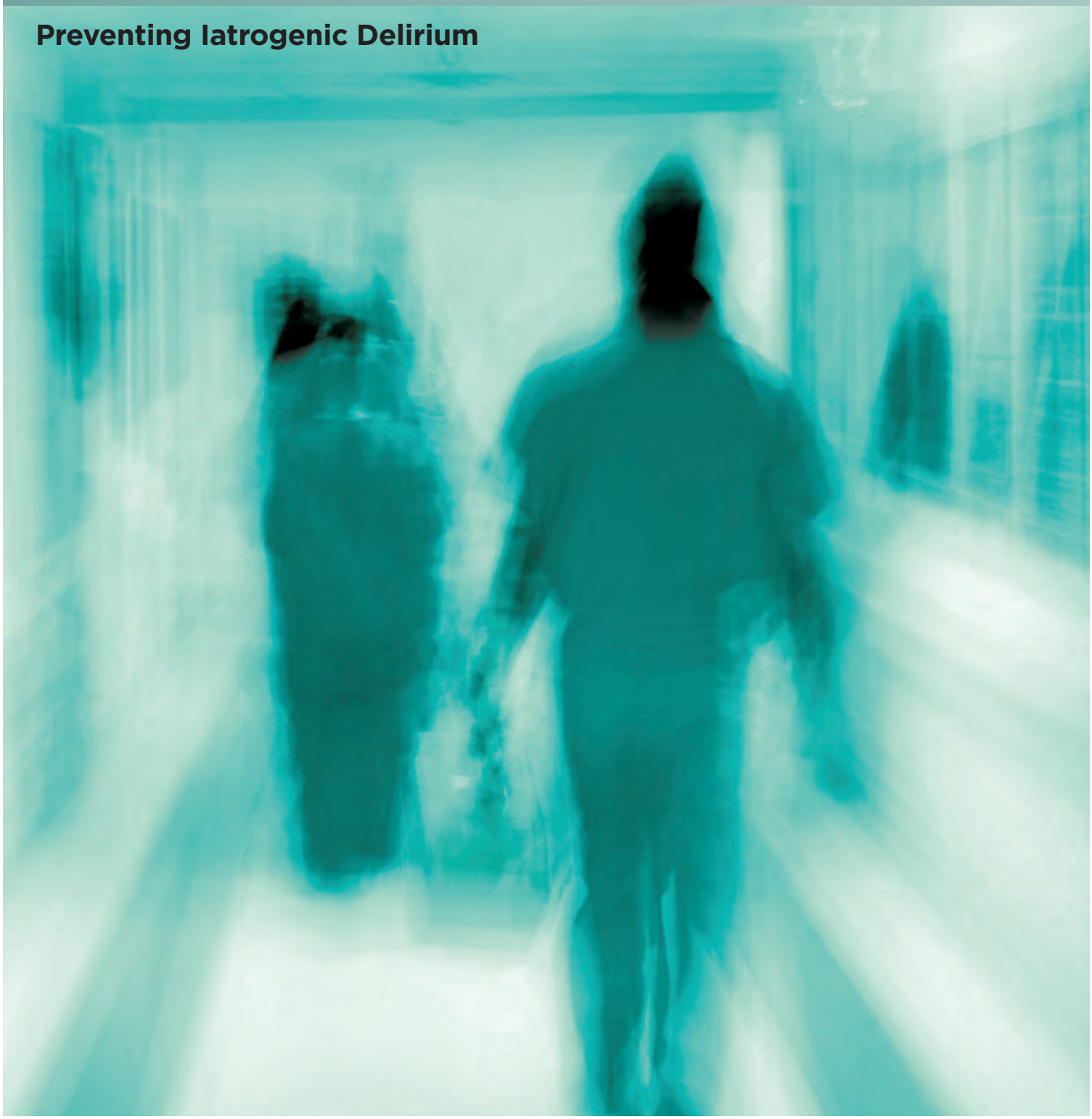
IATROGENIC DELIRIUM CHANGE PACKAGE

Preventing Iatrogenic Delirium



American Hospital Association

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES
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HEALTH RESEARCH & EDUCATIONAL TRUST
In Partnership with AHA

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The AHA/HRET HEN would like to acknowledge our partner, Cynosure Health, for their work in developing the Iatrogenic Delirium Change Package.

OVERVIEW

Background

- Delirium, a state of acute mental confusion, is a common and severe neuropsychiatric syndrome with core features of acute onset and fluctuating course, attentional deficits, and generalized severe disorganization of behavior.
- Delirium may be the most common acute disorder affecting adults in general hospitals. 10-20% of all hospitalized adults, 30-40% of elderly hospitalized patients, and up to **80% of ICU patients** experience delirium.
- Delirium increases the risk of longer stays in the hospital, and death or long-term cognitive impairment up to one year after discharge.
- Research studies estimate that the cost of delirium is $2,500 higher per hospital admission and $6.9 billion per year for Medicare.
- ICU population has greater than 10 risk factors for delirium development and the majority of the study focus has been with this population.
- A strong correlation between patient falls in hospitals and undiagnosed delirium exists promoting the need for early delirium detection and diagnosis

Suggested AIM

- Reduce iatrogenic delirium in the ICU by 40% from baseline by implementing assessment, treatment, and prevention strategies by 12/8/2014.

Potential Measures

Outcome: Percentage of patients assessed positive for delirium in the ICU (OPT-HEN-DEL-8)

Length of stay for iatrogenic delirium patients in the ICU (OPT-HEN-DEL-9)

Total length of stay for iatrogenic delirium patients (OPT-HEN-DEL-10)

Process: Percentage of patients assessed for delirium

Percentage of all eligible patients who received early mobilization in the ICU (OPT-HEN-DEL-11)

PRIMARY DRIVERS	SECONDARY DRIVERS
Delirium Monitoring	• Identify patients at high risk for delirium. • Implement a delirium assessment tool.
Optimize Medications	• Utilize a goal-oriented sedation protocol designed to reduce sedation. • Assess patients' medication lists for agents that may be causing or exacerbating delirium.
Delirium Management and Prevention	• Repeatedly reorient patients. • Provide cognitively stimulating activities multiple times/day. • Implement early progressive mobility. • Remove catheters and other physical restraints in a timely manner. • Ensure adequate nutrition. • Implement a non-pharmacological sleep protocol.

