Long-Term Care: Preventing Falls through a Protocol Approach

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ABSTRACT

Problem: Falls have significantly been a problem for years and occur for different reasons.

Background: Millions of dollars have been spent on fall injuries in long-term care facilities. Falls are especially detrimental to the elderly population and can result in fractures, scrapes, and even death. Falls and fractures can cost millions of dollars to patients, their families, and healthcare organizations (Soliman, Meyer, and Baum, 2016).

Methods: This quality improvement process was implemented over a four-week timeframe. A Fall Prevention Protocol (FPP) and an hourly rounding checklist were utilized with the goal of decreasing fall rates. A seminar was conducted to educate participants about the protocol and hourly rounding checklist.

Results: The pre-intervention fall rate is at 23.1 (*33 falls*) per 1000 patient days while the post-intervention fall rate is at 3.6 (*5 falls*) per 1000 patient days. This DNP QI Project resulted in a positive outcome in reducing falls rates.

Conclusion: The FPP Protocol can be used on the practice site as their Fall Prevention Practice to maintain a low fall rate. The findings of this project may be used as a reference by future DNP projects conducting a similar project on fall prevention in long-term care. This will result in a more reliable QI Project of the FPP protocol's effectiveness in preventing and reducing falls in a long-term care facility.

Long Term Care: Preventing Falls through a Protocol Approach

Falls and fractures can cost millions of dollars to patients, their families, and healthcare organizations (Soliman, Meyer and Baum, 2016). Falls are especially detrimental to the elderly population and can result in fractures, scrapes and even death. Interventions must be implemented to assist the elderly population to avoid falls.

Millions of dollars are spent each year on residents in long term care facilities due to falls. According to Solimon, Meyer, and Baum (2016), one-third of adults over age 65 fall each year and the direct medical costs of falls in the U.S. was $30 billion. This project will explore using a variety of interventions to reduce falls in the Long-Term Care (LTC) setting.

Falls occur widely and for a variety of reasons. Initially, falls were categorized as accidental deaths or injuries and were grouped under motor vehicle accidents (MVA). Tracking falls from death certificates allowed the public health department to analyze the rate of falls occurring within the general public. In 1956, the total number of reported falls were 20,682 in United States (Iskrant,1958).

Studies were conducted to determine the impact and causes of the falls. One of the earlier studies about impacts that a fall would have on a patient was conducted in London in 1958. It concluded that falls are not just a result of old age, but there could be other predisposing factors (Sheldon, 1960). The evidence in the study suggested that causes of fall vary. Fall can be due to fundamental defect of control in posture and gait.

In the late 1950's, the National Safety Council noted that deaths from accidents were a national epidemic (Bissell and McInnes, 1959). The initial issue was the reporting of falls so uniform reporting system was established for falls which ultimately led to a national fall reporting system.

Florence et al (2015), found that 32,000 people over the age of 65 experienced a fall. Half of all LTC residents will experience a fall each year (Berry and Kiel, 2017) but falls can be reduced through a variety of interventions. Issues that contribute to falls include having to go to

the bathroom, falling while reaching to get an object on a table, dizziness, slipping on water, and elevated beds.

Project Identification

As the baby boomer generation ages, death from falls will be more than from all other forms of injury (Allen et al 2015). The subject of this project, Miller's Merry Manor, has 42 residents between the ages of 55 and 103. It is currently experiencing a staffing shortage, which may be contributing to the increase in the fall rates. Falls in the facilities are affecting multiple disciplines. Physical therapy is seeing three additional patients each day due to the injuries associated with falls and social services has been responding to emails and phone calls from the family members after the patient's fall.

The administrator and director of nursing both agree that their fall rates have increased by fifteen percent within the last six months at this facility. This LTC facility had ten falls in September and October but from November to March, there have been forty-three falls. Currently there is no fall prevention policy.

There are many ways to reduce the number of falls in this facility. The National Falls Interventions includes exercise, medication modification, Vitamin D supplementation, environmental and technology assistance, education and multifactorial interventions (Kiel, 2019). This DNP project will explore if an evidence-based Fall Prevention Protocol (FPP) can reduce falls in the LTC setting through reducing the resident needs and increasing education on fall prevention.

The aim of this project is to standardize practice through implementing an evidence-based protocol by providing interventions to help reduce fall rates in the LTC setting within a five-week timeframe. All staff will be trained on how and when to document a fall. Nursing personnel will be trained on how to submit the required documents for this proposal. Administrator and the director of nursing (DON) will be trained on all the documentation for this project. Weekly blitz will be conducted with each department to ensure that they are using the tools effectively.

Weekly blitz will be a ten-minute meeting to discuss the new updates on the FPP to help ensure that staff are following the documentation guidelines.

Project Question

Will implementing an evidence-based fall prevention protocol (FPP) improve fall rates at an LTC facility within a five-week timeframe?

Search Methods

A comprehensive literature search was performed and was limited to studies that were published within the last five years except for the historical perspectives on falls. Uptodate was utilized to locate national policies. Information from as early as the 1950s was chosen to provide historical context. The search engines that were utilized include CINAHL, Medline, and Cochrane Library. Peer reviewed journals and other scholarly information were selected from these sites.

Studies that were included in the literature review were those that addressed patients that had experienced falls in a healthcare or LTC facility. Studies were excluded that did not meet the above criteria. This included information obtained from people that had fallen in their home. The key terms that were used were ‘falls’, ‘risk or falls’ and ‘falls in the LTC’.

Review Synthesis

According to the Centers for Disease Control and Prevention (CDC), three million elderly patients receive treatment each year for injuries sustained from falls. A hip fracture accounts for around 300,000 of the more than 800,000 older individuals who require hospitalization each year owing to fall-related injuries. Fall-related injuries cost more over $50 million in 2015, with Medicare and Medicaid covering 75% of those expenses.

In 2014, one in ten Americans aged 65 and over had reported falling, and more than one in four stated they had suffered a fall-related injury. Each year falls are to blame for more than 50% of injury-related mortality and 60% of injury-related ED visits among older people. The number of medically treated falls is rising along with the older adult population, which is having

a significant financial impact on the healthcare system (Haddad, Y. et al. 2019).

Willy and Osterberg (2014) conducted research on fall prevention techniques for long-term care facilities. They go over how to evaluate fall risks, common causes of falls, and various risk-reduction measures. According to their research, in order to begin a falls prevention strategy before the first fall occurs, an individual's risk factors, and history of at-home falls must be determined. This can be achieved by applying a variety of evidence-based strategies for assessing fall risk on the first day of admission. They must evaluate the medical history, fall history, and comorbidities, then choose and concentrate on strategies. They highlighted a number of causes of falls, including syncope, unsupervised patient movements, visual and cognitive deficit, and auditory clutter. They concluded that beyond mere paper compliance, accurate fall reporting, root cause investigation involving the patient's family and the interdisciplinary care team, and trend identification and analysis are all necessary. Additionally, any fall interventions must be tailored to the risk variables of each individual and started before to the fall.

The biological, behavioral, socioeconomic, and environmental risk factors for falls among older adults are said to be reduced by a range of interventions (Lord, Smith, & Menant, 2010; Nitz et al., 2012; Yoo, Kim, Yim, & Jeon, 2016). These consist of physical activity, prescription drugs, educational programs, and assistive technology like bed alarms. Since environmental factors include both internal and extrinsic risk factors, they are particularly significant. For instance, muscle weakness in older persons causes reduced function and a higher level of frailty, which heightens the risk of falling.

