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Impacting Delirium in the Trauma ICU Utilizing the ICU Liberation Collaborative Benchmark Report

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ABSTRACT

Delirium is a frequent complication of intensive care unit (ICU) admissions, manifesting as acute confusion with inattention and disordered thinking. Patients in the ICU who develop acute delirium are more likely to experience long-term disability and mortality. The Society of Critical Care Medicine published guidelines for the management of pain, agitation, and delirium (PAD) in the ICU in 2013. Based on these PAD guidelines, the ABCDEF bundle was created. Research is lacking on how adherence to the ABCDEF bundle elements impacts specific populations such as trauma patients. This represents a significant gap for patients whose multisystem injuries and comorbidities add a higher level of complexity to their care and outcomes. The medical ICU at a large community hospital participated in a 2-year quality improvement project as part of the Society of Critical Care Medicine's ICU Liberation Collaborative. However the organization's trauma ICU (TICU) was excluded from the study. The purpose of this study was to conduct a baseline assessment of trauma patient records to determine which bundle elements were already being applied in the TICU, and if the resources required for implementing the full ABCDEF bundle would be beneficial to the TICU patient outcomes. Benchmark data from the organization's participation in the ICU Liberation Collaborative quality improvement project served as the primary source of evidence. Analysis revealed strengths and opportunities for improvement. Incidence of delirium remained unchanged and far below national averages, indicating the need for further investigation into practices to verify this finding. An opportunity was identified to expand implementation of certain elements of the ABCDEF bundle in the trauma ICU. There is an opportunity for nurses to take the lead in improving patient outcomes. With improved education, evidence-based assessment tools, and best practice guidelines, nurses can help decrease the incidence of delirium by as much as 30%.

Key Words
ABCDF bundle, Acute confusion, CAM-ICU, Delirium, Early mobility, ICU liberation, Trauma ICU

Pain, agitation, and delirium are frequent complications of intensive care unit (ICU) admissions, with occurrence rates as high as 80% (Kram, 2015). Delirium is defined as an acute change in consciousness, accompanied by inattention, along with changes in cognition or perceptual disturbances (American Association of Critical Care Nurses, 2016). Patients in the ICU who develop acute delirium are more likely to experience long-term disability and difficulty in performing activities of daily living for up to a year after discharge (Kram, 2015). A person's risk of developing delirium in the ICU is impacted by certain modifiable risk factors including uncontrolled pain, prolonged immobility, and administration of certain medications (Hannon, 2015).

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PURPOSE

The Society of Critical Care Medicine (SCCM) published guidelines for the management of pain, agitation, and delirium (PAD) in the ICU in 2013 (Barr et al., 2013). Based on these PAD guidelines, the SCCM then created the ABCDEF bundle. ABCDEF stands for Assess, prevent, and manage pain; Both spontaneous awakening trials and spontaneous breathing trials; Choice of analgesia and sedation; Delirium, assess, prevent, and manage; Early mobility and exercise; and Family engagement and empowerment (Barnes-Daly et al., 2018). A review of the literature indicated a wide variety of research has been published on the PAD guidelines, various components of the ABCDEF bundle, and related outcomes in the ICU. However, research is lacking on how adherence to the PAD guidelines and ABCDEF bundle impacts specific populations of patients, such as trauma patients (Joffe, McNulty, Boitor, Marsh, & Gélinas, 2016; Miller, 2015). This represents a significant gap for patients whose multisystem injuries and comorbidities add a higher level of complexity to their care and outcomes.

The medical/surgical ICU in a large community hospital in Florida participated in a 2-year quality improvement project as part of the SCCM's ICU Liberation Collaborative study. However, the organization's trauma ICU (TICU) patient population was specifically not included in the study. Data submitted by participating organizations were utilized by the ICU Liberation Collaborative to assess for adherence to the ABCDEF bundle elements and associated outcomes related to pain, agitation, and delirium. Each participating organization received a collaborative benchmark report (CBR) to assess their own performance compared with all organizations participating in the collaborative. Because the TICU was excluded from the original study, a baseline assessment was needed to determine which, if any, bundle elements are already being applied in the TICU, and if improvements could be made to impact outcomes. The purpose of this study was to compare baseline practices in the TICU to the organization's CBR to determine whether implementation of the ABCDEF bundle could impact delirium and improve outcomes in the TICU.

