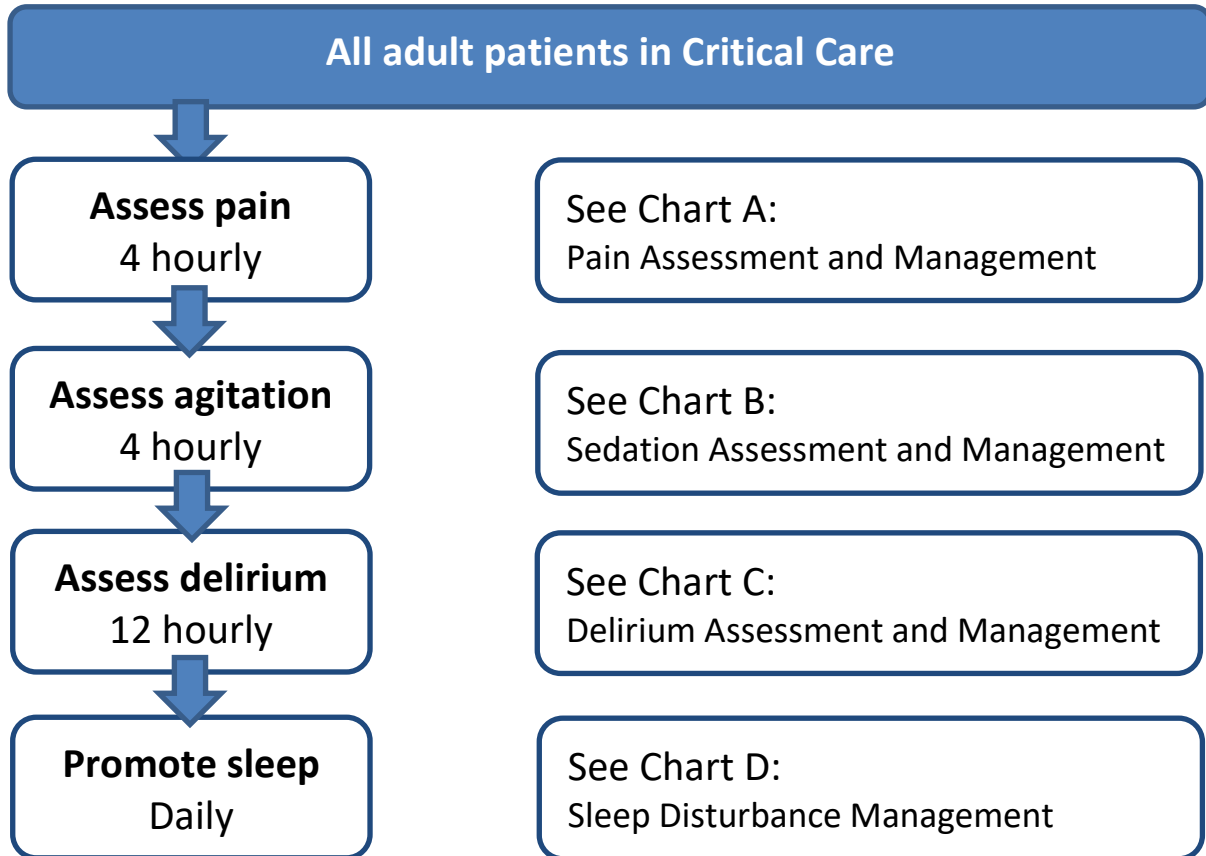


# Pain, Sedation/Agitation, Delirium and Sleep Guidelines in Critical Care

Aim – Provide guidance on the management of pain, agitation, delirium and sleep in Critical Care to enhance patient care

Scope - All adult patients in Critical Care



## Key Principles

### Control pain first

Moderate-severe pain is common in Critical Care, even at rest in non-trauma patients

### Use the minimum sedation necessary

Excessive sedation use is harmful to patients and delays extubation and discharge from Critical Care.

