A REVISED FALL PREVENTION PROTOCOL: CLOSING THE GAP BETWEEN POLICY AND PRACTICE

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Abstract

Preventable patient falls were a persistent problem in the inpatient setting at the project hospital despite a fall safety protocol, universal fall precautions, and a safety huddle each shift. The purpose of the revised fall prevention protocol project was to decrease patient falls, reduce patient harm and cost, and improve nurse quality indicators. This quality improvement project was piloted at a 278-bed regional academic teaching hospital on four acuity adaptable units. The revised fall prevention protocol included the integration of the Falls TIPS tool; a revision of universal fall precautions to include the use of a bed or chair alarm; patient education on fall prevention; daily rounding by unit managers to monitor staff compliance; and expanding the role of the mobility team specialists to mobilize all physiologically stable patients. The number of reported patient falls was recorded for thirty, sixty, and ninety days post-project implementation. Non-injurious, injurious, and the total number of falls were compared to the previous year's fall data. In addition, reported falls at this hospital were compared to the national average. Fall rates were not decreased after the implementation of the revised fall protocol.

Keywords: falls, hospital, fall prevention, fall protocol, fall prevention protocol, fall bundle

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Chapter I: Introduction

Falls are one of hospitals' most reported adverse events (Seow et al., 2021). The Agency for Healthcare Research and Quality (AHRQ, 2021a) estimates that between 700,000 and one million people in the United States fall in a hospital annually, and one-third of these falls are preventable. Falls can have lasting consequences for those affected. Falls negatively impact the patient, their loved ones, healthcare team members, and the organization. About half of the falls result in injury (Seow et al., 2021). According to the Joint Commission, in 2015, falls with serious injuries were among hospitals' top ten sentinel events (Johnston & Magnan, 2019). The National Database of Nursing Quality Indicators measures patient falls as a nursing-sensitive indicator (Phillips et al., 2021). The Centers for Medicare and Medicaid Services does not reimburse fall-related costs (Fehlberg et al., 2017). Considering the high trend in fall rates at the project facility, administrative leaders welcomed a quality improvement initiative to reduce falls.

Statement of Problem

"A patient fall is an unplanned descent to the floor with or without injury" (AHRQ, 2021a, para 1.). Preventable patient falls continue to be a problem in the project hospital despite fall safety protocols, universal fall precautions, and safety huddles.

Purpose/Aim of the Project

This quality improvement project aimed to decrease patient falls, thereby reducing patient harm and cost and improving nursing-sensitive indicators. The project manager intended to close the gap between policy and practice, as a fall prevention protocol was outlined in hospital policy, yet fall rates were similar to the national average. The project focused on implementing best evidence-based practices, increasing

nursing adherence to a fall prevention protocol, improving patient education on fall prevention, and increasing patient activity.

Background/Problem of Interest Supported by the Literature

Fall prevention is an ongoing effort in hospitals. Significant strides were made in addressing fall prevention in hospitals in 2015, both by The Joint Commission and the Agency for Healthcare Research and Quality (AHRQ 2021a; Health Research & Educational Trust [HRET], 2016). Factors that frequently contribute to patient falls include lack of adherence to protocols and safety practices, inadequate leadership, communication failures, and inadequate assessment of patient risk for falls (HRET, 2016). Suggested actions by the Joint Commission (2015) to reduce falls included using a validated fall assessment tool, developing an individualized fall prevention plan based on risk factors, standardizing practices, and encouraging honest and transparent reporting of falls. A comprehensive literature review strongly supported four successful fall prevention themes: fostering an organizational culture of safety, adherence to an evidence-based fall prevention protocol, including patients as active participants in their safety and fall prevention plans, and addressing fall risk factors with a patient-centric approach (Bargmann & Brundrett, 2020; Dubuc & Biovin, 2016; Dykes & Hurley, 2021; HRET, 2016).

Fostering an organizational culture of safety encourages a reduction of preventable patient falls (Bargmann & Brundrett, 2020). Honest and transparent reporting of falls is more likely to occur in a culture of safety with strong leadership support. Nurses who fear reprimand due to a patient fall are less likely to report a fall incident honestly. Nurse leaders play an instrumental role in encouraging transparency and fall

incident reporting. When evaluating a fall, a leader should focus on the situation, contributing factors, or processes, rather than on the individual nurse. The project facility utilizes an electronic incident reporting system to obtain fall data. The project required nursing managers to address any barriers to implementing the revised fall prevention protocol.

Falls resulting from poor adherence to a fall prevention protocol are common. A multifaceted approach is most effective in fall prevention. Components of a fall protocol commonly include performing a fall risk assessment using a validated risk assessment tool, a bed or chair alarm, safety checks during hourly rounding, and assessing mobility (HRET, 2016). Insufficient staff or lack of experience or expertise can lead to an inadequate fall risk assessment (HRET, 2016). Bed alarm use varied widely across studies, and activation of the alarm was often cited as a missed intervention (Seow et al., 2021; Staggs et al., 2020). Universal fall precautions at the project facility required using a bed alarm on medium settings for patients determined to be high fall risk based on assessment. Standardizing bed alarms for every patient, regardless of risk assessment, would eliminate this missed intervention.

Including patients as active participants in their safety fall prevention plan has proven to be a successful measure of reducing falls. Patients do not recognize their fall risk factors and often do not recognize that they are at risk of falling. Nurses must educate patients on their risk factors and recommended interventions.

Lastly, a one-size-fits-all approach has not proven successful in fall prevention (Johnston & Magnan, 2019). Instead, individual risk factors should be identified, and a patient-centric approach taken. The Morse fall scale is an excellent tool for identifying

fall risk factors in hospitalized patients (AHRQ, 2021b). Potential risk factors assessed using the Morse fall scale include having a history of falling, having a secondary medical diagnosis, use of an ambulatory aid or furniture, presence of an intravenous line, an unsteady or weak gait, and altered mental status (AHRQ, 2021b). Due to various fall risk factors, fall prevention interventions tailored to individual risk factors are most effective.

In summary, fostering an organizational culture of safety, adherence to an evidence-based fall prevention protocol, including patients as active participants in their safety, and addressing fall risk factors with a patient-centric approach have proven successful strategies in fall prevention.

Significance of the Project

Patient falls negatively impact the patient, healthcare workers, and the organization. Patients are affected by sustained injury, increased length of stay, and even death (Hoffman et al., 2017). Other adverse consequences for a patient who experiences a fall may include fear of falling, depression, anxiety, and reduced quality of life (Seow et al., 2021). Older adults who sustain an injury from a fall are less likely to return home and are more likely to be discharged to a permanent long-term care facility, presenting emotional and financial ramifications (Stockwell-Smith et al., 2020).

Patient falls impact nurses. Provision three of the American Nurses Association code of ethics (2019) states that the nurse protects the patient's safety. Furthermore, as the American Nurses Association identifies patient falls as a nursing-sensitive quality indicator, the responsibility of fall prevention falls on the nurse (King et al., 2018). Nurses report that a patient falls result in guilt, anxiety, stress, fear of liability, and self-doubt about the quality of care they provide (King et al., 2018).

Falls in hospitalized patients have a significant fiscal impact on organizations. Nonfatal and fatal falls in older hospitalized adults in the United States in 2015 cost an estimated fifty billion dollars (Stockwell-Smith et al., 2020). The annual cost of fall-related injuries among older adults initially treated in the inpatient setting is about $21,424 per individual (Hoffman et al., 2017). Implications for patient falls are broad in a competitive healthcare market. Under the Hospital Outpatient Quality Reporting Program, hospitals must report data on quality-of-care indicators, including falls (CMS, 2022). Highly reputable organizations that are perceived as providing high-quality care are sought after. Those hospitals reporting data indicating the inadequate quality of care, such as high fall rates, are at risk for loss of clients and revenue.

