Guideline

Guideline Title: Delirium in the ICU

Summary: The purpose of this guideline is for ICU staff to be able to inform and therefore improve the prevention, early identification, treatment and management of delirium. Delirium will be assessed using the Confusion Assessment Method for ICU (CAM-ICU).

Approved by: Medical Director of ICU

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1. Introduction:
Delirium, as defined by DSM IVR criteria\(^1,2\), is a syndrome characterised by an acute disturbance of consciousness and a change in cognition, which develops over a short period of time. The disorder has a tendency to fluctuate during the course of the day. It may be the only sign of serious medical illness and should be recognised, responded to and managed, appropriately.

The most important step in delirium management is early recognition. If delirium is not diagnosed, it is doubtful that any efforts will be made to reverse it. Once delirium is detected, efforts should focus on identifying the etiology. Often this can be done by assessing for the presence of known risk factors. Both prevention and treatment should focus on the minimization and/or elimination of predisposing and precipitating factors. The theoretical goals of management are to improve the patient’s cognitive status and reduce the risk of adverse outcomes such as aspiration, prolonged immobility, increased length of acute care, institutionalization, and death\(^1\).

The risk addressed by this policy:

Patient safety and patient comfort
The Aims / Expected Outcome of this guideline:

- To facilitate early detection of delirium, delirium risk and implementation of appropriate treatment and management.
- All clinical staff will be aware of delirium risk, delirium identification and delirium management
- The patient will have appropriate delirium monitoring while in ICU by competent use of the CAM-ICU delirium assessment tool.

Related Standards or Legislation

- NSQHS Standard 1 Governance
- National Standard 4 Medication Safety

Related Policies

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2. Policy Statement

- All care provided within the Liverpool Health Service will be in accordance with infection control guidelines, manual handling guidelines and minimisation and management of aggression guidelines.
- Medications are to be prescribed and signed by a medical officer unless required during an emergency.
- Medications are to be given at the time prescribed and are to be signed by the administering nurse.
- Parenteral medication prescriptions and the drug are to be checked with a second nurse prior to administration.
- All drugs administered during an emergency (under the direction of a medical officer) are to be documented during the event, then prescribed and signed following the event.
- Adverse drug reactions are to be documented and reported to a medical officer.
- Medication errors are to be reported using the hospital electronic reporting system: IIMS.
- Guidelines are for adult patients unless otherwise stated.
- RASS (Richmond Agitation Sedation Scale) must be used to assess sedation scores in all Intensive care patients. The desired score must be determined and documented by the Intensive Care Medical Team in the clinical notes.
- The RASS score must be regularly documented by the ICU nurses on the allocated section of the ICU flow chart.
- If RASS score ≥ 3, then delirium assessment must be performed using the CAM-ICU.
3. Principles / Guidelines

**Etiology**

Most patients with delirium in the ICU likely have multiple causes, though these causes are often very difficult to determine with clinical precision. The exact pathophysiological mechanisms involved in the development and progression of delirium are a point of controversy. However, these mechanisms are thought to be related both to (a) anatomic deficits and (b) imbalances in the neurotransmitters which modulate the control of cognitive function, behavior and mood.

**Precipitating Risk Factors**

Causes for Neurotransmitter Imbalance:

Derangements in levels of serotonin, acetylcholine deficiency and dopamine excess are thought to contribute to delirium, but there are many other neurotransmitters that may be involved. Such derangements could be secondary to a number of causal factors that include:

- Reduction in cerebral metabolism
- Primary intracranial disease
- Systemic diseases
- Sepsis
- Secondary infection of the brain
- Exogenous toxic agents
- Withdrawal from substances such as alcohol or sedative-hypnotics agents
- Hypoxemia and metabolic disturbances
- Administration of psychoactive medications such as benzodiazepines and narcotics

Four important risk factors for transitioning to delirium were:

- Patient age
- Pre-existing neuro-psychiatric problems
- Severity of illness
- Administered sedative and analgesic agents. Avoiding the use of any more of these medications than is absolutely necessary is likely an area of focus that may reduce either the onset or duration of delirium.

Environmental Risk Factors for delirium include:

- Hospitalisation
- Multiple bed/room moves
- Need for visual and hearing aids
- Sensory overload
- Noise
- Out of bed <1 time per day
- Use of restraints
- Disturbed sleep/wake cycle

**Prevention**

- The prevention of delirium focuses on addressing modifiable risk factors and is designed to reduce the number and/or the severity of precipitating risk factors.