CONCEPTUAL MODELS AND THEORY

The theoretical model used to explore the phenomenon of delirium in the ICU is Levine's (1967) conservation model for nursing practice. Levine's focus was on conservation of energy, structural integrity, personal integrity, and social integrity. The theory stresses the importance of nurses working to maintain balance between immediate needs of the patient to keep them safe and the long-term goals to get them back to their baseline wellness (Levine, 1967). Patients experiencing delirium are in an altered state of health. Identifying this altered state and intervening to restore the patient's previous level of cognition aligns with Levine's theory by promoting adequate rest, nutrition, and exercise (conservation of energy); preventing physical and psychological breakdown (conservation of structural integrity); recognizing and respecting oneself (conservation of personal integrity); and preservation of the patient's place among his or her family, community, and society (conservation of social integrity). All are aspects of a person that are threatened by the development of delirium.

PROCEDURES

First, the organization's CBR was reviewed to evaluate the baseline adherence to the elements of the ABCDEF bundle. Next, patient records from the trauma ICU were reviewed to collect the same data points as reported in CBR for comparison. It is important to note that the original ICU Liberation Collaborative study collected many more data points than what was ultimately published in the CBR. For this study, only data points reported in the CBR were utilized for comparison. For example, the ICU Liberation study on pain assessment and management required

participating organizations to submit data on the number of documented pain assessments collected, type of medication administered, and the highest pain score in the last 24 hr. However, the CBR did not provide information on correlations or ramifications of timely assessment and management of pain. Therefore, data collected on the TICU population were limited to only those data points reported in the CBR to allow for direct comparison. A Microsoft Excel spreadsheet was used to organize the specific documentation points that demonstrate adherence to the ABCDEF guidelines. The specific documentation definitions for each bundle element were based solely on the CBR definitions. See Table 1 for the documentation points assessed.

Data collected were used to calculate overall performance of the TICU providers in adhering to the documentation guidelines. Results were then compared with the organization's CBR. Secondary outcomes including incidence of delirium, days of mechanical ventilation, and ICU length of stay were also evaluated.

Following the original ICU Liberation study protocol, the data collected were a "yes," "no," or "not applicable" for each bundle element listed in Table 1. Missing documentation was recorded as a "no." The aggregate data were then calculated in a percentage of adherence to each bundle element. For example, for assessment of pain in the previous 24 hr, if a pain score was documented six times, the compliance rate was 6 out of 6 or 100%. If only three pain assessments were documented, the compliance rate was three out of six or 50%. Analysis of the organization's CBR, as well as analysis of existing trauma patient records, was approved by the organization's institutional review board. Data collected in the spreadsheet described earlier, for the purposes of evaluating practice in the TICU, did not include any identifying or protected health information of the patients.

The organization's cohort included 30 patient records for a total of 79 patient days in the ICU. In order to mimic the original study protocol, the first 10 patients admitted to the TICU per month for 6 months were included in the assessment. For the baseline data of the TICU, the minimum number of records required for appropriate power was determined by an a priori power analysis. Aggregate data on a total of 60 trauma patients, for a total of 202 patient days, were included in this study. The convenience sample approach utilized in both the CBR and TICU assessment was problematic in that no other factors that could impact outcomes were identified or utilized as inclusion or exclusion criteria. This represents an opportunity for improvement in future studies, particularly with trauma patients. Age, gender, comorbidity, and Injury Severity Score can all impact incidences of pain, agitation, and delirium. However, to replicate the data reported in the CBR, these factors were not included in the assessment of TICU patient records.

TABLE 1	ICU Liberation Documentation to Demonstrate Adherence to Bundle Elements
Bundle Element	**Documentation Definition**
A: Assess, prevent, and manage pain	There is documentation that the patient received a minimum of six pain assessments in 24 hr using a PAD guideline-recommended tool.
B: Both SBT and SAT	In patients receiving continuously infused and/or scheduled/intermittent sedatives/opioids, there is documentation that the patient passed an SAT safety screen and received an SAT in the 24-hr period.
	In patients receiving invasive mechanical ventilation, there is documentation that the patient passed an SBT safety screen and received an SBT in the 24-hr period.
	In patients who received both an SAT and an SBT, there is documentation that the SAT was performed before the SBT in the prior 24-hr period.
C: Choice of analgesia and sedation	There was documentation that the patient received a minimum of six sedation/agitation assessments in the prior 24-hr period using a recommended tool.
D: Delirium: assess, prevent, and manage	There is documentation that the patient received a minimum of two delirium assessments in the prior 24-hr period using a PAD recommended tool.
E: Early mobility and exercise	There is documentation that the patient passed an early exercise/mobility safety screen and the patient received exercise/mobility in the prior 24 hr
F: Family engagement	There was documentation at least once in a 24-hr period that a family member/significant other participated in rounds or a family conference or assisted with the plan of care or the ACBDEF Bundle care or received education on the bundle elements.

