



Collaborative Delirium Prevention in the Age of COVID-19

Running Title: Delirium Prevention in the Age of COVID-19

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Dear Editor,

The coronavirus disease 2019 (COVID-19) pandemic is an unprecedented threat to all of us, regardless of age, nationality or socioeconomic status. However, older patients are especially at risk for life-threatening respiratory, cardiovascular, and cerebral complications.¹ As the COVID-19 pandemic continues to consume available global hospital resources, including in the United States, delirium prevention strategies may become an unintended casualty of scarce resource and personnel allocation.² A significant consequence of these realities is an anticipated surge of delirium incidence and duration in hospitalized patients, regardless of COVID-19 status, due to increased risk factors and barriers to implementation of evidence-based delirium prevention guidelines.^{3,4} An increase in delirium will result in both inadvertent harm to individuals and also exacerbation of hospital resource shortages.^{3,4} Our goals are to highlight this insidious complication and pose pragmatic recommendations for minimizing the risk and duration of delirium in all patients during the COVID-19 pandemic.

Even in the absence of drastic environmental modifications resulting from isolation and personal protective equipment (PPE) shortages, up to 50% to 70% of critically ill patients, and 10% to 15% of hospitalized general medical patients, develop delirium.^{3,5} Compared with non-delirious patients, delirious patients are more likely to consume more hospital staff time and precious life-support resources, stay longer, and develop in-hospital complications. Higher rates of delirium will also likely result in more patients discharged to a facility, and readmitted to the hospital.⁶ Such complications would greatly stress an already chaotic healthcare system during the COVID-19 pandemic.

Delirium is not inevitable; rather, it is preventable in approximately 30% to 40% of cases.³

Unfortunately, the COVID-19 management issues outlined in our **Table** bring to light potential barriers to our typical non-pharmacological prevention strategies such as the ABCDEF bundle in the ICU⁷ or the Hospital Elder Life Program (HELP).⁸ These interventions target risk factors for delirium, including inadequate pain management, overuse of sedation and time on mechanical ventilation, restraints, social isolation from loved ones, immobility and sleep disruption.^{7,8}

Delirium prevention programs are even more crucial in the era of COVID-19 and cannot be allowed to wither despite the challenges of integrating delirium prevention with COVID-19 care. Visitors are now prohibited for all hospitalized patients, with rare exceptions.⁹ Since we know that caregivers play pivotal roles in delirium prevention by reducing isolation, providing daytime stimulation to maintain sleep-wake cycles, and advocating for patient needs,¹⁰ this is likely to exacerbate rates of delirium, post-traumatic stress disorder and depression. For this reason, we posit that caregivers, even if family members or friends, *are* essential healthcare workers as they can prevent these poor clinical outcomes.¹¹ We believe that a designated caregiver should be allowed to accompany a non-COVID patient with cognitive impairment or delirium during hospitalization, provided that the caregiver passes the hospital health screen and wears a mask.

Patients hospitalized with COVID-19 face additional challenges that are outlined in the **Table**. Those who are critically ill, requiring ICU-level care, are most at risk of developing delirium. Those who improve may be transferred out of the ICU still delirious. Tests often occur late at night to ensure adequate time for equipment sterilization, disrupting sleep and causing disorientation for vulnerable patients. In addition to being isolated from visitors, these patients

also have minimal contact with staff, including nursing and rehab services, largely to preserve PPE and reduce exposure. While created with the intention of minimizing contagion, policies that increase isolation and immobility for hospitalized patients, combined with acute illness, produce a high-risk environment for delirium.³

We propose several strategies for delirium prevention adapted during this critical time, that require minimal effort to implement, and do not increase risk of exposure to healthcare workers (**Table**). We highlight meaningful steps that can occur outside patient rooms, as well as low-tech ways for improving communication that is hindered by PPE. We also propose ways to integrate technology into the workflow to reduce the isolation felt between patients and family members. Mitigating delirium during this chaotic time is possible with interdisciplinary teamwork and flexibility of roles.

