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Reducing Falls Related to Toileting

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This Manuscript Partially Fulfills the Requirements for the

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Abstract

Practice Problem: The practice problem for the medical-surgical unit is a high rate of falls associated with toileting activities, despite universal fall precautions for all patients. The current fall rate is an average rate of 4 falls per 1,000 patient days.

PICOT: The PICOT question that guided this project was: Among adult patients in the inpatient medical-surgical unit (P), what is the effect of adding a toileting care plan (I) to the current practice of universal fall precautions (C) to reduce the severity and incidence of falls (O) within an 8-week period (T)?

Evidence: Nine high-quality articles supported a toileting care plan encompassing patient-centered fall interventions could decrease falls and falls with injuries.

Interventions: Staff education on risk for patient falls, individualized risk assessments for falls, individualized toileting care plan, and effective handoff communication to all bedside staff about risks for falls.

Outcome: The desired reduction in the rate of falls was not achieved during the intervention period; however, the project highlighted organizational challenges related to coordination of change, staffing, and unit participation. Further increased knowledge and utilization of the Morse fall risk assessment tool, resource allotment for fall reduction programming, and reprioritization for organization review of skills related to toileting plans was achieved.

Conclusion: Clinical significance was achieved with this EBP project, even without the overall goal achievement of a reduction in fall rates on the pilot unit. The project highlighted the need for organizational readiness for change, effective strategy for concurrent priorities, and agility for unanticipated confounders, such as significant staffing concerns.

Reducing Falls Related to Toileting

In the complex healthcare world, there are many obstacles that patients must overcome when receiving treatment and care in the hospital. Patient falls are one of the biggest challenges that patients experience during hospitalizations. According to the Center for Disease Control and Prevention (CDC), the cost of patient falls is about \$50 billion in medical expenses for non-fatal injuries and \$754 million for fatal injuries (2020).

This DNP project focused on an inpatient medical-surgical unit to reduce and prevent patient falls during toileting activities. This project implemented a toileting care plan that included the Morse fall scale for identifying fall risk factors (Agency for Healthcare Research and Quality [AHRQ], 2019b), structured patient self-assessments, effective communication with patients about falls, risk of injuries, and a toileting schedule. The interventions outlined in this project addressed the problem that over 50% of falls in the hospital have been bathroom related (Seow et al., 2020). Patient falls can result in severe issues for hospitalized patients, which increases the cost of care, increased length of stay, poor outcomes, and increased costs to the hospital. Decreasing falls will improve the patient experience, reduce the cost of care, support the appropriate length of stay, and reduce in-hospital injuries. This paper will describe the project intended to decrease falls related to toileting.

Significance of the Practice Problem

The practice problem for the medical-surgical unit is a high rate of falls associated with toileting activities, despite universal fall precautions for all patients. Examples of universal fall precautions are completing a fall risk assessment on every patient, room orientation, non-slip socks, and chair/bed alarms. The current fall rate is an average rate of 4 falls per 1,000 patient days. Although the total number of falls decreased by over 30% after the universal measures

were put in place, the percentage of falls with injuries remained at about 80%, and over 50% of those falls were related to toileting activities (M. Gallegos, personal communication, May 8, 2021).

A fall is defined as any unplanned descent to the floor (Ortelli, 2018). Globally, over 684,000 deaths occur annually in and outside hospitals related to falls. Nationally there are 40,727 deaths associated with falls (CDC, 2021; World Health Organization, 2021). Within the United States, a fall with an injury that occurs during a hospital stay can cost about \$14,056 and increase the average length of stay in a hospital by 6.3 days (Morales, 2021). These additional costs are not covered by Medicare, Medicaid, or other insurances; therefore, they must be absorbed by the hospital (AHRQ, 2017).

Over 50% of the falls in the hospital are related to bathroom activities, and 30% of those falls occur on the night shift (Rose et al., 2020; Seow et al., 2020). Patient falls during toileting activities arise for various reasons, such as increased frequency of urination, unfamiliar settings, confusion related to medications, and the patient not wanting to bother the staff by using the call bell for help. Nurses often underestimate the risk of falls that patients present to themselves (Barrett et al., 2017). Additionally, the healthcare staff's wish to respect a patient's privacy during toileting has increased inpatient falls within the project setting (M. Gallegos, personal communication, May 8, 2021). Patients who fall in the hospital risk a lower quality of life due to their injury, associated costs, decreased comfort and trust in the hospital, and the fear of falling again (van Loon et al., 2019). Additionally, injuries from falls can cause a cascade of issues such as reduced physical activity, decreased strength, depression, and an increase in further falls leading to hospitalizations (Prabhakaran et al., 2020).

Hospitals depend upon the positive experiences and outcomes of their patients. A high number of falls with injuries is one of the factors that patients and insurance companies use to evaluate the overall performance of care provided to patients. The Agency for Healthcare Research and Quality (AHRQ) is an agency that evaluates and scores a hospital on various measures such as falls and injuries from falls. These scores have a direct impact on the ability to maintain liability insurance. Patients and families can search hospitals online for quality and safety scores, which guide patients and families on where to obtain care and services based on positive or negative scores (Smith et al., 2018).

The current practice in the project setting is to evaluate overall patient safety by conducting a basic two-question fall assessment and applying standardized tools to reduce the likelihood of a fall (S. Macveigh, personal communication, June 7, 2021). Examples of standardized tools used in the project setting are falls mats, beds low to the floor, slip-resistant footwear, bedside commodes, bed alarms, night-time floor lighting, signs outside the patients' room for high-risk to fall patients, call-bell in reach always, and patient discussion about preventing falls. This current practice does not emphasize a comprehensive fall assessment, which would consider a patient's past fall risk history or increased risks associated with hospital admissions. The project aimed to help the staff identify patients at a higher risk of falling and ensure that they had conversations with patients about their safety, communicated expectations during their admission, and implemented a course of action related to toileting to reduce the potential of falls.

PICOT Question

Among adult patients in the inpatient medical-surgical unit (P), what is the effect of adding a toileting care plan (I), to the current practice of universal fall precautions (C) to reduce the severity and incidence of falls (O) within an 8-week period (T)?

Population

The project participants consisted of adult inpatients admitted to the hospital on the medical-surgical unit. The population requirements consisted of patients who were not bedbound, alert and oriented, could communicate effectively, and had perceived toileting needs when admitted to the hospital.

Intervention

The intervention introduced a customized toileting care plan based on the patient's self-assessment and an expanded nurse-driven fall assessment completed by the bedside staff (AHRQ, 2019b; Choi et al., 2020; Yost & Baur, 2021). The toileting care plan included communication on the times and frequency of rounding, education on patient-specific risks for falls, and any additional interventions such as *no patient alone* for a patient at risk for non-compliance (Cangany, 2018).

Comparison

The intervention was compared to the current practice of using standard universal fall precautions, which are: utilizing the current electronic health record (EHR) with a two-question fall risk assessment, familiarization with the environment, and demonstrating that the patient was able to use the call light, assessing if the call lights, cellphone, and glasses are within reach every time they are in the room, keeping beds in low positions and locked, patient wearing non-slip

footwear on at all times, night lighting to see the path to the bathroom and decluttering the environment to prevent tripping hazards.

Outcome

The outcome measure was to reduce the rate of falls and falls with injuries related to toileting. The current standard to measure patient falls is based on falls per 1,000 patient days (Centers for Medicare & Medicaid Services, 2014). The national benchmark was less than or equal to 2.7 falls per 1,000 patient days, with the project hospital's rate going from 3.0 to 4.7 falls per 1,000 patient days. (M. Gallegos, personal communication, May 8, 2021).

Timing

The length of the implementation phase and evaluation of outcomes of the project was 8 weeks.

