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Patient Falls: Reducing Patient Falls with Injury

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PATIENT FALLS: REDUCING PATIENT FALLS WITH INJURY

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Chapter 1

Introduction and Microsystem Assessment

The occurrence of patient falls is a very important health concern facing the healthcare industry. Many patients not only experience falls, but have falls with an injury. This is a patient safety concern that can have serious effects on patient outcomes, is a leading cause of patient injuries in hospitals, and are costly adverse events (Trepanier & Hilsenbeck, 2014). It is important that healthcare professionals determine ways to prevent what has been deemed a preventable event (Bemis-Dougherty & Delaune, 2008). In 2005 The Joint Commission (TJC) included patient falls with injury as part of their National Patient Safety Goals (Bemis-Dougherty & Delaune, 2008). The desire was to reduce these events that cause harm to patients in the hospital setting.

In the inpatient hospital setting patients are very unfamiliar with their environment which places them at a higher risk for falls (McCarter-Bayer, Bayer, & Hall, 2005). The arrangement of the room is different as the light switches are not positioned where they normally are, the bathroom is not in the same position it would be in the patient's home and many of the features of the environment are different increasing the risk of the patient falling and sustaining injury (Anderson, Dolansky, Damato, & Jones, 2015).

Patients are also at high risk for falls with injury due to their weak physical state at the time of their admission to the hospital (McCarter-Bayer et al., 2005). Patients with acute and chronic diseases are weaker and can subsequently sustain falls with an injury (Anderson et al., 2015). The purpose of this chapter is to describe the microsystem reviewing any important findings, present the practice problem and present evidence from the microsystem, give a brief

introduction to the literature supporting the practice problem, and present a brief description of the nature of the project related to reducing falls with injury.

Microsystem Assessment and Review of the Findings

The microsystem assessment was performed at Midwestern hospital that is a part of an extensive national macrosystem in the United States. The health system serves 21 states with 86 hospitals. The Midwestern hospital has 2500 employees and has 344 acute beds. Within the 344 acute beds the opportunity presented itself to perform a microsystem assessment. The microsystem is a 42 bed unit whose primary patient population are oncology patients. This unit is also the primary unit for bariatric surgery patients. The bariatric surgery census ranges from 15 to 20 patients a week. The balance of the patients on the unit are considered general medical-surgical overflow. A bariatric trained registered nurse (RN) rounds on a daily basis providing specialty services for the bariatric patients.

The oncology patients are the primary patients on the medical-surgical unit. Many registered nurses on this unit have received special training to provide assessments and provide interventions for oncology patients. Many times chemotherapy medications need to be administered on the unit and the nurses are trained to provide that service. After one year of service on the unit the RNs can work through the process to become chemotherapy certified to administer these medications. There are 70 RNs on this unit and over half are certified to administer chemotherapy.

This microsystem has a diverse patient population and the patients are at an increased risk for falls with injury due to the multiple diagnoses that affects their health status. Many of these intrinsic health factors increase the patients' dependency and reduces their independence placing

them at a higher risk for falls with injury (McCarter-Bayer et al., 2005). Extrinsic health factors such as the potent medications administered for the post-operative bariatric patient and those receiving chemotherapy will place the patient at a higher risk for falls with injury (Anderson et al., 2015).

Practice Problem and Stakeholders

The practice problem that exists is that patients continue to fall and are sustaining injuries. Falls can be classified as an unintentional descent by a patient that results in the patient coming to rest on the floor (Trepanier & Hilsenbeck, 2014). The Midwestern hospital defines a fall as a sudden change in body position in a downward direction, which may or may not result in a physical injury. A sudden, uncontrolled, unintentional, downward displacement of the body to the ground or object, excluding falls resulting from violent blows or other purposeful actions. This also includes all assisted falls events.

One of quality improvement projects for the microsystem is to reduce falls with injury. The microsystem was actually doing well in this area over a year ago and the falls rate had reduced. During the time period from June 2015 to December 2015, there were 20 falls and of that number four involved an injury. Since January 2016 five falls have occurred with two of those resulting in a minor injury. Due to the increased incidence of falls and falls with injury the leadership team is determined to track the root cause and institute or reinforce interventions for prevention. The unit leadership staff are aware that these falls can result in an injury that can have harmful effects on the patient. The microsystem attempts to identify those at high risk for falling by performing the Morse fall risk assessment twice a day. If a score of 45 or greater is calculated the RN must implement a universal intervention that will hopefully prevent a fall from occurring. Interventions that are utilized by the staff are gait belts, bed alarms, chair alarms,

hourly rounds, toileting schedules, and charting near the patient's room that has been deemed a high fall risk. The Midwestern hospital tracks falls by the number of falls per patient days multiplied by 1000. These falls have an effect on the patient, patient's family, and the hospital staff and all key stakeholders that work with the patient to provide safe care. When a fall occurs there is a multidisciplinary response. Interdisciplinary Teams (IDT) are important to effective fall and injury prevention programs (Quigley, 2016). The IDT can be impactful because they can approach the clinical problem from different viewpoints and each disciplines has a different knowledge base that can be used to intervene with the problem (McCarter-Bayer et al., 2005).

The unit communication process for fall events is complex. When a fall occurs on the microsystem the bedside nurse must contact and involve several individuals responsible for the patient's care. The bedside nurse must first call the charge nurse, then the nurse must notify the provider that a fall has occurred. If the patient has sustained an injury the provider will subsequently order a CT scan or X-rays depending on the type of injury to rule out any major traumas. The RN must complete an electronic report for the risk management department to describe the fall event and why the patient experienced the fall. The RN must notify the Clinical Nurse Leader (CNL) and the unit manager that a fall has occurred. The RN then will need to communicate with the patient care assistant regarding any changes in the patients care plan to improve safety measures to prevent any additional falls.

Introduction to the Literature

Falls with injury increase morbidity, mortality, and costs to the healthcare system. The literature supports that this is a significant practice problem. In the United States nearly 11,000 patients will die annually related to complications after sustaining a fall with injury (Anderson et al., 2015). The incidence of falls in the inpatient hospital setting has been documented to be as

high as 15% and of this number up to 42% will sustain an injury (Anderson et al., 2015). Patients who sustain an injury from a fall could have up to 60% higher costs for their treatment or hospitalization (Bemis-Dougherty & Delaune, 2008). According to the Center for Disease Control (CDC) in 1990 (as cited in Bemis-Dougherty & Delaune, 2008) the treatment of all falls with injury was $20.2 billion and is estimated to rise to between $30 and $40 billion by 2020. Center for Medicare and Medicaid Services (CMS) has identified falls with injury as a preventable hospital acquired condition, therefore they will no longer reimburse costs associated with the treatment of these falls (Quigley, 2016).

Nature of the Project

The nature of this project is to determine if a multifactorial approach would help reduce falls with injury. Studies show that it is not just one particular factor that increases the risk of a patient falling (Kwan & Straus, 2014). The clinician must assess if there are risk factors that place the patient at risk for falls beyond the usual indicators such as age, gender, recent falls, and mobility deficits. The clinician must use their clinical judgment with thorough clinical assessments in determining fall and injury risk factors (Quigley, 2016). No matter what the risk screening shows or scores the nurse must use clinical judgment to assess the patient's risk for falling.

For the Morse Fall Risk assessment, a score of 45 or greater means the patient should receive some preventative measures to prevent a fall. If the patient receive a score of less than 45 the nurse must use their clinical judgment to determine if other factors exist that increase the risk of the patient falling (Tzeng & Yin, 2015). The causes of falls are multiple so the interventions should be multifactorial (Kwan & Straus, 2014). Single interventions can be ineffective, but

multifactorial and RN tailored interventions are demonstrating some success in reductions in

falls and fall-related injuries (Mion, Chandler, Waters, Dietrich, Kessler, Miller, & Shorr, 2012).

In order to determine if patient falls and patient falls with injury can be reduced at the

microsystem level, the clinical question should be considered using a PICOT (population,

intervention/issue, comparison of interest, outcome) format:

•   Could patients in the microsystem experience reduced falls with injury as a result

of a multifactorial falls risk assessment and interventions compared to the usual, universal fall

risk prevention practice by year end of 2016?

