1. **PURPOSE**

1.1 To optimize the prevention, assessment and management of pain in children.

1.2 To make pain management a collaborative effort consisting of all members of the healthcare team, the patient and the patient’s family.

1.3 To educate health professionals, patients and families as a crucial aspect of pain assessment, prevention and management.

1.4 To provide the best pain management include pharmacological, psychological and physical methods.

1.5 To provide pain management evidence based guidelines and maintain individuality for each patient.

1.6 To prevent pain when possible. Pain is better prevented than treated. Requirements for analgesics are lower if children are pretreated before painful experiences.

1.7 To identify types of pain that children may experience:

   1.7.1 Procedural pain such as injections, blood draws, heel pokes, IV starts, splinting, dressing changes, catheterization, sutures, NG insertion.

   1.7.2 Pain related to acute/chronic disease such as cancer pain, cerebral palsy, meningitis.

   1.7.3 Pre and post-operative pain.

   1.7.4 Recurrent and chronic pain such as abdominal, headache and musculoskeletal.

   1.7.5 Palliative Care such as “end of life” and chronic disease.
2. **POLICY**

2.1 **Pain Assessment**

2.1.1 Regular pain assessment is a standard of care and will be incorporated into all healthcare interactions and interventions using an evidence informed, developmentally - appropriate process and documented in the patient record.

2.1.2 Child’s pain can be influenced by cultural beliefs, past experiences and caregiver’s coping strategies/responses to pain.

2.1.3 Every patient will have a pain assessment:
- at time of health care interaction and/or time of admission
- with vital signs
- when the patient is at risk for pain and/or receiving pain management interventions

2.1.4 Pain will be reassessed within one hour of a pain management intervention and reassessment will continue q4h or more often until the pain relief goal is achieved.

2.1.5 Unrelieved pain should be brought to the attention of the interdisciplinary team.

2.2 **Pain Classification**

2.2.1 Acute pain is of sudden onset, is felt immediately following injury, is severe in intensity, but is usually short - lasting. It arises as a result of tissue injury stimulating nociceptors and generally disappears when the injury heals.

2.2.2 Chronic pain is continuous or recurrent pain that persists beyond the normal time of healing. Chronic pain may begin as acute pain and persists for long periods or may recur due to a persistence of noxious stimuli or repeated exacerbation of an injury. Chronic pain may also arise and persist in the absence of medical illness. Chronic pain can negatively affect all aspects of daily life.

3. **PROCEDURE**

3.1 **Methods of Pain Assessment**

3.1.1 Pain assessment must be multidimensional using self-report when possible, family perceptions and health care provider observations of behavioral and physiologic signs of pain depending on the age/cognitive state of the child and/or communication capabilities (see Appendix A).

3.1.2 Pain Rating Scale Tool

3.1.2.1 Use developmentally appropriate scoring tool (see Appendix B and C)

3.1.2.2 Consistent use of a pain tool promotes better continuity of care and allows for more accurate tracking of pain over time.

3.1.2.3 Same pain scale should be used consistently by all healthcare providers caring for that child. Type of pain rating scale used must be documented.

3.1.3 Develop pain management plan with interdisciplinary health care team, patient and family incorporating:
- Pain assessment findings and identified pain goals
- Etiology of pain
Policies and Procedures: Pain Management – Pediatric Acute Care

• Maximum pain treatment for first procedure to reduce anxiety and pain

Time

Treatment strategies – 3 P’s approach (pharmacological, psychological and physical)

Pharmacological
Psychological
Physical

3.2 Pain Management – Pharmacological Strategies

3.2.1 Analgesics should be given based on four principles:
- by the ladder (World Health Organization Analgesia Ladder)
- by the clock
- by appropriate route
- by the child

