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Fall Prevention Assessment in the Intermediate Care Patient Population

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FALL PREVENTION ASSESSMENT IN THE INTERMEDIATE CARE PATIENT POPULATION

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Abstract

Fall Prevention Assessment in the Intermediate Care Patient Population

Falls cause greater than 600,000 deaths per year and are the most common injury in people over 65 years of age. Fall prevention in the acute care setting has been identified as key goal in the most recent JCAHO review process. Falls on an intermediary care unit lead to an increased rate of morbidity, delayed discharge, and excess cost expenditure.

Even with appropriate evidence-based tools in place, Hospital A's intermediate care unit, recorded an increased rate of falls; the highest rate in its health care system. An investigation identified factors contributing to the excessive fall rate. After assessing the current protocol, performing direct observation, reviewing charts, and surveying the nursing staff, appropriate protocols had been implemented and the patients' risk of falling was documented accurately the electronic health record (EHR). However, in an excess of caution, signage had been posted identifying virtually all patients as high risk. The presumptive, unintended consequence of this practice was decreased attention the most at-risk patients and thus contributed to the increased fall rate.

An educational intervention for staff was developed and proposed to redirect attention to the protocol ensuring that posted signage and other aspects of the protocol accurately reflected each patient's fall risk. Appropriate use of the protocol could allow nurses to be properly sensitized to high-risk patients and distribute resources more effectively. After a review of the relevant literature, a recommendation was made to add a validated tool to assess delirium as well. It is expected that including this assessment will further refine the identification of patients at high risk for falls.

Reinforcement of the existing, evidence-based, fall prevention protocol should heighten awareness as to appropriate signage of patient risk. Additional assessment of delirium will increase the sensitivity of identifying patients at higher risk of falling due to their compromised mental status. Successful implementation with this combined approach should decrease the rate of falls on an intermediate care unit thereby decreasing patient morbidity and excess hospital costs.

Fall Prevention Assessment in the Intermediate Care Patient Population

Falls are the leading cause of hospital injuries and can complicate or lengthen hospitalization stays (Degelau et al., 2012). A fall is "an event that results in the patient coming to rest inadvertently on the ground or other surface lower than the body" (Graham, 2012, p. 267). According to Staggs et al. (2015), fall rates are from 1.3 to 8.9 per 1000 bed days in acute care hospital units. Approximately one-half of all the patients who stay overnight in a hospital are at increased risk for a fall and almost one-half of those who do fall receive an injury that is emotional or physical (Spoelstra, Given, & Given, 2011). Unintentional emotional injuries occur from falling, such as distress, fear of falling again, and feeling unsafe in health care environments. Unintentional physical injuries include broken bones, lacerations, bruises, brain injuries, and even death (Haines & Healey, 2011).

Many risk factors for in-hospital falls have been identified including gait difficulty, prior history of falls, toileting needs, impaired mobility, and diminished mental status. Advanced age and use of particular classes of medication (e.g., opiates, sedatives) have also been implicated in falls (Evans et al., 2001).

Monetary consequences of falls are significant. Fall injuries lengthen hospital stays by an average of 6.3 days (The Joint Commission, 2013), an additional cost to the hospital that is often not reimbursed by insurance. "A group of economic and financial experts predicts that the total number of falls resulting in injury in the United States will be 17,293,000 by the year 2020 at a projected cost of $85.37 billion" (Poe et al., 2005, p. 110).

Purpose

The goal of this evidence-based practice (EBP) project was to use an EBP approach to identify the underlying causes for the unacceptably-high fall rate at Hospital A's intermediate care unit. The goal of this project was to improve patient safety, health, and well-being by analyzing processes that may explain underlying causes resulting in patient falls.

Review of the Literature

The literature search was conducted using CINAHL, MEDLINE, Cochrane Library, Joanna Briggs Institute, and National Guideline Clearinghouse databases. Some of the key search words included *accidental falls*, *fall reasons*, *inpatient*, *step down unit*, *hospital*, *fall rate*, *injury*, *fall screening tools*, *delirium,* and *dementia and falls*. Two hundred and nineteen relevant citations were retrieved. A closer review of 56 articles was performed. Twelve EBP falls and delirium protocol assessment tools, 9 randomized control trials, 8 qualitative studies, 15 cohort and observational studies, 12 systematic reviews, and 3 pilot studies were considered relevant to this project. Eleven of those articles were used for this paper.

Trombetti et al. (2013) described a multifactorial intervention program as a multidisciplinary, comprehensive assessment to address potential fracture- and fall-risk factors. This multifactorial intervention program provided individually-tailored interventions that targeted a patient's individual risk factors, impairments, and safety needs. As Level II evidence, this study concluded that a patient-specific, multifactorial intervention was best practice. Interventions included standardized assessment tools, gait

and mobility function assessments, delirium screening assessment tools, injury risk assessment, patient education, staff training, and staff education.