Chapter 2

Literature Review

The Center for Disease Control (CDC) reports that falls are a leading cause of death among the elderly in the US (McCarter-Bayer, Bayer, & Hall, 2005). CMS has decided that falls is a hospital acquired injury and is considered serious and should be preventable (Anderson et al., 2015). It is estimated that 42% of falls will result in injury (Anderson et al., 2015). It is estimated that by the year 2020 the consequences of falls will cost $32 billion annually (Dougherty & Delaune, 2008). One proposed idea to prevent falls and falls with injury from occurring is to take a multifactorial intervention and assessment approach. A multifactorial approach is when the plan of care is designed specifically according to the patient assessment to target specific risk factors (Cameron et al., 2010). Multifactorial assessments have been shown to reduce falls and falls with injury. Dupree, Fritz-Campiz, and Musheno (2014) demonstrated by using targeted interventions, tailored based on the patient assessment they were able to present data that reduced falls with injury by 62% from the pre-intervention status. Many of these interventions are implemented by nurses. Nurses are the keepers of the bedside and are closest to the patient and family, thus in a position to educate and intervene to prevent harmful fall events (Dupree et al., 2014).

Review of the Literature

A review of the literature was conducted using CINAHL, PubMed, ProQuest, and The Cochrane Library. The search terms used were: "falls with injury", "falls in hospitals", "preventing falls", "and preventing falls with injury in hospitals". The search of the databases was performed to obtain the highest level of evidence such as systematic reviews and

randomized control trials. The search yielded 5,122 publications, then the search was narrowed to full text articles, and then by type/level of the study. The end result was nine articles deem relevant to the clinical problem. The studies met the inclusion criteria if by focusing on reducing falls or falls with injury. Each study is summarized with the strengths and weaknesses reviewed. The studies are grouped by risk factors, interventions, and the level of evidence.

Risk Factors

Kwan and Straus (2014) conducted a review of the evidence related to assessing risk factors and interventions for falls. The objective was to identify relevant high quality systematic reviews and meta-analysis that address assessment of risk factors and studies that evaluated interventions to prevent falls.

Kwan and Straus (2014) reviewed 14 studies evaluating risk factors for falls. Of the 14 studies nine were systematic reviews that consisted of various levels of evidence such as prospective cohort and cross sectional design of case control and cohort studies. There were also five meta-analysis studies that consisted of two randomized control trials (RCTs), and three prospective studies. The risk factors reviewed by Kwan and Straus (2014) were age, previous falls, cognitive impairment, visual impairment, medications, functional limitations, home hazards, orthostatic hypotension, balance impairment, and impairment of gait or balance.

The statistical significance for the risk factors for falls among the various studies did yield statistically significant results. The probability of falls by age increased from 31% at age 65 up to 37% for age $\geq$ 80 (Kwan & Straus, 2014). There was an increased likelihood ratio (LR) of 2.3-3.8 greater odds of falling if the participant had fallen within the past year.

Two of the studies on cognitive impairment two had evidence that participants with a

history of dementia and ≥ one fall had an increased LR of 17 times greater odds of falling (Kwan

& Straus, 2014). There were significant results of increased LR of falls with visual impairment

(3 studies), functional limitations (5 studies), impairment of gait or balance (6 studies), and home

hazards (2 studies). Orthostatic hypotension showed no association with falls when other risk

factors were considered. The review yielded results that multiple drug usage had an increased LR

of falls.

Staggs, Mion, and Shorr (2014) conducted a cross-sectional analysis of falls in 2011

available data in 1,464 general hospitals that participate in reporting to the National Database of

Nursing Quality Indicators (NDNQI). The purpose of this study was to review data from the

NDNQI to determine if falling assisted versus unassisted would increase the likelihood of injury

or a specific level of injury. The study also looked at whether having a specific falls prevention

protocol would affect the outcomes of the fall.

Evidence that patients who fall and do not have a fall prevention protocol in place were

more likely to fall unassisted and were more likely to result in injury. The authors presented the

concept that falls that are assisted are a result of the clinician properly assessing and identifying

the patient as high risk for falls. Staggs et al. (2014) discussed that unassisted falls suggest that

system failures or the lack of a fall prevention protocol has an increased likelihood that patients

at high risk would not be identified. This gap in identifying the patients at high risk will result in

the patients moving independently increasing the potential for an unassisted fall and increase the

potential for a patient injury.

Results of the data analysis revealed that 19,607 falls were classified as assisted and

134,717 as unassisted. These study results revealed that the patients in units without a fall

prevention protocol in place had statistically significantly higher odds of falling unassisted. There were a significantly higher odds for injury with falls that are unassisted than falls that are assisted.

This study had several limitations. One limitation of the study could possibly be the reporting of inaccurate or biased data due to the voluntary reporting guidelines of NDNQI. Another limitation was the variation in the size and type of hospitals and units that could generate biased results.

Interventions

Kwan and Straus (2014) reviewed 19 studies evaluating interventions for preventing falls. Of the 19 studies ten were systematic reviews that consisted of various levels of evidence such as controlled trials, quasi-RCTs, and one study that was a systematic review and meta-analysis of RCTs. There were also 7 meta-analyses of RCTs reviewed. There was one meta-regression of RCTs included in the review. In the studies there were 11 with single intervention, 5 with multiple interventions, and 3 with both single and multifactorial interventions. The interventions were Otago exercise, home assessments, exercise combined with other approaches, progressive resistive training, primary care interventions, vitamin-D, Tai chi, and whole body vibration.

Of the 19 studies reviewed 13 produced statistically significant evidence that the tested interventions reduced falls. There were five of the 13 studies that utilized multifactorial, multicomponent, and multidisciplinary interventions that reduced the rate of falls. The multifactorial study Cameron et al. (2010) as cited by Kwan and Straus (2014) used a combination of exercise, medications, environmental modifications, knowledge, and measures to

address other factors and yielded statistical results of a reduced LR of .69 or 31% decreased odds of a fall in the hospital setting.

The preponderance of evidence does suggest that multifactorial interventions do reduce falls. Kwan and Straus (2014) suggest that the cause of falls and falls with injury are many and the care provided should reflect a multifactorial approach tailored to the patient risk factors established from a thorough history and physical examination. The assessment and management of this preventative care should be handled by a multidisciplinary team based on the falls risk factors identified. When following the proper care plan there is a potential for a reduction in these harmful events.

Goodwin et al. (2014) conducted a systematic review and meta-analysis related to the use of multiple component interventions for preventing falls and fall-related injuries. The objective of the review is to determine the effectiveness of a multiple component intervention to reduce falls and fall related-injuries. There were 18 papers reporting on 17 studies reviewed by the authors. Studies met the inclusion criteria if they were RCTs, making a comparison of multiple component interventions for fall prevention on fall rate, number of fallers, or fall-related injuries compared with no intervention, placebo, or usual care. Multiple component approach was distinguished from the multifactorial approach to fall prevention and intervention. A multifactorial approach included a patient assessment and an individualized plan of care. While the multiple component approach does not require an individual assessment or tailoring of fall prevention interventions, a fixed combination of interventions was used. Of the 17 studies 14 had one intervention group, and three studies had two or more intervention groups. Twelve of the studies included exercise as part of the multiple component intervention and one additional intervention. Two studies consisted of medication and nutritional supplements or medication and

sunlight exposure as interventions. The control groups were described as usual care which included information sharing, social visits, and no intervention.

The study had several limitations. The article did not give comparison statistics for the usual care but only the multiple component outcomes. The statistical results for the multiple component intervention should have been listed with more statistical detail. It would have been more informative for the researchers to explain the statistical significance and how they arrived at their conclusions. The review failed to present evidence that the multiple component approach was more effective than or as effective as a multifactorial approach, because no comparison was made between the two types of interventions.

In summation, Goodwin et al. (2014) was able to present evidence that multiple component interventions can produce a statistically significant reduction in falls in comparison to controls. The systematic reviews and meta-analysis presented evidence that multiple component interventions that are not tailored individually to the patient can reduce falls. Future studies will be needed to compare the effects of a multicomponent intervention versus a multifactorial intervention to reduce falls and related injuries.

