	PAIN	AGITATION	DELIRIUM	IMMOBILITY	SLEEP
ASSESS	Assess pain 4 hourly unless intervention is required, then PRN. Use: • Patient able to self-report - Numeric Pain Rating Score (NRS) (0-10) (Figure 1) • USE Critical-Care Pain Observation Tool (CPOT) if unable to report (Table 1) **Patient is in significant pain if NRS >3 or CPOT >2**	Assess agitation and sedation hourly using Richmond Agitation and Sedation Scale (RASS) (Table 2)	Assess for delirium once per shift using CAM-ICU7 Scoring (Table 4 and 5) Follow Delirium Protocol (Figure 2) Identify potential causes of delirium (PINCHES ME) (Table 6)	Assess mobility level Assess for presence of mobility precautions Assess suitability for early mobilisation • Level of consciousness • Cardiovascular stability • Oxygen and ventilator requirements • No acute episodes of active bleeding, arrhythmias • RRT that cannot be paused • Vasopressor requirements	Assess sleep quality (duration, fragmentation, energy levels, patient feedback) Assess for risk factors for sleep deprivation • Prehospital (pre-existing issues) • ICU (noise, pain, anxiety, worry, delirium etc.)
TREAT	Treat pain rapidly then reassess: ▪ Non-pharmacological treatment- relaxation therapy ▪ Pharmacological treatment: • Non-neuropathic pain – ise IV opioids +/- non-opioid analgesics • Neuropathic pain - gabapentin or pregabalin + iv opioids • Post-op, rib fractures, consider thoracic epidural or regional nerve block/catheter	Targeted sedation with spontaneous awakening trial (SAT) (Goal RASS -2 to 0). *Unless contraindicated e.g.* Neuro ICU patients or NMB used e.g. ARDS • **If under sedated (RASS >0)** assess/treat pain then give a small bolus of sedation and increase rate. • **If over sedated (RASS <-2)** hold sedation until at target then restart at 50% of previous dose Consider using non-pharmacological methods (Table 3)	• Follow Delirium Protocol (Figure 2) • Treat pain first • Use non-pharmacological measures (Table 7) • Screen for alcohol or drug dependency and treat (Appx 1) • Pharmacological treatment of delirium - First line Haloperidol - Consider atypical antipsychotic - Avoid antipsychotic drugs if prolonged QT	• Daily assessment of suitability and readiness for mobilization • Follow early nurse-led mobilisation protocol for patients with RASS of +1 to –1 (Figure 3 and 4) • Use correct equipment and staffing level • Physiotherapy-led mobilization goal setting and planning • Joint sessions	Non pharmacologic measures: • Noise reduction • Clustering care • Ensure comfort (analgesia, positioning) • Dimmed lights • Offer eye masks and ear plugs • Complete procedures before 2300 when possible • Orientate patient to time and place • Remove unnecessary monitoring/alarms • Close doors/curtains if possible
PREVENT	• Administer pre-procedural analgesia and/or non- pharmacological interventions • TREAT PAIN FIRST, then sedate	• Consider daily SBT, early mobility and exercise when patients are at goal sedation, unless contra-indicated • Consider use of brain function monitoring/EEG if: - Using NMBs - Risk of seizures - Elevated ICP	• Identify delirium risk factors: dementia, HTN, ETOH & drug abuse, severe illness, • Avoid Benzodiazepines or Zopiclone use in those with risk factors • Mobilize and exercise patients daily • Promote sleep using day/night bundle • Restart baseline psychiatric meds if indicated	• Daily assessment for early mobilization • Identify risk factors for ICU-acquired weakness: prolonged ICU stay, frailty, malnutrition • Avoid oversedation • Promote rest and sleep at night • Start daily planning/establish mobilization goals	• Sleep care bundle for all patients (Figure 5)

Management of Pain, Agitation, Delirium, Immobility and Sleep

PAIN

Figure 1: Numerical Rating Scale

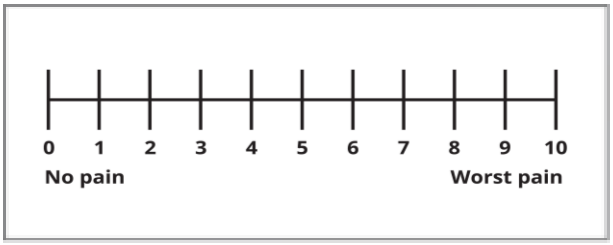


Table 1: Critical Care Pain Observation Tool

Indicator	Description	Score
Facial expression	No tension Frowning, brow lowering, orbit tightening, levator contraction All of the above plus eyelids tightly closed	Relaxed 0 Tense 1 Grimacing 2
Body movements	No movement Slow movement or rubbing pain site, seeking attention through movements Pulling tube, attempting to sit up, thrashing, not following commands, striking staff, trying to climb out of bed	Absence of movements 0 Protection 1 Restless 2
Muscle tension **Evaluation by passive flexion and extension of arms**	No resistance to passive movements Resistance to passive movements Strong resistance: unable to complete passive movements	Relaxed 0 Tense, rigid 1 Very tense or rigid
Ventilator compliance **OR** **Vocalisation**	Alarms not active easy ventilation Alarms stop spontaneously Asynchrony; blocking ventilation, alarms frequently activated Talking in normal tone, no sound Sighing, moaning Crying out, sobbing	Tolerating ventilator 0 Coughing 1 Fighting ventilator 2 Talking, no sound 0 Sighing, moaning 1 Crying out, sobbing 2
Total score range		0-8