An article by Kiel, Schmader, and Givens (2018), concluded that gait and balance problems were the primary cause of falls and also noted falls increased with age. People 65 and older fall 30 to 40 more times than someone younger than 65. An article by Barbosa et al. (2016), also explored the causes of falls. This study was a cross-sectional study conducted in a nursing home. The individuals that participated in the study were 79 years or older and living in a nursing home. This study utilized the Timed Up and Go (TUG) test to determine a patient's fall

risk. The TUG test examined a patient's mobility and requires both static and dynamic balance. This study concluded that falls in this population was associated with lower limb muscle performance, health-related quality of life (HRQOL) and functional status.

Jacobson et. al., 2021 used a Bold Fall Prevention Approach. It is a 12-week digital program of progressive training routines, this program aims to decrease the risk of falls by boosting strength, mobility, and balance. All workouts (classes) were available online and on demand. Bold instructors, which comprised kinesiologists, personal trainers, and community Tai Chi instructors, led each session. Exercises from evidence-based programs like Matter of Balance, Stay Active and Independent for Life (SAIL), Fall Proof, and Tai Ji Quan: Moving for Better Balance were included in the curriculum. Bold's lessons comprised static and dynamic motions that tested a participant's center of gravity and were intended to gradually increase physical strength, balance, and mobility (e.g., tandem walking). Over the course of the program, weight-shifting and overreaching movements were added, progressively upping the difficulty of these exercises. The study illustrated that majority or 60% of the patients had fallen at least one time within 12 months. The Bold Fall Prevention Program had shown a positive impact on falls.

An article by Goldsack, Bergey, Mascioli and Cunningham (2015) studied the effects of hourly rounds on a unit in the hospital. This was a thirty-day prospective pilot study that examined using unit managers and other non-nursing personnel to assist with rounding. The study concluded that effective leadership engagement and involving front-line staff in the program have reduced the fall rate.

Hicks (2015) investigated the results of hourly rounding, a procedure in which nurses and support staff visit hospitalized patients' rooms on a set schedule and carry out particular nursing interventions each hour. She came to the conclusion that hourly rounding reduces a patient's anxiety. By monitoring the patient hourly, attending to their needs during hourly rounds, and employing the four Ps, falls were reduced in the study by 50%. The four P's are pain, potty, positioning, and possessions.

Health Promotion Model (HPM) has been utilized in healthcare through focusing on patient behavior and nurse's knowledge to educate the patient about the benefits of being healthy and free from falls (Sevinc & Argon, 2018). The nurse and the patient both have a responsibility to ensure that the patient remains free from falls which can be accomplished through their interaction. The nurse's responsibility is to ensure that the patient understands the benefits of being free from falls and remaining as healthy as possible. The patient's responsibility is to receive the knowledge from the nurse and then apply it to their daily routines to remain free from falls.

A comprehensive strategy for patient well-being, health promotion comprises interventions and goal-directed behavior (Rector & Gilchrist, 2016). The patient will feel more in charge thanks to this notion, which will boost their self-assurance and restraint. Once their self-control and confidence have increased, the nurse can help them further by making sure that they feel empowered by not falling. A patient may experience a sense of loss of control over their life after a fall.

A five-year longitudinal study conducted from 1972 to 1977, by Gryfe, Aimes and Ashley, (YEAR) on the ambulatory institutionalized population over 65 concluded that 668 residents per 1000 residents experience a fall. In 2014, the United States Preventative Task Force (USPTF) (2018), concluded that 28.7% adults over 65 had experienced a fall. Falls have been associated with an increase mortality within this population and can have an impact on the healing process of patients. This review of literature will explore the significance of falls in an institutionalized setting, causes of falls, and fall prevention strategies. The themes that will be discussed will be the following: fall epidemiology, impact of falls, risk factors for falls, screening for fall risks, fall prevention techniques and controversies and areas for further investigation.

Epidemiology

The USPSTF (2018) findings indicated patients who had experienced falls in the past were much more likely to fall again. Fall epidemiology can be attributed to a variety of things.

Water on the floor could cause slipping, inadequate lighting causes patients to run into furniture or other object, improper wear of footwear can cause imbalance or another medical conditions such as osteoporosis can trigger fall for the patients.

An article by Berry, Kiel, Schmader and Sullivan, (2017), concluded that falls are more common in women than in men. This study followed women for two years and noted a correlation between the location of the fall and the extent of the injury. Nursing home falls are attributed to a higher rate of major injuries.

An article by Kiel, Schmader and Givens (2018), concluded that gait and balance problems were the primary cause of falls and also noted falls increased with age. People 65 and older fall 30 to 40 more times than someone younger than 65. An article by Barbosa et al. (2016), also explored the causes of falls. This study was a cross-sectional study conducted in a nursing home. The individuals that participated in the study were 79 years or older and living in a nursing home. This study utilized the Timed Up and Go (TUG) test to determine a patient's fall risk. The TUG test examined a patient's mobility and requires both static and dynamic balance. This study concluded that falls in this population was associated with lower limb muscle performance, health-related quality of life (HRQOL) and functional status.

Impact of the Problem

The USPSTF (2018) concluded that in 2015, 33,000 falls resulted in death. A fall can have significant impact on a patient and can be detrimental to their mobility. A randomized controlled trial (RCT) conducted by Salkeld et al. (2000) found that older women would rather die than have a fall and then be placed in the nursing home. This demonstrates that these women are aware that a fall can have a negative impact on their life. This study concluded that pain usually occurs after a fall and can result in the patient not being able to ambulate as they had prior to the fall. This impairs the patient's ability to perform self-care and socialize with their friends and family. In a 2013 study Mattison et al. (2017), concluded that pain can affect a patient's daily functioning ability and must be taken into consideration.

Along with the physical costs to patients, the financial cost of a fall can have a tremendous impact on a facility. In 2012, falls were identified by Joint Commission as a national safety goal. Hospitals are required to do a fall risk assessment on their patients upon admission. A study by Williams et al. (2016) noted that if a patient experiences a fall, it can cost an additional $7891.00 in …..(physical therapy costs, etc.).

Risk Factors for Falls

The USPSTF (2018) showed the following are risk factors for falls: impairments in mobility, gait, history of falls and balance. Heflin, Schmader and Givens (2019) concluded that patients should be assessed for physical functioning limitations and impaired mobility, both which can be a fall risk factor. Clinicians must assess the patient to determine what caused the fall. The causative factor could be deemed a risk factor. An article by Berry, Kiel, Schmader and Sullivan, (2017), determined that the following are fall risk factors: age and health status, cognitive impairment, environmental hazards, impaired balance and medication use. A study conducted by Kiel, Schmader and Givens (2017), concluded that there are numerous risk factors that contributes to a patient's fall. The following are a list of things that can cause a patient to fall visual impairment, history of falls, systemic blood pressure, chronic diseases, cognitive, medication use (drugs affecting the central nervous system and cardiovascular medications), alcohol use, footwear and environmental items (scatter rugs).

Add a short paragraph here going over the papers. "As listed from the above studies, the main causes of falls can be x, y, or z. It is therefore important to consider all these factors when implementing protocols to reduce falls within a LTC facility."