**Diagnosis**

The clinical diagnosis of delirium is based on a comprehensive assessment including a detailed history, examination and relevant investigations. Establishing baseline comorbidities and baseline cognitive status aids in diagnosis. THINK: Rapid onset, inattention, clouded consciousness (bewildered), fluctuating.
There are three subtypes of delirium: hyperactive, hypoactive and mixed.

- Hyperactive delirium is characterized by agitation, restlessness, and attempts to remove tubes and lines.
- Hypoactive delirium is characterized by withdrawal, flat affect, apathy, lethargy, and decreased responsiveness.
- Mixed delirium is when patients fluctuate between the two.

In ICU patients mixed and hypoactive are the most common, and are often undiagnosed if routine monitoring is not implemented. Few ICU patients (<5%) experience purely hyperactive delirium.

**Causes for Delirium**

The following mnemonic DELIRIUMS, outlines common causes for delirium:

- D - drugs, drugs and drugs,
- E - eyes and ears
- L - low O2 states
- I – infection
- R - retention and restraints
- I – ictal
- U - underhydration and undernutrition
- M – metabolic
- S - subdural and sleep deprivation

**Delirium Assessment**

The sustained use of analgesics and sedatives are geared toward the maintenance of optimal comfort in critically ill patients by focusing on 3 central components - pain, anxiety and delirium. The emergence and/or persistence of delirium should be regularly monitored in critically ill patients. The Confusion Assessment Method for ICU (CAM-ICU) tool will be used for assessing delirium in the ICU patients.

**CAM-ICU**: The Confusion Assessment Method (CAM) was created in 1990, and it was intended to be a bedside assessment tool to assess for delirium. The CAM-ICU is an adaptation of this tool for use in ICU patients (e.g., critically ill patients on and off the ventilator who are largely unable to talk). Delirium is defined in terms of four diagnostic features, and is deemed present when a patient has positive Feature 1 and Feature 2 or Feature 3 or 4.

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**Feature 1:**
Acute change or fluctuating course of mental status

**Feature 2:** Inattention

**Feature 3:** Altered level of consciousness

**Feature 4:** Disorganised Thinking

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**AND**

**AND**

**OR**
Steps in assessment:

- Delirium assessment is actually part of the overall consciousness assessment.
- Consciousness is defined in two parts—arousal level plus content.
- **Step 1** – Assess level of consciousness – RASS (Richmond Agitation Sedation Scale). The first step to assessing consciousness is to assess level of consciousness. This is best done using a validated sedation/arousal scale such as the Richmond Agitation-Sedation Scale.
- **Step 2** – The next step is assessment of content of consciousness. Assess Content of Consciousness – CAM-ICU. At deeper levels of consciousness (i.e., RASS -4 & -5), it is difficult to ascertain content because the patient is not responsive. These levels are referred to as coma or stupor, and in those situations we do not conduct the CAM-ICU, thus referring to the patient as ‘unable to assess’. However, at the lighter levels of consciousness (i.e., RASS -3 & above), patients are able to display at least the beginnings of meaningful responsiveness (i.e., response to voice). At these levels you are able to assess for clarity of thought, specifically delirium.

Please refer to:

- Appendix 2: CAM-ICU Worksheet
- Appendix 3: CAM-ICU Flowsheet.

**Specific CAM-ICU Instructions & Questions**

**Feature 1 : 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?

**Basics:** Patients with delirium will display changes from their mental status baseline and/or fluctuation in mental status. Feature 1 assesses for these changes.

**Feature 1 is present if either of the above questions is answered ‘yes’.

**Detailed Instructions:**

- To determine baseline mental status, get information from family and friends. This is the patients pre-hospital mental status. Use critical thinking skills for this feature. For example:
  - If the patient is young (e.g. <65) and is admitted from home with no documented neurocognitive disorder or history of stroke, then you could assume that the patient has a “normal” baseline mental status (i.e. alert and calm).
- Always use the same baseline for all successive CAM-ICU assessments. If there is a permanent change in baseline eg: a stroke or anoxic injury the new baseline is used for subsequent CAM-ICU evaluations. This may be difficult to determine because of the difficulty in separating delirium from the new baseline. In practice, it is easiest to gather Feature 1 in such a situation by documenting ‘fluctuations’ in the mental status.
• It still counts as a fluctuation in mental status or change from baseline when the patient is on sedatives. Alteration in mental status includes those that are chemically induced by the healthcare team, including fluctuation due to titration of sedatives. This is not the patient’s usual mental status. It is often difficult to completely distinguish a disease-induced change from a drug-induced change in mental status.

