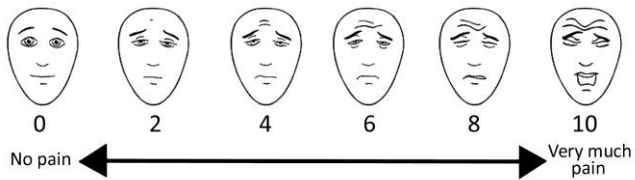


PRINCIPLES OF PAIN MANAGEMENT: PEDIATRIC GUIDE

Assessment and Diagnosis	Treatment	Management and Monitoring
<p>While all patients should be screened for pain, identifying a specific etiology for pain is challenging. A complete assessment, including physical, mental, emotional, and spiritual components is helpful in determining the appropriate course of management. All patients and families, where appropriate, should be actively engaged in self-management of their pain.</p> <p>History: Assess</p> <ul style="list-style-type: none"> • Onset, location, quality, intensity, temporal pattern, aggravating and alleviating factors, associated symptoms • Characteristics of pain; previous methods of treatment • Other medical and surgical conditions. • Substance use <p>Psychosocial History: Assess</p> <ul style="list-style-type: none"> • Depression, anxiety, PTSD, sleep pattern, suicide risk • Impact on quality of life, ADLs & performance status • Patient, family, and caregiver's cultural and spiritual beliefs • Secondary gain: psychosocial/financial <p>Assessment</p> <ul style="list-style-type: none"> • Order and evaluate appropriate diagnostic testing • Evaluate pain on all patients using the age/developmentally appropriate scale: <ol style="list-style-type: none"> 1. Numeric scale & FPS-R: Adolescents and older children <ol style="list-style-type: none"> A. mild pain: 1-3 B. moderate: 4-7 (interferes with work or sleep) C. severe: 8-10 (interferes with all activities) 2. Faces Pain Scale-Revised (FPS-R): Younger children (~6-10 years old) 3. FLACC-revised scale: <6 years old/developmentally delayed 4. NIPS: Neonatal Infant Pain Score <div style="border: 1px solid black; padding: 5px; margin: 10px 0;"> <p style="text-align: center;">Faces Pain Scale - Revised</p> <p style="text-align: center;">Choose the face that shows how bad your pain is right now.</p>  <p style="text-align: center;">0 2 4 6 8 10</p> <p style="text-align: center;">No pain ←————→ Very much pain</p> <p style="font-size: small; margin-top: 5px;">From Hicks CL, von Baeyer CL, Spafford P, van Kortlaar I, Goodenough B. Faces Pain Scale-Revised: Toward a Common Metric in Pediatric Pain Measurement. PAIN 2001; 93:173-183. This Figure has been reproduced with permission of the International Association for the Study of Pain® (IASP®). The figure may not be reproduced for any other purpose without permission.</p> </div> <p>Diagnostic Terms</p> <p>Somatic pain: localized; ache, throb, or gnaw</p> <p>Visceral pain: often referred; cramp, pressure, deep ache, squeeze</p> <p>Neuropathic pain: burns, electric shock, hot, stab, numb, itch, tingle</p> <p>Acute Pain: ↑HR, HBP, diaphoresis, pallor, fear, anxiety</p> <p>Chronic pain: sleep difficulties, loss of appetite, psychomotor retardation, depression, career/relationship change</p>	<p>Treatment</p> <p>Goals</p> <ul style="list-style-type: none"> • Treat acute pain aggressively to avoid chronic pain • Treat chronic pain thoughtfully and systematically • Identify and address the cause of pain • Maintain alertness, ability to function safely/productively • Allow emergence of feelings other than pain • Intervene as noninvasively as possible • Negotiate target with patient/family <p>Non-Pharmacological Therapy</p> <ul style="list-style-type: none"> • Patient/Family Education (Consider Child life) • Community & Web-based Support Groups • Cognitive Behavioral Therapy; Supportive Psychotherapy • Physical Therapy; Chiropractic/Osteopathic Care; Massage • Exercise: Yoga, Tai Chi, Qi Gong, Walking, Water Therapy • Cutaneous Stimulation: Ice, Heat; Counterstimulation: TENS • Acupuncture & Acupressure (trigger point Rx) • Relaxation techniques: Biofeedback, Music, Hydrobath, Reiki, Therapeutic Touch, Healing Touch • Meditation, Mindful Practice, Visualization/Interactive Guided Imagery; Prayer; Spiritual & Pastoral Support <p>Pharmacologic Therapy</p> <ul style="list-style-type: none"> • Nonpharmacologic therapy and nonopioid pharmacologic therapy are preferred for treatment of pain. • For neuropathic pain, use anti-epilepsy drugs (AEDs) first • Use adjuvant therapies or analgesics as needed • Opioids are not first line for chronic pain, which should be managed with an active approach and non-opioid pain relievers, if possible. • Consider opioid therapy based on a careful risk assessment that determines the expected benefits for both pain & function are anticipated to outweigh risks. If opioids are used, establish treatment goals, combine w/active approach & nonopioid analgesics as indicated. • When opioids are indicated (e.g. patients with cancer, post-trauma, palliative and end-of-life care), combine with an active approach & adjuvant medications as indicated. See Opioid Guidelines on Equianalgesic Table for Children. • Avoid inappropriate use of opioids: prevents potential misuse • Older children and adolescents are not immune to opioid dependence, addiction, abuse and experimentation. Opioids are often prescribed for acute sports injuries and other trauma: the lowest possible doses and briefest duration of therapy should be used to minimize risk of dependence and addiction. See Adult Guide & key recommendations on page 1. 	<p>Management and Monitoring</p> <p>General</p> <ul style="list-style-type: none"> • Reassess regularly • Assess pain using tools (i.e. numeric scale, face scale); respond urgently to pain ≥8 • Follow amount and duration of response • Assess performance status • Partner with patient/family in setting goals of care • Balance function vs. complete absence of pain <p>Referrals and Management</p> <p>Acute pain</p> <ul style="list-style-type: none"> • Refer early to appropriate specialist or Pain Center, if diagnosis unclear or pain refractory to treatment <p>Chronic pain</p> <ul style="list-style-type: none"> • Set realistic chronic care goals • Transition from passive recipient to patient-directed management of therapies where appropriate • Refer "difficult to treat" cases (H/O substance abuse, neuropathic pain, rapidly escalating opioid doses) to MD with palliative care or pain expertise <p>Neuropathic pain</p> <ul style="list-style-type: none"> • Use anti-epilepsy drugs (AEDs) first • Use step 2 drug to help Rx <p>Special Situations</p> <p>Anxiety and depression</p> <ul style="list-style-type: none"> • Refer to Depression Guidelines <p>Verbally non-communicative patients</p> <ul style="list-style-type: none"> • Infants, children & cognitively impaired all feel pain • Evaluate patient's non-specific signs: noisy breathing, grinding teeth, bracing, rubbing, crying, agitation <p>Infants (use appropriate pain scale)</p> <ul style="list-style-type: none"> • Start at ¼ - ½ usual dose • Watch carefully for toxicity from accumulation <p>Patients with substance abuse history</p> <ul style="list-style-type: none"> • May need higher starting dose (tolerance) • Use prescribing contracts for outpatient use • Consider abuse-deterrent formulations <p>Be aware of potential for addiction and misuse</p> <ul style="list-style-type: none"> • Encourage established functional goals • Ensure follow-up

