**Sickle Cell Pain Pathway**

**ED**

**Sickle Cell Disease patient with pain:**

- **Exclusion criteria:** trauma, stroke, sepsis

**Nursing may activate “Quick List” for initial IN fentanyl dose**

- **Administer IN fentanyl 1.5 mcg/kg (max 100 mcg)**

- **Place on continuous oxygen monitoring**

- **Reassess pain 15 mins after initial IN dose**

- **If moderate to severe pain, repeat 2nd dose of IN fentanyl**

- **Max 2 doses IN fentanyl in 2 hours**

- **Is pain moderate/severe or mild?**

**Initial IV Bundle**

- **IV Opioid + IV ketorolac**
  - morphine
  - hydromorphone
  - ketamine (IV or IN)

**Reassess pain in 60 mins**

**Reassess pain in 20-30 mins**

**Is the patient comfortable?**

**IV Bundle 2**

- Repeat same dose or give increased dose of opioid if no significant improvement

**Administer oral acetaminophen (if not already given)**

**Reassess pain in 60 mins**

**Is the patient comfortable?**

**IV Bundle 3**

- Repeat same dose or give increased dose of opioid if no significant improvement

**Reassess in 60 minutes and determine disposition**

- **Hematology Consult**

**Discharge Criteria**

- Patient with pain improvement and can pain be managed at home?

- **Continues at least 60 mins after PO analgesia**

- **No other complications of Sickle Cell Disease (e.g. ACS, Sequestration)**

**Screen For:**

- Last pain medication at home
- Last pain episode
- Severe or atypical HA
- Antecedent illness status
- Neurological findings

- New seizures

- Stroke

- Acute Chest Syndrome (ACS)

- Chest pain
- Cough
- Fever
- Hypothesis
- Lung infiltrate

**Admit to PICU vs Hem/Onc admission?**

- **Hem/Onc**

- **PICU**

**Admit to Hem/Onc Floor**

- Utilize the ketamine/dexmedetomidine algorithm for advanced pain management

**Consult Hem/Onc. PICU for inpatient admission**

**Admit to Hem/Onc. Place**

- **If Bundle 4/2D Hold Prior to floor transfer:**
  - Start q 2-3H scheduled opioid
  - Acetaminophen q4H alternating with ketorolac q2H
  - Continue hourly pain reassessments

**Obtain IV access**

- Place on continuous oxygen monitoring

**Initial IV Bundle**

- **IV Opioid + IV ketorolac**
  - morphine
  - hydromorphone
  - ketamine (IV or IN)

**Obtain Labs**

- CBC
- Retic
- Type and Screen
- Chem 14

**Consult Hem/Onc. PICU for inpatient admission**

**Admit to PICU**

- Utilize the ketamine/dexmedetomidine algorithm for advanced pain management

**Admit to Hem/Onc. Place**

- **If Bundle 4/2D Hold Prior to floor transfer:**
  - Start q 2-3H scheduled opioid
  - Acetaminophen q4H alternating with ketorolac q2H
  - Continue hourly pain reassessments

**Consult Hem/Onc. PICU for inpatient admission**

**Admit to PICU**

- Utilize the ketamine/dexmedetomidine algorithm for advanced pain management

**Admit to Hem/Onc. Place**

- **If Bundle 4/2D Hold Prior to floor transfer:**
  - Start q 2-3H scheduled opioid
  - Acetaminophen q4H alternating with ketorolac q2H
  - Continue hourly pain reassessments

**Admit to PICU**

- Utilize the ketamine/dexmedetomidine algorithm for advanced pain management

**Admit to Hem/Onc. Place**

- **If Bundle 4/2D Hold Prior to floor transfer:**
  - Start q 2-3H scheduled opioid
  - Acetaminophen q4H alternating with ketorolac q2H
  - Continue hourly pain reassessments
Sickle Cell Pain Pathway
ED Appendix A Ω & Appendix B Ψ