Drugs

- The unit standard for intravenous infusion for analgesia is fentanyl as it has no active metabolites
- Morphine is first line for PCA and as an oral opiate in patients with adequate renal function
- Remifentanil should be reserved for selected patients requiring rapid reassessment or weaning and must be agreed with the Consultant on call. See Unit Remifentanil Guidelines on ICU website.
- Ensure regular paracetamol is prescribed and consider Trust Acute Pain Guidelines

AGITATION

Table 2: Richmond Agitation and Sedation Scale (RASS scoring)

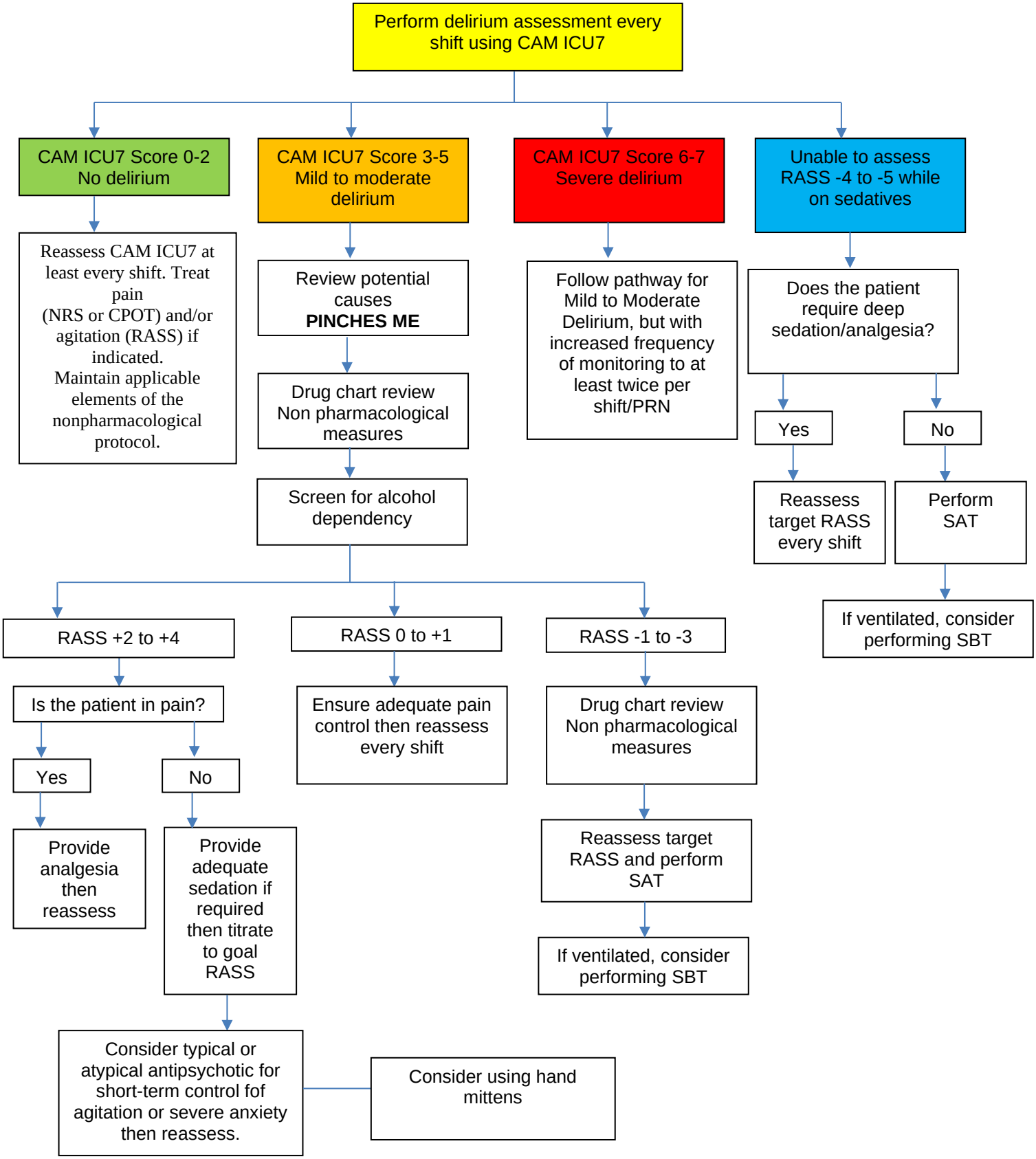
Score	Term	Description
+4	Combative	Overly combative, violent, immediate danger to staff
+3	Very agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2	Agitated	Frequent non-purposeful movement, fights ventilator
+1	Restless	Anxious but movements not aggressive or vigorous
0	Alert & calm	
-1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

