University Hospitals of Leicester NHS
NHS Trust

Pain Management Services

Administration of Patient Controlled Analgesia (IV PCA) for patients 16 years and over within an Adult Enviroment

Policy and Procedures

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Trust Lead:	Sue Daykin – Lead Acute Pain Specialist Inpatient Pain Management Team
Board Director Lead:	Medical Director
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REVIEW DATES AND DETAILS OF CHANGES MADE DURING THE REVIEW

V2, September 2006 – review of V1, format updated to meet Trust requirements

V3, September 2012 – review of V2 – update to Appendix One Section 14 regarding storage of IV PCA in the recovery rooms/post anaesthetic care unit (PACU), format updated to meet Trust requirements

V4: January 2016 – review of V3 – updated appendix regarding infusion devises. Added appendix 7 regarding oral/breakthrough analgesia. Added information on training requirement for Assistant Practitioners

V5: June 2018 – review of V4 – removal of any referral to children as the childrens hospital have their own policy. This policy was previously known as “Administration of
Patient Controlled Analgesia (IV PCA) to Adults and Children (5 years and over)” -
training requirements of Nursing Associates - Information on Acute Pain Drug Chart for prescribing – information on Fentanyl PCA – removal of the use of pethidine for IV PCA

V6 August 2020 – changes to Section 6 education and training for Registered Nursing Assoicates

V7 June 2021 – addition reference to Vascular access care bundle: changes in the dose range of a fentanyl PCA bolus from 10 microgrammes to 10-20 microgrammes: storage of keys in a clinical area

V8 October 2022 – changes to Fentanyl PCA 8mgs/ml 8mgs bolus to reflect bag contents

KEY WORDS

IV PCA policy, IV PCA, Patient Controlled Analgesia

1 INTRODUCTION AND OVERVIEW

1.1 This document sets out the University Hospitals of Leicester (UHL) NHS Trust policy for the administration of Intravenous Patient Controlled Analgesia (IV PCA). The policy gives directives to ensure the safe administration of PCA to patients on all clinical areas within UHL (with the exception of the childrens hospital) by staff that have undergone training in IV PCA.

1.2 Patient Controlled Analgesia is a technique, which allows the patients to administer their own analgesic therapy. Traditional methods of administering postoperative analgesia by intermittent intramuscular injection of narcotics have been shown to provide inadequate analgesia. Despite developments in understanding of pain mechanisms and methods of pain control, many patients undergoing major surgery experienced moderate to severe postoperative pain (Wheatly et al 1991).

1.3 In the light of this, the Joint Colleges Working Party Report 'Pain after Surgery (RCA 1990), recommends the use of postoperative patient controlled analgesia (PCA). This is a method of administration of intravenous analgesia using a special pump containing a reservoir of analgesic drug (usually an opioid). These pumps possess a button or handset that can be activated by the patient so that small intravenous doses can be administered.

1.4 The patient is the only person who knows how much pain they have and knows how much pain relief they require. If the patient can self-administer their own pain relief safely, then pain relief is usually managed better. Ultimately PCA enables the patient to control pain with less dependence on drug administration by medical and nursing staff

The aim of this document is to

a) Provide support and guidance to healthcare professional

b) Standardise clinical practice

c) Ensure quality and safe care with regard to the use of IV PCA practice.

2 POLICY SCOPE –WHO THE POLICY APPLIES TO AND ANY SPECIFIC EXCLUSIONS

2.1 This policy applies to all health care professionals (Registered Nurses, Registered Nursing Associates, Midwives, Operating Department Practitioners and Medical Professionals) working in a clinical area where they will be expected to administer IV PCA.. This policy is supported by the Leicestershire medicine code and the UHL IV drug administration policy

2.2 All Health Care Profieesionals should also identify whether there are any qualifications and competencies that must be held by staff using the Policy and cross reference made to the education and training section if specific training is required.

2.3 This policy relates to all patients 16 and over using IV PCA in all CMGs within UHL with the expection of childrens service who have a dedicated policy

3 DEFINITIONS AND ABBREVIATIONS

3.1	IV PCA	Intravenous Patient Controlled Analgesia
3.2	Bolus Dose	amount the patient can receive when pressing the handset
3.3	Lockout time/off cycle	time interval between available patient doses
3.4	Background Infusion	is a continuous amount of analgesia running per hour. This is usually used in patients who take long term oral opiates and are nil by mouth for a time..

