Decreasing Falls in the Emergency Department

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Abstract

Decreasing falls in the Emergency Department (ED) is essential to protecting patient safety during the patient's time in the ED. When a patient falls, it produces adverse effects contributing to poor patient outcomes. A community hospital part of a private, not-for-profit healthcare network in central North Carolina identified a need to decrease falls in the ED. This quality improvement project aimed to decrease falls in the ED through staff compliance in completing the fall risk assessment tool on each patient and providing fall prevention interventions to patients identified as being at high risk for falls. Staff were educated on the importance of using the Memorial Emergency Department Fall Risk Assessment Tool (MEDFRAT) on each patient. Staff were expected to apply nonskid socks, bed alarms, and fall-risk armbands to patients identified as high risk for falling. Weekly audits occurred for twelve weeks during project implementation. There was a decrease in falls during project implementation compared to the same time the year prior. Using a bundled approach with a reliable fall risk assessment tool and multifactorial fall prevention interventions in the project site ED successfully decreased falls, optimizing patient safety and well-being.

Keywords: emergency department, fall risk, fall prevention, multifactorial, patient safety

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Section I. Introduction

Background

Patient falls in the emergency department (ED) commonly occur and are a safety consideration. The National Database of Nursing Quality Indicators (NDNQI), a national database developed by the American Nurses Association, compiles reviews of medical and administrative records measuring outcomes and nursing care quality. The NDNQI characterizes a fall as a patient's descent to the floor or another surface. Falls are abrupt and unforeseen, resulting in or without patient injury (The National Database of Nursing Quality Indicators, 2020). Annually in the United States, approximately 700,000 to 1,000,000 people fall in the hospital (Agency for Healthcare Research and Quality, 2021). While patients present to the ED seeking treatment for preexisting complaints, complicating the visit with further assessments, imaging, and potential injuries because of a fall occurrence is unfavorable (Cook et al., 2020). According to Cook et al. (2020), patient falls contribute to increased length of stay, hospital admission, increased costs of health care, and poor patient outcomes. The ED manages the balance of unique patient populations with varying acuities and high patient volumes, making fall prediction and prevention challenging. Using a reliable fall risk assessment tool and fall prevention interventions optimizes the safety of patients, decreasing the occurrence of adverse events.

Organizational Needs Statement

Decreasing the occurrence of falls in the emergency department is relevant as the adverse event compromises patient safety and requires additional hospital resources. In the emergency department of a community hospital in central North Carolina, there is a need to decrease patient fall occurrences. This ED is part of a private, not-for-profit healthcare network. The department

has 25 private acute care rooms, nine triage and minor care rooms, and five transitions of care beds. The hospital, along with the others in the health system, has Magnet status from the American Nurses Credentialing Center (ANCC) and commits to maintaining a culture where improved outcomes are prioritized (████████, 2022a).

Between January 2022 to July 2022, there were 30 reported falls in the project site ED, seven resulting in injury (████████, personal communication, July 10, 2022). During the same period, there were 122 falls among the five emergency departments in the health system (personal communication, July 12, 2022). Notably, 25% of the reported falls amongst the health system's emergency departments have occurred in the project site ED. This organization prides itself in ensuring the integration of health and well-being within the community. Unfortunately, this vision is not upheld if patients leave the facility sustaining new injuries from falls while in the organization's care.

The Centers for Medicare and Medicaid Services (CMS) have falls designated as a high-cost preventable condition (Centers for Medicare and Medicaid Services [CMS], 2021). Patient falls with trauma are listed on the hospital-acquired conditions (HAC) list, indicating reduced reimbursements to hospitals that score in the highest percentage for the Total HAC Score calculated annually (CMS, 2021). CMS payments are crucial to health systems' financial status. Additionally, to maintain ANCC Magnet Status through redesignation every four years, an analysis of the hospital quality performance is included in the reapplication process (American Nurses Credentialing Center, n.d.). Sentinel events, including falls, affect hospital performance evaluation results. Therefore, decreasing falls and prevention are pivotal in optimizing CMS reimbursement and maintaining Magnet designation.

Any patient fall is dangerous as it disrupts patient care flow and introduces a risk for further injury. The Joint Commission Center for Transforming Healthcare (2022) reports that 30%-35% of falls result in injury. Of the falls previously discussed, 23% (7) of falls at the project site ED resulted in injury. Specific examples of injuries include fractured bones and lacerations requiring further imaging, wound care, and surgery. While the department is below the national average, significant emphasis must be placed on decreasing falls through fall prevention to promote safe, quality care with positive patient outcomes.

The goal to decrease patient falls in the ED aligns with the Institute for Healthcare Improvement (IHI) Triple Aim Initiative. The dimensions of this framework include improving care quality, decreasing healthcare costs, and improving the health of populations (Institute for Healthcare Improvement [IHI], 2022). Promoting patient safety through fall prevention ensures care excellence, reduces visit costs, and encourages overall well-being.

According to the literature, a multifactorial approach is best utilized to prevent falls in the emergency department (Cook et al., 2020). Ensuring the continued use of a fall risk assessment tool and prevention interventions will increase patient safety. The Memorial Emergency Department Fall Risk Assessment Tool (MEDFRAT) is specific to the emergency department and effectively predicts patients' fall risk (Luo et al., 2020). Moreover, after answering six questions, the tool assigns the patient a low, moderate, or high-risk level. The tool is favored in the ED as it takes approximately 10 seconds to complete and has high predictability. Recommended implementation of prevention interventions includes video monitoring, bed exit alarm technology, engagement of staff and leadership, and clear communication (Cook et al., 2020). While falls can be troublesome to anticipate, these interventions can successfully diminish the adverse event.