QUEST Principles of Pain Assessment¹

- Question the child
- Use pain rating scales
- Evaluate behavior and physiological changes
- Secure parent's involvement
- Take cause of pain into account
- Take action and evaluate results

Neonates²

Signs of Acute Pain	Signs of Chronic Pain
Crying and moaning	Apathy
Muscle rigidity	Irritability
Flexion or flailing of the extremities	Changes in sleeping and eating patterns
Diaphoresis	Lack of interest in their surroundings
Irritability	
Guarding	
Changes in vital signs and pupillary dilatation	

Older Children

- Children < 6 years old or unable to communicate, clinicians should use the FLACC-revised scale
- Children >-6-10 may use the Faces (FPS-R) scale
- Children over 5 may be able to use descriptor words (stinging, burning)²
- Children over 6, who understand the concepts of rank and order, can use scales²

Categories of Pain³

Procedure-Related Pain

- Anticipation of intensity, duration, coping style and temperament child, type of procedure, history of pain and family support system

Operative Pain and Trauma-Associated Pain

- Postoperative pain management should be discussed prior to surgery
- Control pain as rapidly as possible

Acute Illness

- Determine severity of pain by the particular illness and situation (e.g. otitis media, meningitis, pharyngitis, etc.)

Pharmacological Therapy²

- Oral or IV administration of pain medication is the preferred method.
- Avoid painful IM injections.
- The initial choice of analgesic should be based on the severity and type of pain (see table below).
- IV Opioids can be safely titrated to effect in the pediatric inpatient setting
- For older children PCA is an acceptable form of administering pain medication with proper patient and family education.

