Management of Pain, Anxiety and Delirium in Injured Warfighters

Original Release/Approval		23 Nov 2010	Note: This CPG requires an annual review.	
Reviewed:	Apr 2013	Approved:	5 Apr 2013	
Supersedes:	Management of Pain, Anxiety and Delirium in Injured Warfighters, Oct 2010			
☐ Minor Changes (***or***)		☒ **Changes are substantial and require a thorough reading of this CPG (or)**		
☐ Significant Changes				

1. **Goal.** To provide an evidenced based framework for the management of pain, anxiety and delirium in injured combat casualties. To provide state of the art pain services to combat casualties and to reduce the incidence of chronic pain syndromes, PTSD and chronic narcotic dependency. The acute pain service (APS) consultant will coordinate with the trauma team leader to weigh options for analgesia in light of the trauma burden, coagulopathy and risk for venous-thromboembolic events.

2. **Background.**

   a. Pain is universally present in combat casualties. Adequate early pain control has been shown to reduce post traumatic stress disorder and ongoing pain control is an obligatory part of trauma care. The stress response involves a well-established sequence of physiologic and molecular events that include fever, tachycardia, tachypnea, hypertension, gastrointestinal ileus, hypercoagulability, protein catabolism, immunosuppression, among other undesirable consequences that delay or prevent a wounded warrior's full rehabilitation and recovery. Effective pain management requires coordination of all medical providers throughout the evacuation system.

   b. Pain is frequently accompanied by anxiety and delirium in critically injured patients and the medications utilized to treat these conditions may exacerbate them. A multimodal approach to pain control reduces complications associated with narcotics and subsequent narcotic dependence. The use of other modalities such as acetaminophen, ketamine, NSAIDs, continuous peripheral nerve infusions, and continuous epidural infusions greatly increases the effectiveness of narcotics while reducing the incidence of unwanted side effects increasing patient safety. The multimodal approach to pain care optimally includes the establishment of an acute pain service (APS) at Level III (and above) MTFs directed by a physician with extensive experience in acute pain management. The APS is staffed from existing CSH assets and should include a physician (usually anesthesiologist) pain consultant, chief pain nurse, and ward pain nurse champions. The APS is responsible for daily pain rounds, pain management consults, and reports to the trauma team leader.

   c. Standardized and validated scoring systems have been created for the assessment of pain DoD/VA Pain Scale (Appendix A and Appendix B), anxiety—Richmond Agitation Sedation Scale (RASS) (Appendix C), and delirium—Confusion Assessment Method (CAM) (Appendix D). **The Defense and Veterans Pain Rating Scale (DVPRS) and supplemental questions are currently undergoing ongoing validation studies.** Medications utilized to treat these conditions should be specifically directed and dosed to achieve a defined goal; e.g., pain medications dosed to achieve a pain score of 4 or less or

the patient's accepted level of comfort. Excessive use of analgesics and anxiolytics may result in the inability to assess the evolution of patient injuries by physical exam and prolong the need for mechanical ventilation.

d. Assessment of the DVPRS with supplemental questions, RASS and CAM score should be documented in the chart and the effects of treatment should be documented. (Appendices A, B, C, and D.)

e. Intermittent dosing of analgesics and anxiolytics as opposed to continuous dosing has been shown to reduce duration of mechanical ventilation.

f. Daily interruptions of sedation have been shown to reduce the duration of mechanical ventilation and the incidence of ventilator associated pneumonia. Intermittent dosing and daily sedation holidays both prevent the accumulation of the active metabolites of benzodiazepines which may seriously impede the ability to assess patients and advance their care for a prolonged period of time.

g. The assessment of pain, anxiety and delirium is complicated by the presence of traumatic brain injury and the treatment of these conditions affects the ability of the practitioner to assess the neurologic examination.

3. Evaluation and Treatment (Critical Care Patients).

a. An Acute Pain Service (APS) should be developed at Level III–V facilities. The DVPRS should be used to assess pain, the RASS score should be used to assess anxiety and the CAM should be used to assess the presence of delirium.

b. Consider potential causes of increased pain and anxiety prior to treating.

c. Orders for the treatment of pain and anxiety should include set goals and the minimum amount of medication necessary to achieve the goals should be used. The goals are determined by the need to achieve patient comfort and safety.

d. The goal for patients with delirium is to achieve a delirium free state as measured by the CAM.

e. Intermittent dosing of analgesics and anxiolytics should be instituted prior to continuous dosing. Patients who require dosing more frequently than every 2 hours should be placed on continuous dosing titrated to their goal.