Making Changes

- This intervention is part of the LEAPT (Leading Edge Advanced Practice Topics) focus and includes webinars, change packages, and other tools.

Key Resources

- Hospital Elder Life Program (HELP) http://www.hospitalelderlifeprogram.org/public/public-main.php
- Society of Critical Care Medicine ICU Liberation www.iculiberation.org
- Vanderbilt ICU Delirium and Cognitive Impairment Study Group www.icudelirium.org
- ABCDE Bundle Tools from AACN http://www.aacn.org/dm/practice/aacnpearl.aspx?menu=practice

DRIVER DIAGRAM

AIM: Reduce iatrogenic delirium in the ICU by 40% from baseline by implementing assessment, treatment, and prevention strategies by 12/8/2014.

PRIMARY DRIVERS	SECONDARY DRIVERS	CHANGE IDEAS
Delirium Monitoring	• Identify patients at high risk for delirium. • Implement a delirium assessment tool appropriate for setting with in hospital.	• Adapt and adopt a risk-assessment tool (age, dementia, hypertension, ETOH abuse, severity of illness, coma, benzodiazepine administration). • Assess risk for delirium upon admission to hospital and with transfer within hospital. • Develop prompts to ensure the completion of the assessment, such as an admission checklist. Make assessment a routine part of charge nurse rounds. • Assess patients for delirium at least daily and prn for changes in patient behavior by using a validated tool designed for the specific setting (e.g. CAM-ICU, ICDSC, CAM, bCAM). • Assess ALL patients in the ICU at least twice daily and before and after the Spontaneous Awakening Trial (SAT), and PRN for changes in patient behavior. • Use experts to spot-check delirium screening to assess performance, reliability and identify learning opportunities. • Use a nurse champion to communicate the reasons for and the importance of this initiative to the nursing staff. • Include RASS/delirium screening in multi-disciplinary rounds and hand-off communications. • Determine whether to document the overall assessment score (+ vs -) or individual screening elements. • Document assessment results in a highly visible location, e.g. the nursing flow sheet.
Optimize Medications	• Utilize a goal-oriented sedation protocol designed to reduce sedation. • Assess the patient's medication list for agents that may be causing or exacerbating delirium at least daily.	• Use valid and reliable pain-monitoring instruments and treat pain first, prior to sedation. • Administer sedation as ordered by the physician using a target according to a scale such as RASS or SAS. • If possible, attempt to reduce or remove sedation daily. • Use a physician champion to communicate the reasons for and importance of this initiative to medical staff. • Implement a pharmacist review of the patient's medication list to help identify any sedatives, analgesics, and/or anticholinergic drugs that could be removed or decreased in dose. • Avoid using benzodiazepines especially in patients at high risk for delirium. • Implement an alert when an order for a benzodiazepine is entered.

DRIVER DIAGRAM

AIM: Reduce iatrogenic delirium in the ICU by 40% from baseline by implementing assessment, treatment, and prevention strategies by 12/8/2014.

PRIMARY DRIVERS	SECONDARY DRIVERS	CHANGE IDEAS
Delirium Management and Prevention	• Repeatedly reorient patients. • Provide cognitively-stimulating activities multiple times/day. • Implement early progressive mobility. • Remove catheters and other physical restraints in a timely manner. • Ensure adequate nutrition. • Implement a non-pharmacological sleep protocol. • Promote family engagement in delirium management and patient safety.	• Familiarize patients with their surroundings and date/time. • Encourage the use of patients' eye glasses and hearing aids. • Incorporate reorientation into patient care activities. • Use care boards, a large clock, and calendars to aid in reorientation. • Involve family members in reorientation efforts. • Encourage family/friends to furnish some familiar objects, such as family photos or a favorite blanket, to help reorient the patient and make the patient feel more secure. • Utilize puzzle books, Sudoku, magazines, or video games to stimulate patients. • Develop a progressive early mobilization program, including a safety screen and criteria for progression to higher levels of activity. • Modify default activity orders to "as tolerated." • Involve respiratory therapists, physical therapists, and nursing assistants, when applicable, to mobilize patients. • Assess the need for a urinary catheter and/or central line daily. • Reassess the need for restraints Q4/Q2/Q1 hour (based on the patient's age). • Correct dehydration and electrolyte imbalances quickly. • Provide feeding assistance if necessary. • Adopt a "sleep protocol" to cluster patient care activities, minimize unnecessary noise/light/stimulation to avoid sleep disruption and promote quiet hours. • Implement enhanced skin protection and fall prevention measures for this at risk population.

REDUCING IATROGENIC DELIRIUM

The Diagnostic and Statistical Manual of Mental Disorders (DSM IV) officially defines delirium as "a disturbance of consciousness with inattention accompanied by a change in cognition or perceptual disturbance that develops over a short period of time (hours to days) and fluctuates over time."[1] The three motoric subtypes of delirium are hyperactive (often called ICU Psychosis), hypoactive (also called quiet delirium), and mixed (fluctuation between hypo and hyper), hypoactive delirium is frequently under-diagnosed.

Delirium may be the most common acute disorder affecting adults in general hospitals, affecting 10-20% of all hospitalized adults, 30-40% of elderly hospitalized patients, and up to 80% of ICU patients.

Delirium in most patients is likely to have multiple causes, though these causes are often very difficult to determine with clinical precision. The Vanderbilt ICU Delirium and Cognitive Impairment Study Group offers several mnemonics to facilitate identification of potential causes at http://www.icudelirium.org/terminology.html.

Delirium increases the risk of longer stays in the hospital, and death or long-term cognitive impairment up to one year after discharge. Research studies estimate that the cost of delirium is $2,500 higher per hospital admission and result in $6.9 billion in annual costs to Medicare.[2] Decreasing iatrogenic delirium will save lives and money, and preserve quality of life, as well as decreases the risk of harm from falls and pressure ulcers.

