Management of Pain, Agitation and Delirium in ICU Patients

PURPOSE

For pain, agitation and delirium in ICU patients.

PROCEDURE STATEMENTS

1. Pain

   A. Pain assessments should routine be performed in verbal and non-verbal ICU patients
   B. Clinical Pain Observation Tool (CPOT) should be the assessment tools of choice for non-verbal patients, as this corresponds to nursing cares in the ICU
   C. CPOT ≥ 3 suggests significant pain and requires treatment
   D. All IV narcotics are equally effective when titrated to effect and choice should depend on individual patient and their comorbidities
   E. Use of non-narcotic adjuncts may be considered based on patient
   F. Pain should be reassessed at 60 minutes after intervention
   G. Treat pain first before using sedative medications
   H. The utilization of drip versus IVP narcotic medications is patient dependent, but evidence does support a shorter length of mechanical ventilation if pain is adequately controlled with IVP instead of drip formulations.

2. Sedation (applies to intubated and non-intubated patients)

   A. Preferred sedation assessment tool is the Richmond Agitation-Sedation Scale
   B. Targeted sedation will be performed with a target of -2 to 0
   C. If patient under sedated (RASS > 0) assess and treat for pain first then use sedatives
   D. Non-benzodiazepine sedatives (Propofol, Precedex, Haldol) should be first line therapy unless patient is in ETOH or benzodiazepine withdrawal
   E. If over sedated (RASS < -2) hold sedation and restart at 50% of starting dose once target is reached
   F. Once patient is stable and at goal sedation level (RASS -2 to 0) daily Spontaneous Breathing Trials will be performed in conjunction with daily Spontaneous Awakening Trials.
3. Delirium

A. Delirium should be assessed every shift by nursing or physician provider
B. Preferred assessment tools are Confusion Assessment Method (CAM-ICU) or the Intensive Care Delirium Screening Checklist (ICDSC)
C. Delirium is present if CAM-ICU is positive or ICDSC ≥ to 4
D. If positive, ensure adequate pain treatment first
E. Use of reorientation, hearing aids, and eyeglasses should be emphasized
F. Pharmacologic treatment should avoid benzodiazepines unless delirium is due to ETOH or benzodiazepine withdrawal.
G. Avoid antipsychotics if patient has prolonger QT (> 450 ms) or other risk factors for torsades de pointes
H. All patients will be enrolled in early mobility as their comorbidities and clinical status allows
I. Melatonin is associated with lower risk of delirium at a dose 0.5 mg to 5 mg. We currently stock 3 mg tablets and 1 mg/dl solution.

Related References:

- Clinical Practice Guidelines for the Management of Pain, Agitation and Delirium SCCM 2013. Icudefirium.org
Routine Use of Pain Control

Routine use of pain assessments for all verbal and non-verbal patients
  • Clinical Pain Observation Tool (CPOT)

Pain controlled
  • CPOT < 3

Continue to monitor frequently

Pain not controlled
  • CPOT ≥ 3

Initiate treatment
  • Narcotics are first line medications
    o First line
      Fentanyl 25-50 mcg IVP
    o Second line
      Dilaudid 0.2-1 mg IVP
      Morphine 2-4 mg IVP
  • Drips may be considered for pain not controlled with intermittent dosing (>3 dosed per hour)

Consider adjuncts
  • NSAIDS
  • Gabapentin, Pregabalin

Rib fractures
  • Thoracic epidural
  • Continuous intercostal nerve block

Reassess pain in 30 minutes

YES
  Proceed to sedation protocol

NO
Facial Expression

- No muscular tension observed
- Presence of frowning, brow lowering, orbit tightening, or levator contraction
- All of the above facial movements plus eyelid tightly close
- Does not move at all (does not necessarily mean absence of pain)
- Slow, cautious movements, touching or rubbing the pain site, seeking attention through movements
- Pulling tube, attempting to sit up, moving limbs/thrashing, not following commands, striking at staff, trying to climb out of bed

