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Running head: QI PROJECT ON FALLS

Quality Improvement Project on Patient Falls in a Medical-Telemetry Unit

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Abstract

This paper will summarize the quality improvement falls prevention project conducted by a group of University of San Francisco Clinical Nurse Leader (CNL) students. Falls in the acute care setting are a major issue in the current health care system and are a main topic of interest for CNL students to address in order to demonstrate their competency in risk reduction, health promotion, and evidence-based practice. A large, metropolitan hospital uses the Morse Fall Scale to assess patients for fall risk factors. On a medical-telemetry floor, fall incidence rates are increasing from the previous fiscal year. Due to the negative impact of falls on patient outcomes, the CNL students conducted a systematic analysis of the problem. The results were used to design, implement, and evaluate an evidence-based practice intervention to address the root cause of falls on the unit. The systems theories used in this quality improvement project are Chaos Theory and Kotter's Eight Step Change Model.

Quality Improvement Project on Patient Falls in a Medical-Telemetry Unit

The adverse event of a patient fall, regardless of the outcome, has the potential to cause physical and emotional harm to patients, staff, and the organization. In-hospital patient falls are the leading cause of injuries among the older population and can lead to patient injuries, prolonged hospital stays, and higher cost to the institution of care (Dunne, Gaboury, & Ashe, 2014). The American Nurses Association defined a fall in 2009 as an unplanned descent to the floor with or without injury to the patient (Anderson et al., 2008).

Falls among hospitalized patients is an issue experienced at national level in the United States. Between 700,000 and 1,000,000 falls occur in hospitals every year. Furthermore, approximately 30-35% of these falls result in injury and 11,000 falls result in death (Health Research & Educational Trust, 2016). Negative consequences of falls to patients include emotional harm, physical injury, and increased risk of hospital-acquired illnesses, prolonged hospital stays, and fatalities. Even falls that cause no physical injuries can cause harm, as the trauma from the adverse event can cause functional decline and fear related to events surrounding the fall, such as toileting. However, patient falls also impact the staff and organization as they contribute to emotional distress and increased hospital costs. In 2012, fatal falls resulted in \$616.5 million and non-fatal falls resulted in \$30.3 billion in healthcare costs. These costs increased in 2015 to \$637.7 million for fatal falls and \$31.3 billion for non-fatal falls (Burns, Stevens, & Lee, 2016). A multitude of factors contribute to patient falls including issues with communication, medication, education, call-light response, toileting, and fall assessment.

At a large, metropolitan hospital, falls on the medical-telemetry unit have slightly increased since fiscal year 2016. The unit reported 31 falls in fiscal year 2016 and 36 falls in fiscal year 2017. The falls were categorized by 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. In contrast, fiscal year 2017 had 27 Level 1 falls, 8 Level 2 falls, and 1 Level 3 fall.

Falls cause potentially serious consequences that affect patients, providers, and the organization. Fall prevention programs serve to decrease the incidence of falls and, subsequently, reduce the potential for harm or injury. Proper and consistent assessment of every patient identifies risk factors associated with falls and allows providers to implement fall prevention interventions. Even though there is a general fall prevention protocol this clinical location, there is none specific to the medical-telemetry unit. The falls data on this unit demonstrates a need for an in-depth analysis of the problem and possibly modifications in the current fall prevention policy.

Literature Review

The CNL students conducted a literature review to analyze the existing research on fall prevention interventions. In this analysis, the following search terms were used in addition to ‘falls’: call lights, patient assessment, ageism, technology, international evidence-based practice, medication, toileting, handoff, and communication.

Safety Rounding

In addition to the required hourly rounding, nurses will have to conduct two additional rounds on patients who are at high risk for falls. The nurse will have to ensure that all fall prevention precautions for the patient are in place and functioning correctly (such as the armband, fall indication socks, fall sign posted outside, and bed alarm). This intervention was one of the most effective strategies implemented by Anderson Hospital to prevent falls. Anderson Hospital also increased the number of Safety Companions for patients who are at the highest

risk. By implementing these strategies, the hospital went 353 days without a fall beginning in 2011 (Martin, 2013). Another strategy by Anderson Hospital was setting the bed alarm so that it alarms 1-2 seconds after the patient gets out of bed instead of after 10 seconds.

