

# Incidence and Prevention of Delirium in Critical Care Patients



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## KEYWORDS

• Delirium • Intensive care • Complex adaptive system • Delirium screening

## KEY POINTS

- Delirium in the intensive care unit is a very prevalent issue.
- Process improvement projects can be performed successfully around prevention of and screening for delirium.
- Even with these projects, awareness, and educational materials, delirium remains hard to treat.

## INTRODUCTION

As much as nurses would love to think of their delirious patients in regards to Merriam-Webster's secondary definition, "a state of wild excitement and great happiness,"<sup>1</sup> it is not the case with critical care patients. These patients have a wide variety of causes of their delirium, treatment plans, and long-term outcomes. Delirium has been studied and written about a great deal, and the disease process may very well be a complex adaptive system in itself. This article discusses delirium screening and prevention at a major health system.

## REVIEW OF LITERATURE

Literature searches were performed in both Medline and CINAHL databases. It seems as if a plethora of literature exists on delirium, particularly delirium in Critical Care. References from previous evidence-based practice projects within this health care system related to delirium were also examined.

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The authors have nothing to disclose.

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The key feature used to define delirium is inattention that happens suddenly and oscillates over time.<sup>2</sup> “It is the inattention that appears to be the hallmark and pivotal feature of delirium.”<sup>2</sup> It is accompanied by either disorganized thinking or a change in level of consciousness, or both. There are 3 subtypes of delirium: hypoactive, hyperactive, and a combination of both.<sup>3</sup> It has been determined that the acute illness process probably precipitates hypoactive delirium,<sup>1,4–6</sup> while effects on neurotransmitters provided by drugs, chemicals, and anticholinergic agents are more likely to cause hyperactive delirium.<sup>1,7–9</sup>

There are multiple risk factors for delirium and these risks can mostly be grouped into precipitating factors and predisposing factors. It is said that the relationship between these factors is what determines the likelihood of onset of delirium.<sup>1</sup> Some of these risk factors include older age, established cognitive impairment, numerous acute illnesses, and numerous medications.<sup>10</sup> Delirium also has significant long-term effects, “including increased mortality, persistent cognitive impairment with functional decline, and an increase in nursing home placements after discharge.”<sup>11–15</sup> Another study revealed that delirium can increase the risk of developing dementia.<sup>16</sup>

Delirium in the intensive care unit (ICU) is associated with numerous negative outcomes, attributing to higher health care costs. Literature has revealed that delirium can be linked with a 31% increase in overall hospital costs and a 39% increase in ICU costs.<sup>15,17</sup> In 2008, it was estimated that annual costs in the United States could reach \$152 billion.<sup>15,18</sup> In a study that recruited patients and then looked at their records in the 4 years before the index admission and followed their records for 5 years after the index admission, it was noted that patients with delirium had an elevated risk of death and hospital admission for up to 5 years after the initial episode.<sup>19</sup>

Researchers agree that prevention is crucial in decreasing delirium. Multiple studies focused on prevention of delirium concentrate on educating staff, consulting experts, and protocols that seek out multiple risk factors.<sup>15,20–22</sup> This major health system focused on the same type of interventions for delirium prevention.

## CASE STUDY 1

A process improvement project was taken on at the authors’ facility to increase awareness and delirium screening by ICU nursing staff. This case study reviews the process improvement project.

In reviewing the literature, it was noted that up to 90% of ICU patients were found to be positive for delirium. Delirium increases morbidity, mortality, costs, and length of stay for critically ill patients. Delirium has long-term ramifications on the patient’s functional and mental status. At a university medical center, it was identified that patients in the ICU were not being screened with a standardized tool.

A multidisciplinary team was formed for a process improvement project with the goals of

1. Implementing delirium screening using the confusion assessment method intensive care unit (CAM-ICU) screening tool
2. Implementing an order set to help prevent and treat patients with delirium

A medical intensive care unit (MICU) was selected as the pilot unit to reduce the incidence of delirium. In the first Plan Do Check Act cycle, selected registered nurses were trained as supertrainers to do the initial baseline delirium screening using the CAM-ICU tool. There are essentially 2 steps to be taken when performing the CAM-ICU. During the first step, the patient’s sedation level is assessed. Patients who are deeply sedated, not arousable, combative, or agitated are excluded from the second

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