The MEDFRAT is currently used in the project site ED which needs to decrease fall rates. The assessment is done during triage for every patient and every 12 hours after the initial evaluation (personal communication, July 10, 2022). Additionally, after the fall risk assessment and risk level assignment, the electronic medical record (EMR) recommends interventions for the assigned risk level. This department has access to interventions such as fall prevention signage in patient rooms, yellow fall risk armbands, yellow fall risk nonskid socks, stretcher alarms, telesitters, and floor mats. Each staff member must also complete an annual fall prevention education module. Despite the opportunities for assessment and prevention resources available, there continues to be a significant amount of patient fall occurrences.

Problem Statement

Fall prevention in the ED can be challenging due to the accelerated pace, patient acuity, and high volume (Scott et al., 2018). In addition, considerations of alcohol intoxication, sedation medications, and trauma are factors specific to acute ED patients, increasing their chance of falls. While the department requires a fall risk assessment during triage for each patient and supplies fall prevention resources, the data indicates significant fall occurrences in this ED despite current interventions. This project addressed this gap in care by promoting interventions to prevent falls.

Purpose Statement

This quality improvement project aimed to decrease the number of falls in the emergency department by determining the trends and gaps using the fall risk assessment tool and fall prevention resources available. Fidelity to the current policy and recommended interventions reduced falls in the project site ED.

Section II. Evidence

Literature Review

A literature search explored fall prevention and risk assessment tools in the emergency department. PubMed and the Cumulative Index to Nursing and Allied Health Literature (CINAHL) were used during the literature search. Terms used while searching include the emergency department, emergency room, outpatient, fall prevention, fall intervention, fall risk, fall assessment, multifactorial fall prevention, and multifactorial fall intervention. General inclusion criteria for both databases included articles published within the last five years, articles obtained from academic journals, articles in English, and full text only. Exclusion criteria included articles discussing falls in settings other than the emergency department.

In a PubMed search with the MeSH terms ("emergency department" OR "emergency room" OR "outpatient") AND ("fall prevention" OR "fall risk" OR "fall assessment"), 216 articles resulted. After reviewing article titles and abstracts, four articles were kept for reading in their entirety. In another search using the terms ("emergency department" OR "emergency room" OR "outpatient") AND ("fall prevention" OR "fall risk" OR "fall assessment"), 81 articles resulted. Again, after reading article titles and abstracts, five articles were kept from this search to read further. In the third PubMed search with the terms ("emergency department" OR "emergency room" OR "outpatient") AND ("multi-factorial fall prevention" OR "multifactorial fall prevention" OR "multi-factorial fall intervention"), eight articles resulted. After reading the titles and abstracts of the resulting articles, one article from this search was selected to read in its entirety.

In a CINAHL search with the terms ("emergency department" OR "emergency room" OR outpatient) AND ("fall prevention" OR "fall risk" OR "fall assessment"), 158 articles resulted.

After reviewing article titles and abstracts, two articles were selected for reading in their entirety. In another search using the terms ("emergency department" OR "emergency room" OR "outpatient") AND ("fall prevention" OR "fall intervention"), the review of the 58 articles resulted in five articles being kept for reading in their entirety. In the third CINAHL search with the terms ("fall prevention" OR "fall prevention intervention") AND ("multifactorial" OR "multi-factorial"), of the 70 articles that resulted, four were selected to read in their entirety.

Among the articles read in full, those deemed appropriate were determined to be evidence levels V or above using the Johns Hopkins Evidence-based Practice Model Levels of Evidence (Dang & Dearholt, 2018). Between the literature searches of both databases, six articles were included in the literature review on fall prevention in the emergency department across the lifespan. A vast range of knowledge and insight was learned, compiled, and discussed through advanced study and analysis of the selected literature.

Current State of Knowledge

The articles found through the literature search validated that falls in the emergency department are a safety concern as they increase healthcare costs, hospital admissions, and morbidity and mortality rates (Cook et al., 2020). For example, one study found that annual Medicare expenditures reached nearly 13 billion dollars related to hospital falls (Hoffman et al., 2017). Generally, falls occur due to intrinsic or extrinsic factors. Intrinsic factors include physiologic components such as age, sensory deficits, medical diagnoses, and medications (Stoeckle et al., 2019). Extrinsic factors include environmental features such as mobility devices, poor lighting, and insufficient footwear. The risk of falls is higher in the ED due to the fast-paced environment with a wide range of acuity and special populations. In addition, patients that are

intoxicated, acutely ill, or recently sedated, coupled with departmental overcrowding, contribute

to the increased risk of falls in the ED (Scott et al., 2018).

While the literature acknowledges that the risk of falls in the ED is heightened and the

unpredictable nature of the falls makes prevention efforts convoluted, there is a reported distinct

gap with limited knowledge related to fall prevention in the ED (Cook et al., 2020). This gap in

research, identified during a quality improvement project conducted at a Level 1 trauma center

emergency department, can best be attributed to the brief and episodic nature of the encounters in

the ED (Cook et al., 2020). Additionally, there is scarce insight into fall risk assessment tools

designed specifically for the ED (Scott et al., 2018). Future research is needed as most of the

evidence and literature relates to fall risk assessment and prevention in inpatient hospital units

(Stoeckle et al., 2019). However, despite these known disparities, there are some literature

findings regarding evidence-based approaches to fall risk assessment and prevention in the ED.

