Paediatric Analgesia Guideline

The following information is intended for your guidance and use with **in-patients only**. Please consult a senior colleague, a member of the Department of Anaesthesia or Paediatric Pain Service if you are unsure about your prescription. With all drugs consider modifying the dose if there is organ dysfunction. All analgesics (except slow-release preparations) may be given on a PRN basis. Consider prescribing pain relief on a regular basis especially when initiating therapy.

The use of adjunct medicines such as gabapentin or pregabalin, clonidine and tricyclic antidepressants should be discussed with the Pain Service if the prescriber is unfamiliar with their use.

Drug	Suggested Dosing Regimens	Preparations	Considerations
Paracetamol ***Oral***	**Less than 32 weeks –See Newborn Services Guideline** **Preterm 32 weeks – 1 month *CGA** 15 mg/kg 8 hourly (Max 45 mg/kg/24 hrs) **Infants 1 to 6 months** 15 mg/kg 6 hourly (Max 60 mg/kg/24 hrs) **Infants and children over 6 months** 15-20 mg/kg 6 hourly 20 mg/kg/dose (max 1 g/dose) **inpatient use only.** Max: 90 mg/kg/24hrs for acute administration (Do not exceed 4 grams/24 hours) **15 mg/kg/QID – discharge dose**	Oral suspension: 120 mg/5mL, 250 mg/5mL Tablets: 500 mg	-Jaundice -Hepatic impairment -Renal impairment Use ideal weight to dose children with obesity. Infants over 1 month may have a 30 mg/kg loading dose (max 1.5g) pre theatre if prescribed by an anaesthetist and no other paracetamol has been given 12 hrs prior.
Paracetamol ***Rectal***	**Dosing as above** Chart suppositories as whole doses (do not cut suppositories)	Suppositories: 125 mg, 250 mg, 500 mg	
Paracetamol ***Intravenous***	**Less than 32 weeks – See Newborn Services Guideline** **Neonates 32 weeks – 1 month *CGA** 10 mg/kg 8 hourly (Max 30 mg/kg/24 hrs) **Infants and children over 1 month** 15 mg/kg 6 hourly Max: 60 mg /kg/24 hrs – do not exceed 4 grams/24hrs	500 mg/50 mL 1000 mg/100 mL	**Prescribing must be IV ONLY (not IV/PO)** Consider monitoring LFTs in children on regular IV paracetamol for >72hrs and/or have compromised nutritional status Doses must not exceed the dosing regimens outlined
NSAIDs and COX-2 Inhibitors			
Ibuprofen ***Oral only***	**Over 3 months of age (>5 kg) *GCA** 10 mg/kg 8 hourly or 7.5mg/kg 6 hourly Max: 30 mg/kg/24hrs (do not exceed 1.6 g/24 hrs)	Oral suspension: 100 mg/5 mL Tablets: 200 mg, 400 mg Slow Release: 800 mg SR	**Do not use in age < 3 months unless at discretion of pain team.** -Hypovolemia -Severe and unstable asthma -Coagulation defects -Severe liver disease -Renal dysfunction Note: PR NSAID option available – diclofenac (not readily used)
Parecoxib ***Intravenous***	**Pain Team Prescription only** **>2 years of age** 0.75 mg/kg (max 40 mg) Other NSAIDS/COX-2 drugs can be given 12hrs after an IV dose of parecoxib**.**	Injection: 40 mg	
Celecoxib ***Oral*** only	**Over 2 years of age (>25 kg)** 3-4 mg/kg 12 hourly-24 hourly Max: 200mg 12 hourly	Capsules 100mg	**Be aware of aspirin/NSAID-related bronchospasm.** COX-2 (parecoxib, celecoxib) have more favourable side-effect profiles with reduced GI and bleeding risks, but can still cause adverse renal effects in vulnerable patients

Opioids

For opioid naive patients use the lower dose of a range initially and titrate to effect. Side effects from opioids can be dose-related. Trial a lower dose in the first instance of mild side effects before changing opioids. **Use ideal weight to dose children with obesity. Strong opioids should not be prescribed regularly**.

Tramadol[a] **Intravenous/Oral**	**>2 years of age *(pain team may chart for <2 years of age)*** Immediate release: 1-2 mg/kg 4 - 6 hourly Slow Release (SR): 4 mg/kg 12 hourly (if weight >25kg) Max: 8 mg/kg/24 hours (max 400 mg/24 hours) Maximum limit includes both immediate and SR formulation combined.	Capsules: 50 mg Oral liquid: 10 mg/mL Slow Release: 100 mg (Do not chew or crush) IV: 50 mg/mL (administer over 10-20mins)	Use in age < 2 year old on discussion with pain team **Contraindicated** in seizure disorders. Use with caution with other serotonergic medications. Special caution post tonsillectomy: Recommend starting dose of 0.5 mg/kg 6-8 hourly. **Tramadol prescription is made under section 25 of the NZ Medicines Act 1981 – verbal consent must be sought for children under 12 years of age**
Morphine Sulphate ***Oral***	**Infants – 3 months** 0.1 mg/kg 4 hourly PRN **Over 3 months** 0.15 - 0.3 mg/kg 1-2 hourly PRN Max: 10-20 mg every 1-2 hourly PRN	Immediate release only – elixir or tablets (Sevredol) Morphine Elixir: 1 mg/mL Tablets:10 mg, 20 mg	**Seek guidance from senior medical colleague or Pain Service if prescribing for infants under 3 months of age.** Young infants are highly sensitive to the respiratory depressive effects of opioids. Monitoring respiratory rate, level of sedation and oxygenation is required. M-Eslon is not used in children – only short acting opioids. **Sedation is an important early sign of opioid excess. As such it is a more important sign than waiting for a decrease in respiratory rate with potential opioid toxicity.** **Use with caution in:** - Respiratory disease - CNS depression - Hypovolemic shock - Seizures - Hepatic or renal dysfunction
Morphine Sulphate ***Intravenous***	**All ages - Use Paediatric IV Morphine Protocol Flowchart** ***NCA/PCA** – use if inadequate pain control with IV morphine protocol - contact Paediatric Pain Service to prescribe*	Injection: 5 mg/mL, 10 mg/mL, 30 mg/ml	
Oxycodone ***Oral***	**1 month - 12 months** 0.05 – 0.1 mg/kg 4 hourly PRN **Over 12 months** 0.1mg – 0.2/kg 4 hourly PRN Max: 5-10 mg 4 hourly PRN	Elixir: 5 mg/5mL Short Acting Capsules: 5 mg, 10 mg, 20 mg **Oxynorm®** - Immediate release oxycodone	
Oxycodone ***Intravenous***	**IV Oxycodone prescribing is restricted to Paediatric Pain Service only**	Injection: 10 mg/mL, 50 mg/mL	

Naloxone

For excessive sedation/significant respiratory depression from opioid use

1-2 micrograms/kg IV (maximum single dose – 400 micrograms)
Call code pink. Repeat naloxone every 5-10 mins to desired effect.

For **respiratory arrest**, 10 micrograms/kg IV - call code blue

*CGA – corrected gestational age

Schug S, Palmer G et al (2020) Acute Pain Management Scientific Evidence 5th Ed, Australian and New Zealand College of Anaesthetists