University Hospital Adult Emergency Medicine Treatment of Acute Pain Guideline

- Alternative therapies should be considered if there are contraindications to first line recommendations
- Consider next line therapies in a stepwise manner if pain persists 30 minutes after an IV dose **OR** 60 minutes after a PO dose
- Other than in the treatment of severe acute pain, the oral route is the preferred route of administration of most analgesic drugs
- Reserve opioids for pain refractory to non-opioid alternatives. Opioids may also be indicated as initial therapy in certain instances of severe pain.

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Abdominal Pain

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Undifferentiated abdominal pain Acetaminophen 975 mg PO **AND/OR** Ibuprofen 400 – 600 mg PO (If patient cannot tolerate PO, ketorolac 15 mg IV/IM)	*Undifferentiated abdominal pain* Ketamine 0.15-0.3 mg/kg IV over 15 minutes **AND/OR** Haloperidol 2.5-5 mg IV/IM or Droperidol 0.625-1.25 mg IV/IM	Opioid rescue*	*Anti-emetics* Ondansetron 4 mg IV **OR** Ondansetron ODT 4 mg PO **OR** Metoclopramide 10 mg IV *Antacids* Mag hydroxide/aluminum hydroxide/simethicone 1200 mg/1200 mg/120 mg PO **AND/OR** Famotidine 20 mg IV/PO	*Undifferentiated abdominal pain* Acetaminophen 975 mg PO q6H PRN **AND/OR** Ibuprofen 400 – 600 mg PO q6H PRN *Spasmodic pain* Dicyclomine 20 mg PO q6H PRN *Gastroparesis* Metoclopramide 10 mg PO q6H PRN
Gastroparesis Metoclopramide 10 mg IV	*Gastroparesis* Haloperidol 2.5-5 mg IV/IM or Droperidol 0.625-1.25 mg IV/IM			
Pain related to Cannabinoid Hyperemesis Syndrome (CHS) Haloperidol 2.5-5 mg IV/IM or Droperidol 0.625-1.25 mg IV/IM **AND/OR** Capsaicin Cream 0.025% - apply thin layer to abdomen				
Spasmodic pain Dicyclomine 20 mg PO (If patient cannot tolerate PO, dicyclomine 10 mg IM- *do not give IV*)				

Clinical Pearls:

- Consider underlying etiology of abdominal pain before selecting treatment option (e.g. anticholinergics and opioids counterintuitive in gastroparesis)
- Ketamine: avoid use in patients with history of psychosis
- NSAIDs: avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
- Provide patient education regarding type of pain, medication choices, and what to expect
- Consider distractions such as music, talking to patient
- Metoclopramide contraindicated in situations when stimulation of GI motility may be dangerous, including mechanical GI obstruction, perforation or hemorrhage

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Dental Pain

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Acetaminophen 975 mg PO **AND/OR** Ibuprofen 400 – 600 mg PO (If patient cannot tolerate PO, ketorolac 15 mg IV/IM)	Bupivacaine 0.5% nerve block	Lidocaine 2% viscous solution – swish and spit	Apply ice pack to painful area	Acetaminophen 975 mg PO q6H PRN **AND/OR** Ibuprofen 400 – 600 mg PO q6H PRN **AND/OR** Lidocaine 2% viscous solution – swish and spit q3 hours PRN

Clinical Pearls:

- Opioids are almost never indicated for the initial treatment of dental pain
- Provide patient education regarding type of pain, medication choices, and what to expect
- Analgesia is a temporizing measure for more definitive treatment
- NSAIDs: avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
- Consider infectious sources of dental pain, especially in setting of poor dentition, inflammation of jaw/mouth, systemic signs of infection
- Consider distractions such as music, talking to patient

Headache, Non-Migraine

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Acetaminophen 975 mg PO **AND/OR** Ibuprofen 400 – 600 mg PO (If patient cannot tolerate PO, ketorolac 15 mg IV/IM) *Cluster headache* **ADD** oxygen via non-rebreather at 12 L/min for at 15 minutes	Metoclopramide 10 mg IV	Haloperidol 2.5-5 mg IV **OR** Droperidol 2.5 mg IM	Place patient in quiet and dark room when possible	Acetaminophen 975 mg PO q6H PRN **AND/OR** Ibuprofen 400 – 600 mg PO q6H PRN

