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Andie Reed
andietherese@gmail.com

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Assessment of Falls on a Medical-Telemetry Unit

Andie Reed, RN

University of San Francisco

Abstract

The purpose of this quality improvement project aimed at reducing falls on a medical-telemetry unit in a large metropolitan Magnet hospital. It was important for the MSN/CNL students to focus on falls because it is not just a concern for this institution, it is a national dilemma that needs to be addressed. Due to the complexities and intricate details of the IRB process, the MSN/CNL students were unable to collect data or further advance their project into the microsystem. Instead, information was attained from the University of San Francisco database to allow the MSN/CNL students to continue with the steps of the process.

The MSN/CNL students first focused on assessing the medical-telemetry unit by collecting data on the occurrences of falls. There were a reported 31 falls in the fiscal year 2016 with an increase to 36 falls in fiscal year 2017. Currently, patients are assessed for fall risk by using the Morse Fall Scale tool. The MSN/CNL students then split up into groups to observe nurses during shift report, during assessment of the patients for fall risk and while documenting the fall risk. After assessment, the Just-In-Time training was adapted and utilized. The Just-In-Time training focused on educating the nurses on the importance and proper way of implementing the Morse Fall Scale to decipher a patient's fall risk. Success of the Just-In-Time training was seen when the nurse properly performs the Morse Fall Scale on their patients and feels comfortable using the tool. Once the phases of evaluation were completed, the MSN/CNL continued to evaluate to see if the number of falls decreased within the time frame given.

Assessment of Falls on a Medical-Telemetry Unit

Introduction

The National Database of Nursing Quality Indicators (NDNQI) defines a fall as an unplanned descent to the floor with or without injury to the patient. The adverse events of a fall, regardless of whether harm was done or not, has the potential to cause emotional and physical harm to patients, families, staff and the organization. In the hospital setting, falls are common and a serious, adverse event that may lead to serious injury, functional decline, increased costs and prolonged hospital stays (Dunne, Gaboury, & Ashe, 2014). For patients, the consequences of an increased hospital stay include recurrent admissions, untimely admission to residential care homes, a permanent loss of independence and diminished quality of life.

According to the Agency for Healthcare Research and Quality (AHRQ), between 700,000 and 1,000,000 patients fall in hospitals yearly in the United States. With 30-51% of falls causing injury, there is adequate reason and ample evidence to illustrate why hospitals place a premium on this national dilemma (Oliver, Healty, & Haines, 2010). Not only are patients harmed, sometimes never gaining full functionality again, institutions are not reimbursed for falls from the Centers for Medicare & Medicaid Services, which creates a great financial concern and strain. As analyzed by Burns, Stevens and Lee (2016), in 2012, non-fatal falls resulted in incurred costs of $30.3 billion and fatal falls resulted in $616.5 million in healthcare costs. By 2015, these costs had increased to $31.3 billion for non-fatal falls and $637.7 million for fatal falls.

It is important for the Master of Science in Nursing (MSN) Clinical Nurse Leader (CNL) students to focus on falls because it is a national problem that needs to be assessed with detail. There are many factors that contribute to a patient fall. Some of the most common factors

include communication, medication, education, call-light response, toileting and fall assessment scales. Proper and consistent assessment of every patient identifies risk factors associated with falls and allows providers to implement proper fall prevention interventions tailored to the patient's risk. The consistencies need to be considered to improve the patient outcomes and reduce falls on the medical-telemetry unit.

Statement of the Problem

The medical-telemetry unit at large metropolitan hospitals have experienced an increase in patient falls since fiscal year 2016. The MSN/CNL student team were presented with the falls data on the medical-telemetry unit from fiscal year 2016 and 2017 from the Unit Manager and Patient Safety Officer. The unit reported 31 falls in fiscal year 2016 and 36 falls in fiscal year 2017. The falls were categorized into levels: Level 1 falls had no physical harm, Level 2 falls had only minor physical harm, Level 3 falls required sutures, Level 4 falls resulted in a fracture, and Level 5 falls resulted in death. In fiscal year 2016, there were 24 reported Level 1 falls, 6 reported Level 2 falls, and 1 reported Level 3 fall. By contrast, fiscal year 2017 had 27 Level 1 falls, 8 Level 2 falls, and 1 Level 3 fall.

Falls can cause potentially serious consequences that affect the patient, family, providers and organization. Fall prevention protocols serve to decrease the incidence of falls, while positively reducing the potential for harm or injury. Proper and consistent assessment of every patient helps to identify fall risk factors, so fall prevention interventions can be put into place. Although there is a general fall prevention protocol at this large metropolitan hospital, there is not a specific protocol for the medical-telemetry unit. The falls data on this unit poses a need for an in-depth analysis of the problem and possible modification of the current fall prevention protocol.