4 ROLES – WHO DOES WHAT

4.1 Executive Lead (Medical Director) and CMG Management Team (Lead Nurse, Head of Service, Matrons) are responsible for

a) Ensure their CMG Staff are made aware of and comply with this policy

b) Address any concerns raised regarding practice through their CMG incident reporting systems.

4.2 Healthcare Professional Prescribing IV PCA (Includes Anaesthetists, Surgical Doctors, Acute Pain Nurse Specialists who are Non-Medical Prescribers) are responsible for

a) Assessing the patient as suitable for PCA

b) Prescribing the use of IV PCA on the Inpatients Anaesthetic Drug Chart IPAD (Critical Care)/eMeds on Nerve Centre in line with this Policy

c) Ensuring that the Ward caring for or receiving the patient back from Theatre has suitably trained staff to care for a patient with an IV PCA

4.3 Department Managers and Ward Sisters are responsible for

a) Ensuring all their clinical staff are competent to care for a patient with an IV PCA

4.4 All Healthcare professionals who administer PCA are responsible for:

a) Successfully completing the relevant training and be assessed as competent to administer IV PCA

b) Ensure that they keep up to date with their practice

4.5 Acute Pain/Inpatient Pain Operational Group/ Acute Pain Team are responsible for:

a) IPOG are the operational group responsible for inpatient pain management across UHL. Members include Pain Management Consultants, Anaesthetists, Pain Nurses and Pharmacists who monitor and maintain the Acute Pain/Inpatient Policies

b) Provide education and training for all healthcare professionals on all aspects of IV PCA and input information into e-UHL

c) Ensure all IV PCA equipment is available for use

d) Monitor all patients on IV PCA for side effects, patient satisfaction

e) Monitor compliance with this policy through audit

f) Manage audit data and provide reports as necessary

g) Provide information to the UHL management teams as required.

h) Support CMG's with incident investigation and complaint management

5. POLICY IMPLEMENTATION AND ASSOCIATED DOCUMENTS –WHAT TO DO AND HOW TO DO IT

5.1 Verbal Patient Consent must be obtained to be able to set up IV PCA".

5.2 Indications for IV PCA use

a) Patients having elective or emergency surgery where acute pain is expected to be moderate or severe should be considered for IV PCA. Examples include laparotomy, femoral nailing and hysterectomy.

b) IV PCA should also be considered when epidural analgesia is contra-indicated or not possible. IV PCA's are occasionally used on delivery suite for labour analgesia.

c) IV PCA can also be used for non surgical patients e.g. haematology, trauma, pancreatitis. If IV PCA is being considered for these patients the Acute Pain Team must be informed and the prescriber must ensure that the clinical area has had appropriate training to care for these patients.

5.3 Contraindications for IV PCA use:

a) Patients in shock with a low blood pressure

b) Patients not able to physically use the handset

c) Patients who have been assessed as not having the mental capacity to use the pump safely (please see Trust Mental Capacity Act Policy B23/2007).

5.4 The advantages of PCA are:

a) Quality analgesia titrated to patients' requirements

b) Less likelihood of sedation compared to intramuscular opiates and patients better able to comply with physiotherapy, thus improving respiratory function.

5.5 Side Effects of PCA:

a) These are mainly related to the adverse effects of the opioid drug: respiratory depression, sedation, nausea and vomiting, hallucinations, hypotension, pruritus and ileus.

b) Many of these side effects can be controlled with additional drug therapy and safe patient management.

This policy is supported by the following procedures which must be used in conjunction with this policy:

Procedure	Appendix
The Procedure for setting up IV Patient Controlled Analgesia	1

Associated Documents –None.

6 EDUCATION AND TRAINING REQUIREMENTS

6.1 Healthcare Professionals (Registered Nurses, Midwives, Operating Department Practitioners and Medical Professionals) undertaking the preparation and monitoring of PCA must:

a) Hold a valid IV certificate of competence registered practitioners only

b) Successfully complete the Trust approved competency based training and assessment programme in the form of Acute Pain Study Day in conjunction with the Acute Pain Service

6.2 Registered Healthcare Professionals new to the Trust or employed through an agency must provide evidence of training and summative practical assessment to practice within this Trust. These Healthcare Professionals must then complete an equipment competency to ensure they are able to use the infusion device.

