I. INTRODUCTION
Physical and psychological distress is common among critically ill patients. Contributing factors are numerous, and likely evolve in a dynamic fashion that may include acute physiological abnormalities, pain, anxiety, sleep disturbances, poly-pharmacy, withdrawal syndromes, and delirium. Providing effective analgesia and sedation is paramount in optimizing patient care in the intensive care unit. Individual assessment of pain, agitation, and delirium with targeted goals of therapy is necessary in order to achieve and maintain an optimal level of comfort and safety for critically ill patients.

II. PURPOSE
Guide practitioners, through an integrated approach, to provide optimal analgesia and sedation to critically ill patients.

III. INTERVENTIONS
A. Sedation and analgesia for all ICU patients will include a systematic team approach to Assessment (See Appendix A).
   1. Initial assessment upon admission to the SICU to identify risk factors that may effect the type and dosing of medications chosen for sedation and analgesia.
      a. Past medical history
         (1) Determine the baseline mental status prior to admission
         (2) Determine if there is a history of psychiatric disorder, dementia, alzheimer’s disease, stroke, or TBI
         (3) May consider early psychiatric consultation
      b. Past social history
         (1) Substance abuse
            (a) Consider assessment and treatment for alcohol withdrawal if history of ongoing alcohol abuse
            (b) Chronic opioid utilization
            (c) Recreational or prescription drug abuse
            (d) If present consider early pain or psychiatric consultation
c. Medication reconciliation
   (1) Consider providing patient with any home medications or
       medications that were being provided at an outside facility as
       soon as medically feasible to minimize the likelihood of
       under treatment of pain or agitation and potentially decrease
       the development of delirium. Key classes of medications
       include chronic pain and psychiatric medications.

B. Daily Assessment
   1. Valid and reliable assessment tools will be used to evaluate pain, agitation, and
      delirium in the SICU patient.
      a. Pain: Behavioral Pain Score (BPS) or Numerica Pain Score (NPS)
         every 4 hours and PRN (See Appendix E))
      b. Agitation: Richmond Agitation Assessment Score (RASS) every
         4 hour and PRN (See Appendix F)
      c. Delirium: Confusion Assessment Method for the ICU (CAM-ICU)
         every 12 hours and PRN (See Appendix G)

C. Goals of Care
   1. Discuss goals of care at interdisciplinary patient care rounds and with any
      change in clinical condition such as post-operative, pre-and post-intubation,
      and with new emergency or life-threatening medical conditions.
      a. Assess current RASS scores and confirm target RASS goals
      b. Review pain and delirium assessments
      c. Determine a sedation and analgesia plan that includes a strategy to
         evaluate the outcomes of the current plan.
         (1) Needed changes in medication types or doses
         (2) Continuation of current pain and or/ sedation regimen
         (3) Taper dosing or discontinuation of sedation/analgesia
             regimen, transition from intravenous to oral treatment plans
      d. A newly intubated patient must be immediately assessed for pain,
         agitation, and delirium. The goals of care must be assessed and a
         plan for analgesia and sedation developed. The following chart
         outlines the decision tree for this clinical circumstance.
Patient intubated in the ICU

Neuromuscular blocking (NMBA) agent given for intubation

Sedation and analgesia medication given for intubation period may not provide adequate treatment to cover the time period when the NMBA still in effect

Ensure that an amnesic medication is administered to the patient

Consider the following:
Use an intermittent dose of benzodiazepine and opioid for the first 2 hours, then allow the patient to wake up to assess OR
Give a bolus dose of an opioid, start a propofol Infusion BUT
As clinically feasible it is essential to HOLD the propofol infusion within 1-2 hours and assess patient

Assess NPS/BPS, and RASS.
Follow the algorithm for PAD

Admission to ICU post-operatively and remains intubated

Is patient still under the effect of NMBA?

