Sutter Health: Sacramento-Sierra REGIONAL ICU DELIRIUM PROTOCOL

Delirium-(acute brain dysfunction) is defined as a disturbance of consciousness with inattention accompanied by a change in cognition or perceptual disturbance that develops over a short period of time (hours to days) and fluctuates over time. The three subtypes of delirium include hypoactive, hyperactive, and mixed. To properly treat delirium, early recognition is essential. The patient's health history should also be evaluated for delirium risk factors such as dementia, alcohol abuse and drug abuse, hypertension, coma, high severity of illness and use of benzodiazepines.

Assessment of Delirium

All ICU patients will be assessed for delirium by the RN, using validated and reliable evidence based tools. The tools utilized will be the RASS (Richmond Agitation-Sedation Scale) assessment tool every 2 hours through the shift and prn, the CAM-ICU (Confusion Assessment Method for the ICU) assessment tool at least once per shift and prn with any change in cognition. Review the patient's medication history and the medication reconciliation form. This should include any use of psychoactive medications, benzodiazepines or analgesics, and the patient's responses to these medications. Resume home medications as soon as clinically appropriate.

Prevention and Treatment of Delirium

CAM-ICU Negative

If patient is CAM-ICU negative (non-delirious), the assessment will be completed and documented every shift. As a preventative measure the RN will implement the NPDMS (non-pharmacologic delirium mitigation strategies) and treat the patient for pain and anxiety prn.

CAM-ICU Positive

If patient is CAM-ICU positive (delirious), RN will proceed to step 1 and 2. If patient remains CAM-ICU positive after steps 1 and 2 proceed to step 3.

Step 1. Look for possible causes of delirium using the THINK acronym**:**

T-Toxic situations and medications: Congestive Heart Failure, shock, dehydration, new onset organ failure (e.g. liver or kidney), deliriogenic medications (e.g. benzodiazepines, anticholinergics, and steroids)

H-Hypoxemia

I-Infection/ sepsis (nosocomial), inflammation, immobilization

N-Non-pharmacologic delirium mitigation strategies (see below)

K-K+ or other electrolyte imbalances

Step 2. In addition to identifying possible causes of delirium, the RN will implement the following NPDMS (Non-pharmacologic delirium mitigation strategies).

Note: Some of the NPDMS may be inappropriate if patient meets any of the following exclusion criteria:

- Sedative infusion for active seizures
- Sedative infusion for alcohol withdrawal
- Evidence of Myocardial Ischemia in the last 24 hours
- ICP ≥20 mm Hg or on sedatives to control ICP
- Paralytics agents
- Open abdomen
- ECMO
- End of life care

Non-Pharmacologic Delirium Mitigation Strategies (NPDMS)

Eliminate or minimize risk factors:

a) Administer high risk medications judiciously, avoid high risk medications if possible
b) Prevent/promptly treat infections
c) Prevent/promptly treat dehydration and electrolyte imbalances
d) Provide adequate pain control
e) Maximize O2 delivery (supplemental O2, blood pressure support, etc)
f) Use sensory aids as appropriate
g) Normalize bowel/bladder function
h) Provide adequate nutrition

Foster orientation:

a) Maximize mobility: implement progressive mobilization (ROM/sit/dangle/chair/ambulate), avoid physical & chemical restraints
b) Provide appropriate sensory stimulation: quiet room, adequate lighting, perform one task at a time, use noise reduction strategies
c) Frequently reassure & reorient patient, utilize easily visible calendars, clocks, caregiver ID tags, explain activities and procedures, speak clearly
d) Facilitate sleep: back massage, relaxation music, noise reduction measures, avoid unnecessary awakening of patient
e) Foster familiarity: encourage family & friends presence, bring in familiar objects from home, maintain caregiver consistency, minimize relocation of patient, maintain familiar routines (ADL)
f) Reassure and educate family, invite family to inter-professional rounds
g) Minimize invasive procedures and remove invasive devices as soon as clinically appropriate (e.g. urinary catheters, central lines)

Step 3. If patient remains CAM-ICU positive after steps 1 and 2, consider pharmacologic interventions as follows: **(Recommended target RASS for all patients is -2 to 0)**

CAM-ICU positive and RASS score +2 to +4: Assess pain using the NRS (Numeric Rating Scale) or CPOT (Critical Care Pain Observation Tool). If patient is experiencing pain, administer analgesic per physician orders or PAD order set if on ventilator. If not experiencing pain, give sedative for patient safety and titrate to target RASS. Consider Haldol or atypical antipsychotic medication if NPDMS unsuccessful.

