The presence of delirium can complicate and adversely affect a geriatric patient’s hospitalization. Nursing staff in a variety of hospital settings are challenged with providing care to patients who often are resistant, combative, or rendered incapable of speaking coherently. Patients who have suffered and recovered from acute delirium describe the experience as producing intense fear and causing them to become unaware of reality or sanity. Duppils and Wikblad (2007) identified nurses’ frustration at the inability to understand and establish a therapeutic relationship with delirious patients. A collaborative team approach to prevent and identify delirium supports the nursing goal of delivering the best possible care. Knowing the clinical signs and symptoms, risk factors, and treatment options may assist nurses in providing optimal care to at-risk geriatric patients within the hospital.

### Causes of Delirium

Delirium is described as an acute confusional state that involves fluctuating changes in mentation and consciousness, disorganized thinking, and inattention (Holly, Cantwell, & Jadotte, 2012). Causes are thought to be multifactorial and include advanced age, hypoxia, dehydration, malnutrition, polypharmacy, acute illness or trauma, surgical interventions, infection, electrolyte abnormalities, and the presence of pre-existing cognitive or sensory impairment (McDonnell & Timmins, 2012). Low body mass index or low body weight also has been suggested to contribute to the incidence of delirium in postoperative patients (Juliebo et al., 2009). Additional risk or precipitating factors include previous episodes of delirium, heavy alcohol use, uncontrolled pain, urinary retention, and organ dysfunction (Britton, 2011). Many medications also are implicated as causative agents in the development of delirium, including benzodiazepines, antidepressants, antipsychotics, antihistamines, analgesics, and anticholinergics (Catic, 2011). The pathophysiology of delirium remains unclear but is presumed to be complex and multidimensional (Tullmann, Mion, Fletcher, & Foreman, 2008). Studies suggest a strong correlation among delirium, neurotransmitter abnormality, and cholinergic deficiency (Holly et al., 2012).

### Incidence and Prevalence

Delirium is the most common complication of older adult hospitalization, affecting approximately 2.3 million patients each year (Rice et al., 2011). Adverse outcomes associated with delirium include increased hospital length of stay, functional and cognitive decline, 30-90 day readmissions, morbidity, mortality, admission to long-term care facilities, and falls (Conley, 2011). The financial impact of delirium is staggering, with annual estimated costs of $38-$152 billion (Rice et al., 2011). Given the negative effects of delirium on patients, caregivers, families, and health care delivery systems, nurses should be knowledgeable and skilled in delirium identification, prevention, and treatment methodologies.

### Identification of Symptoms

Three subtypes of delirium have been described in the literature (Holly et al., 2012). Hyperactive delirium is the easiest to identify because of associated extreme behavioral changes. Patients with hyperactive delirium are agitated, restless, and paranoid, and often suffer from delusions and hallucinations. Hypoactive delirium produces a decreased level of consciousness and lethargy. This type of delirium can be overlooked and therefore go undiagnosed, especially in patients with underlying dementia. Patients with the more common form of mixed delirium display a combination of hypo- and hyperactive behaviors. Symptoms can fluctuate from agitation to lethargy, or a patient can display a combination of behaviors concurrently.
Research suggests the severity and duration of acute delirium can be moderated by prompt and accurate recognition by caregivers, specifically nursing staff. Clinical features of delirium include an altered sleep-wake cycle, emotional extremes, fluctuating symptoms, delusions, hallucinations, disorientation, altered level of consciousness, changes in speech patterns, and the inability to pay attention. Onset of symptoms occurs over hours to days and can be acute or abrupt. Any sudden change in mental status can indicate the onset of delirium and warrants clinical investigation for a causative agent. In patients with prolonged or persistent delirium, prognosis tends to be poor and can result in an increased risk of requiring long-term care, functional decline, and death (Eeles et al., 2010). Holly and colleagues (2012) reported that if delirium is slow to improve or does not resolve, the patient has less than 50% likelihood of returning to cognitive baseline. Serial assessment by nursing staff can detect small changes in mental status and thus guide treatment and/or diagnostic protocols.

Confusion Assessment Method Algorithm

Because delirium is recognized poorly by doctors and nurses, the use of a standardized screening tool could affect early recognition and therefore treatment of delirium. The Confusion Assessment Method (CAM) was developed in 1990 to assist non-psychiatric health care providers to identify acute delirium (Wei, Fearing, Sternberg, & Inouye, 2008). Used extensively in research and clinical practice guidelines, the tool demonstrates a high degree of clinical accuracy in the detection of delirium. Over time, the tool has been adapted for specific patient populations, including patients in intensive care units, emergency departments, and long-term care settings. The CAM assesses the presence and/or severity of four clinical features of delirium: acute onset and a wavering course, inattention, disorganized thinking, and altered level of consciousness. Training sessions are required to teach nursing personnel effective use of the tool. With training and routine use, nurses can differentiate effectively among delirium, dementia without delirium, and delirium superimposed on dementia (Waszynski & Petrovic, 2008). Nurses assessing for acute onset and fluctuating course delirium should note changes in patient behavior. Often these changes are subtle and difficult to identify. Is the patient able to follow commands? Is he or she behaving differently or confused? Inattention can be recognized by easy distractibility or the inability to follow a conversation. Failure of the patient to recite the days of the week or months is an example of inattention. Rambling conversation, illogical thinking, or alternating from topic to topic demonstrates disorganized thinking. The delirious patient also can be hypervigilant, lethargic, sleepy, or stuporous.