Currently, patients are assessed for fall risk by using the Morse Fall Scale (Appendix A). The assessment occurs upon admission, during transfer of care, once every 12-hour shift, and after a fall during hospitalization. Fall assessments are documented in the patient's record and fall prevention strategies are initiated based on the findings. The Morse Fall Scale has six categories for assessment; history of falling (immediate or previous), secondary diagnosis (> 2 medical diagnoses), ambulatory aid (none/bedrest/nurse assist/ crutches/ cane/ walker/ furniture), intravenous therapy/ heparin lock, gait (normal/ bedrest/ wheelchair), and mental status (oriented to own ability/ overestimates/forgets limitations) (AHRQ, 2013). The patients score is then tallied up and put into a class of either low risk (>25), moderate risk (25-45) and high risk (>45) for falls (AHRQ, 2013). The Morse Fall Scale is recommended for the identification of high fall risk patients; however, its effectiveness varies depending on the clinical setting and conditions associated. The prediction of risk through a screening tool is not absolute due to the changing multifactorial nature of fall risk during hospitalization (Bóriková, Tomagová, Miertová, & Žiaková, 2017). Despite certain benefits to a rapid screening of fall risk, the administration of a tool is only part of the comprehensive assessment and should not replace clinical judgement of fall risk factors, rather be intertwined with each other.

Theoretical Framework

The theoretical framework used for this project focuses on complexity science and chaos theory. Because healthcare is a complex system and continues to become more complex, falls will continue to be a problem unless the framework behind the system is effectively analyzed, and we as humans, adapt to this change. The health care system no longer follows the framework of Newton's clockwork universe, which proposes that big problems can be broken down into smaller ones, analyzed, and solved by rational deduction (Plsek, & Greenhalgh, 2001). Instead,

clinical practice, organization, information management, research, education and professional development are interdependent and built around multiple self- adjusting and interacting systems. New conceptual frameworks that incorporate a dynamic, creative, emergent and intuitive view of the world must replace traditional "reduce and resolve" approaches to clinical care and organization (Plesk, & Greenhalgh, 2001).

Like complexity science, chaos theory focuses on the fact that the universe is not an orderly place with linear cause-and-effect relationships (Spinelli, 2010). The life cycle of an organization is dependent on its adaptability and response to changes in its environment (Spinelli, 2010). Chaos theory expects cycles and lies on the notion that just because your stable today, does not mean you will be stable tomorrow. To fully assess and analyze a system, these frameworks must be understood to be able to look in the right places to collect the right data.

Literature Review

A literature review was conducted to examine the factors involved in a patient fall and suggested interventions that could help reduce falls and the negative impact they have on the patient. CINAHL was the main evidence-based engine search database used to conduct this review. Search terms used to collect the data were *inpatient falls, adult inpatient population, hospital falls, falls prevention, fall risk, fall risk tool and medical patient falls.*

Factors involved in a patient fall can be put into two groups- intrinsic factors and extrinsic factors. Intrinsic factors are specific to the patient's health status and include conditions such as impaired mental status (confusion), older age (frailty), multiple comorbidities, visual disturbances, unsteady gait, use of sedative and hypnotic medications and history of falling (Cox, Thomas-Hawkins, Pajarillo, DeGennaro, Cadmus, & Martinez, 2015). The multitude of intrinsic risk factors makes it difficult to pinpoint specific risks of a hospitalized

patient, which explains why a few of these variables lining up accordingly have the ability to lead to a patient fall. Extrinsic fall risks include environmental obstacles and the way in which these barriers may influence, or help facilitate accidental falls. For example, clutter in the patient's environment, inappropriate footwear, medical equipment and electrical cords on the floor have been found to increase fall risk in the hospitalized patient (Cox, et al., 2015). Fall prevention protocols in acute care settings are designed to address both intrinsic and extrinsic fall risk factors commonly confronted to lessen fall occurrence.

Fall toolkits have been used to implement comprehensive programs to reduce falls and injuries, and have shown promising results. The elements involved in a fall toolkit include analysis of the causes of falls, universal fall precautions, standardized risk assessment, care plan development based on risk assessment, education of the patient and family, post-fall huddles, incorporation of specific best practices from specialties, measurement of fall rates, identification of high-risk medications, and inter-professional involvement (Ambutas, Lamb, & Quigley, 2017). Other in-depth best practice fall prevention strategies recommended by the AHRQ (2013) focus on one-to-one nursing on select patients with every 15-minute rounding on geriatric psychiatric units, inter-professional plan of care for rehabilitation, pharmacy review of medications and physical therapy consult for medical patients. Further, the evidence-based practice tools proven to be most effective in reducing preventable inpatient falls include staff education about the fall- injury risk assessment, post fall assessments, alarm device usage, side effects of medications, hourly rounding and offering toileting frequently (Godlock, & Feider, 2016). Specifically, intentional hourly rounding has multiple positive effects including decreased fall risk, increased call bell usage and increased patient satisfaction.

Cost Analysis

A cost analysis was created by the MSN/CNL student team to break down and compare the cost of implementing the Just-In-Time training to the cost a fall on the medical-telemetry unit at this hospital. First, the cost of having eight MSN/CNL students assess 60 Registered Nurses was calculated. The time for one RN to assess their four patients is around two hours, which will total 120 hours for the MSN/CNL students to assess their assigned RN during initial assessments. This is 120 hours of donated, free time from the MSN/CNL students to the unit.

The second part of the analysis focuses on setting up the meetings and coordinating between staff, approximately five hours are needed for this part. The next ten hours will be spent creating an educational design for the Just-In-Time training protocol. This will cover how the RN's are educated and how they will be evaluated on the specific protocol. Each RN will be evaluated three times with each evaluation taking approximately one and a half hours. With 60 RN's being evaluated, it will take around 90 hours to accurately assess each RN through the three phases.

