

Nurse-Driven Quality Improvement Intervention to Prevent Fall-Related Injuries Using Best Practices and Technology



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BACKGROUND AND RATIONALE

Research into effective fall prevention programs has shown, although multiple targeted interventions are effective in reducing patient falls in an acute care environment,¹⁻⁸ interventions are needed to help drive evidence-based fall prevention guidelines to the patient's bedside.⁹ A recent study by Tzeng et al emphasized the need to provide nursing education which promotes both skills and knowledge of effective fall prevention interventions.¹⁰

Supportive nursing leadership can be beneficial in ensuring caregiver compliance with fall prevention interventions by helping foster a positive approach to continuous quality improvement in patient safety.^{11,12} Commitment from a wide range of interdisciplinary staff, nurses, and leadership is important for developing and maintaining a successful fall

prevention program;^{11,12} however, root cause analyses are useful in identifying problem areas where fall prevention and patient safety can be enhanced through education or quality improvement.¹²

Interventions: The pilot study was initiated by nursing leadership with ongoing monitoring provided by two nursing leaders. The facility's Fall Prevention Policy was updated according to evidence-based best practices, and appropriate use of new bed technology was integrated into the revised policy with a risk-stratified intervention incorporating bed* technology for patients at fall risk. Nursing education was provided to all staff on policy changes by the Erlanger clinical team, and education provided on appropriate use of bed technology on 09/21/11 and 09/22/11.

* Stryker S3® Bed configured with Chaperone® Bed Exit with Zone Control® and iBed® Awareness, Stryker Corporation, Kalamazoo, MI

METHODS

- **OBJECTIVE:**

A pilot study was conducted to observe the effect of a risk-stratified fall prevention intervention on fall rates.

- **ETHICS:**

Institutional review board approval was obtained prior to conducting interventions or data collection.

- **CLINICAL SETTING:**

Two medical/surgical nursing units were selected for the pilot study.

- **TIMELINES:**

A historical baseline of 5 months (April 2011 through end-August 2011) was compared with a 5-month intervention period (October 2011 through end-February 2012). September 2011 was the washout period.

- **INTERVENTIONS:**

The pilot study was initiated by nursing leadership with ongoing monitoring provided by two nursing leaders. The facility's Fall Prevention Policy was updated according to evidence-based best practices, and appropriate use of new bed technology was integrated into the revised policy with a risk-stratified intervention as follows: Use of zone 2 + iBed awareness for patients at fall risk. Nursing education was provided to all staff on policy changes by the Erlanger clinical team, and education provided on appropriate use of bed technology on 09/21/11 and 09/22/11.

- **FALL PREVENTION POLICY:**

The following fall prevention interventions were required per the revised facility policy for patients with a fall risk score of 15 or greater (and monitored throughout the pilot study):

Fall Magnet; Fall armband; brake on; 2-3 side-rails up; bed in low position; bed exit on; bed zone set appropriately (1-3); iBed on; bed plugged in; patient positioned close to nurse's station with personal care items close, room uncluttered, and non-skid slippers available.

- **METRICS:**

Fall rate per 1000 patient days were calculated with the following formula: Total # of falls divided by total patient days multiplied by 1000 = fall rate (rate to 2 decimal points); compliance with appropriate use of bed technology with audits; compliance with adherence to facility fall prevention policy (8 tasks).

RESULTS

The intervention resulted in a 43% decrease in all falls and 36% decrease in bed-related falls when comparing 5 months before (April 2011 through end-August 2011) and 5 months after the intervention (October 2011 through end-February 2012).

FIGURE 1. FALL RATES PER 1000 PATIENT DAYS BEFORE AND AFTER PILOT STUDY

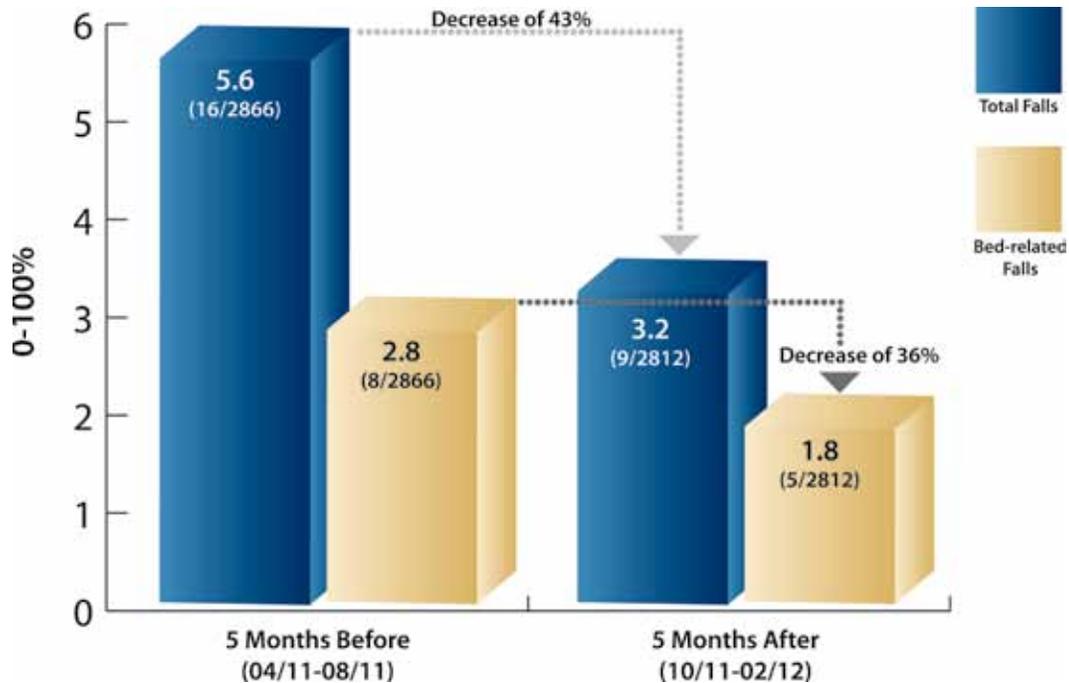


TABLE 1. COMPLIANCE WITH RISK-STRATIFIED TECHNOLOGY INTERVENTION & FACILITY POLICY

Month avg	Compliance Categories				
	Zone 2	iBed	Armband	Magnet	Bed Exit
10/11	22%	61%	65%	91%	60%
11/11	30%	74%	55%	82%	73%
12/11	31%	76%	48%	83%	69%
1/12	30%	66%	49%	81%	55%
2/12	49%	75%	72%	75%	74%
Total Avg	32%	70%	58%	82%	66%

*Compliance audits conducted on periodic basis on patients with fall risk score of 15 or greater.

DISCUSSION

The pilot study was considered to be successful and was implemented on a house-wide basis after March 2012. There were several observations made by nursing leadership which were addressed on the house-wide roll out:

- Effective fall prevention requires multiple evidence-based interventions and interdisciplinary team collaboration.
- Use of bed technology can help reduce the risk of falls in conjunction with other interventions specified in the facility's policy.
- Nursing leadership should develop a plan for addressing noncompliance with the fall prevention facility protocol and best practices in fall prevention through individual one-on-one counseling sessions or other techniques to ensure caregiver accountability.
- Caregivers need ongoing education regarding risk-stratified interventions for patients at risk for falling.

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