3.2.1.2 By the ladder:
- Used as a guide for using analgesic treatments in two steps according to the child’s level of pain severity
- Analgesics are “stepped” according to pain severity: mild, moderate to severe pain. Analgesic agents should match the severity of the pain and increase/decrease progressively.
- Use of more than one class of analgesic (e.g. acetaminophen + NSAID) promotes better pain relief, may reduce opioid requirements and helps to minimize side-effects
- **Mild Pain Step 1:** Simple Analgesics (non-opioid)
  - Topical anesthetics
  - Non-opioids/NSAIDS (oral)
  - Tricyclic antidepressants, anticonvulsants (gabapentin) for neuropathic pain
- **Moderate to Severe Pain:** Step 2 Strong Opioid:
  - Opioids (morphine, oxycodone)

**WHO Analgesia Ladder**

3.2.1.3 By the Clock (scheduled)
- Give analgesic regularly for pain that is expected to be constant (e.g. post-op).
- Analgesics should be ordered and given as scheduled medications (“around the clock”). PRN dosing should be used for breakthrough pain only (e.g. pre-ambulation, pre-procedures).
3.2.1.4 By the appropriate route: use the least invasive route
- Oral route when possible
- IM is not acceptable

3.2.1.5 By the child: ongoing assessment, adjustment and evaluation allow for individualization of the pain management plan.

3.2.2 Prescribing Guidelines

3.2.2.1 Pediatric Drug Dosage Guidelines (see Appendix D) – a guide for prescribing commonly used analgesic medications according to safe dose range, route and interval for children one month of age and children up to 50 kg in body weight. Children weighing greater than 50 kg should receive “adult doses”

3.2.2.2 Commonly used analgesics - Nurses are expected to have a good understanding of analgesics commonly used in pediatrics. The nurse is required to know which medications are most appropriate and the frequency with which they should be administered:

- **Acetaminophen**
  - Most commonly used medication for treatment of mild pain
  - Common side-effects are minimal and rare in the normal prescribed dose
  - These drugs have a “ceiling effect” which means that escalating the dose above the recommended dosage does not provide additional analgesia

- **NSAIDS** (non-steroidal anti-inflammatories)
  - For treatment of mild to moderate pain. They act on the peripheral nervous system to provide pain
  - Can be used as co-analgesics
  - Common side effects include GI irritation/upset and antiplatelet effects contributing to some bleeding tendencies
  - These drugs have a “ceiling effect” which means that escalating the dose above the recommended dosage does not provide additional analgesia

- **Opioids**
  - For treatment of moderate to severe pain. They act on the central nervous system to provide pain relief
  - Treatment of opioid side effects such as nausea, vomiting and pruritus is imperative so that adequate pain management is not compromised
  - Constipation is another common side-effect. Patients receiving opioids for 2-3 days or greater should be closely monitored for constipation and will require stool softeners

- **Local Anesthetics**
  - Topical anesthetics should be used for all skin-breaking procedures including, but not limited to, venipuncture, IV starts, lumbar puncture, skin biopsies and bone marrow
  - Topical analgesics can be used for chronic pain

- **Adjuvants** – medication which has a primary indication other than pain, but is analgesic in some painful conditions
  - Anticonvulsants (gabapentin) tricyclic antidepressants (amitriptyline), clonidine are important in the treatment of neuropathic pain
  - Benzodiazepines may be helpful for the treatment of painful muscle spasms
  - Anticholinergics may be used for bladder and smooth muscle spasms (buscopan, oxybutynin)
- Anxiolytics to relieve anxiety (lorazepam, diazepam)
- Oral Sucrose 24% (infants up to 12 months of age) for minor procedural pain and invasive procedures (Sucrose solution for infant/pediatric Procedural Pain Management Policy #1102)
- Topical analgesics can be used for chronic pain

3.2.3 Pain Management Technologies
- PCA (Policy #1053)
- Epidural (Policy # 1007)
- Peripheral Nerve Block (Policy #1072)
- Procedural Sedation/Analgesia Guidelines – Pediatric (Policy #1121)

3.3 Pain Management – Physical Strategies

3.3.1 Physical comfort measures
3.3.1.1 Use of physical strategies in conjunction with pharmacological and psychological strategies can promote lower levels of anxiety, distress and pain (see algorithm for examples)