Clinical Pearls:

- NSAIDs: avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
- Provide patient education regarding type of pain, medication choices, and what to expect

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Headache, Migraine

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
NS 1 -2 L IV bolus **AND** Metoclopramide 10 mg IV **AND** Ibuprofen 400 – 600 mg PO (If patient cannot tolerate PO, ketorolac 15 mg IV/IM) **AND/OR** Acetaminophen 975 mg PO if patient able to tolerate PO	Prochlorperazine 10 mg IV/IM + Diphenhydramine 12.5 mg IV/IM **AND** Magnesium sulfate 2 g IV **AND** Dexamethasone 10 mg IV once prior to discharge (reduces migraine recurrence)	Haloperidol 2.5-5 mg IV **OR** Droperidol 2.5 mg IM	Apply ice packs to head depending on patient preference Place patient in quiet and dark room when possible Consider sphenopalatine nerve block	Ibuprofen 400 – 600 mg PO q6H PRN **AND/OR** Acetaminophen 975 mg PO q6H PRN

Clinical Pearls:

- NSAIDs: Better efficacy for migraines in comparison to acetaminophen; avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
  Prochlorperazine: administration of diphenhydramine 12.5 mg IV or 25 mg IM helps avoid EPS symptoms
- Provide patient education regarding type of pain, medication choices and what to expect
- Minimize distractions as much as possible

Musculoskeletal Pain (including Fractures and Joint Dislocations)

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Acetaminophen 975 mg PO **AND/OR** Diclofenac gel 1% (Ibuprofen 400 – 600 mg PO or ketorolac 15 mg IV/IM if not candidate for topical therapy) *Muscle Spasms* Tizanidine 2 mg PO	Lidocaine patch 4% - apply up to 3 patches at once to most painful area *(if did not already receive diclofenac gel in same area)* **OR** Ketamine 0.15-0.3 mg/kg IV over 15 minutes *Muscle Spasms* Diazepam 5 mg PO	Consider bupivacaine 0.5% nerve block **AND/OR** Opioid rescue*	RICE – Rest, Ice, Compression, Elevation Apply cold packs to painful area Elevate limb Splint affected limb Consider trigger point injections Music and relaxation Physical therapy	Acetaminophen 975 mg PO q6H PRN **AND/OR** Diclofenac gel 1% OR Ibuprofen 400 – 600 mg PO q6H PRN **AND/OR** Lidocaine 4% patches – apply up to 3 patches to most painful areas q24H PRN, leave on for 12 hours and remove for 12 hours

Clinical Pearls:

- Provide patient education regarding type of pain, medication choices and what to expect
- Patients may require round the clock dosing (e.g., acetaminophen and/or ibuprofen every 6 hours)
- Advise patient to avoid bearing weight on affected bone/joint; provide crutches/splints as warranted
- Ketamine: avoid use in patients with history of psychosis
- NSAIDs: avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
- Trigger point injections may be painful as the needle enters the nerve. Consider nerve block prior to TPI.

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Neuropathic Pain

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Gabapentin 300 mg PO *Trigeminal neuralgia* Carbamazepine 100 mg PO	Lidocaine patch 4% - apply up to 3 patches at once to most painful area **OR** Capsaicin Cream 0.025%- apply layer to affected area *Trigeminal neuralgia* Baclofen 10 mg PO	Ketamine 0.15-0.3 mg/kg IV over 15 minutes **OR** Opioid rescue* *Trigeminal neuralgia* Gabapentin 300 mg PO	N/A	Lidocaine 4% patches – apply up to 3 patches to most painful areas q24H PRN, leave on for 12 hours and remove for 12 hours **OR** Capsaicin Cream- apply layer to affected area **AND/OR** Gabapentin 300 mg TID (with follow up with PMD for dose titration) *Trigeminal neuralgia* Carbamazepine 100 mg PO BID

Clinical Pearls:

- Provide patient education regarding type of pain, medication choices and what to expect
- Gabapentin and carbamazepine do not provide immediate relief in most patients. Advise patients to follow up with their primary care doctor for dose titration
- Ketamine: avoid use in patients with history of psychosis
- Consider distractions such as music, talking to patient, etc.