Current Approaches to Solving Population Problem

A bundled approach comprised of a fall risk assessment, multifactorial interventions, and

a supported unit culture rooted in fall prevention has been identified in the literature review as a

method to decrease falls in the ED (Pop et al., 2020). By completing a triage-based fall risk

assessment, patients arriving at the ED will be quantitatively assessed for fall risk using an ED

specific tool (Scott et al., 2018). Scott et al. (2018) conducted a study to evaluate the reliability

and validity of the Memorial ED Fall Risk Assessment tool (MEDFRAT) in an emergency

department at a 600-bed academic facility. Findings from the study revealed positive interrater

reliability of .70 with the tool. Scott et al. found a 48% decrease in falls with the tool, along with

staff education in the ED. The tool is easy to understand, use, and implement while successfully

decreasing fall rates in the ED. Luo et al. (2020) conducted a study on two ED campuses in the

United States to evaluate the MEDFRAT compared to a fall risk assessment tool not developed

for patients in the ED and assess the nursing staff's perception of the tool. The MEDFRAT was

found to have high predictability in accurately identifying the patient's fall risk, allowing for

adequate interventions to prevent fall occurrences better, and was preferred by most nurses in the

study compared to a non-ED-specific fall risk tool (Luo et al., 2020).

Because no definitive intervention will invariably prevent falls, using a multifactorial

strategy unique to each ED is recommended to decrease patient falls (Cook et al., 2020).

Multifactorial interventions include proactively and consistently utilizing interventions in

patients with an increased risk of falling. Stoeckle et al. (2019) found multifactorial fall

prevention interventions more favorable than a single intervention in reducing falls. The quality

improvement project by Stoeckle et al. implemented specific multifactorial interventions,

including nursing and patient education through educational sessions and handouts, and

identification signs for high fall risk patients. Pop et al. (2020) conducted a study in a 676-bed

urban academic medical center that implemented a comprehensive fall bundle tailored to a

specific ED with practical and readily applicable interventions. The bundled approach included

frontline staff involvement, continuous performance evaluations, and leadership support,

comprehensively creating a culture of fall prevention and patient safety within the unit (Pop et

al., 2020).

Evidence to Support the Intervention

After thorough communication with the project site champion and department leadership,

the best opportunity for improvement was to implement specific interventions for identified

patients at a high risk of falling at the project site ED. The MEDFRAT is completed during triage

and alerts staff to patients at higher risk of falling. Patients identified as high-risk would need

additional attention and interventions to ensure their safety and prevent falls while in the department. An accurate risk assessment and specific interventions for those at high risk of falling can prevent future falls.

Implementing specific fall precautions for high-risk patients will include nonskid socks, fall-risk armbands, and stretcher alarms in use. These interventions are supported as they require no additional supplies or equipment from the project site. Stoeckle et al. (2019) conducted a study implementing multifactorial fall interventions in an 87-bed trauma emergency department. They found these interventions to successfully prevent falls, along with frequent change strategies and leadership support. It was determined that multifactorial interventions and a fall risk assessment effectively prevented falls. These interventions are relevant to patient safety and contribute to the multifactorial strategy for reducing ED falls.

Evidence-Based Practice Framework

The Plan-Do-Study-Act (PDSA) Cycle, introduced by Walter Shewhart, guided the project (The W. Edwards Deming Institute, 2022). Best executed in quality improvement projects, this framework promotes continuous process improvement resulting in desired outcomes. Beginning with the Plan step, a purpose is defined, a process developed, and metrics to measure success determined. Next, the Do step involves implementing the intervention described in the plan. The Study step is next, where outcomes are observed and reviewed for progress, success, and concerns. Finally, the Act completes the cycle as alterations and modifications occur to enhance and strengthen the process and outcomes.

The necessity and purpose of reducing falls in the ED were outlined during the project Plan step. Falls can be reduced by applying fall precautions to each patient in the department identified as having a high risk of falling. The Do step involved implementing the intervention

through staff education and ensuring each high-risk patient has nonskid socks, their stretcher alarm on, and a fall-risk armband applied to their wrist. Observation and evaluation of the intervention in the Study step were measured by frequent audits using a fall prevention checklist surveying for a complete fall risk assessment and precautions on high fall-risk patients in the department (Johnston & Magnan, 2019). Audits occurred three times weekly and were reviewed every two weeks for the twelve weeks of implementation. Areas of improvement noted were addressed in the step to follow. The Act step focused on revisions and transformations to improve the next cycle's process. Continual development promotes a culture of patient-centered care focusing on patient safety, ensuring positive outcomes and reduced falls in the ED.

Ethical Consideration & Protection of Human Subjects

The project leader completed modules from The Collaborative Institutional Training Initiative (CITI) in preparation for the formal project approval process. Knowledge and principles gained from these modules were applied throughout the development and advancement of the project. The project was rooted in improving patient safety, with no increased risk of harm to participants. Through fall prevention, patients' risk of injury is minimized, upholding the ethical principle of beneficence (The CITI Program, 2017). The interventions implemented are equal and equitable to the target population. Additionally, the privacy of participating staff will be maintained to uphold confidentiality and respect for persons.

After completing a specialized worksheet through the University, the project was deemed as quality improvement requiring no additional Institutional Review Board (IRB) review. Following a detailed presentation at the project site, the project received hospital approval through the hospital's Nursing Research Council. It was then deemed quality improvement through the organization's IRB office.

Section III. Project Design

Project Site and Population

The quality improvement project occurred in a 175-bed community hospital in Greensboro, North Carolina. This hospital provides bariatric, urology, orthopedic, and cancer center services (█████████, 2022b). The organization is founded on providing exceptional and comprehensive care to the surrounding community (█████████, 2022b).

While the organizational staff diligently works to serve the insured and uninsured populations of the community, resistance to change resulting from time constraints is an anticipated barrier at the project site. Staffing challenges coupled with increased patient workload and acuity lead to increased stress in the workplace and difficulty focusing on new implementations. However, a facilitating factor includes the accessibility of fall prevention interventions and equipment needed in each patient room. The project site stocks nonskid socks and fall-risk armbands in each treatment room, along with a reusable bed alarm on each bed that only needs to be plugged in and turned on for proper use. Through education, staff were made aware of the availability of interventions and the importance of utilization. Additionally, the project was largely supported by the organization's Nursing Research Council, with members who have shared their intent to follow the project and findings for dissemination to other emergency departments in the health system.

