CHILDREN'S PAIN SERVICE

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(A) WORKFLOW

1. **The Paediatric Pain Team** consists of a Pain Consultant (PC), an Anaesthesia Resident/ Fellow & Pain Nurse. The PC may be assigned to OT duties but should oversee daily rounds, be closely consulted & reported to. Rounds should be done by a minimum of 2 persons. After 5 pm, the On- Call team takes over but the PC remains available for consult.

2. **Requisite Pain & Hand-Over Rounds**:
    1. **A Morning Hand-over Report** by previous night's On Call Team to the rostered Pain Team is compulsory & should highlight problems eg poorly controlled pain issues, updates on therapy, progress, and any projected plans for escalation & weaning.
    2. **The Morning Pain Round** starts at 0830h. Cases which require an afternoon review should be identified during the round.
    3. *All patients on continuous epidural or peripheral nerve block infusions should be reviewed twice a day*.
    4. An **Afternoon Round** with the Pain Nurse should be done at 3pm to review any problems & ensure all the logistics e.g. cartridgeeg cartridge top-ups have been addressed.
    5. **An Afternoon Hand-over Communication** with prospective On-Call Team about the CPS patients & outstanding issues
    6. **An Evening Pain Review** (preferably before 10pm) may be required in selected cases. These should be highlighted at the afternoon hand-over.

3. PCA pump keys

The On-Call team is responsible & accountable for PCA keys as well as Call Room card key. The hand-over of these keys to the subsequent/next On-Call Team each day is mandatory. The day team will utilise either the Pain Nurse's or the Ward's PCA keys. ***A fine as well as police report are mandatory if the keys are lost.***

4. Admission to the CPS:

7. Requires prior discussion/approval at Anaesthetic A/C or C level
8. Occurs post-operatively or via an inpatient referral
9. Pain education/consent issues should be settled before admission
10. Must be cared for in an accredited Ward with proper monitoring

Children's Pain Service

Who should be enrolled under Children's Pain Service	Discharged to which unit/ward?
PCA (Patient controlled Analgesia)	All paediatric units/wards
NCA (Nurse Controlled Analgesia)	All paediatric units/wards except SCN
Epidural/caudal with catheter	CICU, NICU, and ward 65 (HD)
Post peripheral nerve block (upper and lower limbs) with catheter	CICU, NICU, and ward 65 (HD)
OnQ Pump Local Anaesthetic wound infusion with catheter	All paediatric units/wards
Single shot: Post peripheral nerve block (upper and lower limbs)	All paediatric units/wards
Morphine infusion: 1. Post operative patients: **under 2 years old or with Opioid-Induced Respiratory Depression** 2. **EXCEPT** those going to CICU and NICU	All paediatric units/wards
Clonidine infusion	CICU, NICU, ward 65 and ward 76
Clonidine IV Bolus	All paediatric units/wards
Ketamine Ultra Low dose infusion: BW (mg) in 50 ml, max 50 mg/50 ml	All paediatric units/wards

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5. **PCA Pumps** are obtained through AU Nurses in MOT. They will record the pump unit number & track its movement & only release the pump after the requisite prescription on citrix has been co-signed.

6. **Monitoring**

   All PCAs, Epidurals and IV Morphine infusions require continuous pulse oximetry (SpO2), regular assessment of Pain & Sedation Scores, vital signs (especially Respiratory Rate). SpO2 may be reduced to 3 - 4 hourly monitoring (only after 24h) at the discretion of the PC, provided the patient is not overly sedated & has no background basal opioid infusion.

7. **Documentation**

   Orders should be documented & checked. Pain & sedation scores, Side-effects, other observed cues & response to therapy noted daily. Patient's current location should also be updated on the CPS form.

8. **Trouble-shooting & Other Duties**

   11. Appropriate dose adjustments (maintain, escalate or wean).
   12. Add analgesic adjuncts if needed
   13. Manage side-effects (nausea/vomiting/pruritus/constipation) with pre-emptive PRN prescriptions in CLMM (refer to suggested dosing on the last page of purple CPS form).
   14. Dilute & top up all Epidural infusions/CADD cassettes.
       - Epidural (dressing integrity/change, catheter adjustment/removal upon which please document that catheter tip is intact).
       - Communicate the analgesic plan & any changes to the Nursing Staff, Physician-in-charge, Parent & Patient.