Cameron et al. (2010) conducted a systematic literature review to assess the effectiveness of multiple interventions that are used in skilled nursing facilities and hospitals to reduce falls among older people. The research team reviewed 41 RCTs that were evaluated out in 13 countries. These studies were randomized such that fifteen studies used a cluster randomized design and in the remaining 26 studies the subjects were randomized individually. Of the 41 studies, 30 were conducted in skilled nursing care facilities and the remaining 11 studies were conducted in the hospital setting. The primary outcome measures the researchers were seeking was studies that determined the number of falls and the number of people who fall. The study

results revealed that single interventions did not produce a reduction in falls. In skilled nursing

care facilities the single interventions were inconsistent. For skilled nursing care facilities

statistical significance for reduction of falls was found only with the combination of a

multidisciplinary team and multifactorial interventions. In hospitals multifactorial interventions

reduced falls and the risk for falls.

A few limitations was noted in this study. Sixty-eight percent of the outcome assessors

were not blinded increasing the potential for bias in the interpretation of the data. None of the

studies provided a cost analysis for the interventions as this would help institutions to realize the

potential fiscal impact of using interventions. The study participants were not broad in diversity

of age groups, and therefore not generalizable to a younger population. Only eleven

hospitals/acute care settings were included.

In summary the evidence of this review does support that multifactorial interventions

targeted at specific risk factors for the patient will potentially reduce falls in skilled nursing care

facilities and hospitals. More studies will be needed that focus solely on hospitals to determine if

a stronger statistical and clinical effect can be ascertained indicating success at reducing falls and

falls with injury.

Dykes et al. (2010) conducted a cluster RCT comparing patient fall rates in four urban

United States (US) hospitals. The inclusion criteria was medical units with a mean falls rate

higher than the institution and were matched with units with similar fall rates and total number of

patient days. There were a total of eight hospital units that met the inclusion criteria. Four of the

units served as the control units receiving usual care and the other four units served as the

intervention group. The objective of this study was to determine if a fall prevention tool kit

(FPTK) using health information technology (HIT) could decrease patient falls in the acute care setting.

The control group received the usual care of a fall risk assessment with the Morse Falls Scale (MFS), for a score above 45 on the MFS the patient would have a fall risk sign placed above the bed, patient and family was educated and given printed materials on fall prevention, and the plan was documented either manually or in the electronic health record (EHR). The intervention group received MFS using the FPTK, interventions were automatically triggered and were tailored by the nurse (RN) based on the assessment of the patient, educated patient and family education using tailored handouts, and the FPTK generated a tailored plan of care based on the fall risk assessment. The study was conducted over a six month period. The control group and the intervention groups were studied simultaneously as they were on separate units.

The primary outcome sought was to reduce falls in the hospital, and a secondary outcome was to reduce falls with injury. The study noted a reduction in falls and falls with injury. Patients 65 and older in the intervention groups experienced the most benefit from the FPTK. The study revealed a decrease in falls with injury, but it was deemed not to be statistically significant. Overall the study results presented that potentially the FPTK could prevent one fall every four days or 90 falls annually across the studied units.

A few limitations was noted. The first limitation was that the study was performed in hospitals that were a part of the same health care system which could potentially affect the generalizability of the FPTK. The authors did state that this was probably overcome due to the fact that the units chosen were diverse in their patient population. Another limitation is that the FPTK intervention was not blinded, therefore the intervention potentially introduced some bias

by the caregivers. The FPTK was not successful with patient's less than 65 or younger patients possibly because staff were more lenient with implementing interventions.

The study did produce evidence that the multifactorial FPTK did reduce falls and produced clinically significant indications that fall related injuries were reduced. Overall the generalizability of this study could potentially be used across different health care systems, but it would be best to confirm by performing a randomized study across multiple health care systems.

Ang, Mordiffi, and Wong (2011) conducted a randomized controlled trial (RCT) to determine if multiple interventions could reduce the number of patient falls in the acute care hospital. The inclusion criteria was the patients had to be 21 or older and have a Hendrich II Fall Risk score of 5 or greater. The objective of the study was to determine if targeted multiple interventions could reduce falls in those identified as high risk for falls in comparison to the usual care. The control group would receive the usual care provided to high fall risk patients. The usual care consisted of a fall risk assessment, the call light and bed locker within the patients reach, bed rails raised, and the bed would be in the lowest position. The intervention group received all the interventions contained in the usual care and also received an educational session on targeted multiple interventions specific to the patients assessed risk factors.

The study yielded a reduction in falls with the intervention group. A total of 18 high risk patients fell and of that number 4 were of the intervention group and 14 were of the control group. The proportion of those that fell were significantly lower in the intervention group compared to the control group. This study had several limitations. The study may not be generalizable to other patient settings because it was conducted at acute care setting. The study effect may not be sustainable because the research nurses had time to implement the targeted

multiple interventions for the intervention group. The regular unit nurses will probably have less time due to their many responsibilities with patient management.

In summary Ang et al. (2011), study yielded statistically significant evidence that tailored multiple interventions strategies in comparison to usual care reduced falls in the acute care setting. Most units will not have a research RN on staff to lead a fall prevention interventions. For future studies it will be important to allow the bedside RN instead of a research RN to lead the interventions to establish realistically if the results can be duplicated. It will be beneficial for future research teams to track fall related injuries as well as falls and determine if evidence of a reduction in injuries can be detected using a tailored multiple intervention strategy.

Tzeng and Yin (2014) conducted a cross-sectional nurse survey at five US healthcare systems studying interventions to prevent falls with injury. The objective of the study was to identify the top ten interventions to prevent falls with injury from the RNs perspective in an acute care hospital. The study was performed across 10 different types of specialty units. The specialty units were medical, surgical, medical-surgical, telemetry, oncology, orthopedics, cardiac, women's health and delivery, behavioral health, and rehabilitation. The research team sent out 2170 surveys and of this number 560 were completed with an overall response rate of 25.81%. The authors focused on 75 possible interventions that were categorized into three focal areas. The focal areas were (1) patient room and environment-related interventions, (2) treatment and personnel support interventions, and (3) institution and unit-level interventions. A survey, performed by the RNs, was used to identify the top ten interventions. The survey tool has 75 preventative interventions listed and the RNs had to rate the frequency and effectiveness of use. The ratings from the effectiveness column is what was used to answer the research question. The study results revealed that each specialty unit is unique related to effective interventions to

prevent falls with injury. The study results revealed that in most of the specialty areas, focal area one (patient room and environment-related interventions) was perceived by the RNs as highly effective with the one exception of the behavioral health units. This provides evidence the RNs perceived that patient interventions focused on the patient room and environment are effective interventions to prevent fall related injuries. The study results also revealed that interventions must be tailored to fit the uniqueness of the patient and the clinical environment.

The study had several limitations. One limitation identified was the low response rate from the RNs overall (25.81%) and for the behavioral RNs only 3 or 4 responded. The study would not be generalizable because only health systems in one region of the US was involved in the study. This wide range of variability of the different specialty units and types of hospitals could produce very different risk factors since larger hospitals tend to have more medically complex patients. Variability of the units could also reduce the transferability of the perceived effective interventions.

In summary, Tzeng and Yin (2014) study produced evidence that the perception of the RN perception on a specific unit will yield specific and unique interventions based on the patients risk factors. Future studies will need to capture the autonomy of the RN utilizing their critical thinking skills to establish tailored interventions to prevent fall related injuries. Higher level methodological studies will need to follow patients as RNs implement their perception of the highly effective interventions to prevent inpatient fall related injuries.

Barker, Kamar, Tyndall, and Hill (2013) conducted a retrospective cohort study of the inpatients admitted to the Northern Hospital in Victoria, Australia between the years of 1999-2009. The study focused on patients that experienced a falls related-injury during their

hospitalization. The objective of the study was to report the association of low-low beds as an intervention to reduce serious fall-related injuries.

The study sample consisted of 356,158 patients records obtained between the years of 1999-2009. The staff was educated on the functionality of the low-low beds prior to the start of the study. Periodically during the study the staff would be reminded on proper use of the low-low beds to ensure safety and effective use. During the study there was 3946 falls, 1005 fall related-injuries, and 60 serious fall related-injuries.

During the study the rate of fall-related injuries and serious fall-related injuries decreased significantly. Statistical evidence reveal decrease of 12 % each year of the serious fall-related injuries. The ratio of one low-low bed to three standard beds was associated with a reduction in serious fall-related injuries versus one low-low bed to 19 standard beds did not show statistical significance in reducing serious fall injuries. This study presents statistical evidence of an intervention utilizing low-low beds that could reduce serious fall related injuries.

There are several limitations of this study. The study design is not of the highest level research. This study was at a single medical center and may not be generalizable to other acute care hospitals or patient groups. The fact that one source of data collection was used could present some methodological bias or cause under reporting of the results. The study does provide evidence that a relationship exist between the low-low beds and a reduction in serious fall related injuries.