f. Continuous drips should be stopped daily to obtain a reliable physical examination and to perform a spontaneous breathing trial in ventilated patients who are potential candidates for extubation. Intermittent dosing should be attempted following sedation holidays. If continuous drips are still required they should be instituted at one half the prior dose and titrated to achieve the goal. Contraindications to the daily sedation holiday include intractable intracranial hypertension and inability to adequately oxygenate or ventilate mechanically ventilated patients.

g. Propofol is an option for short term sedation in acutely agitated patients. It has rapid onset and it is also cleared rapidly. Propofol has been associated with hypotension which may be related to intravascular depletion. It is dissolved in a 10% lipid solution which should be accounted for when calculating calorie requirements. Propofol is an excellent

drug for ICU patients scheduled to undergo CCATT missions. When used for transport, propofol should only be administered to intubated patients.

h. Dexmedetomidine is an option for short term sedation in patients undergoing awake intubation or as a bridge to extubation in patients who are very agitated and do not tolerate spontaneous breathing trials. It may also be used in patients on BIPAP who require sedation. Its use should not exceed 24 hours when spontaneous respiration is desired.

i. The typical antipsychotic haloperidol and the atypical antipsychotic quetiapine are commonly used for the treatment of delirium. Both of these drugs may be associated with prolongation of the QT interval potentially resulting in fatal arrhythmias secondary to torsades. If these drugs are used, the QT_c interval should be monitored on a daily basis and they should be discontinued if the QT_c exceeds 500 msec or the interval increases 60 msec from baseline.

j. Clonidine is an effective drug for patients with hypertension associated with agitation. Clonidine acts as an alpha-2 adrenergic agonist and also has sedative properties that do not result in respiratory suppression. It may also be used for mild sedation and analgesia.

k. Patients undergoing prolonged air transport are at increased risk of adverse events secondary to the constraints of monitoring and it is the practice of CCATT teams to utilize deep sedation for safety. For this reason, neurologic deterioration in patients with traumatic brain injury cannot be assessed during transport. Patients with evidence of intracranial bleeding on CT scan or those at risk for development of intracranial hypertension who are being transported by CCATT and require deep sedation should have intracranial pressure monitors.

l. See Appendix E for a sample order set including medication options and dosing.

4. Multi-modality pain therapy for injured warfighters.

a. **Guidelines:** The APS should be available to all patients that are admitted to the Level III theater hospital. The primary mission is to give effective pain control for coalition members.

b. The acute pain consultant should round daily on all patients on the acute pain service and participate in daily trauma rounds. The APS should include an interdisciplinary team of physicians, nurses and pharmacists providing 24 hour call coverage. The APS team is responsible for coordinating pain plans with the evacuation system, validating flight surgeon and the receiving MTF. Members of the acute pain service will have duties and responsibilities in addition to Acute Pain Service responsibilities.

c. Regional anesthesia procedures should be performed in a monitored setting where nursing staff is available to help with patient care and provide appropriate recovery services for the patients.

d. An APS should include a tracking system that lists all patients on the acute pain service, their injuries and therapeutic interventions along with treatment plan comments. A cart with all of the needed supplies for regional anesthesia should be stocked in the anesthesia area. The regional anesthesia area should have immediate access to ACLS medications to

include intralipid. An ultrasound machine should be available for the Acute Pain Service and anesthesia use. A pain record to track daily progress should be maintained with the patient record and forwarded to transferring facilities for continuity of care. The APS consultant works for and reports directly to the MTF trauma team leader or director of clinical services (DCCS).

e. The acute pain service should maintain and provide input for standing orders to include:

1) Continuous epidural and peripheral nerve catheter infusion and single injection epidural or intrathecal narcotics.

2) Intravenous patient controlled analgesia (PCA) Orders. Fentanyl, hydromorphone, and morphine are the narcotic agents of choice. Meperidine (Demerol) is not an approved compound for repeated PCA dosing as the metabolite normeperidine reduces the seizure threshold.

3) Low dose ketamine infusions have profound analgesic effects with very minimal side effects. Ketamine binds the NMDA receptor and decreases the total dose of narcotics that is needed to treat a patient. Ketamine infusions should be made as follows: 250 mg of Ketamine in 250 ml of normal saline. For patients who are 70 kg or greater and less than 60 years old, start infusions at 10 mg per hour in the setting of acute and neuropathic pain. Patients that fall out of these guide lines should receive 100 micrograms/ kg/ hour of ketamine in the setting of acute or neuropathic pain. Custom orders may be titrated by the attending anesthesiologist or critical care physician.

f. **Epidural Catheters**:

1) In light of the fact that warfighters injured in theater are transported through a spectrum of care, the implementation of regional anesthesia must be integrated throughout the trauma system to be safe and effective.

2) All catheters should receive a 3 ml test dose of local anesthetic containing at least 1:400,000 epinephrine.