Evidence-Based Practice Framework & Change Theory

The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) model was chosen for this project because it has been proven to be a powerful problem-solving and process change tool (Dang & Dearholt, 2017). In addition, the JHNEBP has been used successfully to evaluate and implement changes in healthcare, which aligns with the practice problem of this project. Using the JHNEB as a guide, the project was broken down into three parts, the practice question, the evidence, and the translation to change in practice. The practice question for this project was developed by the chief nursing officer (CNO) and the project team by looking at the previous fall interventions, the reasons for continued falls, and what interventions could be implemented to reduce falls.

This project used Ronald Havelocks' (1973) modified Lewin's Change Theory, including unfreezing, implementing change, and refreezing. Lewin's modified change theory is ideal

because it works well with systemic modifications and can include the interdisciplinary team (Hussain et al., 2018). Allowing the project team to build a relationship with the healthcare staff on the medical-surgical unit who will implement the changes will support investment in the project. Interprofessional support and teamwork will allow teams to be part of the decision-making process and strengthen the buy-in from healthcare workers. This change model allows for unfreezing of the current practice and changes to the current practice of fall prevention as related to toileting by implementing research-based interventions and then freezing the new interventions so they could be assessed and refined as needed.

Evidence Search Strategy

The student conducted a review of the literature to address the identified PICOT question. An electronic search was conducted using SearchUSA and Google Scholar, which scanned multiple databases, including PubMed, MEDLINE, Cumulative Index to Nursing, ScienceDirect, Journals@OVID, EBSCOhost, Springer Nature, and Allied Health Literature (CINAHL). All searches used the keywords *falls*, *falls AND bathroom*, *falls AND toileting*, *preventing falls AND bathroom hospital*, *preventing falls toileting hospital*, and *falls in hospital*. The search was limited to literature published between January 1, 2016, and July 12, 2021. The type of articles were full-text articles, journals, and dissertations. Geographic location was limited to the United States, except for global fall rates.

The initial search yielded 1892 articles. The review was first narrowed down by excluding articles older than 2016, articles that were not academic, articles that were not journal articles or professional publications, or articles not related to hospital-related falls. The review was further narrowed down to research that included data or information about *falls in the hospital*, *falls related to bathroom OR toileting*, and *interventions to prevent falls related to*

toileting OR bathroom; the number of articles was reduced to 75 upon quick review of titles, actions, and outcomes. Next, additional limiting criteria were applied to eliminate literature with no relevant causes or solutions for falls. The final literature review included a thorough evaluation and comparison to identify evidence-based interventions to reduce patient falls related to the toileting of medical-surgical patients. There were nine remaining articles, which are presented in the evidence table.

Evidence Search Results

A total of 1892 articles were yielded from searches conducted using five databases: MEDLINE, Gale OneFile: News, Gale Academic Online, CINAHL Complete, and Gale OneFile: Health and Medicine. However, from the total, 1,788 were eliminated after screening the titles, abstracts, or pertinent information and references for duplicate data, and 104 articles were initially screened. Articles were further excluded because they did not pertain to falls, hospital falls, reducing falls, or toileting-related falls. After applying inclusion and exclusion criteria, the total number of articles was 58. An additional 20 articles were eliminated after reviewing the data within the articles. Only nine articles provided a high level of evidence, as shown in Figure 1 for the PRISMA flow diagram.

In this project, the appraisal resource used for evidence evaluation was the Johns Hopkins Nursing Evidence-Based Practice and the Evidence Level and Quality Guide tool (Dang & Dearholt, 2017). These resources helped guide and clarify the literature review and retrieval of data, which is organized in a summary of primary research evidence and an overview of systemic research evidence. Nine qualifying articles were evaluated using the JHNEBP tool; one was level II, three were level III, and one was identified as level V. Five articles were graded as A, and four were graded B (see Appendix A and Appendix B).

Themes with Practice Recommendations

A detailed electronic literature review yielded studies with toileting care plan strategies to reduce falls related to toileting. After reviewing the literature, several themes and common interventions were present such as education on falls plans and patient-specific risks for falls during this stay based on patient self-assessment, scheduled toileting times, no patient alone programs, and toilet alarms. These can be combined to form a toileting care plan for patients at high risk of falling (Bargmann & Brundrett, 2020; Cangany, 2018; Jones et al., 2021; Morales, 2021). Each topic supports change for decreasing falls related to toileting in the medical-surgical adult population.

Interventions Should be Individualized

Individualized patient safety/care plans should be customized based on each patient's individual needs and assessments based on patient self-assessment and nurse conversation (Morales, 2021; Renshaw et al., 2020; Silva, 2017). Factors such as new medications, as well as the effects of any recent treatments that may alter patients' ability to go to the bathroom safely and independently, should be taken into consideration (Howard, 2018; Jones et al., 2021; López-Soto et al., 2021; Zubkoff et al., 2019). Patients on high-risk medications such as oxycodone, hydromorphone, morphine, diuretics, and other medicines that alter bowel habits should have more frequent rounding (Rochon & Salazar, 2019). If a patient is identified as a high risk related to urgency, the care team may consider a bedside commode (Silva, 2017).

Toileting care plans should use expanded fall assessment scales such as the AHRQ fall Risk Assessment (Figure 2), and the St. Thomas Risk Assessment Tool in Falling elderly inpatients (STRATIFY) fall risk assessment (Figure 3), and the Morse Fall Scale (Figure 4). These assessments give healthcare staff more in-depth tools to assess the patients' risk of falling

(Barrett et al., 2017; Choi et al., 2018; Dykes et al., 2018; Silva, 2017; Yost & Baur, 2021). The individualized care plan can be further customized based on items such as frequency of bathroom usage per day, the number of times a patient uses the bathroom at night, and the patient's self-assessment with a tool such as Appendix C, Patient Self-assessment (Choi et al., 2020; Hoke & Zekany, 2020; Rose et al., 2020; Yost & Baur, 2021).

Customized Patient Rounds

Patient rounding needs to be meaningful, and the patient needs to be part of the decision on when to be rounded (Barrett et al., 2017). The healthcare staff needs to consider the changes that can occur when patients change their medications and care that may affect balance and cognition. While a standard rounding schedule will not fit every patient's toileting needs, a customized plan has shown a decrease in falls (Barrett et al., 2017; Zubkoff et al., 2019). These rounds are times the patient and the staff agree to perform toileting activities.

Open Communication

Open and honest communication about fall risks and fall prevention measures should occur between the patient and the care team (Dykes et al., 2018). Collaborating with patients gives them the right to choose their fall prevention measures and allows consensus on actions such as always calling for help when going to the bathroom (Bargmann & Brundrett, 2020; Barrett et al., 2017; Rochon & Salazar, 2019; Zubkoff et al., 2019).

Measures for Non-complaint Patients

For various reasons, patients may not be able to follow a toileting care plan. For these patients, alternative measures such as toileting alarms and a plan to not leave the patient alone in the bathroom can be implemented to decrease falls (Ambutas, 2017; Jones et al., 2021; Renshaw et al., 2020). Studies have shown an increase in patient safety and a decrease in hospital falls

after implementing toileting alarms on patients who cannot or will not use the bathroom call bell for help (Ambutas, 2017; Jones et al., 2021). If there is no ability to use a toileting alarm, or if it would place the patient at a higher risk for falling, then *A no patient alone* program should be put in place (Cangany, 2018; Howard, 2018; Huey-Ming, 2017; Zubkoff et al., 2019). The staff must prioritize safety over privacy while maintaining dignity (Renshaw et al., 2020).

Additionally, the literature supports the improvement of fall rates after implementing a no-patient alone intervention as part of new fall measure techniques (Cangany, 2018; Howard, 2018; Huey-Ming, 2017; Zubkoff et al., 2019).

