Preventing & Managing Opioid Side Effects

Nausea and vomiting *
Change route
Add anti-nausea
↓ opioid dose (by 10-25%)
Add or ↑ the nonopioid analgesic for additional pain relief
Switch to another analgesic

Itching, Pruritus *
↓ opioid dose
Consider antipruritic (antihistamininc)
Change route, switch analgesic

Sedation*
Evaluate the underlying cause
Eliminate nonessential CNS-acting drugs
↑ dosing frequency with a lower opioid dose to decrease peak serum concentration
↓ opioid dose (by 10-25%) & Add or increase the nonopioid analgesic for additional pain relief
If excessive sedation persists, switch opioid

Respiratory depression*
Monitor sedation level and respiratory status
Evaluate the underlying cause
↓ opioid dose, ↑ interval
Stop medication
If patient is unresponsive to stimulation, respiration's are shallow or < 8 breaths/min or pupils are pinpoint, stop opioid administration and administer Naloxone (Narcan™)
To minimize opioid withdrawal symptoms (agitation, fever, emesis and pain) when Naloxone is needed.
*dilute Naloxone 1 vial (0.4mg) in 10cc NS
*administer 1 cc /min of diluted Naloxone

Constipation¶
Manage Constipation prophylactically
With few exceptions all patients on opioid therapy need an individualized bowel regimen (including a stool softener and mild stimulant laxative). See some suggested bowel regimens below.
If the patient has not been on a bowel regimen then step 1 should be started. If there is no response in 24 hrs move to next step
Polyethylene Glycol (Miralax ™), Naltrexone may be useful in managing Opioid induced constipation

Maintain a high index of suspicion for the possibility of bowel obstruction/ fecal impaction.Rule out impactation with rectal examination or abdominal x-ray when clinical suspicion exist.

Rectal disimpaction must occur before treating constipation with an oral laxative regimen

¶ Tolerance does not occur over time
*Tolerance occurs over time to this symptom

STEPS	BOWEL REGIMENS
1	Docusate100 mg po bid+Senna 1tab qd/bid
2	Docusate100 mg po bid + Senna **2** tab bid
3	Docusate100 mg po bid + Senna **3** tab bid
4	Docusate100 mg po bid + Senna **4** tab bid Plus Lactulose or Sorbitol **15** cc po bid
5	Docusate100 mg po bid + Senna 4 tab bid Plus Lactulose or Sorbitol **30** cc po bid
6	Docusate100 mg po bid + Senna 4 tab bid Plus Lactulose or Sorbitol **30** cc po bid