Description of the Setting

Project implementation occurred in the hospital's emergency department (ED). The department has 25 private acute care rooms, nine triage and minor care rooms, and five transitions of care beds. Approximately 48,000 patients are seen in the ED annually, ranging in age from pediatric to older adult and acuity from minor to critical care (personal communication,

October 26, 2022). The unit employs 103 staff members, including nurses, nurse technicians, emergency medical technicians, and secretaries (personal communication, October 26, 2022). Physicians and advanced practice providers also serve as integral parts of the treatment team. Together, the team unites to provide reputable care to the greater Greensboro community during patient vulnerability and crisis.

Description of the Population

The project population includes the staff directly providing care to ED patients at a high risk of falling. Adult patients scoring a five or greater on the MEDFRAT were identified as high risk. Nurses are the staff members responsible for completing the fall risk assessment and ensuring fall prevention interventions are in place. Additionally, ED nurse technicians and emergency medical technicians perform fall prevention interventions within the department. The team comprises various levels of education, experience, and staffing schedules. Together, staff were educated on the importance of fall prevention and expected to utilize fall prevention interventions, thus promoting patient safety.

Project Team

The project team comprises the project leader, university faculty representative, project site champion, and clinical nurse specialist. The role of the project leader includes project development, implementation, evaluation, and dissemination of findings. The university faculty is an advisor to the project leader in providing scholarly knowledge on the project plan. The project site champion, the department director, provides leadership support with clinical expertise in data evaluation and rapid cycle change. Finally, the clinical nurse specialist is the project navigator facilitating project approval and implementation within the organization. Each

project team member brings specific strengths, insight, and expertise as they encourage project achievement.

Project Goals and Outcome Measures

The project goal was to decrease the number of falls at the project site ED using the specified fall risk assessment tool and fall prevention interventions for patients with a high risk of falling. Patients were recognized as having a high fall risk using the Memorial Emergency Department Fall Risk Assessment Tool (MEDFRAT) with a score greater than 5 points during assessment (Scott et al., 2018). Patients scoring a high risk for falls may have a history of multiple falls within the last three months, be confused or disoriented, intoxicated, or sedated, have an impaired gait, use a mobility device, or have altered elimination habits (Scott et al., 2018). Using an educational flyer, staff were educated and monitored for compliance through audit intervals. The project was designed to prevent falls before they occur, limiting further injury and complications to the patient's health and well-being. Falls at the project site during the project implementation were monitored, and rates were compared to those of the health system and national averages. Success was noted by staff compliance with the recommendations; thus, fewer falls were reported in the department.

Description of the Methods and Measurement

Implementation methods included staff education by posting the fall prevention educational flyer for viewing at the nurse's stations (see Appendix A). The fall prevention flyer was also attached to the weekly announcement email sent by the department director and project site champion beginning one week before implementation. The flyer was a single sheet with a simple description that all patients should have a fall risk assessment complete with a fall risk level assigned in the EMR. The flyer provided information on the interventions' significance in

predicting falls, preventing harm, promoting safety, and providing quality care. After reviewing

the flyer, the staff were asked to sign the education roster (see Appendix B) at the charge nurse

desk, where each staff personnel checks in at the beginning of their shift. The roster was used to

evaluate the number of staff members educated and their role in the department. Staff was asked

to complete the MEDFRAT on all patients in the ED. Ideally, this assessment was to be

completed during triage. Each patient identified as a high fall risk with a score of five or greater

on the fall risk assessment should have nonskid socks provided, a fall-risk armband applied, and

a bed alarm turned on. An alert in the EMR next to the patient's name communicated to other

staff members in the department that the patient was at risk.

Finally, intervention compliance was measured using the audit tool to track data for

analysis. The tool included the week of implementation, risk assessment completion, and a

listing of each intervention. A simple check was placed in the box with the corresponding

completion of each task. Data were compiled, reviewed, and evaluated for further opportunities

for improvement.

Discussion of the Data Collection Process

Data was collected using the weekly audit tool (see Appendix C) to evaluate staff

compliance in fall prevention interventions. Three times weekly during the twelve-week

implementation, patients in each acute care treatment room were reviewed for a completed fall

risk assessment. Patients identified as high fall risk were further audited, observing if they had all

three fall prevention interventions. The data collected was further analyzed. Data from the audits

were entered into an Excel spreadsheet for data analysis. Data were displayed in graphs further to

evaluate trends, opportunities, and gaps in compliance. This compilation allowed for better

visualization of the most significant opportunity for improvement.

The collected data was impactful as the project was centered on staff completing requested interventions to prevent departmental falls. Analyzing staff effort and determining patterns of consistencies and inconsistencies in the interventions helped conclude the next steps to achieve the project objective. Intentional evaluation of the data collected guided the project's evolution through implementation.

Implementation Plan

Project implementation was guided using the Plan-Do-Study-Act (PDSA) Cycle, which focused on rapid cycle change to support continuous improvement. At the beginning of implementation, staff education occurred for the first week, with weekly audits that followed. During the week of staff education, flyers were posted throughout the department and attached to the weekly announcement email. The project leader was in the department and available for questions and further explanations. The data collected through weekly audits was compiled and reviewed biweekly during the twelve-week implementation to seek and address areas of improvement. Five PDSA cycles were completed throughout implementation. As shortcomings were identified, adjustments and revisions were applied to the next cycle to improve the process.

Timeline

The project started in May 2022, collaborating with the site champion to determine the department's greatest needs. After deciding that patient falls in the ED were an area of concern, a literature search was conducted in August 2022 to gain further insight into fall prevention in the ED. Project design and implementation preparedness progressed through December 2022. In January 2023, project implementation started with staff education. After one week of instruction, weekly auditing commenced, with data reviews every two weeks throughout implementation. In April 2023, implementation concluded with a final evaluation. Discussions of findings and

further recommendations were presented, and the project was completed in July 2023. A detailed

timeline can be found in Appendix D.