CAM-ICU positive and RASS score 0 to +1: Verify patient's pain is adequately controlled. Consider Haldol or atypical antipsychotic medication if NPDMS unsuccessful.

CAM-ICU positive and RASS score -3 to -1: Reassess target sedation goal per physician orders or PAD order set if on ventilator. Consider Haldol or atypical antipsychotic medication if NPDMS unsuccessful.

RASS score -5 to -4 (Cannot complete CAM-ICU assessment)
For patients receiving sedatives or analgesics: Assess need for deep sedation. If deep sedation required, obtain MD orders for appropriate target RASS and reassess target sedation goal each shift.
If deep sedation is not required, wean sedative and analgesic medications until target RASS is met. If patient tolerates weaning of sedation and RASS is -3 or above perform CAM-ICU assessment.
For patients not receiving sedatives or analgesics: Reassess RASS every 4 hours. Once the patient's RASS is -3 or above perform CAM-ICU assessment.

References

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☐ SCANNED TO PHARMACY

☐ STAT MEDICATION

FOLLOWING INTUBATION
GOAL: RASS -2 to 0 or _____

- ☐ Insert an OG or NG tube and Abdominal Film to confirm feeding tube placement
- ☑ Initiate the following orders and discontinue orders once extubated. Notify pharmacy to discontinue medications once extubated.
- ☑ Initiate the Ventilator protocol
- ☑ Portable Chest X-ray for ET placement
- ☑ Start Chlorhexidine Oral Care per Protocol. Notify pharmacy to discontinue 48 hours post extubation.
- ☑ If on Propofol: Check triglyceride level on day 3 of Propofol and then weekly while on Propofol
- ☑ Physical Therapy evaluation on all patients who meet safety screen criteria
- ☑ For post intubation hypotension (A drop in BP within 1 hour of intubation- excludes cardiogenic shock/cardiac surgery): for SBP< 100 give 1 liter normal saline bolus, may repeat in 30 minutes and contact MD

PAIN (treat pain first-check bolus or drip option) **goal CPOT 0-2/8 , NRS 0-3/10 or _____**

Fentanyl Bolus (Preferred)

- ☐ 25 mcg IV q15minutes as needed for mild-moderate pain or prior to procedure related pain
- ☐ 50mcg IV q15 minutes as needed for severe pain

OR

- ☐ _____mcg IV Q _____ as needed for pain

Start Fentanyl Infusion (dosing below)if pain is not controlled with 3 bolus fentanyl doses in 1 hour

- ☐ **Fentanyl Infusion** 50mcg IV bolus then 50mcg/hr and titrate to pain goal (MAX 300mcg/hr)

AGITATION/SEDATION

- ☐ **Propofol (Diprivan)**Preferred**** infusion at 5mcg/kg/min and titrate by 10mcg/kg/min q15minutes (call MD if greater than 50mcg/kg/min)
- ☐ **Midazolam (Versed) bolus option**: 2mg IV Q1 hour as needed to maintain RASS goal or _____mg IV Q ____ as needed for RASS goal
  If agitation/sedation is not controlled with 3 consecutive bolus doses then start midazolam (Versed) Infusion (dosing below)
- ☐ **Midazolam (Versed) infusion:** 2mg IV bolus, then 1mg/hr and titrate up every 10 minutes to RASS goal (usual dose 1-5 mg/hr)
- ☐ **Dexmedetomidine** (**Precedex) *Restricted use* :** Please fill separate Dexmedetomidine (Precedex) Order Form

DELIRIUM

- ☑ Asses for delirium using CAM-ICU every shift and follow nursing Delirium protocol
- ☐ 24 hours post intubation call MD if RASS greater than +2 and CAM ICU positive despite non pharmacologic approaches.

BETWEEN 4 AND 12 HOURS FOLLOWING INTUBATION

☑ Perform a SAT per protocol and coordinate with respiratory therapy to perform a SBT per protocol. SAT/SBT per protocol at least once daily thereafter.
For all SAT titrate drips as follows:
If on Fentanyl drip: turn drip off or for active pain titrate drip to the lowest possible dose to achieve a CPOT 0-2/8 or NRS 0-3/10
If on Propofol drip: decrease the rate of by 10mcg/kg/min q 15 minutes until off
If on Midazolam drip: Discontinue the midazolam infusion and start midazolam 2mg IV q1 hour as needed to maintain RASS goal or _____
☑ For patients who meet extubation criteria, contact MD for order to extubate

FOR THE PATIENT WHO REMAINS INTUBATED
GOALS: Use a pain first approach
RASS -2 to 0 or _____