Table 3: Consider non-pharmacological methods

Physical	Psychological
Reduce noise	Regular orientation and reassurance
Regular repositioning	Relaxation tapes/apps
Massage	Maintain Day/Night cycle (Appendix 2)
Use of communication aids	Music

DELIRIUM

Figure 2: Delirium Assessment and Management Protocol



Tables 4 and 5: CAM-ICU7

CAM-ICU7 Scoring		
Items	**Grading**	**Score**
1. Acute onset or fluctuation of mental status *Is the patient 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/level of consciousness scale (RASS), GCS, or previous delirium assessment?*	**0** Absent **1** Present	
2. Inattention 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.: S A V E A H A A R T Errors are counted when patient fails to squeeze on the letter "A" and when patient squeezes on any letter other than A	**0** Absent (correct ≥8) **1** Inattention (correct 4-7) **2** Severe inattention (correct 0-3)	
3. Altered level of consciousness Present of actual RASS score is anything other than alert and calm (zero)	**0** Absent (RASS 0) **1** If altered (RASS 1, -1) **2** if severely altered (RASS ≥+2 or ≤-2)	
4. Disorganized thinking Yes/No Question 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 two fingers in front of patient). *"Now do the same thing with the other hand"* (Do not repeat number of fingers) An error is counted if patient is unable to complete the entire command.	0 Absent (Correct ≥4) 1 for disorganized thinking (Correct 2-3) 2 for severe disorganized thinking (Correct 0-1)	

Score[i]	Delirium scale
0-2	No delirium
3-5	Mild to moderate delirium
6-7	Severe delirium

Table 6: Delirium prevention strategies

Table 6: Treat potential causes of delirium

P	Pain	**Look for non-verbal signs of pain, use verbal/non-verbal pain assessment tools, CPOT**. *Is analgesia prescribed regularly/PRN?*
I	Infection	**Are there any signs of infection?** *Do they have raised WCC/CRP, pyrexia?*
N	Nutrition	**Are nutritional needs being met?** *Oral intake, NG feed or parenteral nutrition. Is there a significant weight loss?*
C	Constipation	**Has the patient had their bowels opened in the last 48-72hrs?** *If 'NO' consider laxatives.*
H	Hydration	**Is the patient adequately hydrated?** *Review cumulative fluid balance, encourage oral intake or consider alternative fluid replacement.*
E	Exercise	**Are mobilisation/rehabilitation goals being met? Are they achievable at present?** *Is early nurse-led mobilisation possible?*
S	Sleep/sedation	**Is the patient sleeping less than 4hrs at night?** *Does the patient require sleep aids etc.*
M	Medication	**Is the patient on any medication that could contribute to delirium?** *Review prescription chart with Dr/Pharmacist.*
E	Environment	**Is the patient in the most appropriate bed area?** *Keep the bedside tidy & clutter free.* *Personal items within reach.* *Are they appropriate for a critical care diary?* *Can we engage family members?* *Does the patient need a This is me board?*

Drugs

Haloperidol (short term use only and only for delirium with agitation)
- Standard first-line antipsychotic for ICU delirium, although evidence very limited.
- Contraindicated if risk of Torsades des Pointes (long QTc, other QTc-prolonging drugs, history of Torsades des Pointes). Patient should have cardiac monitoring and daily ECGs.

Benzodiazepines (Lorazepam / Midazolam)
- 2nd line, eg if Haloperidol contraindicated or ineffective despite adequate dose.
- May be required for short-term patient safety but can contribute to worsening delirium

Atypical antipsychotics
- Quetiapine first line in hypoactive delirium but also consider IM Olanzapine if enteral route unavailable.
- Quetiapine again prolongs the QTc and should be monitored with daily ECGs. Olanzapine does not.

Table 7: Non-pharmacological measures for treating delirium

Focus	Action
Orientation and cognition	• Provide visual (glasses) and hearing aids • Reorient patient to time, place and events (might need repeating) • If possible, allocate same nursing staff to patient • Family engagement • Patient diary • This is me board/Picture boards • Remove cardiac monitoring, CVC, art line, urinary catheters, etc as soon as no longer needed
Environment	• Lighting: off at night, on during days • Control noise levels, offer earplugs
Activities	• Early mobilisation • Promote self-care activities • Use of tablets/ipad/mobile phones • Promote rest and sleep • Family visiting

Early Nurse-led Mobilisation in Critical Care

Assess suitability for mobilisation at the beginning of each shift for General and Surgical Patients only with a RASS between +1 and –1

Are there any contraindications to mobilisation?

- Actively bleeding
- Acute Cardiac ischaemia
- Neuromuscular blocking drugs
- Unstable spinal or other fractures with mobilisation restrictions
- Resp rate of <8 or >35
- MAP <65mmHg or HR <40
- Acute Fast AF (rate >100)
- IABP
- RRT that cannot be paused especially if femoral line
- Significant or rising dose of vasopressors (e.g. >0.2 mcg/kg/min)
- Mechanically ventilated with FiO2 >60% and/or PEEP >12 or acutely worsening respiratory failure

Yes → Seek medical advice before mobilisation

No ↓

Has the patient already been mobilised by physiotherapy on critical care?