Screening for Fall Risks

Fall risk assessment tools are vital to determining a patient risk factor for falls. The USPSTF (2018) has not identified an assessment instrument accurate and likely to identify adults at risk for falls. Having an assessment instrument can help the healthcare professional with implementing interventions that would minimize falls. One study identified possible tools to

assess fall risk: Matarese, Ivziku, Bartolozzi, Piredda,& De Marinis, (2015), St. Thomas's Risk Assessment Tool (STRATIFY), Hendrich II Fall Risk Model, Johns Hopkins Hospital Fall Risk Assessment Tool, Schmid Fall Risk Assessment Tool, and 5.. Fall Scale (Matarese, Ivziku, Bartolozzi, Piredda,& De Marinis, 2015). Within these possibilities, Morse Fall Scale is utilized the most by nurses. It considers the following areas: Mental Status, History of Falling, Ambulatory Aides, Secondary Diagnosis and Intravenous Therapy (IV) and Gait/ Transferring.

Another possible guideline to use is by the National Institute of Health and Care Excellence (NICE, 2013) , which established guidelines to assess patient's risk for falls. They believe that older people should be asked about falls when they have routine assessments such as during hospitalizations routine doctor visits and during assessments. NICE (2013), concluded that a fall within the last year is the most relevant risk factor for another fall.

A study conducted by Rivera (2017), conducted assessments on106 patients at a local community hospital. This study examined the Hendrich II Fall Risk Assessment, Morse Falls Risk Assessment tool and STRATIFY. The study has concluded that there is no alternative fall assessment risk tool can be recommended at this time due to limited literature. However, STRATIFY may be a best tool due to high record of sensitivity and specificity and it only has five compromising factors. It is the easiest and the quickest tool to use. Unlike any other tool, Hendrich has seven risk factors while Morse has six factors compared to STRATIFY which gives us quick potential solution to disinclination of nurses to complete fall assessment.

Fall Prevention Techniques

The USPSTF (2018) recommended exercise as a preventive intervention for adults at risk of having a fall. An article by Goldsack, Bergey, Mascioli and Cunningham (2015) studied the effects of hourly rounds on a unit in the hospital. This was a thirty-day prospective pilot study that examined using unit managers and other non-nursing personnel to assist with rounding. Their conclusion was that hourly rounds are effective at if the entire healthcare team is involved.

Hicks (2015) studied the effects of hourly rounding, a practice of nurses and assistive

personnel making scheduled visits to hospitalized patients' rooms and performing specific nursing interventions every hour. She concluded that hourly rounding works by decreasing a patient's 0anxiety. In the study, falls were decreased by fifty percent by checking on the patient every hour and addressing their needs during hourly rounds and using the four P's. The four P's are pain, potty, positioning and possessions. A DNP project by Linehan (2018) examined a 23 bed LTC facility to determine if hourly rounds would decrease call light usage and falls. Staff were trained how to complete the fall tracking, call light usage and fall logs over a six-week period. There was low staff compliance due to decrease staff (staffing shortage). There was one fall during the five-week period.

Controversies and Areas for Further Investigation

The USPSTF (2018) recommends additional studies on fall assessment tools and components on exercise. Areas requiring further investigation regarding which interventions work best to reduce falls in the LTC facilities. There are limited studies determining if hourly rounds would be instrumental with reducing falls in the LTC facilities (Linehan, 2018) but hourly rounding has proven useful in the acute care setting. A study by Barbosa et al (2016) concluded that not having a patient fall history limits and impacts their findings.

Addressing the Problem with Current Evidence

HPM has been used in a previous study to explore if lifestyle and diet modifications would assist 108 women to lose weight (Khodaveisi, Omidi, Farikhi and Soltanian, 2015). The HPM was successful with this quasi-experimental study. It concluded that Pender's HPM model helped to improve the nutritional behavior of the patients. It also concluded that Pender's HPM can be used to help improve other health promoting behaviors.

HPM has been utilized in healthcare through focusing on patient behavior and nurse's knowledge to educate the patient about the benefits of being healthy and free from falls (Sevinc & Argon, 2018). The nurse and the patient both have a responsibility to ensure that the patient remain free from falls which can be. accomplished through their interaction. The nurse's

responsibility is to ensure that the patient understands the benefits of being free from falls and remain as healthy as possible. The patient's responsibility is to receive the knowledge from the nurse and then to apply it to their daily routines to remain free from falls.

Health promotion is a holistic approach that includes interventions and goal directed behavior that improves patient well-being (Rector & Gilchrist, 2016). This theory will allow the patient to be in control, which will improve their confidence and self-control. Once their confidence and self-control has improved, the nurse can continue to guide them by ensuring that they feel empowered through being free from falls. The impact of a fall can make a patient feel as if they have lost control of their life.

Theme Development

The following are the themes that are included in this project,

Screenings Tools

A tool will be used by the project to screen each patient. The staff will be able to identify each patient's risks during the screening phase and categorize them according to risk level so they can determine the necessary interventions to treat the patient.

Educating Staff

All participants in this project must be familiar with the protocol namely Fall Prevention Protocol with the intention of following and complying with the set of steps presented. It is also necessary to emphasize the significance of adhering to the specified protocol. This will guarantee that we achieve the project's objectives.

Project Aims

The aim of this initiative is to lower the number of patients who fall within a four-week period in a long-term care setting.

Project Objectives

In the timeframe of this DNP Project, the host site will:

1. Revised an evidence-based FPP at the project site.
2. Improve staff compliance regarding best practice for fall prevention in a long-term care facility through implementing FPP at the project site.
3. Administer an educational seminar for the multi-disciplinary team to train on the FPP at the project site.
4. Reduce falls by ten percent within a four-week period

Implementation Framework

The Lean Implementation Model will be utilized to implement this DNP Project. This model was selected because of its five components: planning, lean project selection, training, project implementation, and monitoring control and sustainment. All five of these components are vital to this project. First, during the planning phase, we will convene a meeting to review the necessary components of the project. This will occur with key staff members (administrator and Director of Nursing to ensure that the necessary components, such as staffing, are available. The staff will be notified of their role concerning this project and would be allowed to ask questions and give their feedback. This would help to increase staff willingness to assist. After this meeting, a start date will be given to the staff. Next, all nursing home staff will be trained on how to implement the project and then review the daily logs to ensure compliance to FPP guidelines. Training will consist of a 1-hour documentation session. This training is imperative to the success of the project. It will communicate with the staff on how to complete the logs and what is the purpose for hourly rounds. Project implantation instructions will be given at the start of each morning. These instructions will include what to do if a patient falls. The project daily logs (fall and hourly rounding) will be reviewed weekly to monitor for control and sustainment. This would help to ensure that the project is proceeding smoothly.

Training must be the priority. A study by Sharma, Dixit and Qadri (2016), found that the most important aspect to implementing The Lean Model

Application to DNP Project

The HPM will demonstrate the correlation between the nurses' understanding of the patients' motivating factors and goal directed interventions to achieve the desired health outcome. The nurse and patient must understand the reward of the patient being free from falls (Fidanci, Akbayrak, & Arslan, 2017). Staff must understand how to properly implement the FPP to prevent falls.

Individual characteristics and experiences from the past can help shape the patient's outlook on health and well-being. Pender's HPM Model conveyed the need to understand the individual patient's experiences and characteristics which will be incorporated into this protocol. These experiences and characteristics include history of previous falls, if they know anyone that has experienced a fall, how often do they go to the bathroom throughout the day, and what occurred prior to the previous fall. It is vital to assess the patient's past experiences, such as previous falls, to determine their current state of mind. This can help to provide motivating factors for the patient to be free from falls.