Body Movements

- Muscle tension
- Evaluation by passive flexion and extension of upper extremities
- No resistance to passive movements
- Resistance to passive movements
- Strong Resistance to passive movements, inability to complete them
- Alarms not activated, easy ventilation
- Alarms stop spontaneously
- Asynchrony: blocking ventilation, alarms frequently activated
- Talking in normal tone or no sound
- Sighing, moaning
- Crying out, sobbing

Compliance with the ventilator (intubated patients)

- Tolerating ventilator or movement
- Coughing, but tolerating
- Fighting ventilator

Vocalization (extubated patients)

- Talking in normal tone or no sound
- Sighing, moaning
- Crying out, sobbing

0-8 Total Range
Targeted Sedation for Intubated Patients

At Goal RASS (-2 to 0)
- Monitor for change

Over-sedated (RASS -3 to -5)
- Hold sedation until RASS -2 to 0
  - Then
  - Restart Sedation at 50% of starting dose

Under-sedated (RASS 1 to 5)
- Treat pain per algorithm first

Targeted sedation for intubated patients
- RASS -2 to 0

• Propofol 5 - 30 mcg/kg/min
• Precedex 0.2 - 1 mcg/kg/hr
  - Delirious
  - Weaning
• Versed 1 - 3 mg IVP
  - ETOH withdrawal
  - Propofol intolerance
  - History of Benzodiazepine use

Daily Spontaneous Awakening Trial
Patient has absence of
- Active Seizures
- ETOH withdrawal
- Uncontrolled agitation
- Use of paralytics
- Myocardial ischemia
- Increased CP
- Hemodynamic instability
- Acute respiratory distress syndrome

PASSES
- No significant agitation
- No cardiac arrhythmia
- RR < 35
- O2 stats > 88%

FAILS
- Significant agitation
- Cardiac arrhythmia
- RR > 35
- OX Stats < 88%

Daily Spontaneous Breathing Trial

Stop Sedation

Proceed to Delirium Protocol

Restart sedation at 50% starting dose

Contact: Trauma Center Medical Director

Effective: 04/2014
Last Revised: 04/2017
# The Richmond Agitation-Sedation Scale

## ADULT Practice Management Guideline

<table>
<thead>
<tr>
<th>Score</th>
<th>Behavior</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Combative</td>
<td>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, apprehensive, but movements not aggressive or</td>
</tr>
<tr>
<td>0</td>
<td>Alert and calm</td>
<td>Alert, calm</td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy</td>
<td>Not fully alert, but has sustained awakening to voice (eye opening and contact &gt; 10 seconds)</td>
</tr>
<tr>
<td>-2</td>
<td>Light sedation</td>
<td>Briefly awakens to voice (eye opening and contact &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</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>

Pun BT, Ely EW. Primary Psychiatry, Vol. 11, No. 11, 2004
Assessing Delirium (CAM-ICU)

Assess Delirium each shift
CAM-ICU

CAM-ICU Positive

CAM – ICU Negative

Pain adequately treated?

YES

NO

Return to Pain Algorithm

Non-pharmacologic

- Reorientation
- Sleep enhancement
- Hearing aids
- Eyeglasses

Physical and Occupational Therapy consults for early mobility

- Mechanical ventilation is not a contraindication

Pharmacologic

- Avoidance of benzodiazepines unless ETOH or benzodiazepine withdrawal
- Change sedative medication to Precedex
- Consider use of antipsychotics unless patient has history or risk factors for torsades de pointes or prolonged QT (>450 ms)
- Melatonin shows promise in the prevention of delirium
  - Melatonin 0.5 mg nightly
- Analgesics to control pain may reduce the incidence or severity of delirium
- Recommended antipsychotics
  - Haldol
  - Seroquel
  - Geodon