One systematic review by Van Oogteghem et al. (1998) reported a need for a multidimensional, dementia-specific approach to mobility assessment.

> Gradual loss of safe and independent mobility is a common feature of the advanced stages of dementia that impacts everyday function, safety, caregiving, and quality of life. Falls also become increasingly common as dementia progresses. Each year, 40%–60% of individuals with advanced dementia fall. (Van Ooteghem et al., 1998, p. 410)

According to Morris & O'Riordan, (2017), using a multifactorial approach to falls allowed them to identify risks and provide effective interventions to reduce falls by 20%-30%.

Evidence-Based Practice Model

The Iowa model of evidence-based practice was designed to process research findings into clinical practice through a series of standardized steps. The first step in the Iowa model was to recognize a problem-focused trigger that might require an EBP change (Brown, 2014). Next was to determine if the problem was a priority for the organization. If so, a team was convened consisting of individuals who will developed, evaluated, and implemented the EBP change. After that, relevant research was gathered via a literature search (Brown, 2014).

Once the research has been critiqued and appropriate information identified, it was then synthesized for use in practice. Using this data and with the collaboration of the end users, an intervention was designed to correct the perceived issue. At the conclusion

of this process, the intervention was implemented as a pilot practice change. Once the pilot was completed, data on the effect of the intervention were collected. Post data analysis, the team would recommend any necessary changes for adoption into practice. The final step in this model was an evaluation of the change (Brown, 2014). The Iowa model was deemed an appropriate model for Hospital A to guide the investigation, design, and implementation of the project

Evidence for the Problem

The rate of falls on the intermediate care unit at Hospital A had been the highest of all the units within this five hospital-wide system. The fall rate for this unit was higher than the hospital's average rate for 10 of the prior 13 months (Table 1). For example, in January 2019, this unit's fall rate was 2.5 times greater than the overall hospital's fall rate; approximate 20% of all hospital falls for those 10 months (S. Nolan, personal communication, February 4, 2020)

Table 1

Monthly Fall Data Hospital vs. Intermediate Care Unit

	Jan 2019	Feb 2019	March 2019	April 2019	May 2019	June 2019	July 2019	Aug 2019	Sept 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020
Hospital Falls/Month	26	31	26	23	18	25	24	24	16	26	21	22	30
Intermediate Care Unit Falls/Month	4	5	6	3	2	3	1	3	3	4	3	1	9
Hospital Rate Falls/ 1000 Pt. Days	2.47	3.47	2.6	2.46	1.79	2.77	2.50	2.62	1.71	2.98	2.33	2.43	2.73
Intermediate Care Unit Rate Falls/1000 Pt. Days	4.45	4.41	5.57	2.56	1.72	2.38	1.72	3.58	2.66	3.59	0.94	2.68	7.00

Project Development and Implementation Timelines

This project was initiated to investigate the chronically-high fall rate in one hospital's intermediate care unit. The successful launch of this EBP project required many steps (Table 2).

In May 2019, the first step was initiated by presenting the project proposal to the hospital stakeholders and apply for hospital institutional review board (IRB) approval. This proposed EBP project received IRB approval in November 2019 (Appendix A).

Once the site approvals were received, Step 2 was an application to the university's IRB for approval; acceptance was received in January 2020. Ongoing collaboration with the clinical advisor was necessary to gather the essential data to identify the unit's needs and formulate a plan. The investigation began by meeting with the unit's education committee and continued collaboratively with unit staff. A process of open-ended questioning was used to elicit attitudes, information, and insights regarding falls and fall prevention on the unit.

Applying principals of evidence-based fall prevention strategies derived from the literature review, the appropriateness of the current fall risk assessment tool (FRAT) was evaluated. The EPB project manager (DNP student) conducted audits that provided a detailed assessment of the protocol's implementation. Individual fall risk scores were extracted from the de-identified EMR and scoring was verified through chart review for accuracy.

A room-by-room assessment was completed to inspect the protocol strategies in place for fall prevention (e.g., two bed rails up, call bell within reach, *falling star* signage on the door). The project manager analyzed these observations to determine if each patient's fall risk was assessed properly and the protocol was implemented correctly. Meetings were held continuously

throughout the project period and unit leaders were updated regularly about the project and its progress.

Data collected from audits, chart reviews, staff interviews, and personal observations were analyzed. In March 2020, the project manager presented the results along with a corrective educational plan to hospital and unit administration.