Renal Colic

First Line	Second Line	Third Line	Adjunctive Therapy	Discharge
Acetaminophen 975 mg PO **AND/OR** Ibuprofen 400 – 600 mg PO (If patient cannot tolerate PO, ketorolac 15 mg IV/IM)	Ketamine 0.15-0.3 mg/kg IV over 15 minutes	Opioid rescue*	*Anti-emetics* Ondansetron 4 mg IV/4 mg ODT PO **OR** Metoclopramide 10 mg IV *Medical expulsive therapy* Tamsulosin 0.4 mg PO once (Consider for distal ureteric stones)	Acetaminophen 975 mg PO q6H PRN **AND/OR** Ibuprofen 400 – 600 mg PO q6H PRN **AND/OR** Tamsulosin 0.4 mg PO q24H until stone passage (max duration 4 weeks)

Clinical Pearls:

- NSAIDs: avoid use in third trimester of pregnancy, peptic ulcer disease, history of GI bleed, or active major bleeding
- Ketamine: avoid use in patients with history of psychosis
- Tamsulosin: consider in patients with distal ureteric stones sized $\leq$ 10 mm
- Provide patient education regarding type of pain, medication choices and what to expect
- Consider distractions such as music, talking to patient, etc.

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Sickle Cell

Refer to **University Hospital Emergency Department Clinical Practice Guideline: Management of Sickle Cell Anemia Vaso-occlusive Crisis (VOC)**

- Available on Clinical Links: Link here

*OPIOID RESCUE OPTIONS

- Reserve opioids for pain refractory to non-opioid alternatives. Opioids may also be indicated as initial therapy in certain instances of severe pain.
- Patients who are already on opioid analgesics receiving methadone/buprenorphine, or receiving end-of-life care may require higher doses and increased frequency of opioids
    - The general recommendation is to provide ~25% above their regular opioid requirement (see opioid tolerant section below)
- **If discharging a patient with an opioid prescription, check the PDMP at https://newjersey.pmpaware.net/login**
    - **Document in Epic using dot phrase (.firstopioid, .secondopioid, .thirdopioid)**

Opioid naïve

Patient able to tolerate PO	Patient *unable* to tolerate PO (preferred)	Alternative provided patient **NOT** opioid dependent
Morphine IR 15 mg PO ↓ If pain score not reduced to tolerable levels within 60 minutes, give: Morphine IV 0.1 mg/kg IV (max dose 8 mg) (consider lower doses in elderly, patients at risk for respiratory depression) **OR** Fentanyl 0.5 mcg/kg IV (round to nearest 25 mcg, max dose 50 mcg) ↓ If pain score not relieved in 30 minutes, may increase morphine dose as tolerated up to 10 mg every 4 hours (if low risk of respiratory depression) (or if using fentanyl, double initial dose, round to nearest 25 mcg, max dose 100 mcg)	Morphine IV 0.1 mg/kg IV (max dose 8 mg) (consider lower doses in elderly, patients at risk for respiratory depression)) **OR** Fentanyl 0.5 mcg/kg IV (round to nearest 25 mcg, max dose 50 mcg) ↓ If pain score not relieved in 30 minutes, may increase morphine dose as tolerated up to 10 mg every 4 hours (if low risk of respiratory depression) (or if using fentanyl, double initial dose, round to nearest 25 mcg, max dose 100 mcg)	Buprenorphine 0.3 mg IV/IM ↓ If pain score not reduced to tolerable levels in 30 minutes, repeat buprenorphine 0.3 mg IV/IM once more

Opioid Tolerant (Patients taking > 60 mg PO morphine equivalents/day OR chronic heroin abuse)

Assess patient's opioid home dose and convert to PO morphine (IV morphine if unable to tolerate PO)

Opioid	Dose	Morphine IR PO Dose	Morphine IV Dose
Oxycodone	5 mg	15 mg	4 mg
	10 mg	30 mg	8 mg
Hydromorphone PO	2 mg	15 mg	4 mg
	4 mg	30 mg	8 mg
Morphine PO	15 mg	15 mg	4 mg
Unknown home regimen	N/A	15 mg	4 mg