Dementia or Delirium

A diagnostic dilemma exists when delirium is present in a patient suffering from a pre-existing cognitive impairment such as dementia. Delirium superimposed on dementia often is not recognized by medical caregivers and subsequently not treated, which can result in poor outcomes (Holly et al., 2012). McDonnell and Timmins (2012) identified dementia as one of the most common risk factors for the development of acute delirium in hospitalized older adults. Dementia is defined generally as impairment in mental function that results in memory, language, visuospatial skills, judgment, planning, and personality deficits (Flood & Buckwalter, 2009). Available dementia assessment tools include the Mini-Mental State Exam, the Clock Drawing Test, and the Mini-Cog. These tests are designed to detect alternations in memory, recall, visuospatial skills, attention, and language. Statistically, the Mini-Cog is recognized as having a high degree of sensitivity and reliability (Flood & Buckwalter, 2009). Flood and Buckwalter suggested use of an algorithm to detect delirium on dementia that includes a description of baseline mental status, rapid identification and treatment of symptoms, a search for causative agents and risk factors, and the provision of safety. Family members or caregivers should be interviewed to assist in describing baseline mental status and can be helpful when searching for an underlying physiologic cause for developing delirium in the demented patient.

Prevention and Treatment Strategies

McDonnell and Timmins (2012) suggested the incidence of delirium can be reduced nearly 30% by early detection of symptoms and use of prevention measures. Furthermore, nurses’ presence at the patient bedside 24 hours per day makes them uniquely able to detect acute, often subtle, mental status changes that herald delirium (Holly et al., 2012). An efficacious program tends to be interdisciplinary and multifactorial in approach to prevention and treatment. Awareness of risk and causative factors by all involved caregivers mitigates the severity and duration of acute delirium. Prevention of delirium begins with an accurate and comprehensive nursing admission assessment. Identification of baseline mental status is imperative and will assist nurses with serial CAM assessments. Tullmann and associates (2008) strongly recommended the use of a standardized protocol for assessing older adults. Comprehensive geriatric assessments should include evaluation of past medical and surgical history, social supports, allergies, adequate oxygenation, fluid and electrolyte balance, treatment of pain, precise medication reconciliation, assessment of bowel and bladder function, nutritional status, baseline functional and cognitive status, and screening for depression. Nurses should pay particular attention to the patient’s list of home medications, as polypharmacy is a major contributor to the development of delirium (Alexander, 2009). Medications that can contribute to development of delirium in older adults include diphenhydramine, opioids,
anticholinergics, sedatives, benzodi-
azepines, tricyclic antidepressants,
corticosteroids, lithium, antihista-
mines, H-2 receptor blockers, anti-
arrhythmics, diuretics, and general
anesthetics. Unfortunately, effects of
polypharmacy can be increased by
use of over-the-counter products,
especially those containing alcohol
(Catic, 2011). Within the confines of
the hospital, a multidimensional
approach to prevention of delirium
should include environmental adap-
tions and consultation by a geriatri-
cian if possible. Nursing care should
focus on maximizing cognitive,
functional, and health status. Pre-
vention strategies include the fol-
lowing (Conley, 2011; O’Mahoney,
Murthy, Akunne, & Young, 2011):
• Avoid high-risk medications.
• Reduce extraneous noise.
• Foster orientation.
• Provide good oral care and gener-
al hygiene
• Reduce sensory deprivation by
use of eyeglasses and hearing aids.
• Regulate bowel/bladder function.
• Avoid the use of tethers such as
indwelling urinary catheters and
restraints.
• Develop specific day/night sched-
ules. Keep lights on and shades up
during the day.
• Be respectful of sleep. Avoid wak-
ing the patient at night.
• Maximize functional status by
mobilizing the patient.
• Educate and involve family.
• Assess and maximize oxygena-
tion.
• Identify and treat infections
promptly.
• Perform a thorough pain assess-
ment regularly.
• Provide and encourage good
nutrition and hydration.
• Ensure safety with fall prevention
tactics.