**Feature 2: Inattention**

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

**Basics:** Alertness is a basic arousal process in which the awake patient can respond to any stimulus in the environment. The alert, but inattentive patient will respond to any sound, movement, or event occurring in the vicinity, while the attentive patient can screen out irrelevant stimuli. All **attentive patients are alert, but not all alert patients are attentive.**

**Feature 2 is present if patient has > 2 errors.**

**Detailed Instructions:**

**Letters**

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 the following 10 letters in a normal tone (loud enough to be heard over the noise of the ICU) at a rate of one letter every 3 seconds.

*Note: Patients with ICU-acquired weakness or other neuromuscular diseases may require more time to respond, or indicate response with another method (e.g., eye blinks, finger taps).*

S A V E A H A A R T

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

*Attempt Letters first. If unable to complete Letters □ Pictures*

**Alternate: Pictures**

**Step 1:** 5 pictures (start with the green card)
Directions: Say to the patient, “Mr. or Mrs. ________, I am going to show you pictures of some common objects. Watch carefully and try to remember each picture because I will ask what pictures you have seen.” Then show Step 1 of either Packet A or Packet B, naming each item and alternating daily if repeat measures are taken. Show the first 5 pictures for 3 seconds each.

**Step 2:** 10 pictures (start with the red card)
Directions: Say to the patient, “Now I am going to show you some more pictures. Some of these you have already seen and some are new. Let me know whether or not you saw the picture before by
nodding your head yes (demonstrate) or no (demonstrate).” Then show 10 pictures (5 new 5 repeat) for 3 seconds each (Step 2 of Packet A or B, depending upon which form was used in Step 1 above).

Scoring: Errors are counted with the patient incorrectly indicates ‘yes’ or ‘no’ for a picture during the second step. In order to improve the visibility for elderly patients, the images are printed on 6”x10” buff colored paper and laminated with a matte finish.

Note: If a patient wears glasses or hearing aids make sure he/she has them on.

**Pictures**

**Step 1**

![Images of various items to demonstrate yes/no responses]

**Step 2**

![Additional images for Step 2 of the assessment]

*An additional set of pictures is available on the website: [http://www.icudelirium.org/assessment.html](http://www.icudelirium.org/assessment.html)*

- **If a patient is RASS -3 or very lethargic, is the CAM-ICU ‘unable to assess’ (UTA)? Is the patient delirious?** The ability to be tested with the CAM-ICU is wholly based on a patient being at all responsive to verbal stimulation, regardless of sedative use. The 2-step approach to assess consciousness with the RASS and CAM-ICU provides a filter for the majority of patients who cannot participate in the assessment. Comatose patients (i.e., RASS -4/-5) are not tested with the CAM-ICU because they are unconscious. Though it seems like a gray zone, most patients who are a RASS -3 can provide enough data to be rated as delirious by the CAM-ICU. Some sites have used RASS -2 as the lower border for CAM-ICU rating, but most use RASS -3 as the cutoff.

- **If a patient has any movement or eye opening to your voice directed to them and doesn’t squeeze at all or stay awake long enough to squeeze for more than one letter, then this patient is obviously inattentive.** At this point, assess the other CAM-ICU Features as needed to determine if the patient is delirious. Example:
  - If the patient ever squeezed, then count the errors (see Letters instructions).
  - If the patient never squeezed then the patient is inattentive. Also be suspicious for inattention when you have to repeat the instructions more than twice.

- **One way to think about this is if there is eye opening or movement to voice, then the “lights are on”. Use the CAM-ICU to see if “anyone is home”.

- **These concepts also apply to a patient who is agitated (i.e., RASS +1 thru +4) and therefore not participating in assessment or comprehending your instructions.**
You do not have to use both letter and picture tests in each assessment. Attempt the Letters first. If the patient is able to perform this test and the score is clear, record this score and move to the Feature 3. If the patient is incapable of performing the Letters or you are unable to interpret the score, perform the Pictures. If you perform both tests, use the Pictures result to determine if the patient is inattentive. The Pictures are rarely required to assess inattention (only <5% of the time).

