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COLLABORATIVE DELIRIUM PREVENTION IN THE AGE OF COVID-19

To the 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 Table 1 bring to light potential barriers to our typical nonpharmacologic prevention strategies such as the 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 (ABCDEF) bundle in the intensive care unit (ICU)⁷ or the Hospital Elder Life Program.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 Because 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 excluding them is likely to exacerbate rates of

Table 1. Reducing Delirium Burden in COVID-19 Patients

Usual delirium care pathways to reduce delirium incidence and duration	
Systematic, routine delirium screening ^a	
Assess and adjust medications with deliriogenic potential ^b	
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 (eg, open blinds and turn on lights)	
Keep the room dark and quiet at night (eg, 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	
Minimize 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	
Enhanced communication	
Provide card with name/photograph (eg, “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/stretchers	
Physical/occupational therapists instruct physicians/nurses on patient exercises	
Instruct patient on safe transferring	
Enhanced considerations in intubated patients ^c	
Perform daily spontaneous awakening trials (SATs)	
Perform daily spontaneous breathing trials (SBTs)	

(Continues)

Table 1 (Contd.)

Avoid prolonged administration of deliriogenic medications, such as benzodiazepines

^aRoutine 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.

^bA medication of particular importance now is hydroxychloroquine, which can cause hallucinations.

^cIn 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.


delirium, posttraumatic stress disorder, and depression. For this reason, we posit that caregivers, even if family members or friends, *are* essential healthcare workers because 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 the caregiver passes the hospital health screen and wears a mask.

Patients hospitalized with COVID-19 face additional challenges (outlined in Table 1). 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 rehabilitation services, largely to preserve PPE and reduce exposure. Although 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 1). 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.

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BREAKING SOCIAL ISOLATION AMIDST COVID-19: A VIEWPOINT ON IMPROVING ACCESS TO TECHNOLOGY IN LONG-TERM CARE FACILITIES

To the Editor:

In addition to large-scale initiatives that have been implemented to prevent international spread of the coronavirus disease 2019 (COVID-19) pandemic, we should advocate for local action targeted at preventing the deleterious health effects of social isolation as a consequence of contingency measures.¹ As a frontline physician involved in the care of older adults living in long-term care (LTC) facilities, I have witnessed profound isolation in this population; my patients have become prisoners in their one-bedroom homes, isolated from each other and the outside world. This extreme loneliness should raise concern as it is a known risk factor for poor health outcomes, including anxiety, depression, malnourishment, and worsening dementia.^{2,3} One way of palliating social isolation would be to integrate technological advances in the care of populations at risk of being further secluded during health outbreaks.

From the encounters I experienced, many older individuals in LTC facilities lacked access to common devices (eg, a smartphone that would have allowed them to "facetime" with family members). Such network-connected devices would also allow patients to freely access health information in the wake of the pandemic, in addition to giving them the opportunity for telecare. More advanced technology, for instance augmented reality, could as well prove beneficial in this patient population, by reducing the burden of frailty, increasing well-being and social participation, and thus promoting successful aging.^{4,5} From the safety of the patients' own home, a device like a wireless virtual

reality (VR) headset could provide the patient with immersive experiences, ranging from connecting with loved ones in a common simulated space to visiting environments not otherwise accessible (eg, a music concert or a nature expedition that could include interaction with virtual animals). For older patients isolated in LTC facilities, providing them with these technology-dependent amenities and social contacts could potentially decrease their sense of loneliness and increase their self-perceived health, similarly to the benefits seen with physically going outdoors.^{6,7} These VR applications have shown positive impact, even in individuals with physical and cognitive impairment.⁸

Yet, none of these technologies was available in the centers I visited and making them available at present time would be impossible given the risk of disease exposure. I believe there are two reasons we have deprived the older population of technological advances: our inherent bias of assuming the aging population is passive and lacks the ability to learn, combined with the fact that this is a population who does not advocate for itself. However, as healthcare providers who strive to constantly improve the care we offer to our patients, we must update our practice of medicine and integrate assessment of technology use as part of the preventative healthcare we offer to vulnerable populations. We must structure our comprehensive assessment to dedicate time in asking our patients questions about concerns and barriers to accessing technology, while redirecting them to educational community resources when necessary. Whether it be in the context of social isolation to control a local gastroenteritis outbreak to a large-scale pandemic, giving older adults in LTC facilities the opportunity to access technology would enable them to maintain social contact and communication. Furthermore, it would allow physicians to virtually connect with these patients and increase frequency of medical contact. It is our duty as a society not only to address but also to prevent the long-term sequelae of a pandemic contingency planning, especially when health outcome entails experiencing invisible mental health illness.

In regards to policy-making decisions and resource allocation, the success of making technology more accessible to the marginalized older population should not be measured solely on the outcome of avoiding acute care services; its benefits should rather be assessed with functional health as the focus of intervention, including measures of psychophysical well-being and life satisfaction.⁹ Higher-end immersive technologies could be installed as a private expense in a patient's room; they could also be made available in common recreational areas within a leisure and/or fitness room, provided by the LTC facility through support of government subsidies and incentives aimed at promoting health of its aging population. However, more popular interactive devices, such as smartphones and computer tablets, must be made available as an affordable commodity for the means of every patient at risk of social isolation, while providing all the necessary ergonomic adjustments to those with impaired physical and sensory function. Finally, just like the pharmaceutical industries should not be allowed to simply sell to the highest bidder during a pandemic, big tech corporations should be required to collaborate with governmental social initiatives to ensure access to