Summary of Recommendations

Per the JHNEBP tool, the strength of evidence showed that the best approach for the project site was to continue with standard fall precaution measures with the addition of an individualized toileting care plan (Morales, 2021; Renshaw et al., 2020; Silva, 2017). There needs to be clear communication with the patient about their toileting care plan, times of interventions, and the risk of falls and potential dangers if a fall occurs (Ambutas, 2017; Bargmann & Brundrett, 2020; Dykes et al., 2018; Lysette et al., 2021; Renshaw et al., 2020; Rochon and Salazar, 2019). The toileting care plan should also include interventions that would be the best for the patient, what actions can be taken for patients at risk for non-compliance to the toileting care plan, and how the interventions can decrease the chance of falling and potential injury (Ambutas, 2017; Jones et al., 2021; Renshaw et al., 2020).

Setting, Stakeholders, and System Change

The DNP project was implemented in a medical-surgical unit of a 186-bed community-based acute care hospital in Central Texas that is part of a more extensive parent health care network. The medical-surgical unit consisted of 30 beds. The primary staff for the medical-

surgical units was registered nurses (RN), unit secretaries, physicians, and patient care technicians. The hospital provides general surgery, bariatric surgery, transitional rehabilitation, general hospital care, and urgent/emergent care. The hospital's mission is "Above all else; we are committed to the care and improvement of human life" (M. Gallegos, personal communication, May 8, 2021). The hospital's vision is "The destination of choice for healthcare excellence" (M. Gallegos, personal communication, May 8, 2021).

Organizational Need

The hospital's quality department and division quality department identified the organizational need to reduce falls with injuries among patients 18 years and older who were admitted to a medical-surgical unit, not bedbound and had perceived toileting needs (M. Gallegos, personal communication, May 8, 2021). The hospital had a previous project to reduce overall falls, which decreased overall falls by 30%. However, falls with injuries remained higher than national averages. (M. Gallegos, personal communication, May 8, 2021). On further investigation of the cause of falls with injuries in the project setting, it was identified that a high number of falls correlated with toileting activities (S. MacVeigh, personal communication, June 11, 2021).

Stakeholders and Sustainability

Upon initiating the project team, stakeholder analysis identified vital contributors to project success, including the chief nursing officer, the chief executive office, the vice-president of quality, and medication directors of the specified pilot units. These individuals' vested interest arose from a primary objective of increasing the delivery of safe patient care to a vulnerable population and the secondary aim of reducing financial penalties related to falls with injuries. The two objectives aligned both in order of achievement and the organization's mission to put

care and improvement "above all else." Leadership as key stakeholders requires supportive stakeholders to complete the heavy lift of the change; these stakeholders were identified as bedside nurses, patient care technicians, providers with interprofessional collaboration and engagement, and patients and their families.

Organizationally, the project was supported through the office of the chief nursing officer, director of quality, and the pilot unit medical directors. As a pilot project, the intent of this effort on the two units was to gather the evidence, synthesize best practices, and then commit the practice change from soft to hardwired. The facility had a vested interest in the success of this pilot project; as identified during weekly steering committee meetings, it committed human, fiscal, and supply resources toward the success.

Utilizing shared governance practice guided by Lewin's change theory, the project roadmap emphasized the milestones of change necessary for project engagement and success. Knowledge transfer to the primary care teams on the importance of the change to promote safer toileting practices to reduce falls was completed using a varied method approach to increase both knowledge and ownership in the process. Staff participation in the decision-making process and implementation schedule encouraged the staff to become experts in practice. The sustainability of a change is highly affected by the willingness of the people for whom the change is made to remain in the changing state or the refreeze state rather than reverting to past known behaviors. Lack of effective hardwiring practices potentiates financial impacts such as loss of value-based performance incentives, increased cost of care or hospital length of stay, perceptions of leadership acumen, partnerships, and effectiveness of staff education/competency programs (Crespo-Gonzales, 2020).

Strengths, Weaknesses, Opportunities, and Threats Analysis

A strengths, weaknesses, opportunities, and threats (SWOT) analysis tool was used and is depicted in Figure 5. Leadership was identified as a strength, as system-wide changes can be challenging to implement without the support of leadership (Castiglione & Lavoie-Tremblay, 2021). Another strength identified was that an active falls committee meets regularly. The weaknesses identified during the SWOT are privacy overriding patient safety, lack of official toileting rounds, and the lack of open and honest discussion of falls and plans to help the patient to the restroom. Opportunities from the SWOT are what the project was built around, a toileting care plan that will address the potential causes of falls, such as lack of a clear strategy, privacy, patient safety, and staff making themselves available to last-minute needs. The threats identified were injuries or death from a fall, increased length of stay, the financial burden to the patient or the hospital, and possible HIPPA violations.

System Change

The project manager's (PM) micro-level unit changes will involve patient care and outcomes. The care plan will address how often the healthcare staff complete rounds on patients, walk them to the restroom and discuss what to do between the scheduled patient rounds. Part of the plan is to ensure that the patient and family can obtain help anytime. The nurse will assess the patients for any medication or treatment changes that would increase the need to use the toilet and adjust the toileting rounds as indicated. If given the rationale for change, the healthcare staff will be more inclined to make a micro-level change to the way they assess and interact with the patient. The macro-level system changes will include using the current fall bundle system-wide and then implementing the toileting care plan with the patient, family, and healthcare staff (Bargmann & Brundrett, 2020; Rochon and Salazar, 2019).

An engaging leadership style can help motivate organizational change (Castiglione & Lavoie-Tremblay, 2021). Mostafa and El-Motalib (2019) discussed a servant leadership style, which is when a leader puts aside their interests for the best interests of others. Being a servant leader for this project would encourage the staff to want to make the change because of the outcomes for the patient, not because it looks negative on the hospital. A leader has to have the right skills to manage a project. They need to have the ability to set realistic goals, clear timelines with clear deliverables, and be a person who can communicate their needs and wants. The leader can make or break any project. The project leader must know the problem, what the research shows, and what the staff and patients understand, and then communicate what can be implemented to correct the issue.

Implementation Plan with Timeline and Budget

This project's objectives are aligned with the project hospital's vision and mission statement, which is a commitment to the care and improvement of human lives and to be a destination of choice for healthcare excellence (M. Gallegos, personal communication, May 8, 2021). The project took about 12 weeks, from beginning to end. (See Appendix D for a timeline).

Objectives

The objectives for this project included:

- Improve the knowledge of the medical-surgical staff with respect to causes of falls related to toileting and the importance of expanded patient fall risk assessments after delivery of AHRQ falls knowledge test (Appendix E) and educational offerings from the project team and champions showing all project staff can obtain an 85% or higher on falls knowledge test

- The project team and unit-based staff will set up a framework for toilet care plans for patients based on round table discussions, evidence-based research, and stakeholder feedback within the first eight weeks of the project
- Project team members, unit champions, and medical-surgical staff will implement the toileting care plans on at least 80% of patients identified as being at higher risk based on the STRATIFY fall risk assessments implemented during the project and knowledge gained from the AHRQ falls knowledge test. Compliance will be assessed by unit champions and project members
- Reduce the rate of falls with injuries related to toileting to less than or equal to 2.7 falls per 1,000 patient days by week 13 of the project
- Reduce the length of stay and cost to the hospital by decreasing the number of falls with injuries by week 13 of the project
- Reduce costs related to falls (see Table 1)

Change Model and Practice Change

Using Lewin's Change Theory of unfreezing of practice, applying the change, and refreezing after the changes allowed for adjustments during implementation as indicated through evaluation by the PM (Lewin, 1951).