6.3 Verification of a professional's competence must be kept by the Adult Acute Pain Service /and within the CMG Specialities and transferred accordingly. It will also be recorded on the Clinical Skills Passport on HELM

6.4 Advanced Health Care Assistants/Trainee Assistant Practitioners/Trainee Nursing Associates/Assistant Practitioners at Band 3 or Assistant Practitioners/Registered Nursing Associates at Band 4 who are working within clinical areas with adults (18+) within UHL can perform observations and monitor the IV PCA under the direct supervision/guidance of a Registered Nurse providing they successfully complete the Trust approved speciality based competency training and competency assessments in the form of the Acute Pain Study Day and work based assessments carried out by the Acute Pain Nurse Specialists. They must also work in any adult clinical area that use IV PCA on a regular basis in order to maintain competencies

7 PROCESS FOR MONITORING COMPLIANCE

7.1 Auditing of IV PCA is completed at the patients' bedside after use by the ward nurse who disposes of it using the IV PCA Chart. This information is then recorded on a database by the Acute Pain Team.

7.2 Key performance indicators / audit standards on the IV PCA chart are as follows

- Patient Satisfaction
- Analgesic Effectiveness
- Patient observation
- Amount used over the period of time
- Length of time used

- Side effects
    - Nausea and vomiting
    - Hallucinations
    - Hypotension
    - Respiratory Depression

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements	Lead(s) for acting on recommendations
IV PCA Chart (see 8.2 for details)	Acute Pain Nurse Specialist	Audit is incorporated into the charts to check compliance	Charts are monitored on ward rounds. Incidents reported on datix. Reported shared at Acute Pain Operational Groups	Acute Pain Operational Group (meet every 2-3 months)	Lead Clinician for Acute Pain and the Acute Pain Team will raise concerns, issues and share best practice with the CMG Management teams for their action.

7.3 Ensure clinical staff are competent to monitor IV PCA and hold a valid competency certificate/assessment

Element to be monitored	Lead	Tool	Frequency	Reporting arrangements	Lead(s) for acting on recommendations
Competency Assessments for all users	Acute Pain Nurse Specialist/ Relevant Clinical Area Managers	Audit is incorporated into euhl to check for compliance after the acute pain study day	The registers from the Acute Pain Study Day to be monitored against euhl every six months to monitor compliance	Senior Acute Pain Nurse Specialist to liaise with relevant Clinical Area Managers if issues raised around compliance	Senior Acute Pain Nurse Specialists raise issues with Clinical Area Managers and share best practice with the CMG Management teams for their action.

7.4 Lead for this Section:

Acute Pain Team – collect and report on the data to the UHL Acute Pain Operational Group chaired by Lead Clinician for Acute Pain.

Acute Pain Nursing Team to monitor nursing competency through HELM

8 EQUALITY IMPACT ASSESSMENT

8.1 The Trust recognises the diversity of the local community it serves. Our aim therefore is to provide a safe environment free from discrimination and treat all individuals fairly with dignity and appropriately according to their needs.

8.2 As part of its development, this policy and its impact on equality have been reviewed and no detriment was identified.

9 SUPPORTING REFERENCES, EVIDENCE BASE AND RELATED POLICIES

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Park G & Fulton B (1992) **The Management of Acute Pain**. University Press – Oxford

Royal College of Surgeons & Anaesthetists (1990) **Joint Working Party Report Pain After Surgery** - London

Royal Marsden (2008) **Royal Marsden Hospitals Manual of Clinical Nursing Procedures** 7th edition

University Hospitals of Leicester (2019) **The Blood Transfusion Policy** B16/2003

University Hospitals of Leicester (2019) **Guideline for oral and IV dosing of Paracetamol in adults** B13/2012

University Hospitals of Leicester (2019) **Policy and Procedures for the Use of Controlled Drugs on Wards, Departments and Theatres** B16/2009

University Hospitals of Leicester (2020) **Cleaning and decontamination for infection prevention UHL policy** B5/2006

University Hospitals of Leicester (2017) **IV (Intravenous Therapy) UHL Policy*** (***excluding cytotoxic, epidural, PN and radiopharmaceuticals** B25/2010

University Hospitals of Leicester (2020) **Vascular Access in Adults and children Policy and Procedure** (B13/2020)

