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Delirium: Still Elusive After All These Years?

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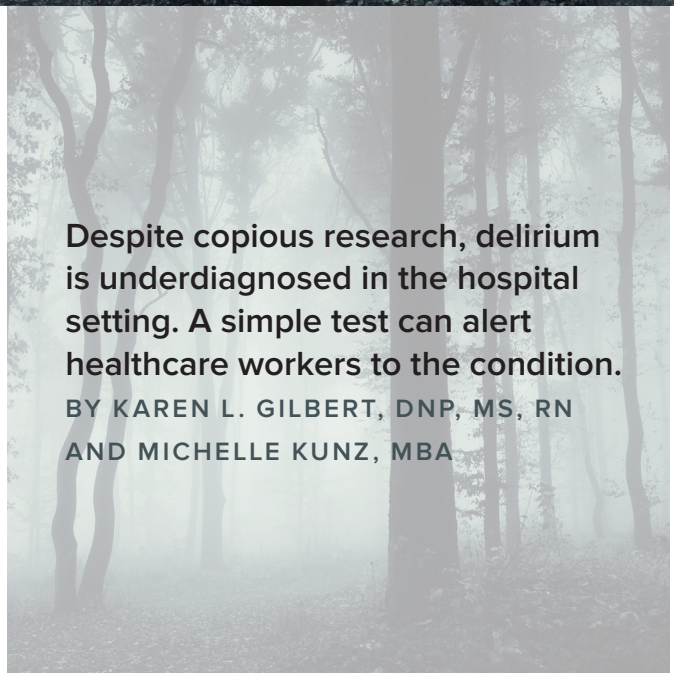
CASE IN POINT: Delirium



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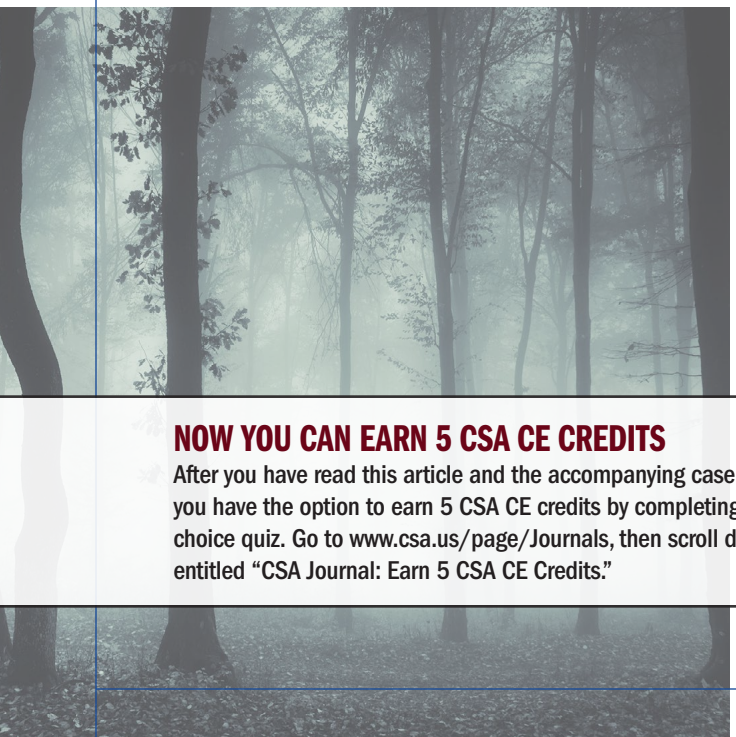
BY KAREN L. GILBERT, DNP, MS, RN AND MICHELLE KUNZ, MBA



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Still Elusive After All These Years?

An acute and common disorder, delirium causes substantial disturbance in cognitive function and awareness of the environment and is generally associated with another medical event. Delirium is often undiagnosed or misdiagnosed. Unrecognized and untreated delirium may result in longer hospital inpatient stays, repeated hospital readmissions, progression of cognitive decline and general morbidity, and otherwise untimely death. According to Bush and Lawlor (2016), the prevalence of delirium can range from 18 to 50 percent of hospitalized patients, and up to 88 percent of patients receiving palliative care, and "about one-third of all delirium episodes in older adults in hospital can be prevented" (p. 129). This underscores the importance of recognizing the factors that contribute to the risk of delirium and promoting proactive approaches to minimize those risks. Those who know the patient well can inform healthcare professionals of the patient's baseline cognitive and physical conditions, and thereby play a vital role in the identification of delirium, facilitating appropriate treatment. An acute episode of delirium should not be attributed to underlying Alzheimer's disease or related neurocognitive disorder, but rather evaluated and treated as a distinct medical concern.