Section IV. Results and Findings

Results

After project implementation, all the collected data was compiled and reviewed, evaluating the findings. First reviewed was the education roster, signed by staff during the first week of project implementation after staff viewed the educational flyer. Forty-one (38%) out of 103 staff members signed the roster. While only 38% of staff signed the roster, many staff were educated throughout implementation during shift huddles, one-on-one discussions during audits, presentations at staff meetings, and reminders in the weekly staff email.

Weekly audits were conducted following staff education, reflecting 690 patient charts reviewed for Memorial Emergency Department Fall Risk Assessment Tool (MEDFRAT) completion. Of the 690 charts, 116 (17%) patients were identified as having a high fall risk, and further audits were conducted to evaluate if fall risk interventions were correctly applied by staff. The data was initially collected using the weekly audit tool and entered into an Excel spreadsheet for better data tracking and analysis. The Excel spreadsheet also allowed easy compliance comparison and identification of opportunities between weeks throughout implementation (see Appendix E).

Staff compliance completing the MEDFRAT on each patient averaged 95% throughout implementation (see Appendix F). Of the 690 patient charts reviewed, 658 MEDFRAT tools were completed by the nurses, yielding a 95% compliance rate. Over the twelve weeks, nurses' compliance in completing the MEDFRAT ranged from 91% to 98%.

Compliance of staff applying the high fall-risk interventions was closely monitored during implementation, and the data were studied weekly to determine areas of opportunity for the rapid cycle changes. Of the 116 patients identified at high risk for falls in the chart review, 84

(72%) patients were provided with nonskid socks; 68 (62%) bed alarms were used, and only 30

(26%) patients had fall-risk armbands (see Appendix G). There was a gradual increase in both

armband and sock use during the project. In contrast, bed alarm use maintained similar

compliance averages throughout, apart from two weeks when there was a drastic decrease at the

beginning of implementation.

Fourteen falls were reported during the twelve weeks of implementation (personal

communication, May 23, 2023). Special attention was placed on reviewing the patients' charts

that fell during that time to observe any trends or opportunities to improve fall prevention. In

comparing fall data from 2022 and 2023, there was a decrease in the number of falls between

January and April. There were fourteen falls from January to April 2023, compared to seventeen

falls during the same period in 2022. The project results, patient chart reviews, staff interactions,

and literature support led to considerable findings.

Discussion of Major Findings

Preventing falls before they occur using a bundled approach worked well for the project

site ED. The staff thoroughly completed the fall risk assessment on the majority of patients.

Compliance in appropriately completing this tool was crucial to identify a patient's risk of falling

and encouraged further interventions for those assigned high fall risk. Staff was expected to then

apply nonskid socks, fall-risk armbands, and bed alarms to these patients. Using multifactorial

interventions allowed for success with differing populations in the department. Additionally,

building a department culture rooted in patient safety through fall prevention was backed by

strong leadership support and creating staff awareness using educational avenues. There was no

emphasis on staff signing the education roster after the first week, and no specific follow-up was

arranged for those who still needed to sign the roster.

Fall prevention in the ED can be difficult, and the challenges faced in the project site ED align with those discussed in the literature (Cook et al., 2020). Special populations, high acuities, department overcrowding, and staffing shortages were all identified by staff during interactions in weekly audits influencing compliance with the fall risk interventions for patients with a high risk of falling. Specific staff feedback allowed adjustments throughout the project to promote better compliance.

Section V. Interpretation and Implications

Costs and Resource Management

The project's estimated costs, resources, and implementation totaled $6,828.25 (see Appendix I). The majority of the expenses were related to the project leader's time spent in the department educating staff, auditing weekly, and stocking treatment rooms to ensure the appropriate interventions were available for use. Time and money could be saved if staff assigned to the treatment rooms prioritized stocking the fall prevention interventions, alleviating the stocking task from the role of the project leader. The supplies were relatively low cost and conveniently available at the project site ED already budgeted, purchased, and stocked. The nonskid socks and fall-risk armbands are priced per unit. The bed alarm remains in each room and is a one-time purchase, while the mattress sensor pad applied to the bed and plugged into the alarm stays for one week or is exchanged if soiled.

When a patient falls, additional expenses are required for imaging, wound closures, surgeries, and hospital admissions (Cook et al., 2020). This increases the cost of care and further complicates the patient's ED visit. Medicare expenditures related to hospital falls have reached nearly 13 billion dollars annually (Hoffman et al., 2017). Overall, the project site ED can support the benefit of the costs and resources used in the project as the estimated cost is less than the costs associated with patient falls that can be prevented by utilizing these interventions.

Implications of the Findings

The implications of decreasing falls in the ED protect patient safety, encourage interprofessional collaboration in nursing practice, and financially impact the healthcare system while promoting community health and wellness. While falls were still reported, there was an overall decrease in patient fall occurrences during project implementation compared to the same

time during the prior year (see Appendix H). Decreasing falls aligns with the Triple Aim

Initiative to improve care quality, decrease healthcare costs, and promote the health of

populations (IHI, 2022). Fall prevention is an opportunity to positively support patients, nursing

practice, and the healthcare system.

Implications for Patients

Decreasing falls in the ED has a direct patient impact as it protects patient safety while

preventing harm. When a patient falls, it increases the length of hospital stay and healthcare

costs, may require a preventable admission, and contributes to poorer patient outcomes (Cook et

al., 2020). Providing patient-centered care with safety at the forefront is critical to nursing

practice as it enhances the quality of care and patient experience while limiting costs for the

patient.