The third part of the analysis is aimed to see how much the hospital would benefit from having a Clinical Nurse Leader implement this project. It will take a total of 230 hours to cover each of the 60 Registered Nurses. If the CNL was contracted at 38 dollars per hour, it would cost the hospital 8,740 dollars. However, since the work would be done by MSN/CNL students as part of their Master's project, it would be of no cost to the organization to implement the Just-In-Time Training protocol. With this partnership, the hospital would ultimately benefit 8,740 dollars (Appendix B).

To compare the cost of implementing this project to the cost of a fall, national data on fall costs was utilized. According to the CDC, the average cost to the hospital for a fall is over 30,000 dollars. If the Just-In-Time training would cost the organization a total of 8,740 dollars,

each dollar invested in the project would give a return of around 3.4-dollar benefit. The first year

of implementation would be the highest cost for the hospital, whereas the subsequent years

would only need to pay for potential retraining. If the start-up cost is 8,740 dollars,

implementation can potentially lead to a 20,000 dollars' savings. These 20,000 dollars are

significant to the organization and can be allocated to other quality improvement projects such as

Catheter Associated Infections, Sepsis Protocols, and Safe Patient Handling. Additionally, the

non-monetary benefits include a more positive work environment, increase in nurse job

satisfaction, and professional development.

Clinical Microsystem Assessment

Purpose

After meeting with the Unit Manager and Patient Safety Officer of the large metropolitan

hospital, the MSN/CNL students determined that they would assess the current fall incidence

reports, interview the staff and patients on the unit, and evaluate the change of shift report for

both day and night shifts. The Unit Manager and Patient Safety Officer wanted to gain an

understanding on why falls had been increasing in frequency the past year, specifically why falls

occurred more on night shift than on day shift. To effectively examine this, a root cause analysis

was needed to examine the main cause. A specific intervention focused on the root cause could

then be implemented to combat the frequency of falls.

Although the implementation of the project was not completed, the MSN/CNL students

planned to collect all incident reports on falls from 2016 and 2017 fiscal years, and create an

item analysis data sheet on the falls reported. The data collected will then be analyzed in detail to

identify specific interventions that will help prevent future falls. Once this item analysis is

created, the Registered Nurse assessment will be observed and a questionnaire will be given. The

MSN/CNL student team will observe the change of shift report for the nurses and nursing assistants to identify how the following guidelines are discussed. The students will be looking to observe discussion of fall risk and potential fall risk, Morse Fall Scale score, universal precautions implemented and ambulation status. The MSN/CNL students will then conduct staff and patient interviews. The interviews will focus on call light use, ambulation and elimination patterns. Each staff member and patient will be asked the same questions to keep the data linear and consistent. These questionnaires will occur during the day and night shifts. All patient and staff identification is omitted and replaced with codes.

The information collected would be organized and analyzed to determine the best evidence-based practice change and intervention selected to prevent patient falls. The trends in falls would be assessed after all data is collected and synthesized. Finally, after the root cause analysis is completed, potential interventions would be presented to the Unit Manager and Patient Safety Officer.

Patient Population

The MSN/CNL student team interviewed the unit manager to gain a greater insight into the patient population that make up the microsystem. The manager stated that many of the patient falls occur when the patient overestimates their physical abilities, subsequently attempting to ambulate by themselves instead of asking for assistance. The most common time that falls take place is during the night when the patient tries to get to the bathroom without assistance. There are 61 beds on the medical-telemetry unit with majority of the diagnoses neurological, cardiac, ETOH and syncope in nature. Many of the patients on this unit have multi comorbidities which makes their risk for falls even greater. Further, the manager explained that

the staff believe the reasons for increased falls on the unit are due to patient confusion, staff

workload, medications, distances between room assignments and non-compliance.

The Morse Fall Scale is utilized in this microsystem to assess high fall risk patients. The

tool maintains six items that scale the risk of falls. First, the history of falling is scored as either 0

for no history to 25 for prior history (AHRQ, 2013). Second, if the patient has less than two

medical diagnoses that is a 0, but if there are more than two medical diagnoses, they gain a score

of 15 (AHRQ, 2013). Third, ambulatory aid is rated 0 for no aid, bed rest or nurse assist;

crutches, canes and walkers are 15; and 30 points for utilizing furniture to walk. Fourth, if the

patient is on IV therapy or a heparin lock they are rated 20, if not then 0 (AHRQ, 2013). Fifth,

gait is rated 0 for normal, bed rest or wheelchair; 10 for weak gait; and 20 for impaired gait

(AHRQ, 2013). Finally, mental status is rated either 0 for oriented to correct abilities or 15 for

forgetfulness or overestimation of abilities (AHRQ, 2013). Once the total is added, a score of 0

means no fall risk; a score of 25 or less is low fall risk; between 25 and 45 is moderate fall risk;

and any score above 45 is a high fall risk. This data on the Morse Fall Scale was utilized from

the Agency for Healthcare Research and Quality (AHRQ, 2013).

Once the Morse Fall Scale is appropriately applied, the high fall risk bundle is utilized for

patients with a score above 45. This bundle includes, but is not limited to, the falling star sign

outside the patient's door which indicates to all health care personnel of the patient's fall risk

status as well as a fall wrist band worn on the wrist and yellow socks. Other interventions

included in the high fall risk bundle include placing the patient close to the nurse's station,

hourly rounding, bed in low position, frequent orientation, a toileting companion, and continuous

education to the patient and family. Any assistive devices that the patient uses are placed close to

them and remain visible for both the patient and health care personnel to note when entering the

room. Lastly, bed alarms are turned on to notify staff members when a patient is trying to get out of bed and ambulate on their own. For these interventions to work to their fullest potential, proper Morse Fall Scale assessments must be conducted first to correctly indicate a high fall risk patient.

