Preventing Patient Falls in Hospitals: Costs, Consequences, and Innovations

Strategies for Reducing Preventable Harm and Financial Burden in U.S. Acute Care Settings

866.212.2955

Executive Summary

Patient falls remain a persistent challenge in acute care hospitals across the United States, resulting in significant patient harm and substantial financial costs. Despite advancements in clinical practice, technology, and innovation, falls continue to be a leading cause of preventable injury. This white paper examines the scope and impact of patient falls, analyzes current approaches and associated costs, and explores innovative solutions that have the potential to enhance patient safety while mitigating financial harm to healthcare organizations.

Introduction

Hospitals are environments of healing but also present unique risks, particularly for patients who are acutely ill, unfamiliar with their surroundings, or experiencing changes in physical or cognitive status. Among these risks, patient falls stand out as a major cause of preventable harm. The consequences of such incidents are far-reaching: physical injury, psychological distress, extended hospital stays, increased costs, and legal liabilities.

Recent reports highlight progress in hospital safety and quality measures, with performance now surpassing pre-pandemic levels according to the 2024 American Hospital Association (AHA) report. Yet, while the ideal of zero harm remains aspirational, the persistence of patient falls underscores the need for ongoing focus and innovation.

The Scope and Impact of Patient Falls

Every year, between 700,000 and 1,000,000 hospitalized patients experience a fall, with approximately one-third of these incidents deemed preventable (AHRQ, 2025). The risk is exacerbated by factors inherent to the hospital setting, such as illness, unfamiliar environments, medications, treatments, and reduced physical activity, all of which can contribute to confusion, weakness, and instability. Notably, even patients who are typically active and independent may become vulnerable to falls during hospitalization.

The repercussions of patient falls extend beyond health outcomes. Falls among patients aged 65 and older incur an annual cost of $34 billion for the U.S. healthcare system (CDC, 2025). Research by Dykes et al. (2023) estimates the average total expense of a fall at $64,526, with direct costs accounting for $36,776. Surprisingly, the cost remains substantial regardless of the level of injury—a reflection of the follow-up assessments and care required in each case. Furthermore, these costs are not reimbursed, and legal claims related to falls add an average of $55,000 per event, exacerbated by public reporting requirements (Boswell, 2001).

Traditional Approaches to Fall Prevention: The Sitter Model

A commonly used intervention to prevent patient falls is the employment of patient sitters who are staff assigned to provide continuous one-to-one observation for those deemed at high risk. US acute care hospitals collectively spend over $1 million annually on sitter costs, a figure that continues to rise (Shields, 2021). In 2025, the estimated cost for a fully burdened hospital sitter in the United States ranges from $23.00 to $51.50 per hour (ZipRecruiter, 2025), factoring in an hourly wage of $16.50 to $36.00 plus a 43% addition for benefits and associated expenses.

Despite this substantial investment, the evidence supporting the efficacy of sitters in reducing patient falls is minimal (Greeley, 2020). Several studies suggest that while sitters may provide reassurance to patients and families, their impact on fall prevention is limited. Conversely, the simple elimination of sitters to cut costs is not a substantiated solution; rather, the focus should be on identifying and implementing interventions that address the underlying causes of falls and effectively reduce their occurrence.

e-bed Enclosure

Cost Analysis: Sitters Versus Alternative Solutions

To illustrate the financial impact, consider the average length of stay for older adults and those aged 45-64—both groups typically remain hospitalized for five days (Up to Date, 2025). At the upper end of the cost spectrum, employing a sitter 24 hours a day could result in a five-day cost of over $6,000 per patient. Such recurring expenses place a significant burden on hospital budgets, especially when factoring in the high volume of patients requiring observation.

Table One: Cost of the e-bed Enclosure as Compared to a Sitter Approach

Approach	Hourly Cost (USD)	Daily Cost (USD)	5-Day Cost (USD)	Notes
Sitter (Low Estimate)	$23.00	$552.00	$2,760.00	24 hours x $23.00/hour
Sitter (High Estimate)	$51.50	$1,236.00	$6,180.00	24 hours x $51.50/hour
e-bed Enclosure	-	Varies (Typically Lower)	Varies (Typically Lower)	Product and maintenance costs spread over many patients

Zip Recruiter. July 1, 2025. Accessed at: https://www.ziprecruiter.com/Jobs/Hospital-Patient-Sitter/2?
Harris, J. Enclosure bed: A protective and calming restraint. American Nurse. Accessed June 30,2025 at: https://www.myamericannurse.com/use-enclosure-beds/

Innovations in Fall Prevention

In response to the ongoing challenge of patient falls, healthcare organizations are embracing a range of innovative strategies:

- Hospital-at-Home Programs: By providing acute-level care in a patient's home, these programs reduce the risk of falls associated with unfamiliar hospital environments and empower patients to recover in familiar settings.
- Telehealth Solutions: The routine use of telehealth enables remote monitoring and consultation, which can be particularly beneficial in identifying patients at risk for falls and delivering timely interventions.
- Artificial Intelligence (AI) Tools: AI-driven platforms hold promise for enhancing efficiency and accelerating improvements in fall prevention by identifying patterns and risk factors that may not be immediately evident to clinicians.
- Technological Interventions: Advanced bed and room sensors, wearable alert devices, and remote video monitoring systems provide alternative means of ensuring patient safety without the need for continuous physical observation.