3) Enoxaparin use in patients undergoing epidural anesthesia increases the risk of spinal or epidural hematoma, which may cause long term or permanent paralysis. **Note: Recommend advising not using Enoxaparin in AE patients given the increased propensity for spinal & epidural hematoma formation and the inevitable increased motion of delivery catheters during patient transport in the DOD AE System.**

4) Prophylactic low molecular weight heparin dosing should be held for 12 hours prior to placement of an epidural catheter. Therapeutic dosing should be held for 24 hours prior to placement of epidural catheters. Administration of LMWH should be delayed for 2 hours after catheter removal. The maximum recommended prophylactic dose of low molecular weight heparin with an epidural catheter in place is 40 mg sq daily. Twice daily dosing of low molecular weight heparin is not recommended for patients with indwelling epidural catheters. The initial dose of once daily prophylactic low molecular weight heparin should not be given until 6-8 hours after catheter placement. Subsequent daily doses should start 24 hrs after this first dose, and the

epidural catheter should not be removed until at least 10 to 12 hrs after the last dose of LMWH. These recommendations are consistent with the most recent ASRA guidelines for the prevention of epidural hematoma.

5) Appendix F is a summary of American Society of Regional Anesthesia guidelines as they relate to use of LMWH in combat casualties. The ASRA guidelines were originally developed for use of LMWH in the peri-operative course.

g. **Peripheral Nerve Catheters**:

1) All catheters should undergo a local anesthetic test dose containing 1:400,000 epinephrine.

2) For patients undergoing deep plexus or peripheral block, we recommend that recommendations regarding neuraxial techniques be similarly applied.

3) Each patient should have no more than two catheters and the total dose of 0.2% Ropivacaine should not exceed 20 ml per hour.

h. **Compartment Syndrome**: Compartment syndrome is a well described complication of severe traumatic injury. Definitive treatment is complete surgical release of the compartments. Patients who are at high risk for compartment syndrome should be discussed in detail between the trauma surgeon, and the acute pain anesthesiologist as pain control may mask symptoms of compartment syndrome.

i. **Air Evacuation**: The PMR must state the type of regional anesthesia being utilized. All individuals participating in the care of the patient should have up-to-date training and experience with regional anesthesia and the equipment. All equipment associated with the use of regional anesthesia must be approved for flight. The current infusion pump system that has been approved by the United States Air Force for air evacuation is the small portable Ambit pump. Ambit pumps should be used for epidural, peripheral nerve catheters, ketamine infusions, narcotic infusions, and patient controlled anesthesia**. For all patients receiving regional anesthesia/analgesia, coordinate with the Trauma Chief, Theater Validating Flight Surgeon and Theater CCATT Director prior to any planned fixed-wing tactical (Intratheater) or strategic (Intertheater) transport to ensure patient safety during flight operations.**

j. **Nursing Care:** Regional anesthesia patients should be recovered by standard post anesthesia care unit (PACU) criteria. Patients with epidurals, and peripheral nerve blocks should be held in recovery until they meet standard discharge criteria from PACU and ICU. Patients with peripheral nerve blocks and epidural catheters that have met discharge criteria from ICU and PACU may be managed on the floor.

k. **Pharmacy support:** Standard preservative free local anesthetics include 0.5% ropivacaine and 1% lidocaine with epinephrine. The standard drip for air transfer out of country should be a 250 ml bag of 0.2% ropivacaine. No narcotics will be added to the peripherial nerve block or epidural infusions as they change the validation for air transport by the United States Air Force.

l. 1000 ml of 20% intralipid should be maintained for use in patients with local anesthetic toxicity (to include availability in air evacuation of patients). 1000 ml of 20% intralipid

must accompany patients receiving local anesthetic infusions during transport in the AE System. Patients with signs of local anesthetic toxicity should immediately receive 1.5 ml/kg of 20% intralipid. In a 70 kg adult, give a 100 ml bolus and 100 ml per hour for four hours. If the patient has arrested, they will require chest compressions to circulate the intralipid. This is an uncommon side effect but one that all caregivers should be aware of.

m. The Military Advanced Regional Anesthesia and Analgesia handbook is an excellent APS reference text for pain care standards and issues (www.bordeninstitute.army.mil or www.DVPMI.org).

n. Tri-service policies for pain management can be found at www.DVPMI.org. Strategic issues on evacuation pain management should be referred by the health care facility APS physician to the Defense and Veterans Pain Management Initiative organization (www.DVPMI.org).

5. Performance Improvement (PI) Monitoring

a. Intent (Expected Outcomes).

1) All combat casualties will have their pain needs addressed

2) All combat casualties in the ICU will be assess for sedation and agitation

b. Performance/Adherence Measures (Core Measures).