SUGGESTED AIMS

The implementation team should begin by defining a clear goal or target. An aim statement for delirium-reduction efforts could include one of the following:

- Reduce iatrogenic delirium in ICU by 40% from baseline by implementing assessment, treatment, and prevention strategies by 12/8/2014.
- Reduce iatrogenic delirium in the ICU in mechanically ventilated patients by 40% from baseline by implementing the ABCDE bundle by 12/8/2014.
- Reduce iatrogenic delirium outside of the ICU by 40% from baseline by implementing assessment, treatments and prevention strategies by 12/8/2014.

DELIRIUM MONITORING

The first steps in reducing iatrogenic delirium are to identify patients at high risk for developing delirium by implementing an assessment designed specifically for the targeted population.

Secondary Driver: Identify patients at high risk for delirium

A risk-assessment tool will aid in identifying patients at high risk for delirium, in making patient care decisions such as sedative use and dosage, in promoting increased monitoring and vigilance, and in implementing targeted delirium prevention strategies. Institutions can adopt a validated risk-assessment tool or use their own data to determine risk factors from their specific patient data sets.

Change Ideas:

- Adapt and adopt a risk-assessment tool that examines the following risk factors: age, dementia, hypertension, alcohol abuse, severity of illness, coma, and benzodiazepine administration.
- Assess risk for delirium upon hospital admission and transfer with in hospital or change in patient behavior.
- Develop prompts to promote the completion of the assessment, and include the assessment on the admission checklist or in charge nurse rounds.

Suggested Process Measure

Sample a small number of patients each month to determine if assessment for risk of delirium is performed reliably. Suggested sample size = 10 cases.

Secondary Driver: Implement a delirium assessment tool

Use a validated delirium assessment tool designed specifically for each setting of care. The Confusion Assessment Method (CAM) is the most widely-used tool in non-ICU settings. The CAM-ICU and the Intensive Care Delirium Screening Checklist are two validated tools for use in the ICU. The Delirium Triage Screen and the brief-Confusion Assessment Method (bCAM) are designed for use in the emergency room or other high-volume settings.[1]

Change Ideas:

- Assess patients for delirium at least daily using a validated tool designed for the specific setting (e.g. CAM-ICU, ICDSC, CAM, bCAM).
- Use experts to spot-check delirium screening to assess performance, enhance reliability and promote learning opportunities.
- Include RASS/delirium screening in multi-disciplinary rounds and hand-off communications.
- Use a nurse champion to communicate the reasons for and importance of the initiative to the nursing staff.

- Determine whether to document overall score or individual screening features.
- Document in a highly visible location such as the nursing flow sheet.

Suggested Process Measures

- Sample a small number of patients each month to determine if delirium assessment has been performed reliably. Suggested sample size = 10 cases
- Ask a delirium assessment expert to sample a small number of patients each month to determine if delirium assessment was performed accurately. Suggested sample size = 10 cases. (See Appendix II for a sample spot-checking tool.)

"Hardwiring" the identification of high-risk patients

Create a process that outlines who should be responsible for the delirium assessment, how often the assessment should occur based on patient condition and location, which tool should be used, where the results should be recorded and to whom they should be communicated, and which actions should be taken as a result of a positive screening. Include sedation and delirium assessments in multi-disciplinary rounds and/or charge nurse rounds. Add the delirium assessment and RASS/SAS documentation to the checklist for regularly scheduled documentation-compliance reviews. Spot-checking that confirms assessment performance, and chart review that demonstrates reliability and accuracy will determine if the process is successfully hardwired. If the results are disappointing, provide additional focused education to the relevant staff. Review of risk and incident reports for harm related to delirium to ensure all cases are detected and areas of improvement are identified.

OPTIMIZING MEDICATIONS

There is an association between commonly-prescribed sedative medications and delirium. To avoid over-sedation, the Pain, Agitation, Delirium Guidelines (PAD) clinical practice guidelines of the Society of Critical Care Medicine emphasize management of pain first, encouraging integrated evidence -based and patient centered protocols focused on preventing and treating pain. Goal-directed delivery of psychoactive medications is then considered as needed for a light level of sedation.[3]

Secondary Driver: Use a goal-oriented sedation protocol designed to reduce sedation use and dosage

In patients that require sedatives, light-sedation (RASS –2 to 0, SAS 3 to 4) is the target. Because many commonly prescribed sedatives are associated with delirium, an established sedation protocol designed to minimize the levels of sedatives administered will reduce the risk of patients developing iatrogenic delirium.[1,4]

Change Ideas:

- Use valid and reliable pain-monitoring instruments, and treat pain first, prior to sedation.
- Promote leadership safety rounds focused on pain and delirium management
- Administer sedation as ordered by the physician using a target outcome guided by a scale such as the RASS or SAS.
- Attempt to reduce or discontinue sedation on a daily basis, as appropriate.
- Use a physician champion to communicate the reasons for and importance of the initiative to the medical staff.

Suggested Process Measures

- Sample a small number of patients each month to determine if their levels of agitation and sedation are assessed reliably. Suggested sample size = 10 cases
- Sample a small number of patients each month to determine if their levels of agitation and sedation assessed using SAS/RASS match the targets set forth by the ordering physicians. Suggested sample size = 10 cases
- Sample a small number of patients each month to determine if sedative support is reduced or removed on a daily basis, if appropriate. Suggested sample size = 10 cases

Secondary Driver: Assess patients' medication lists for agents that may be causing or exacerbating delirium

The use of sedatives or analgesics may exacerbate delirium symptoms. In fact, benzodiazepines and narcotics that are often used in the ICU to treat "confusion" (delirium) actually worsen cognition and exacerbate the problem. A thorough review of patients' medication lists will help to identify any sedatives, analgesics, and/or anticholinergic drugs that may be discontinued or decreased in dose (as medically appropriate).[1]

Change Ideas:

- Implement a pharmacist review of patients' medications to help identify any sedatives, analgesics, and/or anticholinergic drugs that may be discontinued or decreased in dose.
- Avoid using benzodiazepines in patients at high risk for delirium.
- Implement an alert when an order for a benzodiazepine is entered.
- Use a physician champion to communicate the reasons for and importance of the initiative to medical staff.

Suggested Process Measure

- The percentage of patients receiving benzodiazepines that were screened and found to be at high risk for delirium.