3.3.2 Complementary Alternative Therapies in consultation with the medical team:
- Acupuncture
- Reiki

3.4 Pain Management – Psychological Strategies

3.4.1 Use developmentally appropriate psychological comfort measures
3.4.1.1 Use of psychological strategies in conjunction with pharmacological and physical strategies can promote lower levels of anxiety, distress and pain (see algorithm for examples)

3.5 Implementation of Pain Management

3.5.1 Potential health benefits for patients:
- Improved assessment of pain on admission and throughout hospitalization using standardized measures
- Improved pain management of acute, procedural and chronic pain
- Patients and families will be partners in their pain management plan
- Improved communication with families with families about pain assessment and management
- Earlier discharge from hospital and good pain management at home
- Reduced risk of developing chronic pain
Algorithm - Pain Assessment and Management of the Child

Pain Assessment: **WHEN?**
- upon admission
- with vital signs
- before/after pm medications
- before/during/after invasive procedures

| Algorithm based on the Hospital for Sick Children’s Pain Assessment Policy and the Pain Management Clinical Practice Guideline | Algorithm based on the Hospital for Sick Children’s Pain Assessment Policy and the Pain Management Clinical Practice Guideline |

**PIPP**
less than 28 wks & greater than 36 wks

**FLACC**
2 mth - 7 yrs

**Verbal Descriptor Scale**
3 – 7 yrs

**FACES**
4 – 12 yrs

**Numerical Rating Scale**
6 years & older

---

**Pain Management: INTERVENTIONS**

**Pharmacological**
- Apply topical anesthetic for IVs/ phlebotomy
- Give analgesics regularly
- Use least invasive route (orally if possible)
- Mild pain: Acetaminophen ± NSAID
- Moderate & Severe pain: Acetaminophen ± NSAID + opioid

**Ensure no contraindications exist**

**Physical**
- Heat and/or cold (NOT for neonates)
- Massage
- Pressure
- Activity out of bed
- Swaddling (Neonate)
- Sucrose (<12 mos)

**Psychological**
- Explanation (invasive procedure)
- Distraction
- Relaxation
- Consider:
  - Child Life Specialist
  - Psychology/ psychiatry consult for coping strategies

---

**Consult other member of interdisciplinary team:**
SPEC / Anesthesia, Pediatric Palliative Care

---

**Is pain present?**

Yes

No

---

**Is pain relieved?**

Yes

No

---

No relief after trying other alternatives
4. REFERENCES


Calgary Regional Health Authority. Standards for Pain Management.


http://pediatric-pain.ca


RNAO Nursing Best Practice Guideline Program Assessment and Management of Pain.


Stinson, Jennifer, RN, MSc, CPNP. Pediatrics 2006. Understanding Pediatric Pain: the Building Blocks.