1) All combat casualties will have a pain score recorded on admission to a Level III facility

2) No combat casualties will experience an inadvertent extubation

3) All combat casualties identified to be positive for delirium will have delirium addressed

c. Data Source.

1) Patient Record

2) Department of Defense Trauma Registry (DoDTR)

d. System Reporting & Frequency.

The above constitutes the minimum criteria for PI monitoring of this CPG. System reporting will be performed annually; additional PI monitoring and system reporting may be performed as needed.

The system review and data analysis will be performed by the Joint Theater Trauma System (JTTS) Director, JTTS Program Manager, and the Joint Trauma System (JTS) Performance Improvement Branch.

6. Responsibilities.

a. All healthcare providers will:

1) Become familiar with the guidelines for the management of pain, anxiety and delirium in critically injured patients.

2) Appropriately manage patients with pain, anxiety and delirium.

3) Provide feedback on these guidelines and suggestions for changes to the CPG to the JTTS Director.

b. The Trauma Chief, Pain Director and Intensivist at each level III facility will:

1) Implement care that is consistent with the intent of this CPG.

2) Monitor adherence with the CPG.

7. References.

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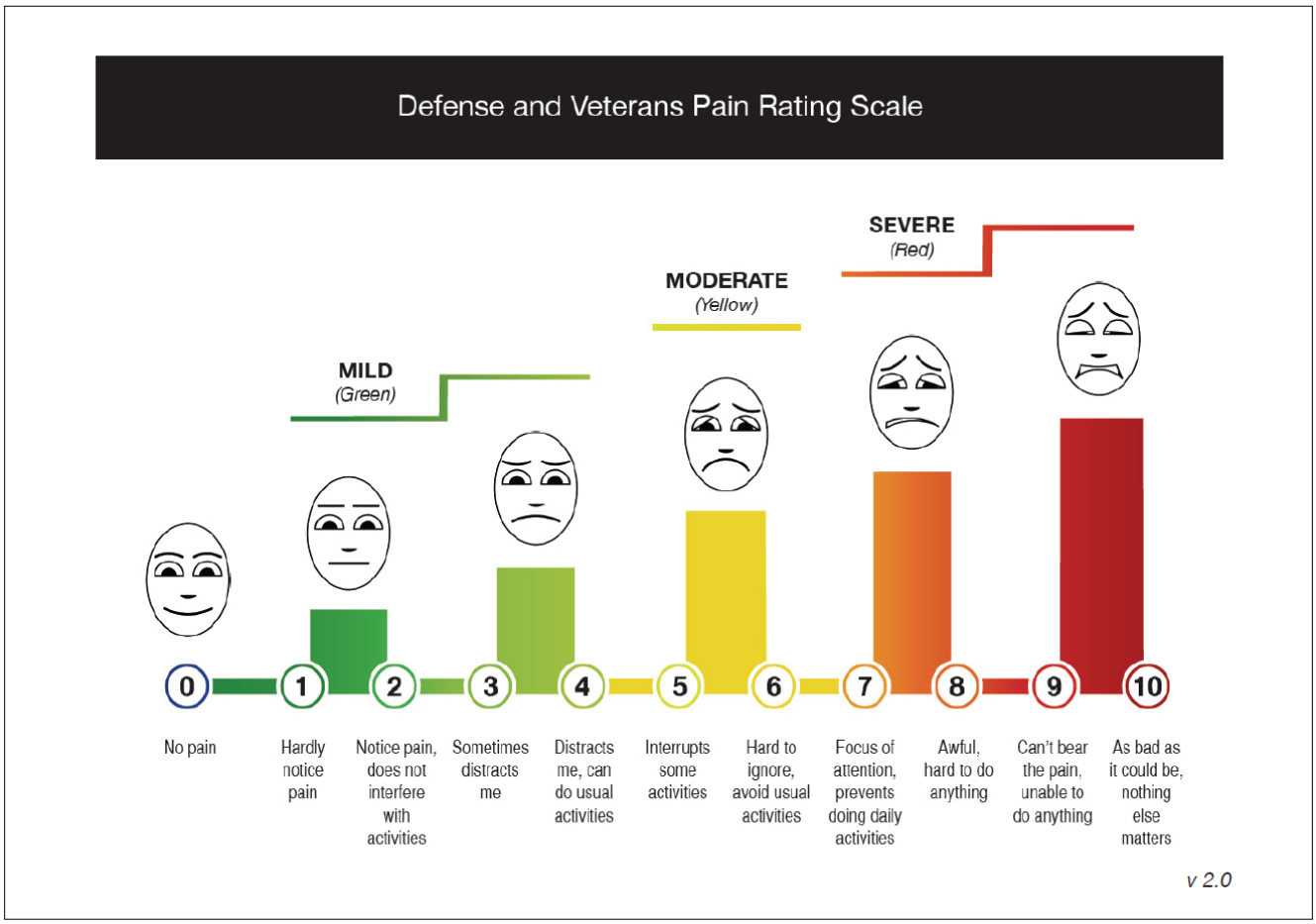
Approved by CENTCOM JTTS Director, JTS Director and CENTCOM SG

Opinions, interpretations, conclusions, and recommendations are those of the authors and are not necessarily endorsed by the Services or DoD.

