Reducing Falls Within the Geriatric Psychiatry Unit

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Abstract

Falls are the leading cause of injury among older adults. Older adults with cognitive impairment and mental illness are at a higher risk of falls. Consequences of falls in the hospital setting increase length of stay, which increases costs for the hospital and the patient. Reimbursement from accrediting bodies may be reduced as well. The first step to reducing falls in the hospital setting is implementing a fall reduction program consisting of mobility screenings, fall alert tracking, and environmental modifications. This project aims to implement standardized fall reduction measures for all patients admitted to an inpatient Geriatric Psychiatry Unit. This project pilot included educating nursing staff on fall reduction strategies and developing a bed alarm screening tool. The goal was 95% compliance with using the bed alarm screening tool. Over fourteen weeks, 794 patients were screened using the bed alarm safety tool. Several limitations and barriers were identified and addressed during the monthly review using the Iowa Model framework. Findings from this project, paired with nursing feedback, laid a foundation for falls education, bed alarm screening tool, mobility screenings, and environmental modifications to be used on the pilot unit and hospital-wide.

Keywords: *falls, older adults, fall reduction*

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Section I. Introduction

Background

The project facility is a small, private acute-care hospital located in rural western North Carolina. This hospital has 144 beds and a total of five floors. Two of the five floors are psychiatric in-patient treatment units. On the top floor, two units treat older adults. One unit is for older adults with mobility deficits and cognitive and behavioral issues. Many of these patients require ambulatory assistance devices. Thus, they are at high risk for falls (Kruschke & Butcher, 2017).

Organizational Needs Statement

The unit for the proposed project implementation has the highest fall rate in the hospital (Parker & Harris, 2021). The project facility acknowledges a need for improvement related to falls in the geriatric unit. Many of the patients on the unit have cognitive impairment and psychiatric disorders. Because of these impairments, the same strategies used in other departments to prevent falls may not work in this unit (Lach et al., 2016). This facility would like to implement cost-effective measures to reduce falls in the geriatric psychiatry unit, reduce the length of stay related to fall injuries, and reduce the costs associated with falls (Personal communication, February 4, 2021). The National Database of Quality Indicators showed that the national average for the benchmark fall rate in 2020 was three to five falls per 1000 bed-days (NIH Clinical Center, 2020). Last year the fall rate for the geriatric psychiatry unit was 3.7 falls per 1000 beds with three injuries (Parker & Harris, 2021). By March 2021, the fall rate for the geriatric psychiatry unit at the proposed site increased to 14.5 falls per 1000 beds with six injuries (Parker & Harris, 2021). The Centers for Medicare & Medicaid Services (Center for Medicare and Medicaid Services, 2020) requires internal reporting of all falls within the hospital.

For falls with serious injury, reporting to CMS is required (Center for Medicare and Medicaid Services, 2020). The incidence of falls with serious injury in the unit has doubled since last year (Parker & Harris, 2021). Falls continue to be the top adverse event and cause of injury in a hospital setting (Institute for Healthcare Improvement, 2021b).

The Institute for Healthcare Improvement (2021b) uses the Triple Aim approach to improve healthcare. The Triple Aim is applied by identifying patients with a higher fall risk, performing a multifaceted assessment to determine internal and external factors that contribute to identified falls, developing interventions to reduce falls, and evaluating the interventions for effectiveness (Institute for Healthcare Improvement, 2021a). The Triple Aim approach is also relevant to use in the patient populations of the frail and elderly (Institute for Healthcare Improvement, 2021a), such as the population at the site for the proposed project.

The facility's priorities include ensuring safety and lowering costs by implementing measures to reduce the rate of falls in the geriatric psychiatry unit. The site champion and support staff would like to significantly reduce the rate of falls in the geriatric psychiatry unit. The site champion believes that developing a strategy will involve keeping an open forum for discussion about lowering the fall rate in the geriatric psychiatry unit.

Problem Statement

The geriatric psychiatry unit has been identified as a high-risk fall area based on age, cognitive status, mobility status, and psychiatric state (Jensen & Padilla, 2017). The national fall rate for acute care facilities is three to five per 1,000 beds (Patient Safety Network, 2019). As of March 2021, the fall rate for the unit was 14.5 (Parker & Harris, 2021). This project is vital to reduce the fall rate and improve patient safety.

Purpose Statement

This project aims to successfully implement a multifaceted program that will reduce falls in the geriatric psychiatry unit. The risk of injury will be reduced by reducing falls in the unit, and associated fall costs will decrease. The project was implemented between August and November 2021.

Section II. Evidence

Literature Review

Literature searches were completed using PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL). The search was narrowed by requesting peer-reviewed articles published in English within the last five years. The MeSH terms *fall, fall prevention, fall prevention scale, dementia, and cognitive impairment* were used in the search. The Boolean terms "*and*" and "*or*" in addition enclosed in quotation marks were included. There was a wealth of information about fall prevention related to older adults with cognitive impairments. The search returned over 300 articles for review. Inclusion criteria were that the articles had to report on falls among older adults, those with cognitive impairment, those with mobility deficits, environmental changes to reduce falls, and appropriate use of mobility and fall scales. Exclusion criteria were that articles could not report on falls occurring in skilled facilities, outpatient facilities, assisted living facilities, or homes. The abstracts of the articles specifically relevant to the topic were reviewed. If the abstract reviewed was relevant to the subject, the articles were read in their entirety and then kept if applicable. Articles were retained only if they had a level of evidence of three or higher (Melnyk & Fineout-Overholt, 2005). A total of six articles were kept (Appendix A).

Current State of Knowledge

Falls are an ongoing concern for multiple healthcare entities due to their negative impact on various areas (Centers for Medicare and Medicaid Services, 2020). Falls can cause serious harm to patients. They also increase health-related costs for both patients and facilities (Centers for Medicare and Medicaid Services, 2020). The risk of falling increases with age. The risk of serious injury related to falling also increases (Centers for Disease Control and Prevention,

2021). Older adults with psychiatric illnesses pose a higher fall risk of serious injury (Lach et al., 2016).

No specific guidelines exist regarding preventing falls; instead, specific measures can be taken to avoid them. One action is to assess the individual's mobility upon admission to the unit (Dolatabadi et al., 2018). Next is using a fall scale to determine the patient's fall risk specific to the population (Abraham, 2016). Using an appropriate fall prevention scale for the patients at risk is imperative (Abraham, 2016). Other factors that would require a different fall scale are mobility, incontinence, mental status, current medications, and previous fall history (Titler et al., 2016).

