STEP 1: Assess Pain (NSR or CPOT)

Treat pain/decrease analgesics as indicated

STEP 2: Determine VAMAAS

VAMAAS <3

- Assess sedation and attempt reduction if appropriate
- If no sedation, assess neurological status and consider sub-hairline EEG

Reassess VAMAAS Q4H and prn

VAMAAS ≥2-3

For dangerous agitation (VAMAAS 5-6) consider propofol infusion. Attempt to wean q1-2 h while adjusting antipsychotics.

STEP 3: ICDSC Screen

ICDSC < 4

Enact non-pharmacological measures **(Appendix C)** and rescreen Q12H

ICDSC ≥ 4 "Screen is positive"

Notify physician and treat possible causes (Appendix A)

Remove or substitute deliriogenic drugs if possible (Appendix B) AND Enact non-pharmacological measures (Appendix C)

Consider Antipsychotics (ordering recommendations):

1. **Regular dose haloperidol 0.5-2 mg[1] IV Q6H *and***
2. **PRN Haldol 0.5-2 mg[1] IV Q2H PRN for mild agitation *and***
3. **Haloperidol 2-4 mg[1] IV Q2H PRN for dangerous agitation**

Titration Guideline: If ICDSC > 0-1 increase regular dose of haloperidol to equal the total daily dose during the preceding 24 hour period (prn plus regular dose). Divide this total dose into regular doses (consider a higher dose at bedtime).

[1]**If age > 65:** Initiate low end of dosing range
Maximum Daily Dose: 20 mg/day ([1]15 mg/day if > 65 years old)
Consult Adult Psychiatry: If no improvement in ICDSC in 48 hours, on more than 2 antipsychotics or history of dementia, or patient with Parkinson's disease[2] or long QT[3]
Weaning: Initiate when ICDSC = 0 X 24 – 48 hours. See **Appendix E** for weaning guidelines

Contraindication: Parkinson's disease[2]

Precautions:

Prolonged QT[3], heart block, hypotension, reduced respiratory drive, hepatic dysfunction

Monitoring:

QT **(Appendix D)**, extra-pyramidal side effects, ICDSC

Appendix A: Identify Potential Causes for Symptoms and Treat

The **priority** following identification of a positive screen is to rule out/treat potential causes. As soon as a patient screens positive or delirium is suspected, notify the critical care physician to assess the patient and rule out /treat potential causes (and document findings).

Rule out potential life threatening causes immediately including:

- **Hypoxemia, hypotension, hypoxia, hypercarbia or neurological event**

Rule out and Treat:

I (Iatrogenic Exposure): Could a recent procedure or intervention have caused a complication such as pneumo/hemothorax or bleeding (e.g., insertion or attempted insertion of a feeding tube or invasive line)?

C (Cognitive Impairment): Does the patient have pre-existing dementia, depression or cognitive impairment or a new brain injury?

U (Use of Restraints): Re-evaluate the need for restraints. Restraints can cause/worsen delirium.

D (Drugs): Evaluate the use of sedatives (e.g. benzodiazepines or opiates) and medications with anticholinergic activity. Consider contribution of alcohol, drug or smoking withdrawal. Consider withdrawal from chronically used sedatives or medications.

E (Elderly): Evaluate patients older than 65 years with greater attention.

L (Laboratory Abnormalities for Metabolic Derangements): Consider lab abnormalities such as hyponatremia, azotemia, hyperbilirubinemia, hypocalcemia, metabolic acidosis and liver dysfunction.

I (Infection): Rule out infection. Mental confusion can be the first sign of infection in elderly.

R (Respiratory): Assess for respiratory failure (PCO2 greater than 45 mmHg or PO2 less than 55 mmHg or oxygen saturation less than 88%). Consider causes for hypoxemia or hypercarbia such as COPD (assess for night-time hypoventilation with a.m. gases), ARDS or Pulmonary Embolus.

I (Intracranial Perfusion): Assess for hyper or hypotension and consider neurological causes such as hemorrhage, stroke, tumour or trauma. Consider non-convulsive seizure (especially in depressed level of consciousness in setting of neurological admission).

U (Urinary/Faecal Retention): Evaluate bladder and bowel elimination; fecal/urinary retention is an important cause for agitation. Remove catheters and fecal drainage tubes when no longer needed.

M (Myocardial): Assess for myocardial causes: myocardial infarction, acute heart failure, arrhythmia

S (Sleep and Sensory Deprivation): Disruption in day-night routine and impaired vision or hearing are important triggers for delirium. Control noise levels and content of conversations.

Appendix B: Removal/substitution of Deliriogenic Substances

- Benzodiazepines (unless used for alcohol withdrawal or prophylaxis or treatment of anxiety). Caution: abrupt withdrawal with prolonged or chronic use can cause withdrawal.
- Anticholinergic agents (metoclopramide, ranitidine, diphenhydramine, dimenhydrinate)
- Steroids (Caution: wean off after prolonged or chronic use)
- Discontinue HS sedation; consider higher doses of antipsychotics at bedtime
- Consult critical care pharmacist for review of other potential pharmacological triggers

Appendix C: Non-Pharmacological Measures

Orientation

- Reorient patient to person, place and time with each encounter (unless it worsens agitation)
- Provide distractions (television/radio/newspapers, puzzles, games, hobbies) when appropriate
- Provide access to telephone/computer when appropriate
- Post daily activities and routines where patient and family can see
- Consider providing a clock or watch if desired by patient
- Participate in primary nursing opportunities
- Avoid restraints whenever possible

What is the patient seeing and hearing?