Unfreezing

The project members and unit champions must demonstrate the need for change in practice to medical surgical staff before any changes in current practice can be accepted. The PM met with stakeholders, the CNO, the Quality department, and medical-surgical bedside staff to fully understand the organization's current state around fall-related to toileting. Combing the data collected after the meetings and providing the data of recent falls, results of AHRQ Staff

Knowledge Test (Appendix E), and communication of the national benchmark of 2.7 falls per 1,000 patient days versus the current rate of 3 to 4.7 falls per 1,000 patient days, the PM educated the medical-surgical staff on the needs for changes around fall reduction measures. Evidence obtained from literature reviews and the previously stated information were combined to construct practice changes around falls and falls with injuries related to toileting.

Change

The change phase included the planning and implementation stages of the project (Lewin, 1951). During this phase, insights from the AHRQ Staff Knowledge Test and feedback from all project and medical-surgical staff members were reviewed. The medical-surgical staff was instructed to use the patient Fall Risk Prevention Questionnaire (FRPQ). The project team suggested and approved changes in fall prevention practices before implementation. Before implementation, volunteers from the medical-surgical staff were asked to be unit champions to help message and monitor the project and its objectives. Implementation of the project commenced once the CNO, the stakeholders, project committee members, EPRC, and the project hospital approval process committee signed off and approved the changes in practice. The project objectives were implemented on adults in medical-surgical units who were at risk for falls related to toileting.

Refreezing

Once the new measures and procedures are implemented, and the staff has made the changes to their practice, they should accept these changes as the new normal for all high-risk fall patients (Hussain et al., 2018). Other factors that can ensure the new objectives and measures were set into place are the presentation of the outcomes from the project, which will show a decrease in patient falls related to toileting. On completion of the project, the PM presented the

project's results with suggestions on further implementation to hospital stakeholders and falls committee members.

Budget

This project's budget requirements were minimal and were not associated with any labor costs outside of regular working hours for the employee. (see Table 1). All meetings occurred during regular work hours and did not have overtime or extra pay for the members involved. The only expenses were related to producing and printing forms, handouts, and signs that were part of the project as a whole. There is a cost-saving for each patient who does not fall at around \$14,000 (Joint Commission Center for Transforming Healthcare, 2021). Any fall reduction from previous years could be seen as an income or savings.

Evaluation Plan

The project evaluation is designed to measure the clinical significance of the decrease in the rate of falls and falls with injuries related to toileting over twelve weeks. After submitting the project proposal to USAHS and the facility, approval was obtained in writing to proceed with the project. During the project evaluation phase, multiple methods were used to collect and analyze data, evaluate staff competency and participant participation, measure the effectiveness of the interventions and evaluate the front-line staff and participants' compliance with the care plan. These methods included data reviewed from the project hospital quality department, staff surveys, observations, and review of data from front-line staff fall assessments.

Staff Competency

Before implementing the project, the AHRQ falls knowledge test (see Appendix E) was sent out to the front-line staff; the data is presented in the data details section below.

Selection of Participants

The participant selection was based on the inclusion criteria, which comprised male and female patients who were not bedbound and were alert and oriented, able to communicate effectively, and had a Morse fall scale risk assessment of 25 or greater. See Figure 4 for approval of usage. The participants were patients admitted to the medical\surgical unit, which had 30 beds. In total, ten patients were able to participate in the project.

Data Details

The following data helped analyze the project's success: AHRQ staff knowledge test, Morse fall risk assessment score, the total number of falls per month, the total number of falls with injuries, and patients falls per 1000 patient days. The bedside staff completed the AHRQ staff knowledge test via online format, completed the Morse fall scale on patients on paper, and placed it in a bin on the unit for collection. The project hospital's quality department collected the falls data monthly. All data was HIPAA complaint because only age and gender were requested on the Morse fall scale, and the fall data contained only numerical data. Any data requested had to be retrieved using a secure login provided by the project hospital. The Logic Model Table in Appendix F guided the project and outcomes.

Seven responses out of 30 staff members were returned for the AHRQ staff knowledge assessment. 85% of the responses were from nurses, and 15% were from techs, clerks, and students. The test's overall score was 81%, with the most common question missed being if "all patients should have a bed alarm active." 60% stated yes, and 40% expressed no. This result indicates that staff needed to be taught about alarm fatigue and when alarms are helpful. An 81% for overall scoring showed that the staff who completed the survey had some falls prevention knowledge, which was beneficial to the changes the project proposed.

The sample size for the return of the Morse fall assessment was less than 10, which did not lead to any meaningful data being collected, and the data cannot be used as a reliable source to measure the project outcomes. The data from the quality department (see Table 2) before and after the project was beneficial in evaluating the overall falls and falls with injuries. The quality department abstracted the data from the EHR and a manual chart audit on any patients who fell using a predetermines chart audit assessment tool.

Missing Data

The missing data's issues will be described in detail in the limitation section below. The only missing data was the Morse fall assessment that the staff was supposed to complete on paper.

Evaluation Design

The evaluation design of this project was non-experimental. Rural Health Information Hub (2015) stated that a non-experimental plan may apply to pre- and post-intervention studies. This patient fall project evaluated overall falls, falls with injuries, and staff knowledge related to factors that could lead to the falls associated with toileting. Comparing the falls and falls with injuries before and after the project is supported by this design and helped to identify areas that needed improvement.

Categories of Measure

Three categories of measures were monitored for this project: outcome measures, process measures, and financial measures. These measures were observed at baseline and at the end of the twelve-week project.

Outcome Measures

The quality department abstracted and evaluated the falls, falls with injuries, fall-related to toileting, and falls per 1,000 patient day data for the pre-intervention and post-intervention portions of the project. A two-tailed paired samples *t*-test was conducted to examine whether the mean difference before and after implementation was significantly different from zero.

The result of the two-tailed paired samples *t*-test was not significant based on an alpha value of .05, $t(1) = 0.77$, $p = .584$, which indicated that the null hypothesis could not be rejected. This finding suggests the difference in the mean of before implementation and the mean of after implementation was not significantly different from zero. The results are presented in Table 3. A bar plot of the means is presented in Figure 6

Process Measures

The staff received education about the Morse fall scale and the toileting care plan during huddle and from the fall champion. COVID-19 significantly impacted the teaching and adoption of the proposed changes.

Financial Measure

The project hospital assessed the financial measure of this project. The review of data showed no new falls with injuries during the project, and no increased length of stay due to falls.

Impact of Project-Based on Data

A decrease in overall falls per 1,000 patient days and this project cannot be directly correlated. The lack of change was due to a few factors, such as lack of buy-in from staff, low data collection indicating staff changed their practice and lack of data related to toileting care plans.

Impact

This pilot project generated excitement from the direct care stakeholders who were participating in shared governance as active members of the pilot project team. Focused participants included representatives from unit nurses, bedside staff, and patients. Initial knowledge level was identified through a quiz on factors that could lead to patient falls, highlighting areas of opportunity for education, improved assessment of patient risk for falls, and identifying a more comprehensive fall risk assessment tool. A robust discussion was encouraged during the planning stage as all agreed that the change was needed. During the exploration, discussion topics such as technology, signage, signaling, EHR alerts, and color-coded call light indicators emerged. All parties agreed that the need for the pilot project existed, and the champions were engaged to begin development and implementation.

However, during the implementation of the pilot project, as described in the implementation section, the organization's corporate headquarters updated the fall risk assessment to the Morse fall scale to provide a uniform evaluation of fall risk in all health system locations. This change was part of the initial discussion during planning; while unanticipated, the team had a general knowledge of the Morse fall scale and updated the implementation strategy with the new risk assessment tool. What changed was the full hospital implementation of the Morse risk assessment tool rather than the initial plan of a pilot change that became hardwired and then spread with champion trainers to the next identified unit.

Clinical significance was achieved by the following outcomes: 1) increased knowledge and utilization of the Morse fall risk assessment tool, 2) increased resource allotment to support an increase in fall prevention for patients with identified higher risks for falls, 3) improved

understanding of the need for specific interventions for toileting practices for patients identified as a higher risk for falls.