APPENDIX A

DoD/VA PAIN SCALE



APPENDIX B

DoD/VA PAIN SUPPLEMENTAL QUESTIONS

DoD/VA Pain Supplemental Questions

For clinicians to evaluate the biopsychosocial impact of pain

1. Circle the one number that describes how, during the past 24 hours, pain has interfered with your usual ACTIVITY:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not interfere — Completely interferes

2. Circle the one number that describes how, during the past 24 hours, pain has interfered with your SLEEP:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not interfere — Completely interferes

3. Circle the one number that describes how, during the past 24 hours, pain has affected your MOOD:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not affect — Completely affects

4. Circle the one number that describes how, during the past 24 hours, pain has contributed to your STRESS:

0 — 1 — 2 — 3 — 4 — 5 — 6 — 7 — 8 — 9 — 10

Does not contribute — Contributes a great deal

**Reference for pain interference: Cleeland CS, Ryan KM. Pain assessment: global use of the Brief Pain Inventory. Ann Acad Med Singapore 23(2): 129-138, 1994.*

v 2.0

APPENDIX C

Richmond Agitation Sedation Scale (RASS) *

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

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.
   e. Patient has any movement to physical stimulation. **(score –4)**
   f. Patient has no response to any stimulation. **(score –5)**

* Sessler CN, Gosnell M, Grap MJ, Brophy GT, O'Neal PV, Keane KA et al. The Richmond Agitation-Sedation Scale: validity and reliability in adult intensive care patients. Am J Respir Crit Care Med 2002; 166:1338-1344.

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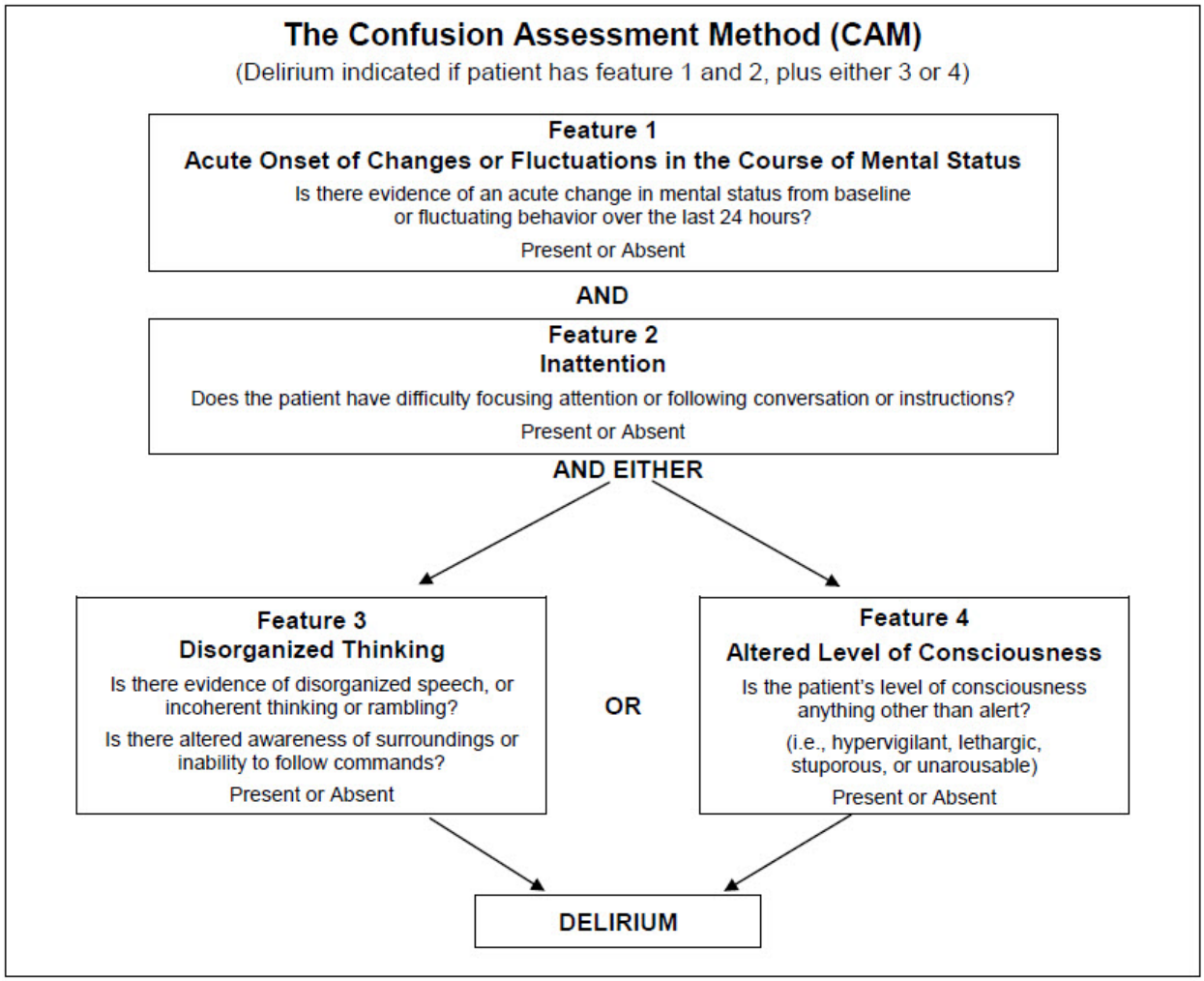
APPENDIX D