The onset of an episode of delirium may be rapid. Certain underlying conditions *predispose* a patient (Mittal et al., 2011). These include (and may not be limited to):

- Advanced age
- Existing cogitive impairment, such as results from Alzheimer's disease or a related neurocognitive disorder

Predictive factors include (Justic, 2000):

- Visual impairment
- Severe illness
- Dementia
- Elevated urea-creatinine ratio (determined by routine lab work)

There are *inpatient factors* that increase the risk of delirium (Justic, 2000). These include:

- Physical restraints
- Urinary catheterization
- Malnutrition
- Adding *more than three* new medications

In addition, risk of delirium is elevated by complications occurring in the course of hospitalization and treatment. Known as "iatrogenic" complications, these

include falls, adverse drug events, hospital-acquired (nosocomial) infections, and pressure wounds.

The start of delirium is usually rapid. In addition to the predisposing and predictive factors noted above, delirium is also more likely in those with chronic illnesses, electrolyte imbalance, underlying infection, surgical intervention, and withdrawal from drugs or alcohol.

Because symptoms of delirium and dementia can be similar, input from a family member or caregiver is vital for a physician to make an accurate diagnosis. The family member, familiar caregiver or certified senior advisor can provide important information as to the patient's "usual" condition prior to the acute hospitalization. Even if the patient has previously been diagnosed with Alzheimer's disease or a related neurocognitive disorder, he or she will still have a usual level of function and set of behaviors that can serve as a baseline for the hospital experience. A *sudden* change in level of orientation, mood, personality, functional ability, should be evaluated as possible delirium, and **never** simply attributed to an underlying neurocognitive disorder.

Symptoms

Signs and symptoms of delirium usually begin over a few hours or a few days from the "trigger event." Trigger events can include acute illness or injury, or a major surgery. Symptoms may fluctuate throughout the day; there may even be periods during the day with *no* symptoms. Symptoms may intensify at night and may manifest as:

- Inability to stay focused on a topic or to switch topics.
- Failing to respond to questions or conversation.
- Being easily distracted by unimportant or unrelated concepts.
- Being withdrawn, with little or no response to surroundings or interventions.
- Poor thinking skills.
- Poor memory, particularly of recent events.
- Disorientation re: surroundings and/or personal identity.
- Difficulty speaking or "word-finding."
- Rambling or nonsense verbalizations.
- Trouble understanding what others are saying.
- Difficulty reading or writing.

Behavioral changes may include:

- Visual or auditory hallucinations.
- Restlessness, agitation, or aggressive or combative behavior.
- Calling out repeatedly.
- Being uncharacteristically quiet and withdrawn.
- Slowed movement or lethargy.
- Disturbed sleep.
- Confusion regarding day and night, and/or a disturbed sleep pattern.

Emotional manifestations may include:

- Anxiety, fear, or paranoia.
- Depression.
- Irritability or anger.
- A sense of feeling euphoria.
- Apathy.
- Rapid and unpredictable mood shifts and/or change in personality.

There are three categories of delirium:

- **Hyperactive delirium.** Probably the most easily recognized type, this may include restlessness (for example pacing, trying to get out of bed repeatedly), agitation, rapid mood changes, or hallucinations.
- **Hypoactive delirium.** This may include reduced activity, abnormal drowsiness, or appearing to be dazed.
- **Mixed delirium.** This presentation has both hyperactive and hypoactive features and may fluctuate from one to the other.

Distinguishing delirium from dementia

Those with underlying symptoms of dementia are at greater risk to develop delirium. Delirium may fail to be diagnosed if simply attributed to preexisting symptoms of dementia. However, dementia and delirium may be distinguished based on **onset, change in attention span, and fluctuating symptoms.**

- **Onset.** The onset of delirium occurs *suddenly.* In contrast, symptoms of dementia begin gradually, over time.
- **Attention.** The ability to stay focused or maintain attention is significantly impaired with delirium. Early symptoms of dementia do not generally affect attention span or alertness.
- **Fluctuation.** The appearance of delirium symptoms can fluctuate significantly and frequently throughout the day. In contrast, symptoms of dementia do not generally fluctuate in the course of a day.

