

# Delirium Position Statement

Melissa Yager ▼ Betty R. Clark ▼ Nichole Gulley ▼ Dawn L. Denny

## Issue

Patients in specialty populations, such as orthopaedic and rehabilitative patients, may experience delirium. Delirium is often unrecognized or underdiagnosed in patients. Delirium is associated with increased lengths of stay, delayed discharge, and increased morbidity and mortality (Richards et al., 2016). Ineffective treatment of delirium can cause long-term, irreversible consequences for the hospitalized patient (Cole et al., 2015). All clinicians need to be vigilant in knowing the risk factors of delirium, maintaining skills to recognize symptoms through routine assessment using validated tools, and being prepared to implement interventions to prevent and treat delirium regardless of the setting (Burton et al., 2021).

## Background and Significance

With the goals of reducing delirium incidence and severity among older adults and empowering nurses caring for patients with delirium, the National Association of Orthopaedic Nurses (NAON) and the Association of Rehabilitation Nurses (ARN) partnered to provide guidance to prevent, recognize, and moderate the costly effects of delirium among our specialty patient populations (orthopaedic and rehabilitation patients). This guidance is based on current evidence and standards of care.

Delirium is a common and serious problem for older adults and is associated with adverse outcomes estimated to occur in 17.9% of older adults preoperatively and in 23.8% postoperatively (Silva et al., 2021). Delirium is a manifestation of acute brain dysfunction, with symptoms of inattention, changes in awareness, and cognition caused by a medical condition that cannot be attributed to a preexisting neurocognitive disorder (Wilson et al., 2020). Postoperative delirium inflicts a high cost on patients, affecting more than 2.6 million older adults in the United States each year (Fick et al., 2018). The healthcare system incurs an estimated cost of \$44,291 per patient over 1 year and \$56,474 per patient in cases of severe delirium (Gou et al., 2021).

Postoperative delirium is an independent risk factor for longer lengths of stay for older adults admitted to either the intensive care unit or medical or surgical units of the hospital (Kirfel et al., 2022). Typically, delirium symptoms in older adults develop following acute illness, hospitalization, or surgery and often lead

to loss of independence, cognitive decline, and increased morbidity and mortality (Fick et al., 2018), increasing the risk of death by 95% at 22.7 months following a delirium diagnosis compared with similar patients without delirium (Witlox et al., 2010). Although higher baseline cognitive function in patients is associated with less severe delirium, if delirium does occur, even older people with a healthy baseline risk have cognitive decline (Tsui et al., 2022).

Although delirium is largely preventable, the signs and symptoms are often underrecognized by clinicians (Bushi et al., 2019). This position statement originates from a nursing focus; however, the best management strategies are interprofessional with multidomain interventions that focus on treating precipitating factors, reviewing medications, managing distress, mitigating complications, and maintaining engagement with the environment (Wilson et al., 2020).

## Position Statement

It is the position of NAON and ARN that nurses play an important role in the prevention and early detection of delirium onset in the orthopaedic and rehabilitation patient populations. The understanding and application of evidence-based screening tools and interventions by nurses, along with recognition of patient-specific risk factors, can assist in lowering the incidence of delirium in these two patient populations (Holly, 2019; Oh-Park et al., 2018). NAON and ARN recommend nurses use the following principles to guide practice and policy decisions to reduce the burden posed by delirium on patients and the healthcare system.

Melissa Yager, PhD, RN, CNS, ONC, Director of the Orthopedic Service Line, Department of Orthopedics, Sharp HealthCare, San Diego, CA.

Betty R. Clark, MEd, BSN, RN, CRRN, Educational Services, Land O'Lakes, FL.

Nichole Gulley, MSN, APRN, AGCNS, CRRN, CMSRN, Spinal Cord Injury/Disorders Clinical Nurse Specialist, VA Northeast Ohio Healthcare System, Louis Stokes VA Medical Center, Cleveland, OH.

Dawn L. Denny, PhD, RN, ONC, Associate Professor, College of Nursing & Professional Disciplines, University of North Dakota, Grand Forks, ND.

The authors have disclosed no conflicts of interest.

**Correspondence:** Dawn L. Denny, College of Nursing & Professional Disciplines, University of North Dakota, 430 Oxford Street Stop 9025, Grand Forks, ND 58202 (dawn.denny@und.edu).