Falls at the project facility have resulted in patient injury, additional testing, extra treatment, increased length of stay, increased cost, and death (C. Herrington, personal communication, December 11, 2021). Reducing fall rates is imperative to improved patient outcomes, the delivery of excellent care, and organizational success. Changes were needed to reduce the high incidence of preventable patient falls. By decreasing the incidence of preventable falls, patient outcomes could be improved, avoiding potential injury and death. Improved patient outcomes demonstrate excellence in nursing care and reflect positively on the organization.

Impact of the Project

An estimated one-third of falls are preventable (AHRQ, 2021a), meaning there is room for improvement. As patients receive nursing care in the hospital around the clock, nurses play a vital role in fall prevention and patient safety. A reduction in the number of falls reported as a nursing-sensitive indicator signifies the improved quality of nursing

care. Improved patient outcomes demonstrate excellence in nursing care and reflect positively on the organization. A standardized yet patient-centric, evidence-based approach to fall prevention promotes excellence in nursing practice and improves patient outcomes.

Chapter II: Literature and Theory Review

Despite a fall prevention policy with universal fall precautions and safety huddles, preventable patient falls are still a problem in the project hospital. The primary purpose of this literature review is to provide a comprehensive analysis of best fall prevention practices in the hospital setting. Four themes emerged as successful strategies for preventing patient falls: fostering an organizational culture of safety, adherence to an evidence-based fall prevention protocol, including patients as active participants in their safety and fall prevention plans, and addressing fall risk factors with a patient-centric approach.

Literature Review

A literature review was conducted using MEDLINE and CINAHL (cumulative index to nursing and allied health literature) databases. The search was limited to scholarly articles written within the last five years. Key words searched included patient falls; hospital and falls; injurious falls; cost and patient falls; fall protocols; fall bundles; bed alarms; cameras, monitors, and falls; and sitters and falls.

Culture of Safety and Adherence to Fall Prevention Protocols

Fostering a workplace safety culture reduces patient falls and improves patient outcomes. "Patient safety culture is the extent to which an organization's culture supports patient safety. It refers to the values, beliefs, and norms that healthcare practitioners and other staff share throughout the organization that influences their actions and behaviors" (AHRQ, 2022, para. 1). According to Bargmann & Brundrett (2020), a lens of transparency promotes a culture of safety. Facility staff who are encouraged to report patient falls and identify unsafe conditions without worry of blame or reprimand are more

likely to report fall occurrences (Bargmann & Brundrett, 2020). Fall data is essential in identifying the causes of patient falls and developing fall improvement plans. Relevant data surrounding a patient's fall include the location, time, witnesses, injuries acquired, circumstances surrounding the fall, and any identified causes. Strong organizational leadership and backing support an organizational culture of safety (HRET, 2016). When managerial processes hinder a nurse's effort to prevent falls, motivation to change is reportedly diminished (Hakvoort et al., 2021).

A patient safety culture can be promoted in the project setting by encouraging a lens of transparency and support from leadership. A lens of transparency can be promoted at the project site by encouraging direct care staff, primarily nurses, to report patient falls using the electronic incident reporting system. Reporting allows the number of falls to be tracked, including details surrounding a fall and any contributing factors identified. Administrative leaders can support a patient safety culture by examining system processes when a fall occurs rather than blaming individuals (AHRQ, 2022). Nurse managers show their commitment to fall prevention by encouraging staff to report fall incidents, including identified causes or contributing factors and any identified barriers to fall prevention.

Adherence to an Evidence-Based Fall Prevention Protocol

According to the facility fall bundle, a common culprit of patient falls is a lack of adherence to one or more fall prevention methods. Many factors contribute to patients' fall risk; therefore, a multifaceted approach to fall prevention is recommended. Implementing fall prevention bundles has been shown to reduce inpatient falls by up to thirty percent (Bargmann & Brundrett, 2020). Johnston & Magnan (2019) identified

frequently missed interventions by implementing a safety checklist completed by bedside staff (registered nurse [RN] or patient care assistant) at shift change during bedside reports. The most frequently reported missed intervention was activating the bed alarm (Johnston & Magnan, 2019).

The effectiveness of bed or chair alarms in reducing falls is controversial. Johnston and Magnan (2019) cited a lack of evidence supporting the efficacy of bed alarm usage in decreasing falls. Still, bed alarms are commonly used in fall prevention protocols (Radecki et al., 2018). Staggs et al. (2020) found that bed alarm use is ineffective in preventing patient falls; however, they acknowledge that it varies widely across hospitals. According to Seow et al. (2021), a recent study showed that bed alarms effectively prevent falls on medical-surgical level units. The incidence of patient falls decreased from 0.23% to 0.11% over six months after the implementation of bed alarms (Seow et al., 2021). Seow et al. (2021) noted the importance of nurses being knowledgeable about selecting the proper mode on the bed alarm (one to three) and being able to respond to alarms in time.

Evidence supporting the use of bed and chair alarms as an effective fall prevention strategy is limited. Several studies acknowledge that the use of alarms varies across health systems and is inconsistent (Radecki et al., 2018; Seow et al., 2021; Staggs et al., 2020). Furthermore, the use of bed alarms may have unintended consequences. Radecki et al. (2018) noted that bed alarms might provide a false sense of security to nursing staff and feelings of confinement to the bed by patients. The use of bed and chair alarms in the project setting was inconsistent. The fall prevention protocol requirements before project implementation required using alarms for patients deemed a high fall risk,

according to the nurse's assessment. However, according to incident report documentation, facility staff are not consistently adhering to the usage of alarms for patients at high risk for falling.

Promoting mobility and exercise is an intervention that can promote strength and independence (Khalifa, 2019) and combat unintended consequences of bed alarms, such as confinement and debility. Furthermore, exercise alone is an effective intervention for preventing falls (Khalifa, 2019). Increased confidence in preventing falls has been reported by older adults who took part in a balance and mobility program focused on strength, balance, gait, and posture (Osho et al., 2020). Keeping patients active helps support strength and independence and prevents weakness and debility from contributing to falls (Khalifa, 2019). Furthermore, mobilizing patients frequently helps negate unintended consequences of alarm use, namely confinement to the bed.

The project uses mobility team specialists to promote increased activity in physiologically stable patients. Broadening the scope of the mobility team specialists to provide mobility assistance to patients at all levels of mobility who are physiologically stable would allow for increased activity. Increased activity levels promote strength, decreases the risk of debility, and decreases the risk of falling (Khalifa, 2019).

No single factor, but rather a multifaceted approach, is necessary to prevent patient falls. Nuckols et al. (2017) found that incorporating safety checks into hourly rounding effectively decreases fall rates. Safety checks involve assessing the environment for potential hazards, such as spills on the floor, items out of reach, the bed not being in the lowest position, or a bed brake not being engaged. Hourly rounding is also suggested to prevent falls resulting from patients not seeking help when toileting (Health Research

& Educational Trust, 2016). Hourly rounding is an expectation at the project site. Additionally, safety checks are incorporated into the universal fall precautions at the project site. The project protocol did not involve any change to the hourly rounding process.

Patients Included as Active Participants in Their Safety Plan

Injurious falls on medical-surgical units often occur early following admission (Francis-Coad et al., 2020). Implementing fall prevention interventions immediately upon admission is necessary to reduce the risk of falls (Francis-Coad et al., 2020). Using a fall safety agreement, implemented upon admission, is one method used to educate and involve patients in their plan for safety and fall prevention (Dubuc, 2016). The nurse educates the patient and their family members regarding unit-specific fall precautions, such as using the call light to request assistance when getting out of bed. The nurse then asks the patient to sign the agreement (Dubuc, 2016). Bargmann and Brundrett (2020) note that injury sustained following a fall may be lessened because of more structured patient education regarding fall prevention using a patient safety agreement form. The project setting does not utilize a patient safety agreement form, written or electronic. According to the fall prevention model at the project site, nurses are expected to assess patients for risk of falling each shift and educate them regarding their fall risk and prevention strategies.