* Prior to starting, obtain baseline EKG and serial EKGs at least q. 3 days

Contact: Trauma Center Medical Director

Last Revised: 04/2017

Effective: 04/2014

ADULT Practice Management Guideline

Iowa Methodist Medical Center — Des Moines
Step 2 Delirium Assessment

**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?

  **NO**

  **CAM-ICU negative**

  **NO DELIRIUM**

  **YES**

  **Inattention**
  - “Squeeze my hand when I say the letter ‘A’.
    Read the following sequence of letters: S A V E A H A R T
    ERRORS: No squeeze with ‘A’ and Squeeze on letter other than ‘A’.
  - If unable to complete Letters → Pictures

  **0-2 Errors**

  **CAM-ICU negative**

  **NO DELIRIUM**

  **> 2 Errors**

  **CAM-ICU positive**

  **NO DELIRIUM**

  **Altered Level of Consciousness**
  - Current RASS level (think back for sedation assessment in Step 1)

  **RASS = Zero**

  **CAM-ICU positive**

  **NO DELIRIUM**

  **RASS other Than Zero**

  **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)

  **OR**
  “Add one more finger” (If patient unable to move both arms)

  **> 1 Error**

  **CAM-ICU negative**

  **NO DELIRIUM**

  **0-1**

  **CAM-ICU negative**

  **NO DELIRIUM**
# Intensive Care Delirium Screening Checklist

**ADULT Intensive Care Practice Management Guideline**

**Effective:** 06/2014  
**Contact:** Trauma Center Medical Director  
**Last Revised:** 04/2017

## PATIENT EVALUATION

<table>
<thead>
<tr>
<th>DAY 1</th>
<th>DAY 2</th>
<th>DAY 3</th>
<th>DAY 4</th>
<th>DAY 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Altered level of consciousness</strong> <em>(A-E)</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If A or B do not complete patient evaluation for the period

<table>
<thead>
<tr>
<th>Inattention</th>
<th>Hallucination – Delusion – Psychosis</th>
<th>Psychomotor agitation or retardation</th>
<th>Inappropriate speech or mood</th>
<th>Sleep/Wake cycle disturbance</th>
<th>Symptom fluctuation</th>
</tr>
</thead>
</table>

**TOTAL SCORE (0-8)**

### SCORING SYSTEM:
The scale is completed based on information collected from each entire 8-hour shift or from the previous 24 hours. Obvious manifestation of an item = 1 point. No manifestation of an item or no assessment possible = 0 point.

The score of each item is entered in the corresponding empty box and is 0 or 1.

1. **Altered level of consciousness:**
   - A) No response
   - B) Response to intense and repeated stimulation (loud voice and pain)
   - C) Response to mild or moderate stimulation
   - D) Normal wakefulness
   - E) Exaggerated response to normal stimulation

2. **Inattention:** Difficulty in following a conversation or instructions. Easily distracted by external stimuli. Difficulty in shifting focuses. Any of these scores 1 point.

3. **Disorientation:** Any obvious mistake in time, place or person scores 1 point.

4. **Hallucination, delusion or psychosis:** The unequivocal clinical manifestation of hallucination or of behavior probably due to hallucination (e.g. trying to catch a non-existent object) or delusion. Gross impairment in reality testing. Any of these scores 1 point.

5. **Psychomotor agitation or retardation:** Hyperactivity requiring the use of additional sedative drugs or restraints in order to control potential dangerousness (e.g. pulling out IV lines, hitting staff). Hypoactivity or clinically noticeable psychomotor slowing. Any of these scores 1 point.

6. **Inappropriate speech or mood:** Inappropriate, disorganized or incoherent speech. Inappropriate display of emotion related to events or situation. Any of these scores 1 point.

7. **Sleep/Wake cycle disturbance:** Sleeping less than 4 hours or waking frequently at night (do not consider wakefulness initiated by medical staff or loud environment.) Sleeping during most of the day. Any of these scores 1 point.

8. **Symptom fluctuation:** Fluctuation of the manifestation of any item or symptom over 24 hours (e.g. from one shift to another) scores 1 point.