GUIDELINES FOR THE CHILDREN'S PAIN SERVICE (CPS)

CPS GOALS:

- To provide safe & effective analgesia for children of all ages,
- Disease & risk profiles irrespective of causality (eg Surgery/Procedures, Pathology, Burns, Trauma, Therapy etc).
- To optimise analgesic prescriptions & implement specialized pain control methods to suit the individual's needs & pain profile.
- To provide 24/7 consultation services for Paediatric Pain Control, to co-ordinate care & facilitate admission to our CPS when indicated.
- To ensure that our patients continue to receive adequate pain control right up to the day after discharge from the APS & at times, from hospital.
- To continually audit, review & improve our analgesic practice.
- To educate staff & parents on how to optimize pain control.
- To promote good pain management culture & holistic care.
- To encourage & champion every patient's right to optimum pain relief.

TRAINING OBJECTIVES:

Practical knowledge about Paediatric Pain, its Assessment & Control

- How pain in children differs from adults (strong emotional & psycho-social component); Barriers to effective pain management; The approach (enlist the main care-giver).
- Pain in early childhood & sequelae of poorly managed pain
- Difficulties in accurate pain assessment & the need for different pain measurement tools (NIPS, PAT, FLACC, Wong-Baker & Numerical Rating Scales) ~ application & limitations.
- Use other salient observations to corroborate accuracy of Pain Scores (viz mood, behaviour, limit of function/ activity)
- Concept of Pain as the 5th Vital Sign. Note that regular screening and assessment is important & should involve staff, parents & child (e.g. keeping a Pain Diary).
- To be able to prescribe effective analgesia appropriate for the individual's pain intensity, pattern and clinical condition.

- To anticipate & manage side-effects & complications incurred
- To identify neuropathic/complex pain requiring specialist input
- To appreciate the role of non-pharmacological methods (Music, Child Life)

ASSESSING PAIN

Pain scores must be assessed & charted daily for 2 situations:

- At Rest (i.e. Baseline Pain), &
- On Movement/Deep breathing (i.e. Incident or Dynamic Pain)

Pain Scales below are those used in our institution. They may be observational behavioural pain measures or self-reported scores.

1. Neonatal / Infant Pain Scale (NIPS) for babies less than 2 mo

Pain Assessment	
Facial Expression	
0 - Relaxed Muscles	Restful face, neutral expression
1 - Grimace	Tight facial muscles; furrowed brow, chin, jaw (negative facial expression – nose, mouth brow)
Cry	
0 - No cry	Quiet, not crying
1 - Whimper	Mild moaning, intermittent
2 - Vigorous cry	Loud scream; rising, shrill, continuous (Note: Silent cry may be scored if baby is intubated as evidenced by obvious mouth and facial movement
Breathing Pattern	
0 - Relaxed	Usual pattern for this infant
1- Change in breathing	Indrawing, irregular, faster than usual; gagging, breath holding
Arms	
0 - Relaxed/Restrained	No Muscular rigidity; occasional random movements of arms
1 - Flexed/Extended	Tense, straight arms; rigid and/or rapid extension, flexion
Legs	
0 - Relaxed/Restrained	No Muscular rigidity; occasional random movements of legs
1 - Flexed/Extended	Tense, straight legs; rigid and/or rapid extension, flexion
State of Arousal	
0 - Sleeping/Awake	Quiet, peaceful, sleeping or alert, random leg movements
1 - Fussy	Alert, restless and thrashing

2. Neonatal Pain Assessment Tool (NPAT) for neonates in NICU & SCN

	0	1	2	
Behavioural states	**Relaxed** Settled Asleep Quiet alert Drowsy		**Agitated** Easily woken Startles on waking Restless	Squirming No deep sleep pattern Gaze aversion/ shut down
Posture/tone	**Relaxed**	**Extended** Finger splay Stiff trunk Limbs drawn out Shoulders raised off mattress	**Flexed/extended or tense** Clenched fists Rigid trunk Head and shoulders resist positioning Term babies- limbs down to midline	
Cry	None or cries briefly but consoles easily	Crying and difficult to console	Whimpering, whining or loud cry which does not cease when consoled Silent cry for ventilated infants	
Facial expression	Relaxed	Frown with slight naso-labial furrow	Grimace with deep naso-labial furrow Brow bulge Eyes clenched shut	
Colour (If no cardio-vascular compromise)	Centrally pink Well perfused		Pale, dusky Flushed Mottled	
Respirations	Normal for baby 40-60bpm	Tachypnoea at rest (>60) Ventilated via ETT	Apnoea at rest or with handling	
Heart rate	Normal for baby	Tachycardia at rest	Bradycardias with/ without handling Fixed heart rate	
Oxygen saturations	Normal for baby	Occasional desaturations	Frequent desats	
Blood Pressure	Normal		Hypertensive	
Outsider perception	No pain observed		Infant appears to be in pain	

3. FLACC Scale for ≥ 2mo. Also validated in older children who are not able to cognitively communicate pain scores

Scored on a series of observations of known pain behaviours.