It has been found that two-thirds of patients with one or more risk factors for falling, including recent fall history, do not perceive themselves as at risk for falling (Tucker et al., 2019). This misperception may contribute to patients not using the call light appropriately to request help when getting out of bed. Patients attempting to leave

the bed unassisted, often for toileting purposes, had been identified as a contributing factor of many falls at the project site. Dykes and Hurley (2021) suggest that patient engagement during the fall risk assessment is critical in educating patients to know their risk factors and the implications of non-compliance with their fall prevention plan. Patient engagement may decrease disparities between patients' perceived and actual fall risk factors, as identified by nursing staff (Heng et al., 2019). In this project, a strong emphasis was placed on educating patients on their fall risk factors and standard and individualized fall prevention strategies.

Patient education can be tailored to address patients with cognitive impairment. Chan et al. (2018) found that patients with cognitive impairment may have improved retention of information provided by a video delivering a focused message twice weekly rather than by lengthy and complex education. Video delivery of fall prevention content to patients is not a process at the project site. Nurses must evaluate a learner's preferred learning method and deliver content accordingly. Fall prevention education is reinforced as needed.

Patient-Centric Approach

Many factors contribute to a greater risk of falling in the hospital, including increased age with cognitive impairment (Stockwell-Smith et al., 2020), medications (Johnston & Magnan, 2019), gait instability, lower limb weakness, and history of falling (Dykes & Hurley, 2021). Cognitive impairment has been identified as a fall risk factor that may benefit from a patient-tailored approach rather than a one-size-fits-all fall prevention strategy (Johnston & Magnan, 2019). Video monitoring of patients with cognitive impairment has proven to be an effective fall-prevention strategy (Greeley et

al., 2020). Using sitters for these patients is costly and is no more effective than video monitoring (Greeley et al., 2020). Kowalski et al. (2018) implemented a video monitoring system where one staff member monitored up to eight patients from a remote location, which resulted in fewer falls and decreased costs.

The project site utilizes various fall prevention strategies for patients with cognitive impairment deemed as a high fall risk, including video monitors, sitters, and restraints, such as soft wrists, mitts, and belts. The utilization of sitters is often limited by staff availability. Challenges of video monitors include staff availability to watch the monitor and the limited reach of the radio frequency of the camera to the monitor. Restraint policies direct care providers to utilize the least restrictive measures possible, using restraints as a last resort. The use of soft wrist and mitt restraints requires safety checks every two hours, including neurovascular assessments on the affected extremities and offering food, water, and toileting. Medications that increase fall risk include antiepileptic, antipsychotic, anxiolytic/hypnotic, and antidepressant drugs (De Groot et al., 2019). Pharmacists at the project site are actively involved in medication management to prevent falls. The Safe Mobility and Fall Prevention Interprofessional Team includes a pharmacy representative.

Use of an algorithm tool outlining evidence-based, individualized fall prevention strategies based on risk factors has been shown to decrease patient fall rates (Spano-Szekely et al., 2019). Fall documentation in the project site's electronic health record (EHR) is disjointed. Fall assessment documentation occurs in one section of the EHR and fall prevention interventions are documented in another. Changes to the EHR must occur system-wide but exceed the amount of time feasible for the project.

In summary, the four major themes identified as successful fall prevention measures were: fostering an organizational culture of safety, adherence to an evidence-based fall prevention protocol; inclusion of patients as active participants in their safety and fall prevention plans; and addressing fall risk factors with a patient-centric approach. As noted in this literature review, studies have shown that a multifaceted approach to fall prevention has proven successful. Standardized nursing processes promote a culture of safety, and synchronously, individual fall risk factors must be considered when taking a patient-centric approach to fall prevention. Data regarding the effectiveness of bed alarms in preventing falls is conflicting. However, the quantity of data regarding the use of bed alarms is limited, and the use of this intervention has been inconsistent. Adherence to fall prevention protocols by nursing is crucial to improved patient outcomes. Patients knowledgeable about their fall risks and recommended fall prevention strategies are more likely to adhere to them and partner in their safety plan. To ensure that patients have this knowledge, nurses must educate patients on fall prevention.

Review of Theory

The theory of goal attainment, developed by Imogene King in the 1960s, guided the development and implementation of the project. King (2006) describes a dynamic, interpersonal relationship in which a patient grows and develops to reach specific life goals. The theory explains factors that can affect the attainment of goals: roles, stress, space, and time (King, 2006).

The concepts for the personal system (individuals) are perception, self, growth and development, body image, space, and time (King, 2006). Interpersonal systems consist of dyads (for example, the nurse and patient), triads (such as the nurse, patient,

and physician), or small groups (for example, the nurse, patient, physician, and social worker) (King, 2006). The concepts of the interpersonal system are interaction, communication, transaction, role, and stress (King, 2006). Social systems are on a larger scale, for example, hospital organizations and government systems (King, 2006). The social system concepts are organization, authority, power, status, and decision-making (King, 2006). Knowledge and perceptions are organized by concept, and this conceptual system is a foundation for goal-setting and decision-making (King, 2006).

King's (2006) transaction process was derived from her theory of goal attainment. The transaction process involves perception, communication, interaction, and transaction (King, 2006). She described the transaction process in relation to the nursing process (King, 2006). The nursing process, which includes assessment, planning, implementation, and evaluation, is a long-standing scientific method used in providing nursing care (King, 2006). Perception, communication, and interaction contribute to the knowledge used during the nursing assessment. Transaction involves mutual goal setting between the nurse and patient, which occurs during the planning stage of the nursing process, followed by implementation and evaluation (King, 2006). King's (2006) transaction process, concerning her theory of goal attainment, provides a conceptual framework for goal setting, evaluating patient outcomes, determining best evidence-based practices, and identifying cost-effective strategies for healthcare organizations.

Alignment of Theory

The fall prevention project was grounded in King's theory of goal attainment. King's three interacting systems of the goal attainment theory (personal, interpersonal, and social) aligned with the fall prevention project (King, 2006). The personal system

comprised the patient and the nurse, each bringing their individual perceptions about fall risk and prevention to the relationship. Often, patients do not recognize their fall risk factors or believe they are at risk for falling. Approximately two-thirds of patients with one or more risk factors, including recent fall history, do not perceive themselves as at risk for falling (Tucker et al., 2019).

The interpersonal system involves the nurse and patient relationship when interaction, communication, and transaction occur. During the interaction, the nurse and patient came together, bringing their individual perceptions about fall risk and falls. The nurse verified their understanding of the patient's perceptions about falling through communication. Nurses played a vital role in sharing knowledge and providing patient education regarding fall risk factors and prevention methods. Next, transaction occurred when mutual goal-setting took place. According to King (2006), a goal will likely be achieved when the nurse and patient agree. The nurse and patient should decide on a mutual goal and how to achieve it. The goal of the project was fall prevention. The method to achieve this goal was following the project's fall protocol. The nurse was responsible for providing education on individual fall risk factors, recommending fall prevention practices per the protocol, and setting a mutual goal with the patient.

Finally, the hospital serving as the project site is the social system where decision-making occurs. The nurse managers over the project units agreed to participate and helped support the initiative during the implementation phase. Thus, King’s (2006) interacting systems of goal attainment supported the fall prevention project.

Chapter III: Method

The project was developed using the best evidence-based practices involving fall prevention in the hospital setting. Revisions to the fall protocol provided a patient-centric approach to fall prevention, promoted consistency in the use of fall prevention strategies by direct care staff, decreased the risk of falls associated with debility, and empowered patients to be active participants in their safety plan.