Professionals

The professionals that make up the medical-telemetry unit are nurse managers, charge nurses, registered nurses, nursing assistants, and unit secretary. The nurse manager of the unit oversees all the patients, staff and day-to-day activity. Each shift makes up one charge nurse, one unit clerk, 12 to15 Registered Nurse floor staff, and 4 to 5 nursing assistants. The charge nurse is responsible for regulating the nurse staff and flow of the unit, as well as responding to any emergencies that occur. The charge nurse is also responsible for providing administrative support and patient care, as well as contacting medical personnel if needed. The floor nurses are responsible for the care of three to four patients each shift. They ensure quality care to each patient by doing assessments, providing education, and creating a patient-centered plan of care. The nursing assistants provide basic care to eight to ten patients per shift. They help assist patients with daily living activities, such as bathing and grooming, as well as act as sitters for those patients who are severely disoriented. Lastly, the unit secretary is responsible for answering phone calls, assisting visitors and maintaining the accuracy and security of confidential patient health records.

The MSN/CNL students do not predict a change in staffing during the data collection period. There will be one charge nurse, 12 to 15 Registered Nurses, 4 to 5 nursing assistants, and one unit secretary per shift during the data collection process. Each nurse will be given 3 to 4 patients, while nursing assistants will inherit 8 to 10 patients depending on the census.

Processes

Each patient is assessed for falls during admission, during each shift, during unit transfers, and again during discharge by the Registered Nurse responsible for their care. The Morse Fall Scale is currently used to assess fall risk throughout the hospital, including on the medical-telemetry unit. The scale is a standardized tool to assess a patient's history of falls, diagnosis, ambulatory aid, intravenous therapy, gait and mental status (AHRQ, 2013). Once the patient is assessed, the fall risk information is updated on the electronic medical record (EMR) by the nurse. The continuous update on a patient fall assessment in the EMR helps healthcare workers implement or continue interventions for high fall risk patients.

When a patient is identified as a high fall risk, precautions are taken depending on the hospital protocol. The high fall risk protocol at this large metropolitan hospital includes yellow non-skid socks, call light within reach, yellow falling star sign outside door, frequent orientation, patient room close to nurse's station, bed low and locked, bed alarm in place, toileting companion and hourly rounding. The precautions for this hospital incorporate both hospital-specific precautions along with universal fall precautions. The hospital- specific fall precautions include turning bed alarm on if patient is disoriented, yellow non-skid socks, yellow wristband, hourly rounding, toileting companion and patient room close to nurse's station. Universal fall precautions include ensuring the bed is in its lowest position and locked, call light within reach, access to all personal belongings, and application of non-skid socks. The bed alarm is a high alert warning system that when triggered, alerts the staff to tend to the patient immediately. If the patient is not tended to within a designated time, then the risk of a fall and harm to the patient is greatly increased. When the nurse hears the alarm, they must react fast to ensure patient safety.

Although shift report was not observed by the MSN/CNL student team, nurses should be reporting the fall status of the patient. During their report, statements such as "*patient needs assistance with walker to ambulate to the bathroom*" or "*patient is able to ambulate independently*". After report, the nurse should then enter the patients room and assess for fall risk, fall hazards and interventions already in place. The nurse should ask the patient questions like "*When you stand do you feel dizzy or weak?*", "*Do you need to go to the bathroom right now?*", and *"Can I see how you walk to the door and back for me please?"*. These questions can help the nurse further assess the patient's risk for falls. Once this initial assessment is done, the nurse should then move into the Morse Fall Scale assessment and document appropriately in the EMR once assessment is completed. After imputing all the information into the EMR from the scale assessment, a score is generated for their current fall status.

Patterns

On the medical-telemetry unit the nurses begin each shift participating in a team huddle. In the huddle, they discuss pertinent information to all staff during the shift. The huddle includes the daily goals for the unit as well as patients that are high fall risk or other special circumstances to make sure all staff are aware. The huddle occurs from 0655 to 0705 with charge nurses as well as staff nurses are present at this meeting. After huddle, each nurse gets their assignment and meets with the previous shift nurse to discuss the patients. This change of shift report occurs either at the nurse's station or, preferably, at the patient's bedside. The shift report occurs from 0705 to 0730. Included in the change of shift report is the patient's status as well as any tasks to complete such as medication administration, dressing changes or new orders.

The MSN/CNL student team could not properly assess patterns on the unit due to the lack of IRB approval. The only time the students were allowed on the unit was for a presentation to

the unit managers. The patterns of this unit would have been observed during change of shift

report and throughout the shift to better assess the microsystem.

Methodology

As a MSN/Clinical Nurse Leader student, quality improvement projects are needed in

areas that are struggling to meet the national average or get above average. In the care pertaining

to falls, the problem roots back to the beginning of a patient's hospital admissions. The questions

that are asked in this quality improvement project revolve around are Registered Nurses doing a

full initial assessment and if so are they using the fall risk assessment tool for the hospital

appropriately? To understand this process and gain understanding, the MSN/CNL student team

devised steps to establish a clear aim, assess the microsystem, review the literature, map current

processes, analyze the root cause and select appropriate tools and interventions for process

analysis. However, due to the institutions confusion with a research project and quality

improvement project, the MSN/CNL student group was only able to complete the International

Review Board (IRB) approval stage required by the hospital. Due to these unforeseen events, the

MSN/CNL group attained information from another University of San Francisco CNL group

project to outline what would have occurred if allowed to continue with the steps of the process.