Pain Management

Pain management in a patient
with delirium presents unique nurs-
ing challenges. Pain often is not rec-
ognized and therefore not treated in
patients who are cognitively im-
paired and unable to verbally express
themselves (Horgas & Miller, 2008).
Nurses are bound ethically to assess
and manage pain in all patients,
including the most vulnerable and
frail. As is true of a person with
dementia, a delirious patient can
lose the ability to self-report pain.
Therefore, delirious patients must be
assessed for verbal and nonverbal
signs of pain (O’Mahoney et al.,
2011). Research suggested the
PAINAD (Pain Assessment in
Advanced Dementia) method of
assessing pain in the cognitively
and verbally impaired demonstrates a
degree of reliability (DeWaters et al.,
2008). The PAINAD method is used
to assess and score patients for nega-
tive vocalizations, facial expressions,
consolability, body language, and
breathing patterns. Similar to the tra-
ditional method of self-reporting
pain, each behavior is assigned a
numeric rating. Patients with deliri-
um can demonstrate pain by splint-
ting their respirations, grimacing,
moaning, maintaining a rigid pos-
ture, clenching their fists, or
attempting to strike caregivers.
When caring for a patient with deliri-
um, nurses should be aware of and
search for potential causes of pain or
discomfort. Treatment strategies
depend on the total score, with 10
being the maximum. If possible,
patients should be assessed during
activities that can cause pain: posi-
tion changes, dressing changes, or
wound care. A trial of analgesics is
warranted if a delirious patient is
determined to be experiencing pain.
Equally important is reassessment of
the patient after medications have
been administered to ensure pain is
mitigated.

Safety Considerations

One of the most dramatic effects
of delirium is behavioral change,
potentiating increased nursing sur-
veillance and presenting significant
risk to patient safety. Delirium can
lead to profoundly unsafe behaviors
that require increased nursing super-
vision and contribute to restraint
usage (Voyer, McCusker, Cole, St-
Jacques, & Khomenko, 2007).
McDonnell and Timmins (2012)
found nurses experience increased
stress when caring for delirious
patients, and this self-reported stress
can affect quality of care. Falls
become a very real threat to safety.
Research indicates a patient’s risk of
falling increases six-fold after experi-
encing delirium during hospitaliza-
tion (Brooks, 2012). Fall prevention
tactics should be explored, including
the use of chair/bed alarms, low
beds, and crash pads, and the identi-
fication of patient-specific risk fac-
tors. Ironically, Flaherty and Little
(2011) reported a lack of evidence for
the use of patient companions as a
fall prevention strategy. In addition,
the use of physical restraints has
been identified as a risk factor for
inciting or worsening delirium and
should be avoided.

Medication

If behavioral and environmental
delirium prevention tactics fail to
control symptoms, use of a standard-
ized medication treatment protocol
may be appropriate. Catic (2011) rec-
ommended a combination of phar-
macologic and non-pharmacologic
methods to reduce the severity and
duration of delirium. Regrettably,
circumstances often warrant the use of
medications to provide relief of symp-
toms. The goal of therapy should be
the provision of patient safety while
maintaining the ability to provide
medical care (Flaherty, Gonzales, &
Dong, 2011). The antipsychotic hal-
doperidol (Haldol®) has been used
extensively for the short-term man-
gement of delirium (Holly et al.,
2012). According to Catic (2011), hal-
doperidol does not prevent delirium
but can reduce duration and severity.
Side effects of haloperidol include
hypotension, sedation, extrapyrami-
dal symptoms, and cardiac conduc-
tion interference. Evaluation by a
physician before initiating therapy is
required, and judicious use in older
adults is advised. Intravenous or in-
muscular dosages should be adjusted
according to severity of symptoms as
assessed and scored by nursing per-
sonnel. Progressive dosage and treat-
ment algorithms are suggested to
keep total dosage below 3 mg in a 24-
hour time period. A reduced dosage
can reduce the risk of developing
extrapyramidal side effects.
Summary

Patients and caregivers struggle with the unpleasant psychological and physical effects associated with delirium. Patients with delirium are at increased risk for falls, functional decline, long-term care placement, morbidity, and mortality (Catic, 2011). Nurses should be aware of subtle changes in mental status that can herald the onset of delirium and affect a treatment regimen aimed at reducing delirious symptoms. Use of medications to treat delirium requires careful assessment and reassessment by physicians and nurses. Delirium cannot be prevented in many cases, but a thoughtful, multidisciplinary approach can reduce the severity and/or shorten the course of symptoms, thereby reducing hospital length of stay, and decreasing health care costs and severity of illness. 

REFERENCES

ADDITIONAL READING

Objectives
This continuing nursing educational (CNE) activity is designed for nurses and other health care professionals who care for geriatric patients with delirium and their families. For those wishing to obtain CNE credit, an evaluation follows. After studying the information presented in this article, the nurse will be able to:
1. Describe the causes, incidence and prevalence, and symptoms of delirium.
2. Discuss the Delirium Assessment Method to identify acute delirium.
3. Define prevention and treatment strategies for delirium in older adults with delirium.
4. Explain pain management, safety, and medication considerations in older adults with delirium.

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