



KEY POINT SUMMARY

OBJECTIVES

A long-term care facility implemented a quality improvement project to reduce the inappropriate use of bed rails without increasing the risk of injuries from falls out of bed. The project strove to raise awareness of hospital bed-system entrapment hazards, educate caregivers and family members on the problems associated with bed-rail use, and develop manufacturing standards for new hospital bed systems, such as bed frames, mattresses, transfer devices, and bed rails.

BedSAFE. A Bed Safety Project for Frail Older Adults

Choi, Y., Hoffman, S. B., Powell-Cope, G., MacClellan, L., Bero, K.
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Key Concepts/Context

Bed rails may cause significant injury and death from entrapments. Systematic interventions are needed to guide practices that reduce bed-rail use while addressing related clinical issues.

Methods

The study included all 180-beds of three units in a long-term care facility. The program included an interdisciplinary team, alternatives to bed-rail use, the art of persuasion, and audit and feedback.

The interdisciplinary team identified a range of barriers and safety concerns and solutions. The nurses and rehabilitation staff contributed critical knowledge of residents' medical conditions and changes in functional status, as well as resident and family preferences. Direct care providers who knew the residents were helpful in persuading residents to lower bed rails. (residents or family members often insisted on using bed rails because they were symbols of safety, especially if they had used rails for a long time. The team had to explain that, in light of new information, the disadvantages of bed rails outweighed the advantages.) The engineer identified safety concerns sometimes overlooked by staff. The team visited each nursing home care unit on a monthly basis and conducted patient and environmental assessments, determined risk, and identified and offered bed-rail alternatives, such as environmental modifications, equipment, and accessories.

Using the BedSAFE Checklist, a data collector recorded bed-rail use monthly. Bed-rail use was defined as a rail in a raised position at the time the data were collected. Because all beds on each of the 60-bed units had full-length bed rails, each unit could have a range of 0 to 120 occurrences of bed-rail use. To determine bed-related falls pre- and post-BedSAFE, the team reviewed 2 years of incident reports:



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1 year prior to and the first year of BedSAFE. Researchers analyzed only incident reports of falls from bed. They also analyzed information about the circumstances of the fall, the prevalence and type of injury, environmental characteristics, and risk factors. Descriptive statistics and chi square analysis were used.

Findings

Comparing rail use pre- and post-BedSAFE, a point prevalence analysis showed a decrease in rail use of 27% across all three units (i.e., dementia, rehabilitation or skilled care, and hospice or respite units).

Further, the number of falls from bed decreased 11% (142 falls in the year preceding BedSAFE compared to 126 falls from bed in the year following the intervention). The rate of falls from bed per 1,000 patient days in the year preceding the intervention compared to the year of BedSAFE was 2.28 and 2.13, respectively. The percent of falls resulting in injury decreased from 30% to 28% (chi square NS).

Using incident report data, the team collected information surrounding the circumstances of patient falls from bed that occurred 1 year before and 1 year after the intervention. Although the overall frequency of injuries decreased only slightly, the team found a significant difference in post-intervention injuries when falls were categorized into those resulting in a fall from bed onto a floor mat and with no floor mat. Only 11% of post-intervention injuries happened when residents fell from bed and landed on a floor mat. The remaining 89% of injuries happened when there was no floor mat.

Limitations

Authors identified no limitations of the study.

Design Implications

This study identified that this multifactorial quality improvement project, BedSAFE, was effective in reducing falls from bed and fall-related injuries. Due to the multifactorial nature of the intervention, it is hard to isolate the impact of the environmental changes or modification on falls and fall-related injuries. However, experts suggest that it is effective at reducing falls from bed and fall-related injuries when hospitals make certain environmental modifications such as pushing the beds next to wall, moving furniture with sharp corners away from the beds, using furniture with rounded corners, and providing height-adjustable beds.