### Optimise non-drugs measure

Sedatives and anti-psychotics are poor substitutes for good general care including controlling noise, light and night-time disturbances

## Key Practices

**Prevent/treat discomfort** with careful positioning and attention to the causes of pain.

**Give regular analgesia** plus additional drugs PRN for breakthrough pain. Always consider regional analgesia [if indicated]

**Maintain light sedation only** - unless contraindicated

**Daily sedation holds** unless contraindicated

**Maintain orientation** with regular communication

**Minimise light and noise disturbance** between 22:00 and 06:00 to encourage natural sleep

### Chart A: Pain Assessment & Management

**Assess pain 4 hourly for all patients in Critical Care [as a minimum].**  
 Hourly pain assessment in trauma/post-surgery patients [when awake]

<p><b>Self-reported Pain Score</b>                  If patient is able to communicate:</p> <p>Assess pain at <b>REST</b> and on <b>MOVEMENT</b></p> <p>Ask the patient if they have pain.</p> <p>If patient responds <b>YES</b> - ask patient to state if they have:</p> <ul style="list-style-type: none"> <li>Mild pain?</li> <li>Moderate pain?</li> <li>Severe pain?</li> </ul> <p>The pain score is based upon patients own description of their own pain</p> <p>Explore pain symptoms – location, duration, type</p>	<p><b>CPOT – Behavioural Pain Score</b>                  If patient is unable to communicate:                  Assess pain at <b>REST</b> &amp; on <b>MOVEMENT</b></p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>0</th> <th>1</th> <th>2</th> </tr> </thead> <tbody> <tr> <td><b>Facial expression</b></td> <td>Relaxed, neutral</td> <td>Tense</td> <td>Grimacing</td> </tr> <tr> <td><b>Body movements</b></td> <td>Absence of movements or normal position</td> <td>Protection</td> <td>Restless/Agitation</td> </tr> <tr> <td><b>Vent compliance</b></td> <td>Tolerating ventilator</td> <td>Coughing but tolerating</td> <td>Fighting ventilator</td> </tr> <tr> <td><b>or</b></td> <td><b>or</b></td> <td><b>or</b></td> <td><b>or</b></td> </tr> <tr> <td><b>Vocalisation</b></td> <td>Talking in normal tone or no sound</td> <td>Sighing, moaning</td> <td>Crying out, sobbing</td> </tr> <tr> <td><b>Muscle tension</b></td> <td>Relaxed</td> <td>Tense, rigid</td> <td>Very tense or rigid</td> </tr> </tbody> </table> <p>CPOT ≥ 3 or increase of 2 or more points triggers an intervention for pain management. Maximum score 8</p>		0	1	2	<b>Facial expression</b>	Relaxed, neutral	Tense	Grimacing	<b>Body movements</b>	Absence of movements or normal position	Protection	Restless/Agitation	<b>Vent compliance</b>	Tolerating ventilator	Coughing but tolerating	Fighting ventilator	<b>or</b>	<b>or</b>	<b>or</b>	<b>or</b>	<b>Vocalisation</b>	Talking in normal tone or no sound	Sighing, moaning	Crying out, sobbing	<b>Muscle tension</b>	Relaxed	Tense, rigid	Very tense or rigid
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**Optimise non-pharmacological measures for pain management including:**

- Reassurance
- Repositioning

- Relief of urinary retention
- Relief of gastric distension

**No Pain**

Repeat pain assessment after 4 hours (or sooner if new signs of pain develop)

**Mild Pain**

Review analgesia and adjust if needed

Repeat pain assessment after 4 hours (or sooner if new signs of pain develop)

**Moderate Pain**

Consider bolus analgesia +/- increase regular analgesia

Consider regional/multimodal analgesia

Repeat pain assessment after 30 minutes

**Severe Pain**

Seek medical review, give bolus +/- increase regular analgesia

Consider regional/multimodal analgesia

Repeat pain assessment after 30 minutes

**IF CPOT**

If CPOT ≥ 3 or increased by 2 or more points commence interventions and escalate depending on response

## Chart B: Sedation Assessment and Management

Assess and treat pain first (refer to Chart A)



### Contraindications for light sedation

- Neuromuscular blockade (paralysis)
- Severe CVS/respiratory instability
- Intracranial hypertension
- Target temperature management
- Status epilepticus
- Any other appropriate condition –rationale to be clearly documented

Assess Richmond Agitation and Sedation Score (RASS) 4 hourly in all patients unless target RASS not achieved then every 30 minutes and titrate accordingly

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 or vigorous
0	Alert and calm	
-1	Drowsy	Not fully alert, but sustained awakening (eye opening/eye contact to <b>voice</b> >10 secs)
-2	Light sedation	Briefly awakens with eye contact to <b>voice</b> (<10 secs)
-3	Moderate sedation	Movement or eye opening to <b>voice</b> (but no eye contact)
-4	Deep sedation	No response to voice, but movement or eye opening to <b>physical</b> stimulation
-5	Unarousable	No response to voice or physical stimulation

