<table>
<thead>
<tr>
<th>ALL OTHER ORDERS</th>
<th>DATE</th>
<th>TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assess pain and sedation level as per hospital policy, using appropriate tools (e.g. POSS, RASS).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Obtain vital signs, pain, and sedation levels prior to initiation or change in PCA. Then monitor vital signs, pain, and sedation levels every 15 min x 4, every hour x 4, then every 4 hours.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Monitor continuous pulse oximetry for first 24 hrs. Page PCA ordering team thereafter to continue monitoring as needed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Call MD/LIP for:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Respiratory rate &lt; 10 or SpO2 &lt; 93%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Unsatisfactory analgesia &gt; 1 hour from previous adjustment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Increasing sedation (POSS score ≥ 3 or RASS &lt; 0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Unsatisfactorily treated nausea/vomiting or pruritus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. If no other IV ordered, use NS at 30mL/hr to maintain IV access for PCA</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Educate the patient and family on the proper use of the PCA pump</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:** Morphine is the initial drug of choice if the patient has normal renal function.

**Note:** Hard ranges for **continuous infusion** in Alaris pump (doses above the following require ordering the intractable pain dosing library. Please order as a separate infusion.):

**Pump Rate Limits**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Standard Dose</th>
<th>High Dose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>1 mg/hr</td>
<td>5 mg/hr</td>
</tr>
<tr>
<td>HYDROMorphone</td>
<td>0.2 mg/hr</td>
<td>2 mg/hr</td>
</tr>
<tr>
<td>FentaNYL</td>
<td>20 mcg/hr</td>
<td>50 mcg/hr</td>
</tr>
</tbody>
</table>

**Continuous Infusion**

- **Intractable Pain Dose** (use requires palliative care or pain anesthesia approval if not in ICU; only for opioid-tolerant patients):
  - Morphine: 5 mg/mL
  - HYDROMorphone: 1 mg/mL
  - FentaNYL: 20 mcg/mL

- **One hr limit**: _________ mg (includes max PCA doses + continuous doses total in 1 hour)

- **Continuous Infusion** (Only for opioid-tolerant patients. Strongly recommend input from anesthesia or palliative care if not in ICU)
  - **23:00PM - 7:00AM**: _________ / hour

**Prohibited Abbreviations:** U, qd, qod, IU, 0.1 (write 0.1), 1.0 (write 1), MS, MSO4, MgSO4
CLINICAL GUIDE FOR CHANGING OPIOID ANALGESICS

<table>
<thead>
<tr>
<th>Oral / Rectal (mg)</th>
<th>Analgesic</th>
<th>Parenteral (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200</td>
<td>Codeine</td>
<td>100</td>
</tr>
<tr>
<td>300</td>
<td>Tramadol</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>Hydrocodone</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>Morphine</td>
<td>10</td>
</tr>
<tr>
<td>20</td>
<td>Oxycodone</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>Hydromorphone</td>
<td>1.5</td>
</tr>
<tr>
<td>(-)</td>
<td>Fentanyl</td>
<td>0.1 (100mcg)</td>
</tr>
<tr>
<td></td>
<td>Oxymorphone</td>
<td></td>
</tr>
</tbody>
</table>

CALCULATING FORMULA

To convert from one opioid or route of administration to another opioid or route of administration:

\[
\text{current opioid dose (mg), route} \times \left( \frac{\text{desired opioid dose (mg), route}}{\text{current opioid dose (mg), route}} \right) = \text{desired opioid dose (mg), route}
\]

ADJUSTING FOR INCOMPLETE CROSS TOLERANCE

Based on level of pain control at the time of conversion

- Poor pain control: 100%
- Moderate pain control: 75%
- Excellent pain control: 50%

FENTANYL CONVERSION

(not to be used for acute pain management)

- Oral Morphine: 50-100mg / 24 hours
- Fentanyl: 25 mcg / hour patch

ORAL/TRANSDERMAL AVAILABILITY OF COMMONLY PRESCRIBED OPIOIDS

- Tramadol: 50mg tablets
- Morphine: Immediate-release: 30mg tablets, Controlled-release: 15mg, 30mg, 60mg, 100mg tablets, Oral solution: 20mg / 10mL, 20mg/mL
- Oxycodone: Immediate-release: 5mg tablets, Controlled-release: 10mg, 20mg, 40mg tablets, Oral solution: 5mg / 5mL, 20mg/mL
- Hydromorphone: 2mg, 4mg tablets, 3mg suppositories
- Fentanyl: Transdermal patches: 12mcg, 25mcg, 50mcg, 75mcg, 100mcg

For specific questions regarding hospital formulary, please contact the main pharmacy.