Design of the Project

The project design was a quality improvement study deemed exempt by the Indiana Wesleyan University Institutional Review Board (Appendix A). The changes in practice were mandated by the managers of the hospital's participating units. Managers communicated the changes in practice related to the project. In addition, the project manager provided a one-page summary that outlined the critical revisions of the fall prevention protocol for each participating unit (Appendix B). This document titled "The Revised Fall Protocol: Important Changes!" was stored in a yellow binder at the nurses' station for access by all direct care providers and nurse managers of each participating unit. Next, the project manager provided the key points of changes in writing to the clinical director, who inserted this information in the hospital-wide safety huddle document distributed weekly to each unit. Administrative leaders used the hospital-wide safety huddle document to communicate essential information to all bedside staff. All bedside staff was expected to attend the safety huddle at the shift change, 0700 and 1900, where the charge nurse of each unit read the safety huddle document.

An organizational culture of safety was promoted by standardizing fall prevention interventions. Universal fall precautions include fall prevention strategies that are

expected to be implemented during every patient encounter. The project involved a revision to the universal fall precautions, including the use of a bed or chair alarm, the presence of a staff member when the patient is out of bed, and the presence of a staff member within arm's reach of the patient deemed a high fall risk. This change in practice was mandated during the pilot period of the project. If a patient refused a recommended fall prevention strategy, a chain of command was followed to promote patient compliance with recommended fall prevention measures. The chain of command included a patient care technician, RN, charge nurse, and nurse manager. The use of standardized scripting, “your safety is our priority”, promoted a culture of safety. Scripting involves using specific language or phrases to communicate information to patients and promote understanding. Scripting sets clear expectations and conveys the tone of the organizational culture (AHRQ, 2017).

The project plan aimed to decrease falls associated with hospital-acquired weakness and debility by maximizing the scope of the mobility team specialists. The initial scope of the mobility team specialist was to encourage ambulation in patients who could walk independently to prevent debility. The expectation of the mobility team specialist was expanded during the project to include mobilizing all physiologically stable patients. RNs were responsible for assessing the mobility level of each patient and communicating this information to mobility team specialists with documentation on the mobility team/nurse communication tool (Appendix C). The team member specialist was responsible for mobilizing as many patients as possible, to the activity level identified by the nurse, at least once per day to lessen the risk of debility and generalized weakness that contributes to falls. The mobility team/nurse communication tool was stored in a

yellow binder at the nurses' station of each participating unit, to which only the unit staff and mobility team had access. Patient information included on this form was limited to room number, patient initials, and date. At the end of each thirty days, the project manager collected this form, placed it in a binder, and stored it securely in a locked filing cabinet. After the project, these forms were placed in a containment device for confidential materials destruction.

Staff adherence to a fall prevention protocol was encouraged by education concerning the protocol changes and added accountability by unit managers. Staff were given written instructions on how to access patient education on fall prevention, how to print and supply written instructions to a patient, and how to properly document in the EHR that falls prevention education was provided. This instruction sheet was housed in the yellow binder and stored at the nurses' station of each participating unit.

It was planned for unit managers to promote staff accountability by rounding in patient rooms daily and ensuring fall prevention strategies were in place according to the revised fall prevention protocol. It was expected that rounding by managers would promote consistency in care, staff accountability, and a culture of safety (Johnston & Magnan, 2019). The unit manager was responsible for rounding on at least five patient rooms daily and completing the revised fall prevention compliance form (Appendix D). Patient information on this form was limited to the hospital room number and date of the audit performed. At the end of each 30 days, the project manager collected this form, which was stored securely in a locked filing cabinet. At the end of the project, these forms were placed in a containment device for confidential materials for destruction. Any consequences for not following the fall prevention policy were at the unit manager's

discretion.

Patient partnering in the safety plan was promoted by patient education. After admission, fall prevention education was provided to patients and families and reinforced throughout their hospital stay. The RN was responsible for printing and providing written education material from the EHR, reviewing this material verbally, and documenting this under the care plan/education section in the chart. If education could not be provided to the patient or family, the nurse documented this in the EHR. Step-by-step instructions were provided to each unit on accessing the education material and documentation (Appendix E). These instructions were stored in a yellow binder at the nurses' station, where all direct care providers and nurse managers had access. At the end of each thirty days, the project manager audited at least five charts per participating unit for fall risk education documentation or documentation of inability to provide education (Appendix F).

An individualized approach to fall prevention was promoted by the integration of the Falls Tailoring Intervention for Patient Safety (TIPS) tool into the patient environment (Appendix G). This evidence-based tool was developed and validated at Brigham and Women’s Hospital and has been used for over a decade (P. Dykes, personal communication, January 20, 2022). The author granted permission to use the tool at the project site (Appendix H). This tool was an 8" X 11" laminated document mounted next to the dry-erase boards in each patient room. According to the Falls TIPS tool, patients are assessed for the following fall risks: history of falls; medication side effects; use of a walking aid; the presence of an intravenous device pole or other equipment; and forgetfulness. Based on risk factors, suggested fall interventions outlined on the Falls

TIPS tool may include communicating recent falls with the interdisciplinary team; use of walking aids; staff assistance when ambulating; a toileting schedule; and use of a bed alarm. RNs used this tool in conjunction with the Morse fall assessment tool (AHRQ, 2022) to document recommended fall prevention interventions each shift based on the assessment findings. The Morse fall assessment tool was already in use, not a project change. The Falls TIPS tool provided a standardized and individualized approach to fall prevention. Additionally, this tool allowed the nurse to communicate the plan for safety to the interdisciplinary team, including the patient. The project implementation period was eighty-nine days, from February 1, 2022 to April 30, 2022.

Setting

The project was piloted at a 278-bed regional academic teaching hospital in the lower Midwest. Four acuity-adaptable inpatient units were involved: 3West, 3East, 4East, and 5East. Acuity adaptable units house patients requiring different levels of care, including medical, surgical, and progressive care patients deemed higher acuity than the average medical-surgical patient. Patients are admitted to units according to their medical diagnosis. Orthopedic and neurologic patients are placed on 3West, a 30-bed unit. Patients requiring dialysis are admitted to 3East, a 14-bed unit. Oncology and cardiac patients are admitted to 4East, a 30-bed unit with critical care level beds. 5East is a 30-bed, primarily medical, with the highest number of COVID-19 positive patients.

Population

The population sample included all direct care providers and nurse leaders on the project units. Direct care providers included RNs, patient care technicians (PCTs), unit managers, unit coordinators, mobility team specialists, and care coordinators. PCTs

function under the direction of the RN; they assist with daily living activities, including mobility, bathing, feeding, and toileting. Mobility team specialists' function under the direction of the RN. They are responsible for promoting patient mobility based on the patient's current activity level and physiologic status. Mobilization may include repositioning in bed, providing passive or active range of motion exercises, assisting a patient dangling at the side of the bed, sitting in a chair, or ambulating. The unit coordinator is positioned at the nurses' station. Among other things, their responsibilities include answering phone calls to the unit, entering patient transport needs in the computer system, greeting visitors, and ensuring they sign in the log. Care coordinators assist with onboarding new nurses and are often available as an educator and a resource. When at total capacity, each 30-bed unit is staffed with seven RNs, including a charge nurse, four PCTs, one unit secretary, and one care coordinator as needed based on staffing. One mobility team specialist was available eight hours daily for the entire hospital. Their efforts are focused primarily on the acuity-adaptable units participating in this project.

Data Collection

From January 2021 to April 2022, project facility fall data was recorded by the number of falls on each of the project's units. The number of reported falls was recorded for thirty, sixty, and ninety days after project implementation. This data was compared to the facility's previous year's data. Non-injurious, injurious, and the total number of falls were compared. In addition, reported falls at this hospital were compared to the national average of three to five falls per one thousand bed days (AHRQ, 2019).