If using IV sedation, titrate sedative based on RASS (Propofol/Midazolam)

Score	Adjustment
+4	Bolus and increase infusion by 30%
+3	Bolus and increase infusion by 30%
+2	Bolus and increase infusion by 20%
+1	Bolus and increase infusion by 10%
0	No change
-1	No change
-2	Reduce infusion by 20%
-3	Reduce infusion by 30%
-4	Reduce infusion by 75%
-5	Hold infusion

### Manage agitation according to goals

- Assess and control pain first
- Optimise non-drug measures – use communication aids, reduce noise, reassure and re-orientate and encourage normal sleep [minimal light and disturbances]
- Use the minimum amount of sedation necessary
- Titrate sedation constantly to achieve **GREEN LIGHT**

### Daily sedation holds unless contraindicated [same as above contraindications for light sedation]

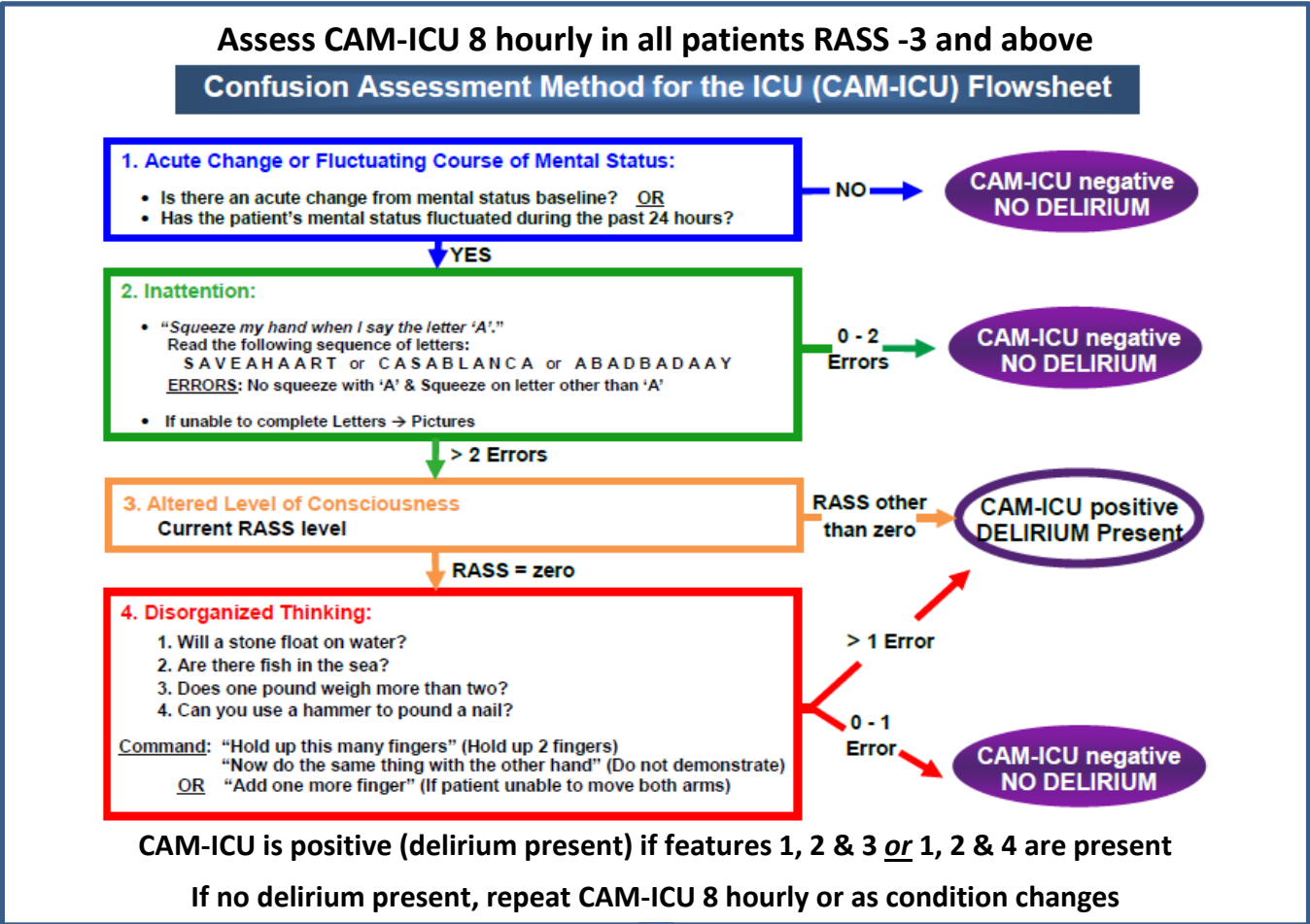
- Purpose of sedation hold to be determined by medical team and communicated to nursing team
- Medical team to review sedation level daily and document rationale for variance outside of guidelines
- **Restarting sedation after sedation hold**  
If within **GREEN** range – start at existing rate  
If outside **GREEN** range then restart at half existing rate and reassess regularly