Trepanier and Hilsenbeck (2014) conducted a quality improvement study to identify the effectiveness of a multifactorial fall prevention intervention in an acute care hospital to reduce falls with injuries. The authors first considered the literature to help identify risk factors for falls.

The systematic reviews presented 27 risk factors in one review, another study identified five risk factors, with the Morse Fall Score is based on six risk factors. The authors of the current study communicates that the evidence supports the need for interventions to reduce falls and falls with injury.

The authors developed a standardized falls prevention program for adult patients. The program was developed by a multidisciplinary team after performing a literature review, consulting experts, and the program was developed based on the evidence gathered. The standardized fall prevention program consisted of seven components. The components include the use of a standardized valid and reliable screening tool, medication regimen assessment, an individualized plan of care, include fall risk in bedside handoff communication, hourly rounding and rounding during shift change, offer continuous observation of the patient if risk factors indicate the need, and offer education for the staff, patient, and their family. Two years after implementation of the fall prevention program falls with injury had decreased a total of 58.3%.

One of the limitations with the multifactorial approach is it can be a challenge to isolate the exact component influencing the change. Another limitation was this study was from a convenience sample and no randomization was implemented increasing the possibility of bias and making it difficult to generalize the findings. This study did produce evidence that the multifactorial intervention produced greater safety and financial improvements for both the patient and the healthcare system.

Summary

The goal of this literature review was to obtain evidence that would help eliminate bias and produce more generalizable evidence related to reducing falls and fall-related injuries.

Efforts were made to eliminate bias by using literature that was at the higher levels of the hierarchy of evidence. The higher levels of evidence help to provide reliable answers to the clinical question (Melnyk & Fineout-Overholt, 2015). The levels are rated from one through seven with the level one studies reflecting the higher methodology that produces the strongest evidence (Melnyk & Fineout-Overholt, 2015). Of the studies reviewed there were three level one, two level two, one level four, and three level six for the hierarchy of evidence (Melnyk & Fineout-Overholt, 2015). All these studies yielded statistical evidence that identifying key risk factors or implementing multicomponent and multifactorial interventions can successfully reduce falls and fall-related injuries.

Conclusion

As stated in chapter one, the goal is to implement a multifactorial intervention that will reduce falls with injury in the assigned microsystem. There were 9 studies reviewed and of the nine studies five looked at multifactorial interventions, a multiple intervention, a single intervention, combination of a single intervention and multifactorial, a multicomponent intervention, and a convenience sample/single descriptive study. As noted there are many approaches to implementing interventions, but there is a gap in knowledge on ranking which interventions would have more success reducing falls and preventing fall-related injuries (Kwan & Straus, 2014).

While there is a need for more RCTs to investigate whether multifactorial interventions decrease fall-related injuries, there is beginning evidence to support the notion that multifactorial interventions reduce falls and fall-related injuries. More studies looking at fall prevention programs to reduce fall-related injuries are needed. Currently Barker et al. (2011) are in the process of implementing a study with 16,000 participants utilizing a multifactorial approach. The

evidence presented in this literature review is a beginning step for developing support for this evidenced based protocol. The literature supports that reduction of falls and falls with injury can be accomplished through a multifactorial approach. Of the nine studies used in this review, eight of them produced results that showed a decrease in these harmful fall events. What is not known is how multifactorial interventions will respond in more intense RCTs to specifically target reduction of fall related injuries.

Chapter 3

Conceptual/Theoretical Context

The concept of falls with injury is a multifactorial and multifaceted. Falls are a problem that can affect the patient outcomes at many levels. The Joint Commission (TJC) (2015) has reported that fall-related injuries are in the top 10 reported sentinel events. There are thousands of falls each year in the United Stated and 30-50% of these falls result in a fall-related injury (TJC, 2015). This multifactorial problem of falls with injury requires a multifaceted approach to preventing these harmful events. There are many reasons patients fall. Management to prevent these falls should be tailored to the specific risk factors of the patient. Preventing the occurrence of falls and reducing fall-related injuries should be a priority for every health care institution seeking to improve patient outcomes.

Conceptual Model

The Nursing Role Effectiveness Model (Appendix A) provides the conceptual framework for the clinical problem. The conceptual framework has three dimensions: structure, process, and outcome. This model approaches the multifaceted problem by analyzing many variables that could influence the occurrence of falls with injury. These three dimensions are broken down into seven variables: patient, nurse, organizational structure, independent role, medical care-related role, interdependent role, and nurse-sensitive patient outcomes (Doran, 2011). The Nursing Role Effectiveness Model (NREM) looks at each of these variables to see how the nursing role can successfully influence patient outcomes.

Structure

The structure component examines variables relative to the patient, nurse (RN), and organizational structure that can have an effect on the outcomes. Patient variable considers the age, gender, education, and the level and type of disease processes the patient may be experiencing (Doran, 2011). The status of each of these areas could potentially have an effect on the outcome the patient will experience. Evidence is clear that as age increases the risk of falls and fall-related injuries increase. In 2010, 31.7% of US adult's age 65 or greater experienced a fall-related injury with the likelihood of injury increasing as age increased (Tzeng & Yin, 2015). The patient's health status can also have an effect on the potential for a fall-related injury. A patient's medications, blood pressure changes, deficits performing activities of daily living (ADLs), cognitive impairment, and chronic diseases can increase the risk for fall-related injuries (Kwan & Straus, 2014).

The nurse variable ensures the RN has been trained to provide a thorough assessment of the patient. RNs must be educated and knowledgeable about various disease processes and risk factors that can increase the potential for a fall-related injury. When an RN has the knowledge and experience related to a clinical problem they are more prepared to improve the quality of care delivered to the patient (Doran, 2011).

The organization must adequately address staffing concerns and staffing ratios to ensure they are adequate for a proposed intervention. It will be important for the organization to identify staff that can help lead and champion the cause for the intervention. Staff champions are essential to facilitate changes throughout an organization, even down to the microsystem level (Dykes et al., 2010).

Process: Independent Role

The process component explores the independent, medical care-related, and the interdependent roles of the registered nurse (Doran, 2011). The independent role of the RN is very important with the nurse being strategically involved in affecting patient outcomes. Professionally, a RN's role has been designed and given legal authority to operate with a high level of autonomy. Many RN driven interventions do not require an order from the provider. An example would be providing an adequate falls risk assessment that does not require a provider's order. Even if no formal fall risk scale, such as the Morse or Hendrich is used in the RNs clinical setting, the education and training the RNs have received has prepared them to assess their patients and identify deficits.

Patient education led by the RN is a single intervention that RNs have always provided autonomously in multiple settings (Doran, 2011). The RN can intervene by assuring the patient has a nurse-led plan of care that involves the necessary interventions based on the patient assessment. Interventions as simple as ensuring the patient's call bell is within reach, making sure the bed is in the lowest position, use of a gait belt, regular rounds, nonslip footwear are examples of autonomous nursing interventions tailored to the needs of the patient (Quigley, 2015).

Process: Medical-Related Role

In the medical care-related role, RNs are required to implement medical directives provided by a physician. For example, medication could put the patient at risk for a fall-related injury. Medically directed care could include a change in the patient's medication regimen due to safety concerns such as orthostatic hypotension or adjustments in other medications that could

affect the cognitive status of the patient thereby impacting the patient's safety (Kwan & Straus.

2014). When medical care is ordered the RN must exercise clinical judgement as they implement

the medical orders to ensure patient safety is maintained.

Process: Interdependent Role

The interdependent role is the third variable of the process component. This variable

involves the entire health care team working together towards the same outcomes for the patient.

Health care systems should function as interdependent parts working together to promote health

and healing (Nelson, Batalden, Godfrey, & Lazar, 2011). The interdisciplinary team (IDT) may

consist of a variety of health care roles and will work to help patients navigate through the

complex health care system (Nelson, Batalden, Godfrey, & Lazar, 2011). The team works to

ensure that patient safety is achieved through evidence-based interventions. IDTs will strive for

open communication across disciplines, maintain the health system and suggest improvements,

and will provide care coordination (Doran, 2011).