Current Approaches to Solving Population Problem(s)

Approaches to address the increased risk of falls in the geriatric psychiatry unit include appropriate fall risk assessments, mobility assessments, and environmental modifications. Multiple assessments of fall risk are available to use in acute care settings. The Morse Fall Scale is currently being used at the proposed project site. Instead, it may be prudent to use the Edmonson Psychiatric Fall Risk Assessment Tool (EPFRAT) (Abraham, 2016). Mathew et al. (2020) conducted a comparative study using the Morse Fall Scale and the EPFRAT to assess falls in 216 patients over three months. Findings from their work conclude the EPFRAT improved clinical judgment among nurses, was more user-friendly and reduced falls by 0.52 per 1,000 beds from the previous year when the Morse Fall Scale was used (Mathew et al., 2020). Currently, the project site is unable to switch to the EPFRAT.

A bed exit alarm is used in acute-care, skilled, and home settings. The warning is activated when the person attempts to exit the bed or chair, alerting caretakers. In conjunction with an activated bed alarm, checking on patients at regular intervals must be done (Spano-

Szekely et al., 2019). Verifying the bed alarm activation and rounding on patients could be documented on a checklist or electronic medical records (EMR). Spano-Szekely et al. (2019) implemented a fall reduction program with inconsistent fall rates at an acute care facility. After implementing consistent bed alarm use, mobility assessments, and rounding, falls were reduced by 54% from the previous year.

The older adult is already at risk for falls, so mobility should be assessed (Kruschke & Butcher, 2017). Individuals with cognitive impairment or dementia have an even higher risk because of impulsivity, decreased vision, and changes in the ability to negotiate surroundings (Dolatabadi et al., 2018). Assessments of mobility considered for the project include the Performance Oriented Mobility Assessment (POMA) or a Timed Up and Go (TUG) assessment (Dolatabadi et al., 2018). Physical therapists should complete these assessments upon each patient's admission to the unit with ongoing assessments during each patient's hospital stay (Dolatabadi et al., 2018). Dolatabadi et al. (2018) conducted a systematic review of 15 studies assessing gait and balance related to fall rates. Findings from the review confirmed the relationship between mobility deficits and falls. Therefore, a mobility assessment should be performed.

Environmental modifications should also be considered in preventing falls. For example, noise reduction in the unit, proper layout of the patient's room, and visual cues to stop the patient from getting out of bed may reduce fall rates (Jensen & Padilla, 2017). Jensen & Padilla conducted a systematic review of 36 studies assessing the effectiveness of environmental modifications to improve functional tasks such as ambulation. Findings from the reviews indicated noise reduction moderately improved the focus of ambulating. It also showed strong evidence of bright light causing behavioral disturbances.

Evidence to Support the Intervention

A bed exit alarm is used at the project site to alert staff when patients attempt to get out of bed. Bed alarms are critical interventions used by nursing staff to prevent falls (Mileski et al., 2019). Although bed alarms may be intrusive, the noise is required, so staff can hear the alarm and respond promptly. A checklist was developed to monitor and verify its use (Appendix D). Verification of the bed alarm also allows for purposeful rounding. Rounding on a patient alerts staff to needs that may cause the patient to get out of bed, such as using the restroom or needing water. Mileski et al. (2019) conducted a systematic review of 28 articles assessing the effectiveness of bed alarms in reducing falls. Findings from these articles indicated bed alarm use alone does not reduce falls. A multisystem approach must be used to prevent falls. These include the use of the bed alarm in addition to rounding.

Another intervention proposed to reduce falls is the use of a mobility assessment upon admission to the unit. This is a nurse-driven order obtained by the provider. This order alerts Physical Therapy (PT) to the need for a mobility assessment. Those patients with mobility deficits have an increased risk of falling (Dolatabadi et al., 2018). Completing mobility assessments and ongoing strengthening initiatives incorporated in the plan of care can lead to a decreased fall risk for the patient (Dolatabadi et al., 2018).

Evidence-Based Practice Framework

The Iowa Model of Evidence-Based Practice guided quality improvement initiatives for the geriatric psychiatry unit. The Iowa Model is best suited for an acute-care hospital setting. The Iowa Model algorithm was used to guide the development and implementation of the project (Appendix B). Following the algorithm allows for the change to be identified, the importance of the problem to be determined, and a team to be formed to synthesize the evidence found. Once

sufficient evidence to support a change in practice is defined, measures are developed to implement changes. The changes are determined to be appropriate or not. If the changes are warranted, the practices are put into place. The changes are evaluated, and findings are disseminated (University of Iowa Healthcare, 2017). The use of the Iowa Model allowed for identifying methods to reduce falls, and the process was identified as a priority. A quality improvement team helped identify possible causes for the increased fall rate. Data on bed alarm use, environmental modifications, and fall rates were collected and analyzed. The changes were put into practice, and the results were disseminated. Alternatively, these results were reevaluated using the same algorithm.

Ethical Consideration & Protection of Human Subjects

The population of patients for the project was considered vulnerable because they are older adults and have cognitive impairment. The Collaborative Institutional Training Initiative (CITI) modules verified the population's status. The CITI modules identified vulnerable people, the ethical considerations for those individuals, and the differences between a research project and a quality improvement project. No identifiable factors were used for the patients, facility, and quality team members.

There were ethical considerations that were factored in when undertaking this quality initiative. Privacy was maintained for patients involved. The identity of all patients in this behavioral health unit was confidential; therefore, only initials were used. Another ethical consideration was the potential for harm. For this initiative, the potential for harm was far less than the harm that could occur if the patient fell. The changes proposed created a safe environment.

The Institutional Review Board (IRB) committee process was completed. It is crucial to have the IRB monitor projects to maintain safety and integrity. This safety net allowed for proper modifications and improvements to the project. The project's site does not have an IRB; therefore, the university's IRB review process needed to be completed to determine if the project was a quality initiative or research. The project leader completed a Quality/IRB self-Certification questionnaire and submitted it through the university process. The project was deemed a quality improvement, and no further IRB review was required.

Section III. Project Design

Project Site and Population

The project site is a geriatric psychiatry in-patient unit located in an acute-care facility in rural western North Carolina. The unit provides treatment to patients with acute episodes of various types of acute psychiatric ailments. The average age of the patients the unit serves is at least 70 years of age.

Description of the Setting

The geriatric psychiatry unit is a 12-bed locked unit in an acute-care facility. One room on the unit is a non-private room that accommodates two patients; all other rooms are private. The beds are standard hospital beds with side rails and built-in fall alarms. The bed controls and the alarms on the bed are locked so that patients cannot adjust the beds. There are no call bells in the room due to safety concerns. Following the hospital's policy, staff members conduct patient rounds every 15 minutes to ensure safety. Patients gather in a common room for group therapy, meals, and television. The locked nurses' desk is located directly across from the common room so that patients can be observed.

Description of the Population

The unit for the proposed project serves a population of adults over the age of 55 years, but most patients are aged 70 years or greater. These patients are facility-based rather than community-based. Many patients have mobility issues such as weakness, unsteady gait, or use a walker. For most patients, their cognitive impairment is due to dementia. Other patients have schizophrenia, bipolar disorder, major depressive disorder, or psychosis. Patients are usually admitted to this unit due to acute episodes of mental health disorders and need medication

adjustments. The average length of stay is seven to ten days. The visit may be extended based on compliance with the treatment regimen and the progression of the disease process.

