Treatment of Common Analgesic Side Effects

Constipation (Most Common Side Effect of Opioids)

1. Assure adequate water intake/hydration
2. Correct electrolyte abnormalities
3. Stool Softener: Docusate Na (Colace®) 100 mg or Docusate Ca (Surfak®) 240 mg (out-pt only), po daily-bid
4. Cathartic: Bisacodyl (Ducolax®) 10 mg po/pr qhs
   Milk of Magnesia 30-60ml po daily-bid
5. Osmotic agent: Lactulose 30-60 ml or sorbitol 30 ml po daily-bid prn
   MiraLax® 17gm in 8 oz fluid po daily
6. Enema: Oil retention (mineral oil) 120 ml pr or Sodium Biphosphate (Fleet's®) pr daily prn

Respiratory Depression

Naloxone (Narcan) 0.2-1mg IV every 2-3 min prn

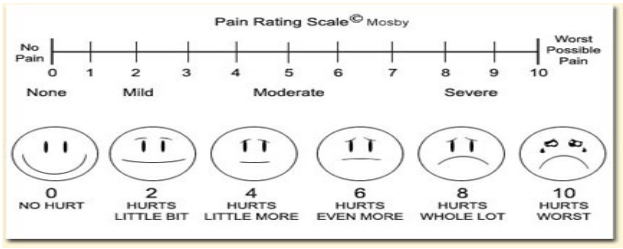
Shands' Pain Management Policy

Pain level is assessed & documented on admission, daily or every shift and as needed.

For adults use the standardized numeric pain scale as depicted below. The scale ranges from 0=no pain to 10=excruciating pain.

Mild pain (1-4): Impacts mood & interpersonal relations.
Moderate pain (5-6): Interferes with sleep and the ability to ambulate.
Severe pain (7-10): Interferes with all aspects of life.

For pediatric patients or cognitively impaired patients the "Wong-Baker faces Scale" as shown below is used to assess pain level



For neonates & infants the Neonatal Infant Pain Scale (NIPS), as shown below is used to evaluate pain level.

Table II – Neonatal Infant Pain Scale

NPS	0 point	1 point	2 points
Facial expression	Relaxed	Contracted	-
Cry	Absent	Mumbling	Vigorous
Breathing	Relaxed	Different than basal	-
Arms	Relaxed	Flexed/stretched	-
Legs	Relaxed	Flexed/stretched	-
Alertness	Sleeping/calm	Uncomfortable	-

Maximal score of seven points, considering pain ≥ 4.

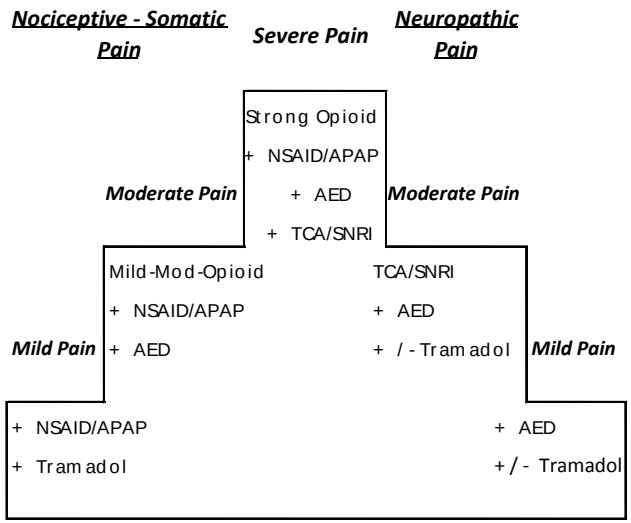
Pharmacotherapeutic Principles

Somatic-nociceptive pain: Associated with tissue damage. Aching, sharp. (e.g., post-op, traumatic)

Neuropathic pain: Altered nerve transmission. Burning, tingling, numbing (e.g., neuropathies)