Limitations of the project included organizational and operational changes that were unanticipated and unable to be avoided, which directly affected the evaluation measures of the project. These limitations include SARS-CoV2-2019 (COVID-19), redesignation of medical-surgical units, and alteration in project scope.

COVID-19

The COVID-19 pandemic's influence on the project's outcome cannot be understated. The organization needs to restructure and realign bed capacity to assist with disease surges, and the limitation of access to the organization due to the potential risk of viral spread reduced visitors, students, and others' access to the organization. Nurse-to-patient staff ratios increased, which had the negative effect of decreased room time for bedside staff. Staff vacancies, temporary or permanent, for illness, resignation, and change in work location further increased the workload burden and lessened the initial enthusiasm for the pilot project. Temporary staff, workload, and burnout were cited for limited participation.

Unit Designation

The organization's medical-surgical designation for specific floors was restructured in the project's final two months. This change resulted in restructuring reporting design and altering the pilot project's unit data sets. The decision to have medical-surgical units and telemetry-oncology units report for three months under one report heading and split to medical-surgical and telemetry-oncology as two separate headings for the remaining three months of the project altered the data visualization of the fall rates. When the data was analyzed, there was no

significant reduction in the total rate of falls under either presentation methodology- combined or separated.

Project Scope

In retrospect, the original project plan was too ambitious, given the state of healthcare during the project timeline. A fundamental understanding of utilizing a stepwise approach to achieve all aspects of the project goals by hardwiring each key element before moving to the next was observed as necessary to increase the potential for long-term sustainability for projects in the future. This pilot project scope included alteration of the fall risk assessment (twice), development of a patient education plan for patients with falls, a structured handoff communication process to ensure communication of patients' known risk for falls, and development of a toileting care plan. These changes proved too much given the additional limitations of COVID-19 and bedding and staffing challenges.

Future project success plans include: a clear plan for each milestone of the project and the metrics to determine hardwiring has occurred, development of a realistic time frame, and robust discussion with project steering committee members of when projects may need to accelerate or decelerate for success given operational goals and objectives. For example, the health system implemented the Morse fall risk assessment across all member hospitals. Still, it did not complete the information technology step of embedding the tool into the EHR to improve nursing adherence by eliminating workflow barriers. Additionally, organizational decision-making for all units needs to be timely so that if, such as in the case of this project, a change decision is still pending to determine organization support for uniform signage for signaling or color-coded call light indicators to be implemented, that the decision is made, and the resources are provided for implementation.

While the initial intent of improving toileting to decrease falls did not produce the outcomes initially sought, the success of this project can be found through an understanding of its limitations. By navigating the change process in this organization, there is clarity in developing an organizational change process for further change efforts to follow. Having uniformity of approach will reduce the initial inquiry, provide a framework for success, and ensure that all resources are understood.

Dissemination

Project closure included a review and evaluation of the strengths, weaknesses, and opportunities for improvement before disseminating the results. Project outcomes were disseminated via a live PowerPoint presentation to the project's stakeholders, the CNO, the fall committee, the hospital's quality department, unit management, and medical-surgical staff involved in the project. The presentation highlighted the project's strengths, weaknesses, members' feedback, a gap analysis, and suggestions for future fall-related projects. A copy of the presentation and handouts will be shared with stakeholders in the unit.

In addition to internal dissemination, this project was submitted to the Scholarship and Open Access Repository website at the University of St. Augustine for Health Sciences (SOAR@USA). After adjusting the presentation to their template, a future presentation of the project through oral and poster presentations Alpha Alpha Alpha Chapter of SIGMA and at the National Teaching Institute & Critical Care Exposition (NTI).

Conclusion

Patient falls with injuries related to toileting activities are a concern that every hospital must manage. The purpose of the EBP change project was to reduce the number of falls to adults in the medical-surgical unit related to toileting from 4.07 falls per patient 1,000 days to under

2.75 falls per patient days. With staff knowledgeable about factors that can lead to falls and patients educated on risks for falls and adverse outcomes, the overall risk of falls with injuries can be reduced. The staff and patient need to communicate about falls, and an appropriate toileting care plan can be implemented based on their discussion. The care plan will include communication of the risks identified, how often the patient will be rounded on, call bell usage, and other measures for patients who cannot follow the plan. Literature support with the proper assessment and patient education falls with injuries can be decreased.

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Table 1*Project Budget*

Expenses		Revenue	
Direct- included in regular operating costs	\$0	Institutional budget support	\$100
Indirect- Included in regular operating costs	\$0	Billing	\$0
Supplies – office	\$100	Grants	\$0
Fall with Injury Associated Cost of Care ^a	\$14000 ^a		
Estimate Total Expenses	\$50	Estimate Total Revenue	\$0
Net Balance			\$0

Note: ^aFall with injury related cost of care is an estimate based on average reported cost of care at facility related to additional care associated with falls. Does not reflect actual expense or revenue, reported as example of potential unreimbursed costs associated with falls in a per fall with injury experience.

Table 2*Falls Medical/Surgical Unit Per Month October 2021 to March 2022*

Phase	Pre- Intervention	Pre- Intervention	Pre- Intervention	Pre- Intervention	Post- Intervention	Post- Intervention
	Oct 21	Nov 21	Dec 21	Jan 22	Feb 22	Mar 22
Patient falls	3	3	2	7	3	1
Falls with injuries	0	0	0	0	0	0
Patient Days	760	747	818	880	696	762
Rate/1000 Pt days	3.95	4.02	2.44	7.95	4.31	1.31

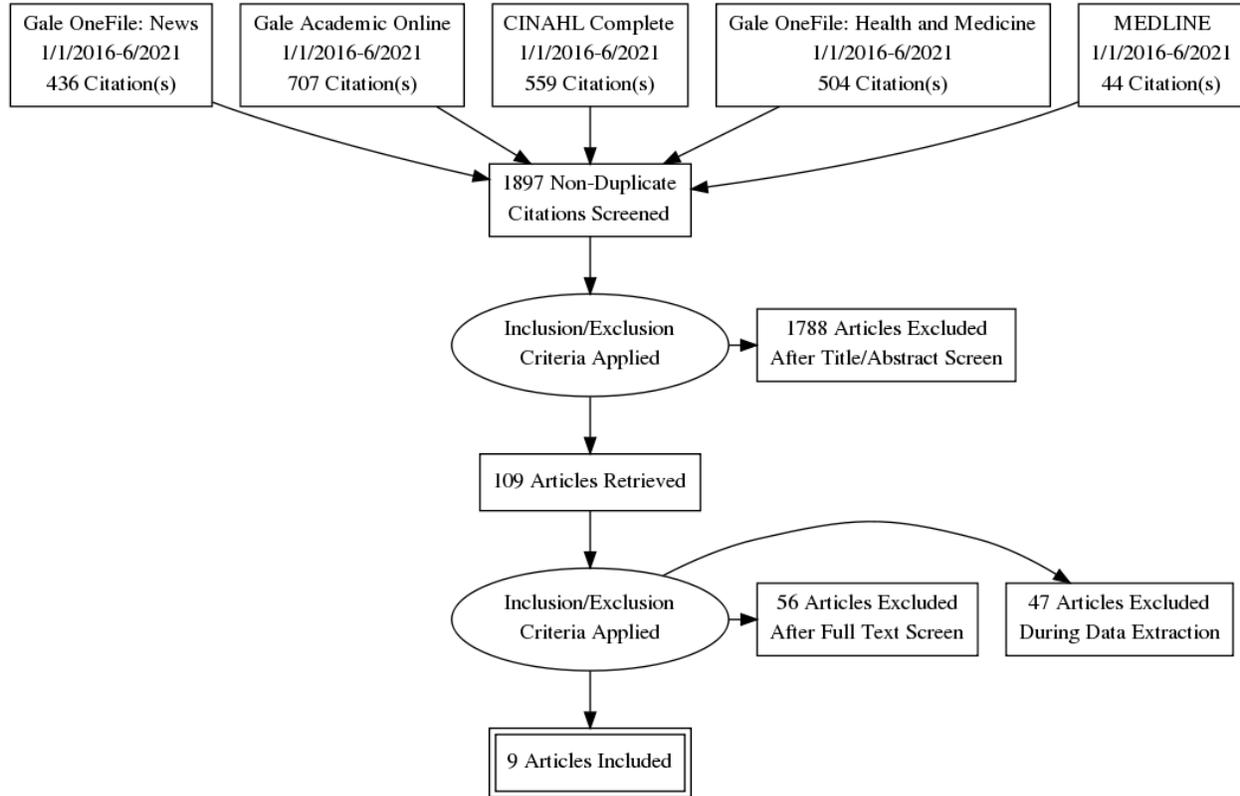
Table 3*Two-Tailed Paired Samples t-Test for the Difference Between Before and After*