Among these innovations, the integration of AI and sensor technology is especially promising for real-time risk assessment and early intervention. For instance, predictive analytics can analyze patient data to flag those most likely to fall, prompting targeted preventive measures. Enclosed bed systems, sometimes referred to as "e-bed enclosures," are another avenue under exploration, offering a physical barrier that minimizes the risk of falls without requiring constant human supervision.

Table Two: Inclusion Criteria for Enclosure Bed Technology

Inclusion Criteria[1]
To be considered for the enclosure bed, the patient must be at high risk for falling and demonstrate one or more of the following: • Impulsiveness • Agitation • Inability or unwillingness to ask for assistance or respond to redirection • Unsteady gait • Wandering behavior

1 Harris, J. Enclosure bed: A protective and calming restraint. American Nurse. Accessed June 30,2025 at: https://www.myamericannurse.com/use-enclosure-beds/

Financial and Clinical Implications

The continued reliance on sitters represents a significant, non-reimbursable expense for hospitals, which draw from resources that could be reallocated toward evidence-based interventions with greater efficacy. These stark financial realities are compounded by the indirect costs of falls: extended hospital stays, additional treatments, regulatory penalties, and reputational harm associated with adverse events.

An effective fall prevention strategy balances patient safety, staff workload, and cost-effectiveness. It requires a shift from resource-intensive but minimally effective models like sitters to technology-enabled and process-driven approaches, underpinned by robust clinical evidence.

Recommendations for Hospital Leaders

Based on current evidence and emerging innovations, the following recommendations are proposed to enhance fall prevention while containing costs:

- Conduct Comprehensive Risk Assessments: Routinely assess each patient's risk for falls using validated tools, with particular attention to those newly admitted or experiencing changes in health status.
- Implement Targeted Interventions: Match the intensity of fall prevention measures to patient risk, focusing sitters or enhanced monitoring technologies on those with the highest likelihood of harm.
- Leverage Technology: Invest in proven technologies such as bed alarms, wireless monitoring systems, and AI-supported risk stratification tools to supplement or replace sitters.
- Consider the least restrictive restraint as a way to promote patient comfort and mobility.
- Educate Staff and Patients: Provide ongoing education and training to staff on fall risk identification and prevention strategies, and engage patients and families in safety initiatives.

- Monitor and Evaluate Outcomes: Employ continuous quality improvement processes to evaluate the effectiveness of interventions and adjust strategies accordingly.
- Review Sitter Utilization: Establish clear criteria for the use of sitters and routinely review cases to ensure appropriateness and explore alternatives where feasible.
- Foster a Culture of Safety: Promote organizational values that prioritize patient safety, encourage reporting of near misses, and support innovation in care delivery.

Conclusion

Preventing patient falls in hospitals remains both a clinical and financial imperative. While traditional approaches such as sitters continue to consume substantial resources, their impact on fall rates is questionable. The path forward lies in the adoption of innovative, evidence-based strategies that harness technology, empower clinical teams, and center the needs of patients. By focusing on continuous improvement and leveraging new tools and approaches, hospitals can reduce the incidence of falls, minimize non-reimbursable expenses, and achieve better outcomes for patients and staff alike.

Table Three: **Overcoming Barriers to Enclosure Technology**

	Enclosure bed	R2R e-bed Enclosure
Ease of Use	Adds an extra bed frame	Uses hospital owned bed frame and mattress
Duration to Implementation	Wait for rental company to deliver	Access eBed from clean utility closet
Therapeutic continuation	Must use enclosure bedframe and mattress	Use standard or air mattress (therapeutic surface)
Cleaning	Dissembling required for cleaning	No dissembling is needed for cleaning
	Polyester weaving is difficult to fully clean	Fully wipeable smooth vinyl
Safety	Zippers are accessible to patients	Zippers are not accessible to patients
Siderail safety	Use with no side rails which poses entrapment risk	Use with side rails up
Footprint	90-inch by 42-inch storage	14-inch by 42-inch storage

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Researched and Prepared by BariSolutions, Inc

barisolutions.com **info@barisolutions.com**