At the end of each month during the project period, the project manager gathered data about patient education on fall prevention from the EHR system. Five patient charts

were randomly selected from each of the four project units and audited for compliance with fall prevention documentation on admission. Next, the project manager looked for a correlation between fall prevention education and falls.

Data regarding staff adherence to the practice changes were gathered, including using a bed or chair alarm, completing the Falls TIPS tool, and noting if items such as the call light and bedside table were within the patients' reach. If interventions were not in place, follow-up with the individual was documented, and any identified reasons why the interventions were not in place.

Chapter IV: Results

This quality improvement study was conducted using a pre and post-analysis method. Patient falls during the implementation period from February 1 to April 30, 2022, were recorded and documented per 1,000 bed days. This data was compared to the number of falls at the project facility during the previous year (February 1 to April 30, 2021) per 1,000 bed days. Staff adherence to changes in the fall prevention protocol, including the use of a bed or chair alarm and completion of the Falls TIPS tool, was monitored periodically by nurse managers or designees. Patient charts were randomly selected each month during the pilot period and audited for compliance with providing education on fall prevention by the project manager. During each mobility team specialist's shift, they recorded every patient who ambulated, the number of ambulation times, and the distance traveled. Despite these interventions, fall rates during the project were not reduced compared to the previous year. It is posited that fall reduction and successful project results were hindered by many limitations related to the project site relocating to a new hospital less than two months before implementation.

Results of Data Collection/Analysis

During the project period, adherence to the use of a bed or chair alarm for every patient occurred 82.41% of the time (Table 1). Completing the Falls TIPS tool was noted 68.58% of the time (Table 1). Fall education was documented 55.77% of the time (Table 1). No correlation was found between patients who received fall education and those who experienced falls, as none of the patients selected to audit for education compliance experienced a fall.

Table 1

Protocol Adherence

Item	Audited	Yes	No	Total	Missing Data
Alarm On	441	356	76	432	9
Percentage		82.41%	17.59%		
TIP Tool	441	299	137	436	5
Percentage		68.58%	31.42%		
Fall Education	60	29	23	52	8
Percentage		55.77%	44.23%		

Patient room audits for adherence to the policy on the bed and chair alarm use and completion of the Falls TIPS tool were completed by a nurse manager 17.01% of the time and a designee 79.37% of the time (Table 2). Other staff who completed audits for compliance with the fall protocol included PCTs and clinical advisors.

Table 2

Nurse Manager Auditing Frequency

Auditor	Frequency	Percent
Nurse Manager	75	17.01%
Designee	350	79.37%
Unknown	16	3.63%

When adherence was documented as not compliant, follow-up with staff occurred 96% of the time for 50 patients audited (Table 3). It is unknown if the follow-up was needed or occurred for the 391 patient records not audited.

Table 3

Staff Non-compliance Follow-up

Follow-up if non-compliant	Frequency	Percent
N	2	4.00%
Y	48	96.00%

From February thru April of 2021, 18 falls and 6,286.18 patient days were reported, resulting in an estimated fall rate of 0.00286, or 2.86 falls per 1,000 patient days. During the same time in 2022, there were 28 falls and 9,053.29 patient days, resulting in an estimated fall rate of 0.00309, or 3.09 falls per 1,000 patient days.

Poisson regression was run to determine whether there was a significant difference between these fall rates. The response variable was the number of falls. An independent variable for the years 2021 and 2022 was included in the two categories of pre-intervention (February – April 2021) and post-intervention (February – April 2022). The natural logarithm of patient days was included as an offset variable to control for the fact that there are different numbers of patient days between the two time periods. The patient days were roughly 44% higher in 2022, likely due to COVID being more prevalent in 2021. Hospital admission rates for acute and elective procedures declined during the COVID-19 pandemic (Gallagher et al., 2021). This trend continued through April 2021 (Gallagher et al., 2021). Contributing factors included the recommendation of social distancing and staying home and the increased availability and utilization of telehealth services (Gallagher et al., 2021). Based on a *p*-value of 0.24, there was insufficient evidence to suggest a significant difference in the fall rates between the two time periods. There was not enough evidence to conclude that the fall protocol effectively

reduced the fall rate.

A chi-square test was run to determine whether there was a relationship between the time periods and whether the fall resulted in injury. Based on a *p*-value of 0.76, there is insufficient evidence to suggest a significant relationship between the time periods and whether the fall resulted in an injury.

Table 4

Injury Outcome of Falls by Time Period

Year	Injury	No Injury	Total
2021 Falls	7	11	18
Percentage	38.89%	61.11%	
2022 Falls	13	15	28
Percentage	46.43%	53.57%	
Total Falls	20	26	46

Discussion

Lack of adherence to the revised fall protocol, including use of bed or chair alarms, completion of the Falls TIPS tool, and patient education, prevented a potential reduction in falls. Adherence to bed or chair alarms for every patient was the most adhered-to intervention, at 82.41% of the time. Next, completion of the Falls TIPS tool occurred 68.58% of the time for the 436 patient rooms audited. Documented patient education on fall prevention had the lowest adherence rate at 55.77% of the time (Table 1).

It was intended that nurse managers complete the fall compliance tool when making patient rounds and follow-up with staff for instances of non-adherence. Audits for compliance with the fall protocol were completed by a nurse manager 17.01% of the

time, while 79.37% of patients were audited for compliance by someone other than the nurse manager (Table 2). Follow-up with the nurse and support staff caring for a patient in a room with missed interventions occurred in 96% of 50 documented cases of non-adherence (Table 3). However, it is unknown if there was need for follow-up for 391 patient rooms that were audited for compliance with the bed or chair alarm and completion of the Falls TIPS tool.

Fall rates per 1,000 patient days were not reduced during the project period compared to the previous year. Furthermore, there is no evidence to suggest a correlation between the time periods and if a fall resulted in injury (Table 4).

Implications for Practice

Although fall rates slightly increased during the project period, recommended best practices for fall prevention are likely to decrease preventable falls when successfully implemented. Once the transition to the new hospital site is complete, and nursing workflow and processes are improved, preventable fall reduction should be a focused area for quality improvement. The critical fall protocol revisions will require nurse and patient partnerships for safety, nurse adherence to the fall protocol, organizational leader support, and an individualized approach to fall prevention.

Limitations

New and unforeseen challenges to fall prevention occurred during the project period. Several factors contributed to a statistically insignificant increase in fall rates during the pilot, including a change in the physical environment, a change in workflow, a surge in COVID-19-positive patients, high utilization of agency nurses, and a high staff turnover rate. These factors impacted both fall rates and adherence to the revised fall

protocol.

Given the variables that significantly impacted the organization and nurse workflow during the project period, it is impossible to conclude the effectiveness of the revised fall prevention protocol. Less than two months before the go-live date, the project hospital moved to a new building. Changes in the physical environment and layout of units prompted adaptation in nurse workflow. The previous hospital had a central nurses' station at each inpatient unit from which all patient rooms were visible. Units were L-shaped, with the nurses' station at the center. The inpatient units at the new facility were rectangular-shaped. Rather than one central nurses' station, there are multiple cubicles, termed pods, where computers are stationed for charting. Having a direct line of sight to all patient beds is impossible from any location.

The adoption of new equipment and technology may also have impacted fall rates. Staff received training on new patient beds; however, a knowledge gap was later identified. Staff reported patient falls, citing that the bed alarm was turned on but did not sound or ring to the call system. It was found that the bed must be lowered to the lowest position, which can be confirmed by the presence of three green lights at the foot of the bed, for the alarm to function properly with the call light system.