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10 PROCESS FOR VERSION CONTROL, DOCUMENT ARCHIVING AND REVIEW

10.1 The Inpatient/Acute Pain Operational Group is responsible for the review of this document every three years.

10.2 The updated version of the Policy will then be uploaded and available through INsite Documents and the Trust's externally-accessible Freedom of Information publication scheme. It will be archived through the Trusts PAGL syste

EQUIPMENT

1. An appropriate infusion devise and relevant disposals
2. Prescription Chart or electronic prescribing
3. PCA observation chart

No	Action	Rationale
1.	Ensure nurses caring for the patient with PCA regularly update themselves on the use of PCA. They should have a competency recorded on HELM	To ensure safe administration of PCA
2.	Identify the suitability of the patient for the use of patient controlled analgesia. Ensure that they are aware that they are the only person who should press the demand button and therefore it should not be used by any other person	To ensure education and preparation of the patient To prevent inadvertent overdosing by persons other than the patient
3..	Ensure that the patient fulfils the criteria of being able to understand the principles for using PCA and is able activate the demand button	To ensure the patient is suitable for using PCA To ensure adequate understanding of the technique
4.	Ensure that the prescription adheres to the guideline for adults or renal patients. This prescription must always appear on eMeds on Nerve Cente. An Inpatient Pain Anaesthetic Drug Card IPAD chart is used for patients within a Critical Care environment. An anti-emetic and Naloxone should also be prescribed.	To prevents any errors in prescribing PCA To ensure safe programming and setting up of the PCA device.
5.	Ensure that appropriate complementary analgesia is prescribed for the patient	To ensure safe and adequate analgesia for the patient
6	Ensure the patient has a patient has a patent peripheral cannula and this is being monitored in line with the Peripheral IV cannula bundle. In rare circumstances (usually in critical care) a Central Line is used, this should be monitored following The Central Vascular Access Device Care Bundle.	To prevent infection at the cannula site and maintain an aseptic process
7.	Know what IV therapy/IV medication/chosen analgesia is compatible with the opiate used for IV PCA, contacting pharmacy for advice in situations that need clarification. This includes blood transfusions which must not be administered through the PCA line	To prevent mixing drugs that are incompatible, ensuring patient safety from any side effects
8.	The opiate which is to be used for IV PCA (primarily morphine), must be taken from the Controlled Drug Cupboard by 2 Registered Practitioners, Information fully recorded in the Controlled Drug Register (time, date, patients name, drug concentration and quantity in the cupboard), checked with the prescription chart and signed by two practitioners for accuracy.	To enable opiates to be administered safely. To comply with Controlled Drug Regulation

No	Action	Rationale
9.	Only Anaesthetists and Persons trained as PCA competent following IV training and attendance at the Acute Pain Study Day may programme PCA and set up the pump for the patient. (Appendix 2)	To ensure that the PCA is correctly and safely programmed. To maintain patient safety
10.	Ensure that a giving set with an anti-reflux valve is used or an additional Y connector with an anti-reflux value is insitu. Ensure that the IV cannula is patent. (anti-reflux value to the iv fluid).**Always ensure that the spike on the giving set is well inside the bag – the spike should be "flicked" to expel air**	To prevent morphine backtracking up the infusion line or other fluids being administered through the same cannula To ensure no air gets into the line.
11.	The PCA bag should be labelled with the patients identification. When a PCA is made it should be attached to the patient as soon as possible. If this is not possible, it should be kept sterile in a locked cupboard along with the patient identification.	Ensure safety of controlled drugs Ensure PCA remains free from contamination
12.	Ensure that the patient understands the relationship between pressing the PCA button and receiving pain relief, **reiterating that the patient is the only person to press the demand button**	To ensure adequate pain control, titrated to each individual patient which prevents inadvertent overdosing by persons other than the patient
13.	Ensure that staff caring for the patient are aware of how to check the pump programme	To ensure safe administration of PCA
14.	Ensure that the staff caring for the patient are aware of the side effects of PCA and are able to deal with any emergency situation – Appendix 4	To ensure the recognition of alteration in the patients condition and facilitate effective treatment
15.	Explain to the patient what observations are necessary and why – Appendix 3	To ensure that the patient is informed and to maintain confidence and co-operation
16	Ensure that the nurses have the knowledge and skills to carry out the observations and are able to accurately record the amount of opiate that a patient has received each time the observations are carried out for the entire episode while using IV PCA	To ensure correct records of the administration of opiates
17.	If PCA bag has been made up in the clinical area it should be changed every 24 hours. A PCA bag from pharmacy will only need changing when it is empty.	To maintain drug stability and prevent harmful effects from contaminates To adhere to the UHL drug policy
18	Ensure that registered practitioners caring for the patient know how to change the bag when empty • Check the Prescription • dispense the relevant drugs from the CD cupboard according Leicestershire Medicines Code • Two registered practitioners/nurses to check (at least one with IV	To ensure PCA is always available To maintain patient safety and adhere to the Leicestershire Medicines Code