Note. ICU = intensive care unit; PAD, pain, agitation, and delirium; SAT = spontaneous awakening trial; SBT = spontaneous breathing trial.

RESULTS AND DISCUSSION

The organization cohort data from the CBR were used as comparison to the baseline TICU data. The results are presented in Table 2.

Comparison of baseline data reveals some significant findings. When comparing data, it is important to note that nurses working in the TICU also float to the medical and surgical ICUs. Therefore, one might assume that nursing

TABLE 2	Baseline Data: Organization Versus Trauma ICU	
Assessment Elements	**Organization Adherence to Bundle Element (*n* = 79)**	**Trauma ICU Adherence to Bundle Element (*n* = 202)**
Six pain assessments in 24 hr	43%	75%
SAT safety screening per each 24 hr	32%	60%
SAT per each 24 hr	34%	52%
SBT safety screen per each 24 hr	38%	47%
SBT per each 24 hr	36%	30%
SAT before the SBT per each 24 hr	60%	60%
Six sedation/agitation assessments per 24 hr	65%	73%
Two delirium assessments per 24 hr	90%	83%
Exercise/mobility per 24 hr	15%	34%
Family member participation per 24 hr	97%	44%
All elements of bundle documented	0%	1%
Secondary Outcomes	**Organization**	**Trauma ICU**
Average incidence of delirium	10% of cases	7% of cases
Average days mechanical ventilation	4.25 days	1.7 days
Average ICU length of stay days	2.5 days	3.4 days

Note. ICU = intensive care unit; SAT = spontaneous awakening trial; SBT = spontaneous breathing trial.

practice and documentation would not vary much from unit to unit. However, the data suggest some significant differences in practice. Differences in practice could be attributed to many factors. For example, when evaluating the frequency of pain assessments, trauma patients may have more significant sources of pain requiring more frequent assessment than medical patients, such as a patient with a high-impact tibia fracture who is at increased risk for compartment syndrome. The American College of Surgeons Best Practice Guidelines for Orthopedic Care recommends assessment for signs of compartment syndrome, including severity of pain, every 1–2 hr for a minimum of 24–48 hr (American College of Surgeons, 2017). Therefore, the nature of the injury supports more frequent pain assessment than perhaps a patient with a medical ICU admission may require. Pain experienced by trauma patients reflects the nature and complexity of multiple injuries, comorbidities impacting physiologic reserve, compensatory mechanisms, and risk of morbidity and mortality (Joffe et al., 2016).

Assessing and managing pain in trauma patients can be challenging. Pain is a frequent complication in trauma, with greater than 50% of patients experiencing moderate to severe pain during the first 3 days of ICU admission (Arbour et al., 2014). TICU patients may have conditions impacting their ability to report pain, such as those with traumatic brain injury (TBI), altered level of consciousness, sedation, and mechanical ventilation. Untreated or undertreated pain can contribute to worsening clinical condition, particularly in the TBI population (Arbour et al., 2014). Valid and reliable assessment tools are available to assess for pain in nonverbal or nonresponsive patients including the Pain Behavioral Assessment Tool and the Critical Care Pain Observation Tool. These assessment tools rely on observation of pain behaviors such as facial grimacing or guarding. However, Gélinas and Arbour (2009) found patients with TBI often exhibit atypical pain behaviors, such as sudden eye opening, eye weeping, and raising their eyebrows, which are not assessed for utilizing these standardized assessment tools. Appropriate management of pain can have a significant impact on preventing delirium (Arbour et al., 2014). Therefore, selecting an appropriate tool and ensuring it is utilized and documented correctly and consistently is necessary to fully evaluate pain management practices and associated outcomes.