First, to get the IRB approval for the project, the MSN/CNL group worked for two

months, between September 26, 2017 to October 27, 2017, revising the document three times

and presenting the project outline twice, once to the medical-telemetry unit managers and once to

the research based counsel at the hospital. By the project end date, the IRB is still pending for

approval by the board. The steps following are what will be completed when the IRB is

successfully approved.

After approval, the MSN/CNL student team will conduct a total of 12 on-site assessments on the medical-telemetry unit at a large metropolitan Magnet hospital. The team will be split up into teams of two, with a total of four teams, to effectively observe the microsystem and not disrupt the unit environment. Each team will complete a total of three 12-hour shift assessments on-site, with an overall total of six shifts during the day and six shifts during the night completed for all teams. The purpose of this evaluation section is to collect data on nurse shift report and observe how and if the nurses talk about fall risk patients. In addition, the MSN/CNL student team observes how nurses document fall risk assessments and how compliant they are with the fall risk protocol. The MSN/CNL students also are observant to see if the nurses fully assess their patients once shift report is completed for fall risk, or if it seems the previous nurse's information is good enough.

The MSN/CNL student will be assigned to one floor nurse during their change of shift report and assessment of the patient. The student will collect data on the effectiveness of nurse communication among colleagues as well as amongst the patients receiving their care. The MSN/CNL student will also assess to see how the nurse communicates the patient's ambulation and toileting requirements to the nurse coming on, to nursing assistants taking care of the patient, as well as to the patient themselves. Observations will be made for any mention of a patient's previous fall history, present fall risk status, ambulation requirements and elimination needs. Finally, observation will be made on whether the oncoming nurse has any questions or comments regarding these matters.

When the nurses do their initial contact assessment with the assigned patients, the MSN/CNL student will pay close attention to how the shift nurse engages the patient and conduct the Morse Fall Scale assessment. The MSN/CNL student will also observe how the fall

protocol precautions are implemented depending on the results of the assessment tool. Observation will then be made to see how the nurse documents on this scale. Data collection for this was not disclosed to the shift nurse prior to prevent changes in assessment behavior. In addition, the nurses will be asked specific questions by the MSN/CNL student to evaluate their general confidence in the scale assessment and implementing the universal fall precautions as well as the hospital-specific fall protocol interventions. Specific questions being asked to the nurses for observation are outlined in Appendix D. Barriers to these criteria will be documented and assessed for patterns in care.

To help the MSN/CNL student team assimilate the data and collect an efficient amount, access will be granted to the list of patients identified as a fall risk on the medical-telemetry unit. The comprehensive list will be used primarily as a guide for the MSN/CNL students to evaluate the following fall core measures: fall risk sign outside the room, three side rails up, activated bed alarms if necessary and call light placement for ease of access. Since the MSN/CNL student team is not allowed access to the hospital until the IRB is approved, the data following was given from another USF CNL student project.

Results

Root Cause Analysis

Due to the complexities and intricate details of the IRB process, the MSN/CNL students were unable to collect data or further advance their project in the clinical microsystem. In the absence of real measurements, data from a similar microsystem was provided by the USF faculty and used by the CNL students. The students were then able to move forward with the planning, implementation and evaluation of this quality improvement project.

Fall Risk Factor Assessment Performance

During the assessment phase, the primary objectives of the RN observations were to understand how nurses communicate with each other during shift change and to determine how falls were being discussed, assessed, and documented. The first set of findings (see Appendix E) were collected after five observation days to assess the number of fall patients. The CNL students observed a total of three AM and two PM shifts. There was an average of 14.6 fall risk patients per AM shift and 17 per PM shift. Of the five shifts, a total of 78 patients were identified as a fall risk. Further, the average number of fall risk patients on the medical-telemetry unit was 15.6 per shift. The second set of findings (see Appendix E) summarizes the data collected during fall risk factor assessments. The criteria measured are if these important factors are being discussed, assessed, and documented to complete a full fall risk assessment. The components that were from most to least observed was orientation and cognition (78%), continence status (72%), number and types of prescribed medications (60%), number of diagnoses (45%), and lastly, gait and balance (42%). Despite the integration of the Morse Fall Scale assessment in the hospital's electronic health record, patients were still not being properly identified as falls risks. Based on a questionnaire and real-time observation of nursing documentation, it was apparent that nurses understood the purpose of the Morse Fall Scale, however, according to this study, many important fall risk factors were not being assessed or discussed with the patient. In the end, the MSN/CNL students concluded that due to a multitude of different reasons, nurses were not conducting their own full fall risk assessment and were frequently relying on the previous nurse's assessment and their own nursing judgement to determine the patient's Morse Fall Scale score.