The staff that serves this unit consists of 41 nurses and 14 certified nursing assistants (CNA). Two registered nurses and two certified nursing assistants are scheduled if the unit census is ten or more. There are always two nurses on the unit, no matter the census. At times of low census, a CNA may not be provided; therefore, the registered nurses must assume the duties of the CNA. A one-to-one safety sitter may be assigned per provider order for patients who require more attention. The unit is staffed above the grid to ensure patient safety when possible.

Project Team

Several team members were part of this project. The site champion was the Chief Nursing Officer (CNO) for this facility. Her role was to be the overseer of the project. She has the task of coordinating all daily nursing operations. She must be aware of all falls and other data within the project site. The risk manager was another team member important to the project. She is responsible for assessing and correcting situations that would harm patients or negatively impact the hospital. She has data about patterns in falls in the hospital and other hospitals in the corporation. The quality director is the head of the quality department and was the person that approved the project. She was the person who approved the measures of change. The Director of the Geriatric Psychiatry unit served as a resource for information regarding patients, the unit, and previously implemented fall precautions. She was included in the new measures introduced to reduce fall risks. The unit nursing staff were also team members. They were the first-line resource to determine fall risks, measures that work, measures that do not, and whether the new measures are effective. The unit staff was the primary implementers of the project. As the project leader, the DNP student developed the project, searched for evidence, and developed the steps

for the project implementation. The faculty advisor guided the project leader on all aspects of the project.

Project Goals and Outcome Measures

The project's goal was to reduce falls in the geriatric psychiatry unit. The unit's fall rate was three times higher than the national fall rate of three to five per 1000 beds (Patient Safety Network, 2019). This goal was accomplished by implementing educational materials for bed operation, safety forms, and environmental modifications to reduce falls. The outcome was measured by comparing the number of falls during the project implementation to previous years. Compliance with the changes in protocol was also evaluated.

Description of the Methods and Measurement

All patients on the unit were included during the implementation of the project. A bed alarm safety checklist was developed to ensure the bed alarms were activated for all persons in the bed. The CNA played a crucial role in checking for the alarms and completing the forms. The RN verified the documents for accuracy. All rooms were included on the checklist. The CNA checked to ensure the bed alarm activated at midnight, 02:00, 04:00, 06:00, 8:00, noon, 16:00, 20:00, and 22:00. If the patient is in bed and the alarm is on, the CNA indicated *yes*. If the patient's bed alarm is not on due to not being in bed, the CNA chose options available on the checklist to explain why. For example, the patient may be in the bathroom, in the dayroom, or walking in the hall. Before implementing the bed alarm safety checklist, an educational presentation was provided to ensure the proper operation of the beds was understood; a PowerPoint was used to deliver the information (Appendix C).

The project leader completed a weekly checklist to verify the physical therapy consult was ordered for all patients. The list also included a section for the presence of a bedside

commode, the bed location, the activation of the bed alarm, and the presence of a clutter-free pathway. Also, the number of falls each week was included in the data collection (Appendix G).

Discussion of the Data Collection Process

To prepare for the project, the project leader reviewed fall rates data on the unit for 2020 and 2021. These data were compared to national fall rates. Interviews with unit staff were conducted to determine the root causes of the increased fall rate in the unit. A weekly chart audit and review of the bed alarm safety checklist were conducted during the implementation phase (Appendix D). The data collected from these audits were entered into a data collection tool powered by Excel for data analysis. In addition, a weekly checklist was completed to survey the surrounding environment. This data was entered into the Excel spreadsheet for analysis.

Implementation Plan

The plan to implement the project was multifaceted. First, a meeting was held with staff members of the unit due to voiced concerns about the staff members' inability to operate the bed alarm and the rotation of staff members unfamiliar with the equipment. A PowerPoint presentation was developed to educate staff on using the bed alarm. The PowerPoint presentation was displayed on the unit and sent via email to all staff on all units (Appendix C).

Ensuring the bed alarm is activated and functioning is imperative. The bed alarm safety checklist was used to ensure the bed alarm was activated. The alarm was checked every two hours at night and every four hours during the day. Next, a proposal to change the fall risk assessment scale from the Morse Fall Scale to the EPFRAT was discussed. Evidence to support the use of the EPFRAT among this population of patients was presented to the project site team members. However, the EPFRAT assessment was not feasible during this project’s scope. The MORSE assessment was reinforced. Next, a mobility assessment and MORSE assessment were

completed upon admission. The nurse ensured a physical therapy order had been entered into the electronic medical record. Lastly, environmental modifications were identified and implemented. These modifications included providing a quiet environment, ensuring the room's layout offers ease of transition to the bathroom, and a visual cue such as a clock on the wall. These evaluations of the utilization of the bed alarm checklist, mobility screenings, and environmental changes were conducted weekly by the project team lead.

Timeline

The project was implemented over 14 weeks, beginning in August 2021 and continuing through November. The PowerPoint presentation was completed in the third week of August, along with the changes in the forms. The environmental changes took place in the third week of August. The staff was educated on all proposed modifications. A PowerPoint presentation was created and emailed to all teams to educate them about the proposed initiative. This email was sent to all medical staff in the hospital, ensuring all staff knew about the bed alarm operation. After the proposed changes were in place for one month, the team discussed progress. If the changes were reducing fall rates, the protocol continued. If the team felt that the changes did not minimize fall rates, the changes were revised, and new measures were developed. Timeline details are outlined in Appendix E.

Section IV. Results and Findings

Results

During the 14 weeks of this project, the census on the geriatric psychiatry unit was recorded weekly. All the patients on the team were screened to assess for activation of the bed alarm, the presence of a bedside commode, and whether patients had an order entry for a PT screening for mobility. A bed alarm safety checklist was used to document whether the bed alarm had been activated. The unit's census averaged nine patients weekly.

The bed alarm safety checklists were gathered weekly and entered into an Excel spreadsheet. The primary data collected was whether the bed alarm was active when the patient was in bed. The data were averaged weekly to track compliance with the bed alarm activation protocol. The number of patients with activated bed alarms was divided by the total number of patients on the floor, then multiplied by 100 to obtain the compliance percentage. The same process was used for the data collection for PT screenings and bedside commode/environmental factors.

Over the 14 weeks, 794 screenings were completed. Of the patients screened, 80% (635) received a completed bed alarm safety checklist. An evaluation of the process using the Iowa model was completed monthly. The expectation was a weekly compliance rate of 95% for using the bed alarm safety checklist. Unfortunately, staff adherence did not meet the established goal. After reinforcing the information in the PowerPoint with staff, the compliance increased to 92% (50 of 54) but fell short in November to 76% (267 of 350) due to absenteeism and turnover (Appendix G).

The first Iowa model evaluation was completed on September 2, 2021, revealing that 89% (35 of 39) of patients had a bed alarm. This percentage did not meet the original goal, but

great optimism was achieved because of the high compliance for the first week. The staff was reminded of the location of the checklists and was reminded to complete them.