Table 2

Project Timeline

Period	Task
	2019
May	Present project to Hospital A stakeholders
July/August	Literature review
September	Prepared IRB documents
November	Submitted IRB documents to hospital IRB committee
	2020
January	Received approval from Hospital IRB
	Hospital IRB approval submitted to university IRB for approval
	Perform audit
	Data analysis
February	Developed educational intervention and support tools
March	Presentation of project, relevant findings and educational intervention to stakeholders

Results

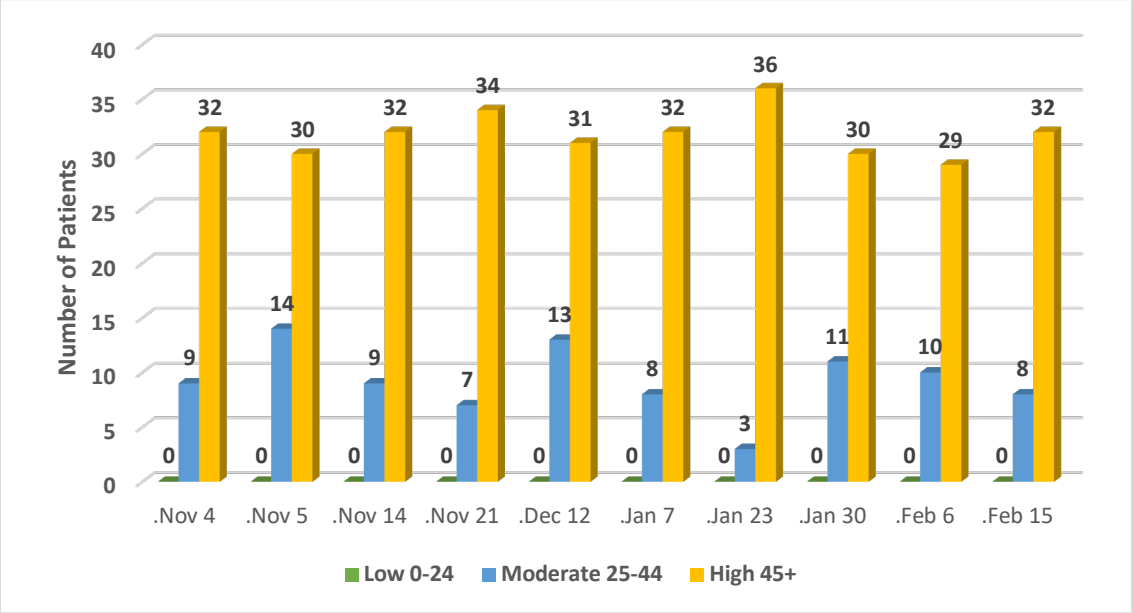
Staff interviews and physical inspections were conduct on the unit during the project period. The project manager's audit included a review of the fall prevention protocol, the FRAT in use on the unit, patients' individual FRAT scores, and the bedside implementation of the fall protocol. Ten daily audits were performed during the study period.

Comparing the literature review with the FRAT in place on the unit revealed that the FRAT was an evidence-based tool and appropriate in this setting. Nevertheless, this tool did not evaluate for delirium; another factor shown in the literature to be related to fall risk. Therefore, the project manager recommended enhancing the FRAT by adding the confusion assessment method for the ICU (CAM-ICU), a delirium assessment tool, to improve nurses' fall-risk assessment. The addition of this EBP-based delirium assessment to the Morse Fall Scale could further refine the identification of patients at the highest risk for falls.

The results of the physical audits on the unit revealed that nurses unfailingly (100%) assigned accurate FRAT scores based on the patients' individual needs as documented in the EMR. Therefore, there was no association between the number of falls per month and the severity of the FRAT score (Figure 1)