- Check physiotherapy notes on Metavision

Yes → Follow established physiotherapy mobility plan

No ↓

Follow nurse-led mobility protocol (see overleaf)

Figures 3 and 4: Early Nurse-Led Mobilisation Protocol

Early nurse-led mobility protocol

Consider pre-admission mobility and use of aids (refer to Patient Diary 'This is Me')

Consider impact of recent injury or surgery. Assess patient's mental capacity

Is the patient able to follow instructions and can they lift their straight leg off the bed on command?

No → Not for mobilisation today. Please re-assess tomorrow

Yes ↓

With two staff, sit the patient on the edge of their bed. Are they able to sit up unsupported?

No → Consider PAT slide chair

Yes ↓

Are they able to stand and then maintain a standing position with minimal support from staff or a walking aid

No → Transfer to a chair using the hoist

Yes ↓

Are they able to step on the spot with or without use of a walking aid?

No

Yes ↓

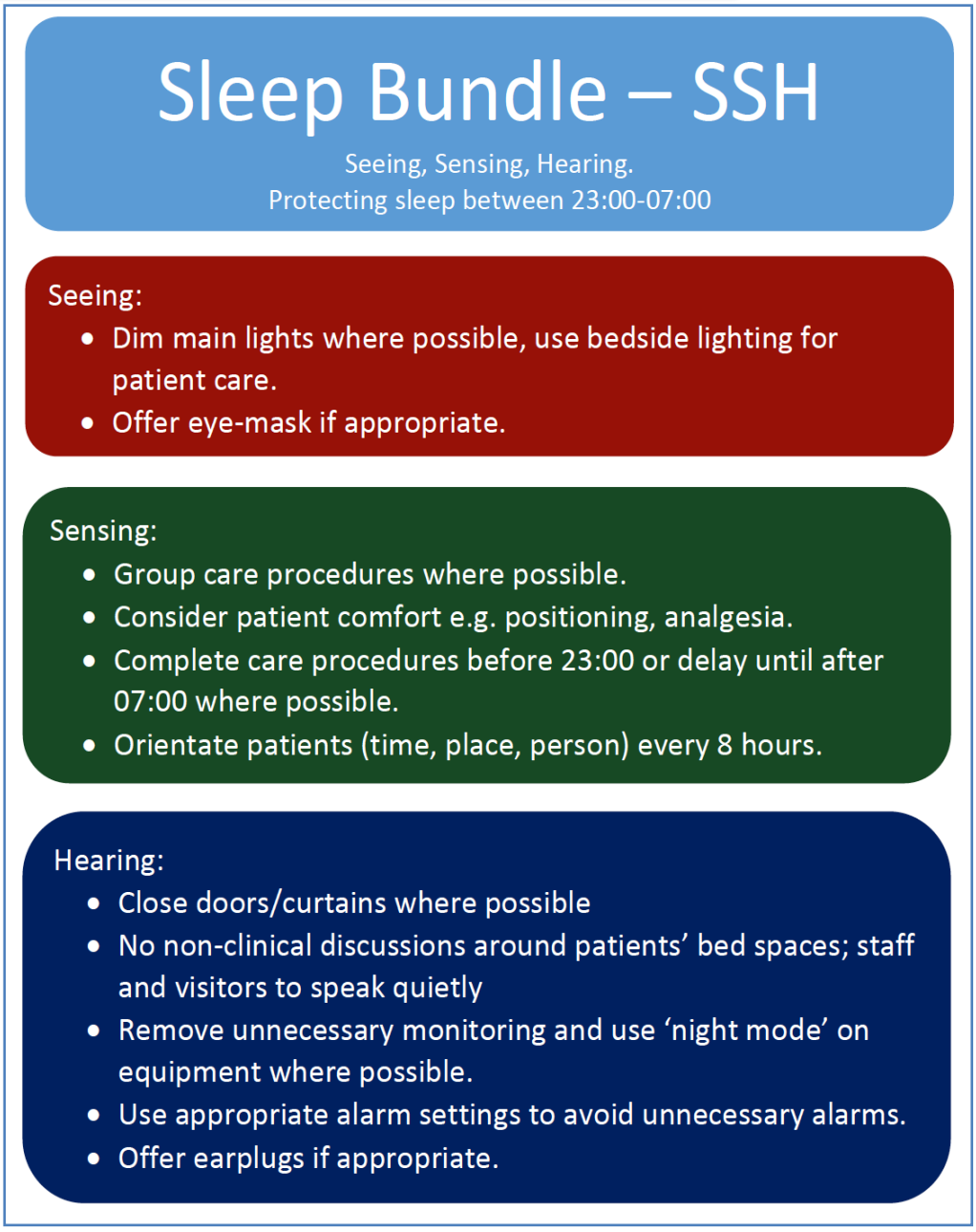
Step transfer to a chair and consider mobilisation away from the bed space if appropriate

Refer to physio (bleep 8376 or via morning handover) if patient not at baseline.