- Ensure hearing aids and eye glasses are used during daytime
- Monitor and control noise levels
- Monitor conversations in patient areas for appropriateness; remind each other to do the same
- Approach patients with calm, quiet voice
- Monitor lighting; overhead lights can be distressing and reflections can cause hallucinations

Empower and Engage Family Members

- Ask family about patient's likes, dislikes and routines
- Encourage family to bring photos and create story boards
- Encourage family members to sit with patient as alternative to restraints (if family able)
- Teach families how to provide calm reassurance, appropriate encouragement, and support daily routines
- Personalize surroundings (bring in patient's own hygiene products, pillows, blankets, familiar items)
- Provide favourite music, videos, tape recordings (home videos, Skype, Email can help patient stay connect)
- Encourage daily family journaling of patient's admission experience (may help patient to fill in gaps in memory)

Day-Night Routine

- Establish consistent day-night routine as soon as possible
- Maintain Sleep-Awake tracking section of 24 Hour Flowsheet (day and night)
- Promote daytime wakefulness:
  - Lights on and curtains open (as appropriate) during daytime hours.
  - Early afternoon nap is acceptable (nap should end by 2:00 pm)
  - Assess and establish bowel elimination routine form admission (unless contraindicated)
- Promote night time sleep
  - Consider earplugs at bedtime; initiate at admission
  - Complete bathing routines by 2200-2300 hrs
  - Reduce turning to Q 4 H between 2200 and 0600 hrs unless skin breakdown present; increase vigilance with skin assessment and documentation to identify problems early
  - Reduce lighting (consider patient specific need for a night light)
  - Close doors and minimize contact (all staff) between 2200 and 0600 hrs
  - No routine blood work between 2200 and 0600 hrs; urgent sampling only on nights
  - Rest on ventilator overnight until ready for complete liberation
  - Assess alarm volumes on monitors and ventilators (while maintaining safe level of audibility)

Liberate Early From Critical Care

- Initiate passive range of motion upon admission unless on neuromuscular blockers
- Promote active/assisted range of motion as soon as patient can participate
- Encourage appropriate level of self-care as soon as possible
- Assess readiness for mobilization Q Shift (to cardiac chair position, dangling, chair and weight bearing)
- RN/RRT collaboration Q Shift to complete SBT screening and implementation (when screen is passed)
- Ambulate on ventilator if unable to wean
- Review need for/discontinue lines, tubes and treatments when no longer needed (including bladder catheter)

Appendix D: Antipsychotic Agents (Initiation and Monitoring Guidelines)

QT Interval Monitoring:

- Obtain baseline 12 Lead ECG within 24 hours of antipsychotic initiation; ensure rate corrected QT interval (QTc) is < 500 ms prior to initiation of antipsychotics. Online QTc calculation: http://www.medical-calculator.nl/calculator/QTc/ The formula for calculation of corrected QT = QT interval/$\sqrt{R} - R\ interval$
- Correct magnesium and potassium deficits. Obtain order to keep magnesium ≥ 1.0 mmol/L.
- Analyze ECG rhythm strip Q6H during antipsychotic therapy; if QT interval is > 50% of R-R interval, reassess magnesium and potassium and notify physician
- Review medications with physician/pharmacist and discontinue other QT prolonging agents if possible (this may reduce the need to discontinue antipsychotics)

Monitoring for Extrapyramidal Side-Effects (EPSE):

- Monitor for EPSE Q Shift including:
  - Akinesia (inability to initiate movement)
  - Akathisia (inability to remain motionless)
  - Dystonia (sustained contraction of muscles causing twisting and repetitive movement or abnormal positioning)
  - Pseudoparkinsonism ("cogwheel" wrist movement to passive range of motion; tremor, rigidity, postural instability)
- Report findings to physician

Monitor for Neuroleptic Malignant Syndrome (NMS):

- Rigidity is the most important neurological finding (usually occurs first)
- Elevation in CK, potassium or fever may occur (later finding due to cell injury)
- NMS usually includes EPSE findings

Appendix E: Weaning Guidelines for Haloperidol (Haldol)

Weaning after acute and brief episode of delirium (ICDCS 0-1 < 72 hours from onset of haloperidol)

- Reduce dose of regular haloperidol to maintain ICDSC 0-1 and VAMAAS 3
- Begin weaning to off when patient's ICDSC is 0-1 and VAMAAS is 3 for > 24 hours (and not requiring PRN boluses)
- Wean total daily dose by 25% per day until off (divided reduction of regular dose haloperidol; consider higher HS dose)
- If patient exhibits symptoms of delirium during dose reduction:
  - Notify physician to review Appendix A and B for treatable causes
  - Ensure Appendix C is implemented
  - Return to previous dose when patient was symptom free

Weaning if > 72 hours of uncontrolled delirium

- Begin weaning to off when patient's ICDSC is 0-1 and VAMAAS is 3 for > 48 hours
- Wean total daily dose by 25% Q 2 days until off (divided reduction of regular dose haloperidol; consider higher HS dose)
- If patient exhibits symptoms of delirium during dose reduction:
  - Notify physician to review Appendix A and B for treatable causes
  - Ensure Appendix C is implemented
  - Return to previous dose when patient was symptom free
  - Consult psychiatry
- If psychiatry has been involved in the management/stabilization of delirium, consult psychiatry for weaning recommendations