Keeping the Patient Busy & Safety Companions

Providing patients with different activities will keep high-risk individuals pre-occupied and potentially prevent them from getting out of bed. Staff should also educate patients and families about fall prevention. Safety Companions provide the unit with continuous observation and assist patients who are at the highest risk for falls. This intervention should generally be reserved for patients who are the most disoriented and unable to follow directions.

Mission Hospital implemented a 3-month pilot of virtual sitters on its neuroscience unit. When a patient's movements generated a virtual sitter alert, the monitor technician intervened using the following escalation pathway: (1) use the two-way audio interface to direct the patient to remain in the bed or assess the need for further intervention; (2) contact the patient's registered nurse or CNA depending on the patient's need; and (3) contact the unit supervisor for emergency situations (Westle, Burkert, & Paulus, 2017). At Mission Hospital, all 98 patients who were placed with a virtual sitter experienced zero unassisted falls and zero injuries during this 3-month trial.

Prescribed Drug List

The unit will provide a list of all commonly prescribed drugs that increase the risk for falls for all staff members. For example, Zolpidem is independently associated with a four-fold increase in risk for inpatient falls (Kolla et al., 2013). The idea behind this is that staff members will recognize the drug and be aware of the patient's risk for falls immediately (even if the patient was not placed on fall precautions previously).

Theoretical Framework

Chaos theory describes how organizations respond to change. In the past, health care organizations were described as ‘well-oiled machines.’ The processes in place that lead to patient outcomes (the output) were streamlined, machine-like, inflexible, and resistant to change. However, chaos theory differs from this outdated description of health care and sees the organization as a living cell as opposed to a machine. A living cell constantly sends and receives internal and external signals and is adaptive and chaotic in nature. Similarly, health care organizations are influenced by internal and external factors and is forced to adapt in order to survive. According to Wheatley, chaos is necessary to new creative ordering, has a symbiotic relationship with ‘order,’ and is well-ordered and predictable (Wheatley, 2006). Chaos theory provides the framework for which the problem of falls will be examined.

When examining the problem of falls, there are a multitude of ways they can occur. With all departments considered, including, but not limited to, nursing, pharmacy, medicine, and physical therapy, it can be chaotic when describing the processes which contribute to falls. However, upon closer examination, the great forces and processes within this chaotic situation can be clearly delineated, studied, and acted upon to create change. The problem of falls is an ongoing battle for all hospitals and in order to survive, the hospital has had to adapt. However, without the proper study and identification of the root cause of the falls, the interventions will not lead to better outcomes. As the CNL students prepared to tackle this issue, they considered this theoretical framework and designed the quality improvement project to reflect the organic structure of the hospital. This is the essence of chaos theory and it clearly identifies where CNLs can focus their energy on improving processes.

Clinical Microsystem Analysis

This large, metropolitan hospital is a 400-bed acute care hospital that provides tertiary and quaternary care, outpatient medical clinics, behavioral health, and rehabilitation. In 2016, the organization obtained Magnet Recognition – the most distinguished accomplishment a hospital can achieve for excellence in nursing.

The microsystem where this quality improvement project takes place is a 28-bed medical-telemetry unit. The formal and informal leaders of the unit include the nurse manager, assistant manager, charge nurses, and most senior nurses that have been with the institution for several years. The patient population is primarily adult or geriatric and the most common ethnicities are non-Hispanic white, Hispanic, and Asian. Most of the patients on this unit are of low socioeconomic status, homeless, and have complex medical needs.

On the medical-telemetry floor, unit nurses begin their day with a daily huddle to discuss all pertinent patient information. The huddle includes the daily goal for the unit as well as identification of patients who are risk for falls. After the morning huddle, nurse-to-nurse handoff occurs at either the nurse's station or at the patient bedside. The change of shift report consists of the patient's current status and any pertinent tasks that need to be completed such as medication administration, dressing changes, and new orders.