Hardwiring the optimization of medications

Assist the physician champion by arming him/her with the most up-to-date research on delirium. Ask the physician champion to present and discuss the research and current recommendations for prevention and treatment at Medical Staff meetings and via newsletters. Utilize the physician champion to address concerns from the Medical Staff, and to mentor his or her colleagues in this area. A physician champion does not need to be a physician who holds a "title," such as Department Chair or Department Director. A good physician champion is:

- Respected as a physician by his/her peers.
- Good at communicating with other physicians and hospital staff.
- Willing to stand firm when necessary (i.e. has courage, but is not a bully).
- One who possesses good social skills and builds positive relationships within the hospital.

Foster pharmacist engagement to ensure continual collaboration for optimal medication management, consultation and reinforcement.

DELIRIUM MANAGEMENT AND PREVENTION

An algorithm or protocol for preventing and treating delirium has not yet been established. In fact, many of the non-pharmacological interventions designed to prevent delirium are also used in the treatment of delirium.[1]

Few studies have focused on the treatment of delirium (inside and outside of the ICU) with medication. Because of the lack of high-quality data, no recommendations have been provided regarding the use of any antipsychotics (haloperidol or the atypicals) to treat delirium. (See Appendix II for a sample Delirium Prevention Protocol.)[1]

Secondary Driver: Repeatedly reorient patients

The hospital environment can play a significant role in the management of delirium. To maximize patients' ability to perceive their environment accurately, reorient patients to their surroundings frequently. Reorientation helps to maintain safety, and achieve familiarity and consistency for the patient.

Change Ideas:

- Familiarize patients with their surroundings, and the date/time.
- Encourage patients to use their eye glasses and hearing aids.
- Incorporate reorientation into patient care activities.
- Use care boards, a large clock, and calendars to aid in reorientation.
- Involve family members in reorientation.
- Encourage family/friends to furnish some familiar objects, such as photos or a favorite blanket, to help reorient the patient and make him/her feel more secure.

Secondary Driver: Provide cognitively stimulating activities multiple times/day

Inattention is the primary neuropsychological deficit in delirium. To prevent and/or treat delirium, provide cognitive stimulation and daytime activities.

Change Ideas:

- Utilize puzzle books, Sudoku, magazines, or video games to stimulate patients.

Suggested Process Measure

- Sample a small number of patients each month to determine if cognitive-stimulating activities are provided reliably. Suggested sample size = 10 patients at high risk for developing delirium.

Secondary Driver: Implement early progressive mobility

Mobility can illustrate a decreased need for sedation, improve sleep, and reduce the incidence and duration of delirium. Some studies suggest that early mobilization in the ICU can decrease delirium duration by 50%, decrease ICU length of stay by 25%, and increase the likelihood of return to independence by the time of discharge by nearly 75%.[5,6,7] Progressive mobility consists of activities from passive range-of-motion to ambulation, "beginning at a patient's current mobility states/levels with the goal of returning the patient to his/her baseline."[8] The level of activity for each patient can be determined by the patient's RASS score. Improving mobility standards outside of the ICU, making activity a key component of care is also essential in an effort to prevent delirium and weakness. (See Appendix IV for sample early progressive mobility protocols.)

Change Ideas:

- Develop a progressive early-mobilization program, including screening for safety and criteria for progression (See Appendix V for sample ICU mobility safety screen criteria).
- Modify default activity orders from "bed-rest" to "as tolerated."
- Enlist respiratory therapists, physical therapists, and/or nursing assistants, if appropriate, to mobilize patients.
- Establish and disseminate simple guidelines for physical and occupational therapy consultations.
- Incorporate the early progressive mobility protocol in admission or ICU orders; provide "opt-outs" with requested documentation for physicians to choose if the program is contraindicated.
- Develop a mobility standard for patients outside of the ICU making activity a key component of care.
- Enlist family encouragement and support for increase activity levels and allow family to assist as appropriate.

Suggested Process Measures

- Sample a small number of patients each month to determine if early mobilization has been implemented reliably. Suggested sample size = 10 patients.

Secondary Driver: Remove catheters and other physical restraints in a timely manner

Physical interventions to prevent/manage delirium include the timely removal of urinary catheters, central lines, and other restraining devices.

Change Ideas:

- Daily assessments of the necessity of maintaining a urinary catheter and/or central line.
- Reassessment of the need for restraints Q4/Q2/Q1 hour (based on patient's age).

Suggested Process Measure

- Sample a small number of patients each month to determine if daily assessment of catheter necessity is being performed reliably. Suggested sample size = 10 patients.

Secondary Driver: Ensure adequate nutrition

Poor nutrition, dehydration, and electrolyte imbalance are causes of delirium. Assessing for dehydration and electrolyte imbalance is a first step in managing delirium.

Change Ideas:

- Early correction of dehydration and electrolyte imbalances.
- Provide feeding assistance if necessary.
- Early registered dietician consult to assess nutritional status and make dietary recommendations.

Secondary Driver: Implement a non-pharmacological sleep protocol

Patients with delirium often present with disturbances in their normal sleep-wake cycle, experiencing restlessness at night and subsequent lack of energy to participate in activities during the day. Factors that disturb sleep among patients include pain, inability to rest comfortably, inability to perform bedtime routines, noise from nursing stations/overhead pagers, and intrusion by staff doing patient care duties. Implement a non-pharmacological sleep protocol to prevent/manage delirium.

Change Ideas:

- Cluster patient care activities to avoid sleep disruption.
- Minimize unnecessary noise/light/stimulation.
- Decrease nocturnal stimuli; introduce quiet hours.
- Develop an environmental checklist to decrease noise and minimize sleep interruptions.
- Open blinds during the day to promote daytime alertness and a regular sleep-wake cycle.

Suggested Process Measures

- Audit patient care areas at night for noise and unnecessary stimulation.

"Hardwiring" delirium management

Clearly define an early progressive-mobility protocol, including roles and responsibilities of staff and safety screens for patients (See Appendix V for sample ICU mobility safety screen criteria). Involve the relevant disciplines in the development of the mobility protocol. Provide the necessary resources to accomplish mobility. Monitor length-of-stay to establish a return on the investment for equipment and staff time required to implement the mobility program. Report delirium outcomes regularly to stakeholders to demonstrate the effectiveness of mobility and other management strategies.