- Daily Record of Patient's Progress (in CPS Form, case sheets/ ICIP notes & in CLMM).
- Recognise & treat withdrawal; monitor severity with WAT-1 scores every nursing shift.
- Any complications should be relayed to the staff responsible.

9. Flagging "High Risk" patients for extra-vigilant follow-up

15. Identify "High Risk" groups eg Neonates/Infants up to 1 year, ASA >2, emergent surgery, Airway/Respiratory/CVS/CNS /NM disorders
16. Implement closer monitoring (e.g. ICU /HD care) & additional review
17. Consider drug dose reduction, additional labs eg LFT, ABG

10. Inpatient acute pain service referrals:

18. During office hours, the rostered pain team will manage
19. After office hours, the On Call Team will manage with a helpline from the rostered Pain Consultant as required.
20. Referrals which have been accepted should be promptly added to the Children's Pain Service list in Citrix.

Discharge from the Service

This should be done by the Pain Team who should then notify the surgeon or physician in charge. A discharge note on adequacy of analgesia/other feedback should be done at the time of coming off the service.

A post-discharge review is done the following day to ensure seamless analgesia. Continued follow up is required until resolution of complications.

11. Charging

Patients should be charged daily via CLMM for Children's Pain Service starting from POD1

Inpatient referrals should be charged on the day of referral via CLMM as per the code for simple or complex inpatient referral then on subsequent days for Children's Pain Service

12. Miscellaneous issues & avoiding disruption of pain therapy

21. *PCA Fentanyl*: Only CICU, HD 65, Ward 76 & 75 carry Fentanyl as ward stock. For all other wards, please arrange for a prescription to be written for the projected duration of therapy (especially if therapy stretches over the weekend) so that the ward can obtain adequate stock from the Main Pharmacy.
22. *Oxycodone* should be prescribed 4 hours post block to prevent interruption of analgesia when block wears off. However, it is currently not available in MOT PACU, thus would need to be obtained from the ward in a timely manner if the patient will not be back in the ward before the timing that the medication needs to be served. Alternatively, oral or IV morphine can be prescribed to the patient.
23. Procedures (e.g. MRI, chemotherapy, DXT) may interrupt opioid infusions & provisions must be made for alternative analgesia.
24. Be aware that administration of IV medications may interrupt opioid infusions if there is no IV access.

(B) PROTOCOLS

Adherence to workflow, monitoring & dosing/ prescription guidelines are important for safety. Additional information and details on protocols & policies can be found on the KKH intranet. All trainees should be fluent in setting up safe & effective prescriptions for PCA, Epidural as well as IV Morphine infusions for children of all weights.

(C) EQUIPMENT

PCA Pumps

- All opiate & ketamine containing infusions must have an anti-reflux valve device in place
- Practical orientation session on equipment is compulsory

(D) SERVICE QUALITY STANDARDS

PCAs & epidural infusions should be started in the Recovery Room. Patients should be able to use the PCAs effectively before leaving Recovery (PACU). Epidural patients must be comfortable & free of side-effects. If excessive sedation prevents this then an expedited review in the ward is needed to rectify this.

Severe pain & analgesic gaps need to be reported & addressed with input by PC. Loading or additional boluses are recommended instead of increasing infusion rates to expedite pain control. Strict multimodal analgesia with paracetamol ± NSAIDs is recommended.

It is the responsibility of all anaesthetists (admitting patient to the APS, discharging from Recovery Area & on call) to ensure that the patient is comfortable upon transfer to the Ward / HD / ICU.

Good communication (parent / nurse / anaesthetist / Pain Service) is essential to ensure safe & effective therapy. All changes to the

initial regimen & additional boluses must be noted in the CLMM & CPS forms and in the patient's progress notes. They should also be noted by the patient's nurse in charge.

High risk patients may need parameter guidelines as to when to alert CPS.

Anti-emetics strictly/PRN need to be prescribed when opiates have been prescribed.