 1mg Patient PCA bolus (equivalent to 1.5-2mg Morphine) with a 5-minute lockout can be used as standard. The Oxycodone PCA prescription can be found under the drug Oxycodone rather than the PCA protocol. The in-patient pain nurses should be alerted to any Oxycodone PCA commenced.

2.1.4. Only a specific PCA administration set should be used.

2.1.5. The syringe should be purged prior to being attached to the patient each time the syringe is changed to reduce mechanical slack.

2.1.6. PCA should be administered via a separate IV cannula, a Y connector should not be used. Central lines may be used.

2.1.7. With the exception of clear IV fluids such as 0.9% sodium chloride or hartmann's, if additional IV fluids are required (e.g. blood products, heparin, insulin or antibiotics), they must be administered via a separate cannula.

2.1.8. A PCA care plan and analgesic assessment chart (or electronic equivalent) must be implemented.

2.1.9. The PCA must be prescribed on an appropriate hospital prescription (e.g. EPMA) with full instructions for bolus and lockout time.

2.1.10. Naloxone should also be prescribed on appropriate hospital prescription (e.g. EPMA) for patients with PCA to treat any respiratory depression.

2.1.11. The current pump protocol should be checked against the prescription.

2.1.12. Ensure the clamp on the administration set is released prior to commencing the PCA to prevent an accidental bolus.

2.1.13. Prior to the patient leaving recovery, the asset number of the PCA should be recorded on the recovery sheet, the electronic PCA assessment on Nervecentre or the pain service pink audit form if still used.

2.1.14. Prior to leaving recovery, patients with a PCA should have a pain score of mild pain or less.

2.1.15. To prevent siphoning due to gravity, the PCA pump should be positioned no higher than the cannula site.

2.1.16. Syringes should be changed by a registered practitioner acting within their scope of practice, who is also competent in the administration of IV drugs and has undergone suitable training in the management of PCA, having attained theoretical and practical competence. ANTT should be used. Another registered practitioner must act as second checker. Refer to the Ward, Theatre and Department Standard Operating Procedure for Controlled Drugs, available in all departments or via the intranet.

2.1.17. Competence in managing the PCA pump should be attained prior to managing patients with a PCA.

2.1.18. Competence should be maintained by regular use of the skill and attending 3 yearly medical device training in PCA pumps.

2.1.19. Prescribed night sedation may be administered to patients with PCA. No new additional opioid or sedation should be given unless discussed with an anaesthetist or inpatient pain team.

2.1.20. Patients admitted on regular opioid analgesics should continue these in addition to the PCA if appropriate. Otherwise, no IV/Intramuscular/oral opioids should be given with a PCA unless discussed/prescribed by an anaesthetist or inpatient pain team. A warning note should be documented on the hospital prescription.

2.1.21. To achieve continuous analgesia, delays in renewing syringes should be avoided.

2.1.22. PCA administration sets should be labelled and changed every 48-72 hours or according to hospital policy.

2.1.23. PCA should normally be continued until it is appropriate to start administering oral analgesia.

2.1.24. Alternative analgesia should be prescribed prior to discontinuing a PCA.

2.1.25. Any opioid left in the syringe must be discarded into a denaturing kit. This should be witnessed by two nurses and documented in the ward's wastage book.

2.1.26. Keys for PCA machines should be kept with the controlled drug keys by the nurse in charge.

2.1.27. Once discontinued, the pump should be cleaned and labeled according to hospital policy and returned to the equipment library or theatre recovery for storage.

2.1.28. Faulty equipment must be cleaned, labeled according to hospital policy and returned to medical physics.

2.1.29. Patients requiring a background infusion on a PCA should only be cared for in critical care or a high dependency area such as the enhanced peri-operative care unit (EPOC). If background infusions in exceptional circumstances are required on a general ward, this should first be discussed with the pain nurses.

2.2. Clinical Observations: monitoring should be documented on the appropriate observations chart and the Analgesic Assessment Chart.

2.2.1. Blood pressure, heart rate, respiratory rate, oxygen saturations, temperature, level of consciousness, sedation and pain scores should be recorded: 15 minutes for 1 hour. 30 minutes for the next 2 hours. Respiratory rate, sedation and pain scores should be recorded hourly until 24 hours postoperative, then 2 hourly until the PCA is discontinued (Anaesthesia UK 2017).

The frequency of other observations may be reduced after 12 hours unless otherwise clinically indicated.