Before		After		<i>t</i>	<i>p</i>	<i>d</i>
<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
3.98	0.05	2.81	2.12	0.77	.584	0.54

Note. N = 2. Degrees of Freedom for the *t*-statistic = 1. *d* represents Cohen's *d*.

Figure 1

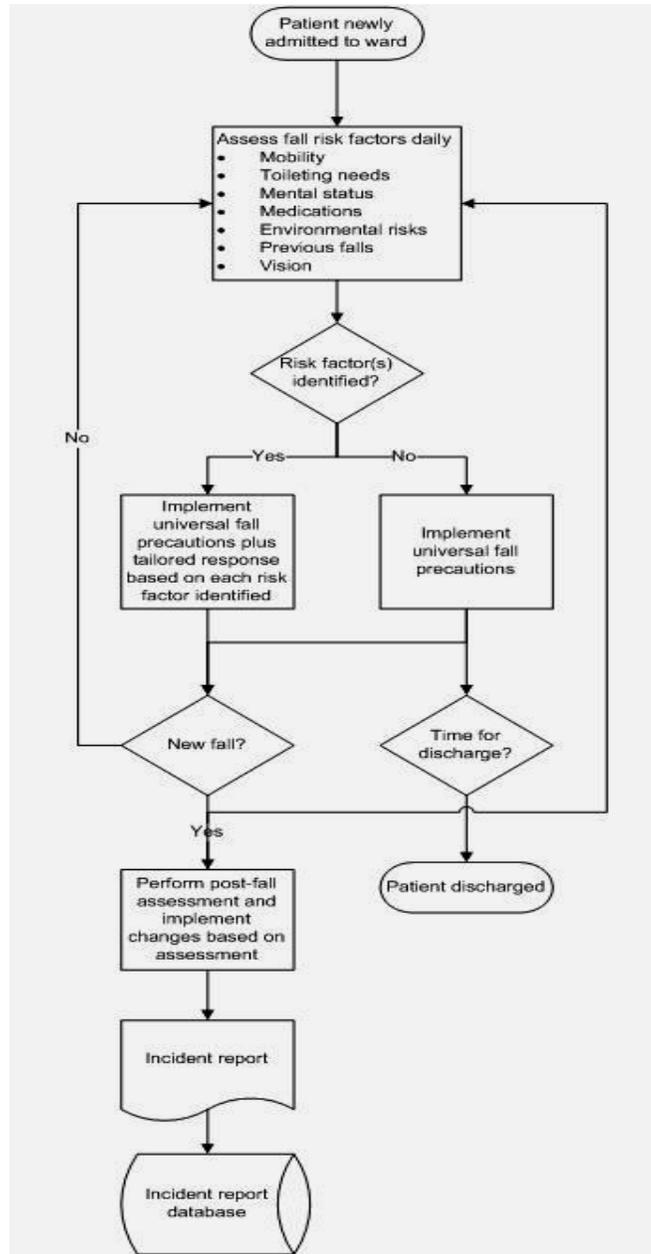
PRISMA Diagram



Note. Prisma flow chart diagram from “Preferred Reporting Items for Systematic Reviews and Meta-analyses: The PRISMA Statement,” by D. Moher, A. Liberati, J. Tetzlaff, & D.G. Altman, 2009, *Annals of Internal Medicine*, 151(4), p.267 (<http://dx.doi.org/10.7326/0003-4819-151-4-200908180-00135>). Copyright 2009 by The American College of Physicians.

Figure 2

Fall Risk Assessment



Agency for Healthcare Research and Quality. (2019a). *Master clinical pathway for inpatient falls*.

<https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/clinical-pathway.html>.

Figure 3

STRATIFY Scale for Identifying Fall Risk Factors

#	Question	Yes / No	
1	Did the patient present to hospital with a fall or has he or she fallen on the ward since admission (recent history of fall)?	Yes = 1	No = 0
2	Is the patient agitated ?	Yes = 1	No = 0
3	Is the patient visually impaired to the extent that everyday function is affected?	Yes = 1	No = 0
4	Is the patient in need of especially frequent toileting ?	Yes = 1	No = 0
5	Does the patient have a combined transfer and mobility score of 3 or 4? (calculate below)	Yes = 1	No = 0
	<i>Transfer score:</i> Choose one of the following options which best describes the patient's level of capability when transferring from a bed to a chair: 0 = Unable 1 = Needs major help 2 = Needs minor help 3 = Independent		
	<i>Mobility score:</i> Choose one of the following options which best describes the patient's level of mobility: 0 = Immobile 1 = Independent with the aid of a wheelchair 2 = Uses walking aid or help of one person 3 = Independent		
	<i>Combined score (transfer + mobility):</i> _____		
Total score from questions 1-5: _____ 0 = Low risk 1 = Moderate risk 2 or above = High risk			

Note: Agency for Healthcare Research and Quality. (2019). STRATIFY scale for identifying fall risk factors. <https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/implementation-guide/index.html>

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Figure 4

Morse Fall Scale

Item	Item Score	Patient Score
1. History of falling (immediate or previous)	No 0 Yes 25	_____
2. Secondary diagnosis (≥ 2 medical diagnoses in chart)	No 0 Yes 15	_____
3. Ambulatory aid None/bedrest/nurse assist Crutches/cane/walker Furniture	0 15 30	_____
4. Intravenous therapy/heparin lock	No 0 Yes 20	_____
5. Gait Normal/bedrest/wheelchair Weak* Impaired†	0 10 20	_____
6. Mental status Oriented to own ability Overestimates/forgets limitations	0 15	_____
Total Score‡: Tally the patient score and record. <25: Low risk 25-45: Moderate risk >45: High risk		_____

Note: * Weak gait: Short steps (may shuffle), stooped but able to lift head while walking, may seek support from furniture while walking, but with light touch (for reassurance).

† Impaired gait: Short steps with shuffle; may have difficulty arising from chair; head down; significantly impaired balance, requiring furniture, support person, or walking aid to walk.

‡ Suggested scoring based on Morse JM, Black C, Oberle K, et al. A prospective study to identify the fall-prone patient. Soc Sci Med 1989; 28(1):81-6. However, note that Morse herself said that the appropriate cut-points to distinguish risk should be determined by each institution based on the risk profile of its patients. For details, see Morse JM, Morse RM, Tylko SJ. Development of a scale to identify the fall-prone patient. Can J Aging 1989;8;366-7.

