

# Patient Controlled Analgesia (PCA)

## Morphine Guidelines

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Refer to intranet for **Fentanyl PCA Guidelines** for patients in whom morphine is unsuitable (*allergy, intolerance, renal or hepatic impairment*).

Refer to intranet for **Paediatric PCA Guidelines** if considering or managing a PCA in a paediatric patient managed on a paediatric ward or in an ACCU setting.

### Aim

To provide safe and effective pain relief, allowing patients to self-administer an analgesic, at a predetermined dose, using a Patient Controlled Analgesia (PCA) Device, under the supervision of trained and competent staff.

### Competency

The doctor/nurse must demonstrate competency in PCA therapy and have been trained in the delivery device. e.g. Fresenius Kabi Agilia PCA syringe pump.

Ward staff must be knowledgeable in the use of PCA, its complications and management.

### Patient Criteria

PCA is appropriate for any patient with severe acute pain who is likely to require frequent repeated doses of parenteral opioid for over 24 hours and is unable to take or absorb oral medication. The patient should be loaded with titrated intravenous opioid, usually morphine. The patient must be physically and mentally able to manage the technique (*if not the subcutaneous morphine protocol will be more suitable*).

### Guidelines for PCA Therapy

All patients on a PCA device should be under the supervision of the Acute Pain Service. Ideally the service should be consulted when considering patient suitability for PCA. PCA should NOT normally be discontinued within 24 hours without reference to the Acute Pain Service.

Other opioids should NOT be administered to patients receiving PCA therapy, except if they are the patient's usual long term background analgesia for example fentanyl patch. However, Oxycodone SR, MST Continus or Buprenorphine must be discussed with the Acute Pain Service or an Anaesthetist and a plan documented before commencement of PCA.

Extreme caution should be used in prescribing or administering other potentially sedating drugs to patients on PCA.

The PCA should be prescribed by a doctor as per Hepma **and** on the PCA prescription and observation chart.

The prescription on the chart should include as below: with the standard prescription as an example

Drug name	Morphine
Drug concentration	Morphine 1mg/ml, 50ml syringe
PCA bolus dose	1mg Morphine
PCA loading dose	Zero
Lockout time	5 minutes
Background infusion	Zero, but may be used only after discussion with Acute Pain Service or on call Anaesthetist.

**Background infusion requires Level 1 monitored bed observations as a minimum.**

Deviations from this standard prescription merits discussion with the Acute Pain Service or an Anaesthetist.

A drug addition label must be attached to the barrel of the BD 50ml luer lock syringe clearly visible but not obscuring the volume markers on the syringe when placed in the Fresenius Kabi Agilia PCA pump.

The correct **make** of syringe must be selected in the program and confirmed on loading or changing syringe. The pump default is BD Plastipak, which is our current stock luer lock syringe.

An extension set incorporating leur lock connections, one-way & anti-siphon valves must always be used (*for example Alaris Extension Set [Ref 30852]*).

Administration of a PCA via a central line is discouraged and only to be used if peripheral intravenous access is difficult/impossible and after discussion with duty/ward charge nurse. The PCA should be delivered via a dedicated lumen. No infusion should be run via the 3 way tap except under exceptional circumstances there is no other lumen available. In this rare circumstance the ward duty charge nurse should be notified and an anti-reflux valve (eg Codan R Lock Ref 16.5250) must be connected at the 3 way tap on the infusate line and compatibility of any infusion fluid/drug checked with charge nurse and pharmacist. Do not stop IV PCA to intermittently bolus any other drugs via infusate line.

Prior to PCA initiation, 1 nurse can program the pump, however 2 nurses must sign, preparing and checking, verifying the prescription against syringe and PCA pump program on the PCA prescription and observation chart.

The patient should be instructed on how to use the device, in particular stressing that **ONLY** the patient may activate the device - Patients may be encouraged but **NOT ASSISTED**.

All keys must be removed from the device and should be connected to the ward controlled drug keys.

The device must not be altered unless by staff appropriately trained to do so.

If the type of drug is changed a new PCA chart must be used.

A new syringe requires only an entry on the PCA prescription and observation chart and Hepma with two nurse check signatures on each.

A nurse must verify medication, dose and setting on any: change in settings, transfer.

## **Monitoring the Patient on a PCA Device**

All patients should receive additional oxygen during PCA use.

All patients on a PCA must have a PCA prescription and observation chart.

Observations will be recorded on the PCA chart every two hours or unless stated otherwise.

### **Observations:**

- a. Respiratory Rate
- b. Sedation Score
- c. Pain Score
- c. Nausea/Vomiting score
- d. Oxygen Saturations
- e. Temperature
- f. Pulse
- g. Blood Pressure
- h. Total Dose/Volume of drug administered
- i. Volume remaining in syringe
- j. IV site for redness/inflammation

The NEWS chart must be completed at appropriate time intervals for that patient to allow scoring. Duplication of charting is not required nevertheless 2hourly observations are the minimum whilst on PCA and respiratory rate, sedation, pain scores and pump checks are best recorded on the PCA chart.

## **Managing side effects and complications**

### **Sedation and Respiratory depression:**

If sedation score is consistently 2 or above and/or Respiratory rate is 8 or less

- a. Remove device handset.
- b. Seek medical advice.
- c. Continue oxygen therapy - from 4 litres via facemask.
- d. Check oxygen saturation.
- e. Have available for the doctor: Naloxone 2mg/2ml pre-filled syringes with graduations of 0.2 ml. 0.1ml (100 micrograms) to be given intravenously every minute until the patient improves.

**Respiratory Arrest:** If the patient is not breathing - shout for help, initiate BLS, and call 2222 'Cardiac Arrest' team.

**Nausea & Vomiting:** An anti emetic should always be prescribed to manage opioid related nausea & vomiting. Refer to intranet for **Guideline for Adult Inpatients in the Perioperative Period**.

**Urinary retention:** consider catheterisation, contact ward doctor.

**Mobility:** Mobilise with support at all times as condition allows.

**Inadequate analgesia:** If pain score is 3 or above for more than one set of observations. Check pump settings and integrity of line and cannula placement. If in doubt flush cannula at side port with 5 to 10ml of normal saline to check intravascular placement. If patient has used PCA less than 4 times in preceding hour re-educate about button & encourage PCA usage. Give adjuvant analgesia if prescribed. If still uncontrolled pain then contact Acute Pain Service (DECT 6224) or Duty Anaesthetist (DECT 8657) for advice.

### **Changing Syringe**

- ❖ The syringe must only be changed by staff appropriately trained to do so.
- ❖ PCA syringes should be changed every 24 hours if prescription to continue.
- ❖ PCA giving sets can be in situ for up to 72 hours and then require renewal if prescription to continue.

### **Discontinuing the PCA**

- ❖ Two nurses must verify and destroy all remaining drug, emptying the syringe into a sharps bin. Details of this should be recorded on PCA chart.
- ❖ Oral analgesia must be prescribed and administered prior to the removal of the device.
- ❖ The Acute Pain Service can be contacted on DECT 6224, or contact the Duty Anaesthetist (DECT 8657) for advice.

### **Acute Pain Service**

Nurse Specialist S Anderson (DECT 6224), Dr C. Slorach: Monday - Friday 08.30 - 16.30  
After hours or if unavailable, contact Duty Anaesthetist (DECT 8657)