The subsequent Iowa model evaluation was completed on September 30, 2021, revealing that 77% (187 of 240) of the patients had a bed alarm. The project leader noticed a drop in the percentage of the completed forms. The staff was re-educated about the importance of fall reduction and completing forms. A review of the original PowerPoint presentation was conducted as part of the education. In addition, suggestions were accepted for the form's layout and ease of completion. The form was revised based on recommendations from staff.

A subsequent Iowa model evaluation was completed on October 28, 2021, with an improved bed alarm compliance rate of 94% (271 of 287) of patients. The increased percentage suggests that re-education sessions influenced the increase in compliance. Another potential factor was the staff-to-patient ratio. The unit was staffed with an extra CNA because of the increased risk of falls for two acute patients.

The final Iowa model evaluation was completed on November 30, 2021, showing 76% (267 of 350) compliance in bed alarm use. The data were skewed because of missing checklists for several days. During this phase, there was an increased number of staff absent because of Covid-19 and staff turnover of staff. The forms were not completed when the unit was without CNAs. Nursing staff reported that it was challenging to complete the documents because they were paper documents.

Compliance with the protocol for PT screening for mobility was also audited during the stated time frame. There was 100% compliance with the PT screening protocol for all patients on the unit. Reminders were posted in the unit to enter a PT screening for all patients admitted. The

provider included the PT screening for orders for admission. The nurses ensured the order was entered into the system and the chart was verified for accuracy.

Environmental factors such as the use of bedside commodes and moving the bed closer to the restroom were audited during the implementation phase. The compliance rate for the use of commodes was 87% (69 of 79). This compliance rate was impacted by a delay in the procurement of the commodes. Four bedside commodes were obtained to be used by the patients with the highest fall risk.

Falls on the unit were tracked monthly. In August, there were two falls documented. In September, there were eight falls, October had 12 falls, and November had eight falls (Appendix G). The falls recorded from mid-September, October, and November were specific to two acutely psychotic patients. These patients' length of stay was longer than the average because appropriate long-term placement could not be found. These patients were considered outliers because of their acute condition. Measures including one-to-one care and moving the patients closer to the nurses' station were used during their stay. It must be noted no other patients fell during the implementation period.

Discussion of Major Findings

The first goal of this project was to achieve a 95% compliance rate with the completion of the bed alarm safety checklist by nursing staff. A bed alarm safety checklist was to be completed for each patient on the unit. The project leader developed the tool and educated the team on completing the list and the importance of its use. However, the overall compliance rate for the bed alarm safety checklist was 80 %. The first barrier to acceptance was that the list was not a part of the electronic forms database. In response to the barrier, the project leader ensured enough weekly checklists were made available during site visits. The second barrier identified

later in the project was the Covid-19 pandemic. Because of staff absenteeism from the virus, forms were not being completed. Nurses would miss completing the checklist on days when there were no CNAs on the unit. These omissions caused incomplete data.

The project's next goal was to ensure all patients received a PT screening for mobility upon admission. Weekly chart audits were completed to ensure the mobility assessments were completed. There was 100% compliance with these screenings for all patients. Conversations with nursing staff on the unit revealed that this screening was already being conducted on admission. Mobility assessments are an essential tool to assist with fall reduction. Those patients with limitations in mobility are already at higher risk of falls (Dolatabadi et al., 2018).

Additional data were collected regarding environmental factors. These environmental factors included moving the bed closer to the restroom and using bedside commodes. Four commodes were ordered for the unit but were delayed because of problems with ordering. Patients with assistive devices for ambulation were given priority use of the bedside commodes. Once the commodes arrived at the unit, there was a 98% compliance rate in use during the five weeks of data collection. The staff verbalized that having the commodes assisted the patients' ambulation to the restroom and increased safety, especially at night.

Section V. Interpretation and Implications

Cost-Benefit Analysis

If the hospital decided to implement a similar project for this unit, the organization's cost would mainly consist of the expense of human resources. Forty-one nurses and 14 CNAs would need to be educated. The average hourly rate of pay for an RN is approximately $30.00 per hour (Glassdoor, 2022b). The average hourly rate of pay for a CNA is $13.00 per hour (Glassdoor, 2022a). The project leader developed an education plan, provided education, and monitored the project's progress. The data collection process took approximately five hours weekly. Staff time involved in education included an additional 30 minutes. The cost to pay those employees would be estimated at $615.00 for RNs and $105.00 for CNAs. The project leader recognized and provided educational opportunities during site visits. Education was provided to those employees over multiple days. No additional costs were incurred because the employees were already on the clock.

Further costs to consider include costs for bedside commodes, paper, toner, and the addition of the bed alarm checklist to the electronic form program used by the project site. A review of the project site's material management cost list shows that the cost associated with a bedside commode is $120 per commode. This equated to a total of $480 for four commodes. Copy paper is $12 a carton, ten reams: 10 in each carton. Therefore, each ream is $1.20. The cost of toner is $80 per cartridge. One cartridge lasts approximately one month. It is estimated that, based on the average of nine patients per week needing a checklist printed, the printing of educational materials for reference would include a minimum of two reams of paper and one toner cartridge. This cost for supplies would be estimated at $82.40. There was a one-time fee of $100 for the bed alarm safety checklist to be added to the forms databases (See Appendix F).

Although the effort would have costs, the project would benefit the organization. The facility could have cost savings in a range of areas, from the length of stay to the reduction of costs associated with fall injuries. Fall prevention strategies used in an organization reduce the number of falls, which reduces costs (Healthcare Improvement, 2021a). According to the Joint Commission on Accreditation of Healthcare Organization (JCAHO) report, one fall with an injury can cost a healthcare entity $14,000 (Joint Commission Center for Transforming Healthcare, 2022). Based on the projected costs of this project, $12,700 could be saved if one fall is prevented by a bed alarm activation screening and the adjustment of the environment. The organization can build a trusting relationship with patients and families. This relationship may lead patients and families to choose this organization for other healthcare needs such as elective surgeries.

The benefits are numerous; however, there are a few potential cost burdens for a nursing-centered project. In November, there was a high rate of staff turnover. In addition to staff turnover, staff nurses from other units were floated to cover the unit when there was a staff shortage. This increases the need for additional educational sessions and costs as these employees need to be trained.

Resource Management

The availability of resources throughout the organization can affect the success of this quality initiative. Valuable resources within the organization include site-wide email availability, the Information Technology Department, and the Quality Department. The site-wide email made it possible to share the data collection tool and educational PowerPoint presentation with all hospital staff. In addition, members of the PT team were able to access the PowerPoint presentation the project leader created to operate the bed alarms. Instructions were helpful to

those staff members because maneuvering the bed alarm function is complex. Information technology allowed for ease of access to the EMR for data collection. Access to the record made it much easier to access patient information, for instance, to verify whether the PT team completed the mobility screenings. The members of the quality department facilitated the project. The quality director presented the implementation of the project during a quality council meeting. During a visit from JCAHO, the quality team mentioned the project as a way that the project site was improving patient safety and addressing fall prevention.