NOTE: Agency for Healthcare Research and Quality. (2019). *Morse fall scale for identifying fall risk factors*. <https://www.ahrq.gov/patient-safety/settings/hospitals/fall-prevention/toolkit/morse-fall-scale.html>

Figure 5*SWOT Analysis***SWOT Analysis****Strengths**

- Falls Committee in Place
- Unit-Based Councils in Place
- Leadership Involved in Process
- Basic Falls Bundles Are Already in Place

Opportunities

- Toileting Care Plan to Discuss Risk of falls and Outcomes From falls
- Agreement on Time for Toileting and What Actions Will Occur
- Questions and Answer Time So Patients and Families Do Not Feel They Are a Bother to Staff
- Toileting Action Plan

Weaknesses

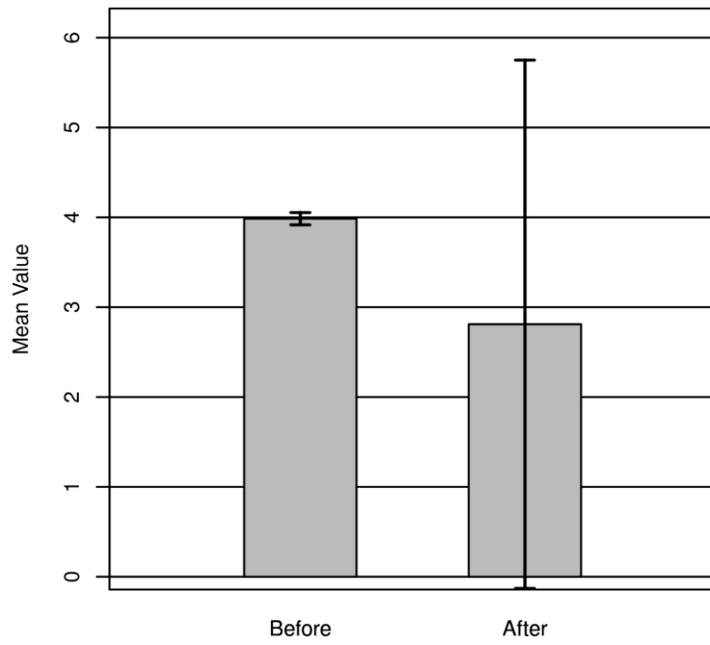
- Privacy is Overriding Safety
- Toileting Rounds are Not Occurring
- Patient Does Not Want to Bother the Staff to Go to the Bathroom

Threats

- Injuries From Falls
- Increased Length of Stay
- Increased Financial Burden

Figure 6

The means of Before and After with 95.00% CI Error Bars



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Appendix A

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Sample Sample size	Intervention Comparison (Definitions should include any specific research tools used along with reliability & validity)	Theoretical Foundation	Outcome Definition	Usefulness Results Key Findings
Seow et al., 2020	Level V (mixed study)- examines workflow at one location Quality rating good	9 Patients	Compared falls before and after building patient rooms with built-in bathrooms	No clear theory mentioned	The outcome includes the impact of build in room bathrooms within 5 feet of the bed on the rate of falls	Having the bathroom closer did not appear to reduce the number of falls. Limitations: Small n for study
Morales, 2021	Design Level III A-High Quality Quantitative study	3054 patients	Did education on TIPS falls sheets and poster decrease average falls per patient day	Kings' Theory of goals attainment	To prevent inpatient falls as evidenced by reducing inpatient falls with injuries on the medical-surgical unit	Goals of 100% completion of TIPS on all patient did not happen, but month over month rates increased. There was not a change in the number of fall related to pre and post intervention

<p>van Loon et al., 2019</p>	<p>Design Level III A-High Quality Quantitative study</p>	<p>203 Patients initially and follow-up with 114</p>	<p>Falls and Impact on patients' lives</p>	<p>No framework was identified</p>		
<p>Barrett et al., 2017</p>	<p>Design Level III B-Good Quality</p>	<p>211 RN's and 185 PCT's</p>	<p>Questionnaire to assess the staff's perception of difference between toileting standard risk to fall patients and any difference with high risk fall assessments</p>	<p>Lean six sigma was identified</p>	<p>Assess and improve RN and PCT mindset to walking high risk patients to the bathroom.</p>	<p>PCT's who were walking patients were not aware of the medications that can increase the risk of falls. Use of diaper was increased instead of walking patient to toilet. PCT and RN need to coordinate their care plans. This study is a good framework to build an action plan for the project</p>

Appendix B

Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/ Recommendation/ Implications
Rose et al., 2020	B	What are the prevalence and characteristics of toileting-related falls in hospitalized older people?	12 months retroactive study of falls within their organizations	Inclusion Criteria: Nighttime falls, Between July 2016 and June 2017, Patients >60 years old, falls occurred one of the two medical wards	Chart review using SPSS version 24 for statistics. Prevalence of falls and falls with injuries related to night-time toileting.	15% of all falls happened at night and 44% of all falls occurred related to toileting	Most patients were not following the recommended mobility advise. Reminder to use call light missing from falls paperwork. Further evaluation needed to understand why patients do not want help when toileting in the hospital
van Loon et al., 2019	B	What is the prevalence and impact of falls on the elderly	Two-year study	Elderly patients on dialysis	Data was collected and assessing falls at baseline and falls two years later	Falls of elderly patients can cause more long-term injuries than younger patients	Male patients fell more than female patients
Prabhakaran et al., 2020	A	What are the predictors for fall related readmission in the elderly population?	Searched the e Nationwide Readmissions Database for 2010 with over 13,907,610 observations for patient with fall related injuries with	Inclusion criteria: Patients older than 65 years and had a fall with injury code	Used STRATA software version 15 for extraction and SPSS 25 software for analysis	110,759 patients had repeated falls with a rate of 273.9 per 100,000 admissions	Geriatric patients are at a greater risk of falls and this population would benefit from the development of specially tailored interventions to reduce falls.

Appendix C

Fall Risk Prevention Questionnaire

I am at risk of falling because _____

1. I have had experiences of falling in the past
2. I have general weakness
3. I lack strength in my legs
4. I have poor balance
5. I have poor vision
6. I have poor hearing
7. I feel dizzy
8. I do not get enough sleep
9. I have difficulty concentrating
10. I feel unsteady on my feet
11. I need to get up and go to the bathroom at night
12. I need help when moving
13. I wear shoes that do not fit
14. I take the following medications: _____
15. I do not keep bed rails up
16. The bed is too high
17. The surroundings are disorganized
18. I use walking aids
19. I use medical devices, such as IV tubing and an IV pole
20. The lighting in patient rooms is very low
21. I take sedatives for tests and procedures
22. I am fasting for tests and procedures
23. The environment of the hospital is unfamiliar
24. There are thresholds in the hallway and bathroom
25. The bathroom or shower floor is wet
26. The floor of the hospital is slippery
27. There are not enough grab bars and handrails in the hospital

Notes. FRPQ, fall risk prevention questionnaire.

Note. From “Development and Validation of the Fall Risk Perception questionnaire for Patients in Acute Care Hospitals” by J. Choi, S. M. Choi, J. S. Lee, S. S. Seo, J. Y. Kim, H. Y. Kim, & S. R. Kim, 2020, *Journal Of Clinical Nursing*, 30(3-4), 406-414

(<https://doi.org/10.1111/jocn.15550>). Copyright 2020 John Wiley and Sons. Used with

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Appendix D
Project Schedule

	NUR7801									NUR7802									NUR7803								
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15			
Preceptor and student meetings	[Black]																										
Project approval with preceptor																											
Prepare project proposal																											
Identify key stakeholders																											
Complete SWOT analysis																											
Gain hospital approval for the project																											
Meet with fall committee to review plan and																											

REDUCING FALLS RELATED TO TOILETING

	NUR7801								NUR7802								NUR7803							
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
rollout																								
Collect pre-intervention survey																								
Review findings and develop education and rollout plan																								
Implement falls reduction plan with staff and patients																								
Adjust plan as needed based on feedback and observations																								
Collect final data																								

Appendix E

AHRQ Staff Knowledge Test

FALL KNOWLEDGE TEST

Each question may have more than one option as the correct answer.