- ☑ Attempt to maintain RASS goal without Propofol infusion- using pain first approach
- ☑ As tolerated, wean off the Fentanyl infusion while maintaining CPOT 0-2/8, NRS 0-3/10 and RASS goals. Replace infusion with Fentanyl boluses:
  - ☐ 25 mcg IV q15minutes as needed for mild-moderate pain and prior to procedure related pain
  - ☐ 50mcg IV q15 minutes as needed for severe pain

  OR

  - ☐ _____mcg IV Q _____ as needed for pain
- ☑ "if" patient is not maintaining CPOT, NRS or RASS goals with 3 bolus fentanyl doses in 1 hour then resume fentanyl infusion (titrate as initially ordered)
- ☑ "If" propofol started initially: RASS goal not met with fentanyl drip alone then resume propofol drip (titrate as initially ordered following intubation).
- ☑ "If" midazolam started initially: RASS goal not met with fentanyl drip alone and midazolam boluses (3 consecutive bolus doses) resume drip and titrate as initially ordered following intubation.

Physician Signature:_____ **Date:**_____ **Time:**_____

Authorization for therapeutic substitution is given unless checked here ☐

Sutter Health
Sutter Medical Center, Sacramento

Patient Identification

ICU Ventilator Pain-Agitation-Delirium (PAD) Order

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☐ STAT MEDICATION

INDICATION FOR USE (please check appropriate box):

- ☐ Intubated patient unable to be weaned from Propofol infusion
- ☐ Intubated patient unable to be weaned from benzodiazepine infusion AND/OR CAM positive secondary to benzodiazepines
- ☐ Adjunct treatment with benzodiazepine for alcohol withdrawal with risk for respiratory compromise (duration limited to 96 hours)
- ☐ Intolerant to non invasive ventilation (CPAP/BIPAP) with risk for respiratory compromise from benzodiazepine/opioids (duration limited to 48 hours)

EXCLUSION CRITERIA:

Bradycardia (Junctional rhythm, advanced heart block, or HR < 55 bpm and no functional pacemaker)	**Hypotension** (SBP < 90 mmHg or MAP <60 mmHg despite vasopressors) **Hypovolemia**	**Pregnancy** (unless potential benefits justifies potential risk to the fetus) **Deep sedation** (RASS – -5 to -4) **Paralytics**

MEDICATION ORDERS:

☑ Start dexmedetomidine (Precedex) Infusion and target a RASS of -2 to 0 or _____

Monitor blood pressure, heart rate, Respiratory rate and 0_2 saturation every 15min x2 and with every rate change. Then per nursing protocol once target RASS score met.

Dexmedetomidine (PRECEDEX) 400mcg/100ml	**STARTING INFUSION:** ***Note: Dexmedetomidine has anxiolytic, sedative and analgesic properties.*** **DOSE: NO BOLUS DOSE,** start continuous infusion at 0.4mcg/kg/hr **Opioid infusion:** 60 minutes after dexmedetomidine (Precedex) infusion started decrease current opioid infusion by 25% and titrate to target pain score **Benzodiazepine infusion for alcohol withdrawal:** 30 minutes after dexmedetomidine (Precedex) infusion started decrease current benzodiazepines drip by 50% and continue to titrate Dexmedetomidine (Precedex) infusion to target RASS score **Benzodiazepine infusion:** STOP once dexmedetomidine (Precedex) infusion started. **Propofol infusion:** 30 minutes after Dexmedetomidine (Precedex) infusion started, wean Propofol infusion by 10mcg/kg/min every 15 minutes until off. Continue to titrate Dexmedetomidine (Precedex) infusion to target RASS score.
	TITRATION: Increase or decrease by 0.1mcg/kg/hr every 30 minutes to target RASS (**MAX DOSE:** 1.5mcg/kg/hr) **For spontaneous awakening trial:** Decrease rate by 0.1mcg/kg/hr every 15 minutes titrate drip to the lowest possible dose to achieve target RASS score **Post extubation:** Decrease drip by 0.1mcg/kg/hr every 15 minutes until off **Hold infusion if HR less than 55, SBP less than 90, or MAP less than 60 and contact MD**
	BREAKTHROUGH AGITATION DURING DEXMEDETOMIDINE TITRATION: Fentanyl 12.5 mcg IV q15minutes PRN RASS greater than + 2 Midazolam (Versed) 1mg IV Q1H PRN RASS greater than + 2 if fentanyl ineffective (Maximum of 3 doses in 12 hours)

Date_____ Time_____ Physician_____

Authorization for therapeutic substitution is given unless checked here ☐

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Patient Identification

*****DEXMEDETOMIDINE (PRECEDEX) - RESTRICTED TO CRITICAL CARE*****