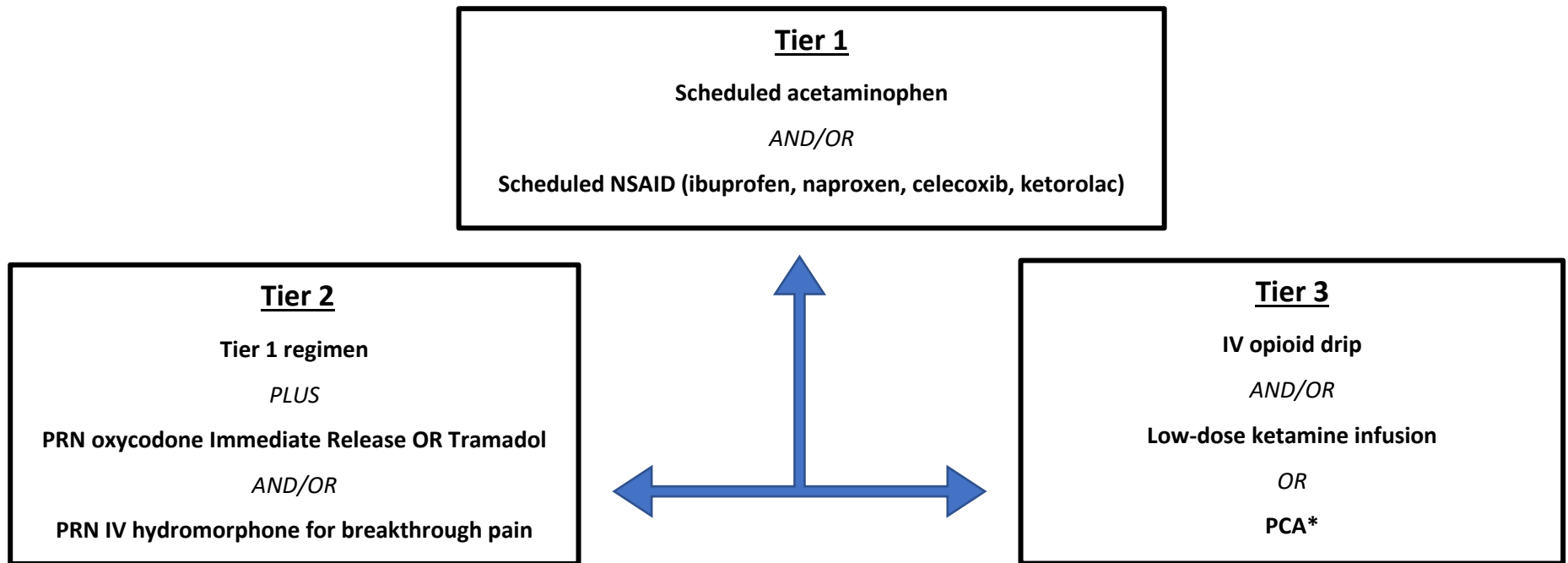


## Trauma Pain Management Guideline for Adult Patients

- Expectations for pain control should be discussed with the patient and/or family members. Pain is expected in patients with traumatic injuries, but the goal is to manage pain so that patients can participate in therapies and improve health.
- Pain should be assessed daily. **De-escalation of pain medication should be considered daily.**
  - Transition from IV to oral and to nonopioid therapy as soon as possible.
  - If ongoing opioid therapy is necessary, consider decreasing the dose or expanding the interval to reduce total use.
  - Discuss nonpharmacologic options available for pain management, such as hot/cold packs, music, massage, or aromatherapy.
  - Maximize use of nonopioid medications (including acetaminophen, NSAIDs, and lidocaine patch or icy/hot).
- **Enteral route is preferred** and should be used when possible.



\* Limit PCA use to <3 days if possible: add Tier 2 regimen and de-escalate from Tier 3 as tolerated

### **Rib Fractures:**

- Consider On-Q if >2 rib fractures

### **Neuropathic pain:**

- Gabapentin 300 mg PO TID
- Renal impairment (CrCl< 50mL/min): 100 mg PO TID
  - Avoid use in renal failure

### **Bowel Regimen:**

Tier 2 and 3 when opioid is used: add stimulant laxative  
Senna 8.6mg BID  
+/- PEG +/- docusate +/- suppository