Implications for Nursing Practice

Preventing falls in the ED is a team approach that encourages interprofessional

collaboration for success. Nursing staff have a role in the early identification of patients at risk

for falls. The fall prevention committee of the healthcare system works to ensure that best

practice interventions are available to meet the specific needs of each department. Additionally,

the nursing staff educates the patient and family regarding fall prevention interventions. The staff

works together to ensure appropriate interventions are in place.

Staff altering their practice by ensuring the completion of the fall risk assessment and

further utilizing the recommended interventions is imperative to patient outcomes. Also affected

are the department metrics measured and monitored by leadership on a larger scale. These

metrics are important as they affect financial reimbursements and nursing compensation.

Impact for Healthcare System

Fall prevention is imperative financially to the healthcare system as falls affect the hospital's total hospital-acquired conditions (HAC) score. The Centers for Medicare and Medicaid Services (CMS) calculates the score determining financial reimbursements (CMS, 2021). Health systems consider these reimbursements as they quantify their financial status.

The Healthcare system's Magnet designation status is also affected by patient falls, as the hospital's performance evaluation results are influenced by sentinel events, including falls with significant injury (American Nurses Credentialing Center, n.d.). The hospital quality performance evaluation analysis is included in the reapplication process for Magnet status, which occurs every four years. Maintaining Magnet status is vital for the healthcare system as it promotes quality patient care through nursing excellence. Overall, the project is a low-cost bundled approach that can positively impact patients, nursing practice, and the healthcare system through the protection of patient safety, promotion of interprofessional collaboration, and continued support of national organizations to advance the health and well-being of the community.

Sustainability

The project intervention can be continued within the department to prevent patient falls. Economically, it is sustainable as no new products are required of the department since the interventions are already supplied for staff use. However, a small cost will be associated with increased use of the items. Additionally, fall rates will remain a measured performance indicator and constant focus. Therefore, the expectation of staff to complete the fall risk assessment tool and utilize fall prevention interventions should continue. Frequent reeducation of staff will be imperative to serve as a reminder and encompass new staff that has joined the team. The

educational role will be maintained by the department champion and integrated into orientation for new staff. This reasonable expectation will contribute to the department's culture shift to better patient care.

Dissemination Plan

Project results were presented to the project site leadership in a one-on-one meeting. Additionally, results were reviewed with the project navigator and system-wide fall prevention committee chair to discuss dissemination to other emergency departments within the health system. The project findings were presented at the University College of Nursing and published in the university's digital archive. Further, the project results and findings can be submitted to a journal specific to emergency medicine, such as the Journal of Emergency Nursing, as the results can benefit other emergency departments.

Section VI. Conclusion

Limitations and Facilitators

Throughout project implementation, there were both limitations and facilitators noted. Some limitations during implementation included considerable time spent at the project site and staff buy-in. Despite fall prevention being a preexisting staff requirement, during interactions, some staff hesitated to change their practice of taking additional steps to prevent falls due to the extra time the interventions required. Another key limitation was that not all patients were reviewed during project implementation, as weekly audits occurred randomly. Other limitations were observed during weekly audits and data reviews. These constraints were addressed during the PDSA rapid cycle changes made throughout implementation. For example, at the beginning of implementation, only two audits were completed weekly, and there was a lack of data as rooms were closed for staffing or the project site ED census was low. This was addressed by adding a third weekly audit to gain more insight. Also, fall-risk armbands were recognized as the least-used intervention during implementation. To address this, the project leader began stocking the armbands in the same location as the nonskid socks in the treatment rooms to facilitate using the armbands.

Project facilitators enhanced the success of the project. The support of the stakeholders improved staff response as leadership included fall prevention reminders in weekly emails. Additionally, using the technology of the electronic medical record (EMR) made chart reviews and weekly audits straightforward and uncomplicated. Other facilitators include interprofessional collaboration, staff teamwork, and readily available fall prevention supplies in each treatment room. These facilitators positively affected the project's flow throughout implementation.

Recommendations for Others

After project completion, there are recommendations for others to consider in decreasing falls in the emergency department. This project can be easily replicated, substituting other fall prevention interventions based on the resources provided within the hospital and health system. Selecting three interventions and educating staff to ensure their use on patients identified as high fall risk allows for department-specific modifications in project replication. Other interventions besides the bed alarm, nonskid socks, and fall risk band include safety sitters, remote video monitoring, and visible patient signage (Cook et al., 2020). There is an opportunity for scalability, allowing adaptations to be implemented in a department of any size. Additionally, the project is sustainable and can create positive outcomes for the health system.

Recommendations for Further Study

To strengthen this project and facilitate decreased patient falls in the ED, further study is recommended on patients not identified as a risk for falling but falling during their ED visit. While the MEDFRAT is reliable, patients who score low on the fall risk assessment occasionally fall. Seeing the limited literature available regarding ED-specific fall prevention, any future studies will be beneficial as falls remain at the forefront of patient safety considerations.

Final Thoughts

Patient falls in the ED are challenging to prevent, especially at the project site ED. The project goal was to decrease falls in the emergency department through early identification of patients at risk for falling and to be proactive in preventing falls before they occur. This can best be accomplished using a reliable fall risk assessment tool and multifactorial fall prevention interventions in a bundled approach with a department culture focused on patient safety. This project aimed to identify high-fall-risk patients using the Memorial Emergency Department Fall

Risk Assessment Tool and implement three interventions to prevent falls in these patients: bed alarms, fall-risk armbands, and nonskid socks. Through staff education, weekly compliance audits, data analysis, rapid cycle changes, and leadership support during a twelve-week implementation, fall rates decreased compared to the same time during the previous year. Continued fall prevention protects patient safety and promotes positive patient outcomes. A bundled approach based on best practices proved effective in reducing falls in this emergency department and will continue to be utilized to ensure quality care provision and positive patient outcomes.