## Developmental Differences of Children According to Age

<table>
<thead>
<tr>
<th>Developmental Group</th>
<th>Expression of Pain</th>
<th>Working with Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infants</td>
<td>• Exhibit body rigidity or thrashing, may include arching</td>
<td>• Allow a pacifier</td>
</tr>
<tr>
<td></td>
<td>• Exhibit facial expression of pain (brows lowered and drawn together, eyes tightly closed, mouth open and squarish)</td>
<td>• Use a quiet soothing voice</td>
</tr>
<tr>
<td></td>
<td>• Cry intensely, loudly</td>
<td>• Touch, rock, cuddle</td>
</tr>
<tr>
<td></td>
<td>• Be inconsolable</td>
<td>• Keep infant warm</td>
</tr>
<tr>
<td></td>
<td>• Draw knees to chest</td>
<td>• Positions of comfort during procedures</td>
</tr>
<tr>
<td></td>
<td>• Exhibit hypersensitivity or irritability</td>
<td>• Remember that infants experience pain</td>
</tr>
<tr>
<td></td>
<td>• Have poor oral intake</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Be unable to sleep</td>
<td></td>
</tr>
<tr>
<td>Toddlers</td>
<td>• Be verbally aggressive, cry intensely</td>
<td>• Positions of comfort during procedures</td>
</tr>
<tr>
<td></td>
<td>• Exhibit regressive behavior or withdraw</td>
<td>• Keep frightening objects out of line of vision</td>
</tr>
<tr>
<td></td>
<td>• Exhibit physical resistance by pushing painful stimulus away after it is applied</td>
<td>• Provide concrete feedback—“good job”</td>
</tr>
<tr>
<td></td>
<td>• Guard painful area of body</td>
<td>• Allow child to have their doll, blanket, toy</td>
</tr>
<tr>
<td></td>
<td>• Be unable to sleep</td>
<td></td>
</tr>
<tr>
<td>Preschoolers/Young Children</td>
<td>• Verbalize intensity of pain</td>
<td>• Positions of comfort during procedures</td>
</tr>
<tr>
<td></td>
<td>• See pain as punishment</td>
<td>• Explain procedure just beforehand</td>
</tr>
<tr>
<td></td>
<td>• Exhibit thrashing of arms and legs</td>
<td>• Talk throughout procedure</td>
</tr>
<tr>
<td></td>
<td>• Attempt to push stimulus away before it is applied</td>
<td>• Distract with noise (e.g., counting)</td>
</tr>
<tr>
<td></td>
<td>• Be uncooperative</td>
<td>• Use positive terms</td>
</tr>
<tr>
<td></td>
<td>• Need physical restraint</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Cling to parent, nurse or significant other</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Request emotional support (e.g., hugs, kisses)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Understand that there can be secondary gains associated with pain</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Be unable to sleep</td>
<td></td>
</tr>
<tr>
<td>School-Age Children</td>
<td>• Verbalize pain</td>
<td>• Offers simple choices to help child feel more in control</td>
</tr>
<tr>
<td></td>
<td>• Use an objective measurement of pain</td>
<td>• Positions of comfort during procedures</td>
</tr>
<tr>
<td></td>
<td>• Experience nightmares related to pain</td>
<td>• Allow questions</td>
</tr>
<tr>
<td></td>
<td>• Exhibit stalling behaviors (e.g., “Wait a minute”)</td>
<td>• Address child’s fears</td>
</tr>
<tr>
<td></td>
<td>• Have muscular rigidity such as clenched fists, gritted teeth, contracted limbs, body stiffness, closed eyes or wrinkled forehead</td>
<td>• Give rewards, i.e., sticker</td>
</tr>
<tr>
<td></td>
<td>• Be unable to sleep</td>
<td></td>
</tr>
<tr>
<td>Adolescents</td>
<td>• Localize and verbalize pain</td>
<td>• Positions of comfort during procedures</td>
</tr>
<tr>
<td></td>
<td>• Deny pain in presence of peers</td>
<td>• Preserve modesty</td>
</tr>
<tr>
<td></td>
<td>• Have changes in sleep patterns or appetite</td>
<td>• Provide opportunity for questions</td>
</tr>
<tr>
<td></td>
<td>• Be influenced by cultural beliefs</td>
<td>• Listen to concern</td>
</tr>
<tr>
<td></td>
<td>• Exhibit muscle tension and body control</td>
<td>• Explain procedure carefully and allow choices</td>
</tr>
<tr>
<td></td>
<td>• Display regressive behavior in presence of family</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Be unable to sleep</td>
<td></td>
</tr>
</tbody>
</table>
## Premature Infant Pain Profile (PIPP)

The PIPP is a bio-behavioural observational tool for acute and procedural pain.

### Population
- Full and preterm neonate.

### See below for instructions:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Indicators</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observe infant for 15 sec prior to event</td>
<td>GA in weeks</td>
<td>≥36 weeks</td>
<td>32-35 weeks and 6 days</td>
<td>28-31 weeks and 6 days</td>
<td>&lt;28 weeks</td>
<td></td>
</tr>
<tr>
<td>Behavioral state</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observe infant for 30 sec immediately after event</td>
<td>Frowned Forehead</td>
<td>Absent</td>
<td>Minimal</td>
<td>Moderate</td>
<td>Maximal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eyes Squeezed</td>
<td>Absent</td>
<td>Minimal</td>
<td>Moderate</td>
<td>Maximal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nasolabial furrow</td>
<td>Absent</td>
<td>Minimal</td>
<td>Moderate</td>
<td>Maximal</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Heart Rate</td>
<td>↑ 0-4 bpm</td>
<td>↑ 5-14 bpm</td>
<td>↑ 15-24 bpm</td>
<td>↑ ≥ 25 bpm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>O₂ Saturation</td>
<td>↓ 0.2-4%</td>
<td>↓ 2.5-4.9%</td>
<td>↓ 5-7.4%</td>
<td>↓ ≥ 7.5%</td>
<td></td>
</tr>
</tbody>
</table>