Figures 3 and 4: Early Nurse-Led Mobilisation Protocol

SLEEP

Figure 5: Sleep Care Bundle



1. INTRODUCTION

Analgesia, sedation, delirium, immobility and sleep deprivation are important but easily overlooked aspects of critical care medicine. These are significant problems amongst patients on an ICU and their treatment has become a priority. Analgesia based sedation is now advocated by many of the critical care societies across the world including the ICS and the SCCM. Regular assessment of pain, conscious level, delirium, mobilization level and sleep quality is necessary to guide treatment effectively. The aim of this guideline is to ensure patients are comfortable and calm in ICU, improving their experience and clinical outcomes.

2. PROCESS (Recommendations & Justification)

Pain, sedation, delirium, mobilization level and sleep quality should be assessed regularly

Recommendation (Action)	Justification (Rationale)
Control pain first	As described above, pain is a common problem in ICU. Effective management of agitation and delirium is very difficult without effective pain control. Analgesia-based sedation is recommended by the UK Intensive Care Society (UK) and the Society of Critical Care Medicine (US). Analgesia should be used pre-emptively when potentially painful procedures are planned. Patients are more likely to participate with mobilization and functional activities and have better sleep quality with effective pain control measures in place.
Use the minimum sedation necessary	Excessive sedation reduces patients' ability to communicate and cooperate with care, and can increase the duration of mechanical ventilation, rates of nosocomial infections and ICU length of stay. Use of the minimum dose of a drug necessary to achieve a clinical goal is a widely-accepted principle in clinical practice.
Optimise non-drug measures	Many factors contribute to discomfort in ICU. Simple measures such as positioning, orientation and minimising and/or grouping interventions helps to reduce the need for sedative drugs.

Pain assessment and management

Recommendation (Action)	Justification (Rationale)
Use of self-reported pain score	Pain is a subjective symptom that is best assessed by asking a conscious patient to describe their own pain. The use of a numerical rating scale (NRS) simplifies this process and produces a score that is validated and intuitive.

Recommendation (Action)	Justification (Rationale)
Use of critical care pain observation tool (CPOT)	The CPOT is validated for the assessment of pain in patients unable to communicate compared to other non-communicative pain scoring systems. CPOT showed good psychometric properties in terms of: inter-rater reliability, discriminant validity and criterion validity in a range of ICU patients, including medical and post-surgical patients. A CPOT cutoff score >2 yields a sensitivity of 86% and specificity of 78%. Pain assessment is difficult when patients are unable to communicate verbally but the CPOT appears to be the best tool currently available.
Opioid analgesia should be given for pain in addition to non-opioid analgesia	As discussed above, moderate to severe pain is a common problem in ICU. All opioids drugs have similar efficacy when titrated to response. If there is significant renal dysfunction (eg calculated GFR<20ml/min), Fentanyl should be used as it has no active metabolites that are excreted in the urine and no histamine-releasing properties. Non-opioid adjunct analgesia such as paracetamol, non-steroidal anti-inflammatory drugs (NSAIDs), and local or regional analgesia should also be considered. These may reduce the dose of opioids needed but will usually be insufficient on their own in patients who are mechanically ventilated. Neuropathic pain (eg. following amputation) may be treated with atypical drugs such as gabapentin and amitriptyline.

Agitation and sedation assessment and management

Use of Richmond Agitation and Sedation Score (RASS)	The RASS is the best-validated tool for clinical assessment of sedation and agitation in ICU. It has good inter-rater reliability and has been studied in the greatest number of patients over a range of different clinical situations. RASS may be used in goal-directed protocols for titration of intravenous sedation.
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.

Propofol is the first-line drug for intravenous sedation	Propofol has been used extensively for sedation on ICUs throughout the world. It has a short duration of action and permits relatively rapid emergence but can accumulate when given as a continuous infusion. The results of studies comparing Propofol with Benzodiazepines for intravenous sedation are conflicting. One meta-analysis suggests that the duration of mechanical ventilation is reduced when Propofol is used instead of Benzodiazepines for sedation, although this may not reduce ICU length of stay. A more recent meta-analysis found a slight decrease in ICU length of stay with Propofol. Propofol also has a more favourable pharmacokinetic profile compared to Midazolam in patients with hepatic and renal dysfunction and probably does not accumulate to the same extent. However, there is some evidence to suggest greater cardiovascular instability with Propofol compared to Midazolam. There is an association with Benzodiazepines and delirium. However, when rates of delirium with Midazolam and Propofol were compared, there were no statistically significant differences between the two groups. Whilst a recent RCT comparing Propofol to Dexmedetomidine showed improved communication and reduced rates of delirium in patients receiving Dexmedetomidine, the duration of mechanical ventilation and ICU length of stay were the same. Although Dexmedetomidine may offer some small advantages over Propofol, there is less clinical experience of this drug and it is considerably more expensive. On balance, Propofol currently seems to offer the best combination of cost-effectiveness and clinical effectiveness for routine use in ICU. Clonidine is sometimes used as an alternative, although it produces more hypotension and bradycardia. See Unit Clonidine Policy.