Unrecognized and untreated delirium may result

in longer hospital inpatient stays, repeated hospital readmissions, progression of cognitive decline and general morbidity, and otherwise untimely death (Fong, Albuquerque, & Inouye, 2016).

Frequently, in assisted living environments, skilled rehabilitation, and skilled nursing facilities, patients or residents exhibiting a sudden change in behavior, particularly with characteristics of *hyperactive* delirium, are "diagnosed" with altered mental status (AMS) and transferred via ambulance to the hospital. AMS should be viewed as tantamount to "other," i.e. a manifestation that was neither appropriately assessed nor evaluated, and which begged for critical analysis of root cause. Though the ultimate diagnosis is frequently urinary tract infection or early pneumonia, many episodes are never adequately explained. Consequently, there is no substantive plan for the patient, a disservice to both patient and family, as well as to the healthcare system.

The Confusion Assessment Method (CAM), first developed by Dr. Sharon Inouye in 1990, is recognized as a valid, easy-to-use tool (Inouye, 2014) and can be utilized to facilitate prompt recognition of delirium and subsequent diagnosis and treatment. Oh, Fong, Hshieh, and Inouye (2017, p. 1163) describe the CAM as continuing "to be the most widely used delirium instrument worldwide," and "with high sensitivity, reliability, and specificity."

The CAM can be incorporated into the electronic medical record as a regular assessment on each shift, with immediate alerts and action for positive findings; the CAM can also be provided on paper for ancillary personnel and families to utilize for providing valuable information to nursing and medical personnel. The short form of the CAM identifies the following four indicators for identifying delirium:

1. Acute onset and fluctuating course, **and**
2. Inattention, **and** *either:*
3. Disorganized thinking, **or**
4. Altered level of consciousness.

Answering "yes" to numbers one and two, and *either* three or four, constitutes a positive screen for delirium and should prompt an evaluation by the physician and/or nurse practitioner.

Justic (2000) critiqued the term "ICU psychosis," revealing that the observed changes in levels of consciousness and attentiveness, increased disorientation, confusion, anxiety, agitation, and/or lethargy, were not necessarily a function of the patient's presence within the intensive care unit, but rather *delirium,* which can manifest in *any* hospital setting. Nevertheless, our healthcare system continues to have a persistent blind spot relative to delirium and its consequent morbidity, mortality, and significant healthcare costs.

Justic (2000) provided a compelling argument for identifying delirium as a distinct manifestation, and provided etiological aspects, a description of the characteristics of hyperactive and hypoactive delirium, a description of prevalence as 10 to 50 percent of "medically ill" inpatients, and prevalence in the elderly of 14 to 56 percent. The elderly with preexisting dementia are particularly vulnerable; as cited by Mittal et al. (2011), advanced age and cognitive impairment "are thought to be the two most common predisposing factors for delirium."

Oh et al. (2017) reviewed 127 articles on the subject, published between January 2011 and March 2017. The authors cite the prevalence of *undiagnosed* delirium as ranging between 55 percent and 70 percent in the years 2000 to 2001 and still 60 percent as recently as 2015. Clearly, little to no progress has been made.

It is obvious that manifestations of hyperactive or hypoactive delirium can appear to mimic symptoms of dementia and confound its identification as an acute episode. However, as discussed here, risk factors for delirium can be identified, preventive actions taken (Akunne et al., 2012), and prompt treatment initiated should symptoms manifest (Fong et al., 2016). Once again, those who know the patient well may be the first to raise the possibility of delirium and are vital advocates for the patient.

When we can know the predisposing factors noted by Mittal (2011) and the predictive and inpatient factors noted by Justic (2000), a preventive care plan can be established (see Figure 1 on page 68).
Putting these simple interventions in place often requires strident input of those who know the patient well. The high prevalence of undiagnosed and untreated delirium underscores the frequent misapprehension of its symptoms and widespread failure to therapeutically address these events for the majority of affected patients.

