Hardwiring Best Practices for Safe Mobility and Delirium Prevention in Older Adult Patients

westhealth™ institute | UAB MEDICINE

Introduction

This case study, featuring the University of Alabama Birmingham Hospital, underscores how deliberate system redesign can embed evidence-based mobility and delirium prevention strategies into routine care. This approach improves outcomes for older adults — reducing complications, length of stay, and post-acute care needs — and offers a scalable model to transform front-line workflows across diverse hospital units and benefit other patient populations.

Overview

University of Alabama Birmingham Hospital has hardwired care principles for safe mobility and delirium prevention in older adult patients, emulating the Acute Care for Elders Unit, a specialized geriatric inpatient model of care. These efforts demonstrate the feasibility of redesigning care delivery systems to standardize best practices into workflows outside of specialized units. The success of this project exemplifies the necessary shift toward proactive, systemwide solutions to protect vulnerable populations.

UAB is driving a culture that integrates age-friendly care into standard operating procedures. This is evidenced by 1) the creation of a hospital department to serve as the operations center for age-friendly care implementation; 2) integrating members of the age-friendly implementation team into formal quality improvement initiatives; and 3) hardwiring assessments for function, mobility, cognition, and delirium for patients of all ages. Training equips staff to promote mobility safely and confidently, while dedicated quality teams monitor and sustain improvements. UAB staff have shown a sustained commitment to making mobility a central part of high-quality care for all patients.

Challenge and Opportunity

Two of the more common and potentially avoidable health conditions experienced by older adults are low mobility and incident delirium, which can result in a downward cycle of related adverse events and avoidable costs. Low mobility in hospitalized patients occurs when they are restricted to a bed or only transferring from a bed to chair. Even brief bouts of inactivity are harmful; older adults can lose up to 10% of muscle strength for every week of bed rest.[1] Despite the known risks, studies indicate older adults may spend over 80% of their hospital stays in bed.[2]

Low mobility also is a significant contributor to developing delirium. Approximately 30% of older patients, up to 50% of older post-surgical patients, and up to 80% of mechanically ventilated older patients experience delirium during or after a hospital stay.[3] A recent study demonstrated each episode of post-operative delirium added approximately $20,000 in costs to the hospitalization.[4] Delirium also has been associated with increased mortality among older adults.[5] Both low mobility and delirium contribute to increased complications, costs, lengths of stay, and post-acute care placement.[6]

Solution

Mobility and delirium are intertwined. Low mobility is a risk factor for developing delirium, and delirium prevention strategies include mobilizing patients. Likewise, delirious patients experience reduced opportunities to be mobilized. Thus, addressing them as a bundle of care processes is a way to maximize return on effort. Published outcomes from safe mobilization and/or delirium prevention interventions implemented in acute care and intensive care unit settings include return to pre-illness mobility status, maintenance of function, decreased hospital falls, reduced incident delirium, reduced length of stay, decreased discharges to post-acute care facilities, and increased ventilator-free days.[6-10] Based on these best practices, UAB developed and implemented an internal UAB Hospital bundle of care processes targeting safe mobility and delirium prevention and management. This bundle includes standardized screens for function, mobility, cognition, and delirium that drive care pathways.

Execution

UAB Hospital developed and implemented the UAB Age-Friendly Care Bundle (formerly called Virtual ACE) in a series of Plan-Do-Study-Act (PDSA) cycles over several years using standard quality improvement strategies. These steps include:[6,11]

1. **Secure interprofessional leadership support to ensure long-term success.** Leadership "owning" and communicating mobility and delirium prevention as an important part of quality and patient safety standard operating procedures is a key factor driving success. Because addressing mobility and delirium requires practice change from multiple disciplines — providers, nurses, patient care technicians, rehabilitation therapists, pharmacists, care transitions staff, and more — support from leaders of these key disciplines is critical for building program infrastructure required for sustained improvements. Leaders of the bundle development and implementation team should proactively provide progress and outcomes reports to senior leadership.

2. **Engage front-line interprofessional team members in the planning stage.** Forming an implementation team that includes front-line team members ensures the new care processes not only fit in workflows but also make the work easier. It also provides a forum to create urgency for why change is needed, a critical first step in a culture of ownership of the change at the microsystem level. For example, in every unit at UAB Hospital implementing the new care bundles, program leaders engaged the medical director, nurse manager, and other key interprofessional unit-based leaders and front-line staff to 1) learn about the unit's patient populations and strategic priorities; 2) measure and share patients' current state of mobility and delirium; 3) engage front-line staff in how best to incorporate the new care processes into current workflows (including what tools are needed to make the work easier); and 4) determine the optimal methodology to deliver education and follow-up coaching to ensure new processes are hardwired.

3. **Standardize and adapt workflows as needed.** Every unit in a hospital is its own microsystem with its own team culture and current state of mobility and delirium assessment and prevention, and in many cases, a unique patient population compared to other units. Adoption should be tailored to each unit's unique needs by adjusting the training and workflows, while addressing other barriers of front-line care that are identified over iterations of implementation.

4. **Develop infrastructure for easily accessible data.** Having real-time access to process and clinical outcomes data enables teams to monitor progress and drive continuous improvement. Dashboards should include both process measures — e.g., completion of mobility and delirium screens — and outcome measures — e.g., proportion of patients ambulating or screening positive for delirium.

Lessons Learned

Proactively mitigating the known barriers to safe mobilization and delirium prevention helps to ensure improved outcomes and garners increased trust from front-line staff. Common hurdles addressed:

- **Balance competing priorities by integrating solutions with existing work.** Identify and integrate with existing quality department infrastructure and/or with other ongoing initiatives to leverage and align with existing work.