Implications of the Findings

This project focused on small implications measures to reduce the number of falls in a geriatric psychiatry unit. The goal was to show that consistent adherence to the bed alarm safety checklist reduces falls. Also, mobility screenings to identify patients with ambulatory assistance needs aid in reducing falls. Once those patients with limited mobility were identified, a bedside commode was provided so the patient would not have to ambulate so far to the restroom, thus reducing fall risk.

Implications for Patients

Reducing falls in the hospital fosters a trusting environment for patients and families. Once a patient falls, the patient is more likely to fall again (Patient Safety Networks, 2019). This initiative is an example of how the organization supports patient-centered care. Falls impact patients negatively by increasing the length of stay, which hurts wellness. In addition, their treatment plan may be interrupted because of the need for acute medical care and rehabilitation services. A fall reduction program such as this has the potential to build a trusting relationship with patients and families. A trusting relationship may improve patient satisfaction scores. It also

may be a key driver for patients and families in choosing this facility for other healthcare needs; thus, it has the potential to increase revenue.

Implications for Nursing Practice

The education provided in the DNP project has several implications for nursing practice. For instance, it expands the knowledge of the nurses caring for the specific patients discussed. In addition, the development of the project allows for interprofessional communication and support. Also, the mobility assessment's inclusion allowed the PT department to participate in the process. Furthermore, the bed alarm safety checklist was predominantly completed by CNAs, allowing for them an active role in change. The nursing staff also played a vital role in the change because they were more aware of patients with higher fall risks. The nurse-driven protocol of entering a mobility screening in the EMR and incorporating bedside commodes allowed autonomy. Ultimately, providing safe and effective care increases morale and productivity.

Implications for Healthcare Systems

Implementation of this quality initiative allows for safe, effective care of patients at a reduced cost. Governing bodies such as JCAHO and the Centers for Medicare & Medicaid Services (CMS) require initiatives to address a problem when identified. Such an initiative reflects positively on the organization if implemented before a catastrophic event. According to Healthy People 2030, falls with injury among older adults have steadily increased. These falls may be linked to decreased activity and loss of strength. The mobility screening implemented allows the PT department to assist with strength training. This training will help fall prevention in a facility and the home setting (U.S. Department of Health and Human Services, 2021). Fall reduction is an ongoing issue and a priority that may be planned for and addressed based on the

needs of patients. Patients and families who notice that an organization is working to reduce falls have increased satisfaction with the facilities, reflected in the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) scores. These scores give patients and families an idea of the quality of care provided at hospitals and other facilities. The higher the HCAHPS score is, the more reimbursement facilities will receive from CMS. These increased reimbursement funds can be used to procure more supplies or to increase pay for staff which can possibly lead to improved patient outcomes. In contrast, lower scores may reduce reimbursement and hinder the hospital's reputation.

Sustainability

The organization plans to continue using intervention strategies in the geriatric psychiatry unit. Furthermore, the organization plans on expanding the use of the bed alarm safety checklist throughout the hospital. Currently, the information technology department has integrated the developed checklist into the database of forms used hospital-wide. The educator for the organization included the measures outlined in the initiative so that new staff members of the Behavioral Health Unit would be familiar with the initiatives. Safety leaders have been identified among the team members to remind staff of the need to complete the checklist, ensure bedside commodes for high-risk patients, and conduct audits to evaluate compliance with the PT screening being ordered.

Dissemination Plan

The data obtained from this project will be disseminated in various places. Findings were presented to the project site's unit director, quality department, site champion, and lead educator. The first poster presentation for the project was at the project site's monthly quality council meeting on March 17, 2022. Various administration members such as the chief executive officer,

the chief operations officer, the risk manager, director of quality, unit directors, infection control, and patient satisfaction liaison were in attendance. A poster presentation was presented at the College of Nursing (CON) on April 5, 2022. Those present included faculty and staff of CON, members of the graduating class, and their family members. The final written project will be submitted to the university scholarship repository for public viewing.

There are no plans to present the project's results at any conferences this year; however, an abstract is under consideration for the Gerontological Advanced Practice Nurses Association's Annual Meeting in 2023. This group specializes in older adults and would be a key supporter of reducing falls. Other organizations considered are the American Psychiatric Nurses Association and the American Geriatrics Society, both of which support fall reduction measures for older adults and those individuals with mental illnesses.

Section VI. Conclusion

Limitations

Some limitations were identified during implementation. The delay in obtaining the bedside commodes impeded data collection. Having the bedside commodes early in the implementation process possibly would have had a more significant impact on fall reduction. The next barrier was the lack of staff members completing the forms. The missing data led to inaccuracies in data collection and potential higher fall risks due to the uncertainty about whether the bed alarm was activated. During September, many staff members were not complying with the completion of the form because of a lack of understanding of the need for information. A re-education session was completed, and compliance increased.

Another barrier was the Covid-19 pandemic. During May and June, the number of cases decreased. In August, Covid cases began to rise again, lasting until recently. In November, there was high absenteeism and turnover due to employee Covid cases, low staff numbers, a high census, and an increased workload. The patients during this time were also more acute, in part because many were positive for Covid-19. Donning and doffing personal protective equipment caused a delay in response time for both patients with Covid-19 and those without.

During October, the increase in falls was related to two patients. These two patients had acute psychosis. Despite having a one-to-one sitter assigned to each of these patients, there were still 12 falls between the two patients in October.

Recommendations for Others

Several recommendations are suggested for those wanting to replicate this project. One suggestion is to meet with the information technology department to have the checklist incorporated into the EMR. Ensuring access to the bed alarm safety checklist would reduce falls as the checklist allows staff to monitor the activation and use of the bed alarm. Patients at high risk of falls or mobility issues should be flagged in the EMR to ensure staff is aware of the risk to implement prevention strategies such as accessibility strategies for ambulation to the bedside commode. Another suggestion for the success of a similar initiative is to realize the value of interprofessional collaboration in providing continuity of care and streamlining communication at the beginning of the project.

Recommendations for Further Study

Care is complex for the population of patients served by this unit. Further study should be conducted for additional measures to reduce falls. One recommendation for further research is to replace the current fall scale that the facility uses (i.e., the Morse Fall Scale) with EPFRAT, which is specific to patients with psychiatric conditions. In addition, further study might help assess the effect of educating staff on reducing escalating behaviors, recognizing escalating behaviors, and clarifying the role of safety sitters. It may be prudent to adjust visitation so that the family can be at the bedside. Family engagement is an alternative when there are staff shortages. Familiar voices and faces may calm the patient and reduce escalating behaviors. Many family members who are caregivers for their loved ones are better able to pick up on subtle signs and needs that staff may not notice.