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Appendix A

Educational Flyer

Appendix B

Education Roster

Spencer Leonard

Decreasing Falls in the Emergency Department

Education Roster

Date	Name	Role	Signature

Appendix C

Audit Tool

Spencer Leonard

Decreasing Falls in the Emergency Department

Weekly Audit Tool

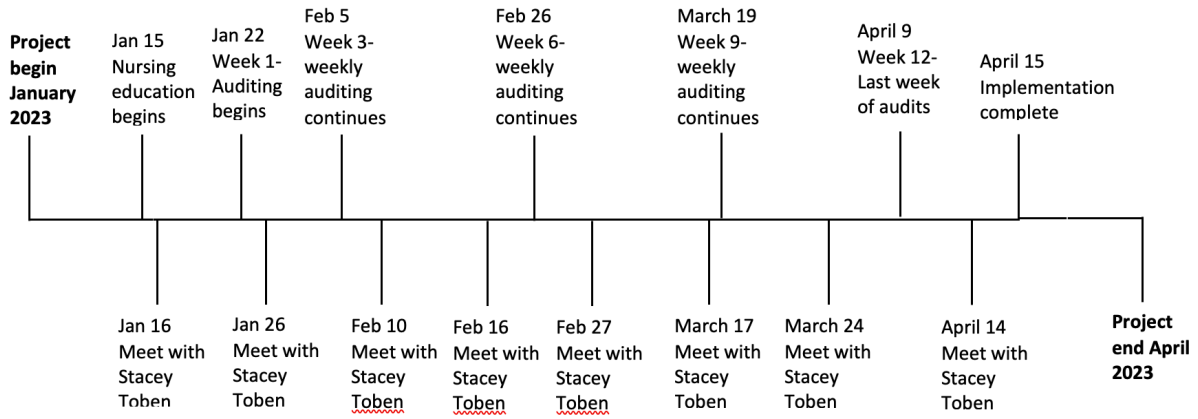| Week	Patient	Date	Assessment	High-risk	Socks	Stretcher alarm	Wrist band
	1						
	2						
	3						
	4						
	5						
	6						
	7						
	8						
	9						
	10						
	11						
	12						
	13						
	14						
	15						
	16						
	17						
	18						
	19						
	20						

Appendix D

Timeline

Top row (left to right):

Project begin January 2023

Jan 15 Nursing education begins

Jan 22 Week 1- Auditing begins

Feb 5 Week 3- weekly auditing continues

Feb 26 Week 6- weekly auditing continues

March 19 Week 9- weekly auditing continues

April 9 Week 12- Last week of audits

April 15 Implementation complete

Bottom row (left to right):

Jan 16 Meet with Stacey Toben

Jan 26 Meet with Stacey Toben

Feb 10 Meet with Stacey Toben

Feb 16 Meet with Stacey Toben

Feb 27 Meet with Stacey Toben

March 17 Meet with Stacey Toben

March 24 Meet with Stacey Toben

April 14 Meet with Stacey Toben

Project end April 2023

Appendix E

Data Tracking

| Week	Total	MEDFRAT	High Risk	Socks	Alarm	Armband
1	47	43 (91%)	6	2 (33%)	5 (83%)	1 (16%)
2	42	40 (95%)	11	7 (64%)	3 (27%)	0 (0%)
3	67	62 (93%)	10	7 (70%)	1 (10%)	1 (10%)
4	62	59 (95%)	16	12 (75%)	6 (38%)	0 (0%)
5	68	64 (94%)	9	4 (44%)	5 (56%)	1 (1%)
6	67	65 (97%)	10	5 (50)%	8 (80%)	2 (20%)
7	60	59 (98%)	11	10 (91%)	8 (73%)	3 (27%)
8	54	52 (96%)	12	9 (75%)	9 (75%)	4 (33%)
9	64	61 (95%)	5	4 (80%)	4 (80%)	3 (60%)
10	46	45 (98%)	9	9 (100%)	7 (78%)	5 (56%)
11	52	49 (94%)	9	7 (78%)	5 (56%)	6 (67%)
12	61	59 (95%)	8	8 (100%)	7 (88%)	4 (50%)
Total	690	658	116	84	68	30