YES

Treat pain initially with bolus of opioid
If propofol infusing, as clinically feasible, HOLD the infusion and assess the patient

NO

Assess NPS/BPS, RASS.
Follow algorithms for PAD
D. Pain
1. The key component to the patients plan of care is to treat pain first. (Refer to Appendix B). Patient reported pain is considered the most reliable. The Numeric Pain Scale (See Appendix E) is used for patients who can determine an accurate pain level. For patients who are unable to communicate that they are having pain, the Behavioral Pain Scale (See Appendix E) should be used for assessment.
   a. Behavioral pain scores range from 3 (no pain) to 12 (maximum pain). A score of 5 or more indicates pain requiring treatment.
   b. Numeric pain scores range from 0 to 10; 1-3 (mild), 4-6 (moderate), and 7-10 (severe).
2. Morphine is the first line opioid agent for pain, unless the patient has renal failure or hypotension. In which case fentanyl or hydromorphone may be used. (Refer to Appendix H pharmacological charts).
3. Consider adjuncts such as NSAIDS, acetaminophen, gabapentin, or regional nerve blocks.
4. Intermittent doses should be determined to be ineffective before initiating continuous infusions
5. In awake and cooperative patients consider patient controlled analgesia (PCA)
6. Patients receiving opioids should receive a bowel regimen of senna, docusate sodium an/or bisacodyl suppository every day as appropriate.

E. Agitation
1. The Richmond Agitation Assessment Scale (RASS) is used to determine a patient’s level of sedation in the SICU (Appendix F)
   Target RASS goal for intubated and non-intubated patients is 0 to (-1) unless clinically indicated as per the physicians orders (Refer to Appendix C)
2. Some medical conditions such as traumatic brain injury and high
intracranial pressures, unstable airway, extreme hemodynamic instability, refractory hypoxemia, and uncontrolled seizures, require for patients to maintain deeper levels of sedation between (-2) to (-5).

3. Procedural sedation and analgesia may also require a patients RASS to be temporarily be <-1 for the completion of the procedure. Refer to UPHS moderate sedation policy number 1-12-11.

4. In cases where deeper sedation levels are required and neuromuscular blockade agents are being utilized, consult ICU pharmacist, refer to online formulary and neuromuscular blockade therapy policy number BCC-03-26.

5. Sedation should initiated only after ensuring adequate analgesia is being provided.

6. There should be ongoing evaluation of the causes for RASS to be outside of the target RASS goal of 0 to (-1), and treat reversible causes.

7. Consider intermittent doses of benzodiazepines before beginning a continuous infusion. For treatment of alcohol withdrawal refer to Appendix J.

8. Propofol may be used for continuous sedation (Refer to Appendix H).

F. Delirium

1. The CAM-ICU is the assessment tool used to determine the presence of delirium. (See Appendix G).

2. Delirium is a very common occurrence and potentially affects up to 80% of patients in the ICU.

3. There are 4 components of ICU delirium: fluctuations in mental status, inattention, altered level of consciousness, and disorganized thinking.

4. Hypoactive delirium is characterized by lack of awareness, decreased alertness, and minimal interaction.

5. Hyperactive delirium is characterized by restlessness, irritability, emotional lability, impulsive and sometimes aggressive and violent behavior.

6. Patients may present with mixed features of both hypo- and hyperactive, as a key component of delirium is a fluctuating course.

7. Treatment of delirium begins with identifying and treating the cause.

8. Implement non-pharmacological treatment measures for all ICU patients
10. Polypharmacy is a leading cause of iatrogenic delirium in hospitalized patients, consider decreasing or stopping high risk medications (See Appendix D).

11. Infection and sepsis are significant risk factors for developing delirium and must be considered when evaluating patients for a change in mental status.

12. Pharmacological treatment of delirium may include anti-psychotics, and atypical anti-psychotics. Refer to Appendix I and to HUP policy 1-07-16 Guideline for initiating antipsychotic medications for delirium.

G. Appendices

1. Appendix A – overall approach to achieving optimal control of pain agitation and delirium in the surgical critical care patient.
2. Appendix B- Management of Pain
3. Appendix C-Management of Agitation
4. Appendix D-Management of Delirium
5. Appendix E- Behavioral Pain Scale/Numeric Pain Scale
6. Appendix F- Richmond Agitation Asessment Scale
7. Appendix G-Confusion Assessment Method for the ICU
8. Appendix H-Pharmacological Charts

IV. BIBLIOGRAPHY


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Reviewed by:
Last Review:

Clinical Practice Guidelines (CPG) are meant to standardize and optimize care and decrease variability in practice. They are intended to be used as framework for the delivery of patient care in the surgical critical care units. CPG's are a combination of evidence-based medicine and accepted practices in critical care medicine. CPG's are intended to provide decision
<table>
<thead>
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<th>CLINICAL</th>
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<tr>
<td>Reference:</td>
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<td>Links to HUP policies</td>
<td></td>
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<tr>
<td>Administration of moderate sedation I-12-11</td>
<td></td>
</tr>
<tr>
<td>Neuromuscular blockade therapy BCC-03-26</td>
<td></td>
</tr>
<tr>
<td>Guidelines for initiating antipsychotic medications for delirium I-07-16</td>
<td></td>
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</tbody>
</table>

support for the management of the majority of patients, and are not proposed as directives, rules, or policies. They are not substitutes for clinical judgement. Deviations from the CPG’s are expected when deemed medically necessary; all exceptions should be documented in the medical record and require discussion between the Surgical Critical Care attending and the attending of the primary or consulting service.
<table>
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<th>UNIVERSITY OF PENNSYLVANIA MEDICAL CENTER</th>
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</table>

Reference:
- Links to HUP policies
- Administration of moderate sedation 1-12-11
- Neuromuscular blockade therapy BCC.03-26
- Guidelines for initiating antipsychotic medications for delirium 1-07-16

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Date: 1/3/14
Surgical Critical Care
Pain, Agitation, Delirium (PAD) Guidelines

Assess and treat PAIN
Behavioral Pain Scores or Numeric Pain Scores

YES
patient is having pain.

See pain algorithm

Reassess for pain, agitation, and delirium

No
patient is not having any pain

Assess for Delirium
CAM-ICU scores

If CAM-ICU positive

Implement non-pharmacological interventions
Find underlying causes and address

See delirium algorithm

Reassess for pain, agitation, and delirium

If CAM-ICU negative

Assess for Agitation
PASS

See Agitation Algorithm

Reassess for pain, agitation and delirium

Note:
Treat the problem identified with the respective algorithm. Reassess the need for change in treatment plan with repeated assessment of PAD scores. Interdisciplinary communication and collaboration with patients and family is key.

October 2013
Pain Algorithm

Determine Numeric Pain Score or Behavioral Pain Score every 4 hrs and PRN

- Is patient opioid naive without any history of chronic pain medication use?
- Is patient opioid tolerant?
- Consider resuming home regimen for pain

Consider starting Acetaminophen/NSAIDS

Assess for neuropathic pain

If present, consider Gabapentin

- Is patient a candidate for an epidural?

Post operative and/or intubated may consider early opioid use

If yes, obtain Acute Pain Service Consult

See pharmacological dosing charts

For Immediate pain relief FIRST begin IV opioid bolus doses

Determine an effective bolus dose of opioid to achieve acceptable NPS/IOPS

Provide the effective opioid bolus dose PRN every hour based on NPS/IOPS

IF the determined effective dose of opioid is needed more frequently than once an hour or Hourly doses given consecutively for >8 hours Consider a continuous Infusion

Begin the continuous infusion at 1/4 of the cumulative bolus doses.

Titrade the infusion based on NPS/IOPS

Use bolus doses to treat pain before increasing the infusion rate, then increase the infusion by 1/4 of the effective cumulative bolus dose

October 2013
Agitation Algorithm

- Determine RASS goals
  - Most patients 0 to (-1) unless deeper sedation clinically indicated
- Assess RASS every 4 hours and PRN

- If no, treat pain first
- Does patient have acceptable NPS/BPS scores
- If yes

- RASS (+3) to (+4)
  - Consider immediate pharmacological sedative intervention if patient or staff at safety risk

- RASS (+1) to (+2)
  - Define and treat the underlying cause

- RASS 0 to (-1)
  - Maintain current treatment

- RASS (-2)
  - Consider weaning any continuous or intermittent sedative and opioid doses or rates by 60% and reassess

- RASS (-3) to (-5)
  - Consider stopping any continuous or intermittent sedative and opioid medications then reassess

- Clinical indicators for RASS (-2) to (-6)
  - Life threatening hypoxemia or hemodynamic instability
  - Unstable airway
  - ICP management
  - Uncontrolled seizures
  - Use of Neuromuscular Blocking Agent

- Consider sedatives when pain controlled and no other causes defined
- See pharmacological dosing charts

October 2013
Delirium Algorithm

Determine CAM-ICU score every 12 hours and PRN

Positive CAM-ICU Patient has delirium

Consider all causes Review for precipitating or aggravating disease states. Review medication therapy