## Inpatient Medication Selection and Dosing:

- Acetaminophen
  - 1,000 mg PO q6h (max 4,000 mg daily)
  - Consider a maximum of <2,000-3,000 mg daily in hepatic impairment or older adults
- NSAIDs:
  - Use cautiously in elderly, history of peptic ulcer disease, hepatic or renal impairment, CHF or post-CABG
  - May be used short-term (<2 weeks) in patients with orthopedic fractures
  - Ibuprofen 400 mg, 600 mg or 800 mg PO q6h or q8h (max 2,400 mg daily)
    - eGFR 30 to <60: do not use if at risk for acute kidney injury
    - eGFR <30: do not use
  - Celecoxib 200 mg PO q12h (max 400mg daily)
  - Naproxen 500mg PO q12h or 250 mg PO q6h or q8h (max 1,000 mg daily)
    - CrCl <30: use not recommended, avoid use in advanced renal disease
  - Ketorolac 10-30 mg IV or IM q6h (max of 40mg daily and max of 5 days)
    - Limit dose to 10-15 mg IV q6h if weight <50kg, older age, or renal impairment
    - Contraindicated in patients with advanced renal impairment or at risk for renal failure
  - May cause bleeding, anemia, hyperkalemia, hypertension
- Oxycodone:
  - 5 – 10 mg PO q4h or q6h as needed
  - CrCl <60 mL/min: initiate at low end of dosage range and use cautiously
  - If intolerance to oxycodone, consider hydrocodone/acetaminophen (Norco) but limit acetaminophen total quantity to less than 4,000 mg/day.
- Tramadol
  - 50 – 100 mg PO q6h (max 400 mg daily)
  - > 75 years old max 300 mg daily
  - CrCl <30 mL/min: extend interval to q12h (max 200 mg daily)
  - Severe hepatic impairment: 50 mg PO q12h
  - Avoid use in pediatrics due to increased risk of death
  - Note: increased seizure risk in patients with head trauma, concomitant use of drugs that lower seizure threshold (bupropion), CNS infections or seizure disorders
- Hydromorphone
  - 0.1 – 0.5 mg IV q3h (use smallest dose and range possible)
  - In renal/hepatic impairment: use cautiously and monitor for respiratory and CNS depression
- Gabapentin
  - 300 mg PO TID
  - CrCl < 50 mL/min: 100 mg PO TID
  - Use with caution in elderly, renal failure or chronic lung conditions
  - May cause respiratory depression and sedation, especially in patients taking concomitant opioids
  - Best data for neuropathic pain
  - May require taper if used longer than 7 days
- Ketamine
  - Ketamine for Pain Control Order Set
  - 0.1-0.3 mg/kg/hr infusion
  - Use with caution in patients with uncontrolled hypertension
  - May cause increase in intracranial pressure, hypertension, tachycardia, psychosis
  - Note: most data as adjunct for pain management in chronic opioid users

<sup>1</sup> Dowell D, Haegerich TM, Chou R. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016. MMWR Recomm Rep 2016;65(No. RR-1):1–49. DOI: <http://dx.doi.org/10.15585/mmwr.rr6501e1>

<sup>2</sup> ACS Trauma Quality Programs. Best Practices Guidelines for Acute Pain Management in Trauma Patients. November 2020.

**Discharge:**

1. Goal for opioid-naïve patients is no opioids upon discharge.<sup>2</sup> Use nonopioids and nonpharmacologic options.
2. If opioids are necessary, assess and minimize risk of opioid use<sup>1</sup>
  - a. Check Prescription Monitoring Program (PMP)
  - b. Avoid use in patients with moderate to severe sleep-disordered breathing when possible
  - c. Use additional caution in patients with the following: 65 years and older, renal or hepatic insufficiency, anxiety or depression, drug or alcohol use disorders, or chronic pulmonary disease.
  - d. Avoid combination of opioids and benzodiazepines, when possible.
3. Use chart to determine quantity, dosing and day supply 7 day supply or less is recommended<sup>1</sup> (<25% of patients need more than 7 day supply)
  - a. Per CDC Guidelines, limit daily opioid dose to less than 50 MMEs (milligram morphine equivalents) and do NOT exceed 90 MME per day.<sup>1</sup>
  - b. Recommend a bowel regimen with stimulant laxative while using opioid therapy.
  - c. Recommend tapering off opioids completely as soon as possible.