When fall risk factors are identified, the appropriate precautions are initiated per hospital protocol. These fall risk interventions include yellow, non-skin socks, placing the call light within reach, displaying the yellow falling star sign outside the door, frequent orientation, placing the patient close to the nurse's station, bed in the lowest position and locked, activating the bed alarm, assigning a toileting companion, and hourly rounding. These precautions include both universal fall precautions and hospital-specific precautions. Universal fall precautions include ensuring a bed is in its lowest position and locked, placing the call light within reach, easy access to all personal belongings, and application of non-skid socks. The bed alarm is a high

alert that, when alarming, serves as a notification to all staff that the patient needs to be tended to immediately. The purpose of activating the bed alarm is to ensure patient safety and to prevent harm. The current falls assessment used is the Morse Fall Scale. This is a hospital-wide protocol and is not specific to the medical-telemetry unit.

The stakeholders who will affect the implementation of this project are the nurse managers and charge nurses. These individuals can provide support for CNL project. The stakeholders who will be affected by the project will include the entire interdisciplinary team and the patients themselves. Beyond the scope of the microsystem, the chief nursing officer, chief medical officer, and the clinical nurse specialist are key stakeholders that can help address resistance among other groups.

Methods

This section describes the systematic methodology used by the CNL students to collect data on falls in the medical-telemetry unit.

Review of Unusual Incidence Reports

Evaluation of falls that occurred between fiscal year 2016 to present was analyzed by performing a retrospective chart and incident report review. A total of 22 falls occurred from 2016 to the present time. The data collection sheet created by the CNL students to collect information is provided in Appendix A. This data was then analyzed to identify specific interventions that will prevent future falls. Patient names, medical record numbers and other patient identification data were omitted. All data was then coded with patient identification destroyed.

The CNL students collected data on patient demographics to analyze characteristics of patients who fell in the fiscal year of 2016-2017. Also, the CNL students analyzed the trends in

medication use, diagnoses, comorbidities, and psychosocial issues among patients. Collection of this data determines an association between patient demographics and falls. Additionally, the CNL students conducted a review of data reports to identify patterns related to previous falls. This analysis discovered the events surrounding the fall and the primary reason for the fall. Details of the fall, injuries related to the fall, and post-fall interventions are recorded.

RN Assessment Observations

During change of shift the CNL students observed the process and interactions among nurses and nursing assistants. The CNL students will specifically focus on the information exchanged regarding fall risk. Appendix B shows the guidelines for what the CNL students will be observing and recording based on the interactions observed. Change of shift was observed during day and night shifts. Nurse and nursing assistant identification was omitted from the study. The established guidelines ensured that all CNL student observations were linear.

At the change of shift, the CNL students observed if nurses identified existing fall risk factors, current patient ambulation status, and the use of the Morse Fall Scale and associated score. Throughout the shift, the CNL students observed if nurses discussed any changes in mental status, the time taken for healthcare providers to respond to call lights, the time the patient spends using the bathroom or bedside commode, and the location of staff while the patient is toileting.

Staff and Patient Interviews Procedure

Staff and patient interviews allowed the CNL students to further explore perspectives regarding ambulation, call light use, and elimination, while in the hospital setting. Pre-set questions for both staff and patients were discussed and finalized (Appendix C). Staff and patient identification information were omitted. Day shift and night shift staff were interviewed.

Randomized patient interviews were conducted. The process allowed a variety of interviews to be conducted and allowed inclusive data to be collected.

The purpose of this procedure was to analyze and explore perspectives regarding fall prevention in the hospital setting on day and night shift. The CNL students used this procedure to seek further knowledge on how the staff nurses identified the level of patient mobility, determined the patient's elimination patterns, determined the history of previous falls, and whether the patient was on bed rest or nurse assist. The CNL students also gathered information regarding staff understanding and perspectives on the current fall prevention protocol. The CNL students then used patient interviews to gather their perspectives on ambulation assistance, call light use, call light responsiveness, fall prevention education, and elimination. The CNL students used this procedure to determine possible barriers such as language, noncompliance, confusion, and overall understanding of fall risk factors.