Implement non-pharmacological therapies

- Communicate all interventions and clinical events
- Constant reorientation
- Family support at the bedside
- Familiar pictures and objects from home
- Promote sleep hygiene:
  - TIP - Sedation is not high quality REM sleep
  - Room shade up from 7am to 7pm
  - Baths completed by 11pm
  - Lights out and TV off by 11pm
  - Noise control/Consider earplugs
- Promote activity during the day
  - Early exercise and mobility/ Consult PT/OT
  - Music therapy
  - Eyeglasses in place
  - Hearing aids in place
  - Removal of unnecessary tubes and lines
  - Removal of physical restraints

Only after institution of non-pharmacological interventions and patient with hyperactive delirium, may consider pharmacological interventions

See pharmacological dosing charts

Negative CAM-ICU Patient is not delirious

Re-Assess every 12 hours and PRN

All ICU patients may benefit from non-pharmacological interventions

Appendix D

October 2013
### Behavioral Pain Scale (BPS)

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial expression</td>
<td>Relaxed</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Partially tightened (e.g., brow lowering)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fully tightened (e.g., eyelid closing)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Grimacing</td>
<td>4</td>
</tr>
<tr>
<td>Upper-limb movements</td>
<td>No movement</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Partially bent</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fully bent with finger flexion</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Permanently retracted</td>
<td>4</td>
</tr>
<tr>
<td>Compliance with</td>
<td>Tolerating movement</td>
<td>1</td>
</tr>
<tr>
<td>mechanical ventilation</td>
<td>Coughing but tolerating</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Fighting ventilator</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Unable to control ventilation</td>
<td>4</td>
</tr>
</tbody>
</table>

BPS score ranges from 3 (no pain) to 12 (maximum pain).

### Numeric Pain Scores

![Numeric Pain Scores Diagram](image)

Richmond Agitation Sedation Scale (RASS) *

<table>
<thead>
<tr>
<th>Score</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4</td>
<td>Comatose</td>
<td>Overly combative, violent, immediate danger to staff</td>
</tr>
<tr>
<td>+3</td>
<td>Very agitated</td>
<td>Pulls or removes tube(s) or catheter(s); aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>Agitated</td>
<td>Frequent non-purposeful movement, fights ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>Restless</td>
<td>Anxious but movements not aggressive vigorous</td>
</tr>
<tr>
<td>0</td>
<td>Alert and calm</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy</td>
<td>Not fully alert, but has sustained awakening</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(eye-opening/eye contact to voice ≥ 10 seconds)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation</td>
<td>Briefly awakens with eye contact to voice (≤ 10 seconds)</td>
</tr>
<tr>
<td>-3</td>
<td>Moderate sedation</td>
<td>Movement or eye opening to voice (but no eye contact)</td>
</tr>
<tr>
<td>-4</td>
<td>Deep sedation</td>
<td>No response to voice, but movement or eye opening to physical stimulation</td>
</tr>
<tr>
<td>-5</td>
<td>Unarousable</td>
<td>No response to voice or physical stimulation</td>
</tr>
</tbody>
</table>

### Procedure for RASS Assessment

1. Observe patient
   a. Patient is alert, restless, or agitated. (score 0 to +4)

2. If not alert, state patient's name and say to open eyes and look at speaker.
   b. Patient awakens with sustained eye opening and eye contact. (score -1)
   c. Patient awakens with eye opening and eye contact, but not sustained. (score -2)
   d. Patient has any movement in response to voice but no eye contact. (score -3)

3. When no response to verbal stimulation, physically stimulate patient by shaking shoulder and/or rubbing sternum.
   a. Patient has any movement to physical stimulation. (score -4)
   f. Patient has no response to any stimulation. (score -5)

---


Confusion Assessment Method for the ICU (CAM-ICU) Flowsheet

1. Acute Change or Fluctuating Course of Mental Status:
   - Is there an acute change from mental status baseline? **OR**
   - Has the patient's mental status fluctuated during the past 24 hours?
   **YES**
   - CAM-ICU negative
   - NO DELIRIUM

2. Inattention:
   - "Squeeze my hand when I say the letter 'A'."
   - Read the following sequence of letters: SAVE A HAART
   - Errors: No squeeze with 'A' & squeeze on letter other than 'A'
   - If unable to complete Letters → Pictures
   **2 Errors**
   - CAM-ICU negative
   - NO DELIRIUM