- Treat mild-moderate somatic-nociceptive pain with acetaminophen or NSAID unless specifically contraindicated
- Add opioid for moderate-severe pain
- Add adjuvant to treat side effects or increase analgesia
- A-T-C or ER dosing for continuous pain
- Short acting opioid for breakthrough pain
- Treat mild-mod neuropathic pain with TCA or SNRI and an antiepileptic
- Add opioid for mod-severe neuropathic pain

Analgesic Ladder



APAP= Acetaminophen. AED=anti-epileptic drug. TCA=tricyclic antidepressant. SNRI=serotonin/norepinephrine uptake inhibitor. NSAID=nonsteroidal anti-inflammatory drug

For more pain management guidelines, consults:
http://intrashands1.umc.ufl.edu/dept/painmanagement/painmgmt.asp

The fifth dimension of Patient-Centered care is Physical Comfort

The level of physical comfort, particularly pain management, has a tremendous impact on how the patient views their entire hospital experience.

Pain is "What a person says it is…"

Pain Management Guidelines

Principles of Pain Management

- Pain control improves outcome
- Control to acceptable level is goal
- Pre-emptive control is optimal
- Pain must be reassessed at regular intervals
- Certain patients require individual attention
- Involve family members when appropriate
- Consider available treatment options
  - Cognitive-behavioral methods
  - Systemic pharmacotherapy
  - Interventional techniques
  - Physical modalities
  - Neuromodulation
  - Surgery
- Systemic pharmacotherapy is basis of acute & cancer pain management
- Unexpected pain requires reevaluation
- Revise management plan as necessary

Sample PCA Orders - Adult

1. Solution: morphine 1mg/ml
2. Basal Rate: 0mg/h for first 24 hours after which may add 1mg/h
3. Loading dose 1-3 mg as a 1 time dose
4. Patient administered dose (demand dose): 0.1-5mg
5. Lock out interval: 5-10 minutes (typically 6 minutes)
6. 4 Hr-Limit: 0.1-30mg (typically 10mg)
7. Monitor BP, HR, O2 sat every 30m x2, every 1h x3, then every 4 hours - repeat with change of dose or infusion rates
8. Monitor pain on numeric pain scale (NPS) every 4 hours or sooner
   - If pain consistently rate >4/10 increase demand dose by 0.2 mg q4h x3 prn. If pain still is not controlled, consult pain team.
9. Monitor sedation scale and RR every 1h x4 then every 2h – repeat with change of dose or infusion rates
   - For RR <12 or sedation scale >3: notify team
   - For RR < 10 and/or sedation scale >3: stop PCA, call team, and give naloxone 0.2mg IV push
10. For pruritus: Diphenhydramine 25-50 mg IV/IM every 6h prn
11. For nausea/vomiting: Ondansetron 4 mg IV q6h prn
12. **Do not administer any other opioid analgesics unless specifically approved by the physician.**

NSAID & Non-Opioid Analgesics

Generic	Trade Name	Adult	Pediatric
Acetaminophen APAP	Tylenol	325-650mg po/pr q4h Max: 4 g/daily (2g/daily if liver dysfunction)	10-15mg/kg po q4h MAX: 75mg/kg up to 2g/daily
Acetylsalicylic acid, ASA	Aspirin	325-650 mg po q4h Max: 4g/daily	Not generally used (Reye's syndrome)
Celecoxib*	Celebrex	100-200mg po daily or bid Max: 400mg/daily	N/A
Choline Magnesium Trisalicylate	Trilisate	500-1500mg po q8-12h Max: 3200mg/daily	25mg/kg po Q12h prn
Ibuprofen	Motrin	400mg po q6h 800mg po q8h Max: 3200mg/daily	4-10mg/kg po Q6-8h Max: 40mg/kg/daily
Indomethacin	Indocin	25-50mg po Q6-12h prn Max: 200mg/daily	1-2mg/kg po q6-12h prn Max: 4mg/kg/daily
Naproxen	Naprosyn	250-500mg po q12h Max: 1500mg/daily	5mg/kg po q12h prn Max: 1000mg/daily
Salsalate	Salsitab	500-1000mg po q4-8h Max: 3 g/daily	N/A
Sulindac	Clinoril	150-200mg po q12h Max: 400mg/daily	N/A
Ketorolac	Toradol	30mg IV q6h x8 doses Max: 120mg/daily	0.5mg/kg IV q6h Max: 2mg/kg/daily
Tramadol	Ultram Ultracet*	50-100 mg q6h po prn Max: 400mg/daily	N/A
*Non-Formulary or restricted on Shands Formulary			

