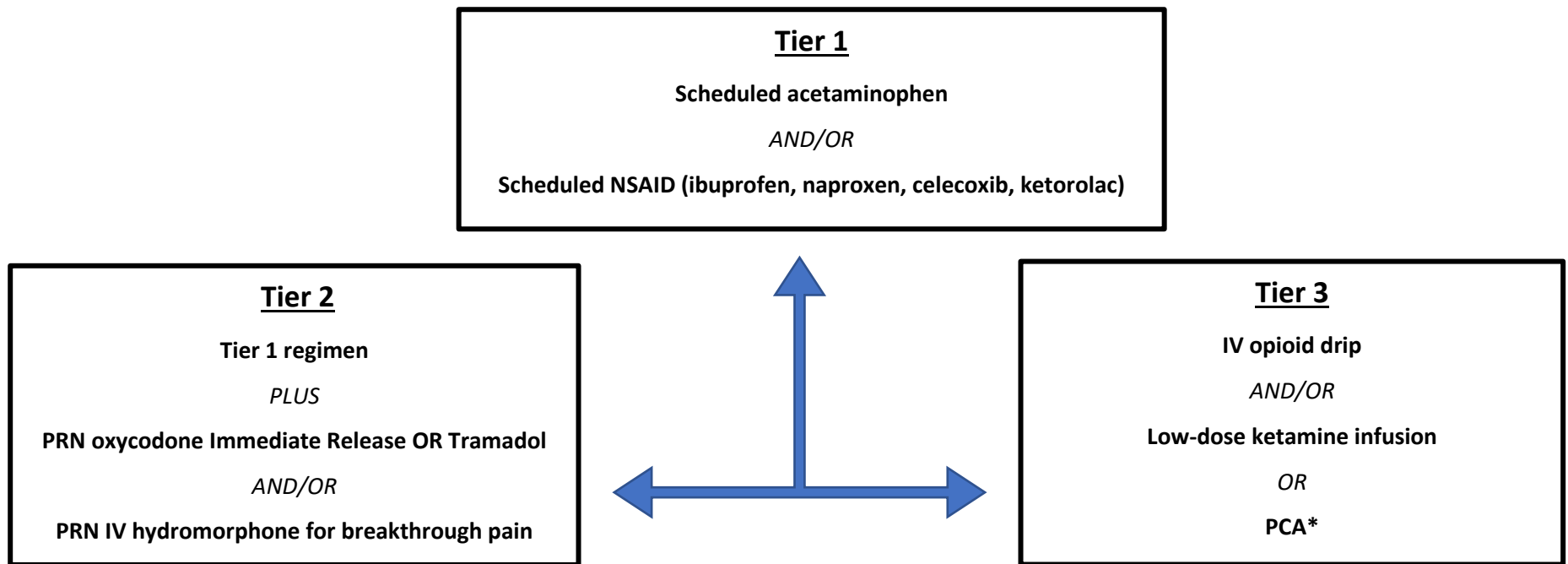


Trauma Pain Management Guideline for Adult Patients

- 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

¹ 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>

² 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.² Use nonopioids and nonpharmacologic options.
2. If opioids are necessary, assess and minimize risk of opioid use¹
 - 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 recommended¹ (<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.¹
 - 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
Less than 50 MME/day	.oxy5	5 mg	5	5	Take 1 tablet every 12 hours as needed for pain. Max of 1 tablet per day.
	.oxy10	10 mg	6	5	Take 1 tablet every 8 hours as needed for pain. Max of 2 tablets per day. Decrease by 1 tablet per day.
	.oxy15	15 mg	8	5	Take 1 tablet every 6 hours as needed for pain. Max of 3 tablets per day. Decrease by 1-2 tablets per day.
	.oxy20	20 mg	11	5	Take 1 tablet every 6 hours as needed for pain. Max of 4 tablets per day. Decrease by 1-2 tablets per day.
	.oxy25	25 mg	17	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 5 tablets per day. Decrease by 1-2 tablets per day.
	.oxy30	30 mg	22	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 6 tablets per day. Decrease by 1-2 tablets per day.
50-90 MME/day	.oxy35	35 mg	28	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 7 tablets per day. Decrease by 1-2 tablets per day.
	.oxy40	40 mg	35	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 8 tablets per day. Decrease by 1-2 tablets per day.
	.oxy45	45 mg	42	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 9 tablets per day. Decrease by 1-2 tablets per day.
	.oxy50	50 mg	49	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 10 tablets per day. Decrease by 1-2 tablets per day.
	.oxy55	55 mg	56	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 11 tablets per day. Decrease by 1-2 tablets per day.
	.oxy60	60 mg	63	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 12 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 1 tablet by mouth every 12 hours as needed for pain. Max of 1 tablet per day.
	.norco2	2 tablets (10mg/650mg)	6	5	Take 1 tablet every 8 hours as needed for pain. Max of 2 tablets per day. Decrease by 1 tablet per day.
	.norco3	3 tablets (15mg/975mg)	8	5	Take 1 tablet every 6 hours as needed for pain. Max of 3 tablets per day. Decrease by 1-2 tablets per day.
	.norco4	4 tablets (20mg/1300mg)	11	5	Take 1 tablet every 6 hours as needed for pain. Max of 4 tablets per day. Decrease by 1-2 tablets per day.
	.norco5	5 tablets (25mg/1625mg)	17	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 5 tablets per day. Decrease by 1-2 tablets per day.
	.norco6	6 tablets (30mg/1950mg)	22	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 6 tablets per day. Decrease by 1-2 tablets per day.
	.norco7	7 tablets (35mg/2,275mg)	28	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 7 tablets per day. Decrease by 1-2 tablets per day.
	.norco8	8 tablets (40mg/2,600mg)	35	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 8 tablets per day. Decrease by 1-2 tablets per day.
	.norco9	9 tablets (45mg/2,925mg)	42	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 9 tablets per day. Decrease by 1-2 tablets per day.
50-90 MME/day	.norco10	10 tablets (50mg/3,250mg)	49	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 10 tablets per day. Decrease by 1-2 tablets per day.
	.norco11	11 tablets (55mg/3,575mg)	56	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 11 tablets per day. Decrease by 1-2 tablets per day.
	.norco12	12 tablets (60mg/3,900mg)	63	7	Take 1-3 tablets every 6 hours as needed for pain. Max of 12 tablets per day. Decrease by 1-2 tablets per day.
Maximum acetaminophen (APAP) dose is 4,000mg per day.					

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 1 tablet by mouth every 12 hours as needed for pain. Max of 1 tablet per day.
	.tramadol100	100mg	6	5	Take 1 tablet every 8 hours as needed for pain. Max of 2 tablets per day. Decrease by 1 tablet per day.
	.tramadol150	150mg	8	5	Take 1 tablet every 6 hours as needed for pain. Max of 3 tablets per day. Decrease by 1-2 tablets per day.
	.tramadol200	200mg	11	5	Take 1 tablet every 6 hours as needed for pain. Max of 4 tablets per day. Decrease by 1-2 tablets per day
	.tramadol250	250mg	17	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 5 tablets per day. Decrease by 1-2 tablets per day
	.tramadol300	300mg	22	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 6 tablets per day. Decrease by 1-2 tablets per day
	.tramadol350	350mg	28	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 7 tablets per day. Decrease by 1-2 tablets per day.
	.tramadol400	400mg	35	7	Take 1-2 tablets every 6 hours as needed for pain. Max of 8 tablets per day. Decrease by 1-2 tablets per day.

Maximum tramadol dose is 400mg per day.