3. Altered Level of Consciousness
   - Current RASS level
   - **RASS = zero**
   - CAM-ICU positive
   - DELIRIUM Present

4. Disorganized Thinking:
   1. Will a stone float on water?
   2. Are there fish in the sea?
   3. Does one pound weigh more than two?
   4. Can you use a hammer to pound a nail?
   **Command:** "Hold up this many fingers" (Hold up 2 fingers)
   "Now do the same thing with the other hand" (Do not demonstrate)
   **ERROR** "Add one more finger" (If patient unable to move both arms)
   **1 Error**
   - CAM-ICU negative
   - NO DELIRIUM

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<table>
<thead>
<tr>
<th>Opiate</th>
<th>Onset of Action</th>
<th>Peak Analgesic Effect</th>
<th>Duration of Action</th>
<th>Dosing Infusion</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fentanyl</td>
<td>IV: 1-2 min.</td>
<td>3-5 min.</td>
<td>2-4 hrs.</td>
<td>12.5 - 100mcg IV every 1-2 hrs. PRN</td>
<td>25-400mcg/hr; Hepatic metabolism; no active metabolites; rigidity with high doses</td>
</tr>
<tr>
<td></td>
<td>PO: 15-30 min.</td>
<td>30-60 min.</td>
<td>3-4 hrs.</td>
<td>2-4 mg PO every 4-6 hrs. PRN</td>
<td>0.1-4 mg/hr; Hepatic metabolism</td>
</tr>
<tr>
<td>Hydromorphone</td>
<td>IV: 5-15 min.</td>
<td>15-20 min.</td>
<td>2-3 hrs.</td>
<td>0.1 - 1.0 mg IV every 2-3 hrs PRN</td>
<td>1-10mg/hr; May cause bronchospasm and hypotension secondary to histamine release</td>
</tr>
<tr>
<td></td>
<td>PO: 30 min.</td>
<td>60 min.</td>
<td>4 hrs</td>
<td>10-30 mg PO (Immediate release) every 4 hrs. PRN</td>
<td>1-10mg/hr; Hepatic metabolism; avoid in renal failure due to accumulation of active metabolites</td>
</tr>
<tr>
<td>Morphine</td>
<td>IV: 5-10 min.</td>
<td>15-20 min.</td>
<td>3-4 hrs.</td>
<td>1-10mg every 2-3 hrs.</td>
<td>1-10mg/hr; May cause bronchospasm and hypotension secondary to histamine release</td>
</tr>
<tr>
<td></td>
<td>PO: 30 min.</td>
<td>60 min.</td>
<td>4 hrs</td>
<td>10-30 mg PO (Immediate release) every 4 hrs. PRN</td>
<td>1-10mg/hr; Hepatic metabolism; avoid in renal failure due to accumulation of active metabolites</td>
</tr>
<tr>
<td>Oxycodone IR</td>
<td>PO: 10-15 min.</td>
<td>30-60 min.</td>
<td>3-6 hrs.</td>
<td>5-15mg PO every 4-6 hrs. PRN</td>
<td>Metabolized by hepatic CYP isoenzymes; assess for drug interactions when initiating therapy</td>
</tr>
</tbody>
</table>