The Confusion Assessment Method (CAM)
(Delirium indicated if patient has feature 1 and 2, plus either 3 or 4)
Feature 1
Acute Onset of Changes or Fluctuations in the Course of Mental Status
Is there evidence of an acute change in mental status from baseline or fluctuating behavior over the last 24 hours?
Present or Absent
AND
Feature 2
Inattention
Does the patient have difficulty focusing attention or following conversation or instructions?
Present or Absent
AND EITHER
Feature 3
Disorganized Thinking
Is there evidence of disorganized speech, or incoherent thinking or rambling?
Is there altered awareness of surroundings or inability to follow commands?
Present or Absent
OR
Feature 4
Altered Level of Consciousness
Is the patient's level of consciousness anything other than alert?
(i.e., hypervigilant, lethargic, stuporous, or unarousable)
Present or Absent
DELIRIUM

APPENDIX E

SEDATION ORDERS

Allergies: _____ **Weight:** _____ **kg**

Diagnosis: _____

Service: _____ **Attending:** _____

SEDATION ANALGESIA DELIRUM

See ICU Sedation Analgesia Delirium Algorithm

Nursing Orders

☐ Daily sedation Hold

1. Hold sedation/analgesia daily.
2. Assess pt for SBT if on ventilator.
3. Restart sedation/analgesia at intermittent dosing;
   OR if pt's condition requires continous infusion, restart infusion at ½ pre-interruption dose.

☐ Sedate to RASS goal of minus 2 to minus 1

See RASS scale. (Appendix C)

☐ ICU Sedation Analgesia Delirium Protocol

See CAM scale. (Appendix D)

See Treatment Algorithm

☐ Notify MD

For delirium prior to initating pharmacologic treatment

For patient on Clonidine - If SBP falls > 30 mmHg or DBP fall > 20 mmHg

ANALGESIA

Intermittent Dosing Start with Intermittent Dosing. If required more than Q 2 Hours, go to Continuous Infusion.

☐ fentanyl IV _____ mcg (25-100 mcg). Intravenous, EVERY 1 HOUR AS NEEDED for mild to moderate pain.

Titrate pain medications to achieve a level 3 or _____ (pain scale 1-10).

Start with Intermittent Dosing. If required more than Q 2 hours, go to Continuous infusion.

Administer via slow IV.

☐ ketamine IV____mg (0.1-0.5 mg/kg). Intravenous, EVERY 1 HOUR AS NEEDED for mild to moderate pain.

Continuous Dosing Stop intermittent dosing if continuous infusion initiated and notify Pharmacy.

☐ fentanyl IV _____ mcg (25-250 mcg/hr), Intravenous**,** CONTINUOUS
Titrate pain medication to achieve a level 3 or ____ (pain scale 0-10).
Stop intermittent dosing if continuous infusion initiated and notify Pharmacy Services.
High-Risk Medication

☐ fentanyl IV bolus _____mcg (25-100 mcg), Intravenous, EVERY 10 MINUTES AS NEEDED for breakthrough pain.
Titrate pain medication to achieve a level 3 or ____ (pain scale 0-10).
Administer via slow IV.

☐ ketamine IV _____mg (10-40 mg/ hr for ≥70 kg and < 60 years old) CONTINUOUS
Titrate pain medication to achieve a level 3 or ____ (pain scale 0-10).
Stop intermittent dosing if continuous infusion initiated and notify Pharmacy Services.

☐ ketamine IV_____mg (100 mcg/ kg/ hour) of ketamine CONTINUOUS
Titrate pain medication to achieve a level 3 or ____ (pain scale 0-10).
Stop intermittent dosing if continuous infusion initiated and notify Pharmacy Services.