DOI: 10.1097/NOR.0000000000000940

## Prevention

Recognition of risk factors for delirium is crucial for prompt implementation of delirium mitigation strategies. Risk factors for developing delirium in older adults include the following:

- Age 65 years and older;
- Postoperative (especially orthopaedic and open heart surgeries);
- Uncontrolled pain;
- Interrupted sleep due to a loud environment or emotional distress;
- Sensory or neurological impairment, including Alzheimer's disease and dementia;
- Psychiatric disorders;
- Agitation;
- Ventilation and sedation;
- Use of restraints;
- Polypharmacy;
- Urinary retention;
- Constipation; and
- Hypoxia (Francis & Young, 2023; Inouye et al., 1993; Richards et al., 2016; Todd et al., 2017; Yang et al., 2017).

### ENVIRONMENTAL MODIFICATIONS

Modifications to the environment can help in the prevention and treatment of delirium.

- Keep the environment calm and quiet with adequate but soft, indirect light.
- Limit noise levels.
- Consider the use of night lights to combat night time confusion.
- Provide a hazard-free environment.
- Provide a call bell, explain purpose, and ensure ability to use.
- Involve family in patient care and teach how to identify signs and symptoms of delirium.
- Orient the patient as a normal part of daily care and activities.
- Repeat information as necessary for the confused person.
- Have calendars and clocks that are easily visible to assist with orienting the patient.
- Provide glasses, dentures, and hearing aids to maximize sensory perception.
- Establish a consistent routine (Burton et al., 2021).

### SLEEP HYGIENE

Sleep modifications to help prevent delirium may include the following:

- Use music, healing touch, massage therapy, aromatherapy, and relaxation techniques.
- Normalize sleep-wake cycles:
  - Lights off at night, on during the day,
  - Uninterrupted sleep at night, and
  - Quiet room with low-level lighting.

- Consider obtaining an order for melatonin for nonoperative patients (You et al., 2022).
- Schedule medication administration and blood draws to avoid interruption of sleep.
- Offer noncaffeinated warm drinks at bedtime.
- Assess routinely and medicate for pain, if needed (Burton et al., 2021; Richards et al., 2016; Todd et al., 2017).

### OTHER INTERVENTIONS TO PREVENT DELIRIUM

- Ensure adequate hydration and nutrition.
- Encourage family and/or patient support involvement.
- Establish early mobility or ambulation.
- Establish daily routine.
- Minimize the use of restraints.
- Ensure adequate oxygenation.
- Ensure prevention of constipation.
- Use short and simple sentences when communicating with patients.
- Listen to the patient and observe for nonverbal cues/behaviors.
- Offer activities and reading materials for cognitive stimulation.
- Ensure patients with hearing or visual impairments are wearing aids.

## Detection

Early recognition of emerging delirium symptoms can hasten clinical assessment and intervention implementation while facilitating prompt identification and correction of etiology by providers (Devlin et al., 2018). Interventions to detect delirium include the following:

- Implement delirium education that includes delirium assessment into nurse orientation and ongoing educational sessions (American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults, 2015).
- Include routine and regular assessment using a valid delirium screening tool as part of best practice in the care of older adults in acute non-ICU and post-acute care settings (Devlin et al., 2018).
- Incorporate delirium screening tools into the electronic health record charting system to facilitate documentation.
- Develop next step procedures for nurse detection of abnormal findings.

## Treatment

Continue all delirium prevention strategies in addition to the following treatment strategies:

- Medical treatment: The goal of medical treatment of delirium is to manage the underlying cause as promptly as possible. It is vital to remove the potential causes of delirium before using a pharmacological intervention.

- Infection is a common cause of delirium, especially pneumonia and urinary tract infection. Treat with appropriate antibiotics.
- Treat electrolyte imbalances with appropriate electrolyte replacements.
- Administer oxygen if hypoxic.
- Review the patient's medication profile and remove potential harmful medications, such as sedative hypnotics, anticholinergics, opioids, and benzodiazepines.
- Inform the interprofessional team of the change in mental status.
- Consult therapy team for mobility concerns and communication issues.
- Encourage self-care and monitor activities during the day.
- Incorporate interventions to promote participation:
  - Cognitive stimulation—puzzles, word searches, games,
  - Mobility, and
  - Music.
- Adjust plan of care to include frequent reorientation, fall prevention measures, bed and chair alarms and hourly mental status checks, reassessment, frequent toileting, and monitoring blood glucose and oxygen saturation levels.
- Agitation related to hyperactive delirium episodes should be treated with nonpharmacological interventions first before adding pharmacological interventions.
- Reserve the use of antipsychotics with lower anticholinergic effects, such as haloperidol, for short-term management of agitation that threatens substantial harm to self or others.
- Caution is needed for those with cardiopulmonary, renal, or hepatic disorders (Lauretani et al., 2020; Richards et al., 2016).