Family engagement is critical in providing a comfortable environment for patients with delirium. Provide families with education regarding delirium so they understand the change in their loved ones behavior. Provide families information to promote understanding of patient's routines and how best to minimize distraction and environmental noise to further minimize effects of delirium. Enlist families' assistance in bringing items of familiarity from home, ensuring glasses and hearing aides are at the bedside, reorienting the patient frequently and encouraging memories of family and friends.

POTENTIAL BARRIERS

Delirium monitoring requires that nursing staff absorb a large amount of new knowledge and learn new skills. Providing nursing staff with adequate training and helpful resources, such as pocket reminder cards and access to staff expert consultants, can improve compliance with and accuracy of delirium assessments.

Implementing an early progressive-mobility program requires the investment of significant resources in both equipment and staff time. Piloting a trial program on one unit, increasing executive awareness about the potential net financial savings, and highlighting positive patient-based outcomes may reduce resistance among staff and senior leaders to broader program implementation. Lord, et al. published a financial modeling of cost savings associated with an ICU early mobility program.[9]

Using administrative leadership sponsorship to help remove or mitigate barriers

A management executive sponsor, recognizing the value to the patients and the value to the organization of preventing delirium, can help brainstorm solutions to what may appear to be added work, or provide resources to mitigate that additional work. An executive sponsor can also help to see the "big picture" on how this may impact organizational wide, and champion through requests for equipment, workflow changes and staffing requests. Executive sponsors can help educate, lead, and provide solutions to staffing barriers.

A senior or opinion leader physician is crucial to accomplish the goal of organization-wide adoption of sedation protocols and delirium management strategies. Focused leadership safety rounds encourages adherence to established protocols and strategies.

This is not just a change in practice but may also be a change in culture

Implementing a sedation protocol to maintain light sedation, particularly in an ICU setting, may be a culture change for physicians, nurses, and other patient care practitioners. Increasing awareness about the link between over-sedation, delirium, and negative long-term cognitive outcomes may increase staff buy-in.

Successful early progressive mobility requires a team-based approach. Communication and coordination among disciplines are essential to successful implementation.

Reducing iatrogenic delirium is an example of an innovation that will require beginning with small tests of change and then spreading the successful best practices throughout the organization.

TIPS ON HOW TO USE THE MODEL FOR IMPROVEMENT

Delirium Monitoring

- Design, test, and implement a delirium risk-assessment tool.
  - — **P**lan: Adapt a risk-assessment tool for your facility.
  - — **D**o: Test a risk-assessment tool with one nurse, one patient, on one unit.
  - — **S**tudy: Obtain feedback from the nurse on the content and design of the tool.
  - — **A**ct: Determine if revisions of the tool/protocol are necessary.
  - — **P**lan: Incorporate the feedback into redesign of the tool.
  - — **D**o: Test the risk-assessment tool more broadly (e.g. same RN, different patient; different RN, 1 patient).
  - — **S**tudy: Obtain feedback on the content and design of the tool.
  - — **A**ct: If no changes are necessary, pilot the risk-assessment tool on all of the patients in one unit.
- Pilot the delirium assessment in one unit.
- Review risk-assessment results for all patients diagnosed with iatrogenic delirium; all or most patients should have been captured by the process. If not, revise the risk-assessment tool, incorporating the knowledge gained from the review.
- Enlist/train delirium-assessment experts to a) train others; b) conduct spot-checks; c) serve as resources and consultants.

Optimizing medications

- Cultivate a physician champion.
- When establishing sedation protocols, encourage voluntary physician participation by using the method of "asking for help to *improve*, not *approve*." This approach will often generate engagement and momentum leading to rapid improvement of a process.

Delirium Management

- Create a multi-disciplinary team, including nurses, physician(s), respiratory therapists, physical/occupational therapists, pharmacists, dieticians.
- Pilot early mobilization programs on one unit.
- Test exercise safety screens in each population, revising them as needed.
- Develop a mechanism to debrief regarding issues and concerns about mobilizing patients.

APPENDIX I: ASSESSMENT TOOLS

Link to Richmond Agitation Sedation Scale:
http://www.icudelirium.org/docs/RASS.pdf

Link to Riker-Sedation Agitation Scale:
http://www.icudelirium.org/docs/SAS.pdf

Link to Confusion Assessment Method-ICU (CAM-ICU) Training Manual:
http://www.icudelirium.org/docs/CAM_ICU_training.pdf

Link to CAM-ICU Flowsheet:
http://www.icudelirium.org/docs/CAM_ICU_flowsheet.pdf

Link to CAM-ICU Worksheet:
http://www.icudelirium.org/docs/CAM_ICU_worksheet.pdf

Link to Intensive Care Delirium Screening Checklist Worksheet (ICDSC):
http://www.icudelirium.org/docs/2013-Tufts-ICU-Delirium-Screening-Checklist.pdf

Link to Delirium Triage Screen (DTS) for use in Emergency Room patients:
http://www.icudelirium.org/docs/dts_flowsheet.pdf

Links to Brief Confusion Assessment Method (bCAM) for use in Emergency Room patients:
http://www.icudelirium.org/docs/bCAM_Overview.pdf
http://www.icudelirium.org/docs/bCAM_Flowsheet.pdf

Link to Confusion Assessment Method (CAM) Training Manual and Coding Guide for use in non-ICU patients:
http://www.hospitalelderlifeprogram.org/pdf/TheConfusionAssessmentMethod.pdf

Link to Pain Agitation & Delirium (PAD) Guidelines
http://www.learnicu.org/SiteCollectionDocuments/Pain,%20Agitation,%20Delirium.pdf

APPENDIX II: SAMPLE SPOT-CHECKING TOOL

			EXPERT SPOT-CHECKER						BEDSIDE RN						
MR#	DATE	SHIFT	RASS	CAM-ICU1	CAM-ICU2	CAM-ICU3	CAM-ICU4	OVERALL	RASS	CAM-ICU1	CAM-ICU2	CAM-ICU3	CAM-ICU4	OVERALL	COMMENTS

CAM-ICU options: Yes / No / UTA (unable to assess) / NA (not assessed)

DELIRIUM PREVENTION PROTOCOL

DAYTIME

a. Encourage patients to use their visual and hearing aids during the daytime.

b. Encourage communication with patients, and reorient patients frequently. For example:

   i. Ensure the room calendar is up-to-date and a large clock is visible.

   ii. Introduce oneself with each encounter, providing the current date and time, explaining any procedures to be done, and giving the patient choices regarding his or her care whenever possible.

   iii. Identify language barriers and provide resources in primary language as appropriate.

c. Have the family bring in a few familiar objects from home to display in the patient's room.

d. Ask the patient/family if they watch television, and, if so, what shows they prefer. Provide the patient with these choices, as well as with the daily news on TV or radio.

