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## Implementing an Evidence-Based Multifactorial, Multidisciplinary Fall Prevention Program in a Nursing and Rehabilitation Center to Reduce Fall Rates among Patients

Tincy Poovathur

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Implementing an Evidence-Based Multifactorial, Multidisciplinary Fall Prevention Program in a  
Nursing and Rehabilitation Center to Reduce Fall Rates among Patients

Tincy Poovathur, MSN, RN

Southern Illinois University Edwardsville

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**Executive Summary**

**Introduction of the Problem**

Falls are the leading cause of injury and injury-related death in adults aged 65 and older. According to the Centers for the Disease Control and Prevention (CDC, 2020), approximately 36 million older adults fall annually. Patients living in long-term care facilities have an increased risk for falls compared to their senior counterparts in the community. Approximately 50-75% of patients in long-term care facilities fall annually, and on an average, 100 to 200 falls are reported in a 100-bed nursing facility every year (CDC, 2017). One out of every five falls results in fatal injuries requiring hospitalization accounting for more than 32,000 deaths per year (CDC,2020). Moreover, fall-related injuries and their resulting expenditures are expected to increase substantially with the increasing aging population making this a problem of high priority. According to the CDC, it is estimated that by 2030, approximately 52 million older adults may fall, out of which 12 million may result in serious injuries (CDC, 2020). Although not all falls are entirely preventable, the Centers for Medicare and Medicaid Services (CMS, 2020) urges health care facilities to incorporate fall prevention initiatives into their facility's safety programs to reduce the number of falls among older adults in long-term care facilities.

The location in which this quality improvement project was conducted was at a 180-bed long-term care facility on the north side of Chicago. An average of 60 falls per month were reported at this facility (12.2 falls per 1000 bed days) which was five times higher than the national average (2.74-5.48 per 1000 bed days). Historically, about 97-99% of monthly falls reported at this facility were non-fatal falls. About one to three percent of their monthly falls

resulted in fractures or head injuries requiring hospitalization. Although the facility had a fall prevention protocol in place, it was not evidence-based and was not successful in reducing fall incidences. There was a significant gap in sustainable fall prevention interventions.

Implementing a successful evidence-based fall prevention program was of utmost importance for reducing fall rates and ensuring patient safety.

### **Literature Review**

Prevention of falls in long term care facilities requires several different comprehensive approaches to manage the unique risk factors predisposing older adults to falls. Since many conditions can compound the risk of falls in the elderly, each risk factor should be assessed separately to intervene effectively. There is a lack of compelling evidence that any one particular intervention will reliably decrease the incidence of falls in elderly patients (Oxtoby, 2015).

However, there is strong support in the literature for implementing multifactorial patient assessments and systematic interventions can reduce falls by 20-30 %. Moreover, an audit report from the Royal College of Physicians (2015) recommends a multidisciplinary team approach for fall reduction because it helps individualize multifactorial interventions most effectively.

In several studies, multifactorial interventions are recommended as a primary treatment strategy for fall prevention in the elderly. Multifactorial interventions include an initial fall risk assessment and customized treatment interventions explicitly tailored to each patient's fall-risk profile (Hopewell et al., 2018). According to the Joint Commission (2015), a thorough multifactorial fall risk assessment using a standardized, validated fall risk screening tool should be the essential first step to multifactorial fall prevention interventions. The Morse Falls Score (MFS) has proven to be an effective screening tool in predicting falls in the elderly, and all interdisciplinary staff should be adequately trained to use the tool to ensure inter-rater reliability.

Once a comprehensive fall risk assessment is completed, the interdisciplinary team should then plan care interventions to mitigate each risk identified. Consistent evidence suggests that multifactorial interventions (exercise, vitamin D supplementation, nutritional supplements, medication review, hip protectors) appear to be the most effective interventions to prevent falls in long-term care facilities and hospital settings (Guirguis-Blake, Michael, Perdue, Coppola, & Beil, 2018). Additionally, there is increasing evidence in the literature supporting the incorporation of post-fall huddles (PFH) with staff in reducing the incidences of preventable falls in elderly patients (Buckner & Sherry, 2019). Utilizing PFH has proven to be effective in identifying the root cause of fall events, thus facilitating an individualized care plan to prevent future falls. Implementing PFH shows promising results for reducing the risk of repeat falls in patients, improving staff communication, and providing pertinent information for designing fall prevention programs.

### **Project Methods**

The purpose of this quality improvement project was to increase patient safety by adding new evidence-based interventions to the facility's existing fall precautions to reduce fall incidences over time. This project aimed to develop and implement an evidence-based multifactorial fall prevention program to reduce facility's fall rates by at least 20-30% over the five weeks post-implementation period. This goal was achieved by creating a new multidisciplinary fall injury prevention team, educating staff on fall prevention and fall risk assessment tool (Morse Fall Score), introducing post-fall huddles (PFH) by utilizing the form developed by the U.S Department of Veterans Affairs Palo Alto Healthcare System, and creating interdisciplinary fall champions.