## Conclusion

Delirium is a prevalent, but also preventable, issue in both the orthopaedic and rehabilitation patient populations. It leads to costly financial burdens on the health-care system as well as to the patient and family. Delirium also causes setbacks in functional status as well as an increase in morbidity and mortality. Early detection and prevention of delirium are dependent upon clinician knowledge of patient-specific risk factors and use of valid and evidence-based screening tools, interventions, and treatments.

## REFERENCES

American Geriatrics Society Expert Panel on Postoperative Delirium in Older Adults. (2015). American Geriatrics Society abstracted clinical practice guideline for postoperative delirium in older adults. *Journal of the American Geriatrics Society*, 63(1), 142–150. <https://doi.org/10.1111/jgs.13281>

Burton, J. K., Craig, L., Yong, S. Q., Siddiqi, N., Teale, E. A., Woodhouse, R., Barugh, A. J., Shepherd, A. M., Brunton, A., Freeman, S. C., Sutton, A. J., & Quinn, T. J. (2021). Non-pharmacological interventions for preventing delirium in hospitalised non-ICU patients.

*Cochrane Database of Systematic Reviews*, 11(11), CD013307. <https://doi.org/10.1002/14651858.CD013307.pub3>

Bushi, S., Barrett, A. M., & Oh-Park, M. (2019). Inpatient rehabilitation delirium screening: Impact on acute care transfers and functional outcomes. *Physical Medicine & Rehabilitation: The Journal of Injury, Function and Rehabilitation*, 12(8), 766–774. <https://doi.org/10.1002/pmrj.12304>

Cole, M. G., Bailey, R., Bonnycastle, M., McCusker, J., Fung, S., Ciampi, A., Belzile, E., & Bai, C. (2015). Partial and no recovery from delirium in older hospitalized adults: Frequency and baseline risk factors. *Journal of the American Geriatrics Society*, 63(11), 2340–2348. <https://doi.org/10.1111/jgs.13791>

Devlin, J. W., Skrobik, Y., Gélinas, C., Needham, D. M., Slooter, A. J., Pandharipande, P. P., Watson, P. L., Weinhouse, G. L., Nunnally, M. E., Rochwerg, B., Balas, M. C., van den Boogaard, M., Bosma, K. J., Brummel, N. E., Chanques, G., Denehy, L., Drouot, X., Fraser, G., Harris, J. E., & Alhazzani, W. (2018). Clinical practice guidelines for the prevention and management of pain, agitation/sedation, delirium, immobility, and sleep disruption in adult patients in the ICU. *Critical Care Medicine*, 46(9), e825–e873. <http://doi.org/10.1097/CCM.0000000000003299>

Fick, D. M., Auerbach, A. D., Avidan, M. S., Busby-Whitehead, J., Wesley Ely, W., Jones, R. J., Marcantonio, E. R., Needham, D. M., Pandharipande, P., Robinson, T. N., Schmitt, E. M., Trivison, T. G., & Inouye, S. K. (2018). Network for Investigation of Delirium across the U.S. (NIDUS): Advancing the field of delirium with a new interdisciplinary research network. *Journal of the American Geriatrics Society*, 65(10), 2158–2160. <https://doi.org/10.1111/jgs.14942>

Francis, J., & Young, G. B. (2023). Diagnosis of delirium and confusional states. *UpToDate*. <https://www.uptodate.com/contents/diagnosis-of-delirium-and-confusional-states>

Gou, R. Y., Hsieh, T. T., Marcantonio, E. R., Cooper, Z., Jones, R. N., Trivison, T. G., Fong, T. G., Abdeen, A., Lange, J., Earp, B., Schmitt, E. M., Leslie, D. L., & Inouye, S. K. (2021). One-year Medicare costs associated with delirium in older patients undergoing major elective surgery. *JAMA Surgery*, 156(5), 430–442. <https://doi.org/10.1001/jamasurg.2020.7260>

Holly, C. (2019). Primary prevention to maintain cognition and prevent acute delirium following orthopaedic surgery. *Orthopaedic Nursing*, 38(4), 244–250. <https://doi.org/10.1097/nor.0000000000000569>