Clinical observations may be undertaken by an appropriately trained healthcare assistant if delegated by a PCA competent practitioner. Accountability remains with the PCA competent registered practitioner.

2.2.2. Pump observations recorded on the analgesic assessment chart (or electronic equivalent) should be recorded by a registered practitioner competent in the management of PCA's, also having maintained their competency and training in the PCA medical device as per trust policy.

2.2.3. If a further loading dose is administered by an anaesthetist or pain specialist nurse, then observations should be recorded every 15 minutes for one hour to ensure the patient's condition is stable.

2.2.4. The IV cannula should be monitored in accordance with the peripheral intravenous cannula care bundle available on the document library.

Complications:

2.2.5. **Respiratory Depression**

Morphine can cause sedation and respiratory depression. This is usually gradual in onset and detectable as a slow respiratory rate in a very sedated patient. The sedation score must be regularly measured on every patient with a PCA. If the respiratory rate is less than 8 and/or sedation score 3, remove the handset/stop the infusion. Give oxygen 15l/min and inform medical staff. *Consider* giving Naloxone.

If the respiratory rate is <5 and sedation score 3 *give* Naloxone. Naloxone should be given in 100mcg increments every 5 minutes or in accordance to current BNF guidelines. This should be given until respiratory rate >8 and sedation score <2. Observe pain and sedation scores closely. If not resolved after 0.4mg Naloxone – seek further medical assistance.

2.2.6. **Hypotension**

Check fluid status, exclude significant blood loss and if appropriate administer IV fluids. Follow RCHT guidelines and obtain medical assessment.

2.2.7. **Nausea and Vomiting**

Morphine can sometimes cause nausea and vomiting. Droperidol may have been added to the PCA to try and prevent this. If the patient is nauseous give anti-emetics as prescribed.

2.2.8. **Pruritus**

Pruritus is occasionally a side effect of morphine and can be treated with either an antihistamine such as Piriton or by low dose Naloxone under medical guidance.

2.2.9. **Inadequate Analgesia**

Ensure the equipment is functioning correctly and that the line is not occluded. Check that the patient understands how to use the PCA appropriately. Give alternative analgesics other than opioids. Contact the pain team or anaesthetist: an additional bolus dose may be required.

3. Monitoring compliance and effectiveness

Information Category	Detail of process and methodology for monitoring compliance
Element to be monitored	Adherence to the guidance
Lead	Inpatient Pain Team
Tool	• Pain team/anaesthetic review of a patient with a PCA on day 1. • Adherence to the guidance will be monitored by viewing the Clinical observations, analgesic assessment chart and PCA care plan. Results will be recorded on the acute pain form (paper CHA 2602 or electronic hospital data base) and in the medical notes (electronic or paper). DATIX reports will be investigated.
Frequency	The acute pain forms will be audited annually.
Reporting arrangements	The audit is reported to the acute pain lead consultant and the anaesthetic governance lead.
Acting on recommendations and Lead(s)	• The inpatient pain team. • Inpatient pain lead consultant.

Information Category	Detail of process and methodology for monitoring compliance
Change in practice and lessons to be shared	• Required changes to practice will be identified and actioned within 1 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 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:	Patient Controlled Analgesia (PCA) Adult Clinical Guideline V10
This document replaces (exact title of previous version):	Patient Controlled Analgesia (PCA) Adult Clinical Guideline V9.1
Date Issued/Approved:	02 April 2025
Date Valid From:	April 2025
Date Valid To:	April 2027
Directorate/Department responsible (author/owner):	Jessica Forsyth, Pain Specialist Nurse
Contact details:	Phone: 01872 252172 Bleep: 3233
Brief summary of contents:	PCA Nursing Guidelines
Suggested Keywords:	Patient Controlled Analgesia, PCA, Morphine 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 Services. ACCT Governance Huddle.
Manager confirming approval processes:	Matthew Body
Name of Governance Lead confirming consultation and ratification:	James Masters, ACCT Governance Lead
Links to key external standards:	None required
Related Documents:	• RCHT Controlled Drug Policy.