Behavior-specific cognitions and affect can be manipulated in a variety of actions. This allows the nurse to motivate the patient to be free from falls through a variety of interactions. This includes the patient's understanding and the significance of requesting help and making requests known to staff to prevent falls. The nurse would employ interventions to prevent falls such as hourly rounds, assessing the patient for pain, toileting the patients in a timely manner and repositioning the patient often. All of these factors will assist the patient with being free from falls.

Behavioral outcomes will be identified at the start of the shift. They would include the patient being free from falls to prevent fractures and other injuries that result from falls. The patient would be made aware of the benefits of not having a fall. The patient and the nurse will feel a sense of accomplishment when the patient is free from falls and overall health status would improve.

Major framework tenets

The major tenets of this theory are the following: individual characteristics and experiences, behavior-specific cognitions and affect, and behavioral outcomes (Pender, 2011). Individual characteristics and experiences explore contributing factors that help to shape an individual. This includes past behavior and previous health history. Race, age, economic background, and ethnicity are some of the things that should be explored when implementing HPM. Behavior-specific cognitions and affects helps us to better understand how to educate the patient. It allows the nurse to make the learning experience relevant for the patient, which involves incorporating their motivating factors. Once the motivating factors have been identified, a greater understanding on how to promote better healthcare can be established. It allows the nurse the opportunity to understand the patient's support system and plan of action. Behavioral outcomes are the desired behavior changes after the interventions have occurred. This is final spectrum within HPM. It provides the patient and the nurse assurance that the interventions that were implemented achieved the desired outcome.

The major tenets of this theory interact by understanding the patient's past experiences, using those experiences to guide their mental process of acquiring knowledge and understanding and then achieving the desired behavior outcome by using the information gleaned from the patient along with educating the patient.

Population of Interest

The direct population of interest will include the organizational administrator, Director of Nursing, Assistant Director of Nursing, two front office staff and physical therapists, activities director, 11 Licensed Practical Nurses and 15 Registered Nurses. All staff that are included in the direct population will be trained and assist with implementation of the FPP. RN's will perform the initial fall assessment and LPN's will do the reassessment if a fall or change in the resident's cognitive condition occurs. Office staff will be responsible for greeting visitors, manage files and

organizing paper works. Physical therapist will provide direct care to patients and assist them while they are on a wheelchair or using other equipment. Inclusion criteria includes all full and part-staff. Exclusion criteria includes any per-diem staff and travelers.

The indirect population of interest are the 51 long-term residents at the clinical site. Short-term residents are excluded. All residents will be screened with the facilities current screening tool (Morse) to obtain their baseline fall risk score.

Setting

The DNP project is being conducted at a local clinical setting in Hobart, Indiana. The clinical setting is a corporately owned long-term care facility that provides care to patients that require both short (less than six months) and long-term (longer than three months) care for residents. This facility has the capacity to accommodate 64 residents. The staffing ratio is 10 residents to every one nurse and 15 residents to every one certified nursing assistant (CNA). There is one charge RN that works every shift and does not have patients. The facility uses AllScripts as their electronic healthcare record (EHR).

Stakeholders

Stakeholder buy-in is essential to any QI projects to help ensure a successful project (Eskerod & Jepsen, 2016). The stakeholders include the DON, administrator and the corporate compliance nurse. Weekly fall meetings have been established to discuss this project and to ensure that staff is complying with the FPP during the implementation phase. The key stakeholders will benefit from this project by decreasing the facility fall rates, improving patient safety, meeting corporate goals and assisting with qualifying for additional funding from state organizations. Falls in the elderly can be detrimental. This project will benefit the residents by standardizing practice through the implementation of an evidence-based protocol with the aim to reduce falls among this population.

Recruitment Methods

All residents will be involved with this project. Residents will be made aware of the

project. The DON will be responsible for storing their data and logs and has agreed to provide a locked file cabinet for this project.

Staff will be recruited and informed of the educational seminar by flyers and a computer screen saver that provides information about the seminar. The DON is assigned to inform the participants including everyone that is indirectly involved in the project verbally about the project and all of them will be required to attend the educational seminar to be trained on the FPP protocol which includes hourly rounding. Staff will receive a $5.00 Speedway gas card for attending the training. The finances to purchase the gas card will be generated from the following staff events: ice cream social, jean day and family game night.

Resident's charts will be reviewed in the EMR weekly to audit for falls. Staff will complete a fall log and then the logs will be scanned and emailed to the DON. The DON will forward all completed fall logs to the project coordinator. Falls that originate in the facility will be included in the project. Falls that occur outside the facility, including on the patio, will be excluded. These falls are excluded because hourly rounds will not be documented or conducted on patients while they are outside of the facility.

Interventions

Educational Presentation

An education presentation will be provided to staff participants to train on the FPP at the project site. Fall Prevention Protocol (FPP) has three levels of Fall Risk that staff must follow during their hourly rounding. This protocol will allow staff to monitor each patient and their fall risk level. Staff will receive training on the FPP (Appendix B) and discuss its importance in compliance and its use as a broader discussion after the presentation. Staff will know who to assist first and how they should respond to the situation. The FPP is dependent upon staff conducting a fall screening using the facilities current Morse Fall Scale fall risk tool for all

residents. Fall screening will be done prior to the implementation of the project in order to identify which appropriate intervention the staff needs to use for their patients.

Staff will also be trained using an hourly rounding checklist (Appendix C). The staff will be informed about the importance of the hourly rounding checklist to help reduce the fall rates, and assess the 4 P's on the checklist (pain, potty, positioning, and possession).

A question-and-answer sheet discussing the importance of the FPP and fall prevention strategies (Appendix D), hourly rounding simulation scenarios and mock hourly rounding forms. (Appendix C). These forms will assist staff completing the hourly rounds during weeks two to five.

FPP tool was introduced by the regional nurse consultant four years ago but never utilized. Seminar attendance will be monitored using an attendance sheet.

Timeline

The FPP project will take place over five weeks starting on October 28, 2022 (Appendix A). Two weeks prior to the start of the project implementation, flyers will be posted on the main entrance of the facility to announce the project. The handouts will include space where the staff can take notes prior to the project implementation. An article by Stacy & Cain (2015), inferred that handouts in a digital technology era must ensure that space is available for the receivers' note-taking.

During the first week, staff training will be conducted. The training includes a discussion on how to use the hourly rounding checklist, the Fall Prevention Protocol, and sample scenarios using the checklist. Participants will begin utilizing the hourly rounding checklist after the education session in week one. In the second and third weeks, there will be weekly updates with key stakeholders, continue the use of an hourly rounding checklist, onsite visits to provide support to the participants, and weekly chart reviews.

The fourth week will continue the key stakeholder's meeting and complete final data collection via chart reviews. In week 5 data analysis will begin.

Tools

Tools for this project will include the FPP, an hourly rounding checklist (mock and project copy-Appendix B and E) educational seminar materials, and a chart review (Appendix E) tool.

Fall Prevention Protocol (FPP)

The Fall Prevention Protocol (Appendix B) will be discussed during the first week of the project. This topic is the most important topic to be discussed and it will be utilized by the participants with strict compliance. The FPP uses 4P's strategies that are to be used in the hourly rounding. The FPP includes three levels of Fall Risk and level 1 is mainly about orienting the patient, giving an instruction encouraging the patient to seek assistance if needed, and preparing all tools and devices required during the implementation. Levels two and three show a series of additional precautionary measures, reevaluation, and reinforcement of patient care assistance. This will be reviewed by the staff from time to time to ensure every item is done properly. -

Hourly Rounding Checklist

The hourly rounding checklist (Appendix C) will be utilized for this project to ensure that staff are documenting and checking the 4P's religiously every hourly round. This will ensure help decrease the risk for falls. The checklist will list the times and date and will include a brief description of what should be documented in each section. Staff should ensure that they have properly utilized the checklist before leaving the patient.