Delirium assessment and management

Recommendation (Action)	Justification (Rationale)
Use of CAM-ICU7 scoring system for assessing presence and severity delirium.	The Confusion-Agitation Method-ICU 7 (CAM-ICU7) is a delirium scoring system derived from CAM-ICU. The scoring method was adapted from a prior study (CAM-S) as a delirium severity instrument outside of the critical care setting. The scoring system ranges from 0-7, with 7 being most severe. CAM-ICU7 scores were further categorized as 0-2: no delirium, 3-5: mild to moderate delirium, and 6-7: severe delirium. CAM-ICU demonstrates good validity and reliability when assessing for the presence of delirium. It has high levels of sensitivity and specificity when compared to the American

Recommendation (Action)	Justification (Rationale)
	Psychiatric Association's criteria for delirium and is specifically designed for use in the ICU. CAM-ICU7 has a high internal consistency-reliability and sensitivity rating during an observational study on 518 patients. Furthermore, delirium severity as measured by CAM-ICU7 scores significantly predicts the clinical outcomes of in-hospital mortality, discharge destination and length of ICU stay.
A multicomponent delirium management protocol must be followed in patients with delirium.	Protocols and evidence-based strategies for prevention and treatment of delirium have emerged as more evidence becomes available from ongoing studies of both non-pharmacological and pharmacological strategies. The Society of Critical Care Medicine has recommended both the use of a validated delirium scoring tool and a multicomponent, non-pharmacologic strategy be used to reduce delirium in critically ill adults. The use of pharmacologic agents with delirium is discussed below.
If delirium present address underlying causes.	An exhaustive list of causes of delirium is beyond the scope of this text. However, detection of delirium using CAM-ICU7 should trigger investigation and management of the potential causes. Causes of delirium can be classified into modifiable and non-modifiable. Modifiable causes include hypoxia, sepsis, electrolyte disturbance, hypercarbia, medications, sleep deprivation and disturbance of the sleep-wake cycle. Non-modifiable causes include illness severity, alcohol abuse, pre-existing dementia, CNS disease and old age. Common causes of delirium include drug or alcohol withdrawal. These causes have specific treatments, (See Appendix B) for example, Benzodiazepines are used for the management of alcohol withdrawal.

Recommendation (Action)	Justification (Rationale)
If delirium is present despite treatment with non-drug measures and the patient is unsafe, Haloperidol is the first-line drug.	There is no evidence to support the prophylactic use of Haloperidol or other antipsychotics in the prevention of ICU delirium. Haloperidol is not a substitute for proper attention to underlying causes of delirium and should only be used for short-term management of refractory hyperactive delirium, based on an individual risk benefit analysis. This includes balancing the risk of increasing cerebrovascular adverse events against the severe distress or immediate risk of harm to the patient or others. Special care should be taken to avoid or minimise the use of haloperidol in patients at risk of dementia. When treatment is necessary for patient safety reasons, Haloperidol is the first-line drug. Haloperidol is not proven to reduce the duration of delirium but reduces agitation and aggressive behaviour. Doses should start at 1-2mg and if the patient is still unsafe after 30 minutes, the dose may be doubled. Continuous cardiac monitoring should be used where feasible as haloperidol can prolong the QTc interval and precipitate fatal dysrhythmias. Haloperidol is contraindicated in patients with a prolonged QTc, who are on other QTc-prolonging drugs, or who have a history of Torsades-de-pointes VT.
There is limited evidence for other antipsychotics	Other antipsychotics have been used in small clinical trials but these drugs are no more effective than haloperidol, may only be given enterally or have worse side-effect profiles. NICE guidelines previously recommended Olanzapine as an alternative agent although there is more evidence for Quetiapine. Of these three, only Haloperidol is licensed for short-term treatment of delirium
If patient with delirium remains unsafe despite use of Haloperidol, consider the use of Benzodiazepine.	Benzodiazepines have a role in the treatment of specific withdrawal syndromes, such as alcohol. In other circumstances, the use of benzodiazepines should be avoided in delirium as they may worsen or prolong the problem. In certain circumstances (e.g. patients who are a danger to themselves or staff, and where Haloperidol has failed) gaining control outweighs the risks of increasing the duration of delirium. Haloperidol should be continued during this period and the benzodiazepine should be stopped at the earliest opportunity.