### Scoring Method for the PIPP

1. Familiarize yourself with each indicator and how it is to be scored by looking at the measure.
2. Score gestational age (from the chart) before you begin.
3. Score behavioral state by observing the infant for 15 seconds immediately before the event. See below a description of each behavioral state.
4. Record baseline heart rate and oxygen saturation.
5. Observe the infant for 30 seconds immediately after the event. You will have to look back and forth from the monitor to the infant's face. Score physiological and facial action changes seen during that time and record immediately after the observation period.
6. Calculate the final score.

### Scores range from 0-21:
- 0-6  absent or mild pain
- 7-13 mild to moderate pain
- 13-21 moderate to severe pain
# Pain Measurement Tool

## Appendix C

### Pain Intensity Scores

- **Age 8+**: Start with (A). If it doesn't work use (B). If that doesn't work use (C).
- **Age 4+**: Start with (B). If it doesn't work use (C).
- If the child is term birth to 3 years, or unable to give self-report, use (C).

### A Self-report for verbal patients 8 years and up: Verbal Numerical Scale (VNS)

I'd like you to tell me a number from 0 to 10 to show how much it hurts right now (how much hurt or pain you have). 0 would be no pain or no hurt at all. 10 would be the most hurt or the worst hurt you could have.

(For patients who need a simpler verbal self-report scale: "no pain" = 0, "mild" = 1-3, "moderate" = 4-7, "severe" = 8-10)

### B Self-report for age 4 years and up: Faces Pain Scale – Revised (FPS-R)

These faces show how much something can hurt. This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face] – it shows very much pain. Point to the face that shows how much you hurt [right now].

### C Observation for infants up to adolescents: FLACC

Sum the five scores to produce a score from 0 to 10

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Score 0</th>
<th>Score 1</th>
<th>Score 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, uninterested</td>
<td>Frequent to constant quivering chin, clenched jaw</td>
</tr>
<tr>
<td>Legs</td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking, or legs drawn up</td>
</tr>
<tr>
<td>Activity</td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting back and forth, tense</td>
<td>Arched, rigid or jerking</td>
</tr>
<tr>
<td>Cry</td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers; occasional complaint</td>
<td>Crying steadily, screams or sobbing, frequent complaints</td>
</tr>
<tr>
<td>Consolability</td>
<td>Content, relaxed</td>
<td>Reassured by occasional touching, hugging or being talked to, distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>
## Appendix D