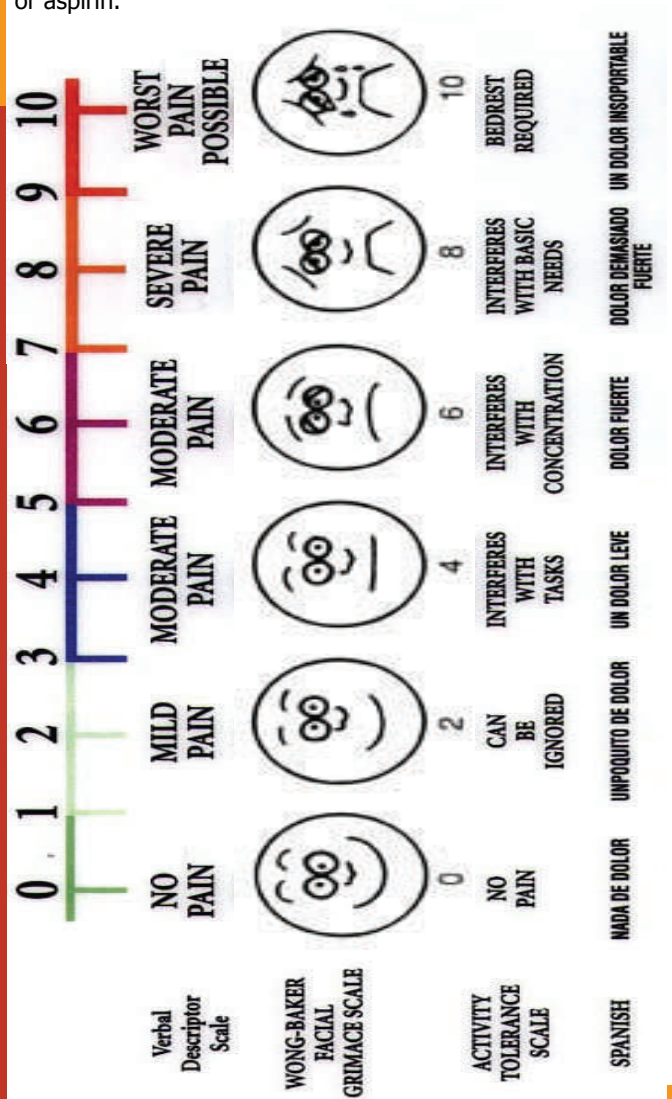
Pain Management Guide UTHSCSA/STVHCS

1. ASSESS PAIN:

- Use the pain scale, **Ask the patient.**
- Pain intensity, location, onset, duration, relieving or exacerbating factors, quality (sharp, dull throbbing)
- If the patient is **unable to communicate,** assess pain based on behavioral cues. Such as facial grimacing, guarding an area of the body, crying, moaning, decrease in social interaction, aggression, increase in body movements, irritability, confusion
- Assess pain at each clinical interview, every 8 hrs, and PRN (at least every 1 hr for moderate to severe pain).
- The cause of pain must always be properly addressed

2. PAIN TREATMENT

- When the pain is not expected to resolve shortly, medications should be administered around the clock and additional prn doses should be available.
- Patients who are already taking opioids will require higher doses to control new or worsening pain.
- For Moderate-Severe pain use Short acting opioids
- Only start long acting preparations of opioids after pain has been controlled on short acting opioids.
- Never use long acting opioids for controlling acute pain
- There is no maximum or ceiling dose for analgesia with opioids unless the opioid is in combination with acetaminophen or aspirin.



Pain Scale from UCLA Anesthesiology Department

Equianalgesic Table : Changing Opioid Administration Routes or Agents:

Opioid agonist	Oral/rectal mg	IV/SC mg	IV to PO
Morphine	30	10	3
Oxycodone	20	N/A	
Hydromorphone	7.5	1.5	5
Codeine	200	120 (IM)	
Hydrocodone	30	N/A	N/A
Oxymorphone	10	1	
Fentanyl[1]	N/A	100mcgr single dose	
Methadone [2]	1-20	1-10	1.5
Codeine	200	130	1.5

$$\frac{\text{Equianalgesic dose (route) } \textbf{current} \text{ opioid}}{\text{24hr dose(route) } \textbf{current} \text{ opioid}} = \frac{\text{Equianalgesic dose (route) } \textbf{Desired} \text{ opioid}}{\text{24hr dose (route) } \textbf{Desired} \text{ opioid}}$$

Equianalgesic Dose Conversion Formula

These are NOT suggested starting doses; these are doses of opioids that produce **approximately the same amount of analgesia.**
Titration to clinical response is necessary. Recommended doses do not apply to patients with renal or hepatic insufficiency. Elderly patients generally require lower doses, titrated slowly to the desired effect or intolerable side effects.

CONVERTING TO/FROM FENTANYL PATCH
1mcg/hr fentanyl transdermal ≈ 2mg total oral morphine/day
25mcgr/fentanyl transdermal ≈ 9 tabs per day of:
Oxycodone 5mgAPAP 325mg, *(Percocet™)* Hydrocodone5mg/APAP500 *(Lortab5™)* ,Codeine 30mg/APAP (*Tylenol #3™*)

PREVENTING CROSS TOLERANCE
When converting from one opioid to another decrease the equianalgesic dose by 25-50% to allow for incomplete cross-tolerance between different opioids. (may need to titrate rapidly to an analgesic dose within the first 24 hrs).

