Ventura County Medical Center Guideline for Sedation and Analgesia in Ventilated Patients

**Is pt comfortable and at target RASS level?**
- Yes: Continue current care
- Perform daily awakening trial (see reverse for contraindications to daily awakening trial)

**PAIN**
- Is pain level >3
- Is VOPS score >2
- Any reversible cause of pain or anxiety? (see back page)

**ANXIETY**
- Is pt anxious?
- Is RASS score >0?

**HEMODYNAMIC STABILITY?**
- Yes: Fentanyl 0.5-1 mcg/kg (20-100 mcg) IV q3min prn OR Hydromorphone 0.25-2 mg IV q3 min prn
- No: Fentanyl or hydromorphone as above
- Ketamine 1 mg/kg IV bolus over 2-3 min; then start drip at 0.25-1 mg/kg/hour
  - Max infusion 150 mcg/kg/min
  - Max duration of continuous infusion is 5 d
  - Avoid if increased ICP/IOP, severe hypertension, psychosis

**DELIRIUM**
- Is pt delirious? (CAM-ICU)
- Haloperidol 5-10 mg PO/IV q12h/q4h prn (1-2 mg q12h if elderly) (avoid if prolonged QT interval >500 msec)
- Olanzapine 5-10 mg PO/IM daily-bid (2.5-5 mg daily-bid if elderly) (max 20mg/day)
- Continue antipsychotics for 24 hours past delirium
- Sleep aids: Ambien 5-10 mg PO qhs or alternative
- Hold antipsychotics and sleep aids for over-sedation

**Dexmedetomidine (Precedex)**
- DO NOT BOLUS
- Initiate drip at 0.5 mcg/kg/hour
- Titrate between 0.2-1.4 mcg/kg/hr every 30-60 min; caution if CrCl<50mL/min
- Maximal duration of use is 5 days
- Avoid in AV block/severe bradycardia

**Propofol 0.5 mg/kg IV load then start drip at 20 mcg/kg/min**
- Rebolus 0.5 mg/kg IV and increase drip 10mcg/kg/min every 5 min until target RASS score
- Max infusion 150 mcg/kg/min
- Max duration of continuous infusion is 5 d
- Baseline triglyceride level and q48h

**Lorazepam or midazolam 1-2 mg IV q10min titrated to target RASS then q2h prn**
- If benzos needed >q2h, start midazolam infusion at 1-2 mg/hr (AVOID lorazepam drip)
- If undersedated in 60 min, bolus with 50% drip rate and increase drip by 50%
- If oversedated, hold drip until target RASS score then decrease drip by 50% or restart intermittent dosing q 2h prn
- Max duration of midazolam drip is 72h; 24h if BMI>30, liver failure or renal failure (CrCl<30 mL/min)

**CONTROL AMBIENT NOISE**
- Turn off lights

**BUNDLE NIGHTTIME CARE**
- Frequent reorientation
- Early mobilization
- Remove unnecessary lines
- Hearing aids
- Glasses
- Avoid dehydration
- Ear muffs and eye shades at night
- BP cuff check q4 h in hemodynamically stable sleeping patients

**VENTILATOR SEDATION FLOWSHEET**

VENTURA COUNTY MEDICAL CENTER
SANTA PAULA HOSPITAL

VCMB-516-029 (06/2010)
### Ventura County Medical Center Observational Pain Scale (VOPS)**‡

<table>
<thead>
<tr>
<th>Facial Expression</th>
<th>0 points</th>
<th>1 point</th>
<th>2 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxed, neutral:</td>
<td>Presence of frowning, brow lowering, orbit tightening, &amp; levator contraction</td>
<td>Grimacing: All of the facial expressions for 1 point + eyelids tightly closed</td>
<td></td>
</tr>
<tr>
<td>No muscular tension observed</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Body Movement</th>
<th>Absence of Movements</th>
<th>Protection: Slow cautious movements, touching or rubbing the pain site, seeking attention through movements</th>
<th>Restlessness: Pulling at tube, attempting to sit up, moving limbs or thrashing, not following commands, striking at staff, trying to climb out of bed</th>
</tr>
</thead>
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<thead>
<tr>
<th>Muscle Tension</th>
<th>Relaxed: No resistance to passive movement</th>
<th>Tense, Rigid: Resistance to passive movements</th>
<th>Very Tense or Rigid: Strong resistance to passive movements, inability to complete them</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alarms not activated, easy ventilation OR Talking in normal tone or no sound</td>
<td>Coughing but tolerating the ventilator: Alarms stop spontaneously OR Sighing, moaning</td>
<td>Fighting Ventilator: Asynchrony; blocking ventilation; alarms frequently activated OR Crying out, sobbing, tearing</td>
<td></td>
</tr>
</tbody>
</table>

| Compliance with Ventilator (if intubated) OR Vocalization (if not intubated) | Alarms not activated, easy ventilation OR Talking in normal tone or no sound | Coughing but tolerating the ventilator: Alarms stop spontaneously OR Sighing, moaning | Fighting Ventilator: Asynchrony; blocking ventilation; alarms frequently activated OR Crying out, sobbing, tearing |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------------------------------------------------------|
| |

<table>
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<tr>
<th>Modifiers:</th>
<th>Known mildly painful procedure or condition (see list): +1</th>
</tr>
</thead>
<tbody>
<tr>
<td>-</td>
<td>Known moderately to severely painful procedure or condition (see list): +2</td>
</tr>
<tr>
<td>-</td>
<td>Unexplained elevated blood pressure, heart rate, or respiratory rate over baseline: +1</td>
</tr>
<tr>
<td>-</td>
<td>Unexplained markedly elevated blood pressure, heart rate, or respiratory rate over baseline: +2</td>
</tr>
</tbody>
</table>

The scale is to be recorded hourly with the vital signs. Scores of ≥10 are recorded as 10.

** - VCMC Observational Pain Scale is utilized if a patient can not self-report pain; desire a VOPS score <3

Adapted from the Critical Care Pain Observation Tool in American Journal of Critical Care. 2006; 15(4):420-427

‡ - Note: This scale does NOT apply to patients who are receiving neuromuscular blockers

### Richmond Agitation-Sedation Scale

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4</td>
<td>Combative, violent, immediate danger to self</td>
</tr>
<tr>
<td>+3</td>
<td>Very agitated Pulls or removes tube(s) or catheter(s); aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>Agitated Frequent nonpurposeful movement; fights ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>Restless Anxious, apprehensive but movements are not aggressive or vigorous</td>
</tr>
<tr>
<td>0</td>
<td>Alert and Calm</td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy Not fully alert, but has sustained awakening to voice (eye opening &amp; contact &gt;10 sec)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation Briefly awakens to voice (eye opening and contact &lt;10 sec)</td>
</tr>
<tr>
<td>-3</td>
<td>Moderate sedation Movement or eye opening to voice (but no eye contact)</td>
</tr>
<tr>
<td>-4</td>
<td>Deep sedation No response to voice, but movement or eye opening to physical stimulation</td>
</tr>
<tr>
<td>-5</td>
<td>Un arousable No response to voice or physical stimulation</td>
</tr>
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### Contraindications to Sedation Vacation

ICP >20 or suspected high ICP
Marked hemoptysis
Active Upper GI bleed with hemodynamic instability
Unstable Airway
Need for Therapeutic Coma
Marked Hemodynamic Instability
Receiving Neuromuscular Blockade
Prone Positioning
Respiratory Instability on Ventilator