Falls prevention can be a complex clinical problem that requires collaboration to

implement the necessary interventions. Collaborative efforts involves the patient, family

members, physician, pharmacist, occupational therapist, physical therapists, caregivers (support

staff), social workers, case managers, and nurses (Kwan & Straus, 2014). The plan for this

protocol is to convene an interdisciplinary team that can provide feedback and insight related to

the multifactorial interventions.

Outcome

The outcome component of the model is an evaluation of how well the structure and

process affected the patient outcomes. This component is explained through nursing-sensitive

patient outcomes (Doran, 2011). Nursing-sensitive outcomes are classified into six categories. These six categories are "(a) prevention of complications like injury or nosocomial infections, (b) clinical outcomes such as symptom control, (c) knowledge of the disease, it's treatment, and management of side effects, (d) functional health outcomes such as physical, social, cognitive, mental functioning, and self-care abilities, (e) satisfaction with care, and (f) cost" (Doran, 2011, p. 16). These nursing-sensitive indicators reflect on how well the patient's care is being provided care.

Nursing-sensitive indicators will reveal if the structure and process are having an impact on the quality of patient outcomes and safety. Organizations such as the National Quality Forum (NQF) and the National Database of Nursing Quality Indicators (NDNQI) maintain databases on key nursing-sensitive indicators that have been voluntarily reported by health care systems (Montalvo, 2007). These organizations focus on key indicators that are directly affected by nursing care. The Nursing Role Effectiveness Model helps to identify variables that indicate patient-centered outcomes have been achieved due to RNs' contributions (Doran, 2011). Nurses have a great presence in health care due to their close proximity to the patient. Nurses directly impact quality, outcomes, and safety throughout the healthcare industry (NQF, 2004).

This clinical problem of fall-related injury fits within the six categories framework of nursing-sensitive outcomes (Doran, 2011). A fall-related injury is a failure to prevent a complication of an injury. NDNQI and the NQF have declared falls with injury a nursing-sensitive indicator (Montalvo, 2007). The concept of falls with injury can be captured in all six categories of nurse-sensitive outcomes. If there is a failure to control symptoms and side effects due to illness, a patient could fall and sustain an injury.

An example of a potential failure focuses on a patient who experiences orthostatic hypotension caused by antihypertensive medications (Bemis-Dougherty, & Delaune, 2008). It will be important that an accurate medication history is performed since several medications have been shown to increase the risk of a patient falling (Kwan & Straus, 2014). When clinicians fail to assess and report deficits in the physical, social, cognitive, mental, and ADLs, this may lead to adverse patient outcomes.

Patient satisfaction will improve with rounding and studies have shown that rounding reduces falls (Ford, 2010). Any reduction in falls with injury will ultimately reduce the costs associated with this outcome. The average financial cost is $24,000 to $27,000 for care required after a fall-related injury (Hester, 2015). Patients who experience a fall or fall-related injury experience both physical and psychological harm and the health care professional experiences feelings of failure and frustration (Institute of Medicine, 1999).

Conclusion

The broad view that this model takes makes it appropriate for development of a protocol preventing fall-related injuries. There are many factors that can contribute to fall-related injuries. The Nursing Role Effectiveness Model can be used to help organize the complex components of this phenomenon. Use of this model helps identify the variables to address that could potentially lead to improved outcomes for the patient by reduction or prevention of fall-related injuries.

. Chapter 4

Clinical Protocol

The clinical problem of falls and fall-related injuries can have disastrous outcomes for the patient. A clinical protocol to improve the approach to prevention of falls and fall-related injuries will be implemented on a medical-surgical unit in a Midwestern acute care hospital. This protocol will be developed to enhance and support the current fall prevention programs targeted at reducing falls and fall-related injuries in this microsystem.

Description of the Protocol

The protocol will consist of a multifactorial risk assessment and intervention. A multifactorial approach is when the plan of care is designed specifically according to the patient assessment to target specific risk factors. The evidence in the literature review has revealed that multifactorial interventions have clinical significance to help reduce falls and fall-related injuries. There is an intervention to consider from the research that has produced evidence of successfully reducing falls and fall-related injuries. The Joint Commission Center for Transforming Healthcare has created an online tool to help organizations combat some of the leading quality and safety problems (The Joint Commission, 2016).

Master of Science in Nursing/Clinical Nurse Leader (MSN/CNL) Essentials

Fundamental to the CNL practice are the MSN/CNL Essentials and Competencies (American Association of Colleges of Nursing [AACN], 2013). AACN (2013) has determined that it is necessary for CNLs to have a list of basic competencies to help define their practice and provide guidance as they work to improve patient-care outcomes. For the current protocol there are four Essentials that will help with goal setting for this process improvement project. The

Essentials are *Essential IV:* Translating and Integrating Scholarship Into Practice Competencies, *Essential V:* Informatics and Healthcare Technologies Competencies, *Essential VI:* Health Policy and Advocacy Competencies, and *Essential VII:* Interprofessional Collaboration for Improving Patient and Population Health Outcomes Competencies (AACN, 2013).

Having specific, measurable, agreed upon, realistic, and time sensitive goals (SMART goals) can provide guidance and potentially improve outcomes in projects (Lawlor & Hornyak, 2012). Two SMART goals were developed to fulfill the objectives associated with each Essential (Appendix E). The SMART goals were (1) Implement the Targeted Solutions Tool (TST) to lead a change initiative that will produce evidenced based outcomes related to preventing falls and falls with injury by December 12, 2016 (2) Disseminate data r/t the evidenced based protocol improvement project related to falls and falls with injury by December 9, 2016.

Targeted Solutions Tool

The quality improvement tool to consider is the Targeted Solutions Tool (TST). This is a tool that was developed by The Joint Commission (TJC) is currently targeting hand hygiene, hand-off communications, safe surgery, and preventing falls. The TST is an evidenced based tool that was developed by The Joint Commission Center for Transforming Healthcare (TJCCTH) using what they have titled Robust Process Improvement (RPI) using Lean Six Sigma and other change methodologies to solve complex problems in healthcare (Health Research & Educational Trust, 2016). RPI uses fact based, systematic, and data driven methodologies like Lean Six Sigma, that have been implemented by other industries to improve safety and quality (The Joint Commission, 2016). The development was undertaken by seven U.S. hospitals with varying types of inpatient units used to test and validate the methodology. The tool is being used nationwide to prevent fall events. These seven hospitals each identified specific causes or factors

that led to falls. Once the teams had determined the causes they collectively identified 30 root causes of falls (Health Research & Educational Trust, 2016). Based on the evidence in literature the team developed 21 targeted solutions to address the root causes or contributing factors to falls or falls with injury (Health Research & Educational Trust, 2016).

The tool is an online application where the health care organization enters each fall event at the microsystem level. TST fall event form can be completed electronically or in a paper document. Information ultimately is entered into the online tool so the proper data analysis can be generated and the targeted solutions suggested. All data entered are de-identified and no data are reported specific to the patient. This tool has built-in data analysis algorithms in the software that determines the suggested targeted solutions based on the identified contributing factors. Once the targeted solutions are suggested, staff can then establish interventions for the falls prevention plan of care.

TST application is based on a systematic approach for complex problem solving that uses define, measure, analyze, improve, and control (DMAIC) approach. DMAIC is one of the components for the Lean Six Sigma methodology used to help improve existing processes (Langley et al., 2009). Lean focuses on identifying and eliminating waste in hopes to bring an improved outcome for the customer or patient (Langley et al., 2009).

Defining the problem that needs improvement is the first step, next in order is to measure, using data to examine the current state. Then data will be analyzed, problems determined, with root causes identified. Goals will be set and interventions developed based on this analysis. Finally, the team will seek to control the change by continuously monitoring and adjusting the process as needed to maintain the improvement (Dreachslin, & Lee, 2007). TST is a tool that

requires the user to follow the systematic DMAIC robust process step by step, thus discouraging the practitioner to jump to a solution.

Define

In using the TST the problem of falls and fall-related injury is defined by looking at the current state. Staff will enter every fall into the TST during the define phase. This is currently accomplished by an established post fall huddle process. Staff currently complete a post fall huddle form, electronic documentation, and complete a risk management report. The plan is to continue the current form alongside the TST fall event form. It has been determined by the project team that the preliminary outcomes must be determined, before training every nurse on the unit how to complete the TST fall event forms. The data from the post fall process is reported, collected, and organized by a data analyst within the organization and then disseminated monthly to every unit and reviewed by the falls team.

