

SIGNIFICANCE

Falls are the leading cause of accidental death and non-fatal injuries in older adults.¹ Nearly a third of community-dwelling individuals over the age of 65 fall each year, but the incidence is considerably higher in health care settings, with the highest rates (50% to 75%) occurring in long-term-care facilities.² The annual death rate from falls averages 41 per 100,000 people and has been increasing in the past decade.¹

Falls are the leading cause of accidental death and non-fatal injuries in older adults.¹

In addition to increased morbidity and mortality, falls are associated with an increased length of stay in hospital and significant costs. The estimated total annual costs are \$16 to \$19 billion for nonfatal fall-related injuries and approximately \$170 million for fallrelated deaths; the average cost of each fall-related injury is \$24,962.^{1,3}

Several recommendations have been made to lessen the incidence of falls due to their preventable nature. There are several risk assessment scales available, such as the Morse⁴ and Hendrich scales,² and the Institute for Healthcare Improvement (IHI) has created a tool to enable individual institutions to identify patients who are risk for injury from falls and implement interventions to prevent or lessen these injuries.⁵ In addition, the Joint Commission on Accreditation of Healthcare Organizations has listed several risk reduction strategies for fall prevention,⁶ and the Agency for Healthcare Research and Quality (AHRQ) has developed an evidence-based program for fall and injury prevention.¹ Because more than half of all falls in the health care setting occur at or near the bedside,⁷ many intervention strategies include the use of bed-exit alarms, along with a low-rise bed that includes siderails.^{1,2,5,6}

Adventist Hinsdale Hospital is a 354-bed teaching hospital in Hinsdale, Illinois. In the hospital's Neurological Step Down Unit, the fall rate was 9.11 per 1000 patient days in the 2nd quarter of 2009 (9 falls/982 patient days). The fall rate for the Neurological Step Down Unit was substantially higher than the national benchmark rate (mean = 3.31; median = 3.06).

A survey performed to determine the reasons for this higher fall rate revealed that there were multiple different types of beds and bed-exit alarms in use in the hospital, with each type of alarm having its own specific instructions. The wide variety of instructions led to staff confusion, resulting in underutilization of the alarms.

PURPOSE

The 22-bed Neurological Step Down Unit was selected to pilot a quality improvement (QI) initiative to standardize the beds and bed-exit alarms. A staff educational program was also devised to re-emphasize the need for appropriate bedside care for fall prevention. The purpose of the QI initiative was to improve patient safety by reducing the number of falls; to decrease the clinical costs associated with patient falls and related injuries, as well as legal settlement costs; and to improve staff morale and efficiency.

Continuous quality improvement efforts on Neurological Step Down Unit result in 66% relative reduction in patient falls

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STRATEGY AND IMPLEMENTATION

The QI project was initiated in the 22-bed Neurological Step Down Unit in September 2009 (Figure 1). A Unit Champion and Super Users were selected to receive in-depth training and act as resources for all nursing staff on the unit at all times. All beds on the unit were replaced with fall-prevention beds* that were low in height and contained a multi-zone bed-exit system, a retractable frame, and extensive siderail coverage; these beds were tagged as "Neurological Step Down Beds Only" so that they remained on the unit. All nursing staff received in-depth training on appropriate use of the beds and the bed-exit alarm system. In addition, all nursing staff received comprehensive fall-prevention education.

The period from October 1, 2009, to December 31, 2009, was chosen as the test period. During the test period, falls were tracked on the unit as usual, with the addition of bed-exit alarm usage tracking at the time of a fall. At the end of the test period, the unit fall rate was compared with those for previous quarters and with national benchmarks. Staff members were surveyed to measure competency and satisfaction with equipment standardization at 30, 60, and 90 days after the start of the quality improvement initiative.



* Secure II[®] Med/Surg Bed configured to include Chaperone[®] Bed Exit with Zone Control[®] with Isoflex[®] Pressure Redistribution Surface, Stryker Medical Inc., Portage, MI

EVALUATION

During the test period, the QI initiative reduced the patient fall rate by 55%, from 9.11 (2nd quarter 2009) to 4.08 (4th quarter 2009) per 1000 patient bed days. The fall rate continued to improve over time, decreasing to 3.08 by the 2nd quarter 2010, for a total relative reduction of 66% (Figure 1). This reduction in falls is estimated to have resulted in savings of ~ $$125,000^{1,3}$ from 2nd Q 2009 to 2nd Q 2010 (Figure 2). In addition, the nursing surveys revealed a 100% staff competency rate, as well as a 100% rate of satisfaction with the standardization program (Figure 3).

Figure 2. Estimated Cost Savings Neurological Step Down Unit

nated Savings	\$124,810
ed Q2 2010 Cost of Falls	\$99,848
ed Q2 2009 Cost of Falls	\$224,658
ed Cost per Fall ^{1,3}	\$24,962
r of Falls Q2 2010	4
e Q2 2010	3.08
r of Falls Q2 2009	9
e Q2 2009	9.11
r of Neuro Step Down Unit Beds	22



REFERENCES

- Currie L. Fall and injury prevention. In Hughes RG (ed): Patient Safety and Quality: An Evidence-Based Handbook for Nurses. (AHRQ) Publication No. 08-0043). http://www.ncbi.nlm.nih.gov/bookshelf/br.fcgi?book=nursehb&part=ch10. Accessed September 14, 2010. . Gray-Miceli D. Nursing standard of practice protocol: Fall prevention. Reprinted from Gray-Miceli, D. Preventing falls in acute care. In Capezuti E, Zwicker D, Mezey M, Fulmer T (eds): Evidence-Based Geriatric Nursing Protocols For Best Practice, 3rd ed. New York: Springer Publishing Company, Inc; 2008. http://consultgerirn.org/topics/falls/want_to_know_more. Accessed September 14, 2010.
- . Centers for Medicare and Medicaid Services. Medicare program: Changes to the hospital inpatient prospective payment systems and fiscal
- 4. Morse Fall Scale. 1997. VA National Center for Patient Safety Fall Prevention and Management. http://www.patientsafety.gov/CogAids/ FallPrevention/index.html#page=page-4 Accessed September 16, 2010.

vear 2008 rates. Fed Regist. 2007;72:47379-47428

- fall-related patient injuries.
- from Falls. Cambridge, MA: Institute for Healthcare Improvement; 2008. http://www.ihi.org/IHI/Topics/PatientSafety/ReducingHarmfromFalls Tools/TCABHowToGuideReducingPatientInjuriesfromFalls.htm. Accessed September 15, 2010. The Joint Commission on Accreditation of Healthcare Organizations. Fall prevention program. http://www.jointcommission.c

Boushon B, Nielsen G, Quigley P, Rutherford P, Taylor J, Shannon D. Transforming Care at the Bedside How-to Guide: Reducing Patient Inj

- AccreditationPrograms/LongTermCare/Standards/09 FAQs/NPSG/Patient falls/NPSG.09.02.01/Fall+reduction+program.htm. Accessed September 14, 2010.
- Vass CD, Sahota O, Drummond A, et al. REFINE (Reducing Falls in In-patient Elderly)—a randomised controlled trial. Trials. 2009;10:83 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2753618/. Accessed September 15, 2010.