No	Action	Rationale
	certificate and PCA competence) • Right drug, right patient, right route • Clamp the PCA line • Change the bag • Reset the Pump • Unclamp the line • Check all the settings • Run to start	
19	Ensure that discussion takes place with the patient for discontinuing PCA The patient should have • Taken regular simple oral for 24hrs • Diminished their use over last 12 hours • Satisfied that the device is to be removed	To aid the opiate sparing effect and bridge the analgesia gap
20.	Disposal of the PCA, The Nurse should • Record the amount used and switch off the PCA pump • The line should be removed from the machine • The CD should be emptied into the "CD Drug Disposal Kit (DOOP)" • The line and spike providing the empty bag is attached should be placed onto the clinical waste bin. If the bag is not attached the line spike should be placed on the sharps bin • Documentation for disposal of the CD on the front of the PCA chart by two Registered Practitioners • Audit section is completed ascertaining patient satisfaction • The top copy of ALL the IV PCA charts should be filed in the patients medical notes and the bottom copies returned inside the box of the infusion devise. These are used for audit purposes • The pump has been cleaned and disinfected using clinell universal wipes and is returned to the designated place	In accordance with the policy for disposal of controlled drugs. To help monitor efficacy of the treatments and to help with improvement and provide an audit trail To ensure that pumps are cleaned and disinfected and available for the next patient To comply with Infection Prevention

1. PREPARATIONS

1.1 PCA is provided using infusions generally containing a standard mixture of morphine (1mg/ml).

1.2 Pharmacy will endeavour to ensure that pre mixed 100ml bags of morphine appropriate for the pumps are available, however if this is not possible, the appropriate solution should be made in the clinical area using the IV policy for mixing of IV drugs.

1.3 Special prescriptions following consultation with the Acute Pain Team should also be made in the clinical area using this method. Each regime should be assessed daily as to its suitability for the individual patient. With regard to Fentanyl, this comes in a pre-made bag alternatively it can be made in the clinical areas. Ampoules need to be used to the concentration as listed below on page 13

1.4 Any controlled drug which is to be used for IV PCA, should be obtained from the pharmacy department using the UHL procedures for the ordering, administration and storage of controlled drugs (Policy and Procedures for the Use of Controlled Drugs on Wards, Departments and Theatres B16/2009)

2. DEVICES

PCA is administered via a Sapphire Infusion Device:

- *Pumps are kept in relevant theatre recovery units and Medical Equipment Libraries- anyone requiring such a devise should contact the relevant area–*
- *a trace of which patients has these pumps are maintained by the Acute Pain Nurses.*
- *They should be cleaned with disinfectant wipes (trigene/distell) prior to leaving a clinical area, upon storage between patients and prior to each patient use.*
- *Chlorclean should NOT be used as it damages the devise.*

3. DOSES

Drug	Normal Renal function (50kg+)	Renal impairment
Mixture – **MORPHINE**	1mg/ml (**Pre-filled 100ml bag from pharmacy)**	1mg/ml (**Pre-filled 100ml bag from pharmacy)**
Bolus	1mg	0.5mg (500 micrograms)
Lock-out time/off cycle	5 minutes	10 minutes
Background infusion	For patients on long term opiates at Anaesthetist/Pain Team discretion	Nil
Mixture – **FENTANYL**	8 micrograms/ml 1000mcgs in 100mls of saline making 1000micorgram in 120ml (**Pre-filled 120ml bag from pharmacy)** PLEASE BE SURE THAT THE INFUSION DEVICE USED HAS SETTINGS FOR MICROGRAMS. ALL ADULT SAPHIRE PUMPS HAVE A FENTANYL PRE-SET PROGRAMME WHICH YOU CAN SELECT ON PROGRAMMING THE PUMP. **Should you require to make a bag in the clinical area please see page 14**	
Bolus	8 micrograms to 16 micrograms depending on the patient 8 micrograms (1ml) 12 micrograms (1.5mls) 16 microgram (2mls)	
Lock-out time/off cycle	5 minutes	