Summary

Peer-reviewed studies and review articles on delirium are ubiquitous, yet delirium continues to be unrecognized or misdiagnosed 60 percent of the time. The increased acute care length of stay, morbidity, mortality, and healthcare costs warrant new approaches. The Centers for Medicare and Medicaid Services (CMS) established the use of the CAM in its required skilled rehabilitation and skilled nursing facilities. It should likewise be standard for those same patients and

FIGURE 1: INTERVENTION RATIONALE	
Toileting schedule	The patient may not "remember" to use a call bell and wait for assistance. Unassisted toileting promotes falls, one of the "inpatient factors" that increases risk of delirium.
Assistance with meals and eating	The patient may not recognize a meal tray as his/her tray and/or may not be able to manipulate the packaging; poor nutrition increases the risk of skin breakdown, which also increases the risk of delirium.
Avoid or minimize urinary catheterization	Catheterization is a recognized "inpatient factor" contributing to delirium in and of itself (Justic, 2000); catheterization can also contribute to the iatrogenic complication of urinary tract infection.
Validation as communication technique	Repeatedly trying to "reality orient" a patient with an underlying neurocognitive disorder can agitate the patient and increase his/her degree of confusion.
Minimize the addition of new medications; encourage family to bring all current medications to the hospital	Adding multiple new medications increases delirium risk; reviewing all current medications may facilitate use of those medications versus prescribing multiple new medications.
Encourage family to bring the patient's eyeglasses, hearing aids to the hospital	Visual impairment is recognized as a "predictive factor" for delirium (Justic, 2000); any sensory impairment can increase confusion/ disorientation.
Encourage family and/or close friend to be with the patient as much as possible	The presence of those familiar to the patient will mitigate the risk of escalating confusion.

residents when they are cared for in acute or other subacute settings.

This relatively simple CAM tool, taking only minutes to complete, can become a required entry on each shift via prompting from the electronic medical record in the hospital as well as the subacute settings. The tool could also be provided to Certified Nursing Assistants, physical, occupational, speech, and respiratory therapy professionals, etc. electronically and/or on paper. Via this mechanism, any clinical staff interacting with the patient would have the means to identify the presence/absence of change in mental status, inattention, disorganized thinking, and/or altered level of consciousness, with the information readily passed to the patient's assigned nurse.

Oh et al. (2017) discuss how family or other caregivers can provide information on the patient's cognitive status *prior* to the acute care episode. Establishing the baseline should facilitate a plan of care that incorporates sensitivity to the aforementioned-delirium risk factors, promotes the identification of changes from baseline, changes that should not be dismissed as underlying dementia, but assessed as a possible acute episode of delirium requiring prompt treatment. Providing family or other familiar caregivers with a CAM tool can encourage and empower those familiar with the patient's baseline to recognize signs and symptoms of delirium and alert the nursing and medical staff. The family or friend can advise the clinical staff as to the patient's *usual* mood and demeanor, level of orientation, and functional abilities, illustrating the contrast with the acute episode that may be delirium. A positive screen for delirium should prompt further evaluation by the medical staff to formerly diagnose and treat the episode of delirium. Treatment must be individualized for each patient based on the predictive, predisposing, and inpatient factors affecting the patient, as well as preexisting comorbidities, specific medication issues, etc.

A CAM tool adapted for family caregivers and others well-acquainted with the patient could resemble Figure 2.

Though a definitive diagnosis of delirium would then need to be made by the appropriate physician or nurse practitioner, educating hospital, skilled rehabilitation, and long-term care facility staff to risk factors and preventive measures, and providing a simple tool for recognizing and reporting symptoms should go a long way to improving prevention and early diagnosis and treatment when symptoms manifest.

Addressing delirium in a proactive manner also aligns with the Triple Aim of the Institute for Healthcare Improvement (The IHI Triple Aim, n.d.), i.e.:

- Improving patient/family satisfaction with care
- Improving population health
- Decreasing the per capita cost of care

The assessment of delirium and proactive approaches are neither costly nor difficult.

FIGURE 2: CAM TOOL			
Is there a change in mental status from baseline?	☐ Yes	☐ No	
Does the patient have difficulty focusing attention – is he/she easily distracted or unable to follow a discussion?	☐ No	☐ Yes, continuously	☐ Yes, difficulty comes/goes
Is the patient's thinking disorganized or incoherent?	☐ No	☐ Yes, continuously	☐ Yes, difficulty comes/goes
Does the patient display any of the following? Easily startled by sound or touch; Dozing while being asked questions; Difficult to arouse and keep aroused; Cannot be aroused	☐ No	☐ Yes, continuously	☐ Yes, difficulty comes/goes

Our aging population and prevalence of Alzheimer's disease and related neurocognitive disorders that affect adults in many decades of life should support structured education on delirium for all healthcare professionals, as well as for those in allied professions charged with advocating for and protecting the health and well-being of older adults, such as the Certified Senior Advisor®.