Final Thoughts

Fall reduction will always be a topic of safety and compliance in acute care settings. Patients may have varying needs related to mental and physical health. For those patients with mental health issues, falls add to the burden of recovery, especially in older adults. This project was a meaningful attempt to address a problem in an organization. As in other organizations, patient safety is of the utmost importance. Successful quality initiatives for change benefit staff, the organizations, and patients and families.

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Appendix A

Literature Matrix

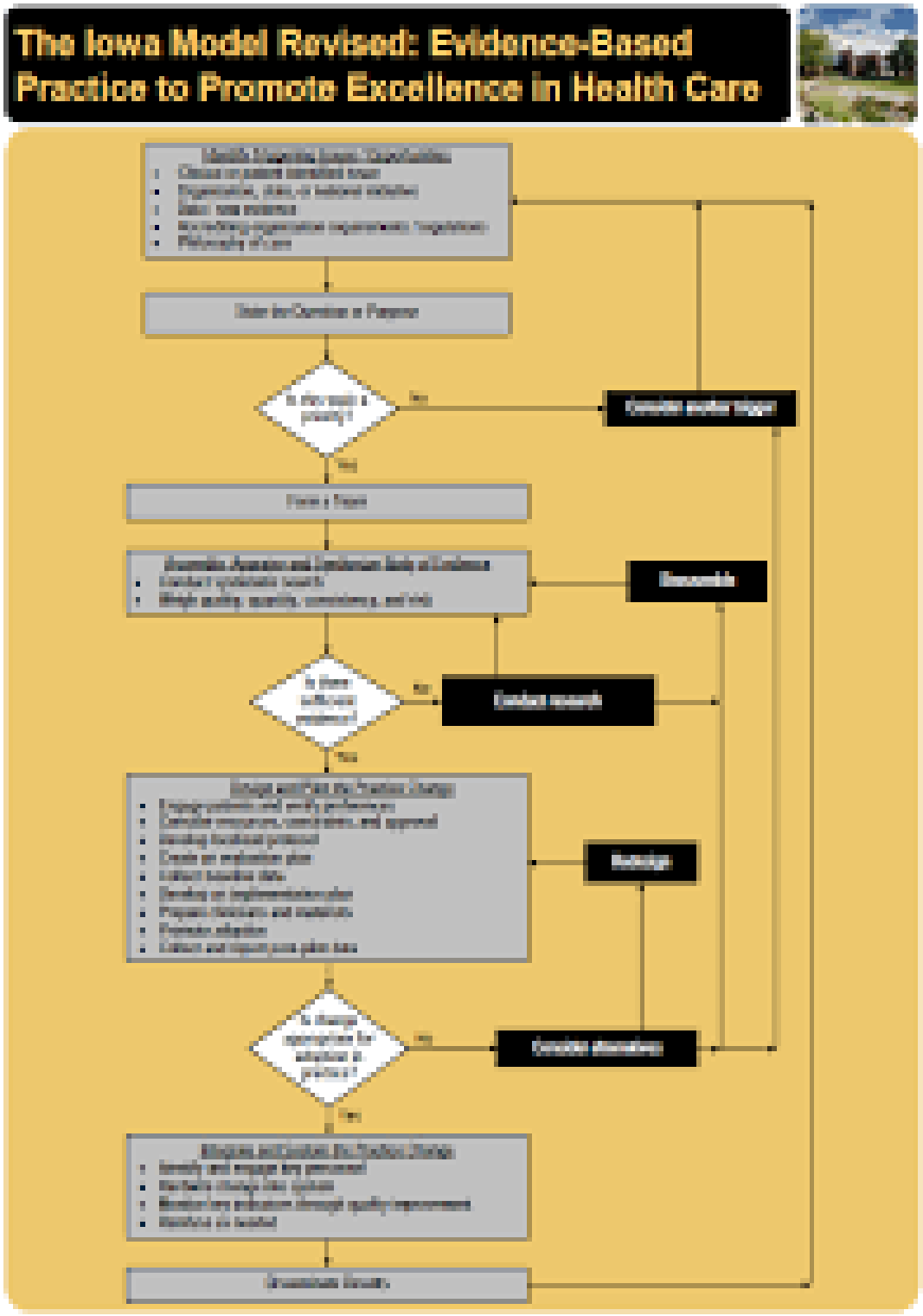
Authors	Year Pub	Article Title	Theory	Journal	Purpose and take home message	Design/Analysis/Lev of Evidence
Lach, H., Harrison, B., Phongphanngam, S.	**2017**	**Falls and falls prevention in older adults with early-stage dementia**	**Utilizing Change Theory**	***Research in Gerontological Nursing***	**Fall prevention for cognitively impaired older adults**	**Level V/ Integrative review**
Dolatabadi, E., Ooteghem, K., Taati, B., Laboni, A	2018	Quantitative Mobility Assessment for fall risk prediction in dementia: A systematic review	Neuman's Systems Model	*Dementia and Geriatric Cognitive Disorders*	Using a fall the appropriate fall prediction tool to assess fall risk in older adults to prevent future falls.	Level I/ Systematic Review

Jensen, L., Padilla, R	2017	Effectiveness of Environment-based interventions that address behavior, perception, and falls in people with Alzheimer's disease and related major neurocognitive disorders: A systematic review	Change Theory	*The American Journal of Occupational Therapy*	Evaluates the effectiveness of changing the environment to address behavior and falls.	Level I/ Systematic review
Kruschke, C.	2017	Evidence-Based practice guideline: Fall prevention for older adults	Neuman's Systems Model	*Journal of Gerontological Nursing*	Outlines practice guidelines to prevent falls in older adults	
Abraham, S	2016	Looking for a psychiatric fall risk assessment tool	Change Theory	*Annals of Psychiatry and Mental Health*	Proper assessment of fall risk is lacking among psychiatric patients.	

Taylor, M., Lord, S., Delbaere, K., Kurrle, S., Mikolaizak, A., Close, J.	2017	Reaction time and postural sway modify the effect of executive function on the risk of falls in older people with mild to moderate cognitive impairment.	Neuman's Systems Model	*American Journal of Geriatric Psychiatry*		

Appendix B

Iowa Model Revised



University of Iowa Healthcare, 2017

Appendix C

PowerPoint Presentation

FALL PREVENTION FOR OLDER ADULTS

Reducing Falls on Traditions
Megan Oxentine, BSN RN
DNP Student
East Carolina University
College of Nursing

DID YOU KNOW?

Falls are the leading cause of injury among older adults (*Older adult fall prevention*, 2021).

Older adults with cognitive/psychiatric diagnoses are at higher risk of falling (Lach et al., 2016).

A fall is more likely to increase the length of hospitalization (*Older adult fall prevention*, 2021).

In North Carolina last year there were 69-87 deaths related to falls for people over the age of 65 (*Deaths from Older Adult Falls, 2020*).

Once and older adult falls the likelihood of falling again is increased substantially (*Older adult fall prevention*, 2021).