Institutional Review Board (IRB) Process

In the planning phase of this project, hospital leadership did not classify this work as quality improvement. Instead, it was considered a nursing research project in which it was subject to IRB approval. Hospital leadership considered this step as non-negotiable and because the organization had a very firm process for gaining IRB approval, the CNL students found it difficult to move forward with this project. To achieve IRB approval, the CNL students repeatedly collaborated with the unit manager and nurse educator, attended researched based council meetings, conducted several presentations, and completed several hours of CITI module training which delineated the purpose and process of hospital research. The IRB drafted by the CNL students endured an extreme vetting process with several revisions which eventually caused setbacks in the timeline of this project.

Results of the RCA

Due to complexities with the IRB process, the CNL students were unable to collect data from the clinical microsystem. In the absence of real measurements, data from an alternative microsystem was provided by the USF faculty and used by the CNL students to move forward with the planning, implementation, and evaluation of this quality improvement project.

Fall Risk Factor Assessment Performance

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 following data is summarized in Table 1. The CNL students observed a total of 3 AM and 2 PM shifts. On average, there were 14.6 fall risk patients per AM shift and 17 per PM shift. Of the 5 shifts, 78 patients were identified as a fall risk. The average number of fall risk patients on this medical-surgical/telemetry floor was 15.6 per shift. Table 2 summarizes the data collected during fall risk factor assessments. These are important factors must be discussed, assessed, and documented in order to complete a full fall risk assessment. 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%).

Currently, the MFS is integrated in the hospital's electronic health record. Despite this integration, patients were still not being properly identified as fall risks. Based on questionnaire and real-time observation of nursing documentation, it was apparent that nurses understood the purpose of the MFS. However, according to this study, many important fall risk factors were not being discussed or assessed. It was concluded that due to many 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 MFS score.

Care Planning Performance

Risk factor assessment is the first step in creating a care plan which meets the patient's fall precaution needs. The subsequent step is to act on the care plan and initiate the appropriate fall prevention interventions. The purpose of observing care planning performance was to collect data on overall compliance and competency of nurses on the established fall protocol. This data is summarized in Table 3. In order of highest compliance to lowest are the following interventions: fall risk sign posted outside the door (63%), call light placed within reach (36%), three side rails up (36%), and bed alarm activated (7%). Compliance was exceptionally low with activating bed alarms. The bed alarm was only activated if the patient was not alert and oriented to person, place, and time.

Implementation Plan

Based on the results of the systematic study, the CNL students designed an implementation plan to address the root cause of falls on the telemetry unit called "just-in-time training." "Just in time training" requires the expertise of the CNL student. The CNL student will have three encounters with each RN. The 1st encounter involves the CNL student demonstrating the correct use of the Morse Fall Scale. This is the RN's opportunity to learn from the CNL student. The 2nd encounter involves the nurse return-demonstrating and teaching back the Morse Fall Scale assessment to the CNL student. The CNL student will utilize his/her skill in coaching during this encounter. In the 3rd encounter, the RN will perform the Morse Fall Scale assessment correctly and the CNL student will evaluate the RN's competency. The change theory that best describes this implementation plan is Kotter's Eight Step Change Model.

Step 1 involves an assessment of the microsystem to compile data on patient falls (incidence reports, staff and patient surveys, item analysis, and RN assessment observations) and

present the problem of incorrectly done Morse Fall Scale assessments, how it contributes to patient falls, and the consequences of patient falls.

Step 2 is to establish a group that would be committed to the process improvement of patient falls, including unit managers, senior management, nurses, nursing assistants.

Step 3 is to define the end goal. In this case, the specific aim is to reach a clear understanding from staff on how to correctly conduct the Morse Fall Scale assessment and a reduction in patient fall incidents and determine method of implementing change (just in time training).

Step 4 is to communicate the vision and goal with staff and managers of the unit and ensure understanding of the process of just in time training.

Step 5 involves removing barriers to encourage participation in just in time training.