Pharmacologic therapy is based on severity of pain:

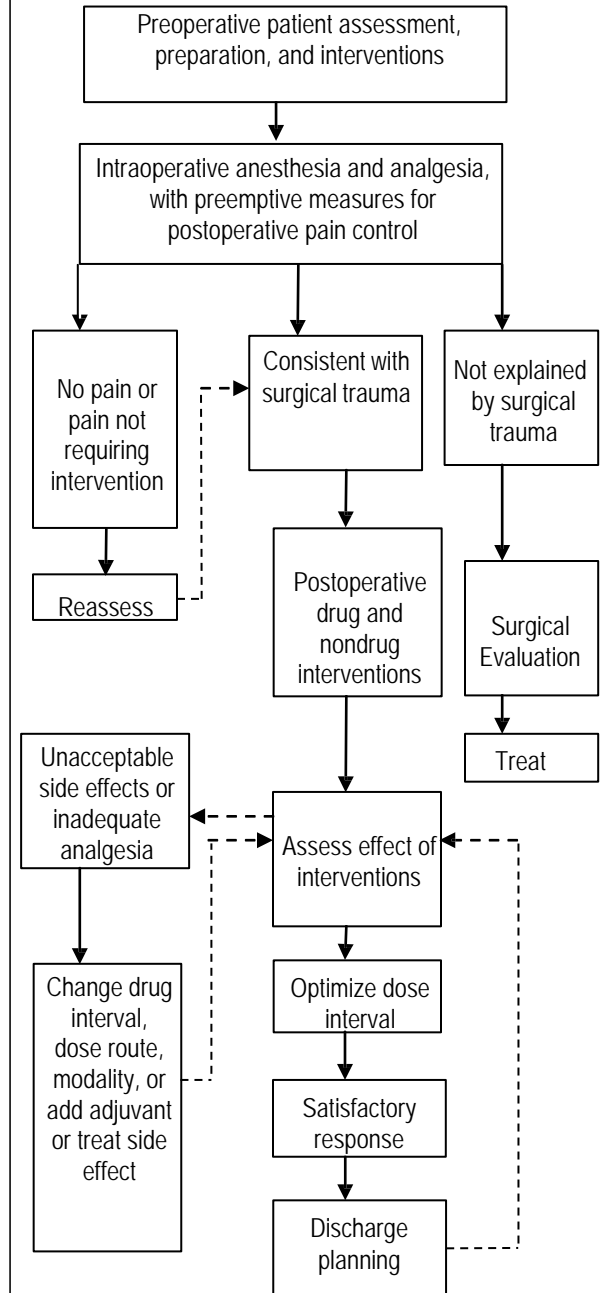
Pain Severity	Analgesic Choice	Examples
Mild (pain score 1-3)	Acetaminophen*(APAP) or NSAID**	Tylenol®, Ibuprofen, Naproxen
Moderate (pain score 4-7)	PO APAP/opioid combinations IV/PO low dose MSO4	Toradol®, Vicodin®, Tylox®
Severe (pain score 8-10)	Opioid	Morphine, Fentanyl®, Hydromorphone

Drug	Oral Dose	
	Children	Adolescents
Mild Pain		
Ibuprofen**	5-10 mg/kg	400-600 mg q6 hrs prn
Acetaminophen (APAP)*	10-15 mg/kg	300-600 mg q4-6 hrs prn
Use APAP* or ibuprofen** to enhance analgesia		
Moderate or Severe Pain	Children & Adolescents	
Morphine	0.15-0.3 mg/kg/dose q3-4 hrs	
Hydromorphone	0.03-0.06 mg/kg/dose q3-4 hrs	
Oxycodone	0.1-0.2 mg/kg/dose q3-4 hrs	

*Daily dosing of Acetaminophen not to exceed 15 mg/kg/dose or 5 doses per day (75 mg/kg/24 hrs) in children <40 kg and 3000 mg/24 hrs in adolescents ≥40 kg.

**NSAIDs – monitor in patients on anticoagulation therapy and/or history of bleeding disorder; limit use ≤5 days.

Operative Pain Management



1. Baker CM and Wong DL. 1987. Q.U.E.S.T.: A Process of Pain Assessment in Children. *Orthopaedic Nursing*. 6(1):11-21. <http://www.wongbakerfaces.org/wp-content/uploads/2010/08/QUEST.pdf>. Accessed: 25 August 2014.

2. American Academy of Pediatrics, Committee on Psychosocial Aspects of Child and Family Health and American Pain Society, Task Force on Pain in Infants, Children and Adolescents. 2001. The Assessment and Management of Acute Pain in Infants, Children, and Adolescents. *Pediatrics* 108(3): 793-797. <http://pediatrics.aappublications.org/content/108/3/793.full.pdf+html>. Accessed: 25 August 2014.

3. Agency for Health Care Policy and Research, United States Department of Health & Human Services. 1992. Clinicians' Quick Reference Guide to Acute Pain Management in Infants, Children and Adolescents: Operative and Medical Procedures. *Journal of Pain and Symptom Management* 7(4):229-42.