Early mobility is also helpful for preventing delirium, but can be more challenging in the trauma population. Certain traumatic injuries warrant complete immobilization before definitive stabilization, such as spinal cord injuries or nonoperative management of liver or spleen lacerations (Stassen et al., 2012). When reviewing TICU baseline data, multiple cases were observed where early mobilization assessment was deferred due to patient condition. However, when looking at the TICU data compared with the organization's CBR, the TICU cohort documented adherence to the bundle element in 34% of patient days compared with 15% in the organization cohort. In both cohorts, documentation of early mobilization is poor and represents an opportunity for improvement.

Another opportunity for impacting delirium the TICU is family presence. The ABCDEF bundle recommends promoting family engagement and empowerment, as evidenced by family member participation in rounds, a family conference, or evidence that education was provided to the family on the ABCDEF bundle elements. The organization cohort demonstrated adherence to this bundle element in 97% of patient days. The TICU cohort demonstrated adherence in only 44% of patient days. However, it is unknown whether these data reflect poor or inconsistent documentation practices or policies and protocols that do not adequately support family presence in the TICU. Further investigation is required. Mitchell et al. (2017) report it is the family members' intimate knowledge of the patient that can help the nurses better understand who this person is, what their baseline cognition is, and how best to orient them. Family also provides a reassuring, familiar comfort that can help prevent delirium (Mitchell et al., 2017). A simple intervention such as providing the family with an informational pamphlet on what delirium is and how to prevent it can impact incidence.

The incidence of reported episodes of delirium in the organization's CBR is quite low compared with numbers reported in current literature. The CBR reported a baseline incidence of delirium in 10% of cases whereas the TICU cohort demonstrated delirium in 7% of cases. Incidence of delirium in the ICU nationwide ranges from 20% to 80% (Barr et al., 2013; Hannon, 2015; Kram, 2015; Pinto & Biancofiore, 2016). The organization utilizes the Confusion Assessment Method tool for Intensive Care Unit (CAM-ICU) to assess for delirium. The CAM-ICU tool is one of the assessment tools recommended by the PAD guidelines. The tool assesses for four screening points that indicate delirium: (1) an acute change in mental status or fluctuating mental status over the past 24 hr, (2) inattention, (3) a Richmond Agitation-Sedation Scale (RASS) score indicating an altered level of consciousness, and (4) degree of disorganized thinking. Studies have reported the CAM-ICU tool to be both valid and reliable, including a study by Guenther et al. (2010) finding approximately 90% sensitive, 100% specific. With incidence of delirium reported at such low rates in both the organization and TICU cohorts, one must question whether incidence is really that low, or whether the providers are failing to recognize the symptoms using the CAM-ICU tool.

Within the trauma population, utilizing the CAM-ICU can be problematic, specifically in patients who are sedated or have suffered TBI. However, Soja et al. (2008)

demonstrated high interrater reliability in patients with TBI and found the CAM-ICU to be helpful in supplementing the Glasgow Coma Scale for monitoring changes in neurological status. A study by Frenette et al. (2016) demonstrated similar findings but cautioned the CAM-ICU may have lower specificity in patients with moderate to severe TBI. Therefore, consideration for the nurses' reliability in recognizing delirium utilizing the CAM-ICU tool may need to be addressed.

Delirium remains severely underdiagnosed in the ICU (Nishimura et al., 2016). The hyperactive form of delirium is easier to detect than the hypoactive form, which is much more common but also more difficult to detect without improved education and use of reliable screening tools (Eastwood, Peck, Bellomo, Baldwin, & Reade, 2012). Underrecognition of delirium may have devastating impacts on the individuals, communities, and institutions. Eastwood et al. (2012) conducted a survey of ICU nurses' perceptions of assessing for delirium, finding only 20% knew a formal delirium test existed, and only 7% sometimes used it. In the organization cohort, the CAM-ICU was utilized to assess for delirium at least twice per 24 hr in 90% of cases, yet delirium was only identified in 10% of cases. Further investigation is warranted to determine whether the tool is being utilized consistently and correctly, and whether this tool is the most reliable for the trauma population.

Other secondary outcomes reported in the CBR included average days on mechanical ventilation, and ICU length of stay, both of which can impact incidence of delirium. The TICU cohort demonstrated an average of 1.7 days on mechanical ventilation and an average of 3.4 days length of stay in the ICU. This suggests that those trauma patients who do require mechanical ventilation tend to be extubated quicker than in the organization cohort, whose baseline average on mechanical ventilation was 4.25 days. However, earlier discontinuation of mechanical ventilation did not result in decreased length of stay in the TICU. In the organization cohort, the average ICU length of stay was 2.5 days whereas the average length of stay in the TICU cohort was 3.4 days. For all patients in the TICU cohort, the data suggest that length of stay is, on average, shorter than in the organization cohort. Length of stay and mechanical ventilation can be impacted by a variety of factors; however, opportunity to improve these outcomes may exist in the TICU by improved adherence to these bundle elements.

