

# Trauma and Surgical ICU

## Sedation, Analgesia, and Delirium Guidelines

1. Assess, prevent, and manage pain
  2. Both SATs (spontaneous awakening trial) and SBTs (spontaneous breathing trial)
  3. Choice of sedation
  4. Delirium: assess, prevent, and manage
  5. Early mobility and exercise
  6. Family engagement and empowerment
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1. Assess, prevent, and manage pain
    - a. Assessment pain
      - i. RN should document pain score via the "Pain assessment non-verbal" (CPOT) score or patient reported scale of 1-10.
    - b. Prevent pain
      - i. Clinician should warn patient prior to performing painful procedures. Expectations for severity and duration of pain should be stated.
        1. Procedures include blood draws, dressing changes, chest tube removal, etc.
      - ii. Relaxation techniques should be utilized whenever possible
        1. Options are available in nursing flowsheet
        2. Examples: splinting, ambulation, meditation
    - c. Manage Pain
      - i. Patients expected to have severe pain or  $FiO_2 > 50\%$ 
        1. Fentanyl continuous infusion
        2. Consider addition of enteral medication (if enteral route available)
          - a. Acetaminophen
          - b. Tramadol
          - c. NSAIDs
          - d. Gabapentin
      - ii. Patients with improving pain (after 2-3 days, demonstrating adequate pain control) and  $FiO_2 \leq 50\%$ 
        1. Enteral, non-narcotic medication
          - a. Acetaminophen
          - b. Tramadol
          - c. NSAIDs
        2. Oxycodone 5-10 mg enterally every 4-6 hours
          - a. Chronic opiate users may require higher doses
            - i. Consider methadone
          - b. Doses may be increased after 24 hours if pain control insufficient on these dosages

2. Both SATs (spontaneous awakening trial) and SBTs (spontaneous breathing trial)
  - a. SATs and SBTs are contraindicated in patients with comfort care orders.
  - b. SAT
    - i. Safety screens should be performed prior to initiation. Discussion with the clinician should occur prior to initiation of SAT if there are positive findings.
      1. SAT safety screen
        - a. No active seizures
        - b. No alcohol withdrawal
        - c. No agitation (as evidenced by escalating doses of sedatives in the prior 6 hours)
        - d. No paralytics
        - e. No myocardial ischemia
        - f. Normal intracranial pressure ( $\leq 15$  mm Hg)
      - ii. SATs for patients on intermittent boluses of sedating medications involves delaying or missing the next scheduled bolus. This includes pain medication when being used for sedative purposes.
      - iii. SATs for patients on continuous infusion should have the infusions held until signs of failure (see below) or until signs and symptoms appear suggesting that sedatives should be restarted. There is no time limit.
        1. SAT failure
          - a. Anxiety, agitation or pain
          - b. Respiratory rate  $> 35$ /min
          - c. Oxygen saturation  $\geq 88\%$
          - d. Respiratory distress
          - e. Acute cardiac arrhythmia
          - f. Elevation of intracranial pressure
    - d. SBT
      - i. Safety screens should be performed prior to initiation. Discussion with the clinician should occur prior to initiation of SBT if there are positive findings.
        1. SBT safety screen
          - a. No agitation (as evidenced by escalating doses of sedatives in the prior 6 hours)
          - b. Oxygen saturation  $\geq 88\%$
          - c.  $FiO_2 \leq 50\%$
          - d.  $PEEP \leq 8$
          - e. No myocardial ischemia
          - f. No vasopressor usage
          - g. Inspiratory efforts are adequate
        - ii. SBT involves placing the patient on PEEP of 5 and pressure support of 5.
          1. Increased PEEP and pressure support may be used if discussion is held with the clinician.
        - iii. SBT duration
          1. 30 minutes or until failure
        - iv. SBT failure

1. Respiratory rate  $> 35/\text{min}$  or  $< 8$
2. Oxygen saturation  $\geq 88\%$
3. Respiratory distress
4. Acute cardiac arrhythmia
5. Mental status change
6. Marked use of accessory muscles or abdominal paradox
7. Tachycardia or bradycardia not present prior to initiation of SBT

v.SBT success

1. The respiratory therapist and/or bedside nurse should discuss with the clinician the suitability for extubation prior to returning the patient to the prior ventilator settings