Care Planning Performance

The nurses on the medical-telemetry unit were also assessed and evaluated on their care

planning performance. The purpose of observing care planning was to collect data on the overall

compliance and competency of nurses on the established fall protocol (see Appendix E). A risk

factor assessment, including a patient's fall precaution needs, is the first step in creating a care

plan. The succeeding step is to act on the care plan by putting appropriate interventions in place

to initiate the appropriate fall prevention strategies. The order of highest to lowest compliance

interventions are listed as the following: fall risk sign posted outside the door (63%), call light

placed within reach (36%), three side rails up (36%), and bed alarm activated (7%). The

MSN/CNL students were surprised to observe that compliance was exceptionally low when it

came to activating the bed alarms. The bed alarm was only activated if the patient was not alert

and oriented to person, place, and time. The results of the care planning performance by the

nurses were insightful to the MSN/CNL students because it showed which areas of the Morse

Fall Scale and interventions of the fall precautions were most difficult to follow and implement.

By knowing this data, an implementation was developed to increase compliance and

understanding of all the components of the Morse Fall Scale assessment.

Implementation

Utilizing Kotter's Eight Step Change Model (see Appendix F), Just-In-Time training will

be implemented to decrease fall incidences on the medical-telemetry unit. The first step of

Kotter's change model is establishing a sense of urgency. An assessment of the microsystem is

conducted to compile data on patient falls (incidence reports, staff and patient surveys, item

analysis, and RN assessment observations). The key areas of the problem are associated with

nurses incorrectly implementing the Morse Fall Scale assessment, which contributes to patient

falls, and the consequences of patient falls. The second step is creating a guiding coalition by

establishing a group that is committed to the process improvement of patient falls, including unit managers, senior management, nurses, nursing assistants. The third step is developing a vision and strategy. First, the end goal is defined as having a clear understanding from staff on how to correctly conduct the Morse Fall Scale assessment, and a reduction in patient fall incidences. Second, the method of implementing this change is determined: Just-In-Time training program. The fourth step is communicating the change vision. The vision and goal is communicated with staff and managers of the unit to ensure understanding of the process of Just-In-Time training. The fifth step is empowering a broad-based action. This will be done by removing barriers to encourage participation in just-in-time training. The sixth step requires generating short-term wins for the intervention. Short-term benchmarks include checking off staff on Morse Fall Scale assessment competencies and seeing a reduction in patient falls within a month of just-in-time training. The seventh step of Kotter's change model focuses on consolidating gains and producing more change. This is done by continuing to accomplish short-term goals over time (reduction in patient falls) to establish motivation to continue quality improvement and change in practice. The last step in the model is anchoring new approaches in the culture. The MSN/CNL group needs to continue to evaluate and motivate staff to continue with performing an efficient Morse Fall Scale assessment so that it becomes a natural part of the unit's protocol.

The Just-In-Time training for nurses focuses on three encounters for each nurse with the CNL to determine that the RNs are correctly performing the Morse Fall Scale assessment. On the first encounter, the CNL demonstrates the Morse Fall Scale assessment to the nurse. The CNL will guide the nurse through the assessment on one of their patients so that they correctly understand each part of the scale. The second encounter is to have the nurse demonstrate and teach back the Morse Fall Scale assessment to the CNL. Any changes and corrections will be

made at this encounter to make sure the assessment is utilized properly for their further practice. At the third encounter, the nurse will perform the Morse Fall Scale assessment correctly and the CNL will check off the nurse's competency on this skill.

The goal of this change project is to educate staff on the appropriate use of the fall assessment. By creating this Just-In-Time training protocol, all staff will be educated on the current fall assessment tool.

<div align="center">**Evaluation**</div>

The MSN/CNL students evaluated the success of the Just-In-Time training intervention in three phases. In the first phase of evaluation, the CNL will evaluate the nurse performing the Morse Fall Scale assessment on the patient, and then will check the competency off when the criteria are met. The check list is assessed by the following guidelines questions: Did the nurse ask about history of falls prior to or during hospitalization? Did the nurse assess the admission record or ask the patient for a secondary diagnosis? Did the nurse assess the patient's extremity strength while sitting? If the patient can ambulate, did the nurse assess the patient's gait while walking a short distance? Did the nurse assess if the patient needed an ambulatory aid (walker, crutches, cane, staff assistance, furniture)? Did the nurse assess if there was an IV in place with continuous therapy or saline/heparin lock? Did the nurse assess the patient's mental status? The nurse also categorizes the patient correctly based on the Morse Fall Scale assessment (no risk, low risk, moderate risk, high risk). The nurse will state the correct fall prevention interventions based on the result of the Morse Fall Scale assessment. The nurse then will integrate interventions into the plan of care and will share findings at change of shift. The Morse Fall Scale assessment is conducted by the primary nurse every shift and interventions are placed throughout the shift to make sure the patient is properly safeguarded against falls.

The second phase will consist of a questionnaire. The nurses will be given a questionnaire to see if this process met their needs, also to identify how well they learned from the Just-In-Time training. The third phase of evaluation will consist of another questionnaire to see if the nurses liked the training, and if they will adapt it to the environment. For something to change, the person agrees with the change and must be willing to adapt to it. There will also be an ongoing evaluation and reassessment by the CNLs of the nurses on the medical-telemetry unit to see if they are continuing to implement the Morse Fall Scale assessment correctly in their practice. The CNL can then evaluate if there was a decrease in the number of falls with the correct implementation of the scale.

Discussion

This project was not able to be thoroughly completed because of miscommunication and confusion on the main objective of the CNL role. The institution where this project was being implemented required that the MSN/CNL students receive IRB approval to be able to go on site and conduct the project. IRB approval is required for conducting research on human subjects, however, it is not typically required for a quality improvement project, which was the focus of the project. Because of this misconception, much of the data was obtained from the USF database for the MSN/CNL students to successfully assess and evaluate a quality improvement project.