Information Category	Detailed Information
	• RCHT Ward, Theatre and Department Controlled Drugs Standard Operating Procedure. • RCHT Peripheral Intravenous Catheter Care Bundle. • RCHT Aseptic Non-Touch Technique policy. • RCHT Injectable Medicines Policy. • Anaesthesia UK (2017) • RCHT Patient Controlled analgesia (PCA) Adult Clinical Guideline.
Training Need Identified?	Yes – Learning and Development aware • Registered Nurse, competent in the administration of intravenous medication. • Completion of appropriate learning package. • Medical devices PCA pump training, 3 yearly attendance.
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
30/06/2010	V1.0 to V4.0	No record of previous versions.	Dr Paul Upton
11/4/2012	V5.0	Changed to current hospital template and headings. Page 2 No 17: Naloxone to be prescribed prior to patient leaving recovery or on setting up a PCA.	Sharon Dunstan Senior Pain Specialist Nurse
23/7/2012	V6.0	Added page 1 No 2. A PCA care plan must be implemented. Amended page 2 Clinical Observations: Monitoring should be documented on the MEWS chart and Analgesic Assessment Chart.	Sharon Dunstan Senior Pain Specialist Nurse

Date	Version Number	Summary of Changes	Changes Made by
26/3/2015	V7.0	Rewording, re-organisation and renumbering of contents onto new hospital template. 2.1 Additional guidance: PCAs should only be used in areas with adequately trained and competent staff. If a PCA is requested out of hours, this should be done in consultation with the on-call anaesthetist and should only be set up in surgical, trauma and orthopaedic or critical care areas. 2.1.7 Addition of analgesic assessment chart to PCA care plan. 2.1.8/9 Change to hospital prescriptions to reflect move towards electronic prescribing. 2.1.19 Clarification for patients taking regular opioids pre-admission. 2.2.3 IV cannula monitoring in accordance with Peripheral IV cannula care bundle. Removal of references to disposable PCA no longer used within the trust.	Sarah Medlicott, Pain Specialist Nurse
26/3/2018	V8.0	2.1 The addition of CDU and Wellington as appropriate wards for PCAs. 2.2 Changed NEWS chart to appropriate observations chart to reflect e-observations. 2.2.1 Replaced ‘post-operative’ with specific observations required. Guideline retitled Updated Governance Information and IEIA forms.	Sarah Medlicott, Pain Specialist Nurse
5/5/2021	V9.0	Addition of summary flowchart Incorporation of competency requirements for the skill of PCA 2.1 Change to where chest trauma patients can be managed. 2.1.28 Addition of where background infusions on PCAs can be cared for. 2.2.1 Clarification of who can undertake clinical observations. 2.2.2 Additional paragraph regarding completion of PCA pump observations.	Sarah Medlicott, Pain Specialist Nurse
3/3/2022	V9.1	Additional paragraph inserted into 2.1.3 for PCA prescriptions including the use of Oxycodone PCA in exceptional circumstances.	Sarah Medlicott Pain Specialist Nurse

Date	Version Number	Summary of Changes	Changes Made by
17/12/2024	V10.0	Rewording and re-organisation of contents onto new template. Removal of Tintagel and Wellington as PCA competent wards. Change of name for ward Theatre Direct to ESU. Related Documents updated.	Jessica Forsyth, Pain Specialist Nurse

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:	Patient Controlled Analgesia (PCA) Adult Clinical Guideline V10
Directorate and service area:	Anaesthetics/Pain
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 252172

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)	Guidelines for nursing staff caring for patients with Patient Controlled Analgesia.
2. Policy Objectives	To maintain safe standards of care for the delivery of this method of pain control.
3. Policy Intended Outcomes	Provides guidance to staff regarding the care required for patients with PCAs to ensure they are cared for safely and effectively. Any side effects and complications are identified early and dealt with in a safe, evidence-based manner. Any requirement for training is identified.
4. How will you measure each outcome?	Regular Audit. Routine review of patients by the acute pain team and/or anesthetist. Monitoring of Datix reports.

Information Category	Detailed Information
5. Who is intended to benefit from the policy?	Patients and staff.
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Yes • Patients/visitors: No • Local groups/system partners: No • External organisations: No • Other: No
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/groups:** Pain Services, Appropriate wards consulted regarding accepting PCA's in those areas ACCT Governance Huddle
6c. What was the outcome of the consultation?	Agreement of acceptance from wards listed in summary. Approval of guideline at governance huddle.
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	
Sex (male or female)	No	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	No	
Race	No	

Protected Characteristic	(Yes or No)	Rationale
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	No	
Religion or belief	No	
Marriage and civil partnership	No	
Pregnancy and maternity	No	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	No	

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