DELIRIUM
Delirium occurs in 60-80% ventilated ICU patients, 40-60% nonventilated patients. 90% of patients are hypoactive, 10% have hyperactive delirium.
First line therapy is Haldol. An alternative is Quetiapine (Seroquel). Benzodiazepines should be avoided in patients with delirium. There is no evidence that these medications prevent ICU delirium. Haloperidol does not reduce the duration of delirium; Atypical antipsychotics may reduce the duration of delirium in adult ICU patients.

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>Combative</td>
<td>Overtly 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 (eye-opening/eye contact) to voice (&gt;10 sec)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation</td>
<td>Briefly awakens with eye contact to voice (&lt;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>

<table>
<thead>
<tr>
<th>Dosage forms</th>
<th>Peak</th>
<th>T1/2</th>
<th>Metabolism</th>
<th>Dosing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haloperidol</td>
<td>IV, Oral</td>
<td>1 hr</td>
<td>10-36 hours</td>
<td>Hepatic, active metabolite 2.5-10 mg q 2 hrs</td>
</tr>
<tr>
<td>(Haldol)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Risperidone</td>
<td>Tablet, Solution</td>
<td>1 hr</td>
<td>20-30 hrs</td>
<td>Hepatic, active metabolite 1 mg po q12h, increase 0.5-1 mg every 2-3 days, Max 6mg, renal and hepatic adjustment</td>
</tr>
<tr>
<td>(Risperdal)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quetiapine</td>
<td>Tablet, SR tab</td>
<td>1.5 hr</td>
<td>6 hours</td>
<td>Hepatic, active metabolite 25 mg PO Q12 hr Titrated in increments of 25 mg/day every 24 hours Max daily dose 800 mg</td>
</tr>
<tr>
<td>(Seroquel)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**UCH Critical Care: DELIRIUM PROTOCOL**

**Sedation Scale / Delirium Assessment**

- **Non-delirious (CAM-ICU negative)**
  - Reassess brain function every shift
  - Treat pain and anxiety

- **Delirious (CAM-ICU positive)**
  - Consider differential Dx e.g. Sepsis, CHF, metabolic disturbances
  - Remove deliriogenic drugs
  - Non-pharmacological protocol

- **Stupor or coma while on sedative and analgesic agents (RASS -5)**
  - Does the patient require deep sedation?
    - **YES**
      - Perform SAT
    - **NO**
      - Reassess target sedation goal every shift

**Non-pharmacological protocol 2**

**Orientation**
- Non-pharmacological protocol
  - Orientation – provide visual and hearing aids
  - Encourage communication and reorientation
  - Have familiar objects from home in the room
  - Attempt consistency in nurse staff
  - Allow TV during day
  - Nonverbal music

**Environment**
- Sleep hygiene: Lights off at night, on during day
- Sleep aids (quetiapine & risperidone)
- Control excess noise (staff, equipment, visitors)
- Ambulate or promote progressive mobility
- Limit stimulation by visitors to promote sleep hygiene

**Clinical parameters**
- Maintain systolic blood pressure > 90 mm Hg
- Maintain oxygen saturations >90%
- Treat underlying metabolic derangements and infections

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1. Consider stopping or substituting decreasing dosages for deliriogenic medications such as benzodiazepines, anticholinergic medications (metochlorpromide, H2 blockers, promethazine, diphenhydramine, steroids. 
*Primarily a concern with renal dysfunction & elderly*
2. See non pharmacological protocol – at right
3. **Analgesia** – Adequate pain control may decrease delirium. Assess w/ objective tool: CPOT or Nursing Assessment Hierarchy (Behavioral) OR Self Report: 0-10, mild/mod/severe, Faces.
4. Typical or atypical antipsychotics- While tapering or discontinuing sedatives, consider haloperidol 2.5-5 mg IVP Q 4 hours. May also consider using any of the atypicals (e.g. olanzapine, quetiapine, risperidone).
 Re-assess with CAM-ICU every 12 hours.
 D/C w/ high fever, QTc prolongation, or drug-induced rigidity.
5. **Spontaneous Awakening Trial (SAT)** – Stop/hold sedative bolus and/or infusions (notably benzodiazepines) to awaken patient, tolerated.
6. **Spontaneous Breathing Trial (SBT)** – CPAP trial if on ≤50% and ≤8 PEEP and Sats 90%
7. Sedatives and analgesics in ICU commonly include benzodiazepines, propofol, dexmedetomidine, fentanyl, or morphine.

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**UC Central:**
Updated 7/2013
[www.ICUdelirium.org](http://www.ICUdelirium.org)
# CAM-ICU Worksheet

## Feature 1: Acute Onset or Fluctuating Course

<table>
<thead>
<tr>
<th>Score</th>
<th>Check here if Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Either question Yes →</td>
<td>□</td>
</tr>
</tbody>
</table>

**Is the pt different than his/her baseline mental status?**

**OR**

**Has the patient had any fluctuation in mental status in the past 24 hours as evidenced by fluctuation on a sedation scale (i.e., RASS), GCS, or previous delirium assessment?**

## Feature 2: Inattention

### Letters Attention Test

**Directions:** Say to the patient, "I am going to read you a series of 10 letters. Whenever you hear the letter 'A,' indicate by squeezing my hand." Read letters from the following letter list in a normal tone 3 seconds apart.

S A V E A H A A R T

Errors are counted when patient fails to squeeze on the letter “A” and when the patient squeezes on any letter other than “A.”

| Number of Errors >2 → | □ |

## Feature 3: Altered Level of Consciousness

**Present if the Actual RASS score is anything other than alert and calm (zero)**

| RASS anything other than zero → | □ |

## Feature 4: Disorganized Thinking

### Yes/No Questions

- 1. Will a stone float on water?
- 2. Are there fish in the sea?
- 3. Does one pound weigh more than two pounds?
- 4. Can you use a hammer to pound a nail?

Errors are counted when the patient incorrectly answers a question.

### Command

Say to patient: "Hold up this many fingers" (Hold 2 fingers in front of patient) "Now do the same thing with the other hand" (Do not repeat number of fingers) "If pt is unable to move both arms, for 2nd part of command ask patient to "Add one more finger"

An error is counted if patient is unable to complete the entire command.

| Combined number of errors >1 → | □ |

## Overall CAM-ICU

**Feature 1 plus 2 and either 3 or 4 present = CAM-ICU positive**

**Criteria Met →**

**CAM-ICU Positive (Delirium Present)**

**Criteria Not Met →**

**CAM-ICU Negative (No Delirium)**

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