Educational Seminar Materials

The educational seminar will be conducted during the first week of the project. Staff will receive training on the project through the educational seminar. Educational seminar materials will be disseminated during the educational seminar. The educational seminar materials will include the following: FPP, a question-and-answer sheet discussing the importance of the FPP and fall prevention strategies (Appendix D), hourly rounding simulation scenarios, and mock

hourly rounding forms (Appendix E). The education seminar attendance sheet will be signed by each staff attending the educational seminar. This record will help to ensure that all staff have been trained prior to the second week of the FPP.

Chart Review Tool

A chart review tool (Appendix F) was developed by the project lead and validated by project team review and approval at the site. It will be used to ensure compliance amongst the staff completing the hourly rounds. This tool will include the following columns: chart code, missing hourly rounding documentation, and participant code. Should a resident fall a chart review will be conducted within 24 hours. These charts will be reviewed to check when the last hourly round was conducted for possessions, pain, potty, and position change. A weekly review of all charts will be conducted to ascertain the last time hourly rounding was completed that included checking the resident for possessions, pain, potty, and positioning.

Plan for Data Collection

Presentation Attendance

Data collection for this project includes a chart review and staff attendance at the educational seminar. Staff education will occur during the first week. Staff will be required to use the sign in using the attendance sheet to track their attendance. The attendance sheet will be collected to determine the percentage of the staff attended.

Hourly Rounding Checklist

The hourly rounding checklist will be utilized for this project to ensure that staff are documenting on all the tools used to conduct hourly rounds. This checklist will be collected daily and reviewed weekly to ensure staff compliance in checking the 4P's.

Chart Review

Chart review will take place daily on all patients that fell within the last 24-hour. Charts will be reviewed for their medical diagnosis and events prior to the fall to determine if there is a

pattern. If falls do not occur, a minimum of ten charts will be reviewed. The charts will be randomly selected for 4-week period.

Fall rates will be collected from the fall records from four weeks prior to the implementation of the project. The past fall rate will be obtained from the DON. And then, the data will then be compared to the fall rate prior to the FPP for a comparison. The data collected before, and the data collected from the chart review will be updated weekly to reflect the past and current results.

Chart code and participant codes will be assigned to residents' charts and staff respectively served as their unique identification throughout the intervention. The coding system will be based on the numerical value of the letters in the alphabet. This is to ensure the security of the medical records. Staff will be recruited and informed of the educational seminar by flyers and a computer screen saver that provides information about the seminar. The hourly rounding checklist and chart review data will be collected daily during the four-week period and then stored on in a google spreadsheet and the link won't be shared to anyone for safe keeping. The DNP project lead will only have the access to the google spreadsheet using a personal computer to ensure no one has access to it.

Plan for Analysis

The hourly rounding checklist and chart review will be collected daily but will be evaluated and analyzed weekly for the number of falls and staff compliance in checking the 4P's. Data analyzed will include the following: resident's charts, fall logs, and number of falls. SPSS Edition 26 will be used for data analysis.

In order to compare the compliance with the FPP, this project will utilize a chi-square test with an alpha level of 0.05 will be used. This is to determine the compliance or noncompliance of staff following protocol. The chart review tool will be reviewed to assess their compliance and their consistency. This will demonstrate if the employees are implementing the project as directed. The data will be sampled randomly in order to get an unbiased and accurate result.

Descriptive statistics will also be used to determine the fall rate after the intervention has been done. This will demonstrate how far the fall rate has reduced within the course of the project. This will be utilized and randomly sampled to determine the tendencies and look for patterns and how the fall rate has reduced over the 4-week period.

Ethics/Human Subjects Protection

To maintain compliance with Touro University of Nevada's policy, the Institutional Review Board (IRB) determination form was submitted for review and was determined by the project team to be a quality improvement project. Since the project utilizes a QI educational design based on published best practices and does not involve direct patient care or human subjects, it was determined that the project will not require IRB oversight. The project poses no risks to either direct participants or residents. It provides an opportunity for quality improvement and a positive outcome in terms of lowering the fall rate at the end of the project.

The facility has determined that IRB approval is not required for this quality improvement project. Participants will be given codes to protect their identity. Participants will be recruited and informed of the educational seminar by flyers and a computer screen saver that provides information about the seminar. The DON is assigned to inform the participants including everyone that is indirectly involved in the project verbally about the project and all of them will be required to attend the educational seminar to be trained on the FPP protocol which includes hourly rounding. There will be no monetary incentives provided to the participants.

Analysis of Results

After implementing the FPP Protocol at the facility, data was collected and analyzed using chi-square tests and descriptive statistics.

Chi-Square Analysis

The chi-square test was used to determine if the participants were checking their residents hourly. The test indicated that there is no significant association between participants' compliance or non-compliance in random testing and the effectiveness and efficiency of the FPP. The result of the test showed that the p=value was 0.878 and the chi-square value is 20.475 based on 29 degrees of freedom. The chi-square value is not significant at alpha=0.05. The result suggests we conclude that staff compliance cannot be measured randomly. Table 1 shows the result of the chi-square test result.

Table 1

Chi-Square Table

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	20.475[a]	29	0.878
Likelihood Ratio	25.869	29	0.632
N of Valid Cases	33048		

a. 30 cells (50.0%) have expected count less than 5. The minimum expected count is .75.

Thirty participants were observed during the project. Each participant was assigned five residents to ensure that each patient was thoroughly examined. Three of the participants were assigned to six residents because the long-term resident population is 51. The result of the hourly

rounding showed that during the first week of the project, a total of 11 times hourly rounds were missed. In week 2, it showed seven times missed hourly rounds; in Weeks 3 & 4-, three- and two times hourly rounds were missed. During the first two weeks, the participants were adjusting to the protocol but in the last two weeks, it was improving. On average, participants have 1080 visits based on the 8 hours shift schedule except for participants 2028 until 2030 because they have been assigned to six residents.

Descriptive Analysis

A chart audit was done on a weekly basis to see how many hourly rounds were missed and how many falls occurred during the missed hourly rounds. The data showed that there were 23 recorded missed hourly rounds, and only 5 falls had occurred during the missed hourly rounds which only encompasses 21.7% of the total missed hourly round.

The previous number of falls and fall rates from the last four weeks were requested from the facility prior to the start of the project's implementation.