Anti-Neuropathic Medications

Medication	Trade Name	Beginning Max Dose	Max Dose
TCA's: Amitriptyline Nortriptyline Desipramine	Elavil Pamelor Norpramin	25mg po qhs	200mg/d 150mg/d 200mg/d
SRNI's: Venlafaxine Duloxetine*	Effexor IR Cymbalta	37.5mg po bid 60mg po daily	75mg po tid 120mg/d
Gabapentin	Neurontin	300mg po qhs-tid	3600mg/d
Pregabalin	Lyrica	50mg po tid	100mg po tid
Oxcar-bazepine	Trileptal	300mg po bid	2400mg/d
Capsaicin* Cream	Zostrix	0.025% q4h	0.075% q4h
Lidocaine Patch*	Lidoderm 5%	1-3 patches topically daily (remove for 12 hours)	3 patches topically/d

Addiction: (Psychological dependence)

- Characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving.
- A primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations.

Dependence: (Physical)

- A state of adaption that is manifested by a drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist (AAPM, APS, ASAM 2001)

Pseudo addiction:

- Behaviors that appear to indicate addiction but actually reflect undertreated pain.

Tolerance:

- State of adaptation in which exposure to a drug induces changes that result in diminution of one or more of the drug's effect over time.
- Tolerance does not equal addiction.

Medication	Approximate Equianalgesic Dose		Recommended Starting Dose ADULTS (Opioid Naïve)		Recommended Starting dose CHILDREN (Opioid Naïve)		Notes
	Oral/ Transdermal	Parenteral	Oral/ (Transdermal)	Parenteral	Oral	Parenteral	
Morphine IR	30	10	15-30 mg q4h	7-10 mg q4h	0.3 mg/kg po q4h	0.1 mg/kg q4h	Rectal Dose + Oral Dose
Morphine ER	------	-----	15-30mg q12h	-----	------	-----	
Codeine	200	100	Not usually recommended	Not usually recommended	Not usually recommended	Not usually Recommended	Codeine is a prodrug; it is metabolized to morphine in the liver
Hydromorphone *	7.5	1.5	4 mg po q4h	1.5 mg q4h	0.06 mg/kg po q4h	0.015 mg/kg q4h	*oral bioavailability could be as high as 60%: Rectal Dose=Oral Dose
Hydromorphone ER	------	-----	8 mg every 12 hr	-----	-----	-----	
Hydrocodone APAP	30	N/A	5-10 mg q4h	N/A	0.2 mg/kg 4h	N/A	
Fentanyl		100 mcg		50mcg/hr		1 mcg/kg	
Fentanyl transdermal (TD) **	(12)	-----	(12 mcg/h q 72h)	-----	-----	-----	**Fentanyl TD 25 mcg/h + oral Morphine 60-90 mg per 24 hr
Oxycodone IR	20	10 #	5-10 mg q 4 h	N/A	0.2 mg/kg 4h	N/A	#parenteral not available in US
Oxycodone ER	------	-----	10-20mg q12h	N/A	-----	N/A	In general, not recommended in children
Tramadol	120	100#	100 mg q 6h	N/A	-----	-----	#parenteral not available in US
Oxymorphone IR	10	1	5-10 mg q4	1 mg q 4h	-----	-----	
Methadone							***CALL PAIN CONSULT !***
Buprenophine							
Levorphanol							