OPIOIDS NOT RECOMMENDED FOR USE
Meperidine SHOULD NOT BE USED in older adults or patients with renal failure because of CNS toxic metabolites. Contraindicated with MAOIs.
Mixed agonist/ antagonist (pentazocine, butorphanol, nalbuphine) : compete with agonists leading to withdrawal. analgesic ceiling effect. high risk of psychotomimetic adverse effects
Propoxyphene: no better than placebo. toxic metabolite at high doses.

OPIOIDS SPECIAL PRECAUTIONS
Methadone : Variable pharmacodynamic and pharmacokinetic effects complicate the use of methadone for analgesia. Symptoms of overdose may be delayed 3-7 days after starting or increasing Methadone. Escalate methadone q4-7 days

TREAT PAIN ACCORDING TO SEVERITY

MILD PAIN:
Acetaminophen 650-1000 mg po q 6hrs
Ibuprofen 200-800mg po q 6 hrs

MODERATE PAIN:
Acetaminophen with oxycodone 5-10mg q 4hr
Acetaminophen with codeine 30-60mg po q 4hr
Maximum acetaminophen daily:
*4gr/day adult, 3gr/day elderly, 2gr/day liver disease

SEVERE PAIN:
If the pain persists or increases despite the above measures the patient should be re-evaluated.
Morphine 15-30 mg po q 3hrs or
Hydromorphone 4-8 mg po q 3hr
continue NSAID or Acetaminophen unless contraindicated
If the pain is severe, strongly consider parenteral opioids repeated every 15- 30 minutes until the pain is controlled. Opioids dosing for the average adults are:
*morphine 5-10 mg IV/SQ OR
*hydromorphone 0.5-1.5 mg IV/SQ

3. OPIOID MEDICATIONS

OPIODS FORMULATIONS
Short acting opioids:
Morphine, Hydromorphone, Codeine, Hydrocodone, Oxycodone
Effect 5-15 min (IV) and 1 hrs (oral/rectal)
Duration 3-4 hrs (oral/rectal)
Dosing Can be increased q 2hrs

Long acting preparations of opioids:
sustained release morphine, sustained release oxycodone (duration 8-12 hr)
Dosing Can be increased q 24hrs
or transdermal Fentanyl patch (duration 48-72hr)
Dosing Can be adjusted q 72hrs

OPIOIDS TITRATION
- For moderate pain: titrate at least every 24hrs
- For severe pain: titrate every 2 hrs
- Increase opioids depending on pain level
  Mild-mod pain: ↑ dose 25-50%
  Mod-severe pain: ↑ dose 50-100%

OPIOIDS AND BREAKTHROUGH PAIN
- For acute pain in patients with otherwise controlled pain use short acting opioids.
- Breakthrough dose is about 10 % of the 24hr standing opioid dose (scheduled dose)
- Make breakthrough dose available every 1-2hrs
- Example:pt on long acting Morphine 60 mg po q 12 hrs. the breakthrough dose would be 15 mg po q 1hr prn

FENTANYL
Indicated for patients with persistent, moderate to severe chronic pain who have been taking a regular, daily, around-the-clock opioid pain medicine for **>1 week** and are considered to be **opioid-tolerant**
- For dosages of Fentanyl patch >100µg/hr multiple patches can be used
- Patch duration 48-72 hrs .It takes 12-24 hrs before achieving full analgesic effect after the 1st patch
- Prescribe a short acting opioid for breakthrough pain.
- Increase the patch dose based on the average amount of additional short acting opioid required 72 hrs prior.

PATIENT CONTROLLED ANALGESIA (PCA)
Safe & effective way of delivering opioids for pain that is expected to resolve(post op pain) or Acute exacerbation of chronic pain. Patient self delivers fixed Opioid dose by pressing a button. Overdose infrequent as patient has to be alert to press the button.
Safe starting PCA Dose for average Adult
* Morphine 1 mg every 10 minutes or
* Hydromorphone 0.25mg every 10 minutes
Use a continuous Opioid infusion for patients who are suffering from pain not expected to resolve shortly.