### Pediatric Analgesic Drug Dosage Guideline

**Age:** 1 month (term infants) & older; up to 50 kg  
Refer over for patients > 50 kg

**CAUTION:** *Unit specific administration & monitoring guidelines must be followed*

<table>
<thead>
<tr>
<th>Class</th>
<th>Drug</th>
<th>Dose/Route/Interval</th>
<th>Comments</th>
</tr>
</thead>
</table>
| **NSAID** | Acetaminophen | PO 10 - 15 mg/kg/dose q6h or q8h  
PR 15 - 20 mg/kg/dose q6h or q8h | Procedural Pain or Pre- or Post-Operative:  
Loading Dose: 50 - 60 mg/kg/dose x 1 dose  
(max. 2 g/dose; start maintenance dose in 4 hours) |
| | Ibuprofen | PO 4 - 10 mg/kg/dose q6h or q8h | Max. 40 mg/kg/day, up to 3.2 grams/24h |
| | Naproxen | PO 5 - 7 mg/kg/dose q8h or q12h  
PR 5 - 10 mg/kg/dose q12h (round dose to nearest 120 mg) | Max. 20 mg/kg/day, up to 1500 mg/24h |
| **Opiates** | Morphine  
(Immediate Release) | PO 0.2 - 0.5 mg/kg/dose q6h or q8h  
IV 0.05 - 0.2 mg/kg/dose q6h or q12h | Max PO 10 mg/dose  
IV 10 mg/dose  
These are initial doses. Higher dosing may be required for specific indications. |
| | Hydromorphone | PO 0.03 - 0.08 mg/kg/dose q3h or q4h  
IV 0.015 - 0.04 mg/kg/dose q3h, q4h or q6h | Max initial PO dose 1 - 2 mg/dose  
Max initial IV dose 0.2 - 0.6 mg/dose  
Note: Hydromorphone is at least 5 times more potent than morphine |
| | Fentanyl | IV 0.5 - 2 micrograms/kg q6h or q12h  
IV Infusion: (initial) 0.5 - 2 micrograms/kg/hour  
(range) 0.5 - 5 micrograms/kg/hour | Maximum of 50 micrograms/dose  
These are initial doses. Higher dosing may be required for specific indications.  
Infusion preferred for continued therapy. |
| | Oxycodone  
Acetaminophen with Codeine | No longer recommended for use in children.  
Consider oral morphine as an alternative | Ineffective in approximately 1/3 of people.  
Up to 5% of population are ultra-rapid metabolizers and may experience serious toxicity |
| **Antiemetic** | Dimenhydrinate | PO, IV, PR 0.5 - 1 mg/kg/dose q4h or q6h | 2 - 3 yrs: Max 75 mg/24h  
4 - 12 yrs: Max 150 mg/24h  
**NOTE:** do NOT use concurrently with diphenhydramine (e.g. Bendryl®) |
| | Ondansetron | IV, PO 1 - 2 mg: 0.1 mg/kg/dose q12h  
2 yrs & older: 0.1 mg/kg/dose q8h or q12h | Maximum dose: PO 15 mg/24h  
IV 40 mg/24h |
| | Prochlorperazine | PO 0.1 mg/kg/dose TID or QID  
IV 0.1 - 0.2 mg/kg/dose q8h or q12h | Maximum dose: PO 15 mg/24h  
IV 40 mg/24h |

### Other Agents

**Sucrose**  
Sucrose 24%  
1 drop = 0.04 mL  
Infants and Children to 2 years of Age  
Administer dose 2 minutes prior to start of procedure.  
Repeat every 5 minutes x 3 doses maximum/procedure  
Maximum 5 - 6 mL/day

<table>
<thead>
<tr>
<th>Birth to 1 month</th>
<th>1 - 24 months</th>
<th>if NPO</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 25 drops/dose (usual 5 - 10 drops)</td>
<td>25 - 50 drops (1 - 2 mL/dose)</td>
<td>5 drops/dose</td>
</tr>
</tbody>
</table>

**Amantadine, Clonazepam & Gabapentin:** refer to Patients > 50 kg chart (over)

Source: SHE Department of Pharmaceutical Services (R2H, SCH, S9H). If you have further questions about analgesics, please contact Pharmacy. For pain that is not adequately controlled, please consult Anesthesia Acute Pain Service, Pharmacy, PICU or Pediatric Palliative Care services.

