Pain Control

NCOEMS Ketamine Pilot Project

History
- Age
- Location
- Duration
- Severity (1 - 10)
- If child use Wong-Baker faces scale
- Past medical history
- Medications
- Drug allergies

Signs and Symptoms
- Severity (pain scale)
- Quality (sharp, dull, etc.)
- Radiation
- Relation to movement, respiration
- Increased with palpation of area

Differential
- Per the specific protocol
- Musculoskeletal
- Visceral (abdominal)
- Cardiac
- Pleural / Respiratory
- Neurogenic
- Renal (colic)

Enter from
Protocol based on **Specific Complaint**

Assess Pain Severity

Use combination of Pain Scale, Circumstances, MOI, Injury or Illness severity

Mild

B	**Ibuprofen 10 mg/kg PO** **(400 – 600 mg typical adult)** **Maximum 800 mg** **Or** **Acetaminophen 15 mg/kg** **(325 – 1000 mg typical adult)** **Maximum 1000 mg** **Or** **Aspirin 324 to 650 mg PO** **(≥ 16 only)**
A	Consider IV Procedure ***if indicated***

Moderate to Severe

	IV / IO Procedure
A	**Ketorolac 30 mg IV / IO** **60 mg IM** **Maximum 60 mg** **Peds: 0.5 mg/kg IV / IO / IM** **Maximum 30 mg**
	Cardiac Monitor
	Nitrous Oxide 50:50 Mix ***if available***
P	**Fentanyl 50 – 75 mcg IV / IO** Repeat **25 mcg** every 20 minutes **Maximum 200 mcg** **Peds: 1 mcg/kg IV / IO / IM / IN** May repeat 0.5 mcg/kg every 5 minutes **Maximum 2 mcg/kg** Or **Morphine 4 mg IV / IO / IM** Repeat **2 mg** every 5 minutes as needed **Peds: 0.1 mg/kg IV / IO / IM** May repeat every 5 minutes **Maximum 10 mg**
	Ketamine 0.2 mg/kg IV / IO **Maximum 20 mg** Mix in 50 - 250 mL NS and Infuse over 10 minutes May repeat in 30 minutes as needed

Monitor and Reassess
Every 10 minutes following sedative

Notify Destination or
Contact Medical Control

Universal Protocol Section

Pain Control

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Universal Protocol Section

- Pearls
- **Recommended Exam: Mental Status, Area of Pain, Neuro**
- **Pain severity (0-10) is a vital sign to be recorded before and after PO, IV, IO or IM medication delivery and at patient hand off. Monitor BP closely as sedative and pain control agents may cause hypotension.**
- **Both arms of the treatment may be used in concert. For patients in Moderate pain for instance, you may use the combination of an oral medication and parenteral if no contraindications are present.**
- **Pediatrics:**
  - For children use Wong-Baker faces scale or the FLACC score (see Assessment Pain Procedure)
  - Use Numeric (> 9 yrs), Wong-Baker faces (4-16yrs) or FLACC scale (0-7 yrs) as needed to assess pain
- **Vital signs should be obtained before, 10 minutes after, and at patient hand off with all pain medications.**
- All patients who receive IM or IV medications must be observed 15 minutes for drug reaction in the event no transport occurs.
- Do not administer any PO medications for patients who may need surgical intervention such as open fractures or fracture deformities, headaches, or abdominal pain.
- **Ketorolac (Toradol) and Ibuprofen should not be used in patients with known renal disease or renal transplant, in patients who have known drug allergies to NSAID's (non-steroidal anti-inflammatory medications), with active bleeding, headaches, abdominal pain, stomach ulcers or in patients who may need surgical intervention such as open fractures or fracture deformities.**
- Do not administer **Acetaminophen** to patients with a history of liver disease.
- Burn patients may required higher than usual opioid doses to titrate adequate pain control.
- Consider agency-specific anti-emetic(s) for nausea and/or vomiting.
- **Ketamine:**
- **Agencies participating in the NCOEMS Ketamine Project must complete both Ketamine Evaluation Forms and submit to the Regional Specialist.**
- **Ketamine administration requires continuous EtCO2 monitoring.**
- **Use for pain limited to: Patients who no longer fit on a Pediatric Length-based Resuscitation Tape to ≤ 65 years of age.**
- **Must administer by IV / IO infusion over 10 minutes. Recommended volumes are 50 – 250 mL.**
- Ketamine Dissociation syndrome:
  - With rapid push or rapid infusion side effects such as hallucinations or agitation could occur. Doses ≥ 0.2 mg/kg may also cause similar symptoms. Symptoms may occur even with slow infusion.
  - Treatment includes benzodiazepines such as Midazolam, Lorazepam, or Diazepam. May require repeat dosing.
  - Treatment also includes decreasing ambient stimuli such as sounds, lighting, or activity.
  - Ketamine can cause apnea in the geriatric population.
  - While uncommon, Ketamine may cause hypotension.