Figure 1

Severity of Fall Risk from FRAT Scores Audits

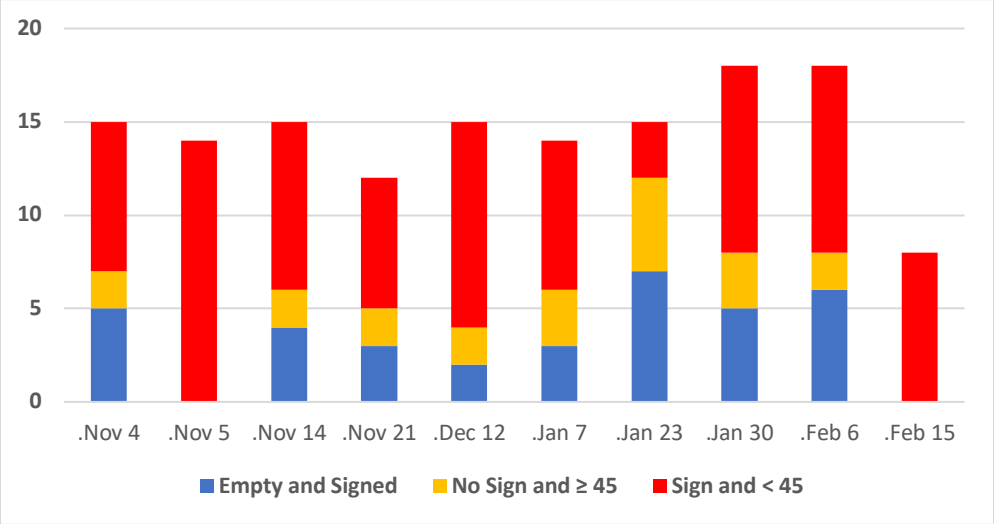


Bedside compliance of fall protocol was more problematic. Precautions in the room (e.g., patient orientation, safety rounds, non-skid footwear, bed rails) were uniformly and appropriately applied. Conversely, from 30% to 50% of the signage on the rooms was incorrect. The average rate of mistaken signs for the project period was 35%.

Three types of signage mistakes were recorded. Based on the score from the FRAT, a low score (0-24 points) and a moderate score (25-44 points) requires no signage. A score of 45 or higher does require the signage. These falling star signs alert staff to the high fall risk status so that they may implement other safety precautions (e.g., moving patients closer to the nursing station). Despite a high risk of falling, 14.5% of the time no high-risk sign was posted. Fall prevention signs were placed on empty (unoccupied) rooms 24% of the time. Finally, and unexpectedly, 61% of the time, patients with a low FRAT score (< 45 points) yet had high risk signage attached to their doors (Figure 2) This mismatch of bed occupancy, fall risk score, and signage was found throughout the project.

Figure 2

Frequency of Signage Mistakes



After this finding was documented, the project manager in a collaborative, non-confrontational way, queried the unit staff regarding the rationale for the signage discrepancy. Staff reported that labeling everyone as high-risk was from an abundance of caution. When asked to resolve the contradiction of all patients getting high risk labeling whether the FRAT required it or not, they responded in the following ways: "We don't want any of our patients to fall, so we make them all high risk;" "We know our patients better than a tool;" and "Better to be safe than sorry."

Once the project manager explained the evidence, the reasoning behind the FRAT, and informally reeducated them on the proper use of the tool, the nursing staff responded positively. "Oh I see . . . if we make everyone high risk then we don't give the right amount of attention to the truly high risk patients."

Cost-Benefit Analysis

Falls create an additional cost burden on the hospital through several mechanisms. First, falls without additional injury can increase length of stay (LOS). According to the Morello et al.

(2015) cohort study, patients who fell increased their LOS by an average of 8 days compared those who did not fall and incurred $6,669 of additional health care costs. Patients with injury falls had an additional 4-day increase in LOS compared to those who fell without injury and had over $4,727 in added health care costs. Given the benefit structure of hospital payments, these additional costs are not reimbursed and must be absorbed by the hospital. If a fall results in a fracture, serious trauma, or even death, these costs can escalate. Additional hidden costs to society can occur if patients are unable to return to an independent living status.

Significant financial incentives exist to limit the number and severity of inpatient falls; however, interventions must be cost effective as well. As part of this EBP project, the project manager provided analytical services to the hospital at no cost. The student also recommended an intervention and developed a re-education strategy with new tools to assist staff in properly implementing the protocols. Re-education could be included in the staff's routine, ongoing educational activities or as part of their daily *stand-up* meetings and does not require additional staff time.

Conclusion

This project identified relevant information to assess the high rate fall on one hospital unit. Adding a delirium evaluation tool to the current fall risk reduction practice should decrease the number of falls by addressing delirium as a risk factor. The audit revealed a potential cause of the high fall rate: the over utilization of high-fall-risk signage despite a low FRAT scores and signage in unoccupied rooms. Presumptively, the unintended consequence of this signage mismatch diluted attention to the truly high-risk patients and thus contributed to the excessively-high rate of falls. Appropriate use of the FRAT with the CAM-ICU should allow the nurses to be properly sensitized to the high-risk patients and distribute resources more effectively.

Although actual implementation of the corrective measures is beyond the scope of the current project, executing the educational intervention and auditing for sustainability would make an excellent future DNP project. This would be an especially attractive project as the curriculum and educational tools have already been prepared.

Despite appropriate attention to EBP tools, practices, and protocols, it is a saltatory lesson for all nurse practitioners, clinical nurse specialists, and policy makers to appreciate that the last step, implementation, may be the most important to achieve one's goals. Implementation, not mere design, requires confirmation, special attention, and sustainability. Aligning actions with intentions ensures that patients and health care facilities experience the full benefits of EBP.

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