### General advice

- Propofol and Alfentanil are first line agents within the Critical Care Unit
- Sedation bolus to be prescribed to support titration of sedation, as above
- Midazolam and morphine are second line agents i.e. for patients at risk of Propofol Infusion syndrome or if exceeding maximum limits for Propofol usage

**Chart C: Delirium Assessment and Management**

**Assess and treat pain and agitation first (refer to Charts A & B)**



- If delirium present, TREAT FIRST WITH NON-DRUG MEASURES and refer to OT (pods 3-6 only)**
- |  |  |
|--|--|
| <p><b>Treat potential causes of delirium</b></p> <ul style="list-style-type: none"> <li>• Hypoxia and hypercapnia</li> <li>• Hypoglycaemia</li> <li>• Infection</li> <li>• Dehydration</li> <li>• Drug, alcohol &amp; nicotine withdrawal</li> <li>• Medication review</li> <li>• Consider Post Traumatic Amnesia [PTA] with Traumatic Brain Injury [TBI]</li> <li>• Previous mental health condition</li> <li>• Bowel and bladder management</li> </ul> | <p><b>Optimise environmental/non drug measures</b></p> <ul style="list-style-type: none"> <li>• Reduce noise, reassure and re-orientate</li> <li>• Use communication aids</li> <li>• Provide sensory aids [glasses, hearing aids]</li> <li>• Familiar objects from home</li> <li>• Early mobilisation</li> <li>• Encourage normal sleep – minimise light, noise and disturbances overnight</li> <li>• Consider ear plugs and eye masks to support sleep [only if patient able to remove them]</li> </ul> |
|--|--|

**If non-drug measures fail and patient is unsafe – to self or others THEN consider drug therapy based upon type of agitation [see overleaf]**

**Chart C: Delirium Assessment and Management** [continued]

**WITHDRAWAL DELIRIUM**

Alcohol withdrawal	Nicotine withdrawal	Drug [Opiate/Benzo] withdrawal
<ul style="list-style-type: none"> <li>Commence CIWA-Ar scoring</li> <li>Refer to current UHNM medical guidelines</li> <li>Refer to “<b>Delirium management in Critical Care – withdrawal delirium – alcohol</b>” prescribing guidelines</li> <li>Refer to Alcohol Liaison [where appropriate]</li> </ul>	<ul style="list-style-type: none"> <li>Consider Nicotine replacement therapy</li> <li>Refer to “<b>Delirium management in Critical Care – withdrawal delirium – NRT</b>” prescribing guidelines</li> <li>Apply in the morning - remove at night if sleep disturbed</li> </ul>	<ul style="list-style-type: none"> <li>Refer to “<b>Delirium management in Critical Care – withdrawal delirium – drugs</b>” prescribing guidelines</li> </ul>

**DELIRIUM**

Hyperactive delirium	Hypoactive delirium
<ul style="list-style-type: none"> <li>Optimise non drug measures</li> <li>Only medicate to maintain patient or staff safety</li> <li>Refer to “Delirium management in Critical Care” prescribing guidelines</li> </ul>	<ul style="list-style-type: none"> <li>Optimise non drug measures</li> <li>Drug treatment is <b>NOT</b> recommended</li> </ul>

All prescriptions should be endorsed “Delirium management – short term use, not for discharge” in the additional information box under the prescription. All prescriptions should be reviewed before the patient is discharged from Critical Care