Maximum score = 10, Minimum score = 0

Needs active pain management/additional analgesics if scored > 3

FLACC Behavioral Pain Assessment Scale

CATEGORIES	SCORING		
	0	1	2
Face	No particular expression or smile	Occasional grimace or frown; withdrawn, disinterested	Frequent to constant frown, clenched jaw, quivering chin
Legs	Normal position or relaxed	Uneasy, restless, tense	Kicking or legs drawn up
Activity	Lying quietly, normal position, moves easily	Squirming, shifting back and forth, tense	Arched, rigid, or jerking
Cry	No cry (awake or asleep)	Moans or whimpers, occasional complaint	Crying steadily, screams or sobs; frequent complaints
Consolability	Content, relaxed	Reassured by occasional touching, hugging, or being talked to; distractable	Difficult to console or comfort

How to Use the FLACC

In patients who are awake: observe for 1 to 5 minutes or longer. Observe legs and body uncovered. Reposition patient or observe activity. Assess body for tenseness and tone. Initiate consoling interventions if needed.

In patients who are asleep: observe for 5 minutes or longer. Observe body and legs uncovered. If possible, reposition the patient. Touch the body and assess for tenseness and tone.

4. WONG-BAKER FACES Scale

Self-report score for age 3 - 7yrs.

Child needs to understand concepts of “more than” and “less than”

Maximum score = 10, Minimum score = 0

Needs active pain management/additional analgesics if score is > 3

5. NUMERIC RATING SCALE (NRS)

Self-report score for age > 6yro based on numeric rating of Pain Intensity

Maximum score = 10, Minimum score = 0

Needs active pain management/additional analgesics if score is > 3

THERAPEUTIC PRINCIPLES OF PAIN CONTROL:

a. Basic Analgesic Pharmacology (refer to section on drug doses)
- Drug Classes, Mode of Action, Pharmacokinetics
- Indications & Contra-indications
- Side-effects, Complications, Interactions & their management
- Dosing, Routes of administration, Onset/Latency & Duration

b. Good Prescription Practices :
- Individualize doses **on a per kg body weight basis**
- Be aware of the **maximum** allowable **single** dose limit
- Stay within **recommended 24h daily dose limit**
- **Limit duration** of prescription to **3 - 7 days** & reassess
- **Daily CLMM review** & with **adjustments** for age, disease, risk profile & response to therapy

c. Effective **analgesia** (through standardised logical prescription):
- **By the Ladder** (WHO Analgesic Ladder)
- **By the Clock** Strictly for baseline analgesia
- **By Patient's Request** (PRN rescue for unexpected pain)
- **By Risk Status** (constraints of age, disease, post-op status requiring dose reduction or route restrictions)

Select drug based on potency to match pain intensity. Include an opiate if moderate to severe pain exists (escalate as per the WHO Ladder, using Multi-modal Therapy & Analgesics round the clock (strictly served) to maintain within the "Analgesic Corridor"

Appreciate that Pain is dynamic, not static. Proactive treatment dictates provision of PRN analgesics for breakthrough/incident pain.

Appreciate that pain is strongly influenced by anxiety

d. Avoid or Rectify Analgesic Gaps
- Address Incident /Breakthrough/End of Dose Pain, particularly in cases who have received peripheral or central neuraxial blocks
- Assess cause for increasing pain/analgesic requirements
  - disease progression
  - iatrogenic eg DXT & mucositis, physiotherapy

- opioid dependence; tolerance; opioid induced hyperalgesia
- Treat according to cause; use **lowest effective dose**

e. Avoid or Manage Withdrawal (Abstinence Syndrome)

- Gradual Weaning till Discontinuation (if opioid therapy > 5 days)
- Opiate Conversions (eg. from IV to PO based on 24h opioid use)
- Opioid Rotations/ Substitutions +/- weaning; for sufficient duration
- Use Analgesic Substitutes / Analgesic adjuncts eg. Clonidine 1mcg/kg
- Monitor for withdrawal e.g. WAT-1 scores

f. Establish an Analgesic Plan which also encompasses anxiety management

- Pharmacological and Non-pharmacological management including referral to Allied Health Services e.g. Music Therapy or Child Life Specialist

g. Analgesic Modalities managed in the wards

- **Simple Analgesia** : Paracetamol and NSAIDS (enteral or parenteral)
- **Specialized Analgesia** :
  - Oral opioids
  - IV Morphine infusions
  - Patient Controlled Analgesia (PCA) / Nurse Controlled Analgesia (NCA)
  - Continuous Epidural / Caudal Infusions or Regional /Plexus Blocks
  - Continuous Wound Infusion