Following the move to the new facility, the number of patients diagnosed with COVID-19 surged. Inpatient pediatric beds on 3West were transitioned to overflow adult beds. The clean supply room near those rooms was stocked with pediatric supplies requiring staff to walk farther to obtain needed supplies. This change resulted in a slower response time to call lights and alarms.

Travel nurses reported difficulty recognizing the room where a bed or chair alarm

sounded. When a bed alarm sounds, a flashing light related to the call system appears above the patient's room. Staff was accustomed to looking down the hallway to identify the flashing light. The layout of the unit made it impossible to visualize every room. Further education on the call light system was needed to help staff quickly identify which room was associated with a sounding alarm.

Nurses reported feeling overwhelmed with responding to bed and chair alarms due to the large size of the unit. The number of inpatient beds in each participating unit increased by three. The number of medication rooms increased from two to four. The number of clean and soiled utility rooms and nutrition rooms doubled from one to two per unit. Nurse assignments were often interspersed over the unit rather than being together. Charge nurses reported that this was to make assignments as fair as possible based on acuity level. This way, one nurse was not assigned all medical-surgical level of care patients, and another assigned all higher acuity, progressive care patients. Patient assignments spread throughout the unit caused nurses to be less readily available to respond to their assigned patients' needs and alarms.

Two of the three mobility team specialists took on new jobs within the organization two weeks before project implementation. The remaining mobility team specialist continued to function within her defined role and helped patients who could ambulate with the assistance of one person or by themselves. The goal of increasing the scope of the mobility team specialist to mobilize all physiologically stable patients, requiring the assistance of two or more staff members, did not occur.

The revised fall prevention compliance forms (Appendix D) were intended to be completed by each participating unit's manager or charge nurse. However, this task was

often delegated because of the many administrative demands required of nurse managers related to the change of the new facility and staffing.

Finally, some nurses reported alarm fatigue. Alarm fatigue is characterized by alarm desensitization, which can lead to a slow response time, or a missed alarm (Woo & Bacon, 2020). Acuity adaptable units house medical-surgical level of care patients and progressive care patients who require continuous cardiac monitoring. Alarms on the project units included those associated with the cardiac monitors, Alaris pumps used for administering intravenous fluids and medications, kangaroo pumps used for enteral feedings, and bed and chair alarms.

Recommendations

Some limitations have been resolved as workflow and processes have become better established since the facility relocation. Nurse workflow issues related to the layout and size of the unit and widespread assigned patient rooms have been addressed by transitioning to assignment by pods or teams. Nurses are now assigned to patient rooms close in proximity rather than spread throughout the unit. This grouping allows the nurse most knowledgeable about the patient to be closer, allowing for improved observation and patient care. As a result, call lights and alarms can be addressed promptly.

In response to the continued need for more adult inpatient beds, all the beds on the 3 West unit were permanently designated as adult inpatient beds. The clean utility room was stocked with appropriate supplies for the adult population, and pediatric supplies were removed. Staff working in the pod of rooms previously designated pediatric beds now have close access to needed supplies to monitor their patients quickly and respond to safety needs.

Organizational leadership decided to drastically reduce pay rates to travel nurses, as the pay rate increase in response to the pandemic was not fiscally sustainable. A strategy to counteract the loss of agency nurses was hiring nurses from an international travel nurse organization. These hires are committed to two-year terms with a potential permanent position offer at the end of the contract. Less turnover should lead to retention of staff that are knowledgeable about facility equipment and protocols, including the fall prevention protocol.

Fall prevention protocol adherence has been shown to be greatest in a culture of safety with solid leadership support (HRET, 2016). Adherence to a fall protocol, or changes to a protocol, is more likely to occur when a nurse manager monitors rather than delegates to subordinates. Manager follow-up with bedside staff who do not adhere to the fall protocol is essential for accountability, patient safety, and improved quality of care.

This project offered strategies established on evidence-based practices that could successfully decrease preventable patient falls. Increasing activity during hospitalization can reduce patient falls resulting from debility and weakness. Therefore, expanding the role and the number of mobility team specialists is recommended. Providing patient education, performing hourly rounding, and partnering with patients in their plan for safety can help prevent alarm fatigue. When a patient calls for assistance to get out of bed, staff can then respond and turn the bed or chair alarm off, preventing a bed or chair alarm from sounding. Adding the bed or chair alarm to universal fall precautions and remaining with the patient until they return to a seated or lying position may help reduce the number of unwitnessed falls.

Considering the multitude of fall risk factors in the hospital, an individualized,

patient-centric approach to fall prevention is essential. Integrating a Falls TIPS tool or similar tool offers an individualized approach to fall prevention and serves as a communication tool for staff and patients. In summary, preventing hospital falls is a continued improvement opportunity. Strong leadership support and added accountability may increase adherence to a multifaceted fall prevention protocol that supports best evidenced-based practices.

References

Agency for Healthcare Research and Quality. (2019). *Falls.* https://psnet.ahrq.gov/primer/falls#:~:text=Falls%20are%20a%20common%20and,hospitalized%20patients%20fall%20each%20year

Agency for Healthcare Research and Quality. (2021a). *Preventing falls in hospitals*. http://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/practices.html#3-4

Agency for Healthcare Research and Quality. (2021b). *Preventing falls in hospitals, Tool 3H: Morse fall scale for identifying fall risk factors.* https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/morse-fall-scale.html

Agency for Healthcare Research and Quality. (2017). *The CAHPS ambulatory care improvement guide: practical strategies for improving patient experience*. https://www.ahrq.gov/sites/default/files/wysiwyg/cahps/quality-improvement/improvement-guide/6-strategies-for-improving/access/cahps-strategy-6-q.pdf

Agency for Healthcare Research and Quality. (2022). *What is patient safety culture?* https://www.ahrq.gov/sops/about/patient-safety-culture.html

American Nurses Association. (2019). *American Nurses Association code of ethics*. https://nursing.rutgers.edu/wp-content/uploads/2019/06/ANA-Code-of-Ethics-for-Nurses.pdf

Bargmann, A.L., & Brundrett, M.S.M. (2020). Implementation of a multicomponent fall prevention program: Contracting with patients for fall safety. *Military Medicine*,

185, 28–34. https://doi.org/10.1093/milmed/usz411

Centers for Medicare and Medicaid Services. (2022). *Hospital outpatient quality reporting program.* https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/ HospitalQualityInits/HospitalOutpatientQuality ReportingProgram

Chan, D.K.Y., Sherrington, C., Naganathan, V., Xu, Y.H., Chen, J., Ko, A., Kneebone, I., & Cumming, R. (2018). Key issues to consider and innovative ideas on fall prevention in the geriatric department of a teaching hospital. *Australasian Journal on Ageing*, *37*(2), 140–143. https://doi.org/10.1111/ajag.12528

De Groot, G.C.L., Al-Fattal, A., & Sandven, I. (2019). Falls in hospital: A case–control study. *Scandinavian Journal of Caring Sciences*. Advance online publication. https://doi.org/10.1111/scs.12733

Dubuc, A., & Boivin, J. (2016). Fall prevention: The little things can make a big difference. *American Nurse Today*, *11*(11), 25–26.