WHY SHOULD FALLS BE PREVENTED?

It's as easy as 1, 2, 3…

ACTIVATING THE BED ALARM | Step 1…

ACTIVATING THE BED ALARM | Step 2…

ACTIVATING THE BED ALARM | Step 3…

WAIT FOR THE BLACK SCREEN | Almost there!!

ACTIVATING THE BED ALARM | Last step

ALARM IS SET!

You did it!!

Remember…All patients that are in the bed should have the bed alarm activated.

Remember…The patient must be in the center of the bed for activation.

Remember…Wait for the black screen.

WHAT ELSE CAN WE DO?

- Ensure Morse Fall Score is accurate.
- Move the bed closer to the restroom.
- Use a bed side commode.
- Remember the 3 P's…**P**ain, **P**otty, **P**osition.
- Promote a quiet environment at bedtime.
- Keep open communication about changes with the patient.
- Anticipate escalating behavior.
- Rounding
- Reorientation to time and place.
- Distraction.
- Remember patience for your patient.
- Ask for help.

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Appendix D

Bed Alarm Safety Checklist

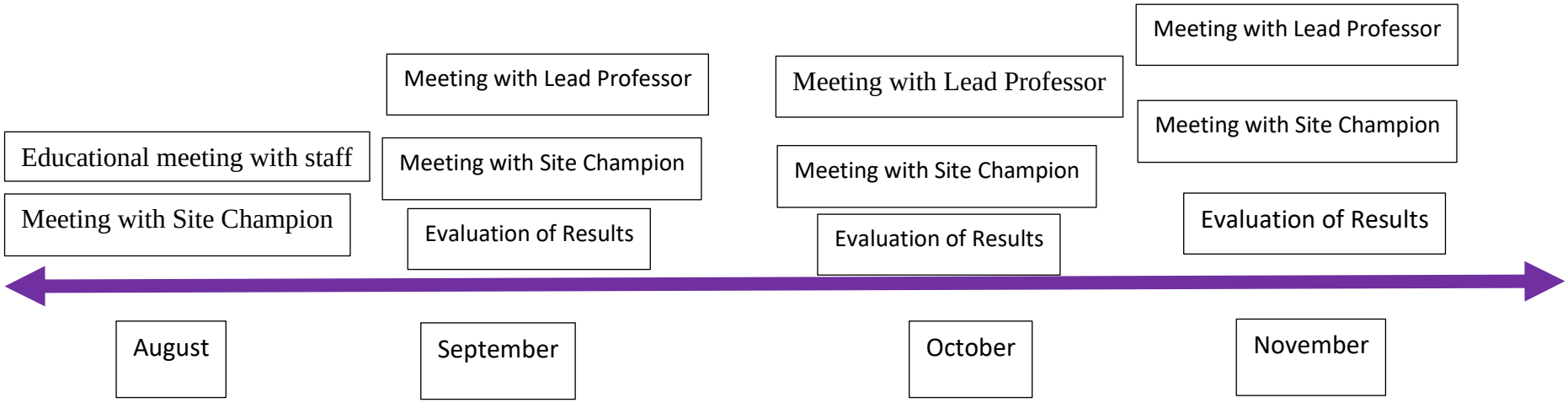
Date: _____

Room	Patient Initials	Time On/Off								Location	Initials
		00:00	2:00	4:00	6:00	8:00	12:00	16:00	20:00		
523											
530											
531											
532											
533											
534 A											
534 B											
535											
536											
567											
538											
539											

Nurse Signature Date & Time	Signature / Initials	Location Codes
_____/_____	_____/_____	**A. Patient Room** **B. Patient Bathroom** **C. Day Room** **D. Hallway** **E. Other _____**
_____/_____	_____/_____	
_____/_____	_____/_____	
_____/_____	_____/_____	
_____/_____	_____/_____	