Laying the groundwork for a potential project involves identifying key stakeholders and those staff members who will serve on the team for the project. Significant support and buy-in from leadership must be established. It will be necessary to receive buy-in from the Nursing Director of Clinical Services who has oversight of the microsystem, the Quality Assurance Team, the Director of Integrity & Compliance, Security, and Guest Services all have roles in the approval process for the online tool, ensuring that the data are de-identified, protected, and that a data use agreement is in place with TJC is critical.

Other key stakeholders that were important to the process was the Executive Director of Research and Innovation, internal review board chair, educators, unit manager, Clinical Nurse Leader (CNL), organizational falls' team, microsystem fall representatives, the data analyst, and

the staff nurses. Communication during this stage would focus on how the TST could be implemented at the microsystem level; if there are successful outcomes, the question is, how use of the TST could be spread throughout the organization.

Measure

This stage involves collecting data on the problem and every aspect that may potentially affect the problem. Falls data will be collected and entered into the TST as falls occur. This will help to establish a baseline for the microsystems rate of falls and falls with injury. Every occurrence of a fall or fall with injury will be entered in the online tool as a fall event. It will be the project lead responsibility to train the data collectors or nursing staff on how to enter the falls data into the tool. Data will be collected for a minimum of three months before moving to the analyze stage. Then the team will measure the current state of the problem on the unit to determine the top contributing factors that lead to falls.

Analyze

As the DMAIC process proceeds the team will analyze data to identify specific causes and the top contributing factors of falls and fall-related injuries that would lead to identification of targeted solutions specific to the project unit. Sharing the data are the first intervention of the project (TJC, 2016). The TST does not identify patient specific information but seeks to identify a root cause and solutions that is specific to the unit. The TST seeks to capture a system or process breakdown. For example the tool will list the top 5 contributing factors for falls that have been gleaned from the data entered from the fall event forms. Contributing factors could be whether or not nursing staff provided bathroom assistance for patients, medication issues were identified, patient education provided, or simply that the patient overestimated his/her abilities.

The data will be further analyzed to determine the primary cause of falls and the top location in which falls occur. During this phase the team will seek to interpret and understand what the data are revealing. Spending adequate time in the analyze stage will help the team chose the best solutions driven by the data analysis.

Improve

The next step would be the improve phase where the team would implement the targeted solutions specific to the identified top contributing factors. The TST will generate a list of contributing factors in the analysis phase which will suggest targeted solutions to be implemented based on the factors. The team will continue to monitor fall rates to determine if improvements in rates of falls and falls with injury occurs.

Control

Finally the team will reach the control phase to work at sustaining and spreading the improvement by monitoring the intervention on an ongoing basis. The control phase will start three months after data has been collected during the improve phase. The monitoring would be accomplished by the Plan-Do-Study-Act (PDSA) (Appendix B) model for improvement (Langley et al., 2009). It will be important for fall events to continue to be entered in the TST database as they occur to help capture improvements or the lack of improvements. The team will need to have ongoing discussions to determine if adjustments should be implemented to foster a better chance for success.

In summary, TST is an evidenced-based interventions tool that led to a reduction in these harmful events. As a result of tailoring interventions specifically to the units, the robust process improvement (RPI) has produced evidence of a reduction of fall-related injuries by 62% and falls

rate by 35% (The Joint Commission, 2016). This intervention has the bandwidth to impact all stakeholders involved with prevention of falls and fall-related injuries. The evidence for this intervention suggests that the TST may have positive effects on patient safety, provide cost savings, and decrease morbidity and mortality.

Timeline for Protocol Implementation

Activity	Completion Date
• Define the clinical problem	June 6, 2016
• Identify Key Stakeholders	June 30, 2016
• Approval for data use for the Targeted Solutions Tool granted	August 5, 2016
• Access granted to the Targeted Solutions Tool (TST)	August 10, 2016
• Establish core team	August 17, 2016
• Meet or communicate with Key Stakeholders	August 31, 2016
• Two TST projects started-Historical & Current fall events	September 1,2016
• Data entered for historical falls events	September 30, 2016
• Data entered for current falls events as they occur for three months	August-October 31, 2016

• Share the findings the TST
    ○ Unit leadership meeting
    ○ Falls team meeting
    ○ Unit based council
    ○ Nursing leadership council
	
	November 2, 2016
	November 3, 2016
	November 9, 2016
	December 6, 2016

• Sustainability plan implemented	December 10, 2016
• Projected start of improve phase-Implementing targeted solutions	January 9, 2017
• Control phase-3 months after interventions started	April 9, 2017

Protocol Guided by the Conceptual Model

Nursing Role Effectiveness Model

The conceptual framework of the Nursing Role Effectiveness Model (NREM) will guide development of the clinical protocol. As discussed in chapter three the conceptual framework is comprised of three dimensions: structure, process, and outcomes. These dimensions are broken down into seven variables that will guide the development and implementation of evidence-based interventions for the clinical problem. The TST is an intervention that has been presented as a possible process improvement protocol to reduce falls and falls with injury. Use of the NREM will allow each of the three dimensions to help guide the TST to provide proper assessment, collaborative interventions, and nurse-sensitive patient outcomes.

Structure

Assessment of the interrelationships among the patient, nurse, and organizational/unit variables, is part of the structure dimension. The staff will need to assess for risk factors for falls by examining the patients intrinsic (ex. age) and extrinsic (ex. medications) risk factors. These assessments will be completed by experienced, well trained, and educated nurses. The Doran, Sidani, Keatings, and Doidge, (2002) study yielded significant results supporting the notion that as nurses have higher levels of degrees and training, such as a bachelor's in comparison to a associates degree, there is a direct relationship with a higher quality of care and improved patient outcomes. Targeting staff that are bachelor's prepared and have organizational records of proven competency, to be a part of the project team increases the potential for quality assessments, and could lead to better contributing factors and solutions being identified.

Since the care environment can affect process and outcome, the conceptual framework will guide the protocol by examining the characteristics of the microsystem that could facilitate or limit professional nursing practice (Amaral, Fereira, Cardosa, & Vidinha, 2014). It will be important to examine nursing care hours and understaffed teams as studies have produced evidence that the potential for negative outcomes increase if staff is overloaded and team structure is lacking (Aiken, Clarke, Cheung, Sloane, & Silber, 2003). When an efficient staff mix and staffing ratios are used, evidence supports the idea that in a given microsystem patient safety outcomes relative to patient falls, medication errors, wound infections, pressure ulcers, and many hospital acquired conditions can be prevented and adverse events significantly reduced (Hall, Doran, & Pink, 2004). For the success of the TST there will need to be staff involvement that is supported by good staffing ratios to ensure the success of the project.

Process

The process dimension will help guide the protocol development related to the independent role of the nurse, the role in relationship to the medically directed care, and the interdependent role in partnership with the interdisciplinary team. With the TST model the nurse has to exercise independence to assess risk factors for fall and injury potential, tailor interventions to prevent falls and fall-related injuries based on the data generated, and exercise good clinical judgement as each targeted solution is suggested. The Morse Fall Risk Scale which has been validated in inpatient settings and the DMAIC approach will be used to operationalize the steps and key decisions points for the protocol (Dykes et al., 2010). The Morse Fall Risk Scale assesses for the risk for falling only, but the TST evaluates the falls event to identify root causes and develop a plan of prevention for future falls and falls with injury.

When the protocol identifies risk factors or the need for the change or implementation of medical orders (such as a medication change) the nurse will function in the dependent role by advocating for the change and facilitating awareness of the physician. This will allow the nurse to implement the individualized interventions that have been specifically tailored based on the assessment and contributing factors generated by the TST.

To operationalize the interdependent role the team leader will build a team to determine and implement specific interventions related to falls and fall-related injuries. The individual staff nurse caring for the patient will enter the falls event data and help analyze the data. As the nurse functions in the interdependent variable the nurse is connecting functions and responsibilities as a shared effort with the health care team (Doran et al., 2002).

TST uses an interdisciplinary team approach to solve the clinical problem of falls through communication, openness, and the enhancement of the coordination of care (Health Research & Educational Trust, 2016). The roles of the various disciplines and the activities of care delivery are interdependent and intertwined. It is imperative that the disciplines communicate and work together to prevent fall events. Whether it is the physical therapist, a patient care associate (PCA), or the nurse, there must be a continual effort to communicate and to work as a team to prevent fragmentation of care that could expose the patient to harm. This could affect the performance of each role therefore one would expect to see interrelationships working to support the protocol (Doran et al., 2002).