Step 6 is to establish short-term benchmarks. The CNL students will conduct competency check-offs on staff regarding the correct Morse Fall Scale assessment. The CNL students will evaluate this data to identify an improvement on fall incidence within one month.

Step 7 is to continue working toward short-term goals over time (reduction in patient falls) to establish motivation to continue quality improvement and change in practice.

Step 8 is continuing to evaluate and motivate staff to perform an efficient Morse Fall Scale assessment so that it becomes a natural part of the unit's protocol.

Cost Analysis

The cost breakdown of implementing "just-in-time training" is explained in this section. The total number hours for studying the problem of falls on the unit is 120 hours. This is calculated by multiplying the number of nurses on the unit (60) by the number of hours needed to assess each nurse (2 hours). For this intervention, each CNL-nurse encounter will take

approximately 30 minutes, resulting in a total of 1.5 hours allocated to training 1 nurse. In addition to these hours, this implementation plan requires 5 hours of coordination, 10 hours of educational design, and 5 hours of team meetings and reporting back to hospital leadership and faculty advisors. The total numbers of hours spent for this intervention is 230 hours. This is the required number of hours to cover “just-in-time training” for all 60 nurses on the unit.

If the cost of labor per hour for the CNL’s time is set at \$38 per hour, the total cost of this intervention would equate to \$8,740. According to the CDC, the average hospital cost for a fall injury is over \$30,000 dollars (CDC, n.d.). If this implementation plan was successful in preventing even one fall, each dollar invested in the first year of this project would return more than \$3.40 in benefits (B/C ratio of 3.4:1). In subsequent years, savings will continue to increase at no added expense, except when possible additional training is necessary. If the start-up cost is \$8,740, implementation can potentially lead to \$20,000 in savings. This amount of savings is significant to the organization and can be allocated to other quality improvement projects within the microsystem. This includes increasing the unit’s capital budget so that it can be used to purchase special beds, chair alarms, video monitors and other equipment to reduce risk and promote safety.

Equally important are the non-monetary benefits of “just-in-time training” which add value to this project. As all members of the interdisciplinary team take responsibility for improving falls, quality of care will be enhanced and patient outcomes will be improved. Additionally, this project will help prevent complications and longer hospital stays. These benefits can lead to increased patient satisfaction scores and contribute to the hospital’s culture of caring. Furthermore, an emphasis on protecting patients from falls can bolster the hospital’s reputation for being a safe institution that demonstrates nursing excellence.

Evaluation

To evaluate the success of “just-in-time training” the CNL students will complete the following three-phase procedure. Phase 1 (check-off) occurs during the 3rd encounter described in the implementation plan. The CNL will evaluate the RN performing the Morse Fall Scale assessment on the patient and then check the competency off if demonstration was successful. The guidelines for successful completion include the following: (1) the nurse must demonstrate the Morse Fall Scale assessment on one patient; (2) the nurse must ask about history of falls prior to or during hospitalization; (3) the nurse must assess the admission record or ask the patient for a secondary diagnosis; (4) the nurse must assess the patient’s extremity strength while sitting; (5) if the patient is able to ambulate, the nurse must assess the patient’s gait while walking a short distance (6) the nurse must assess if the patient needs an ambulatory aid (walker, crutches, staff assistance, or furniture); (7) the nurse must assess if there is an IV in place with continuous therapy or saline/heparin lock; (8) the nurse must assess the patient’s mental status; (9) the nurse must categorize the patient correctly based on the Morse Fall Scale assessment; (10) the nurse must state the correct fall prevention interventions based on the result of the Morse Fall Scale assessment; and (11) the nurse must integrate interventions into the plan of care and share findings at change of shift.

Phase 2 involves a questionnaire designed to identify teaching success. Nurses will be given a questionnaire to see if this process met their needs and how well they learned from “just-in-time training.”

Phase 3 involves another set of questions that evaluate the teaching process. The nurses will have an opportunity to say liked or disliked the learning process and to identify possible alternatives for teaching.