Dykes, P.C., & Hurley, A.C. (2021). Patient-centered fall prevention. *Nursing Informatics*, *52*(3), 51–54. https://doi.org/10.1097/01.NUMA.0000733668.39637.ba

Fehlberg, E., Lucero, R., Weaver, M., McDaniel, A., Chandler, A., Richey, P., Mion, L., & Shorr, R. (2017). Impact of the CMS no-pay policy on hospital-acquired fall prevention related practice patterns. *Innovation in Aging*, *1*(3). https://doi.org/10.1093/geroni/igx036

Francis-Coad, J., Hill, A.M., Jacques, A., Chandler, A.M., Richey, P., Mion, L.C., & Shorr, R.I. (2020). Association between characteristics of injurious falls and fall

preventive interventions in acute medical and surgical units. *The Journal of Gerontology*, *75*(10), e152–e158. https://doi.org/10.1093/gerona/glaa032

Gallagher, K., Gerhart, J., Amin, K., Rae, M., & Cox, C. (2021). Early 2021 data show no rebound in health care utilization. https://www.healthsystemtracker.org/brief/early-2021-data-show-no-rebound-in-health-care-utilization/#Observed%20overall%20hospital%20admissions%20as%20a%20percent%20of%20predicted%20admissions,%20Jan.%202020%20-%20April%202021

Greeley, A.M., Tanner, E.P., Mak, S., Begashaw, M.M., Miake-Lye, I.M., & Shekelle, P.G. (2020). Sitters as a patient safety strategy to reduce hospital falls: A systematic review. *Annals of Internal Medicine, 172*(5), 317–325. https://doi.org/10.7326/M19-2628

Hakvoort, L., Dikken, J., Van Der Wel, M., Derks, C., & Schuurmans, M. (2021). Minimizing the knowledge-to-action gap; identification of interventions to change nurses' behavior regarding fall prevention, a mixed method study. *Biomed Central Nursing*, *20*(80), 1–13. https://doi.org/10.1186/s12912-021-00598-z

Health Research & Educational Trust. (2016). Preventing patient falls: A systematic approach from the Joint Commission Center for transforming healthcare project. *Hospitals in Pursuit of Excellence*, 1–19. http://www.hpoe.org/Reports-HPOE/2016/preventing-patient-falls.pdf

Heng, H., Jazayeri, D., Shaw, L., Kiegaldie, D., Hill, A.M., & Morris, M.E. (2019). Educating hospital patients to prevent falls: Protocol for a scoping review. *British Medical Journal*, *9*(9), 1–4. https://doi.org/10.1136/bmjopen-2019-030952

Hoffman, G.J., Hays, R.D., Shapiro, M.F., Wallace, S.P., & Ettner, S.L. (2017). The costs

of fall-related injuries among older adults: Annual per-faller, service component, and patient out-of-pocket costs. *Health Services Research*, *52*(5), 1794–1816. https://doi.org/10.1111/1475-6773.12554

Johnston, M., & Magnan, M.A. (2019). Using a fall prevention checklist to reduce hospital falls: Results of a quality improvement project. *American Journal of Nursing*, *119*(3), 43–49. https://doi.org/10.1097/01.naj.0000554037.76120.6a

Khalifa, M. (2019). Improving patient safety by reducing falls in hospitals among the elderly: A review of successful strategies. *Studies in Health Technology & Informatics*, *262*, 340–343. https://doi.org/10.3233/SHTI190088

King, B., Pecanac, K., Krupp, A., Liebzeit, D., & Mahoney, J. (2018). Impact of fall prevention on nurses and care of fall risk patients. *Gerontologist*, *58*(2), 331-340. https://doi.org/10.1093/geront/gnw156

King, I.M. (2006). A systems approach in nursing administration: structure, process, and outcomes. *Nursing Administration Quarterly, 30*(2), 100-104. https://doi.org/ 10.1097/00006216-200604000-00006

Kowalski, S.L., Burson, R., Webber, E., & Freundal, M. (2018). Budgeting for a video monitoring system to reduce patient falls and sitter costs: A quality improvement project. *Nursing Economics*, *36*(6), 291–295.

Nuckols, T.K., Needleman, J., Grogan, T.R., Liang, L.J., Worobel-Luk, P., Anderson, L., Coles, C., Czypinski, L., & Walsh, C. (2017). Clinical effectiveness and cost of a hospital-based fall prevention intervention: The importance of time nurses on the front line of implementation. *The Journal of Nursing Administration*, *47*(11), 571–580. https://doi.org/10.1097/NNA.0000000000000545

Osho, O.A., Harbidge, C., Hogan, D.B., Manns, P.J., & Jones, C.A. (2020). Evaluation of a balance and mobility program for older adults at risk of falling: A mixed methods study. *Journal of Evaluation in Clinical Practice, 27*(2), 307-314. https://doi.org/10.1111/jep.13413

Phillips, J., Malliaris, A., & Bakerjian, D. (2021). Nursing and patient safety. *Patient Safety Network.* https://psnet.ahrq.gov/primer/nursing-and-patient-safety

Radecki, B., Reynolds, S., & Kara, A. (2018). Inpatient fall prevention from the patient's perspective: A qualitative study. *Applied Nursing Research, 43*, 114–119. https://doi.org/10.1016/j.apnr.2018.08.001

Seow, J.P., Chua, T.L., Aloweni, F., & Lim, S.H. (2021). Effectiveness of an integrated three-mode bed exit alarm system in reducing inpatient falls within an acute care setting. *Japan Journal of Nursing Science*, 1–7. https://doi.org/10.111/jjns.12446

Spano-Szekely, L., Winkler, A., Waters, C., Dealmeida, S., Brandt, K., Williamson, M., Blum, C., Gasper, L., & Wright, F. (2019). Individualized fall prevention program in an acute care setting: An evidence-based practice improvement. *Journal of Nursing Care Quality*, *34*(2), 127–132. https://doi.org/10.1097/NCQ.0000000000000344

Staggs, V.S., Turner, K., Potter, C., Cramer, E., Dunton, N., Mion, L.C., & Shorr, R.I. (2020). Unit-level variation in bed alarm use in US hospitals. *Research in Nursing & Health*, *43*(4), 365–372. https://doi.org/10.1002/nur.22049

Stockwell-Smith, G., Adeleye, A., Chaboyer, W., Cooke, M., Phelan, M., Todd, J., & Grealish, L. (2020). Interventions to prevent in-hospital falls in older people with cognitive impairment for further research: A mixed studies review. *Journal of*

Clinical Nursing, *29*, 3445–3460. https://doi.org/doi.org/10.1111/jocn.15383

The Joint Commission. (2015). Preventing falls and fall-related injuries in health care facilities. *Sentinel Event Alert, 55,* 1-5. https://www.jointcommission.org/-/media/tjc/documents/resources/patient-safety-topics/sentinel-event/sea_55_falls_4_26_16.pdf

Tucker, S., Sheikholeslami, D., Farrington, M., Picone, D., Johnson, J., Matthews, G., Evans, R., Gould, R., Bohlken, D., Comried, L., Petrulevich, K., Perkhounkova, E., & Cullen, L. (2019). Patient, nurse, and organizational factors that influence evidence-based fall prevention for hospitalized oncology patients: An exploratory study. *Worldviews on Evidence-Based Nursing*, *16*(2), 111–120. https://doi.org/10.1111/wvn.12353

Woo, M. & Bacon, O. (2020). Making healthcare safer III: A critical analysis of existing and emerging safety practices. *Agency for Healthcare Research and Quality.* https://www.ahrq.gov/sites/default/files/wysiwyg/research/findings/making-healthcare-safer/mhs3/alarm-fatigue-1.pdf

Appendices

Appendix A

Notice of Exemption

Indiana Wesleyan University
Institutional Review Board

Notice of Exemption

A Revised Fall Prevention Protocol: Closing the Gap Between Policy and Practice
Title of Research Topic

Amanda Brashear, Rhonda Oldham
Investigator(s)

1678.22

IRB ID Number

The IWU Institutional Review Board (IRB) has reviewed your proposal and has determined that your proposal is exempt from further review by the IRB because the proposed project does not constitute human subjects research. Federal regulations that establish the authority of the IRB provide a specific definition of human subjects research which defines the scope of IRB authority. Your project falls outside the federal definition of human subjects research and is therefore not subject to IRB review.