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MEDICATIONS FOR DISCHARGE PEARLS

<table>
<tr><th>Medications Class</th><th>Medication</th><th>Recommended Dose</th><th>Pearls</th></tr>
<tr><td>Nonopioid analgesic</td><td>Acetaminophen</td><td>650 mg every 4 hours PO as needed</td><td>• Maximum dose: 4g/day (patients with chronic liver disease or cirrhosis can safely use up to 2g/day [provided not actively drinking alcohol])
• Ensure patient is not taking other acetaminophen containing combination products (e.g., oxycodone-acetaminophen, over-the-counter cough and cold medicine, etc)
• Safe in pregnancy</td></tr>
<tr><td rowspan="3">Nonopioid analgesic (NSAIDs)</td><td>Ibuprofen</td><td>400 mg to 600 mg every 6 hours PO as needed</td><td rowspan="3">• Use lowest dose and shortest duration possible to decrease risk of adverse effects
• Black Box Warning:
○ Increased risk of serious cardiovascular thrombotic events, including MI and stroke. Patients with known CV disease or risk factors at higher risk. Contraindicated in the setting of CABG
○ Increased risk of GI bleeding, ulceration and perforation. Elderly patients at greater risk
• Additional warnings: new or worsening HTN, heart failure and edema, renal impairment- use sparingly or avoid in at risk patients
• Avoid in patients with liver disease and third trimester of pregnancy
<table><tr><th></th><th colspan="3">Gastrointestinal Risk*</th></tr><tr><th></th><th>Low</th><th>Moderate</th><th>High</th></tr><tr><td>Low CV risk</td><td>Ibuprofen</td><td>Ibuprofen + PPI</td><td>Alternative therapy if possible or celecoxib + PPI</td></tr><tr><td>High CV risk**</td><td>Naproxen + PPI</td><td>Naproxen + PPI</td><td>Avoid use</td></tr></table>PPI- proton pump inhibitor
*GI risk stratified into low (no risk factors), moderate (1-2 risk factors) and high (multiple risk factors or previous ulcer complications or use of corticosteroids or anticoagulants). Risk factors include age >65 years, high dose NSAID therapy, previous history of uncomplicated ulcer and concurrent use of aspirin
**High CV risk defined as requiring low-dose aspirin for prevention of CV events</td></tr>
<tr><td>Naproxen</td><td>250 to 500 mg every 12 hours PO as needed</td></tr>
<tr><td>Celecoxib</td><td>200 mg every 12 hours PO as needed</td></tr>
<tr><td rowspan="3">Opioids</td><td colspan="3">New Jersey law requires prescribers to review patient’s prescription history using NJPMP prior to prescribing: https://newjersey.pmpaware.net/login
NJ Law also limits initial opioid prescriptions to no more than a 5-day supply at the lowest effective dose</td></tr>
<tr><td>Morphine</td><td>10 mg every 4 hours as needed</td><td>• Avoid in renal and hepatic disease</td></tr>
<tr><td>Hydrocodone-Acetaminophen</td><td>2.5 to 10 mg hydrocodone every 4 to 6 hours as needed (max dose may be limited by acetaminophen content in product)</td><td>• All immediate-release hydrocodone formulations contain acetaminophen. Patients MUST be counseled on reading labels of over-the-counter products carefully and not exceeding recommended daily dose of acetaminophen
• Initiate therapy with a low dose and monitor closely in renal and hepatic impairment</td></tr>
<tr><td rowspan="2">Miscellaneous</td><td>Gabapentin</td><td>100 to 300 mg 1 to 3 times daily</td><td>• Causes dose-dependent CNS depression that presents as dizziness and/or drowsiness. Use cautiously and at lower doses in renal impairment, elderly and those taking other sedatives
• Does not provide immediate relief in most patients. Requires primary care follow-up for dose titration</td></tr>
<tr><td>Lidocaine Patch</td><td>Refer to manufacturer’s labeling for product-specific dosing</td><td>• Patches come in 4% (OTC) and 5% (prescription only). Patches should only be applied to intact skin</td></tr>
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