3 KEYS

PCA keys (T34 and CADD Key) will be attached to the CD keys within all relevant clinical areas. A risk assessment has been carried out and concluded it is not suitable to keep pump keys separate to CD keys as there are no other keys on the ward as the drug cabinets have digital locks. This leads to misplacement of these keys hence this is exceptional for adult wards were PCA patients are monitoried.

Fentanyl PCA – Instruction for the making of a Fentanyl PCA bag in the clinical area

Ideally a pre-made bag should always be used but if there are occasion when these are made in the clinical area the IV (Intravenous Therapies) Policy should be adhered to.

*Fentanyl bags **made in the clinical area** for use in a PCA machine need to be made every 24 hours.*

The standard fentanyl prescription is

***1000 microgrammes** of Fentanyl in **100mls** of normal saline = 120mls . (Giving a concentration of **8 microgrammes in 1ml**)*

To make up a minibag:

- Take 10 ampoules of 100 microgrammes of fentanyl or 2 ampoules of 500 microgrammes of fentanyl = 20mls
- Add the 20mls of Fentanyl to give a volume of 120mls
- Label the Minibag with the additive sticker.

The patient has a dose of	**8 microgrammes**
Lockout of	**5** minutes
With the potential to get	**96 microgrammes in 1 hour**.
When using the Sapphire Pump the Container size is	**1000 microgrammes in 100mls = 120mls bag volume**

It is advisable to try and maintain any opiates for patients who come into hospital on **ANALGESIC PATCHES OR LONG TERM ORAL** opiates (morphine, oxycodone and methadone) for a long standing condition. However If the patient is having surgery which requires them to by NIL BY MOUTH for long periods or admitted as an EMERGENCY in Severe Acute Pain where patient controlled analgesia is indicated, the IV PCA dose will need to be calculated taking into account any **long term oral opiates**.

BACKGROUND CALCULATIONS:

DAILY ORAL DOSE OF MORPHINE (ZOMORPH AND ORAMORPH) DIVIDED BY 2 (This will calculate IV equivalent)

THIS DAILY DOSE DIVIDED BY 24 to give background rate

e.g.: A patient arrives in hospital with a drug history of Zomorph 40mg BD and 10mgs of oramorph 4 times a day

80 + 40 = 120 mgs of oral morphine divided by 2 = 60

60 divided by 24 = 2.5 mgs per hour

Help with calculations for other oral opiates can be gained from the acute pain team or medicines information/pharmacy department.

PATCHES – Fentanyl and Buprenorphine

You should also discuss with the acute pain team requirements for patients who are prescribed Fentanyl patches as these will also affects the amount of opiates needed in these situations. It is also advisable to try and keep any Fentanyl patch in place as without it the patient may not have adequate pain relief. With Buprenorhine (Transtrec) 35 and above it is probably best to remove them due to the agonistic effect with morphine however the drug will take up to 24hrs to leave the system if removing on day of surgery. You will still need to substitute this with other analgesia.

These observations should be commenced once the patient starts using morphine (this may be some time after the pump is attached). They should only be carried out by qualified nurses/midwives who have had training in the use of IV PCA or Trained Assistant Practitioners under the supervision of a qualified nurse.

No	Action	Rationale
1	Monitor and observe as follows: • ¼ hourly for one hour • Hourly for 4 hours • Two hourly for 12 hours • Four hourly thereafter • Pain Score • Function Score • Respiration Rate • Pulse and Blood pressure • Oxygen saturation • Sedation Score • Emesis (PONV) score • Total amounts used **This must be done by using the "Check Patient History" function.** Delivery History ⇨ Bolus History Period Select Period required ⇨OK. Failure to comply will mean inaccurate records of opiate use which could result in a medicines incident being reported Programme/pump check	• To maintain patient safety • To maintain close observation and monitoring of the patient • To observe for any side effects from the PCA • To monitor fluctuations in the patients condition due to the administration of opiates • Accurate records of opiate consumption for each patient

