**Paediatric Pain Service - Royal London Hospital**

**Anaesthetic Trainee Pain Induction**

**Lead consultant for pain**

Dr Shylesh Aravindan

**Clinical nurse specialists (CNS)**

Uli Sigg & Ambia Ali – bleep 1109

CNS cover: Monday – Friday, 09:00-17:00

**Pain rounds**

am – at approximately 09:15 – CNS will bleep 1061

pm – CNS will review patients

Weekends / out of hours pain reviews and cover by 1061:

* Audit / handover forms for pain patients are in the pain folder kept in recovery or during office hours with the CNS
* Handover of pain patients at the end of the shift
* All pain patients to be reviewed at each shift
* All patient reviews to be documented on audit / handover form and CRS
* Chronic pain patients are usually referred to GOSH. The trainees are only expected to deal with acute on chronic pain issues out of hours

**New pain patient e.g. PCA/NCA/epidural/LA nerve catheter/complex pain issue/concerns about possible pain issues…**

Complete audit / handover form and leave in pain folder in recovery or bleep CNS (1109)

For urgent /same shift review bleep 1109

**Paediatric analgesia prescriptions**

Prescribe all analgesia as per **Acute Paediatric Pain Guidelines** (not BNF) **-** See BOX app Acute Pain Formulary or hard copy in pain folder

Paediatric specific issues:

* For obese children prescribe analgesia based on ideal body weight not actual weight. See table in “Acute Paediatric Pain Guidelines”
* CAUTION: Paracetamol PO/IV doses different in children < 10kg:

IV paracetamol in children < 10kg: 10mg/kg TDS, max 30mg/kg/day

IV paracetamol in neonates 32-36/40: 7.5mg/kg TDS, max 25mg/kg/day

* Oramorph (doses are often more generous than for adult patients)
	+ Step-down from PCA / NCA: 0.2 – 0.4mg/kg 3 hourly prn (max. 20mg)
	+ Neonates: 0.1 – 0.2mg/kg 4 hourly prn
	+ Moderate pain: 0.1 – 0.2mg/kg 3 hourly prn
	+ In acute sickle cell disease pain: 0.4mg/kg 3 hourly prn – max. 25mg
	+ For discharge: Lloyds pharmacy oramorph proforma (available on all paediatric wards, in the anaesthetic rooms and pain folder). See BOX app: “oramorph discharge guidelines for daycase surgery”
* For acute sickle cell disease pain follow “paediatric acute sickle cell pain pathway” – See BOX app. or pain folder.
	+ Some complex patients may have individualised pathways (information to be kept in the pain folder)

**PCA / NCA**

Select colour coded PCA / NCA prescription chart depending on required opioid

* Prescription charts are kept in the anaesthetic rooms and in the pain folder (in recovery)
* For information on how to make up syringes and specific pump settings see guidelines on the back of the PCA / NCA prescription charts
* Ensure syringe and pump settings are double checked (document on PCA/NCA prescription)
* Morphine (WHITE chart)
* Neonatal morphine (YELLOW chart)
* Fentanyl (PINK chart)
* Morphine / ketamine (GREEN chart)
* Fentanyl / ketamine (LILAC chart)
* Oxycodone (BLUE chart)
* Oxycodone / ketamine (no specific chart available yet)

PCA / NCA pumps (Alaris / IVAC PCAM syringe driver) are kept in paeds. recovery

* The pump key is being kept by the on-call anaesth. trainee; further keys are in recovery and on the wards
* Choose specific programming depending on opioid used
* Nurses can change the syringes but not alter the pump settings

Designated anti-syphon/reflux administration sets are kept in the anaesthetic rooms and on paeds. wards

Designated IV cannula needed wherever possible (if possible insert 2nd IV cannula when child anaesthetized). If a designated IV cannula is not possible information on drug compatibilities is kept in the pain folder and in PCA/NCA guideline

IV access to be maintained for four hours after the last opioid administration

Consider a loading dose – for information on loading doses see guidelines on the back of the prescription charts

Most paediatric PCA/NCA are started with a background infusion for better pain control, facilitating rest periods / settled nights

Drug prescription chart (no electronic prescribing available)

See guidelines on the back of the PCA / NCA prescription charts for more specific information

* PCA/NCA to be prescribed on the reg. site of drug prescription chart (in addition to the PCA/NCA prescription chart)
* Reg. paracetamol / ibuprofen (unless contra-indicated)
* Prn:
	+ naloxone for reversal of respiratory depression
	+ low dose naloxone dose for urinary retention / pruritus
	+ ondansetron and if at risk of severe PONV: Cyclizine for 2nd line anti-emetic
	+ if at risk of skeletal muscle spasms: diazepam
* Don’t prescribe supplementary opioids whilst on PCA / NCA
* Once PCA / NCA stopped: prn oramorph

**Management of PCA / NCA related urinary retention and pruritus**

See guidelines on the back of the PCA /NCA prescription charts and PEWS observation charts for more information



Low dose naloxone: 0.5mcg/kg also effective for management of opioid related pruritus

Administer a total of 4 doses at 10 minutes intervals as for management of urinary retention.