Table 2

Descriptive Analysis for Chart Audit Table

Fall Occurrence within 4 weeks

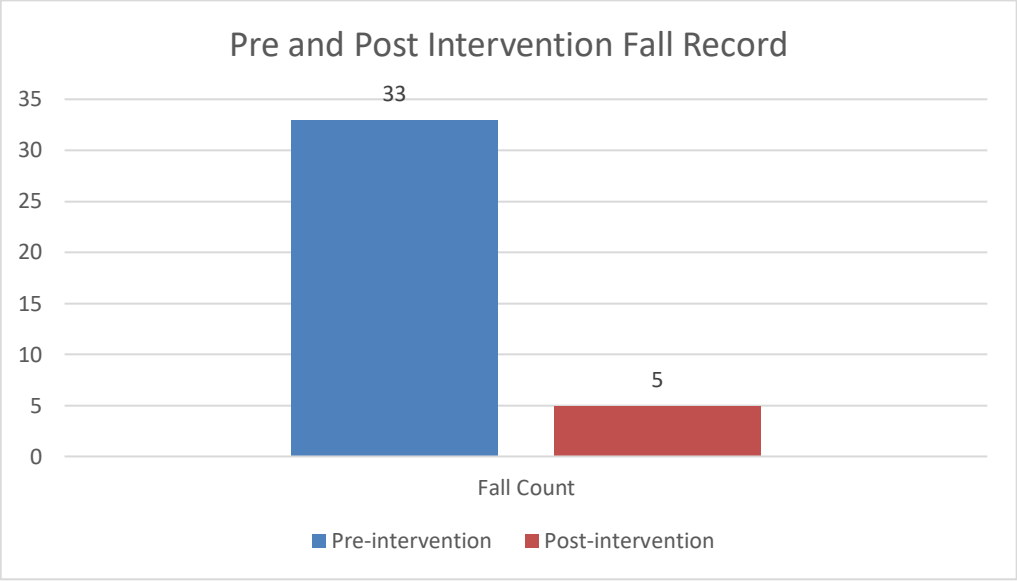
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	18	78.3	78.3	78.3
	Yes	5	21.7	21.7	100
	Total	23	100	100	

Data collected showed a reduction in the fall counts pre-and post-intervention. Therefore, we can say that the compliance of the participants in implementing the protocol has a positive effect in reducing the fall of the residents.

A descriptive analysis test was used to measure and determine fall rates pre-and post-intervention. The result has shown that out of 23 missed rounds, only 5 fall occurrences were reported across the project. Four falls were reported in Week 1 and one fall was reported in Week 2. We can conclude that there is a reduction in the fall rate before and during the intervention across the period. The pre-intervention fall rate is at 23.1 (*33 falls*) per 1000 patient days while the post-intervention fall rate is at 3.6 (*5 falls*) per 1000 patient days.

Figure 1

Pre- and post-intervention fall



Assumptions of Chi-Square

Random Sampling. A chi-square test of independence was used to determine whether the compliance and non-compliance of participants is significant to measure the effectiveness of FPP.

The result has shown that there is no significant association based on alpha value of 0.05, df 29, and p = 0.878. The result indicates this assumption is not violated.

Assumptions of Descriptive Analysis

Normality. A descriptive analysis test was used to measure and determine fall rates pre- and post-intervention. The result has shown that there is a decrease in the fall rate. The pre-intervention fall rate record was 23.1 per 1000 patient days while the post-intervention fall rate was at 3.6 per 1000 patient days. A reduction on 19.5 per 1000 patients' days has been shown.

Summary and Interpretation of Results

The fall rate has significantly reduced post-intervention and may be associated with the compliance of the participants to check their patients on an hourly basis.

One strength of this project was participant involvement. It is considered the key to the success of this project. This project agrees with Goldsack, Bergey, Mascioli and Cunningham's article in 2015 about hourly rounding and patient falls. Their study concluded that with the active involvement of leadership and the front-line staff was significant in reducing inpatient fall rates. Moreover, this project also agrees with Hicks's (2015) about hourly rounding using 4P's. In the study, she concluded that the hourly rounding worked in decreasing patient anxiety and falls decreased by 50%. These pieces of evidence support the DNP project to conclude that the consistency and compliance of participants improve patient falls and patient satisfaction.

Maintaining hourly rounding places is a significant strain on the nursing resources available. It is possible that it would be more cost-effective for nursing aides to fulfill the "4 Ps" protocol; however, we are unsure as to whether this would have the same impact on patient satisfaction scores as hourly rounding performed by registered nurses. Any shifts in the routine tasks performed by nurses should encourage administrators in charge of nursing care to evaluate

the necessity of additional staffing and determine whether or not the benefits will be sufficient to justify the expenses.

Limitations

In evaluating the project outcomes, limitations were noted concerning the project design, data recruitment, and collection methods.

Project Design

The FPP Protocol used as a tool for this Quality Improvement (QI) project has limitations. The project itself only took place in one facility and the results only depended on how the participants took their part to ensure the project's success. The participants were closely supervised to ensure they follow the protocol which could also be a factor in the success of the project. This project may not be enough evidence to conclude that the FPP Protocol is a better option as there is no comparative analysis using other fall prevention protocols.

Data Recruitment

The seminar took place in the morning on the first day of the project implementation. During the seminar, there were participants who are unable to attend due to schedule variations. A second session was done to minimize limitations in mid-afternoon to ensure that the project seminar covered every participant and that before they started to implement the protocol, they have the right knowledge on how to use and implement and use the tools.

Collection Method

The project was a four-week long intervention. This may not be enough of a time frame to review the effectiveness of the project. The population of the residents in the project only focuses on long-term care patients. Hence, the review of participants' hourly rounding checklist is focused only on a small population.

Conclusion

The DNP project aimed to reduce falls using FPP Protocol at a long-term care through conducting seminars and training prior to implementation. This QI Project resulted in a positive outcome in reducing falls. The role of the participants was necessary for making this project a success in reducing the number of falls. Ongoing use of the FPP protocol and hourly rounding can help decrease fall rates and reduce medical costs related to falls.

The result of this project may be used by future DNP projects as a reference for conducting similar projects on fall prevention in long-term care. Nursing leaders are required to have a solid understanding of the evidence that supports the change in the way nursing care is delivered and to be able to use this evidence to get the support of other hospital or facility administrators and managers of health systems. The dissemination of information to parties who are interested in the value of adjustments to nursing practice can be facilitated effectively through the utilization of systematic evaluations of clinical evidence.

References

Allen, C. J., Hannay, W. M., Murray, C. R., Straker, R. J., Hanna, M. M., Meizoso, J. P., ... & Proctor, K. G. (2015). Causes of death differ between elderly and adult falls. *Journal of Trauma and Acute Care Surgery*, *79*(4), 617-621.

Alligood, M. R. (2018). *Nursing theorists and their work* (9th ed.). St. Louis, MO: Elsevier.

Allison, J. J., Wall, T. C., Spettell, C. M., Calhoun, J., Fargason Jr, C. A., Kobylinski, R. W., ... & Kiefe, C. (2000). The art and science of chart review. The Joint Commission journal on quality improvement, 26(3), 115-136.

Álvarez Barbosa, F., del Pozo-Cruz, B., del Pozo-Cruz, J., Alfonso-Rosa, R. M., Sanudo Corrales, B., & Rogers, M. E. (2016). Factors associated with the risk of falls of nursing home residents aged 80 or older. *Rehabilitation nursing*, *41*(1), 16-25.

Becker, C., & Rapp, K. (2010). Fall prevention in nursing homes. *Clinics in Geriatric Medicine*, *26*(4), 693-704.

Berry, S., Kiel, D. P., Schmader, K. E., & Sullivan, D. J. (2017). Falls: Prevention in nursing care facilities and the hospital setting. Uptodate.com.

Bhatia, T., Mishra, N. N., Nimgaonkar, V. L., Deshpande, S. N., & Parker, L. S. (2019). ATTITUDE OF INDIAN RESEARCH PARTICIPANTS TOWARDS PRIVACY AND CONFIDENTIALITY. European Neuropsychopharmacology, 29, S885-S886.