It is important for future studies to be able to differentiate between research and quality improvement (QI) projects. Although each method is rigorous in its own way and have similar initial steps, quality improvement and research have distinctly different overall aims and processes. Research is a systematic investigation of phenomena for the purposes of generalizing findings to a population. Researchers aim to add to a current body of knowledge about a subject,

and results are often published in academic journals (Merrill, 2015). QI projects are also

systematic, but it aims to improve care, processes, or outcomes within an organization (Merrill,

2015). The purpose of the QI is to test a new process using the plan, do, study, act model. This

cycle is repeated and new changes are made to improve outcomes. Institutions and other

organizations looking for improvement in a specific area must first distinguish if there focus will

be research based or quality improvement based. Once this is decided, a process can be

implemented in the direction it is intended to go and knowledge will be gained.

      If this project were to be implemented, it would require diligent work by the CNL. With a

complex system of care, the CNL would first have to coordinate a team of individuals to help

champion this project. The CNL would also have to communicate with the falls committee, who

meet at limited times, to help facilitate the project. Every member apart of this project would

have to be invested with no resistance met by the staff on how it is mean to be implemented.

However, there will always be resistance and pushback to change. The CNL is equipped with

tools to successfully deal with difficult and complex systems, which is why the importance of the

role cannot be stressed enough.

Nursing Relevance

      Nurses play a fundamental role in keeping patients safe. When the safety of a patient is

jeopardized**,** there is a direct impact on the nurse. The effects of a fall can stay with a nurse

throughout his/her career and impact the patient and family for a lifetime. Fall assessments and

universal and hospital-specific precautions are implemented to prevent these tragic events.

However, in many instances, assessments and interventions are not properly or fully

implemented. To further improve nursing practice regarding falls prevention, specific areas need

to be assessed and addressed. These areas include the urgency to increase patient safety, the need

for proper fall risk assessment, patient advocacy regarding ambulatory ability, the importance of

re-educating the patient and family about fall risk status, and the patient's understanding of their

fall risk. The MSN/CNL students assessed this critical area of need and created the Just-In-Time

training to provide nurses with a sense of security and knowledge in preventing unnecessary

falls. This training program is intended to increase nurse's confidence in performing the Morse

Fall Scale, successfully identify their patients fall risk, and putting proper interventions into

place to prevent falls from occurring. Nurses are at the frontline of care and much of the

interventions concerning patient's safety need to be focused on them.

<div align="center">**Clinical Nurse Leader Relevance**</div>

The CNL is a point-of-care safety clinician that focuses on quality improvement

outcomes at the microsystem level. The expertise of the CNL is a valuable resource to the

clinical microsystem because of the specific training and dedication to work exclusively on

improving the flow of the work environment. There is simply not enough time in the day for

other professionals to spearhead these consuming projects, all while looking at the intricate

details of a dysfunctional system. When protocols are not functioning properly, the CNL

systematically goes through the process of improvement. They first focus on the needs of

microsystem, find the root cause of the issue, and finally implement an appropriate intervention.

The roles of CNL include lateral integrator of care, outcomes manager, and horizontal leadership

and help coordinate care across the continuum.

Throughout this fall prevention project on the medical-telemetry unit, it has been evident

how greatly the CNL role would be a vital part of the healthcare team. According to the cost

analysis created by the MSN/CNL students, it is projected to take 230 hours to educate the

nurses on the proper Morse Fall Scale assessments. This time does not include the time it may

take to implement the project or evaluate the outcomes of the project. However, by implementing the CNL role, the unit will be saving 3.4 dollars for every dollar spent the first year on falls. After the first year, the savings will greatly increase and positively impact the hospital. Further, the CNL role would be a great investment to this institution and would reward them with many benefits to the patient population and organization.

Future Directions

Although resistance was met, there were many valuable lessons learned while embarking on this process, as this issue is universal. First, the process of submitting IRB approval helped the MSN/CNL students meditate on the problem of falls and identify the proper steps to implement a change. The blue-print for the project was completed and for future practice, the hope is that the project is implemented and continues to be adapted to the needs of the microsystem.

Future MSN/CNL students can begin by completing a thorough assessment of the microsystem needs. The students will then implement a root cause analysis from the data collected on the microsystem to see where the main cause of the problem lies. Once the cause of falls is pinpointed, specific intervention can be found by conducting an in-depth literature review. Once the intervention is selected, a plan can be developed to implement it into the microsystem. The Just-In-Time training created in this project may be adapted in the future if it successfully fulfills the need of the microsystem and reason for the falls. If it does not properly fix the problem or fit into the microsystem anymore, then another evidence-based intervention may be put in place to successfully reduce the incidence of falls on the medical-surgical unit.

Conclusion

Falls continue to be a costly and devastating problem in healthcare. With an ever complex and changing system, the interventions put into place for fall prevention must also keep up with a shifting landscape. Just-In-Time training is an adaptive program to help nurses become more intellectually confident and knowledgeable in the fall risk assessment protocol. These changes in care may be difficult for many to adopt, but are necessary because the current way is ineffective. The CNL is well positioned to be an advocate for quality improvement and patient safety as they navigate the complex and chaotic environment that is healthcare.

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Appendix A

Morse Fall Scale Tool

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. Adapted from 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.

Note. 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.