**Discharge Prescription Guideline for Oxycodone 5mg Tablets**

	Smart Phrase in the EMR	Patient's Use of Oxycodone in Last 24 hours	Quantity of Oxycodone 5mg tablets	Day Supply	Oxycodone 5mg SIG
<b>Less than 50 MME/day</b>	<b>.oxy5</b>	5 mg	5	5	Take <b>1</b> tablet every 12 hours as needed for pain. <b>Max of 1</b> tablet per day.
	<b>.oxy10</b>	10 mg	6	5	Take <b>1</b> tablet every 8 hours as needed for pain. <b>Max of 2</b> tablets per day. Decrease by 1 tablet per day.
	<b>.oxy15</b>	15 mg	8	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 3</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy20</b>	20 mg	11	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 4</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy25</b>	25 mg	17	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 5</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy30</b>	30 mg	22	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 6</b> tablets per day. Decrease by 1-2 tablets per day.
<b>50-90 MME/day</b>	<b>.oxy35</b>	35 mg	28	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 7</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy40</b>	40 mg	35	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 8</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy45</b>	45 mg	42	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 9</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy50</b>	50 mg	49	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 10</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy55</b>	55 mg	56	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 11</b> tablets per day. Decrease by 1-2 tablets per day.
	<b>.oxy60</b>	60 mg	63	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 12</b> tablets per day. Decrease by 1-2 tablets per day.
Any amount above this exceeds 90 MME/day and is not recommended by the CDC for acute pain management					

**Hydrocodone/APAP 5/325 Tablets**

	Smart Phrase in the EMR	Patient's Previous <u>24 hour</u> Inpatient Use of Hydrocodone/APAP 5mg/325mg	Prescribed quantity of Hydrocodone/APAP 5mg/325mg tablets	Day Supply	Hydrocodone/APAP 5mg/325mg SIG  <i>**Sig dot phrases will include "Do not exceed 4,000mg of acetaminophen per day"</i>
Less than 50 MME/day	.norco1	1 tablet (5mg/325mg)	5	5	Take <b>1</b> tablet by mouth every 12 hours as needed for pain. <b>Max of 1</b> tablet per day.
	.norco2	2 tablets (10mg/650mg)	6	5	Take <b>1</b> tablet every 8 hours as needed for pain. <b>Max of 2</b> tablets per day. Decrease by 1 tablet per day.
	.norco3	3 tablets (15mg/975mg)	8	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 3</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco4	4 tablets (20mg/1300mg)	11	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 4</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco5	5 tablets (25mg/1625mg)	17	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 5</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco6	6 tablets (30mg/1950mg)	22	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 6</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco7	7 tablets (35mg/2,275mg)	28	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 7</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco8	8 tablets (40mg/2,600mg)	35	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 8</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco9	9 tablets (45mg/2,925mg)	42	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 9</b> tablets per day. Decrease by 1-2 tablets per day.
50-90 MME/day	.norco10	10 tablets (50mg/3,250mg)	49	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 10</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco11	11 tablets (55mg/3,575mg)	56	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 11</b> tablets per day. Decrease by 1-2 tablets per day.
	.norco12	12 tablets (60mg/3,900mg)	63	7	Take <b>1-3</b> tablets every 6 hours as needed for pain. <b>Max of 12</b> tablets per day. Decrease by 1-2 tablets per day.
<b>Maximum acetaminophen (APAP) dose is 4,000mg per day.</b>					

## Tramadol 50mg Tablets

	Smart Phrase in EMR	Patient's Previous <u>24 hour</u> Inpatient Use of tramadol 50mg	Prescribed quantity of tramadol 50mg	Day Supply	Tramadol 50mg SIG
Less than 50 MME/day	.tramadol50	50mg	5	5	Take <b>1</b> tablet by mouth every 12 hours as needed for pain. <b>Max of 1</b> tablet per day.
	.tramadol100	100mg	6	5	Take <b>1</b> tablet every 8 hours as needed for pain. <b>Max of 2</b> tablets per day. Decrease by 1 tablet per day.
	.tramadol150	150mg	8	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 3</b> tablets per day. Decrease by 1-2 tablets per day.
	.tramadol200	200mg	11	5	Take <b>1</b> tablet every 6 hours as needed for pain. <b>Max of 4</b> tablets per day. Decrease by 1-2 tablets per day
	.tramadol250	250mg	17	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 5</b> tablets per day. Decrease by 1-2 tablets per day
	.tramadol300	300mg	22	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 6</b> tablets per day. Decrease by 1-2 tablets per day
	.tramadol350	350mg	28	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 7</b> tablets per day. Decrease by 1-2 tablets per day.
	.tramadol400	400mg	35	7	Take <b>1-2</b> tablets every 6 hours as needed for pain. <b>Max of 8</b> tablets per day. Decrease by 1-2 tablets per day.
Maximum tramadol dose is 400mg per day.					