**Continuous epidural infusions**

See epidural prescription / observation chart for more detailed information.

Prescription / observation chart available in the anaesthetic rooms, in the pain folder and on 7C ward.

Wards accepting epidurals

7C (ortho/trauma/surgical)

7F (gastro/surgical)

6C - PICU

8D - NICU

Epidural pumps:

CME body guard 545 (same as adults but labelled “paeds.” with designated paeds. protocols)

Pumps kept in paeds. recovery

The key is kept with the on-call anaesth. trainee, further keys are kept in recovery and on the wards.

**Access codes: level 1: 1109, level 2: 1061** (same as CNS and anaesth. on-call bleeps!)

Epidural administration sets (yellow): kept in theatres

Bupivacaine 0.1% 250ml infusion bags and urinary catheter/bag (urometer) supplied from ward (usually 7C) with patient.

The majority of the paediatric epidural infusions are for children with neuromuscular conditions undergoing major orthopaedic surgery. These children are commonly at risk of severe skeletal muscle spasms. Plain bupivacaine 0.1% has been found to be effective for management of postoperative pain and spasms. Max. infusion rate 15mls/kg/hr.

If bupivacaine 0.1% with fentanyl 4mcg/ml required obtain infusion bags from adult theatres. Rarely used, but occasionally the preferred option for adolescents requiring major surgical / gastro-surgical procedures. Infusion rate: 0.3mls/kg/hr max. 15mls/hr.

Don’t forget to prescribe naloxone.

Epidural prescription / observation chart:

Complete epidural insertion details, infusion rates and patients normal movement / sensation prior to surgery.

Drug prescription chart:

Epidural infusion on reg. site (in addition to prescription on epidural specific prescription / obs chart)

Reg. paracetamol / ibuprofen (unless contra-indicated)

Prn:

* oramorph (unless epidural with fentanyl ), ondansetron, diazepam (if at risk of skeletal muscle spasms)
* If epidural with fentanyl: naloxone for reversal of respiratory depression and low dose naloxone for urinary retention / pruritus

IV access must be maintained for the duration of the infusion and kept for four hours post infusion.

Routine urinary catheterisation for all children over 1 year old (catheter and hourly measurement bag (urometer) supplied by the ward)

Assessment of sensory / motor block and epidural site on pain ward round

Motor block assessment:

Pre-operative motor assessment required for all children with neuromuscular condition.

Assessment to be documented on epidural / observation chart.

For children with neuromuscular conditions (e.g. cerebral palsy) use alternative algorithm to Bromage score. See document on: “management of epidural leg weakness for patients with reduced mobility prior to epidural insertion”. Stapled to prescription / observation chart or available in pain folder or on BOX app. Nurses on the ward aware.

If motor block assessment not required this must be stated on prescription / observation chart or with anaesthetic post-op instruction. Decision to be made by consultant anaesthetist / orthopaedic surgeon.

Nurses can change epidural infusion bags but not the epidural pump programming.

Epidural boluses

Administration by anaesthetists / pain CNS only

Post-bolus: vital signs every 5 minutes for 20 minutes, the bolus giver to remain on the ward for 20 minutes after delivery of epidural bolus.

Management of epidural disconnection: anaesthetist or pain CNS only

Check that Tegaderm fixation is applied to epidural administration set covering filter and connecting parts to prevent accidental disconnection.

Discontinuing of epidural infusion / removal of epidural catheter:

* Neonatal / caudal catheter: 48 hours
* Epidural catheter: 72 – 96 hours
* Weaning not necessary
* Anticoagulation guidelines available in pain folder (in recovery or with pain CNS) if thrombopropylaxis given
* If concerned about sepsis present check INR
* Ward nurses can remove epidural catheter

**Local anaesthetic blocks / wound catheter / infusions**

If a patient with a LA block requires reviewing by the pain team please complete an audit / handover sheet

Local anaesthetic wound catheter

An epidural catheter is inserted into the posterior margin of the incision. A dressing is applied to hold the catheter in position. An initial dose of levobupivacaine is given and further boluses can be administered prn by an anaesthetist / pain CNS every 6 hours

* See LA wound catheter information sheet for further details and doses (kept in anaesthetic room with pain prescriptions / pain folder)
* LA wound catheter information sheet to be sent back to the ward with the patient
* Complete pain audit / handover sheet to ensure pain team aware

The catheter can remain in-situ for 48 hours.

Patent IV access is required for the duration of the wound catheter

Local anaesthetic infusions

If you are considering a LA infusion please discuss this with the anaesthetic consultant / pain team. A guideline is in development and will be shared as soon as approved.