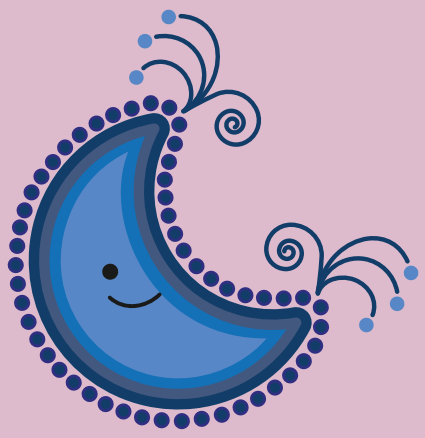
e. Provide non-verbal music or opt for music reflecting the patient's preference.

f. Open shades and keep the lights on during the day.

g. Provide an uninterrupted rest period in the afternoons between 1-3 pm.

h. Minimize use of physical restraints (including lines and tubes).

i. Provide early and progressive mobility.



NIGHTTIME

PM Care — begin between 2100-2200

a. Ask the patient if toileting is needed (bedpan, bathroom, bedside commode, etc.).

b. Perform oral care (toothbrush, mouth moisture, with assistance or independently); assist the patient in washing his or her face and hands; perform back care or massage with warmed lotion); offer earplugs.

c. Ask "Do you take or do anything at home to help you sleep? Do you sleep with white noise (fan, TV, music)?"

d. Ensure the call light is within reach and the bed is in the low position; close the shades, dim the lights, store the bedside charts outside of the room, close the door (except in the MICU), and place the "sleep cycle in progress" sign on the door.

e. Minimize noise inside and outside of the room.

f. Aim for a minimum of 2 hours of uninterrupted sleep, allowing for a full 90-minute sleep cycle. If possible, remove the automatic BP cuff; and enter the room with a flashlight or low lighting to perform necessary activities.

i. If patient has been hemodynamically stable in the previous 24 hours, explore extending the uninterrupted sleep period to 4 hours (but only for patients who are unrestrained and can turn themselves).

APPENDIX IV: SAMPLE EARLY PROGRESSIVE MOBILITY PROTOCOLS

Progressive Mobility Grid (PMG)

Level 1 Mobility in Bed

Activity Level	Responsible Discipline	Frequency	Duration	Patient Consideration	Documentation	Caregiver Consideration
Resposition and Turn	RN	Every 2H	CCU stay while in bed	Explain procedure and encourage participation	Every 2H and which sides	Request order to progress mobility if no contraindications.
Active Range of Motion (AROM)	RN	3X per shift	CCU stay while in bed	Explain procedure and encourage participation	3X per shift	
Passive Range of Motion (PROM) -if AROM not possible	RN	Every 2H	CCU stay while in bed	Explain procedure	3X per shift	
HOB elevated at 30°	RN	At all times	CCU stay while in bed	Explain procedure	Every routine assessment	

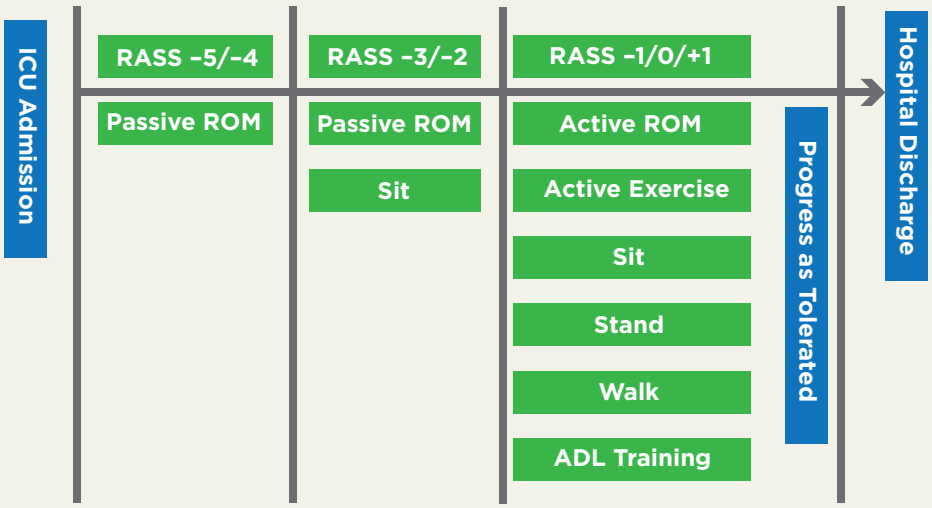
Level 2 Mobility to Chair

Activity Level	Responsible Discipline	Frequency	Duration	Patient Consideration	Documentation	Caregiver Consideration
Excluxion Criteria Assessment	RN - discussion with RCP and PT recommended	Minimum of twice daily	As long as order to progress is in effect	NA	Twice daily	Exclude from progression if answer "yes" on 1 criterium
HOB elevated to 45°-65°	RN	Minimum of twice daily prior to sitting	5-10 minutes minimum. OK to extend contingent on patient request.	Explain procedure. Encourage patient to report tolerance to activity.	Vital signs and tolerance to activity at 10 minutes-monitor for orthostatic hypotension	If orthostatic hypotension present, place patient in reverse trendelenberg, notify provider if BP does not normalize in 15 min for further intervention, reassess in 12 hours
Sitting on side of bed with feet dangling (for non-intubated patients)	RN or PT	Twice daily following HOB elevation to 45°-65°	5-10 minutes minimum. OK to extend contingent on patient request.	Explain procedure and encourage participation. Encourage patient to report tolerance to activity.		
Standing and pivoting to chair/ sitting on chair	RN or PT	Minimum of twice daily following sitting on side of bed. May be bypassed in leiu of ambulation	Total chair time of two (2) hours or more as tolerated.	Explain procedure and encourage participation. Encourage patient to report tolerance to activity.	Duration of time in chair and patient tolerance	Reposition in chair every 30 minutes
Cardiac chair (chair out/beach chair) position (for intubated patients)	RN - discussion with RCP and PT recommended	Minimum of twice daily following HOB elevation to 45°-65°	Total chair time of 1 hour or more as tolerated. May be less than 1 hour if ambulation planned to follow	Explain procedure and encourage participation.	Duration of time in chair and patient tolerance.	