Appendix B

Cost Analysis

Intervention #1	Break down of training hours:	CNL Activity:	Hours Spent
"Just in time" training	1st encounter: 30 min 2nd encounter: 30 min 3rd encounter: 30 min 1.5 hrs. for training 1 RN or 90 hrs. for training 60 RNs	Initial Assessment Coordination Educational Design Training 60 RNs Reporting Back	120 hours 5 hours 10 hours 90 hours 5 hours
		Total hours to cover all 60 RNs	230 hours

Appendix C

Data Collection Sheets

	Patient Demographi
Name	
Age/Sex	
Diagnosis	
Comorbidities	
Psych Diagnosis	
History of falls	
Bone Disease	
Coagulopathy	
Recent Surgery	
Current drug and/or alcohol use	
Hx of drug and/or alcohol use	
Homeless or Housed	
Was CIWA used? (circle one) **If yes, indicate treatments/interventions used during the fall.**	YES/NO

Incidence Report Sheet

Review of Incidence Reports	
Date and time of fall: (eg. dd/mm/yy, 0000)	
Shift (Circle one)	AM shift, PM shift, or NOC shift
Was the patient identified as a fall risk? (Circle one)	YES/NO

Was Morse Fall Scale Used? (Circle one) If yes, how did the patient score? (as recorded on charting)	YES/NO

Item	Select Areas of Risk (check one per item)	Score
1. History of falling	❏ No ❏ Yes	0 25
2. Secondary Diagnosis:	❏ No ❏ Yes	0 15
3. Ambulatory Aid	❏ None/bed rest/nurse assist ❏ Crutches/cane/walker ❏ Furniture	0 15 30
3. IV Therapy/ HepLock/Saline Lock	❏ No ❏ Yes	0 20
4. Gait:	❏ Normal/bed rest/wheelchair ❏ Weak ❏ Impaired	0 10 20
5. Mental Status:	❏ Oriented to one ability ❏ Overestimates/forgets limitations	0 15
Patient is (**select one**) ❏ No risk for falls (0) ❏ Low risk for falls (<25) ❏ Moderate risk for falls (25-45) ❏ High Risk for Falls (>45)		Total:

Nursing care plan to address fall risk:	
Did the patient have sitter (circle one)	YES/NO
Who was with the patient when the fall occurred?	
The reason for the fall:	
Injuries sustained as a result of the fall:	
Post-fall interventions (eg. extended LOS, x ray, etc.):	

Appendix D

Interview Questions

Nursing Staff Questions:

1. What are some interventions most commonly used on this floor for fall prevention? In your opinion, is it effective? Why or why not?
2. What is the protocol used on this floor when a fall occurs?
3. Which patient population do you find to be most at risk for falls? Specifically, what age, gender and diagnosis are the most common.
4. Do you communicate with your patients the importance of using their call light when they need help of bed? If so, how compliant are they, and what do you think would help them become more likely to comply?
5. Do you find that patient's family and friends understand that their loved one or friend is a fall risk and what that means specifically?
6. What are your feelings about falls? What is the climate on the unit about fall prevention?
7. What are the barriers that you have experienced while implementing the fall prevention protocol?
8. When you are giving a patient medication that might cause them to get up more (i.e. diuretics), what interventions do you use to prevent them from falling? Do you feel these interventions are appropriate?
9. Under what circumstances would you implement the need for a patient to have a sitter if they are a fall risk?
10. Do you find that more patients fall during change of shift or during your breaks? Why or why not?

Guidelines for On-Site Observations

Students will be observing change-of-shift report on-site between nurses and nursing assistants for the following:
1. Discussion of existing fall risk or potential for fall risk during report
2. Discussion of current patient ambulation status
3. Mentions of patients' Morse Fall Scale (MFS) score

In addition to these three items, observations will be made continuously while on-site for the following:
1. Change in status of patients (altered level of consciousness, over medication, under medication, acute pain, sedation, nutrition imbalances, cardiac status, and etcetera)
2. Time it takes for health care providers to respond to call lights or beeping IV lines
3. How long patients take once situated in the bathroom or bedside commode and the exact location of the health care provider while patient is using the bathroom

Appendix E

Results

Table 1

Number of Fall Risk Patients on a Medical-Surgical/Telemetry Unit

Data	AM Shift	PM Shift	Total
Number of Shifts Observed	3	2	5
Number of Patients Identified as a Fall Risk	44	34	78
Average Fall Risk Patients per Shift	14.6	17	15.6

Table 2

Fall Risk Factor Assessment Composition

Fall Risk Factor	Percent Communication of Fall Risk Factor During Nursing Assessment
Patients level of orientation and cognition	78%
Continence status	72%
Number and types of prescribed medications	60%
Number of diagnoses	45%
Gait and balance	42%

Table 3

Care Planning Performance

Fall Risk Prevention Intervention	Percent Compliance with Fall Risk Protocol
Three side rails up	36%
Fall risk sign posted	63%
Bed alarm activated	7%
Call light placed appropriately within reach	36%

Appendix F

Kotter's 8 Steps of Change Process

Step 1	Create a climate for change
Step 2	Create a guiding coalition
Step 3	Develop a vision and strategy
Step 4	Communicate the vision
Step 5	Empower broad-based action
Step 6	Create short term wins
Step 7	Consolidate gains to produce more change
Step 8	Anchor new approaches in the organization

(Kotter, 1996)