Immobility Assessment and Management

Recommendation (Action)	Justification (Rationale)
Patients must be assessed regularly for risk of immobility and ICU-acquired weakness	Many patients admitted to critical care develop a syndrome of neuromuscular dysfunction characterized by muscle weakness and inability to be liberated for mechanical ventilation. Since this syndrome occurs in the absence of pre-existing neuromuscular disease, it is believed to reflect illnesses and treatments occurring in critical care, hence the term Critical Illness Polyneuromyopathy (CIPNM) or ICU-acquired weakness (ICU-AW). Many studies have highlighted that ICU-AW after critical care affects survivorship and quality of life. Accurately diagnosing ICU-AW can be difficult and other tests like electrophysiology testing, direct muscle stimulation or muscle biopsy might be necessary together with clinical assessment, but several risk factors (sepsis, multiorgan failure, SIRS, hyperglycaemia and prolonged mechanical ventilation) can help in determining risk level. Clinical assessments for all critical care patients must include mobilisation levels. Identifying risk level and prevention of ICU-AW must be discussed during medical and multidisciplinary ward rounds for all patients.
Patients must be assessed regularly for suitability and readiness for early mobilisation.	Rehabilitation is a set of interventions designed to optimise functioning and reduce disability in individuals with a health condition. Mobilisation is a type of intervention within rehabilitation that facilitates the movement of patients and expends energy with a goal of improving patient outcomes. Early mobilisation is an integral part of good ICU care and has been the only intervention resulting in decreased days of delirium, need for mechanical ventilation, and ICU and hospital length of stay. Suitability and readiness for early mobilisation must be a multi-disciplinary decision based on the patient's clinical status and must be discussed daily on ward rounds. Major indicators for safely initiating mobilisation include cardiovascular, respiratory and neurological status.
An early nurse-led mobilisation protocol can be used to guide practice for general and surgical patients with RASS of +1 to -1.	All patients with a Richmond Agitation Sedation Score of +1 to -1 must be assessed for suitability and readiness for early mobilisation and if possible, the Early-Nurse Led Mobilisation Protocol (See Figure 3 and 4) should be followed. This is in conjunction with the patient's individualised clinical assessment and plan (including mobilisation precautions if any), and must be done with the correct staffing and equipment.
A physiotherapy-led mobilisation plan can be used to guide practice for patients with complex and/or prolonged critical care unit stay.	Physiotherapy treatment is an integral part of a multi-disciplinary approach in promoting physical and respiratory functioning of critically ill patients. Physiotherapy also facilitates early weaning from mechanical ventilation, prevention of ICU-AW and safe discharge from critical care. Patients with identified physiotherapy needs must be referred

Recommendation (Action)	Justification (Rationale)
	and discussed promptly to the physiotherapy team and to the wider multidisciplinary team to facilitate goal setting and planning for weaning and rehabilitation.

Sleep assessment and management

Recommendation (Action)	Justification (Rationale)
All patients must be assessed for sleep quality and presence of sleep-related fatigue.	Poor sleep is a common complaint and a source of distress for many critically ill patients. Sleep disruption in the critical care unit can be severe and is characterized by sleep fragmentation, and abnormal circadian rhythms. In addition to emotional distress, sleep deprivation can also contribute to delirium, prolonged duration of mechanical ventilation, deranged immune function, and neurocognitive dysfunction. Patients with existing issues relating to sleep prior to critical illness will have a higher risk of sleep deprivation in critical care. Other risk factors that can affect sleep quality in ICU are noise, pain/discomfort, immobility/restrictions, fragmented nursing/medical care/procedures, presence of worry and anxiety. Clinical assessments for all critical care patients must include sleep quality. If sleep deprivation or poor sleep quality is present, this must be highlighted during ward rounds.
Use of sleep care bundle	A multi-component strategy must be used to ensure good quality sleep for all critically ill patients. The use of a sleep care bundle (see Figure 5) has been recommended to prevent sleep deprivation and improve patient experience in critical care.

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4. ONLINE RESOURES

www.icudelirium.org

http://www.ics.ac.uk/ics-homepage/guidelines-and-standards/

http://www.learnicu.org/SiteCollectionDocuments/Pain,%20Agitation,%20Delirium.pdf