Some might think that infection with the SARS-CoV-2 virus has created a new reality in the field of healthcare that would allow us to triage delirium “off the table” as a priority. We believe the opposite is true. A focus on delirium during the COVID-19 pandemic is more important than ever. Millions of people are at risk for delirium as a complementary and exacerbating factor of COVID-19. Doubling down on established protocols and guidelines for delirium prevention and management will help with our ventilator and hospital bed shortage. Delirium prevention tenets are not antithetical to the precautions needed to care for patients in a pandemic. Rather, these principles center on the humanistic qualities that inspired many of us to enter medicine in the first place. While faced with unprecedented social isolation, preventing delirium in our patients is something we must all embrace.

Conflict of Interest:

Sara C. LaHue reports no relevant disclosures.

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Table 1: Reducing Delirium Burden in COVID-19 Patients.

| Usual Delirium Care Pathways to Reduce Delirium Incidence and Duration |
|---|
| Systematic, routine delirium screening ¹ |
| Assess and adjust medications with deliriogenic potential ² |
| Avoid antipsychotics unless patient is a danger to self or others |
| Fundamental physical needs: |
| Assess and treat pain, nausea, constipation and cough |
| Treat dehydration with oral fluids |
| Ensure call button and telephone are within reach after every encounter |
| Cognitive stimulation and caregiver support: |
| Reorient patient with each interaction |
| Visitor pass for caregivers of COVID-19 negative patients with dementia or delirium |
| Facilitating telephone/video chat with family |
| Normalize sleep/wake cycles: |
| Provide ambient light/sunlight during day (e.g. open blinds and turn on lights) |
| Keep the room dark and quiet at night (e.g. close blinds, turn off lights and TV) |
| Schedule melatonin for sleep if needed |
| Limit room changes or tests that take place outside the room during night hours |
| Mobilization: |
| Prioritize assisted mobility during meals and medication administration |
| Keep chair and assistive devices in room |
| Encourage independent safe mobility at each encounter |
| Minimizing tethers: |
| Remove lines, catheters, pulse oximetry and telemetry when appropriate |
| Discontinue bladder and rectal catheters as soon as possible |
| Minimize use of physical restraints |
| Minimize sensory deprivation: |
| Keep eyeglasses within reach |
| Provide portable amplifying devices and/or personal hearing aids |
| Enhanced Delirium Care Pathways for COVID-19 Affected Patients |
| Usual Care Pathways as outlined above |
| Enhanced communication: |
| Provide card with name/photograph (e.g. “baseball card”) for patient to keep |
| Orient the patient to roles of each individual involved in care daily |
| Daily family/caregiver teleconferencing with “patient update” (tablets, iPads) |
| Speak slowly, in low tones with assessment for understanding |
| Enhanced mobilization: |
| Instructional handouts for room and bed exercises/stretches |

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|---|
| Physical/occupational therapists instruct physicians/nurses on patient exercises |
| Instruct patient on safe transferring |
| Enhanced considerations in intubated patients: ³ |
| Perform daily spontaneous awakening trials (SATs)* |
| Perform daily spontaneous breathing trials (SBTs)* |
| Avoid prolonged administration of deliriogenic medications, such as benzodiazepines |

¹ Routine delirium screening, a cornerstone of delirium care pathways, can be challenging at this time, even for non-COVID patients, due to limited resources. We still encourage asking patients orientation questions or offering daily attention tasks, such as reciting the days of the week backwards, during patient encounters.

² A medication of particular importance now is hydroxychloroquine, which can cause hallucinations.

³ In the Intensive Care Unit (ICU) patients are frequently intubated on mechanical ventilation and in shock on vasopressors. These patients experience profound isolation and barriers to mobility and so special attention should be given to any attempt at mitigating delirium. This is further exacerbated by the frequent need for high doses of sedation to suppress the severe COVID-19 cough, which acts to displace the endotracheal tube and exacerbate droplet spread of the virus. In turn, the sedation greatly enhances the likelihood of a prolonged delirium and so performing SATs and SBTs are of utmost importance.