Note: Doses recommended are for opioid naïve patients. Patients chronically receiving opioids require higher doses for pain relief.
<table>
<thead>
<tr>
<th>Sedative</th>
<th>Onset of Action</th>
<th>Peak Sedative Effect</th>
<th>Duration of Action</th>
<th>Dosing</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lorazepam</td>
<td><strong>IV</strong>: 5-10 min.</td>
<td>40 min.</td>
<td>4-8 hrs.</td>
<td><strong>0.5 - 4 mg IV or PO every 2-6 hrs.</strong></td>
<td><strong>Hepatic metabolism; Inactive metabolites</strong> Higher doses may be clinically indicated for withdrawal syndromes</td>
</tr>
<tr>
<td></td>
<td><strong>PO</strong>: 20-30 min.</td>
<td>60 -90 min.</td>
<td>6-8 hrs.</td>
<td><strong>IV continuous infusion: 0.25 - 6 mg/hr</strong></td>
<td></td>
</tr>
<tr>
<td>Propofol</td>
<td><strong>IV only</strong>: 1-2 min.</td>
<td><strong>Rapid</strong></td>
<td>3-10 min. Dependent upon dose</td>
<td>Initial starting dose of 5 mcg/kg/min. Titrate dose in 5-10 mcg/kg/min. increments with a minimum of 5 minutes between dosing adjustments. Maximum dose is 80 mcg/kg/min</td>
<td><strong>Adverse effects include infection, pain at the site of injection, hypotension, bradycardia, apnea, hypertriglyceridemia, and propofol infusion syndrome. Use extreme caution with compromised cardiac function, intravascular volume depletion, or abnormally low vascular tone from sepsis.</strong></td>
</tr>
<tr>
<td>Midazolam</td>
<td>1.5-5 min.</td>
<td><strong>Rapid</strong></td>
<td>2-6 hrs.</td>
<td><strong>0.5 -2 mg IV once PRN</strong></td>
<td><strong>Useful where rapid control of an agitated patient is needed. Useful for procedural sedation Hepatic metabolism; active metabolite renally eliminated</strong></td>
</tr>
<tr>
<td>Antipsychotic</td>
<td>Dosing</td>
<td>Other Information</td>
<td></td>
<td></td>
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<td>----------------</td>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------</td>
<td></td>
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</tr>
<tr>
<td>Haloperidol **</td>
<td>May be given IM, IV, or PO</td>
<td>Drug of choice for delirium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>If given IM or IV, wait 20-30 min. before redosing to see effect.</td>
<td></td>
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<tr>
<td></td>
<td>For oral doses, wait 60 min. before redosing to see clinical effect.</td>
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<tr>
<td></td>
<td>Initial dose:</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>1.5 mg for RASS up to (+3)</td>
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<tr>
<td></td>
<td>5-10 mg for RASS (+4 to +5)</td>
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<tr>
<td></td>
<td>Maximum single dose 10 mg.</td>
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<tr>
<td></td>
<td>Maximum dose in 24 hrs. is 30 mg.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Quetiapine**</td>
<td>PO only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dosing:</td>
<td>If a patient has Parkinson's disease, extrapyramidal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.5 – 25 mg daily or twice daily in frail/elderly &gt;65 years of age</td>
<td>symptoms, Lewy body dementia, or HIV dementia,</td>
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<tr>
<td></td>
<td>25-50 mg daily or twice daily for healthier patients &lt;65 years of age</td>
<td>quetiapine is considered to be the antipsychotic of</td>
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<tr>
<td></td>
<td>Maximum dose in frail/elderly</td>
<td>choice</td>
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<tr>
<td></td>
<td>&gt;65 years of age 50mg in 24 hrs.</td>
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<td></td>
<td>Maximum dose in healthier patients &lt;65 years of age 300mg in 24 hrs.</td>
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<td></td>
<td>Wait 60 minutes before redosing to see clinical effect</td>
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<tr>
<td>Olanzapine**</td>
<td>PO and sublingual (SL) only</td>
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<td></td>
<td>Dosing:</td>
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<tr>
<td></td>
<td>2.5-5mg PO or SL daily or twice daily</td>
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<td></td>
<td>Maximum dose in 24 hrs is 20 mg.</td>
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<tr>
<td></td>
<td>Maximum dose in frail/elderly in &gt;65 years in 24 hrs is 10mg.</td>
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<td>Wait 60 min before redosing to see clinical effect</td>
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</tbody>
</table>
### Risperidone**

<table>
<thead>
<tr>
<th></th>
<th>PO only</th>
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</thead>
<tbody>
<tr>
<td>Dosing:</td>
<td>0.5 – 2 mg daily or twice daily</td>
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<tr>
<td></td>
<td>Wait 60 minutes before redosing to see clinical effect</td>
</tr>
</tbody>
</table>

**Note:** Patients must have an EKG to check for prolonged QTc interval prior to dosing unless the patient is extremely agitated and is at risk for hurting themselves or a staff member. Baseline QTc should be <0.46 msec for medication administration.

A single dose of an antipsychotic medication may be given emergently without checking an EKG. However, an EKG should be obtained prior to additional dosing. Obtain daily EKG until the patient is stable.

Refer to hospital practice guideline number 1-7-16 *initiating antipsychotic medication for delirium*. QTc monitoring and interpretation, contraindications to antipsychotic use, and discontinuation after delirium resolution as this table is not all inclusive.