Please circle the letters that correspond to the correct answers.

1. Which of the following statements is *correct*?
 - a. Falls have multifactorial etiology, so fall prevention programs should comprise multifaceted interventions.
 - a. Regular review of medication can help to prevent patient falls.
 - b. The risk of falling will be lessened when a patient's toileting needs are met.
 - c. The use of antipsychotic medications is associated with an increased risk of falls in older adults.
2. A multifaceted intervention program should include:
 - a. Individually tailored fall prevention strategies
 - b. Education to patient/family and health care workers
 - c. Environmental safety
 - d. Safe patient handling
3. Risk factors for falls in the acute hospital include all of the following *except*:
 - a. Dizziness/vertigo
 - b. Previous fall history
 - c. Antibiotic usage
 - d. Impaired mobility from stroke disease
4. Which of the following statements is *true*?
 - a. The cause of a fall is often an interaction between patient's risk, the environment, and patient risk behavior.
 - b. Increase in hazardous environments increases the risk of falls.
 - c. The use of a patient identifier (e.g., identification bracelet) helps to highlight to staff those patients at risk for falls.
 - d. A fall risk assessment should include review of history of falls, mobility problems, medications, mental status, continence, and other patient risks.
5. Patients with impaired mobility should be:
 - a. Confined to bed

- b. Encouraged to mobilize with assistance
 - c. Assisted with transfers
 - d. Referred for exercise program or prescription of walking aids as appropriate
6. The management of the acutely confused patient should include all of the following *except*:
- a. Moving patients away from the nursing station
 - b. Involving family members to sit with the patient
 - c. Orienting patients to the hospital environment
 - d. Reinforcing activity limits to patients and their families
7. Which of the following statements is *false*?
- a. Fall prevention efforts are solely the nurses' responsibility.
 - b. A patient who is taking four or more oral medications is at risk for falling.
 - c. A patient who is taking psychotropic medication is at higher risk for falling.
 - d. Testing or treatment for osteoporosis should be considered in patients who are at high risk for falls and fractures.
8. In hospital settings, intervention programs should include:
- a. Staff education on fall precautions
 - b. Provision and maintenance of mobility aids
 - c. Post fall analysis and problem-solving strategy
 - d. Bed alarms for all patients, regardless of risk
9. When assessing patients, which of the following statements is *false*?
- a. All patients should be assessed for fall risk factors at admission, at a change in status, after a fall, and at regular intervals.
 - b. Medication review should be included in the assessment.
 - c. All patients should have their activities of daily living and mobility assessed.
 - d. Environmental assessment is not important in the hospital as it is all standardized.
10. Risk factors for falls include:
- a. Parkinson's disease
 - b. Incontinence
 - c. Previous history of falls
 - d. Delirium
11. Exercise programs for ambulatory older adults should:
- a. Be very aggressive
 - b. Be unsupervised
 - c. Be ongoing
 - d. Include individualized strength and balance training

12. Which of the following statements on education in fall prevention is *false*?
- a. Education programs should target primarily health care providers, patients, and caregivers.
 - b. Education programs for staff should include the importance of fall prevention, risk factors for falls, strategies to reduce falls, and transfer techniques.
 - c. Instruction on safe mobility, with emphasis on high-risk patients, should be provided to both patients and families.
 - d. Education should only be given at the start of the fall prevention program.
13. Which of the following is recommended to improve patient safety?
- e. Locking wheeled furniture when it is stationary.
 - f. Having non-slip flooring.
 - g. Placing frequently used items (including call bell, telephone, and remote control) within reach of the patient
 - h. Rounding hourly to address patient needs

Answer Key:

- 1. A, B, C, D
- 2. A, B, C, D
- 3. C
- 4. A, B, C, D
- 5. B, C, D
- 6. A
- 7. A
- 8. A, B, C
- 9. D
- 10. A, B, C, D
- 11. C, D
- 12. D
- 13. A, B, C, D

Note. From “Tool 2E: Fall Knowledge Test” from Agency for Healthcare Research and Quality, 2013, (<https://www.ahrq.gov/patient-safety/settings/hospital/fall-prevention/toolkit/fall-knowledge-test.html>). Copyright 2013 Agency for Healthcare Research and Quality.

Appendix F

Logic Model Table

QIN-NCC Logic Model Template (MS Word) Version 07.15.15

OVERARCHING GOAL: Decrease Rate of Falls with Injuries Related to Toileting		LOGIC MODEL DATE:			
INPUTS	→	OUTPUTS	→	OUTCOMES	
Mobilized Resources		Activities and Interventions	Specific processes to measure	Short-term outcomes and measures	
<p>Personnel:</p> <ul style="list-style-type: none"> • Falls Committee • Project Team as assigned by CNO • Charge Nurses • Bedside Staff <p>Leadership:</p> <ul style="list-style-type: none"> • DNP Project Lead • CNO • Unit Director/Manager • Quality Department <p>Resources</p> <ul style="list-style-type: none"> • Bedside staff time on the project • Manger and falls committee on the project <p>Funds</p> <ul style="list-style-type: none"> • Project hospital will supply printed material and meeting space for free. 		<p>A. Educate Staff on the risk of falls related to toileting</p> <ul style="list-style-type: none"> • Assess staff understanding of causes of falls and if toileting is a factor via pre/post-test • Educate Staff on causes of falls based on literature and hospital data <p>B. Educate patient on the risk of falls related to toileting</p> <ul style="list-style-type: none"> • Assess patients for their knowledge of causes of falls and their accurate fall risk assessment <p>C. Create and Implement toileting care plan between bedside staff and patient</p> <ul style="list-style-type: none"> • An in-depth conversation about falls while toileting, what the perceived needs are based on patient history, and new medications r procedures, or treatments 	<p>A. Educate Staff on the risk of falls related to toileting</p> <ul style="list-style-type: none"> • Evaluate percent of completed pre-tests for knowledge deficit • Educate Staff based on findings • Staff will verbalize factors the increase falls • Evaluate post-test for learning <p>B. Educate patient/family on the risk of falls related to toileting</p> <ul style="list-style-type: none"> • Verbalize their risk of falls • Verbalize their care plan <p>C. Create and Implement toileting care plan between bedside staff and patient</p> <ul style="list-style-type: none"> • Patient/family and Staff can verbalize care plan for toileting and patients' risk to fall • Staff identify if the patient can follow a plan or needs a toilet alarm or no-toilet alone protocol 	<p>1. Adult patients, Staff, and families gain knowledge and awareness of:</p> <ul style="list-style-type: none"> • Factors that increase falls related to toileting • Medications or procedures that can alter normal bathroom habits • Factors in a room that can increase the chance of falls <p>2. Adult patients and Staff will:</p> <ul style="list-style-type: none"> • Call before they get out of bed • Address items or factors that be fixed to prevent falls, such as needing a light on or commode at the bedside 	<p>1. Staff will:</p> <ul style="list-style-type: none"> • Identify patients who are at high risk to fall sooner and more reliability • Increase rounding on high-risk patients • Schedule toileting times • Demonstrate improved communication around falls, the risk to fall and need to call and not fall • Decrease chance of fall by proactive room management for clutter and trip and slip hazards <p>2. Patients will:</p> <ul style="list-style-type: none"> • Have a decreased incidences of falling • Show the ability to call for toileting help • Verbalize that they are on a toileting care plan
ASSUMPTIONS (root cause analyses, prior learning/experience)		EXTERNAL FACTORS (barriers/facilitators)			
<ul style="list-style-type: none"> • Because we teach a new process, it will be adopted • Patients will follow the toileting plan • Staff will be willing to participate • Process changes lead to decreased falls and fall with injury 		<p>State and federal laws COVID and Staffing Hospital Policy change Change in hospital priority</p>			

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