Level 3 Mobility to Ambulation

Activity Level	Responsible Discipline	Frequency	Duration	Patient Consideration	Documentation	Caregiver Consideration
Ambulation Non-Intubated Patients	RN or PT	Minimum of twice daily following 1 successful completion of sitting up on a chair	As tolerted by the patient	Explain procedure and encourage participation. Encourage patient to report tolerance to activity.	Estimated distance of walk	Privacy. IV lines and tubings secure. Anti-slip footwear is worn at all times
Pre-Ambulation Time Out and Checklist Completion of Intubated Patients	Ambulation Team	Prior to every ambulation.	As long as order to progress is in effect	Explain procedure, ambulation route and encourage participation.	Checklist completed.	Focus. Insure patient and staff safety.
Ambulation of Intubated patients	Ambulation Team	Minimum of twice daily following 1 successful completion of sitting up on a cardiac chair	As tolerated by the patient	Continued encouragement and monitoring of patient	Estimated distance of walk and tolerance	Focus on the patient and the ambulation path as well as the monitors and ventilator

APPENDIX IV: SAMPLE EARLY PROGRESSIVE MOBILITY PROTOCOLS (CONTINUED)



Vanderbilt University

THE UNIVERSITY OF KANSAS HOSPITAL[1]

Department of Nursing
Adult Critical Care

SECTION: Standard of Practice and Procedures Effective: 2/20/07

TITLE: Progressive Upright Mobility (PUM)

PATIENT OUTCOMES:

1. Patients will experience improved physical conditioning.
2. Patients will demonstrate hemodynamic stability (i.e. no orthostasis) with upright mobility.

STANDARDS OF PRACTICE:

Assessment for PUM

In the care of all patients, the RN will:

1. Assess the patient for Progressive Upright Mobility (PUM) upon admission, and during every shift, and will initiate PUM if answer is "yes" to one or more of the following questions and the patient is free from any contraindications:
   a. Is the patient at risk for deconditioning due to immobility?
   b. Does the patient require orthostatic training to achieve an upright position?

2. Assess the patient for contraindications to PUM such as activity restrictions due to:
   a. A Diagnosis or Condition e.g. spinal cord injury, unstable intracranial pressure, etc.
   b. Devices e.g. femoral sheaths, traction, draining ventriculostomy, etc.
   c. Therapies e.g. during CRRT, hemodialysis, etc.
   d. Comfort Care

3. Apply PUM in conjunction with Continuous Lateral Rotation Therapy SOP and Progressive Mobility Algorithm for Critically Ill Patients (attached).

Initiation and Management of Patient Undergoing PUM

In the care of all patients, the RN will:

4. Advance the patient through the following PUM steps 1-6:

Progressive Upright Mobility (PUM) Steps
Step 1 HOB elevated to 45°
Step 2 HOB elevated to 45° plus legs in dependent position (cardiac chair or partial chair using chair mode)
Step 3 HOB elevated to 65° plus legs in full dependent position (full chair mode or cardiac chair)
Step 4 HOB elevated to 65° plus legs in full dependent position and feet on the floor plus standing
Step 5 Initiate stand/pivot and into chair
Step 6 Initiate stand/pivot with march stepping and into chair

5. Ensure that a PUM step is implemented at least three times/day and more frequently as tolerated.

6. Evaluate cardiopulmonary tolerance to each position change by assessing vital signs, ECG, and SpO2. Allow a 5-minute equilibration period after the position change before determining cardiopulmonary stability.

7. Progress each step to a length of 30 to 60 minutes as the patient tolerates.

8. Repeat each step until the patient demonstrates hemodynamic and physical tolerance to the target activity/position for 60 minutes, then advance to the next step at the next activity period.

9. Initiate orthostatic training TID using reverse Trendelenburg if the patient demonstrates cardiopulmonary intolerance or contraindications to PUM. Continue to assess for PUM (re)initiation when the patient demonstrates stability (i.e. no orthostasis) with upright mobility.

10. Adjust the plan of care to manage intolerance as follows:
    a. Educate and reassure the patient
    b. Decrease interval times to 15-30 minutes

11. Document progress with each activity period under the "Activity/Position" column on the flow sheet:
    a. Step(s) # completed
    b. Duration in minutes

12. Document, when appropriate, in the nursing notes:
    a. Patient response to therapy
    b. Adjustments to therapy/interventions

Discontinuation of PUM

13. Discontinue PUM when the patient is successfully ambulating.

14. Assess for re-initiation of PUM every shift.

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APPENDIX V: SAMPLE IV MOBILITY SAFETY SCREEN CRITERIA

- Patient responds to verbal stimulation (i.e. RASS ≥-3)*
- FIO2 ≤ 0.6
- PEEP ≤ 10 cmH2O
- No ↑ dose of any vasopressor infusion for at least 2 hours
- No evidence of active myocardial ischemia (24 hrs.)
- No arrhythmia requiring the administration of new anti-arrhythmic agent (24 hrs.)

* Range-of-motion activities may be started in comatose patients, but are not considered Early Exercise/Mobility interventions.