Sep. 27, 12 version 0
# PEDIATRIC ANALGESIC DRUG DOSAGE GUIDELINE

## Patients greater than 50 kg

*including overweight & obese children*

### CAUTION: *Unit specific administration & monitoring guidelines must be followed*

<table>
<thead>
<tr>
<th>Class</th>
<th>Drug</th>
<th>Dose/Route/Interval</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Acetaminophen</strong></td>
<td>PO, PR</td>
<td>325-650 mg q 4h or q6h</td>
<td>Procedural Pain or Pre, Peri, or Post-Operative: Loading Dose: 50 – 40 mg/kg/dose x 1 dose (max. 2 g/dose; start maintenance dose in 4 hours)</td>
</tr>
<tr>
<td><strong>NSAID</strong></td>
<td>Ibuprofen</td>
<td>PO 200-800 mg q 6h or q8h</td>
<td>Maximum dose: 3.2 grams/24h</td>
</tr>
<tr>
<td></td>
<td>Naproxen</td>
<td>PO 500mg x 1 then 250 mg PO q8h or q12h</td>
<td>Maximum dose: 1500 mg/24h</td>
</tr>
<tr>
<td><strong>Opiates</strong></td>
<td>Morphine (Immediate Release)</td>
<td>PO 10 mg q4h; IV 2.5 – 5 mg q 2h or q4h Infusion (initial) 1 – 2 mg/hour (max. 5 mg/hour)</td>
<td>Obesity: initial dose on TBW; infusion on IBW</td>
</tr>
<tr>
<td></td>
<td>HydroMorphone</td>
<td>PO Initial: 1 – 2 mg q1h or q4h Usual: 2 – 4 mg q1h or q6h IV 0.2 – 0.6 mg q1h or q4h</td>
<td>Obesity: initial dose on TBW; infusion on IBW</td>
</tr>
<tr>
<td></td>
<td>Fentanyl</td>
<td>IV 0.5 – 2 micrograms/kg q1h or q4h IV Infusion 0.5 – 2 micrograms/kg/hour</td>
<td>Obesity: initial dose on TBW; infusion on Lean BW</td>
</tr>
<tr>
<td></td>
<td>Codeine/ Oxycodeine/ Acetaminophen with Codeine</td>
<td>No longer recommended for use in children. Consider oral morphine as an alternative</td>
<td>Ineffective in approximately 1/3 of people. Up to 5% of population are ultra-rapid metabolizers and may experience serious toxicity.</td>
</tr>
<tr>
<td><strong>Antiemetic</strong></td>
<td>Dimenhydrinate</td>
<td>PO, IV 50 – 100 mg q6h or q8h</td>
<td>Maximum dose: Oral: 400 mg/24 hours IV: 100 mg/dose</td>
</tr>
<tr>
<td></td>
<td>Ondansetron</td>
<td>PO, IV 4 mg q8h or q12h</td>
<td>Maximum dose: PO, IV: 40 mg/24h</td>
</tr>
<tr>
<td></td>
<td>Prochlorperazine</td>
<td>PO 5 – 10 mg TID or QID IV 2.5 – 10 mg q4h</td>
<td>Maximum dose: PO, IV: 40 mg/24h</td>
</tr>
<tr>
<td><strong>Other Agents</strong></td>
<td>Amitriptyline ≤ 6 yrs and Older</td>
<td>PO (initial) 0.1 – 0.2 mg/kg/dose once daily at bedtime (up to 10 mg/dose)</td>
<td>For neuropathic pain. Use as a bridging therapy while gabapentin titrated. Increase dose every 2 – 4 days PRN.</td>
</tr>
<tr>
<td></td>
<td>Haloperidol</td>
<td>PO 3 – 10 mg q24h divided q6h, q8h or q12h (neuropathic pain: up to 20 mg/kg q24h)</td>
<td>Co-analgesic with NSAID or opiate For neuropathic pain, start at q4h interval</td>
</tr>
<tr>
<td></td>
<td>Gabapentin</td>
<td>PO (initial) 5 mg/kg/dose once daily at bedtime (range: 8 – 40 mg/kg/24h divided TID)</td>
<td>For neuropathic pain Maximum dose: 3600 mg/24h</td>
</tr>
</tbody>
</table>

**Source:** SNB Department of Pharmaceutical Services (RPH, SCH, SPM). If you have further questions about analgesic, please contact Pharmacy. For pain that is not adequately controlled, please consult Anesthesia, Acute Pain Service, Pharmacy, PICU or Pediatric Palliative Care services.

**References:**
- BC Children’s Hospital Pediatric Drug Dosage Guidelines, 6th Edition
- The File: Pediatric Pain, Treatment Considerations, Q & A's, 3rd Ed., 2010

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