Feature 3: Altered Level of Consciousness

Current RASS Level.

Basics:
Patients with delirium experience a disturbance of consciousness and changes in cognition. For the CAM-ICU this is measured by using the RASS scale and assessing current level of consciousness. If Features 1 & 2 are absent, you do not need to proceed with this Feature.

Feature 3 is present if the patient’s current level of consciousness is anything other than alert (RASS 0).

- Coma is not considered delirium. Remember, we do not perform the CAM-ICU if a patient is comatose (i.e. RASS -4 or -5). Many delirious patients have recently been comatose, indicating a fluctuation of mental status. Comatose patients often, but not always, progress through a period of delirium before recovering to their baseline mental status.
- What is the difference between Feature 3 and Feature 1?
  - Feature 3 (Altered Level of Consciousness) evaluates the patient’s current level of consciousness (right now). The current level of consciousness as detected with the actual current RASS regardless of the patient’s baseline mental status.
  - Feature 1 (Acute Change or Fluctuating Course of Mental Status) evaluates the patient’s pre-hospital mental status baseline and whether there has been fluctuation in mental status during the past 24 hours.
  - Take home point: A patient can have an alert/calm baseline, RASS fluctuations (-1 to -2) over the past 24 hours, and currently be RASS 0. Feature 1 is present due to fluctuations, but Feature 3 is absent because the patient is currently alert (RASS 0).

Feature 4: Disorganised Thinking

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?

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 is unable to move both arms)
Basics: This is the hardest area to assess in nonverbal patients because it is the most subjective of the four Features. Thought is expressed by verbal or written words. Mechanical ventilation and loss of fine motor movement limit this expressive ability in most ICU patients. Because of this, the CAM-ICU uses easy questions and a simple 2-step command to assess organization of thought. If Features 1 & 2 are absent, you do not need to proceed with this Feature.

Feature 4 is present if there is >1 error for the combined Questions + Command.
- According to the CAM-ICU a patient is delirious if Features 1 and 2 and either 3 or 4 are present. Many times you will not need to assess this Feature because you will have the information you need from Features 1, 2, and 3. It is only when Features 1 and 2 are present and Feature 3 is absent (patient is alert) that you have to complete this Feature.
- The 2-step command should be performed even if the patient scores 100% on the questions because there is a chance the patient had four lucky guesses. The combination of questions and 2-step command gives the clinician more data to make a judgment of whether there is disorganized thinking. If the patient answers all questions correctly, but the rater feels the patient randomly said yes/no, the performance on the 2-step command can help to affirm or disprove the suspicions of the clinician.
- If the patient cannot move their arms or is blind (paralysed, quadriplegic or visually impaired), score them sorely on Feature 4 questions (do not assess the 2-step command). Therefore, Feature 4 is present if the patient misses more than one question (>1 error).

Alternate Questions:
These questions can be used as an alternative to the set listed above. Try to alternate ‘yes’ then ‘no’ answers.
- Will a leaf float on water?
- Are there elephants in the sea?
- Do two pounds weigh more than one?
- Can you use a hammer to cut wood?

Delirium Management.1,3,5,6
Non-Pharmacological Management5,6: Primary prevention with non-pharmacological management is preferred for management of delirium. The focus is on minimizing risk factors.

The strategies include the following interventions:
Orientation:
- Provide visual and hearing aids.
- Encourage communication and repeated reorientation of patients to time, date and place.
- Visible clocks.
- Minimise confusing stimuli, eg: frequent changing of rooms / bed spaces.
- Have familiar objects from home in the patients bed area, eg: photographs.
- Attempt consistency in nursing staff.
- Can have music with ear phones.
- Encourage reading of newspapers / magazines.
- Provision of cognitively stimulating activities for the patients multiple times a day.
- Reduce isolation, ensuring visible daylight when possible.

Environment:
- Have a non pharmacological sleep protocol — lights off at night and on during the day.
Early mobilization activities and range of motion exercises.
Minimization of unnecessary noise/stimuli

Clinical:
- Timely removal of catheters and physical restraints.
- Early correction of dehydration.
- Use of a scheduled pain management protocol.
- Maintain hemodynamic stability, SBP > 90mmHg.
- Avoid hypoxia, SaO₂ > 90%.
- Treat underlying metabolic derangements and infections.