APPENDIX VI: SAMPLE ABCDE BUNDLE PROCESS REVIEW TOOL

PROCESS QUESTIONS	POLICIES AND PROCEDURES List and review all associated policies and procedures. Are any changes needed?	TRAINING MATERIALS List and review all associated training materials. Are any changes needed?	ACTUAL PRACTICE Observe through chart review, staff interview, or unit observation. Does practice match policy?	MONITORING* List measures collected, and frequency. Who collects/aggregates data? Where do the findings go?
AWAKENING				
Do all patients receive an SAT Safety Screen daily? (Opt Out) Do all patients who pass the SAT Safety Screen proceed through SAT? Are the steps of the SAT clearly defined? Where are the results of the SAT Safety Screen/SAT documented? Are actual RASS/sedation scores compared with targets? When they differ, is an action triggered?				
BREATHING				
Do all patients who pass the SAT receive an SBT Safety Screen? (Opt Out) Do all patients who pass the SBT Safety Screen proceed through SBT? Are the steps of the SBT clearly defined? Where are the results of the SBT Safety Screen/ SBT documented?				

SAT: Spontaneous Awakening Trial

SBT: Spontaneous Breathing Trial

• Who is responsible for the monitoring process (e.g., NP, CNS, charge nurses, champions, unit managers, Quality Management)? How/when are the results communicated to staff?

APPENDIX VI: SAMPLE ABCDE BUNDLE PROCESS REVIEW TOOL (CONTINUED)

PROCESS QUESTIONS	POLICIES AND PROCEDURES List and review all associated policies and procedures. Are any changes needed?	TRAINING MATERIALS List and review all associated training materials. Are any changes needed?	ACTUAL PRACTICE Observe through chart review, staff interview, or unit observation. Does practice match policy?	MONITORING* List measures collected, and frequency. Who collects/aggregates data? Where do the findings go?
COORDINATION				
Are the results of the SAT communicated to the RT in a timely fashion? Are the SAT and SBT coordinated (scheduled together)? If a patient passes the SBT, is his/her physician notified in a timely fashion?				
CHOICE OF SEDATIVE				
Is there an Analgesia/ Sedation Protocol for mechanically ventilated patients? Does the Analgesia/ Sedation Protocol provide guidelines to minimize and direct the use of benzodiazepines, opioids, and haloperidol? Does the Analgesia/ Sedation Protocol provide guidelines to minimize the use of continuous drips for pain?				

SAT: Spontaneous Awakening Trial

SBT: Spontaneous Breathing Trial

• Who is responsible for the monitoring process (e.g., NP, CNS, charge nurses, champions, unit managers, Quality Management)? How/when are the results communicated to staff?

APPENDIX VI: SAMPLE ABCDE BUNDLE PROCESS REVIEW TOOL (CONTINUED)

PROCESS QUESTIONS	POLICIES AND PROCEDURES List and review all associated policies and procedures. Are any changes needed?	TRAINING MATERIALS List and review all associated training materials. Are any changes needed?	ACTUAL PRACTICE Observe through chart review, staff interview, or unit observation. Does practice match policy?	MONITORING* List measures collected, and frequency. Who collects/aggregates data? Where do the findings go?
DELIRIUM				
Is every patient on a sedative assessed Q shift for arousal using sedation scales (Ramsay, RASS, or SAS)? Is every patient assessed for delirium Q shift (and with every change in RN provider) using either the CAM-ICU, ICDSC, or CAM? How do you evaluate staff competency to perform CAM-ICU, ICDSC, CAM? Where are the results from arousal and delirium assessments documented? Are target sedation levels, actual sedation levels, CAM status (+/-), and lists of meds communicated to attending physician(s) during patient rounds? Are possible non-pharma-cological interventions implemented for patients who are positively assessed for delirium?				

CAM: Confusion Assessment Method

ICDSC: Intensive Care Delirium Screening Checklist

RASS: Richmond Agitation Sedation Scale

SAS: Riker Sedation-Agitation Scale

* Who is responsible for the monitoring process (e.g., NP, CNS, charge nurses, champions, unit managers, Quality Management)? How/when are the results communicated to staff?

APPENDIX VI: SAMPLE ABCDE BUNDLE PROCESS REVIEW TOOL (CONTINUED)

PROCESS QUESTIONS	POLICIES AND PROCEDURES List and review all associated policies and procedures. Are any changes needed?	TRAINING MATERIALS List and review all associated training materials. Are any changes needed?	ACTUAL PRACTICE Observe through chart review, staff interview, or unit observation. Does practice match policy?	MONITORING* List measures collected, and frequency. Who collects/aggregates data? Where do the findings go?
EARLY MOBILITY				
Do all patients receive an Exercise Safety Screen daily? Are the results of the Exercise Safety Screen communicated to Physical Therapy? Do all patients who pass the Exercise Safety Screen receive individualized exercise therapy? Is the proper equipment available for mobilizing patients? Is there adequate staffing for mobilizing all patients who pass Exercise Safety Screen? Where are the results of the Exercise Safety Screen and level of therapy received documented?				

* Who is responsible for the monitoring process (e.g., NP, CNS, charge nurses, champions, unit managers, Quality Management)? How/when are the results communicated to staff?

APPENDIX VII: IATROGENIC DELIRIUM TOP TEN CHECKLIST

Iatrogenic Delirium Top Ten Checklist

TOP TEN EVIDENCE BASED INTERVENTIONS				
PROCESS CHANGE	**IN PLACE**	**NOT DONE**	**WILL ADOPT**	**NOTES (RESPONSIBLE AND BY WHEN?)**
Use a validated tool to regularly assess patients for delirium.	☐	☐	☐	
Include Richmond Agitation Sedation Scale (RASS)/delirium screening (or a validated agitation scale) in multidisciplinary rounds and hand-off communication.	☐	☐	☐	
Use a scheduled pain management protocol.	☐	☐	☐	
Avoid using benzodiazepines in patients at high risk for delirium.	☐	☐	☐	
Administer sedation using a goal according to a scale such as RASS or Modified Ramsey Score as ordered by physician.	☐	☐	☐	
Develop a process that ensures daily reduction or removal of sedative.	☐	☐	☐	
Implement an early, progressive mobilization program.	☐	☐	☐	
Provide cognitively stimulating activities multiple times/day, and enlist family engagement to provide a calm, familiar environment.	☐	☐	☐	
Implement a non-pharmacological sleep protocol.	☐	☐	☐	
Monitor incident report for possible cases for which delirium may have been a factor.	☐	☐	☐	

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