These observations should be recorded on a designated chart for the monitoring of Patient Controlled Analgesia

2	• Patient may sit out of bed if blood pressure and observations are stable • Intravenous access should be available at all time • Full resuscitation equipment should be available	• To encourage early mobilisation • To ensure patient can receive analgesia • To maintain patients safety in an emergency situation

Additional IV PCA charts can be obtained from interserve print room services using the online system

Problems with Intravenous Patient Controlled Analgesia (IV PCA)

University Hospitals of Leicester NHS
NHS Trust

Appendix Five

Some mild problems which may arise can be sorted out by Competent Medical Staff/Ward Nurses (see education and training) in liaison with the Clinical Nurse Specialist in Acute Pain Management. It is important that any problem is not automatically attributed to the method of analgesia. Other causes of problems such as hypotension or confusion should be actively sought and treated.

	Problem	Action	Rationale
1	Mild Hypotension	Increase IV fluids	To maintain haemostasis
2	Pruritus	Administer chlorpheniramine (	To alleviate symptoms of itching
3	Respiratory Depression RR < 8 per min or Excess sedation (score of 3) in an Adult Patient	• Stop the pump seek advice as below • Assess conscious level • Give oxygen (4litres/min and monitor Sa0² • IV Naloxone should be prescribed for each adult patient. This is automatic on electronic prescribing. Doctor to give naloxone 400 micrograms (0.4mg) (**Adult dose**) intravenously. • If unable to protect airway, doctor to consider admission to HDU and Senior Anaesthetic advice should be sought	To maintain safety and continue respiratory function
4	PCA not working	• Check all the pump connections • Other analgesic techniques to be used regularly: oral or rectal	*To ensure the pump is still connected o the patient.* Regular analgesia has an opiate sparing effect.
5	Nausea and Vomiting	• Regular anti-emetics should be prescribed and given prophylactically to all Adult PCA patients with PRN alternatives.	To prevent unwanted nausea and vomiting

Who to call to see a Patient with Intravenous Patient Controlled Analgesia (IV PCA)

Appendix Six

Routinely, Monday to Friday all patients will receive a visit from the Acute Pain Team

All unexpected and severe problems with PCA warrant immediate action and should be referred to:

	LEICESTER GENERAL	LEICESTER ROYAL ADULTS	GLENFIELD
DURING HOURS MON-FRI	Acute Pain Nurse Specialists Ext 14157 Bleep 3388	Acute Pain Nurse Specialists Ext 16640 Bleep 5539 Bleep 3002	Acute Pain Nurse Specialists Ext 13662 Bleep 2671 Bleep 2672
OUT OF HOURS	ANAESTHETIST ON CALL BLEEP 3226 Maternity Patients: ON CALL OBSTETRIC ANAESTHETIST BLEEP 3102	ON CALL ANAESTHETIST (General Duties) BLEEP 4459	ANAESTHETIST ON CALL Phone: 07773667158

All problems and actions taken should be documented on the PCA Observation chart and also in the patients' medical note

Use of simple analgesia with IV PCA enhances pain relief. All patients receiving IV PCA should have simple analgesia prescribed. This should be prescribed on the 'regular' side of the patient's drug chart and should be administered orally as soon as the patient can tolerate oral fluids. Good balanced analgesia will enable the PCA to be more effective and help the patient to mobilise. PCA is only effective when the patient presses the button so oral analgesia will help maintain a continued effect of analgesia. Different areas will prefer different regimes but these are the most common drugs used

Oral Analgesia

Paracetamol 1 gram 4 times a day (reduce dose if <50kg with health complications)

Codeine 30mgs 1-2 tablets 4 times a day

Codeine and Paracetamol combinations

- Cocodamol 8/500: 8 mg codeine, 500mg paracetamol, 2 tablets 4 times a day
- *Cocodamol 30/500: 30mg codeine, 500mg paracetamol, 2 tablets 4 times a day*

As these may cause drowsiness and constipation, there is the option to give the constituents separately.

- *Dihydrocodeine: 30mg, 4 times a day*
- *Tramadol: 50 to 100mg, 4 times a day*
- ***NSAIDS***
- *Ibuprofen 400mgs 3 times a day once eating*

Intravenous Analgesia

Paracetamol: 1 gram 4 times a day, (reduce dose if <50kg or with risk factors of toxicity) UHL paracetamol guidelines B13/20