Please note that this exemption regards only the oversight of human subjects research by the IRB. The IRB has not reviewed any other aspects of the research project and makes no judgement on the merits of the project or its methodologies. All research executed at IWU must conform to all applicable state and federal laws and regulations and to all applicable IWU policies.

January 27, 2022

Appendix B

One-Page Summary of Changes

Revised Fall Protocol: Important Changes!

Falls TIPS tool: laminated tool in each patient room. Nurses, please use this tool to communicate the safety plan to the entire care team, including your patient.

Bed/ chair alarm: Please ensure the alarm is on for EVERY patient. DO NOT LEAVE A PATIENT OUT OF BED UNATTENDED. Remain within eyesight when OOB (arms reach if high fall risk).

Fall prevention education: please provide to every patient or family who is capable and ready to learn **upon admission** and repeat PRN. If unable or not ready to learn, document fall prevention not given. See how-to instructions.

If your patient refuses recommended interventions (nonskid socks, walker, etc.) notify your charge nurse before mobilizing patient. Charge nurse→ notify unit manager. Use scripting, “Your safety is our priority”, and “safety trumps privacy”.

Nurse manager or charge nurse will conduct safety spot checks daily, ensuring safety measures are in place.

Mobility team will be present on your unit for 1.5 hours during day shift. Night nurse: please complete patient activity level on “mobility team/ nurse communication” form. Goal: mobilize as many patients as possible.

Appendix C

Mobility Team/Nurse Communication Tool

The mobility team will be available between 0900-1600 to help mobilize patients. Please utilize this resource! Night shift nurses: please have the room number, patient initials, and current activity level completed on this form prior to the end of your shift.
Mobility team schedule: 3W: 0900-1030 3E: 1030-1200 4E: 1230-1400
5E: 1400-1530 0: 1530-1630
Day shift nurses: Please plan accordingly and try to pre-medicate PRN and toilet patients prior to their scheduled mobility time.

Room #	Patient initials	Current activity level	Chair- time spent in chair if possible	Ambulated- please include distance in estimated # of feet	Activity- other

Appendix D

Compliance Form

Revised Fall Prevention Compliance Form

Dear nurse leader (manager or charge nurse): Please make rounds in at least one patient room assigned to each nurse, with a minimum of five patient rooms total, and note the following: Is the bed or chair alarm on? Are items (bedside table & call light) within reach? If no, please follow up with the assigned nurse. If barriers are identified or staff education is provided, please note this under the additional info/ comments section.

Date	Auditor initials	Room #	Bed or chair alarm on (Y/N)	Falls TIPS tool is complete (Y/N)	Call light and bedside table within reach (Y/N)	Follow up completed with care team for inventions not in place? (Y/N)	Additional information/ comments

Appendix E

How to Access Patient Education

Providing Patient Education on Fall Risk Prevention in the Hospital:

How to access written education material for patients & how to document this.

1. Log in to Cerner and open your patient's chart.
2. Find the "Patient Education" tab in the toolbar at the top.
3. In the search settings, ensure that the dropdown "contains" is selected and that the "ALL" button is selected.
4. Type "fall" in the search box. In the options that appear to the right, select by double clicking "Preventing Falls: In the Hospital".
5. At the bottom right of this page, select "Sign", and then select "Print" if you would like to provide written education material to your patient.
6. Next, select the I&O flowsheet from the left column.
7. Scroll down to "Patient Education".
8. Complete the "learner profile" section.
9. Then scroll down to find "Fall precautions". Within this category there are 3 section options: universal fall precautions, review etiologies, and review patient specific information. Select all 3.

Appendix F

Patient Education Compliance Form

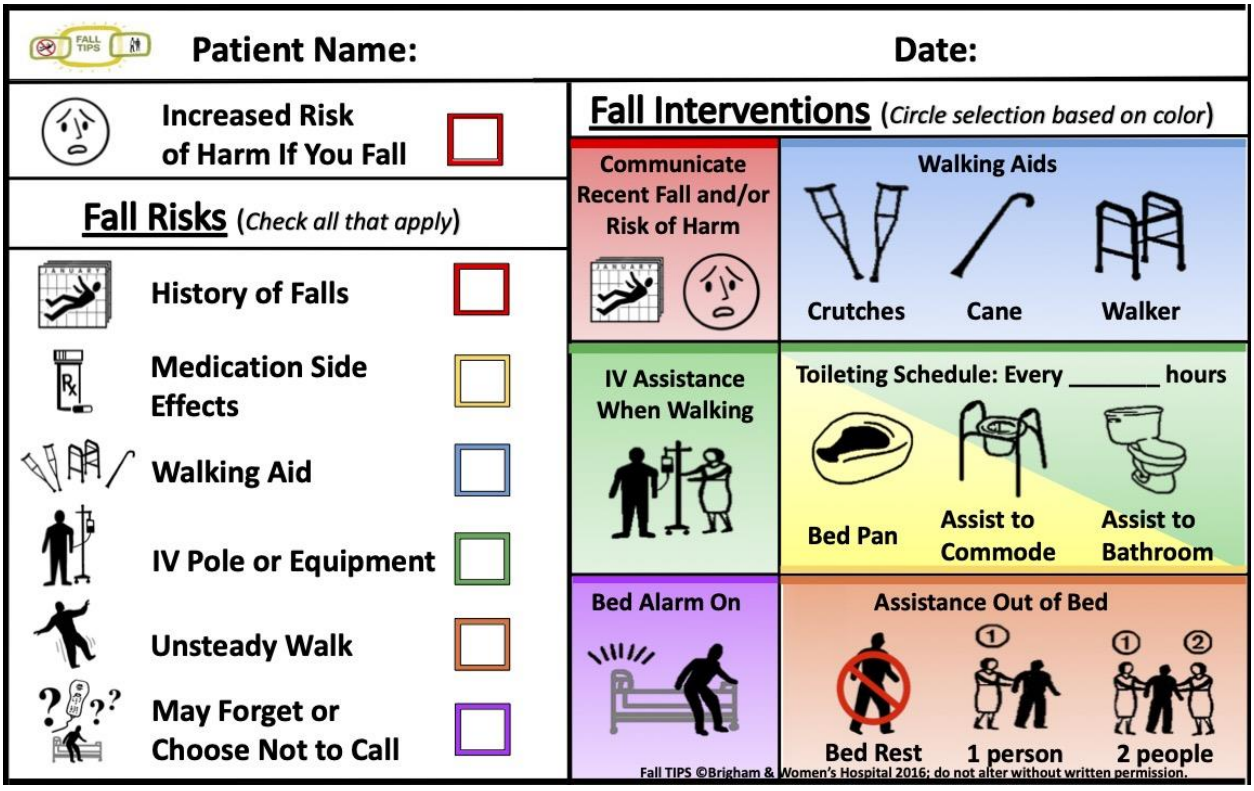
Patient Education Compliance

The principal investigator of this project will audit at least five patient charts on each of the five participating units every thirty days of this study.

Date	Unit	Room number	Patient initials	Fall prevention education was documented as provided (Y/N)	Education documentation states that patient is not ready to learn.	No existing documentation of fall prevention education OR reason for no education.	Patient experienced a fall during this hospital stay (Y/N)

Appendix G

Falls TIPS Tool



Appendix H

Permission to Use Tool

1/20/2022

To Whom it May Concern,

This message grants Amanda Brashear of Indiana Wesleyan University permission to implement Fall TIPS (Tailoring Intervention for Patient Safety) within their domains. This is an evidence-based tool that has been developed, tested, and validated over the past decade at Brigham and Women's Hospital and other collaborating hospitals. Given that the Fall TIPS tool is our property, we ask that you do not alter the tool without written permission from us. You may add your logo, but please send us the final version of the poster for approval.

Sincerely,

Patricia C. Dykes, PhD, RN, FAAN, FACMI

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