Institutional Review Board (IRB) jurisdiction was deferred by the facility's DON to the Southern Illinois University Edwardsville IRB. Approval to carry out the proposed project at the long-term care facility was obtained. The residents did not need to consent because the project was considered a quality improvement effort, not an investigational research study.

## **Evaluation**

The first objective of this quality improvement project was to educate the facility's staff on new evidence-based fall prevention initiatives. A pre-test questionnaire developed by AHRQ was utilized to assess staff knowledge on falls in elderly patients. A 30-minute staff development in-service was provided using a PowerPoint presentation on fall precautions in nursing facilities. Materials and handouts for the presentation were developed using content from the AHRQ's website. Staff members were educated on utilizing the Morse Fall Score as a validated tool for their patient's fall risk assessment. Following the presentation, a post-test was conducted using the AHRQ post-test questionnaire to assess staff training efficacy. Participation in the pre-test and post-test was voluntary. A total of 52 multidisciplinary staff ( $n = 52$ ) attended the in-service, and all of them (100%) participated in the pre and post-tests administered. A paired-sample t-test was conducted to evaluate the impact of the in-service on staff's scores on the pre/post-test. There was a statistically significant increase in scores from pre-test ( $M = 5.23$ ,  $SD = 1.78$ ) to post-test ( $M = 7.48$ ,  $SD = 1.39$ ) with a p-value of  $3.5604E - 25$  (two-paired). The post-test evaluation indicated that the in-service provided increased the fall prevention knowledge of those in attendance.

After the staff development in-service was provided, the new fall prevention protocol was implemented in the facility. First, baseline fall rates were assessed. The facility's quality assurance committee provided aggregate fall rate data for the study from August 2020 to January

2021. Next, an interdisciplinary fall prevention team was formed, which consisted of the Director of Nursing as the team leader, the facility's nurse practitioner, the MDS care plan coordinator, the physical therapy director, a registered nurse, a CNA, an activity assistant, and three fall champions. Fall champions were then assigned to each of the three facility units.

Outcome measures included: fall rate data post-implementation, utilization of fall champions in monitoring and reporting fall data, compliance rates using post-huddle forms, and effective utilization of the Morse Fall Scale. Baseline data revealed that the fall pre-intervention fall rate averaged 12.2 falls per 1000 bed days. Five weeks after implementation, fall rate data was collected again to assess the new fall prevention interventions' efficacy. There was a 40% reduction in the fall incidence rate to 4.9 falls per 1000 bed days. There were no injurious falls or post-fall hospitalizations reported during these five weeks. Data was also collected on the number of post-fall huddles that were completed in the month following implementation. Data showed that fall champions were utilized each time a fall incident occurred. With each reported fall incident, post-fall huddles were conducted on 100% of falls in the post-intervention period. Additionally, fall champions completed post-huddle forms in their entirety with timely reporting of falls to the fall prevention team at a rate of 100%. Furthermore, the staff was 100% successful in using the Morse Fall Scale on each fall risk patient.

One of the limitations of the project was primarily from restrictions due to the COVID pandemic. To comply with social distancing regulations, multiple small in-service sessions were needed. Each session was conducted with eight to ten staff members. Three to four small sessions were needed on three different days to accommodate staff schedules. Multiple virtual meetings were needed with the management to coordinate project work and respect COVID restrictions.

## **Impact on Practice**

The new evidence-based fall prevention program successfully increased patient safety by reducing the facility's overall fall incidences. A 40% reduction in monthly fall rates was experienced during the five-week post-project implementation period. The program also facilitated teamwork by enhancing communication among multidisciplinary staff. The incorporation of the Morse Fall Score as a part of routine fall assessment helped multidisciplinary staff accurately and consistently assess high fall-risk patients, institute timely fall precautions, and disseminate care plans to coordinate patient care. Furthermore, the introduction of post-fall champions was well received by the staff and the management. They were influential in timely reporting of falls to the fall prevention team.

Monthly monitoring of fall rates and post-fall huddle compliance rates will help to determine the long-term impact of newly introduced evidence-based fall prevention interventions in the facility moving forward. Managerial staff was encouraged to update their current fall prevention policy with the new evidence-based fall prevention initiatives to decrease the burden of future falls in this facility.

## **Conclusion**

Evidence shows that multifactorial, multidisciplinary fall interventions effectively reduce fall incidences by 20-30% in skilled nursing facilities. The evidence-based fall prevention program consisting of staff education, incorporation of the Morse Fall Score in the fall risk assessment, post-fall huddles, creation of a multidisciplinary fall prevention team, and fall champions successfully reduced the facility's fall incidences by 40 % during a five-week post-implementation period. The program was well-received by management and staff and plans are underway to update the current fall prevention policy to include the new recommendations.