Outcomes

For the last dimension, outcome, it will be important for the nurse, the unit staff, and the interdisciplinary team to document metrics for comparison to benchmarks and baseline data.

Nursing sensitive indicators will be used to detect if the structure and process are impacting outcomes. The primary outcome variable will be falls with injury which has been classified by National Database of Nursing Quality Indicators (NDNQI) as a nursing-sensitive indicator (Montalvo, 2007). In the DMAIC model the Improve and Control phase is where the outcomes will be presented.

Plan-Do-Study-Act Cycle

Sustainability will be a key factor for the protocol presented. Another key factor will be to evaluate if the change is working and if adjustments should be made that will produce better outcomes. This will be accomplished in the Control phase of the DMAIC model. In the Control phase is where the process will be monitored, solutions standardized, and continued improvement implemented (Dreachslin & Lee, 2007). There are times when Robust Process Improvements need to be systematically revised to compare predictions to actual observations and to make adjustments if the primary outcomes are not being obtained (Langley et al., 2009).

The Model for Improvement and the Plan-Do-Study-Act (PDSA) cycle will be used to implement this protocol (Langley et al., 2009). The Model for Improvement asks three questions: (1) What are we trying to accomplish? (2) How will we know a change is an improvement? And (3) What change can we make that will result in improvement? (Langley et al, 2009). Asking these questions will be the primary driving force of this project and the PDSA cycle will be used to facilitate the knowledge generated by the TST, tests for change, and the implementation of the actual change (Langley et al., 2009).

When the specific protocol is selected based on the data entered into the TST, it will be implemented to test the intervention's effectiveness. The intervention will then be observed and

results will be studied to determine if a change occurred. Finally action will be taken to determine next steps based on what was learned. It may be necessary to run several PDSA cycles to test the interventions and to revise the protocol until the desired results are achieved (Langley et al. 2009). Once the protocol has been successfully implemented in this microsystem, the protocol can be "scaled up" throughout the hospital.

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Plans for Protocol Implementation

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Factors to Consider

The plans for the protocol implementation are included in the development process. Several factors will need to be considered for the implementation of this protocol. The perception is an important consideration. Do the staff believe a problem with falls and fall-related injuries exists?

Another factor to consider will be whether this unit embraces change or resists change. The literature review has provided evidence, but this information will need to be communicated to the staff. To assess the staff perception, a staff survey (Appendix C) was developed allowing the staff an anonymous opportunity to respond to open-ended questions. The survey asked 7 questions: (1) Why do patients fall and sustain injuries? (2) What are some ways that could improve or prevent falls with injury from occurring? (3) Do you feel you have the necessary tools to prevent a fall with injury? (4) How comfortable are you with completing the Morse Fall Risk Scale (MFRS)? (5) Do you feel you could benefit from more education on how to complete the MFRS? (6) Does the Morse Fall Risk Assessment adequately capture a thorough assessment of the patient's risk? (7) Do you know how to evaluate if a fall is with injury or no injury?

In analyzing the results from the survey the approach was to perform a thematic analysis. A thematic analysis looks to identify patterns and inconsistencies in the data collected (Polit & Beck, 2012). The hope was to identify if there is substantive and generalizable information gathered that could help validate the clinical problem and help identify possible solutions (Polit & Beck, 2012). There were a total of 23 surveys completed. One survey was incomplete, four were completed by patient care associates (PCA), and 18 were completed by staff nurses. The unit has 70 nurses which gives a response rate of 26% for the bedside nursing staff.

The primary themes of the results were that the staff feel they have the tools necessary to prevent falls and have a general sense of what causes falls and falls with injury to occur. Of the nurses surveyed most reported being comfortable using the MFRS, with 67% being very comfortable, 28% were comfortable, and 5% were somewhat comfortable. A consistent theme among those nurses surveyed was the MFRS may not capture a thorough assessment of the patient's risk. This gap was communicated to be related to risk with medications and whether the scale adequately captured the influence of medications as a contributor when assessing for risk of falling. Since falls are a multifactorial problem this information supports the need for a multifactorial approach to help identify root causes and solutions to the clinical problem.

Resources Needed

Many resources are necessary for implementing the protocol. Key stakeholders will be a needed resource and must be identified. The unit leadership team will need to support and be involved in leading the change. For the microsystem where the protocol will be implemented, this would involve the unit manager, clinical nurse leader (CNL), clinical nurse specialist (CNS), supervisors, charge nurses, bariatric specialty RN, case managers, and educator. This group meets weekly as a leadership team to discuss patients, concerns related to the unit, staff

education, and decisions are made about process improvement projects. Other roles that will be important are social workers, bedside RNs, and patient care associates (PCAs) due to their direct patient care they provide and their valuable experience that would give insight into solutions related to the clinical problem.

Members of the interdisciplinary team such as the dietician, pharmacists, and spiritual care services would also be a needed resource. Physicians would be needed to help with the medical-related care orders. Physical therapy and occupational therapy would be a resource to provide expert opinion as to whether the physical demands of the interventions are safe and realistic. The patient and their family will be the most important resource needed for the protocol implementation since the change could not occur without the patient being a willing participant and the family members supporting the interventions.

Challenges to Implementation

There are challenges that could hinder the implementation of the protocol. One barrier could be training and education on the use of the protocol. Staff are already bombarded with competencies and educational updates', therefore some resistance to another change may occur. Changes to the health information technology (HIT) has the potential to be a challenging obstacle. The protocol will require a change to the HIT allowing staff to access the TST through a link. Learning how to use the TST will be a learning challenge for the staff as it is a new online tool where they would need to document the fall events. The training for the tool could be uploaded to the healthcare organizations online self-learning modules. Staff involvement will be a hurdle because activities outside of regular staff shifts are not included in the unit budget. This will make it difficult to engage the staff during their shift due to high acuity and high patient to nurse ratios minimizing the staff's ability to engage the new protocol.

Overcoming Challenges

One strategy to overcome the challenges will be to ensure leadership supports the proposed protocol. Most staff have respect for their leaders and will consider new ideas from a trusted source. In the present microsystem, where the evidenced-based protocol will be implemented, the leadership team consists of the unit manager, supervisors, CNL, CNS, and the nurse educator. The CNL leads the process improvement projects and has established trust with the staff. The CNL will be a key individual to help encourage staff involvement. Informing staff of the impact of falls and fall-related injuries could have an impact on the patient safety and the hospital's Magnet re-designation status if benchmarks are not met is a critical aspect of the CNL role.

Langley et al. (2009) proposed five guidelines that will be used to secure commitment for change. The five guidelines are: (1) create the will to adapt the change, (2) provide information on why the change is needed, (3) offer specific information on how the change will affect everyone, (4) get consensus or buy-in from key stakeholders, and (5) publicize the change (Langley et al., 2009). Achieving these five guidelines will involve engaging the staff and presenting data collected to validate a problem exist.

Staff are accustomed to change as the organization is constantly evolving. Motivating staff to embrace the change will come through highlighting the data that shows the level of the problem. The TST has produced data validating the clinical problem and areas of contributing factors. This data will be presented at the unit's weekly leadership meetings, at unit based councils, and staff meetings to increase awareness and buy-in from leadership and staff. The plan is to use the huddle board and a designated bulletin board space in the staff breakroom to

publicize the progress. These boards will be maintained by the unit's fall representative and the CNL displaying stories and statistical importance of this clinical problem.

Analysis of Costs and Benefits

There will be cost involved in the implementation of this protocol. Cost would be associated with training the staff nurses how to use the TST. The training for staff would be a 30 minute self-learning module administered through the organization's Learning Management System. This cost would be based on the average hourly salary of the staff nurses for the unit. The unit manager reports the average hourly rate as $30, so 30 minutes would cost $15.00, but if the nurses complete the training during their shift there would be no additional cost. There are 70 RNs so the estimated cost to train the team would be $1050. The cost for development of the learning module by the informatics department has not been determined at this point for the project. Development of the learning module would potentially have minimal cost because the TJC has already created a Power Point presentation and video on how to use the TST that would just need to be upload.