Inouye, S. K., Viscoli, C. M., Horwitz, R. I., Hurst, L. D., & Tinetti, M. E. (1993). A predictive model for delirium in hospitalized elderly medical patients based on admission characteristics. *Annals of Internal Medicine*, 119(6), 474–481. <https://doi.org/10.7326/0003-4819-119-6-199309150-00005>

Kirfel, A., Guttenthaler, V., Mayr, A., Coburn, M., Menzenbach, J., & Wittmann, M. (2022). Postoperative delirium is an independent factor influencing the length of stay of elderly patients in the intensive care unit and in hospital. *Journal of Anesthesia*, 36(3), 341–348. <https://doi.org/10.1007/s00540-022-03049-4>

Lauretani, F., Bellelli, G., Pelé, G., Morganti, S., Tagliaferri, S., & Maggio, M. (2020). Treatment of delirium in older persons: What we should not do! *International Journal of Molecular Sciences*, 21(7), 2397. <https://doi.org/10.3390/ijms21072397>

Oh-Park, M., Chen, P., Romel-Nichols, V., Hreha, K., Boukrina, O., & Barrett, A. M. (2018). Delirium

screening and management in inpatient rehabilitation facilities. *American Journal of Physical Medicine & Rehabilitation*, 97(10), 754–762. <https://doi.org/10.1097/phm.0000000000000962>

Richards, R., Azad, R., Adeola, M., & Clark, B. (2016). Delirium: The 21st century healthcare challenge for bedside clinicians. *Journal of Nursing Education and Practice*, 6(6), 8–16. <https://doi.org/10.5430/jnep.v6n6p8>

Silva, A. R., Regueira, P., Albuquerque, E., Baldeiras, I., Cardoso, A. L., Santana, I., & Cerejeira, J. (2021). Estimates of geriatric delirium frequency in noncardiac surgeries and its evaluation across the years: A systematic review and meta-analysis. *Journal of the American Medical Directors Association*, 22(3), 613–620.e9. <https://doi.org/10.1016/j.jamda.2020.08.017>

Todd, O. M., Gelrich, L., MacLulich, A. M., Driessen, M., Thomas, C., & Kreisel, S. H. (2017). Sleep disruption at home as an independent risk factor for postoperative delirium. *Journal of the American Geriatrics Society*, 65(5), 949–957. <https://doi.org/10.1111/jgs.14685>

Tsui, A., Searle, S. D., Bowden, H., Hoffmann, K., Hornby, J., Goslett, A., Weston-Clarke, M., Howes, L. H., Street, R., Perera, R., Tae, K., Kustermann, C., Chitalu, P., Razavi, B., Magni, F., Das, D., Kim, S., Chaturvedi, N., Sampson, E. L., & Davis, D. (2022). The effect of baseline cogni-

tion and delirium on long-term cognitive impairment and mortality: A prospective population-based study. *The Lancet. Healthy Longevity*, 3(4), e232–e241. [https://doi.org/10.1016/S2666-7568\(22\)00013-7](https://doi.org/10.1016/S2666-7568(22)00013-7)

Wilson, J. E., Mart, M. F., Cunningham, C., Shehavi, Y., Girard, T. D., MacLulich, A. M. J., Slooter, A. J. C., & Wesley Ely, W. (2020). Delirium. *Nature Reviews: Disease Primers*, 6, 90. <https://www.nature.com/articles/s41572-020-00223-4.pdf>

Witlox, J., Eurelings, L. S. M., de Jonghe, J. F. M., Kalisvaart, K. J., Eikelenboom, P., & van Gool, W. A. (2010). Delirium in elderly patients and the risk of postdischarge mortality, institutionalization, and dementia: A meta-analysis. *JAMA*, 304(4), 443–451. <https://doi.org/10.1001/jama.2010.1013>

Yang, Y., Zhao, X., Dong, T., Yang, Z., Zhang, Q., & Zhang, Y. (2017). Risk factors for postoperative delirium following hip fracture repair in elderly patients: A systematic review and meta-analysis. *Aging Clinical and Experimental Research*, 29(2), 115–126. <https://doi.org/10.1007/s40520-016-0541-6>

You, W., Fan, X. Y., Lei, C., Nie, C. C., Chen, Y., & Wang, X. L. (2022). Melatonin intervention to prevent delirium in hospitalized patients: A meta-analysis. *World Journal of Clinical Cases*, 10(12), 3773–3786. <https://doi.org/10.12998/wjcc.v10.i12.3773>