This implementation plan also requires ongoing evaluation on behalf of the CNL students. The CNL students will further evaluate nurses on the medical-telemetry floor to see if they are continuing to utilize the Morse Fall Scale correctly and if there is a correlation to the decreased incidence of falls on the unit.

Discussion

The CNL students identified several key findings regarding the overall process of this quality improvement project. The most influential finding of this quality improvement process was the difference in the expectations of the students versus the expectations of the hospital management. As stated before, a large portion of the timeline for this project was unexpectedly allocated to gaining IRB approval. This created an enormous setback for the CNL students and a missed opportunity to experience the process of collecting data.

Just as in the introduction, this roadblock can be explained by chaos theory. The quality improvement process is not linear like a machine or conveyor belt. It is better described as an adaptive process that is sensitive to several internal and external inputs and outputs. The IRB process presented many challenges and the CNL students learned to demonstrate flexibility and adaptability to find a viable path within the chaotic environment. Furthermore, due to the shifting forces and moving parts of this project, the CNL students were able to explore the complexities of lateral integration. To be successful, CNLs must coordinate, collaborate, communicate, and evaluate care. This project demonstrated the immense requirement for all these skills in completing a full quality improvement or evidence-based practice project.

Nursing Relevance

This project had a significant contribution to the present understanding of the nursing role. It reiterates the fact that it is imperative that nurses do a fall assessment correctly. The best

person to prevent the fall is the person who is doing the assessment. Without proper assessment, we cannot customize the care. Nursing assessment includes inspection, palpation, percussion, auscultation. In the case of a fall assessment, the initial inspection does not just include looking at the patient as they sit in bed. The fall assessment must include an actual demonstration of the patient's gait and balance as well as other fall risk factors.

This project also reinforces the importance of collaboration. Nurses must work as part of the interdisciplinary team to create the plan of care. The most important person to include in this team is the actual patient. Not only in the assessment but also in the implementation of the fall prevention protocol. It is important to make a contract with the patient to ensure they understand the assigned safety interventions. For example, it is a nurse's responsibility to place the call light appropriately within reach. However, the nurse must ensure there is clear communication with the patient and family members on the call lights purpose and appropriate use to make sure it is used for its intended purpose. At the same time, the nurse must ensure his or her availability in case the patient calls for assistance.

This quality improvement project underscores the ethical principle of beneficence. Actions that involve beneficence are taken to help others and is a core principle of patient advocacy (Beauchamp & Childress, 2009). Once the nurse identifies all possible fall risk factors, the nurse should institute precautions as soon as possible in an act of beneficence. Interventions include putting three side rails up, posting a fall risk sign, activating the bed alarm, and other evidence based interventions. Patient outcomes for falls greatly depend the nurse's ability to anticipate risk. The nurse should be a patient advocate who is empowered to make decisions that promote safety and reduce the chance of harm.

CNL Relevance

The CNL is the only individual in the acute care setting who has the time and expertise to execute quality improvement projects from start to finish. The professionals who lead quality improvement processes are implementing interventions often without a systematic analysis of the actual problem. This type of vertical leadership often does not lead to improved patient outcomes or successful practice change. As a master's prepared generalist, the CNL has a special skill set in improvement science. The strength of the CNL curriculum is that it teaches the students how to improve work flow and work environment. The CNL is competent in using tools such as root cause analysis and failure mode effect analysis and can complete a systematic, in-depth analysis of processes and patterns within the microsystem.

Secondly, CNLs have enough time and the correct schedule to complete full quality improvement projects. The responsibility of quality improvement often falls on the unit nurse manager. However, managers have many other responsibilities that they have very little time to allocate to such projects and often do not have formal training in this arena. Also, floor nurses do not have the time to take on full quality improvement projects due their bedside responsibilities. No other hospital professional has this amount of continuity and influence on the patient's plan of care. CNLs are the only professionals who are present Monday through Friday from 9:00 A.M to 5:00 P.M. They have a full work week and possess the ability to follow the patient every day. Whereas nurses are only there 3-4 times a week and might not have the same patient assignment. The workflow of the other interdisciplinary team members is more siloed and there is less continuous, daily interaction with the patient.