Pharmacological Management⁵,⁶:
- Review patient’s current pharmacological treatment by the ICU medical team on the daily ward round. Consider if any of the current medications are contributing to delirium.
- Continue regular sedation assessment with the RASS and use the sedation protocol (Appendix 4) to ensure appropriate administration of sedation and analgesia.
- Consider stopping or substituting for deliriogenic medications such as benzodiazepines, anticholinergic medications (metochlorpromide, H2 blockers, promethazine, diphenhydramine), steroids etc.
- When pain present administer analgesia – Adequate pain control may decrease delirium. Consider intermittent analgesia when feasible.
- When delirium present and pain absent, administer sedative for safety – then minimise the need for ongoing administration of sedatives.
- Consider typical or atypical antipsychotics - First choice for short term treatment is haloperidol 2mg to 5 mg IV, initially. In the elderly patients (>65 years) - initially 0.25 mg-1mg boluses to a total of 3mg; if they require doses of > 3mg / day seek advice from the ICU Staff Specialist and Geriatric team.
- May also consider using any of the atypicals (e.g. olanzapine and risperidone).
  - **Risperidone**⁴ – start at 0.5mg per day with incremental increases of 0.5mg to a maximum dose of 2mg per day.
  - **Olanzapine**⁴ – Start at 2.5mg per day, increase to 5mg per day. Titrate the dose based on careful review after this period.
- If patient RASS -1 to -3, reassess target sedation goal and perform daily Spontaneous Awakening Trial (SAT) – Stop sedation or decrease infusion (especially benzodiazepines) to awaken patient as tolerated.
- If the patient tolerates the spontaneous awakening trial, then perform a Spontaneous Breathing Trial (SBT).

Clinical Considerations¹,⁵,⁶:
- The most important step in delirium management is early recognition.
- If delirium is not diagnosed, it is doubtful that any efforts will be made to reverse it.
- Once delirium is detected, efforts should focus on identifying the etiology. Often this can be done by assessing for the presence of known risk factors. Both prevention and treatment should focus on the minimization and/or elimination of predisposing and precipitating factors.
- The theoretical goals of management are to improve the patient’s cognitive status and reduce the risk of adverse outcomes such as aspiration, prolonged immobility, increased length of acute care, institutionalization, and death.
- Delirium assessment should be performed on a daily basis by trained nursing and medical staff, if indicated this assessment may need to be repeated in 12 hours. The delirium assessment findings using the CAM –ICU should be documented on the CAM –ICU Worksheet and in the patient’s progress notes.
• If delirium is present, there should be a documented strategy for its management in the progress notes.

• **How do I perform the CAM-ICU if my patient doesn’t speak English?**
  The CAM-ICU is available in almost 20 languages. They can all be found at this link: [http://www.icudelirium.org/assessment.html](http://www.icudelirium.org/assessment.html). Use an interpreter or family member to ask the questions.
1. Consider stopping or substituting for deliriogenic medications such as benzodiazepines, anticholinergic medications (metoclopramide, H2 blockers, promethazine, diphenhydramine), steroids etc
2. See non pharmacological protocol – at right
3. Analgesia – Adequate pain control may decrease delirium. Consider intermittent narcotics if feasible. Asses with pain scale.
4. Typical or atypical antipsychotics- While tapering or discontinuing sedatives, consider haloperidol 2 to 5 mg IV initially (0.25 -1 mg in elderly, to a maximum of 3mg). Consider using any of the atypicals (e.g. olanzapine, quetiapine, risperidone).
5. Spontaneous Awakening Trial (SAT) – Stop sedation to awaken patient as tolerated.
6. Spontaneous Breathing Trial (SBT)
7. Sedatives and analgesics may include benzodiazepines, propofol, dexmedetomidine, fentanyl or morphine.

Non-Pharmacological Protocol:

Orientation:
- Provide visual and hearing aids.
- Encourage communication and repeated reorientation of patients.
- Visible clocks, Reduce isolation, ensuring visible daylight when possible
- Minimise confusing stimuli, eg: frequent changing of rooms / bed spaces.
- Have familiar objects from home in the patients bed area.
- Attempt consistency in nursing staff.
- Music with ear phones, Encourage reading of newspapers / magazines.
- Provision of cognitively stimulating activities for the patients.