- **Acknowledge the tension between fall prevention and safe mobility.** This is a culture change journey, and transitioning from a culture of preventing falls at all costs is central to increasing safe mobilization. Helpful in this journey is research demonstrating that mobilizing patients reduces the risk of falls.[12]

- **Set realistic goals for progressive mobility.** Develop education, structures, and processes that recognize, measure, and reward progressive mobility in patients. This helps to ensure front-line staff have realistic expectations about supporting patients to return to their baseline mobility level.

- **Standardize processes for identifying and communicating daily goals to the patient and family.** Patients and their families or care partners are vital members of the team to assist in delirium prevention and safe mobility. Proactively communicate the harms of prolonged bed rest and/or certain medicines such as sedatives that may have previously been viewed as part of healing.

- **Tackle changes incrementally.** Break the care bundle into its component parts and implement them in iterative PDSA cycles that build on each other and allow for progress to be hardwired, reported, and celebrated at each step. This will help ensure team members do not become overwhelmed.

Results

Hardwiring evidence-based care processes for safe mobility and delirium prevention at UAB Hospital showed initial success in two orthopedic surgery units.[11] Nurse adherence completing screenings for current functional status increased significantly, from 62.5% to 88.5%. Mobility was measured by patient, family, and/or staff responses to an interview assessing patient mobilizations in the prior 24 hours. The proportion of patients transferring from bed to chair (36.4% vs. 63.5%) and ambulating in the hallway (18.2% vs 33.7%) increased post-bundle implementation. The prevalence of abnormal delirium screens also was reduced from 13.6% to 4.8%.[11] Improvements were similar on additional units, and patient and caregiver surveys have demonstrated high satisfaction with the UAB Age-Friendly Care Bundle. A subsequent study of patients with cognitive impairment admitted to one of eight medical-surgical units also demonstrated increases in patients mobilized from bed to chair (29% vs. 51%) and ambulating in the hallway (13% vs. 27%) post-bundle.[13]

Conclusion

Low mobility and delirium in hospitalized older adults lead to numerous additional adverse outcomes that can complicate care delivery in the hospital and often persist post-hospitalization, including permanent new disability, cognitive decline, and shortened life-expectancy. Low mobility and delirium require the same sense of urgency expended to manage other serious hospital complications that threaten the lives and independence of older adult patients. Low-cost, feasible, and effective programs can be successful through gaining leadership support, engaging front-line stakeholders, ensuring new processes improve staff workflows, and establishing a process for continuously monitoring and reporting progress and outcomes. UAB Hospital's success is a powerful example of hardwiring proactive solutions across diverse care settings. When systems empower staff and leadership to collaborate and innovate, hospitals can transform standard practice at a large scale, to the benefit of patients and the hospital.

References

1. Wald HS, Ramaswamy R, Person MH, et al. The case for mobility assessment in hospitalized older adults: American Geriatrics Society White Paper Executive Summary. J Am Geriatric Soc 2019;67(1):11-16.
2. Brown CJ, Redden DT, Flood KL, Allman RM. The underrecognized epidemic of low mobility during hospitalization of older adults. J Am Geriatric Soc 2009;57:1660-1665.
3. Hshieh TT, Inouye SK, Oh ES. Delirium in the elderly. Clin Geriatr Med 2020;36:183-189.
4. Gou RY, Hshieh TT, Marcantonio ER, et al. One-year Medicare costs associated with delirium in older patients undergoing major elective surgery. JAMA Surgery 2021;156(5):462-470.
5. Tieges Z, Quinn T, MacKenzie L et al. Association between components of the delirium syndrome and outcomes in hospitalised adults: A systematic review and meta-analysis. BMC Geriatr 2021;21:162. https://doi.org/10.1186/s12877-021-02095-z
6. Lorgunpai SJ, Finke B, Burrows I, et al. Mobility Action Group: Using quality improvement methods to create a culture of hospital mobility. J Am Geriatric Soc 2020;68:2372-2381.
7. Brown CJ, Foley KT, Lowman JD, et al. Comparison of posthospitalization function and community mobility in hospital mobility program and usual care patients: A randomized clinical trial. JAMA Intern Med 2016:176(7):921-927.
8. Landefeld CS, Palmer RM, Kresevic DM, et al. A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. N Engl J Med 1995;332 (20), 1338-1344.
9. Inouye SK, Bogardus ST, Baker DI, et al. The hospital elder life program: A model of care to prevent cognitive and functional decline in older hospitalized patients. J Am Geriatr Soc 2000;48(12):1697-1706.
10. Schweickert WD, Pohlman MC, Pohlman AS, et al. Early physical and occupational therapy in mechanically ventilated, critically ill patients: A randomized controlled trial. Lancet 2009;373(9678):1874-1882
11. Booth KA, Simmons EE, Viles AF, et al. Improving geriatric care processes on two medical-surgical acute care units: A pilot study. J Healthcare Qual 2019;41(1):23-31.
12. Kuhn BM, Hirschman KB, Bracht J, et al. Relationship between mobility and falls in the hospital setting. BHM J Qual Patient Saf. 2023;5(2).
13. Vickers JK, Kennedy RE, Sharrell S, et al. Age-friendly care and mobility in hospitalized older adults with cognitive impairment: A feasibility quality improvement initiative. J Am Geriatr Soc 2025; Jun 30. doi: 10.1111/jgs.19582. Online ahead of print.