Bissell, D. M., & McInnes, R. S. (1959). Accident control: A local health department's experience in development and evaluation of a home accident program. *American Journal of Public Health and the Nations Health*, *49*(12), 1646-1652.

Brightman, I. J., McCaffrey, I., & Cook, L. P. (1952). Mortality statistics as a direction finder in home accident prevention. *American Journal of Public Health and the Nations Health, 42*(7), 840-848.

Bromley, E., Mikesell, L., Jones, F., & Khodyakov, D. (2015). From subject to participant: Ethics and the evolving role of community in health research. *American Journal of Public Health*, *105*(5), 900-908.

Centers for Disease Control and Prevention. (2021, August 6). *Facts about falls*. Centers for Disease Control and Prevention. Retrieved October 6, 2022, from https://www.cdc.gov/falls/facts.html

Chang, S. Y., Chen, W. S., Teng, T., Yeh, C. Y., & Yen, H. C. (2019). Fall risk program for oncology inpatients: Addition of the "traffic light" fall risk assessment tool. *Journal of Nursing Care Quality*, *34*(2), 139-144.

DiCuccio, M. H. (2015). The relationship between patient safety culture and patient outcomes: a systematic review. *Journal of patient safety*, *11*(3), 135-142.

Eskerod, P., & Jepsen, A. L. (2016). Project stakeholder management. Routledge.

Fidanci, B. E., Akbayrak, N., & Arslan, F. (2017). Assessment of a health promotion model on obese Turkish children. *Journal of Nursing Research*, *25*(6), 436-446.

Finch, J. L., & Flenner, A. R. (2017). Using data visualization to examine an academic library collection. College & Research Libraries, 77(6).

Florence, C. S., Bergen, G., Atherly, A., Burns, E., Stevens, J., & Drake, C. (2018). Medical costs of fatal and nonfatal falls in older adults. *Journal of the American Geriatrics Society*, *66*(4), 693-698.

Goldsack, J., Bergey, M., Mascioli, S., & Cunningham, J. (2015). Hourly rounding and patient falls: what factors boost success? *Nursing2018*, *45*(2), 25-30.

Grossman, D. C., Curry, S. J., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., ... & Kubik, M. (2018). Interventions to prevent falls in community-dwelling older adults: US Preventive Services Task Force recommendation statement. *Jama*, *319*(16), 1696-1704.

Gryfe, C. I., Amies, A., & Ashley, M. J. (1977). A longitudinal study of falls in an elderly

population: I. Incidence and morbidity. *Age and Ageing*, *6*(4), 201-210.

Haddad, Y. K., Bergen, G., & Luo, F. (2018, July). *Reducing fall risk in older adults*. The American journal of nursing. Retrieved October 6, 2022, from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6342202/

Heflin, M., Schmader, K., Givens, K., (2019). Geriatrics Health Maintenance. *UpToDate, Waltham, MA.*

Hicks, D. (2015). Can rounding reduce patient falls in acute care? An integrative literature review. Medsurg nursing, 24(1), 51-56.

Iskrant, A. P. (1958). Health departments and prevention of motor vehicle accidents. *Public Health Reports*, *73*(11), 1021.

Jacobson, C. L., Foster, L. C., Arul, H., Rees, A., Stafford, R. S., Inc, A. B., & Foster, C. A. L. C. (n.d.). *A Digital Health Fall Prevention Program for older adults: Feasibility study*. JMIR Formative Research. Retrieved October 6, 2022, from https://formative.jmir.org/2021/12/e30558

Khodaveisi, M., Omidi, A., Farokhi, S., & Soltanian, A. R. (2017). The effect of Pender's health promotion model in improving the nutritional behavior of overweight and obese women. *International journal of community based nursing and midwifery*, *5*(2), 165.

Kiel, D. (2018). Interventions to Prevent Falls in Community-Dwelling Older Adults: A Systematic Review for the US Preventive Services Task Force.

Kiel, D., Schmader, K., Givens, J. (2018). Falls in older persons: Risk factors and patient evaluation. *UpToDate,* Waltham, MA.

Lee, R., Bergen, G., Burns, E., Curtis, F., Johnston, Y., Dellinger, A., & Baldwin, G. (2018). PW 0913 Cost of older adult falls in the United States and innovative interventions to address the problem. *Injury Prevention*, *24*, A221.Matarese, M., Ivziku, D., Bartolozzi, F., Piredda, M., & De Marinis, M. G. (2015). Systematic review of fall risk screening tools for older patients in acute hospitals. *Journal of Advanced Nursing*, *71*(6), 1198-1209.

Lord, S. R., Smith, S. T., & Menant, J. C. (2010). Vision and falls in older people: Risk factors and intervention strategies. Clinics in Geriatric Medicine, 26(4), 569–581. doi:10. 1016/j.cger.2010.06.002

Luck, L., Chok, H. N., & Wilkes, L. (2017). Nurses as participants in research: an evaluation of recruitment techniques. Nurse Researcher (2014+), 25(2), 44.

Matarese, M., Ivziku, D., Bartolozzi, F., Piredda, M., & De Marinis, M. G. (2015). Systematic review of fall risk screening tools for older patients in acute hospitals. *Journal of Advanced Nursing*, *71*(6), 1198-1209.

Mattison, M., Marcantonio, E., Schmader, K. E., Gandhi, T. K., & Lin, F. H. (2013). Hospital management of older adults. *UpToDate,Waltham, MA*.

McArthur, C., Gonzalez, D. A., Roy, E., & Giangregorio, L. (2016). What are the circumstances of falls and fractures in long-term care? *Canadian Journal on Aging/La Revue canadienne du vieillissement*, *35*(4), 491-498.

Morley, J. E. (2018). F3ALLS approach to preventing falls.

National Institute for Health and Care Excellence. *Falls: Assessment and prevention of falls in older people*. NICE Clinical Guideline 161. London: NICE, 2013.

Pender, N. J. (2011). Health promotion model manual. Retrieved from https://deepblue.lib.umich.edu/bitstream/handle/2027.42/85350/HEALTH_PROMOTION_MANUAL_Rev_5-2011.pdf?sequence=1&isAllowed=y

Rector, C., & Gilchrist, K. L. (2016). Health promoting behaviors among RN to BSN students at two public universities. Retrieved from https://sigma.nursingrepository.org/bitstream/handle/10755/603072/2_Rector_C_p75440_1.pdf?sequence=1&isAllowed=y

Rivera, C. (2017). Baseline Prevalence Study of Hendrich II Fall Risk Assessment Tool at a Local Community Hospital.

Salkeld, G., Ameratunga, S. N., Cameron, I. D., Cumming, R. G., Easter, S., Seymour, J., ... Brown, P. M. (2000). Quality of life related to fear of falling and hip fracture in older women: a time trade off study Commentary: Older people's perspectives on life after hip fractures. *Bmj*, *320*(7231), 341-346.

Sevinc, S., & Argon, G. (2018). Application of Pender's health promotion model to post-myocardial infarction patients in Turkey. *International Journal of Caring Sciences*, *11*(1), 409-418.

Shabboo Valipoor, Debajyoti Pati, Mahshad Kazem-Zadeh, Sahar Mihandoust & Soheyla Mohammadigorji (2020) Falls in Older Adults: A Systematic Review of Literature on Interior-Scale Elements of the Built Environment, Journal of Aging and Environment, 34:4, 351-374, DOI: 10.1080/02763893.2019.1683672

Sharma, V., Dixit, A. R., & Qadri, M. A. (2016). Modeling lean implementation for manufacturing sector. *Journal of Modelling in Management*, *11*(2), 405-426.