MARIE, AGE EIGHTY-ONE, ARRIVES WITH HER BEST FRIEND Tilly for the pre-op doctor's visit before her full hip replacement surgery that is scheduled for the following week. Marie is an artist and an avid walker. Marie gave up her car a few years ago because she was starting to have some memory issues and was afraid of getting lost. So, being able to comfortably walk every day to do her errands around town was extremely important to Marie. Other than her painful hip and her mild cognitive issues, Marie was in great health. She had suffered a serious loss when her long-time partner died suddenly two years ago, but she dealt with the ensuing depression through her art and her daily walks. Marie refused most medication, and only occasionally took Tylenol when she could no longer tolerate her aching hip.

The doctor was pleased that Marie wasn't taking medication, since that minimized any medication side effects both pre- and post-op. He was a little bit concerned about her memory issues and wanted to make sure that there would be someone with Marie, while she was recovering from her surgery, to advise her nurses about Marie's typical attitude (engaged, interested in what was going on around her) and to notice if Marie started to have a change in mood, abilities, or orientation. Tilly agreed to be Marie's "go-to" person. The doctor explained that, because of Marie's cognition problems, the medical staff might assume that Marie's dementia was worsening, when in fact, she might be having an acute episode of delirium.

The day of Marie's surgery came, the surgery was successful, and she began her recovery in the hospital. Tilly was at Marie's side for the entire process. She

stayed in the hospital with Marie, sleeping in the reclining chair. The morning after Marie's surgery, Tilly was surprised that Marie seemed incredibly quiet, withdrawn, and was moving very slowly. Marie seemed unable to focus on the menu choices Tilly was giving her for breakfast. Although Tilly expected Marie to be in some pain from the surgery, she didn't expect Marie's attitude and mood to be so different than usual. Remembering what the doctor said, Tilly informed Marie's nurse that there might be something to be concerned about.

The nurse came in to assess Marie. When the nurse asked Marie where she was, Marie said "in a hotel." The nurse noted that Marie wasn't drinking her water and was very probably dehydrated. Tilly was asked to make sure that Marie drank her water and ate her breakfast.

About an hour later, the nurse came back in the room, and found that Marie was becoming very insistent that she "needed to get out of this hotel…NOW!" The nurse came in to do the CAM (Confusion Assessment Method) and determined that Marie was indeed delirious. The nurse convinced Marie that it might be a better plan to try using the toilet, so she removed Marie's catheter that had been placed for the operation. Within an hour, Marie had been assisted to the toilet by her physical therapist, and not only walked with her new hip, but was able to urinate on her own. The physical therapist walked her back to bed and suggested that what Marie needed most right now was some sleep.

Tilly was also pretty tired and figured that the best medicine for Marie at the moment was to get some uninterrupted sleep, something that is hard to come by in a hospital, especially if the patient is recovering from surgery. After talking to the nurse, Tilly put a "Quiet" sign on the outside of Marie's hospital room and shut the door, closed the blinds, turned on some soothing music, and turned out the lights so Marie could get some more sleep.

When Marie awoke, the nurse asked Marie to hold her hand and squeeze every time that the nurse said the letter "A" as she spelled out "s-a-v-e a h-e-a-r-t." Marie only squeezed the nurse's hand once. The nurse told Tilly that missing two letters, or squeezing on the wrong letter, is a sign of delirium (disorganized thinking). The nurse asked Tilly to do this every hour or so, to see if Marie's delirium was waning or maintaining. Over time, Marie was able to get all three letters correct. She slowly started to come out of her withdrawn state, started talking again, and was able to get up and move. She continued to have episodes of delirium but was able to recover fully over time. •CSA

Karen Gilbert serves as a vice president for Alzheimer's Community Care. Karen is a Certified Alzheimer's disease trainer from the Florida Department of Elder Affairs and is a Certified Dementia Practitioner from the National Council of Certified Dementia Practitioners. Karen has completed her Doctor of Nursing Practice degree from Palm Beach Atlantic University. Karen received her Bachelor of Science degree from the State University of New York and holds a Master of Science degree from Nova Southeastern University.

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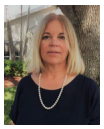

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