(Memorial Campus X46356, University Campus X62775)
### UMASS MEMORIAL MEDICAL CENTER

#### PHYSICIAN’S ORDERS

**ADULT INTRAVENOUS PATIENT-CONTROLLED ANALGESIA (PCA)**

Page 3 of 4

<table>
<thead>
<tr>
<th><strong>Name:</strong></th>
<th><strong>Birthdate/Age:</strong></th>
<th><strong>Sex:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Medical Record Number:</strong></td>
<td><strong>ECD / Account Number:</strong></td>
<td></td>
</tr>
</tbody>
</table>

**PRINT CLEARLY IN INK OR IMPRINT WITH PATIENT’S CARD**

---

**Height** Inches  Cm.  **Weight** Lbs.  Kg.

**ALLERGIES:**
- [ ] YES (LIST BELOW) OR [ ] LISTED PREVIOUSLY
- [ ] NONE KNOWN

---

**Attending/Change Attending To:** __________________________________________  Pager: __________

**(First) (Last)**

**Resident:** __________________________________  Pager: __________

**Overnight coverage:** ______________________  Pager: __________

**Intern/NP/PA (First Call):** ______________________  Pager: __________

**House Staff Coverage:** [ ] Yes  [ ] No (uncovered)

---

**ATTENDING/NURSE TO SIGN AND PLACE PAGER NUMBER LEGIBLY UNDER EACH ORDER SET**

**MEDICATION ORDERS ONLY**

**INDICATE CHOICE OF ORDER OPTIONS BY USING X IN CHECK BOXES**

---

**1. Prevention of Constipation:**
   - [ ] Senna 2 tabs PO BID (hold for >3 loose stools/day) recommended
   - [ ] Docusate sodium (Colace) 100mg PO BID (hold for >3 loose stools/day) recommended
   - [ ] Other:

**2. Treatment of Constipation**
   - **Choose one Oral Laxative:**
     - [ ] Polyethylene glycol (Miralax) 17gm PO daily if >24hrs without BM
     - [ ] Milk of magnesia 30mL PO q6hrs PRN if >24hrs without BM
   - **Choose Rectal PRN Laxative(s):**
     - [ ] Bisacodyl (Dulcolax) 10mg PR q6hrs PRN if unable to take PO and/or >24 hrs without BM despite oral laxatives
     - [ ] High tap water enema PR daily PRN > 48 hrs without BM and bisacodyl PR unsuccessful
   - [ ] Other:

**3. Treatments PRN Nausea/Vomiting (N/V) (choose one):**
   - [ ] Metoclopramide (Reglan) 10mg IV q6hrs PRN nausea/vomiting (first choice for patients with impaired GI motility)
   - [ ] Ondansetron (Zofran) 4mg IV q8hrs PRN nausea/vomiting (first choice for patients post-anesthesia or receiving cancer-directed therapy)
   - [ ] Other:

---

**4. Treatments PRN Pruritus:**
   - [ ] Diphenhydramine (Benadryl) 12.5-25mg IV q4hrs PRN pruritus
   - [ ] Other:

**5. Treatments PRN Respiratory Depression:**
   - [ ] If patient is hemodynamically stable with signs of respiratory depression (e.g. RR <10 and [POSS > 3 or RASS < 0])
     - (a) administer O2 at 4L/min by NC
     - (b) stop opioid infusion
     - (c) call MD/LIP and
     - (d) use 1mL luer-lock syringe with Naloxone 0.4mg/1mL vial and administer Naloxone 0.04mg IV (0.1mL) every 3 minutes up to 0.12mg IV PRN
   - [ ] If patient is hemodynamically unstable with RR <10 and (POSS > 3 or RASS < 0)
     - (a) call CODE BLUE if patient full code or call MD/LIP if DNR/DNI
     - (b) administer Naloxone 0.2mg IV every 3 minutes up to 0.4mg PRN and every 2 hours PRN; higher doses may be required if high suspicion for opioid-induced respiratory depression

---

**Signature of MD/DO/NP/PA:** ________________________________  **Printed Name:** ________________________________

**Signature of RN:** __________________________  **Printed Name:** ________________________________  **Pager:** __________

Prohibited Abbreviations:  U, qd, qod, IU, .1 (write 0.1), 1.0 (write 1), MS, MSO4, MgSO4

810672  Rev 03/22/15
Suggestions Regarding Treatment of Side Effects:

**Constipation:**
The daily regimen should be increased if frequent rescue medication for constipation is necessary.
1. Opioid reduce peristalsis. All patients on opioids need a daily stimulant laxative to prevent constipation, as well as rescue medication if constipation persists.
2. Consider the following protocol:
   i. Start with senna (max of 8 tabs/day) and docusate
   ii. Order oral and rectal laxatives PRN and use if no bowel movement in 1-2 days.
   iii. Titrate daily maintenance regimen as needed.
3. Note: Some patients are not appropriate to receive rectal laxatives or enemas (e.g. patients with neutropenia).

**Nausea/Vomiting:** tolerance will usually develop to opioid induced nausea/vomiting
1. Constipation may contribute or be the source of nausea so be sure to treat the constipation.
2. Consider pathophysiology of patients’ nausea to guide treatment.
3. For opioid-induced nausea, dopamandergic agents can work best.
   i. Metoclopramide - can also help with poor GI motility (watch for drug induced movement disorders)
   ii. Haldoperidol - non-sedating, 0.5mg IV every 6 hours PRN (watch for drug induced movement disorders)
   iii. Prochlorperazine (Compazine) 25mg PR every 12 hours PRN nausea/vomiting
   iv. Ondasetron - can be effective, especially in post-op setting; can cause constipation and headache

**Pruritus:**
1. Consider opioid rotation
2. Diphenhydramine can decrease the opioid induced histamine release that triggers itching.