RECOMMENDATIONS

The purpose of this study was to compare documentation of baseline practices in the organization to determine whether implementation of the ABCDEF bundle could impact delirium and improve outcomes in the trauma ICU. The analysis determined several opportunities. The overall theme for opportunities to improve lies first and foremost within the quality of nursing documentation. In evaluating all bundle elements, utilizing just the documentation recorded in the patients' medical records, it was difficult to determine whether the recommended care was not provided, or provided but just not appropriately documented. Reviewing the current electronic record to ensure the ABCDEF bundle elements can be easily, accurately, and consistently documented would be the first action item for ensuring evidence-based care is being provided and how it may or may not be impacting outcomes.

An example of this was found in the documentation of respiratory care. Daily spontaneous breathing trials appear to be conducted infrequently in the TICU, based on the documentation found in the TICU cohort; however, direct observation of this practice on the unit suggests that this finding does not accurately reflect true practice. Ensuring that the trials are documented when conducted is important. Ensuring processes are in place to support coordination between the nurses, pharmacists, and respiratory therapists is also crucial to improvement. Patients who receive coordinated spontaneous awakening and breathing trials have on average fewer days on mechanical ventilation and decreased ICU length of stay, both of which impact incidence of delirium (Kram, 2015). Once documentation is correct, a better assessment of true practice can be conducted.

There is much room for improvement regarding early mobility. Recommendations to improve must again start with ensuring accurate documentation to determine whether this is a true reflection of current practice. The organization currently does not utilize an early mobility safety screening tool and protocol for nurses to be able to start progressing mobility without waiting for a formal physical therapy evaluation. The Agency for Healthcare Research and Quality has a safety screening tool available for hospital implementation as part of its project to promote early mobility (Agency for Healthcare Research and Quality, 2017). Including this, or other evidence-based assessment tools, in the daily electronic assessment flow sheet could potentially improve practice and outcomes in the TICU. Mobilization is sometimes medically contraindicated. In such cases, the reason for deferring mobility should be documented in the electronic record. Assessment and progression of mobility should be started as soon as possible based on the patient's condition.

Delirium recognition is another opportunity for improvement. Delirium may not be as frequent in the trauma population as it is in medical population, or perhaps it is much more frequent, but underrecognized and misdiagnosed (Frenette et al., 2016). Further investigation is warranted. For the TICU, improvement should start with ensuring the nurses are conducting the assessments

utilizing the CAM-ICU tool appropriately, documenting the assessment correctly, and then utilizing an evidence-based protocol to intervene when a patient is exhibiting signs of delirium. For every day a patient experiences delirium, their risk of mortality increases by 10% (Kram, 2015).

The best approach to managing delirium is prevention (Adams et al., 2014). Key interventions include addressing medical complications, mobilizing patients early and often, maintaining a normal wake–sleep cycle, and avoiding high-risk drugs such as benzodiazepines (Adams et al., 2014). The SCCM's PAD guidelines include very specific recommendations on appropriate assessment tools and medications to manage sedation. The organization uses the RASS to assess level of sedation. The RASS is a 10-point scale scoring system ranging from −5 to +4. A score of 0 indicates the patient is alert and calm. A score of +4 indicates the patient is agitated and combative. A score of −5 indicates the patient is heavily sedated (Holly, Cantwell, & Jadotte, 2012). Several studies have demonstrated a significantly negative relationship between delirium in the ICU and use of benzodiazepines (Balas et al., 2012). The SCCM's PAD guidelines recommend lighter levels of sedation and promote the idea of analgosedation (Barr et al., 2013). Analgosedation is the primary use of analgesic medications with sedatives administered sparingly, and only as needed for managing anxiety and agitation (Berntzen, Bjork, & Woien, 2017). According to the organization's CBR, the use of benzodiazepines for sedation increased from 16% preimplementation to 19% postimplementation, indicating an ongoing opportunity to improve. In the TICU, baseline use of benzodiazepines for sedation was found in only 6% of cases.