Appendix E

Timeline



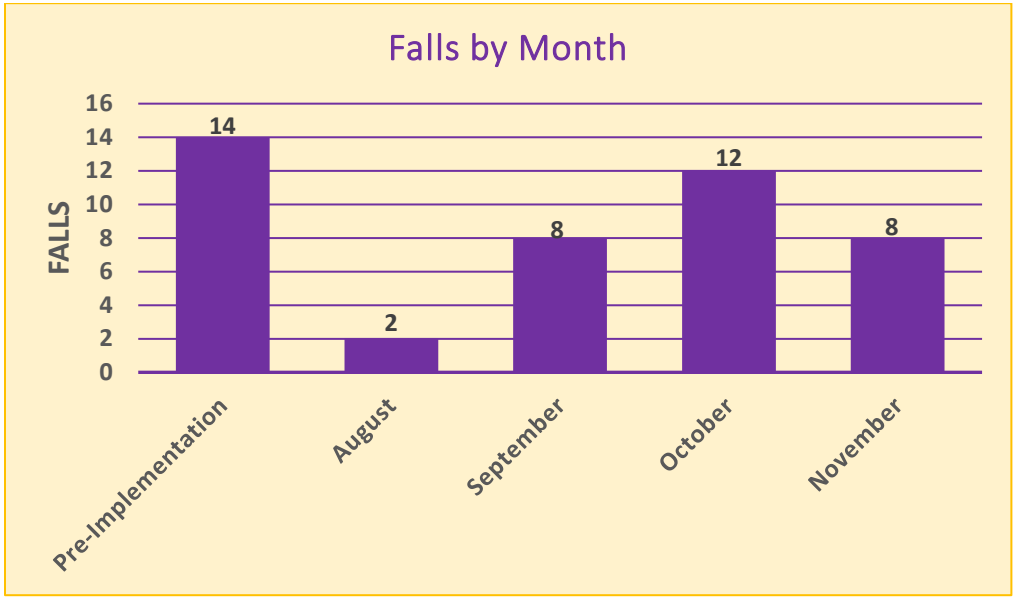
Appendix F

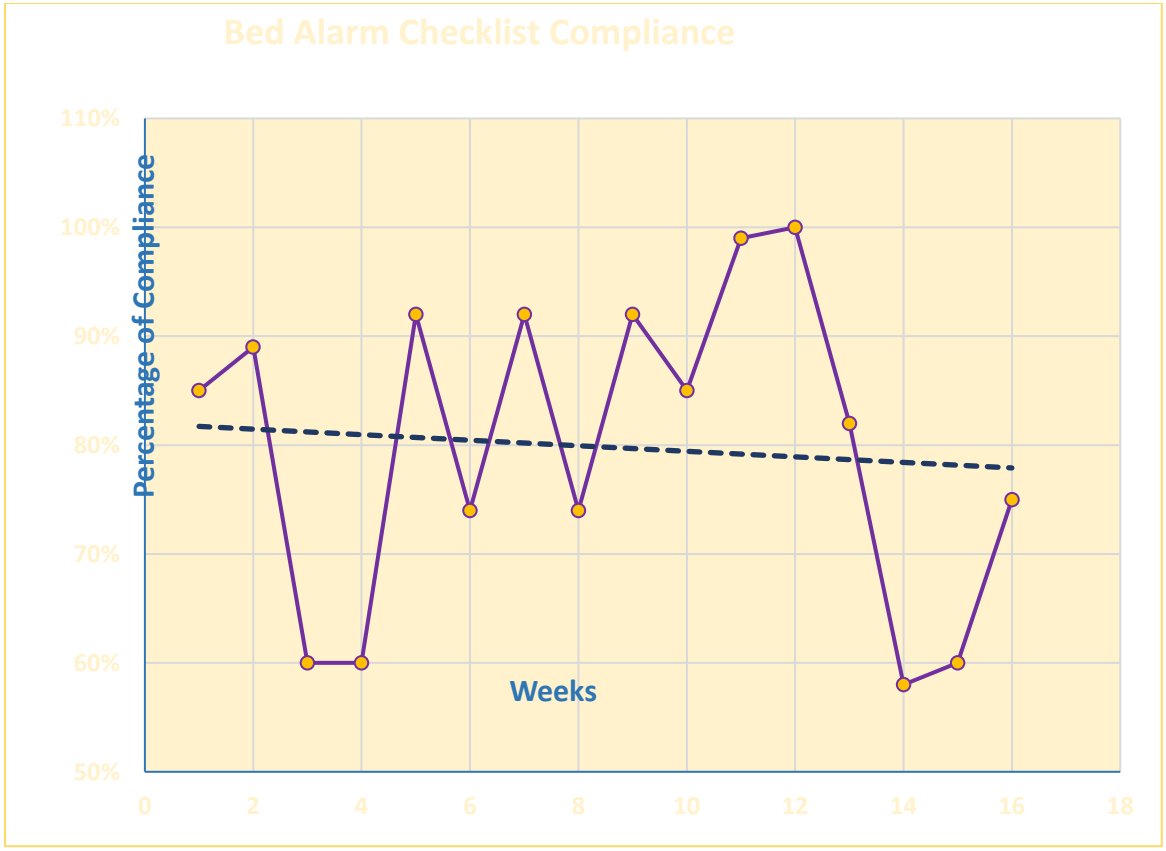
Cost-Benefit Analysis

Cost-Benefit Analysis	Quantity	Cost
Staff	41-RNs $30/hr. for 0.5 hrs	$615.00
	14-CNAs $13/hr for 0.5 hrs	$105.00
Paper	2-Reams $1.20	$2.40
Toner	1-$80	$80.00
BSC	4-$120	$480.00
Total		$1,282.40
Fall	$14,000	
	Surplus of $12,717.60	

Appendix G

Fall Reports and Data




Bed Alarm Checklist Compliance
Percentage of Compliance
110%
100%
90%
80%
70%
60%
50%
Weeks
0
2
4
6
8
10
12
14
16
18

Appendix H

Doctor of Nursing Practice Essentials

	Description	Demonstration of Knowledge
Essential I ***Scientific Underpinning for Practice***	**Competency** – Analyzes and uses information to develop practice **Competency** -Integrates knowledge from humanities and science into context of nursing **Competency** -Translates research to improve practice **Competency** -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	1. Analyze research to support the quality initiative. 2. Utilized IHI framework to develop a project. 3. Utilized Melnyk & Fineout-Overholt levels of evidence to formulate a literature review. 4. Translate project into a written deliverable.
Essential III ***Clinical Scholarship & Analytical Methods for Evidence-Based Practice***	**Competency** - Critically analyzes literature to determine best practices **Competency** - Implements evaluation processes to measure process and patient outcomes **Competency** - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients **Competency** - Applies knowledge to develop practice guidelines **Competency** - Uses informatics to identify, analyze, and predict best practice and patient outcomes **Competency** - Collaborate in research and disseminate findings	1. Continue to review literature for changes over the length of project while developing, implementing, and evaluating the quality initiative. 2. Communicated project progress with site champion (CNO), Quality Director, Unit Director, and Risk Manager. 3. Presented quality project findings and recommendations for future projects to the Quality Council.
Essential IV ***Information Systems – Technology & Patient Care***	**Competency** - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care	1. Met with a representative from information technology on multiple occasions to evaluate the best method to add and access the screening tool.

Technology for the Improvement & Transformation of Health Care	**Competency** - Analyze and operationalize patient care technologies **Competency** - Evaluate technology regarding ethics, efficiency and accuracy **Competency** - Evaluates systems of care using health information technologies	2. Assisted nursing staff in locating and completed the developed screening tool. 3. Met with the representative from Education to provide annual and new hire training of project topic.
	Description	**Demonstration of Knowledge**
Essential V ***Health Care Policy of Advocacy in Health Care***	**Competency**- Analyzes health policy from the perspective of patients, nursing and other stakeholders **Competency** – Provides leadership in developing and implementing health policy **Competency** –Influences policymakers, formally and informally, in local and global settings **Competency** – Educates stakeholders regarding policy **Competency** – Advocates for nursing within the policy arena **Competency**- Participates in policy agendas that assist with finance, regulation and health care delivery **Competency** – Advocates for equitable and ethical health care	1. Developed an educational presentation for staff on the unit. Discussed the content of the presentation with staff while working at different times so all staff could be a part of the presentation. Re-education was given after problems were identified. 2. Met with organization's Chief Nursing Officer and Quality Director to plan on the expansion of the project to include nurse-driven interventions. 3. Advocated for improvement of the fall prevention strategies in geriatric psychiatry patients in reducing injury.
Essential VI ***Interprofessional Collaboration for Improving Patient & Population Health Outcomes***	**Competency**- Uses effective collaboration and communication to develop and implement practice, policy, standards of care, and scholarship **Competency** – Provide leadership to interprofessional care teams **Competency** – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	1. Completed CITI Modules and submitted and IRB request for review of the project. 2. Developed a multidisciplinary team of nursing staff. Nursing leadership, PT, IT, and providers to ensure success. 3. Maintain frequent meetings with all members of the multidisciplinary team.

Essential VII ***Clinical Prevention & Population Health for Improving the Nation's Health***	**Competency**- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery **Competency** – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care **Competency** – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	1. Utilized the Iowa Model of Evidence-Based Practice to evaluate and improve the quality initiative. 2. Identified health-specific needs for the geriatric population as part of the quality initiative. 3. Developed a project that supported the Triple Aim to improve care, support health, and reduce financial burden.
Essential VIII ***Advanced Nursing Practice***	**Competency**- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings **Competency** – Design, implement & evaluate nursing interventions to promote quality **Competency** – Develop & maintain patient relationships **Competency** –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes **Competency** – Mentor and support fellow nurses **Competency**- Provide support for individuals and systems experiencing change and transitions **Competency** –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	1. Mentored fellow nurses throughout the quality initiative. 2. Utilized quality outcomes to evaluate costs. 3. Discussed appropriate interventions for falls reduction with site champion to be included in nursing education.