The workflow of the CNL allows him or her to work exclusively on quality improvement projects. The CNL students each put 300 hours into this project over the semester to only get through the planning phase. If implementation plan and evaluation took 230 hours, that would be a total of at least 530 hours to complete this project. For a full-time employee to do focus

exclusively on this project, it would take 3.3 months of working 9:00 A.M to 5:00 P.M to complete it. No other position has the time to take on this role. For these reasons, the CNL is an asset to the clinical microsystem. Furthermore, the successes gained in the microsystem can serve as pilot projects for future implementations. The CNL has the ability to be a great influence on the mesosystem and macrosystem as well.

Future Directions

This quality improvement project was an excellent educational experience for the CNL students. Their topic of interest was important because all hospital organizations have a problem with falls. The issue of falls is mainstay for nursing dashboard measures and will require continuous evaluation to ensure patient safety. Aside from the ability to practice the quality improvement process, the CNL students greatly benefited from the in-depth study of fall prevention. The CNL students have gained a thorough understanding of how to properly assess for fall risk factors and evaluate others who are assessing fall risk factors. These tools allow the CNL students to properly analyze systems, anticipate risk, and manage outcomes using evidence-based practice and lateral integration with the interdisciplinary team.

The CNL students also gained a better understanding of the differences between quality improvement and nursing research. Given the circumstances of this project, the CNL students recommend two options for future involvement with this clinical location. The first is to request the option to waive the IRB. The IRB process was a major roadblock in the progression of this project and greatly reduced the amount of time spent in the hospital doing actual process improvement work. Also, the task of writing an IRB is outside the scope of the MSN/CNL curriculum. However, it is within the scope of the MSN/CNL curriculum to design, implement, and evaluate entire performance improvement projects. Secondly, the CNL students recommend

enhancing communication and collaboration with hospital leadership. The purpose and objectives of the CNL synthesis project should be clearly delineated with all leadership involved in order to set realistic expectations. The CNL students should also utilize the USF CNL faculty more for mentorship and direction to help facilitate this process.

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Tables

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 A

Data Collection Sheets

Patient Demographics	
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
Detailed Review of Medications	

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	<input type="checkbox"/> No <input type="checkbox"/> Yes	0 25
	2. Secondary Diagnosis:	<input type="checkbox"/> No <input type="checkbox"/> Yes	0 15
	3. Ambulatory Aid	<input type="checkbox"/> None/bed rest/nurse assist <input type="checkbox"/> Crutches/cane/walker <input type="checkbox"/> Furniture	0 15 30
	3. IV Therapy/ HepLock/Saline Lock	<input type="checkbox"/> No <input type="checkbox"/> Yes	0 20
	4. Gait:	<input type="checkbox"/> Normal/bed rest/wheelchair <input type="checkbox"/> Weak <input type="checkbox"/> Impaired	0 10 20
	5. Mental Status:	<input type="checkbox"/> Oriented to one ability <input type="checkbox"/> Overestimates/forgets limitations	0 15
	Patient is (select one) <input type="checkbox"/> No risk for falls (0) <input type="checkbox"/> Low risk for falls (<25) <input type="checkbox"/> Moderate risk for falls (25-45) <input type="checkbox"/> 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 B

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 C

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 out 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?

Patient Questions:

1. Do you feel that the nursing staff is communicative with you about the fall risks?
2. Do you understand why you are considered a fall risk?
3. Does your family and friends understand why you are considered a fall risk?
4. How safe do you feel, in terms of risk of falling, with these prevention measures in place?
5. Do you feel that the nurses taking care of you respond to your call light within a reasonable time (1-5 minutes)? Or do you find it taking more than 5 minutes?
6. When you have to use the restroom, knowing you are a fall risk, what is your initial action?
7. Did the nurse provide you with instructions for getting up to use the restroom?
8. Did the nurse communicate the safest way to ambulate?
9. When you feel dizzy from standing, did the nurse speak to you about how you should react?
10. Did the nurse address to you the importance of keeping on your non-slip socks?