Environment:
- Have a non pharmacological sleep protocol – lights off at night and on during the day.
- Early mobilization activities and range of motion exercises.
- Minimization of unnecessary noise/stimuli

Clinical:
- Timely removal of catheters and physical restraints.
- Early correction of dehydration.
- Use of a scheduled pain management protocol.
- Maintain hemodynamic stability, SBP > 90mmHg
- Avoid hypoxa, SaO2 > 90%.
- Treat underlying metabolic derangements and infections.
APPENDIX 1

Assessing Consciousness: Linking Sedation and Delirium Monitoring

Step 1 Level of Consciousness: RASS

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<th>Label</th>
<th>Description</th>
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<tr>
<td>+4</td>
<td>COMBATIVELY</td>
<td>Combative, violent, immediate danger to staff</td>
</tr>
<tr>
<td>+3</td>
<td>VERY AGITATED</td>
<td>Pulls to remove tubes or catheters; aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>AGITATED</td>
<td>Frequent non-purposeful movement, fidgets ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>RESTLESS</td>
<td>Anxious, apprehensive, movements not aggressive</td>
</tr>
<tr>
<td>0</td>
<td>ALERT &amp; CALM</td>
<td>Spontaneously pays attention to caregiver</td>
</tr>
<tr>
<td>-1</td>
<td>DROWSY</td>
<td>Not fully alert, but has sustained awakening to voice (eye opening &amp; contact &gt;10 sec)</td>
</tr>
<tr>
<td>-2</td>
<td>LIGHT SEDATION</td>
<td>Briefly awakens to voice (eyes open &amp; contact &lt;10 sec)</td>
</tr>
<tr>
<td>-3</td>
<td>MODERATE SEDATION</td>
<td>Movement or eye opening to voice (no eye contact)</td>
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If RASS is ≥ -3 proceed to CAM-ICU (Is patient CAM-ICU positive or negative?)

-4 DEEP SEDATION
-5 UNAROUSABLE

If RASS is -4 or -5 → STOP (patient unconscious), RECHECK later

Step 2 Content of Consciousness: CAM-ICU

Feature 1: Acute change or fluctuating course of mental status
And
Feature 2: Inattention
And
Feature 3: Altered level of consciousness
Or
Feature 4: Disorganized Thinking

References:
CAM-ICU Worksheet

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<tr>
<th>Feature 1: Acute Onset or Fluctuating Course</th>
<th>Score</th>
<th>Check here if Present</th>
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<td>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?</td>
<td>Either question Yes →</td>
<td>□</td>
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Feature 2: Inattention

**Letters Attention Test** (See training manual for alternate Pictures)

 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. **SAVE A HA ART**

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** (See training manual for alternate set of 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)
APPENDIX 3

Confusion Assessment Method for the ICU (CAM-ICU) Flowsheet

1. 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?

2. 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’ & Squeeze on letter other than ‘A’
   - If unable to complete Letters → Pictures

3. Altered Level of Consciousness
   Current RASS level
   - RASS = zero

4. 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)

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APPENDIX 4

Analgesia / Sedation Protocol

1. Assess Analgesia
   - In pain
     - Yes: Fentanyl 20-50 micrograms/hr OR Morphine 2-5 mg/hr
     - No: Reassess often (1-2 hourly)

2. Assess Sedation
   - RASS at Target? (usual is -1 to 0)
     - No
       - Over-Sedated: Hold sedative/analgesic to achieve RASS target. Restart at 50% of the rate it was running at if clinically indicated.
       - Under-Sedated: 1) Propofol 5-10 ml/hr (50 to 100 mg/hr). 2) Midazolam 1-3 mg/hr (if patient is in alcohol withdrawal or has propofol intolerance). 3) Dexmedetomidine 0.2-0.7 mcg/kg/hr (if weaning off sedation or ventilation)
     - Yes: Reassess and document 2nd hourly. Consider daily sedation vacation & Spontaneous breathing trial

3. Delirium
   - If RASS ≥ 3 perform CAM-ICU Delirium Assessment
     - Negative: Reassess in 12 hrs
     - Positive
       - Non-pharmacological management
       - Pharmacological management
       - (as per delirium guideline)
5. References / Links

1. Vanderbilt University Medical Center, 2011, Sedation Protocol, http://www.mc.vanderbilt.edu/icudelirium/sedation.html, “Copyright © 2013, E. Wesley Ely, MD, MPH and Vanderbilt University, all rights reserved”
4. SWSLHD_GL2011_002, Delirium Guideline, NSW Health, SWSLHD.

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