https://www.sccm.org/ICULiberation/Home/ABCDEF-Bundles

Video of CAM ICU scoring: https://youtu.be/6WyJ0zL7VkI

Appendix 1: Drug Withdrawal

Drug	Dependence	Withdrawal	Management of withdrawal
Gamma-hydroxybutyrate (GHB) and gamma-butyrolactone (GBL)	Regular prolonged use of GHB/GBL can lead to physiological dependence. Users will become tolerant, consuming GHB/GBL at regular intervals during the day and at night, sometimes as often as every 1–3 hours 'around the clock' in order to avoid withdrawal. Also at risk are patient consuming more than 30g (15 teaspoons) of GHB per day, and those with concurrent alcohol or benzodiazepine dependence.	Dependent users will develop withdrawal symptoms on reduction or cessation of use, which can be severe and life threatening. It has been suggested that all cases of GHB withdrawal delirium be considered medical emergencies and be managed in critical care settings. Withdrawal syndrome is similar to that of benzodiazepines and alcohol. Problems relating to the identification of GHB/GBL withdrawal are linked to these similarities. Withdrawal has a quick onset typically a few hours after the last dose but may be within 30mins. Delirium can evolve rapidly. Mean duration of withdrawal symptoms is 9 days (range 3 - 21 days). Early symptoms: • insomnia • tremor • confusion • nausea & vomiting Over the next 12-48 hrs • tachycardia • hypertension • agitation • seizures or myoclonic jerks • hallucinations Severe withdrawal: • Delirium • Seizures (may be life threatening) • Psychosis • Withdrawal mimicking schizophrenia • Rhabdomyolysis	Management is symptomatic and requires large doses of benzodiazepines. Patients may need 150 – 200mg diazepam equivalents (or higher) in the first 24 hours. Suggested starting dose of Diazepam 20mg qds, plus 10-20mg 4 – 6 hourly prn. Benzodiazepine dose will need to be individually titrated. Ensure close observation and availability of flumazenil. Antipsychotics should be used with caution due to the risk of neuroleptic malignant syndrome and seizures.
Ketamine and Methoxetamine (ketamine analogue)	There are reports of ketamine dependence but the incidence is not known. Frequent use is associated with physical tolerance. There have been no reports of methoxetamine dependence.	Clinical experience suggests that ketamine withdrawal has symptoms of: • 'Chills' • Autonomic arousal • Lacrimation • Restlessness • Nightmares • Psychological craving • Anxiety • Shaking • Sweating • Palpitations • Tiredness • Low appetite • Low mood	1 case report describes successful elective ketamine detox with 3 day reducing course of diazepam. There are no studies to support the use of any other agents. For methoxetamine suggest using diazepam as with ketamine.
Nitrous Oxide	There are no reports of nitrous oxide dependence in the literature. There is anecdotal evidence of psychological dependence. Heavy users can suffer from vitamin B12 depletion causing: • Psychosis • Paralysis • Parasthesiae • Myelopathy • Polyneuropathy • Peripheral neuropathy These can respond to B12 replacement. Consider B12 deficiency in patients who present with psychiatric manifestations and report nitrous oxide exposure	There are no specific withdrawal symptoms.	There are no specific withdrawal symptoms.
Cocaine	Cocaine use is associated with dependence but there is no pharmacological treatment of proven efficacy despite several Cochrane reviews.	Due to the short half-life of 90 minutes, withdrawal symptoms may occur within a few hours of the last dose. • dysphoric mood • fatigue • insomnia or hypersomnia • psychomotor agitation or retardation • increased appetite • vivid, unpleasant dreams	Medication to provide symptomatic relief when indicated on an individual basis.
Amphetamine Sulphate	Regular usage will lead to tolerance and physical and psychological dependence leading to • Serious sleeping problems • Poor nutrition and anorexia • Anhedonia • Severe effects on quality of life	As for Cocaine (above).	Medication to provide symptomatic relief when indicated on an individual basis.

Drug	Dependence	Withdrawal	Management of withdrawal
Methamphetamine	The risk of dependence with methamphetamine is high and tolerance will develop with frequent use. Dependent users show:	There is a psychological (rather than physical) withdrawal syndrome which can occur within 24 hours of the last dose. Acute withdrawal phase lasts 7 – 10 days and includes: • Severe dysphoria • Irritability • Melancholia • Anxiety • Hypersomnia and marked fatigue • Intense craving • Paranoia • Suicidal ideation • Akathisia	Pharmacological management of withdrawal is an adjunct to psychosocial therapies. Mirtazapine may have potential to lessen many symptoms of withdrawal.
Mephedrone and other Synthetic Cathinones	Mephedrone has a dependence potential due to its similarity to amphetamine. Tolerance to mephedrone develops quickly and users will consume higher doses more frequently.	Symptoms reported include: • Tiredness • Insomnia • Nasal congestion • Impaired concentration • Depression • Anxiety • Increased appetite • Irritability • Cravings to use again • Increased muscle tone alleviated by constant movement (reported by 1 heavy user)	There are no established regimens to manage withdrawal. Reports suggest that benzodiazepines may alleviate agitation and paranoia. One report describes the use of olanzapine for psychotic symptoms. Another describes the use of risperidone for symptoms of disorganisation, delusions and hallucinations.
Ecstasy (MDMA) and related drugs with similar effects	While ecstasy has some potential for dependence use is usually self-limiting, perhaps due to the long recovery period after one dose.	Withdrawal has been described, although there are wide variations in the reported incidence. This may reflect the application of withdrawal criteria to the 'come down' which may be regarded as a usual effect following usage. The post usage period is characterised by a dysphoric 'crash', and then in chronic users an extended withdrawal with anhedonia and a lack of energy.	The primary treatment for harmful chronic ecstasy usage is psychosocial. No pharmacological treatments are reported for dependence or withdrawal.
Benzofurans (Benzofury)	No information	No information	No information
Pipradrols and pipradrol derivatives e.g."Ivory Wave" or "Head Candy"	Prolonged use of D2PM can cause craving further doses. No further information on the long term effects of usage.	No information	No information
Hallucinogens	LSD and other 'classic hallucinogens' do not lead to dependence or compulsive usage.	LSD and other 'classic hallucinogens' do not lead to a withdrawal syndrome.	LSD and other 'classic hallucinogens' do not lead to a withdrawal syndrome.
Synthetic Cannabinoids (SCs)*	Long term effects of SCs are not known. Some users report features of dependence. Frequent users have reported psychosis that may last for weeks after last use and may be accompanied by depression and suicidal ideation. Symptoms may be managed with benzodiazepines and antidepressants in cases of concurrent depression or atypical antipsychotics for psychotic disorders.	Reported withdrawal symptoms are rare but include: • Headaches • Anxiety/nervousness • Insomnia/sleep disturbance • Anger/irritability • Impatience • Difficulty concentrating • Restlessness • Nausea • Depression	No information