3. Choice of sedation

- a. Use should be limited to patients with agitation NOT responsive to pain medication and non-pharmacologic therapies
- b. Patients with increased intracranial pressure
  - i.Propofol continuous infusion
    1. Monitor closely for hypotension due to cardiac suppression and vasodilatory effects
- c. Patients with  $\text{FiO}_2 > 50\%$  but no alteration in intracranial pressure
  - i.Clonazepam 0.25-1mg daily or twice daily as needed for reported/observed anxiety
  - ii.Valium 2 mg IV q 4 hours if enteral route not available
  - ii.If still agitated, add dexmedetomidine continuous infusion
    1. Alternatives may be used if side effects are a concern
      - a. Propofol continuous infusion
      - b. Ketamine continuous infusion
- d. Patients with  $\text{FiO}_2 \leq 50\%$ 
  - i.Discontinue all sedative infusions
  - ii.Treat pain first
  - iii.Clonazepam 0.25-1mg daily or twice daily as needed for reported/observed anxiety
  - iv.Sleep promotion
    1. Control of environmental factors
    2. Morning and bedtime routines
    3. Schedule medications with sedating properties at bedtime
    4. Melatonin 3 mg enterally at 5 pm
  - v.If still agitated, add dexmedetomidine continuous infusion
    1. Alternatives may be used if side effects are a concern
      - a. Propofol continuous infusion
      - b. Ketamine continuous infusion
- e. Rescue therapy
  - i.It is common for patients receiving sedatives to exhibit escalating distress, creating a cycle of increasing doses of sedatives

1. Mobility is the treatment of choice (see section 5)
  2. Sleep promotion (see section 4b)
  3. Consider addition of olanzapine 20 mg
4. Delirium: assess, prevent, and manage
- a. Assess
    - i. Use the CAM-ICU score to detect delirium every 12 hours and as needed for changes in mental status
  - b. Prevent
    - i. Frequent reorientation
    - ii. Assure patient of safety and give gentle touches on hands/shoulders
    - iii. Ensure patient has their normal assistive devices (glasses, hearing aids, etc)
    - iv. Minimize noise and alarms
      1. Keep door closed whenever feasible and safe
      2. Conversations should be held outside the room and with low volume
    - v. Minimize television and conversations
      1. No television for patients with traumatic brain injuries
      2. Uplifting, calming television during waking hours only for patient without brain injuries
    - vi. Turn the patient to face the window if possible
    - vii. Play soothing music if patient is cooperative enough to indicate musical preferences
    - viii. Give patients choices and control
      1. Music/videos
      2. Room temperature
      3. Lighting
    - ix. Promote sleep
      1. Give ear plugs and eye masks at night
      2. Bathing and other activities should be done during waking hours
  - c. Manage
    - i. Assess for potential etiologies
      1. Dr. DRE mnemonic
        - a. Diseases (sepsis, CHF, COPD, TBI)
        - b. Drug Removal (benzodiazepines, narcotics, antihistamines, dopaminergics, etc.)
        - c. Environment (See section 4b)
    - ii. Antipsychotics
      1. Haloperidol (Haldol) 2 mg IV q6 around the clock + 2-5 mg IV q8 hr prn for 48 hours
      2. Non-brain injury patients:
        - a. Olanzapine 5 mg BID (oral dispersible tab)
          - i. Can be increased up to max 15 mg BID
      3. Brain injury patients

- a. Valproate 500 mg BID and 250 mg q6 hours prn agitation
    - 4. These should be discontinued 48 hours after delirium resolves
    - 5. Monitor Qtc interval (hold for Qtc > 525)
  - v. Trazodone 25 mg BID
  - vi. Restoration of sleep patterns
    - 1. Melatonin 3 mg enterally at 5 pm
    - 2. Trazodone 100 mg qHS (can be used in conjunction with BID dosing for agitation)
  - 1. Propranolol 30 mg BID for brain injury patients
  - 2. Amantadine 50-100 mg BID for brain injury patients
- 5. Early mobility and exercise
  - a. Decreases hospital length of stay (LOS), ICU LOS, ventilator days and delirium
  - b. Unresponsive patients (RASS -4 or -5)
    - i. Passive range of motion of all limbs in all cardinal directions
  - c. RASS -3 or -2
    - i. Passive range of motion of all limbs in all cardinal directions
    - ii. Attempt to sit on edge of bed or in chair
  - d. RASS -1, 0, or +1
    - i. Stand, walk, and attempt activities of daily living
- 6. Family engagement and empowerment
  - a. Educate family about components and effectiveness of protocol
  - b. Allow family to "remind" providers of bundle components
    - i. Don't get defensive or offended. Be grateful and encourage ongoing collaboration.
  - c. Inform family of long-term effects (PTSD, depression, cognitive impairment)