**General notes**

- Prior to medicating patient a baseline 12 lead ECG is required, or as soon as possible afterwards for patients who are at risk of harming self or others
- Repeat 12 lead ECG should be completed and review 48 hours later to monitor QTc
- All prescriptions for anti-psychotics should be endorsed “*Delirium management – short term use, not for discharge*” to aid review and discontinuation of therapy.
- Resolution of delirium to be reviewed daily on ward round.
- Once patient is negative for delirium, antipsychotics should be gradually withdrawn over 2-3 days
- Benzodiazepines are associated with delirium and should be used as a last resort except in alcohol withdrawal
- If using chemical or physical restraints a DOLS referral **MUST** be completed prior to ward discharge

## Chart D: Sleep Disturbance Management

**Assess and treat pain, agitation and delirium first  
(refer to Charts A, B & C)**

### Optimise non-drug measures for sleep promotion

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• Noise reduction</li> <li>• Clustering care</li> <li>• Ensure comfort [analgesia, positioning]</li> <li>• Consider eye mask &amp; ear plugs [only if patient can remove]</li> <li>• Dimmed lights with minimal light disturbance between 22:00 &amp; 06:00 hrs</li> </ul> | <ul style="list-style-type: none"> <li>• Music for relaxation</li> <li>• Medication review</li> <li>• Deter day time sleeping</li> <li>• Avoid caffeinated drinks after 18:00hrs</li> <li>• Daylight therapy</li> <li>• Early mobilisation</li> </ul> |
|---|---|

### Commence sleep diaries to monitor patient sleep/awake cycle

**Request medication review to ensure insomnia inducing drugs are prescribed in the morning**

**If all non-drug measure trialled and patient is still unable to sleep THEN consider starting medication  
see – “Sleep Management in Critical Care” prescribing guidelines**

### General notes

- All prescriptions should be endorsed “*Short term sleep aid – not for discharge*” in the additional information box under the prescription
- Review all prescriptions on discharge from Critical care to prevent inappropriate continuation of therapy
- Zopiclone – due to the risk of dependence it is advised that Zopiclone is **NOT** continued beyond 4 weeks

## Supporting evidence

### INTRODUCTION

Analgesia, sedation, delirium and sleep are important but easily overlooked aspects of care within the Critical Care Unit [CCU].

The harmful effects of pain, over-sedation, delirium, and sleep deprivation are widely recognised to have significant negative impact on patients' length of stay, mortality and morbidity [SCCM]

Analgo-sedation is advocated with regular assessment of pain, conscious level and delirium identified as essential management strategies to guide treatment effectively [ICS & SCCM]. The Pain, Agitation, Delirium, Immobility, and Sleep Disruption (PADIS) clinical practice guidelines emphasise management of pain first, followed by goal-directed delivery of psychoactive medications to avoid oversedation and to promote earlier extubation.

There is limited quality research to support the pharmacological management of delirium and sleep in the CCU. Non-pharmacological management of delirium is advocated unless the patient poses significant danger to themselves or others.

The aim of this guideline is to ensure patients are comfortable and calm in CCU, improving their experience and clinical outcomes.

### PURPOSE & SCOPE

To provide guidance on the management of pain; agitation (sedation), delirium and sleep for adult patients in Critical Care Unit at RSUH.

### DEFINITIONS

**Pain:** An unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.

**Sedation:** The inducement of a relaxed state

**Delirium:** A common clinical syndrome characterised by disturbed consciousness, cognitive function or perception, which has an acute onset and fluctuating course.

**CCU:** Critical Care Unit.

**CPOT:** Critical Care Pain Observation Tool – tool for assessing pain in patients who are unable to communicate their pain.

**CAM-ICU:** Confusion Assessment Method – ICU - tool for assessing the presence of delirium.

**RASS:** Richmond Agitation Sedation Scale – tool for assessing level of sedation and Agitation

**LOS:** Length of stay

### DUTIES AND RESPONSIBILITIES

The decision to implement this guideline is at the discretion of the critical care consultants. Implementation of this guideline is the joint responsibility of appropriate critical care medical/ nursing staff. This guideline is subject to professional judgment and accountability.

### General guidance and principles



### **Pain Assessment/Management**

Pain is common in critically ill patients with its cause being multi-factorial [surgery, disease process, intubation, ventilation, invasive lines]. Regular pain assessments in ICU is essential to guide appropriate treatment and is also associated with improved clinical outcomes [reduced ICU LOS, reduced duration of mechanical ventilation].