### Appendix A
**Medication Dosing Chart**

<table>
<thead>
<tr>
<th>Medication</th>
<th>Route</th>
<th>Administration</th>
<th>Dose</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetaminophen</td>
<td>PO</td>
<td></td>
<td>15 mg/kg q 4-6 hrs</td>
<td>MAXDOSE 1000 mg</td>
</tr>
<tr>
<td>Dexmedetomidine</td>
<td>Cont IV</td>
<td></td>
<td>0.5 mg/kg/hr</td>
<td></td>
</tr>
<tr>
<td>Fentanyl</td>
<td>IN</td>
<td>Use 1 syringe, add 0.1 mL saline to prime. Administer half of dose into each nostril</td>
<td>1.5 mg/kg</td>
<td>Onset 5-10 mins</td>
</tr>
<tr>
<td>Hydrocodone</td>
<td>PO</td>
<td>&lt; 60 kg 0.2 mg/kg dose</td>
<td>2.5 kg 5-10 mg/kg dose</td>
<td>Dosing every 4-6 hours</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>IV</td>
<td>&gt;6 months of age AND &gt;10 kg</td>
<td>0.5 mg/kg/hr</td>
<td>Dosing for children over 6 months ONLY MAX 1 mg</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>PO</td>
<td></td>
<td>10 mg/kg q 4-6 hrs</td>
<td>MAXDOSE 800 mg</td>
</tr>
<tr>
<td>Ketamine</td>
<td>IN</td>
<td>One time admin</td>
<td>0.25 mg/kg</td>
<td>Onset within 10 mins</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td></td>
<td>0.25 mg/kg</td>
<td>Onset within 10 mins</td>
</tr>
<tr>
<td></td>
<td>Cont IV</td>
<td>Can bolus x1 up to 10 mg</td>
<td>0.1-0.5 mg/kg/hr</td>
<td>Recommend starting dose of 0.15 mg/kg/hr</td>
</tr>
<tr>
<td>Ketorolac</td>
<td>IV</td>
<td>IVP 2-3 mins</td>
<td>&lt; 50 kg 0.5 mg/kg dose</td>
<td>MAX 15 mg</td>
</tr>
<tr>
<td></td>
<td>IV</td>
<td>Slow IV over 5 mins</td>
<td>0.1 mg/kg/hr</td>
<td>MAX 5 mg/dose</td>
</tr>
<tr>
<td>Morphine</td>
<td>PO</td>
<td>≤ 6 months 0.1 mg/kg dose</td>
<td>&lt; 50 kg ≤ 15 mg/hr</td>
<td>50 kg 0-20 mg/hr</td>
</tr>
<tr>
<td>Codeine</td>
<td>PO</td>
<td>Infants ≤ 6 mo 0.05-0.06 mg/kg dose</td>
<td>&lt; 50 kg ≤ 1 mg/hr</td>
<td>50 kg 0-20 mg/hr</td>
</tr>
</tbody>
</table>

### Appendix B
**Pain Scales**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>N-Pass-Revised Score</th>
<th>rFLACC Score</th>
<th>PACE3-R Scale Score</th>
<th>Ages 2 months - 7 years &amp; children with cognitive impairment</th>
<th>Ages 4-15</th>
<th>Ages 10 and older</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth to 36 months, ALL NICU patients</td>
<td>0-3*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Relaxed and Comfortable</td>
<td>3-6*</td>
<td>1-3</td>
<td>2-4</td>
<td>1-3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mild Discomfort/pain</td>
<td>6-8*</td>
<td>4-6</td>
<td>4-6</td>
<td>4-6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate Pain</td>
<td>9-11*</td>
<td>7-10</td>
<td>8-10</td>
<td>7-10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severe Pain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Prematurity impacts perception of pain at 30 weeks gestation or less.
For patients 30 weeks gestation or less, add 1 point to each section’s baseline score.

**Disclaimer:** Pathways are intended as a guide for practitioners and do not indicate an exclusive course of treatment nor serve as a standard of medical care. These pathways should be adapted by medical providers, when indicated, based on their professional judgement and taking into account individual patient and family circumstances.

ChildrensNebraska.org/Pathways
Updated 09/2023