☐ ketamine IV bolus 0.1-0.5 mg/kg , Intravenous, EVERY 10 MINUTES AS NEEDED for breakthrough pain.
Titrate pain medication to achieve a level 3 or _____ (pain scale 0-10).

SEDATION See RASS scale

Intermittent Dosing Start with Intermittent Dosing. If required more than Q 2 hours, go to Continuous Infusion.

☐ lorazepam (aka ATIVAN) IV _____ mg (1-4 mg), Intravenous, EVERY 1 HOUR AS NEEDED for anxiety/agitation.
Start with Intermittent Dosing. If required more than Q 2 hours, go to Continuous Infusion.
Titrate sedation to RASS score of -1 to 0

Continuous Infusion Stop intermittent dosing if continuous infusion initiated and notify Pharmacy.

☐ lorazepam (aka ATIVAN) IV infusion _____mg/hr (1-5 mg/hr), Intravenous, CONTINUOUS
Stop intermittent dosing if continuous infusion initiated and notify Pharmacy.
Titrate sedation to RASS score of -1 to 0

☐ lorazepam (aka ATIVAN) IV bolus _____ mg (1-2 mg), Intravenous, EVERY 20 MINUTES AS NEEDED for breakthrough agitation/anxiety.
Titrate sedation to RASS score of -1 to 0

☐ midazolam (aka VERSED) IV infusion (avoid in renal/liver dysfunction) _____ mg/hr (1-6 mg/hr), Intravenous, CONTINUOUS.
Stop intermittent dosing if continuous infusion initiated and notify Pharmacy.
Titrate sedation to RASS score of -1 to 0

☐ midazolam (aka VERSED) IV bolus _____ mg/hr (1-2 mg/hr), Intravenous, EVERY 2 MINUTES AS NEEDED for breakthrough agitation/anxiety.

Titrate sedation to RASS score of -1 to 0

Dexmedetomidine Continuous Infusion

☐ dexmedetomidine IV _____mcg/kg/hr (0.3-0.7 mcg/kg/hr), Intravenous, CONTINUOUS for 24 hours

1. Is rapid extubation expected (24-48 hrs)? ☐ Yes ☐ No
2. Ordered by IC fellow or ICU staff? _____
3. Please select the indication (must meet one of the following):
   - ☐ Awake intubation
   - ☐ BIPAP use requiring sedation
   - ☐ Bridge to extubation
   - ☐ Desired light to moderate sedation

Titrate in increments of 0.1 mcg/kg/hr Q 10 minutes to achieve a sedation score of 2-3 and pain score < 4/10.

Do not exceed maximum dose of 0.7 mcg/kg/hr.

Keep heart rate greater than ____ beats per minute and systolic blood pressure greater than ____ mmHg and mean arterial pressure greater than _____mmHg.

Discontinue for heart rate < 45 beats per minute or if patient develops 2nd or 3rd degree Atrioventricular block.

For persistent hypotension unresponsive to fluid challenge, decrease the rate by 50%.

Discontinue if systolic blood pressure and mean arterial pressure do not return to parameters specified above in 10 minutes. Call physician for further instructions.

DELIRIUM See CAM scale

Initiating Therapy

☐ haloperidol (aka HALDOL) IV x 1 _____mg (2-10 mg), Intravenous, ONCE For 1 Dose Administer over 1 minute. See CAM scale.

☐ haloperidol (aka HALDOL) IV PRN _____mg (2-5 mg), Intravenous, EVERY 15 MINUTES AS NEEDED for agitation. Recommend not to exceed 20 mg over one hour.

Slow administration over 5-10 minutes preferred to minimize hypotension. See CAM scale.

Maintenance Dosing QTc monitoring required for patients receiving more than 10 mg haloperidol per day

☐ haloperidol (aka HALDOL) IV _____ mg (2-5 mg), Intravenous, EVERY 1 HOUR AS NEEDED for delirium.

- Not to exceed dose 80 mg IV in 24 hours.
- Slow administration over 5-10 minutes preferred to minimize hypotension. See CAM scale.

☐ quetiapine (aka SEROQUEL) PO tablet (Day 1) 25 mg, Oral, TWICE DAILY. See CAM scale.

☐ quetiapine (aka SEROQUEL) PFT tablet (Day 1) 25 mg, Feeding tube, TWICE DAILY. See CAM scale.

☐ quetiapine (aka SEROQUEL) PO tablet (Day 2) 50 mg, Oral TWO TIMES DAILY.
If patient responds to initial dose and PO/PFT available. See CAM Scale.

☐ quetiapine (aka SEROQUEL) PFT tablet (Day 2) 50 mg Feeding tube, TWO TIMES DAILY.
If patient responds to initial dose and PO/PFT available. See CAM scale.