Sheldon, J. H. (1960). On the natural history of falls in old age. *British Medical Journal*, *2*(5214), 1685.

Shin, H., Ma, H., Park, J., Ji, E. S., & Kim, D. H. (2015). The effect of simulation courseware on critical thinking in undergraduate nursing students: Multi-site pre-post study. *Nurse Education Today*, *35*(4), 537-542.

Soliman, Y., Meyer, R., & Baum, N. (2016). Falls in the elderly secondary to urinary symptoms. *Reviews in Urology*, *18*(1), 28.

Stacy, E. M., & Cain, J. (2015). Note-taking and handouts in the digital age. *American Journal ofPpharmaceutical Education*, *79*(7), 107.

Thomas, D., Pavic, A., Bisaccia, E., & Grotts, J. (2016). Validation of fall risk assessment specific to the inpatient rehabilitation facility setting. *Rehabilitation Nursing*, *41*(5), 253-259.

Toole, N., Meluskey, T., & Hall, N. (2016). A systematic review: barriers to hourly rounding.

Journal of Nursing Management, 24(3), 283-290.

Wanner, T. (2015). Enhancing student engagement and active learning through just-in-time teaching and the use of PowerPoint. *International Journal of Teaching and Learning in Higher Education, 27*(1), 154-163.

Whicher, D., Kass, N., Saghai, Y., Faden, R., Tunis, S., & Pronovost, P. (2015). The views of quality improvement professionals and comparative effectiveness researchers on ethics, IRBs, and oversight. *Journal of Empirical Research on Human Research Ethics*, *10*(2), 132-144.

Williams, C., Bowles, K. A., Kiegaldie, D., Maloney, S., Nestel, D., Kaplonyi, J., & Haines, T. (2016). Establishing the effectiveness, cost-effectiveness and student experience of a imulation-based education Training program On the Prevention of Falls (STOP-Falls) among hospitalised inpatients: A protocol for a randomised controlled trial. *BMJ open*, *6*(6), e010192.

Willy, B., & Osterberg, C. M. (n.d.). *Strategies for Reducing Falls in Long-Term Care*. Hmpgloballearningnetwork.com. Retrieved October 6, 2022, from https://www.hmpgloballearningnetwork.com/site/altc/articles/strategies-reducing-falls-long-term-care

Yoo, J. S., Kim, C. G., Yim, J. E., & Jeon, M. Y. (2015, October 13). *Factors influencing falls in the frail elderly individuals in urban and rural areas - aging clinical and experimental research*. SpringerLink. Retrieved October 6, 2022, from https://link.springer.com/article/10.1007/s40520-015-0469-2

Appendix A

Timeline Table

Week/Date	Activity
Week 1 (October 28-November 3, 2022)	1. Data gathering tools finalized 2. Meeting with the key stakeholders prior to the training. 3. Education with participants 4. Begin hourly rounding tool 5. Begin Weekly Chart Audit
Week 2 (November 4-10, 2022)	1. Weekly update with the key stakeholders. 2. Onsite to provide support to the participants 3. Continue using hourly rounding checklist 4. Continue Weekly Chart Audit
Week 3 (November 11-17, 2022)	1. Weekly update with the key stakeholders. 2. Onsite to provide support to the participants 3. Continue using hourly rounding checklist 4. Continue Weekly Chart Audit
Week 4 (November 18-24, 2022)	1. Weekly update with the key stakeholders. 2. Complete and Finalized Chart Audit
Week 5 (November 25-December 1, 2022)	1. Begin data analysis.

Appendix B

PATIENT FALL PREVENTION PROTOCOL

Fall Risk Level I Protocol Orient patient to surroundings

- Provide patients the name of the assigned staff
- Instruct patients to seek assistance whenever necessary.
- Provide chair to the patient that is easily accessible.
- Patients who require ambulatory assistive devices will be provided with a wheelchair to enter and exit the treatment area.
- Keep ambulatory assistive devices within easy reach post treatment
- Encourage all ambulatory patients to wear skid-resistant footwear.
- Patient care staff will accompany patient into and out of the treatment area
- All personnel are responsible for eliminating environmental hazards

Fall Risk Level II Protocol All of Level One Plus:

- All tools for patient use should be within reach
- Seek medication for diarrhea episodes, keep a clean walking surfaces
- Instruct the patient or the family to seek for an assistance for any patient relocation
- Reevaluate the safety of the footwear
- Assess the need for assistive devices such as a wheelchair, cane, or walker.
- Educate transportation to verbally transfer care of patient to staff watch area
- Reinforce use of assistive devices when it is used
- Evaluate for restraint devices as needed
- Wheelchair will be in a locked position unless attended
- Reassess for clutter-free, well-lit environment

Fall Risk Level III Protocol All of level two, plus:

- Initiate high fall risk identification by placing a colored warning on the patient's clipboard.
- Reorient and reinforce the need for patient care staff assistance on a regular basis.
- Consider assigning seats in a more visible location
- Always keeps a close eye on the patient
- Help patient with all activities
- Notify physician if patients need a medication review
- Assess the need for physical therapy, such as strength training and transfer options.
- Use safety belts or jackets for wheelchair and stretcher patients
- If a supportive device is required to provide safety for the patient or others, use it; if these are insufficient, provide staff supervision in addition to the supportive device.
- If supportive device not appropriate to diagnosis/condition of patient, provide staff watch

Appendix C

Hourly Rounding Checklist

Hourly Rounding Checklist

12A to 12PM

Date_____ Unit_____ Room#_____ Patient Participant Code_____

Every hour check for pain, potty (if the patient needs to go to the bathroom or change), positioning, possessions (if they have all the items near them such as the call light and water), and environment is there anything on the floor?

Time	12A	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A
Pain												
Potty												
Possessions												
Environment												
Staff Initials												

Time	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P
Pain												
Potty												
Possessions												
Environment												
Staff Initials												

Staff Signature/ Initials_____ Staff Signature/Initials_____

Staff Signature/Initials_____ Staff Signature/Initials_____

Staff Signature/Initials_____ Staff Signature/Initials_____

Appendix D

Mock Hourly Rounding Form

Mock Hourly Rounding Form

12A to 12PM

Date_____ Unit_____ Room#_____ Patient Participant Code_____

Every hour check for pain, potty (if the patient needs to go to the bathroom or change), positioning, possessions (if they have all the items near them such as the call light and water), and environment is there anything on the floor?

Time	12A	1A	2A	3A	4A	5A	6A	7A	8A	9A	10A	11A
Pain												
Potty												
Possessions												
Environment												
Staff Initials												

Time	12P	1P	2P	3P	4P	5P	6P	7P	8P	9P	10P	11P
Pain												
Potty												
Possessions												
Environment												
Staff Initials												

Staff Signature/ Initials_____ Staff Signature/Initials_____

Staff Signature/Initials_____ Staff Signature/Initials_____

Staff Signature/Initials_____ Staff Signature/Initials_____

Appendix E

FPP Chart Audit

Audit Date: _____

FPP Chart Audit Tool

Directions: Charts will be audited weekly to ensure that hourly rounding has occurred.

Chart Code (residents' identification)	Missing Rounding Documentation (Time) Participant Code	Fall Occurrence (yes or no)