Sedation is necessary for many ICU patients, but sedation is not equivocal to sleep. Maintaining normal sleep/wake cycles plays an important role in delirium. Avoiding medications that disrupt this cycle is helpful. Keeping lights dim, noise levels down, and even providing earplugs help support sleep (Hill, 2017). Promoting wakefulness, reorientation, and normal stimulation during wake cycles is also important. This may include interventions such as getting patients up into a chair and/or walking around if applicable, reading, keeping the room brightly lit with sunlight from a window, and lighting in the room. For those unable to get out of bed due to medical conditions, bed exercises such as utilizing a specially developed cycle device to pedal in bed should be considered (Edmunds, 2017).

Nurses working in the organization's TICU received the same education as all nurses in the ICU when the ABCDEF bundle was initially rolled out for participation in the ICU Liberation Collaborative study. Because the TICU nurses occasionally float to other areas of the ICU, their exposure to the ABCDEF bundle was greater in the TICU baseline assessment than for those included in the CBR. Therefore, a recommendation to plan and implement a full-scale introduction and educational roll-out of the entire ABCDEF bundle in the TICU is not warranted. Instead, these baseline data should serve as a tool to identify which bundle elements are not currently receiving adequate attention, such as early mobility and family presence, and build quality improvement projects around those specific elements. A Plan, Do, Study, Act (PDSA) cycle approach is recommended. The Institute for Healthcare Improvement recommends the PDSA tool for accelerating improvements within an organization by identifying a change needed then planning it, trying it, observing the results, and acting on what is learned (Institute for Healthcare Improvement, 2018).

LIMITATIONS

Several limitations were observed. First, implementation of the PAD guidelines utilizing the ABCDEF bundle was conducted and outcomes measured with a retrospective-prospective study design. This design lacked randomization and a control group, which could add validity to study results. Also, data were collected utilizing a convenience sample of the first 10 patients admitted to the ICU per month. Use of a convenience sample limits study findings. The CBR is also not risk-adjusted based on severity of illness and other factors such as age, gender, and comorbidity. A randomized selection of patient records to include in the study and a risk-adjusted presentation of findings could strengthen generalizability in future studies. Incidence of delirium in relation to Injury Severity Score is currently unknown, but could shed more insight into better management of delirium in the trauma population.

Determination of outcomes was also limited by the choice in data points documented and collected from the TICU patients' medical records. This approach was purposeful, as only the data reported in the CBR were available for comparison. Repeating the study, collecting all data points originally included in the ICU Liberation Collaborative study, could reveal stronger evidence of current patient outcomes and appropriate interventions to improve. For example, the pain assessment in the CBR focused on whether the assessment was completed the specific number of times prescribed in the 24-hr period. The CBR did not include the accuracy of the pain assessment, the actions taken to address pain, or the use of nonpharmacological interventions to address pain.

CONCLUSION

A summary of the findings, implications, and limitations of this study has been presented. In addition, recommendations are provided based on the strengths and opportunities identified. Next steps for the TICU include assessing

current documentation practices and workflow to ensure the medical record accurately reflects the care provided. Only then can the data be used to identify which ABC-DEF bundle elements are in need of attention to improve outcomes. PDSA cycles will then be prescribed to focus on small improvements over time, as opposed to implementation of a full-scale ICU Liberation project.

The prevalence of delirium in the ICU continues to rise, with the potential to increase exponentially in coming years. Delirium remains underrecognized, underdocumented, and undertreated in as many as 84% of patients (Smith & Grami, 2017). Bedside nurses are in a unique position to provide interventions and advocate for a plan of care to help prevent delirium. However, bedside nurses fail to recognize delirium in more than 50% of the cases (Collins, Blanchard, Tookman, & Sampson, 2010; Rice et al., 2011). There is an opportunity for nurses to take the lead in improving patient outcomes. With improved education, evidence-based assessment tools, and best practice guidelines, nurses can help decrease the incidence of delirium by as much as 30% (McDonnell & Timmons, 2012).

KEY POINTS

- Delirium is a frequent complication of ICU admissions with occurrence rates as high as 80%, yet a study of baseline trauma patients in a large community hospital indicated incidence of only 7%.
- Utilization of the CAM-ICU tool helps identify delirium; however, further study is warranted to determine whether nurses are utilizing this tool correctly and whether this tool accurately reflects episodes of delirium in the trauma population.
- With improved education, evidence-based assessment tools, and best practice guidelines, nurses can help decrease the incidence of delirium in the trauma population.

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