Appendix F

MEDFRAT Compliance

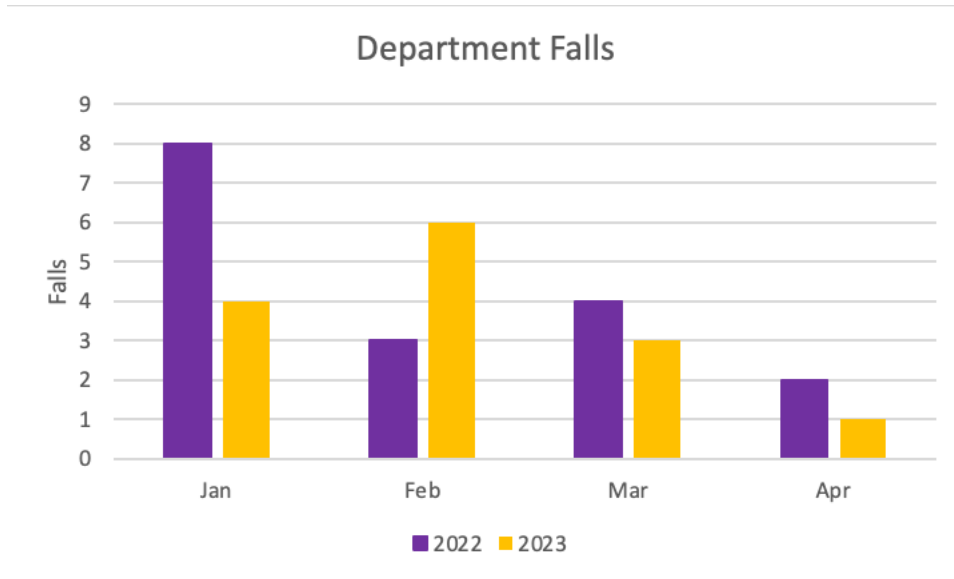**Staff Compliance Completing Fall Risk Assessment**
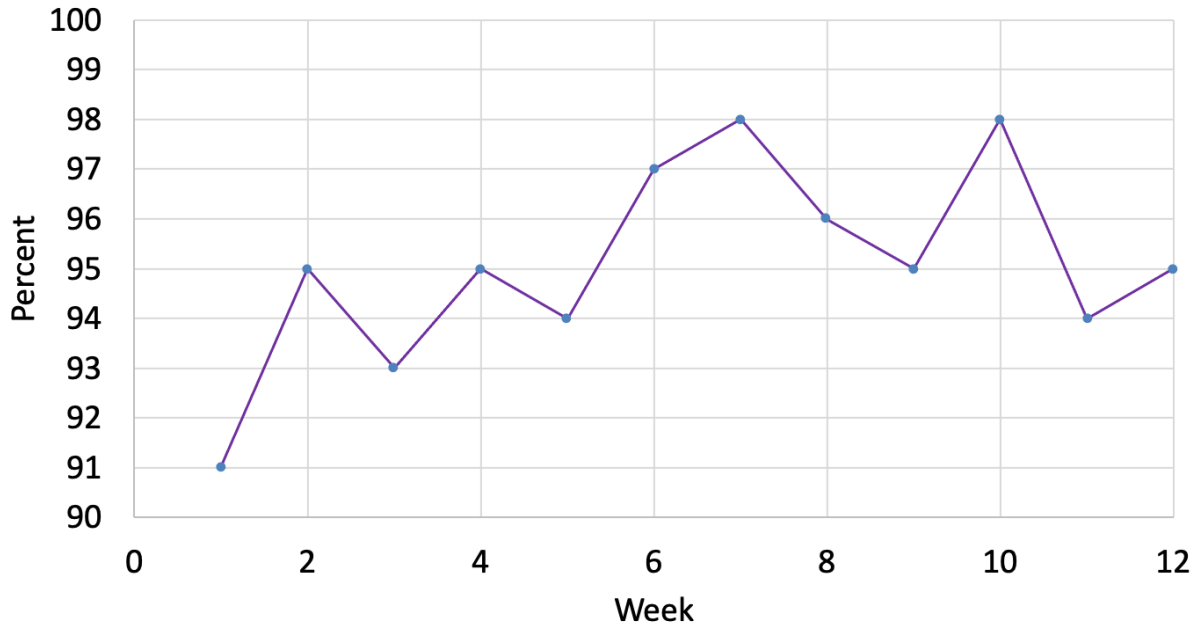
Appendix G

High Fall Risk Intervention Compliance
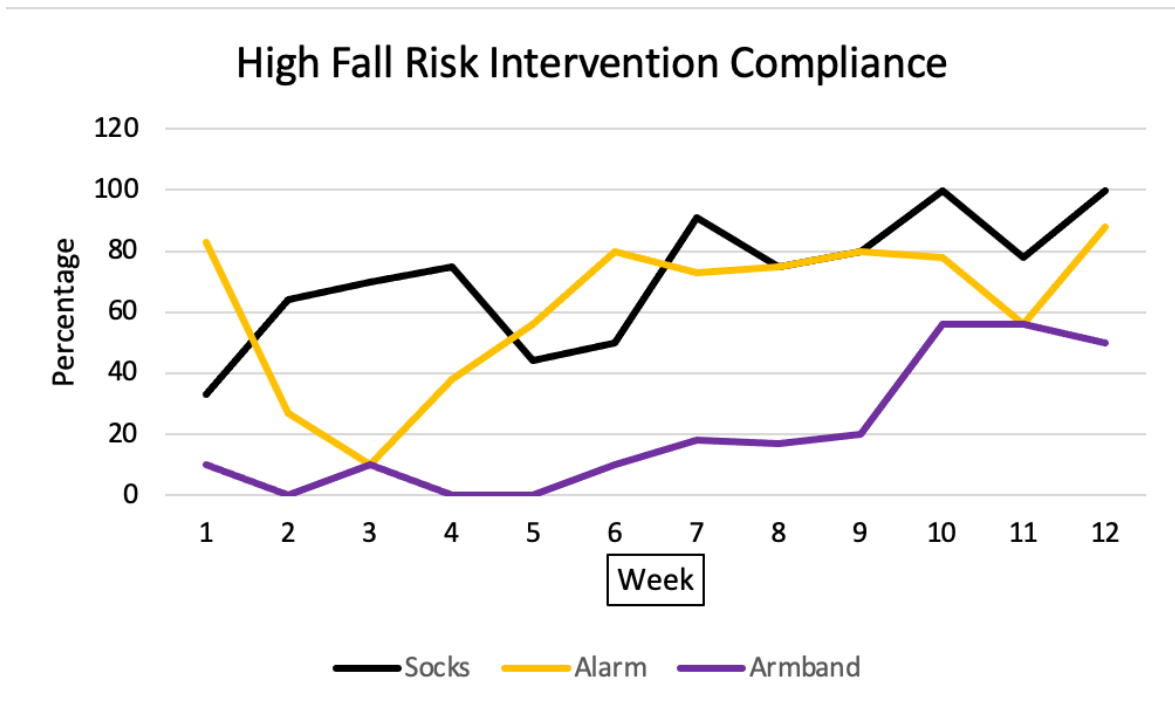
Appendix H

Falls Comparison 2022-2023

Appendix I

Budget

Item	Cost	Quantity	Total
Armband	$0.10	125	$12.50
Socks	$0.47	125	$58.75
Bed alarm	$108.35	30	$3,250
Alarm pad	$14.14	50	$707
Staff	$40/hour	70	$2,800
Total			**$6,828.25**