☐ clonidine (aka CATAPRES) tablet PRN 0.1-0.2 mg, Oral EVERY 1 HOUR AS NEEDED for hypertension due to agitation.

May repeat x 3 doses as needed, until SBP ≤ 140 mmHg (160 mmHg if over 65 years of age).

If blood pressure goal is not achieved with clonidine 0.1 mg, give clonidine 0.2 mg every 1 hour as needed to achieve SBP ≤ 140 mmHg (160 mmHg if over 65 years of age).

Once BP goal is met, move to maintenance and/or PRN dose.

Hold clonidine if systolic blood pressure falls more than 30 mmHg of diastolic blood pressure falls more than 20 mmHg and notify physician.

☐ clonidine (aka CATAPRES) tablet scheduled 0.1-0.2 mg, Oral, EVERY 8 HOURS

Administer until SBP < 140 mmHg then change to maintenance/PRN dose.

Hold clonidine if systolic blood pressure falls more than 30 mmHg or diastolic blood pressure falls more than 20 mmHg and notify physician.

APPENDIX F

Consensus Statement of American Society of Regional Anesthesia (ASRA) on LMWH as it relates to regional anesthetic use, adapted for use in combat casualties.

1. Antiplatelet or oral anticoagulant medications administered in combination with LMWH increase the risk of spinal hematoma. ASRA recommends against concomitant administration of antiplatelet drugs, standard heparin, dextran or coumadin, regardless of LMWH dosing regimen.
2. Needle placement should be delayed at least 10 to 12 hours after patient has received LMWH thromboprophylaxis.
3. Needle placement should be delayed at least 24 hours in patients receiving therapeutic LMWH.
4. In patients receiving twice daily dosing of LMWH:
    a. indwelling catheters should be removed before initiation of twice daily dosing regimen.
    b. LMWH should be delayed for 2 hours after catheter removal.
5. In patients receiving single daily dosing of LMWH”
    a. catheters can be maintained in place.
    b. catheter can be removed no sooner than 10 to 12 hours after last dose of LMWH.
    c. subsequent LMWH should be withheld for two hours after catheter removal.
6. NSAIDs (including aspirin) alone do not add a significant risk for development of spinal hematoma.
7. Neuraxial anesthetic techniques should be avoided in patients who are receiving NSAIDS and LMWH.
8. These same recommendations apply for patients undergoing deep plexus or peripheral blocks.

APPENDIX G
ADDITIONAL INFORMATION REGARDING OFF-LABEL USES IN CPGs

1. **Purpose**. The purpose of this Appendix is to ensure an understanding of DoD policy and practice regarding inclusion in CPGs of "off-label" uses of U.S. Food and Drug Administration (FDA)–approved products. This applies to off-label uses with patients who are armed forces members.

2. **Background**. Unapproved (i.e., "off-label") uses of FDA-approved products are extremely common in American medicine and are usually not subject to any special regulations. However, under Federal law, in some circumstances, unapproved uses of approved drugs are subject to FDA regulations governing "investigational new drugs." These circumstances include such uses as part of clinical trials, and in the military context, command required, unapproved uses. Some command requested unapproved uses may also be subject to special regulations.

3. **Additional Information Regarding Off-Label Uses in CPGs**. The inclusion in CPGs of off-label uses is not a clinical trial, nor is it a command request or requirement. Further, it does not imply that the Military Health System requires that use by DoD health care practitioners or considers it to be the "standard of care." Rather, the inclusion in CPGs of off-label uses is to inform the clinical judgment of the responsible health care practitioner by providing information regarding potential risks and benefits of treatment alternatives. The decision is for the clinical judgment of the responsible health care practitioner within the practitioner-patient relationship.

4. **Additional Procedures**.

    a. Balanced Discussion. Consistent with this purpose, CPG discussions of off-label uses specifically state that they are uses not approved by the FDA. Further, such discussions are balanced in the presentation of appropriate clinical study data, including any such data that suggest caution in the use of the product and specifically including any FDA-issued warnings.

    b. Quality Assurance Monitoring. With respect to such off-label uses, DoD procedure is to maintain a regular system of quality assurance monitoring of outcomes and known potential adverse events. For this reason, the importance of accurate clinical records is underscored.

    c. Information to Patients. Good clinical practice includes the provision of appropriate information to patients. Each CPG discussing an unusual off-label use will address the issue of information to patients. When practicable, consideration will be given to including in an appendix an appropriate information sheet for distribution to patients, whether before or after use of the product. Information to patients should address in plain language: a) that the use is not approved by the FDA; b) the reasons why a DoD health care practitioner would decide to use the product for this purpose; and c) the potential risks associated with such use.