Pain should be routinely assessed every 4 hours, or more frequently if severe. Pain assessments should be completed at rest and on movement to ensure pain is recognised and adequately managed.

Pain is a subjective symptom with self-reporting identified as the gold standard for pain assessment. UHNM advocates using the verbal descriptor scale [VDS] or numerical rating scale [NRS] for patients who are able to communicate their pain. Alternative pain assessment tools are available via the intranet for patients unable to communicate [modified face scale]

Pain behaviour scales are recommended for the assessment of pain for critically ill patients who are unable to self-report. The Behavioural Pain Scale [BPS] and Critical Care Pain Observation Tool [CPOT] demonstrate the greatest validity and reliability for monitoring pain in ventilated patients. CPOT is already embedded within practice at UHNM and is frequently monitored within PDMS.

The principles of pain management in CCU is to manage patients pain effectively to score of none or mild through the titration of analgesic medications [WHO analgesic ladder].

Analgesia should be used pre-emptively when potential painful procedures are planned.

Consideration of regional analgesia, where appropriate, to decrease opiate burden – ie. serratus anterior block for rib fractures, rectus sheath block, local nerve blocks.

Neuropathic pain (eg. following amputation) may be treated with atypical drugs such as gabapentin and amitriptyline.

### **Sedation Assessment/Management**

Excessive use of sedation limits patients' ability to communicate, cooperate and engage in rehabilitation and care, which can increase the duration of ventilation, rates of healthcare associated infections and length of stay. The Pain, Agitation, Delirium, Immobility, and Sleep Disruption (PADIS) clinical practice guidelines of the Society of Critical Care Medicine [SCCM 2018] emphasise management of pain first, followed by goal-directed delivery of psychoactive medications to avoid over-sedation and to promote earlier ventilator liberation.

All patients should receive 4 hourly assessment of sedation level using the Richmond Agitation and Sedation Score [RASS] with the aim of minimising sedative drugs and reduce the risk and incidence of delirium (SCCM). The RASS is the best-validated tool for clinical assessment of sedation and agitation in CCU, with good inter-rater reliability and has been studied in the greatest number of patients over a range of different clinical situations.

The target RASS should be clearly documented within the Critical Care PDMS parameters and prescription and must be reviewed daily during the consultant ward round. Rationale for any variances in the target RASS should be clearly documented in the medical notes.

Use daily sedation breaks unless contraindicated. Daily breaks from continuous IV sedation reduce the duration of mechanical ventilation, ICU length of stay and requirement for neurological imaging with no increase in adverse events.

### **Delirium Assessment/Management**

Delirium is a common condition experienced by critically ill patients. Its presence interferes with care provision, can result in increased adverse incidents and is an independent risk factor for morbidity and mortality.



Protocols and evidence-based strategies for prevention and treatment of delirium have emerged as more evidence becomes available from on-going studies of both non-pharmacological and pharmacological strategies. The Society of Critical Care Medicine recommends both the use of a validated delirium scoring tool and a multicomponent, non-pharmacologic strategy be used to reduce delirium in critically ill adults

All patients should receive routine delirium assessments screening for the presence of delirium as it may not be apparent unless specifically tested. The CAM-ICU assessment tool has good validity and reliability for the identification of delirium, and is an advocated screening tool [NICE and GPICS v2.1]

There is no consensus on the pharmacological management of delirium: the first line approach should be non-pharmacological management, focusing on identification and management of precipitating [modifiable] causes. Drug and alcohol withdrawal are common causes of delirium, which have specific treatment [benzodiazepines for alcohol withdrawal]

## **Sleep assessment/management**

A common complaint and a source of distress, for many critically ill patients is poor sleep. Sleep deprivation in the CCU can be severe and is characterised by abnormal circadian rhythms and fragmented sleep. Sleep deprivation can also contribute to delirium, prolonged duration of mechanical ventilation, deranged immune function, and neurocognitive dysfunction. Additionally, other risk factors for poor sleep are noise, pain/discomfort, immobility/restrictions, fragmented nursing/medical care/procedures, presence of worry and anxiety. Optimal sleep hygiene is an essential and fundamental part of patient care, with sleep duration and quality being assessed. Presence of pre-existing sleep issues prior to critical illness, should be determine where possible as these patients will be high risk of sleep deprivation.

Sleep promotion should start with non-pharmacological sleep bundle as highlighted above in chart D to prevent sleep deprivation and improve patient experience.

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