The cost of this problem nationally to the patient can be an increase in the length of stay (LOS), increased cost for the hospital visit, and increased harm. TJC (2016) reported that 30-35% of patients that fall will sustain an injury. These injuries have the potential to increase the LOS in the hospital by 6.3 days and the cost for a fall with injury is about $14,056 (TJC, 2016). The average cost of falls per category based on the NDNQI ranking, for the organization where the protocol will be implemented are as follows: No Injury - $80, No Injury with imaging - $300, Minor Injury - $330, Moderate Injury - $440, Major Injury - $17,000. The microsystem had 26 falls and seven were with injury. Depending on the classification level of the fall this cost to the

organization could range from $560-$117,000. Successful implementation and good outcomes from use of the TST would benefit the organization and the patients.

TST approach was tested in five hospital centers across the United States and falls with injury were reduced by 62% and falls by 35% (TJC, 2016). An example given by the TJC was if falls for the year totaled 117 with injury at $14,056 for each fall, then the total cost would be $1.7 million annually (TJC, 2016). After implementation of the TST approach, the fall-related injuries could decrease to 45 falls with injury resulting in $1 million in cost being avoided (TJC, 2016). During the fiscal year of 2015-2016 the organization where the project will be implemented experienced 72 falls with injury. A fall with injury could result in cost potentially as high as $17,000 per episode, depending on the level of injury, with annual totals ranging from thousands up to S1.2 million. When comparing the cost to educate the staff versus the cost for falls with injury there is a potential that the TST could produce benefits outweighing the cost of implementation.

Conclusion

Falls and fall related injuries are a complex and multifaceted clinical problem. To improve the negative outcomes associated with this clinical problem it will require a proven evidenced based protocol. The Targeted Solutions Tool (TST) for preventing falls has produced evidence addressing the complex clinical problem of falls and fall-related injuries. The protocol has the potential to improve outcomes for the healthcare organization and more importantly for the patients at risk, by reducing and preventing these harmful events.

Chapter 5

Clinical Evaluation

The primary focus of this quality improvement project was to identify and implement solutions that potentially could reduce falls with injury and falls overall. Falls and falls with injury are a multifactorial problem that could have devastating outcomes for patients. Cameron et al. (2010) presented evidence that multifactorial targeted interventions could potentially reduce falls. With every quality improvement project the team or leader must evaluate if progress is being made or should the implementation design be modified to increase the potential for better outcomes. Implementing change can involve defining the problem, testing solutions, sustaining the change, and spreading the change (Langley et al., 2009). The Targeted Solutions Tool (TST) could potentially be a method of approaching a multifactorial complex problem like falls.

Evaluation of the Protocol Implementation

In an effort to promote optimal implementation of the project, several key individuals have been identified as necessary to the project's success. The Clinical Nurse Leader (CNL) was the first stakeholder approached that granted approval. Quality improvement and tracking outcomes is one of the primary roles of the CNL. As an information and outcomes manager, the CNL observes and evaluates patterns that could potentially affect practice and outcomes (Harris, Roussel, & Thomas, 2014). Once the clinical problem of falls was identified through the microsystem assessment, the CNL validated the value of an evidence-based protocol to potentially reduce these harmful events.

The CNL's daily lateral integration with the healthcare team within the microsystem and across the organization enabled her to help identify other key stakeholders that could potentially

support or delay progress of the project. Together with the CNL a list of key stakeholders were identified. The key stakeholders identified were the: director, unit manager, night shift supervisor, bariatric specialty nurse, case managers, clinical nurse specialist, unit based counsel, organization-wide falls team, microsystems falls representatives, staff nurses, and patient care associates. Of the disciplines listed all will not be intricately involved in the protocol implementation, but they could provide some valuable insight. At this point in the project all of the stakeholders engaged have approved the project targeting falls and falls with injury reduction.

The TST was presented to the stakeholders as a possible method to reduce falls and falls with injury. Approval was granted to enter the unit's fall event data into the tool. There was concern expressed over a complete change to the use of the TST for post-fall assessments prior to determining if there are valuable outcomes that could be generated. As a result of this decision two projects were started in the TST online module, one with falls event data entered for the 26 falls from the fiscal year 2016 and a current project in real time entering data from falls that have occurred since August of this fiscal year 2017 to current. The data were entered by the CNL student and the outcomes from the 26 historical falls will be used to determine if a clinical relevance can be determined.

Training staff to complete the fall event form in the TST was deemed not feasible at this point in the project because of the uncertainty of whether the tool would generate meaningful results. Staff would need to complete a 30 minute module and then complete a quiz testing their knowledge of the training module requiring an additional 10-15 minutes. The module would need to be loaded into the organization's online Learning Management System and staff would need to take time during their shift to complete the training. Currently the findings are being

shared; the leaderships decision, to proceed or not, will determine when the staff would receive training.

Comparison of Baseline and Post Implementation Data

Prior to use of the TST, data have been collected by a data analyst and monthly reports were generated. These reports highlight information that was reported by staff from the post fall huddle process. When a fall event occurs, staff is required to submit a report into the organization's electronic risk management system. The data analyst gathers and organizes this information to present to each department monthly. These reports did not give a baseline status of contributing factors or give solutions to the clinical problem of falls and falls with injury. The TST performs an in-depth analysis of every fall event reported in the online tool through built in algorithms. This process identifies potential root causes of falls and presents possible solutions to prevent future falls.

After entering the 26 falls event data into TST, the tool has yield results identifying potential contributing factors and targeted solutions. The results are presented in text format, pie charts, and graphs which allows staff to see the problem areas clearly. There are 13 contributing factor categories and within these categories the tool has identified 134 contributing factors to falls and falls with injury.

The categories are bathroom assistance, medication issues, overestimated patient ability, commode availability, assistive device issues, no patient assistance, assessment issues, education issues, call light issues, equipment issues, fall risk identification, environment issues, and alarm issues. The top five categories of contributing factors are: bathroom assistance 21.6%, medication issues 14.9%, overestimated patient ability 14.2%, commode availability 8.2%, and

assistive device issues 7.5%. For each contributing factors category, there are TST documents generated listing possible interventions. The data output will be analyzed by several key stakeholders to determine if this information is clinically relevant to their unit.

There is a consensus among the frontline stakeholders that this information is valid and presents a picture of the fall events that occur. Currently, the contributing factors are being reviewed by key stakeholders to determine for which factors to implement solutions. The targeted solutions presented for each category of contributing factors are also being reviewed to decide what intervention should be attempted. If staff decide to target bathroom assistance the targeted solution plan is already available.

The solution guide would list detailed examples for potential problems, contributing factors, potential solutions and action plans. For example, the guide states that one potential problem is urinary urgency due to medications for which a contributing factor is the patient was left alone while toileting. A potential solution proposed in the guide is to create a toileting schedule and remain with the patient while toileting. The action plan educates patients and staff regarding the potential solution which could be a protocol to be followed such as remaining with patients while toileting.

The future state of the project would include ongoing monitoring of fall events. Staff would start entering any new fall events that occur during the improvement phase. Improvements will be reflected on the graphs and pie charts (Appendix D) as the patient days are updated, contributing factors change, and fewer falls or falls with injury occur. Post implementation of the Targeted Solutions Tool (TST), if the data output displays that fewer falls are occurring related to bathroom assistance, then staff can maintain their approach with that contributing factor, and implement solutions targeting another contributing factor.

Moving forward the staff will follow the plan, do, study, act (PDSA) approach to adjust the targeted solutions as needed to reach the desired outcomes or to determine the need for adjustments. The PDSA cycle will help the staff build knowledge about the problem and the tool, test the change, and implement changes based on what was gleaned (Langley et al., 2009).

<div align="center">**Implications for Practice**</div>

Reducing falls and fall related injuries could potentially have great implications for clinical practice. If the Targeted Solutions Tool (TST) could help with this clinical practice problem of falls this could potentially keep patients safe. This intervention could be a great tool to help with this complex clinical problem.

Successes & Difficulties Encountered

Process improvement projects can be met with some highs and lows when trying to get approval and permission to implement. One of the considerable challenges with this project was getting buy-in from key stakeholders. In June 2016 approval was sought to use the TST at the organization aforementioned. Through conversation with the Clinical Nurse Leader (CNL) the decision was made to meet with several key individuals.

A conversation with the Nursing Director of Clinical Services was conducted. The goal of this session was to inform the director of the value of the tool based on the literature and to present results of success from other sites that have utilized the tool. The project team communicated how the TST could be implemented at the microsystem level and with successful outcomes be spread throughout the organization. The director asked many questions and expressed the need to communicate with the Performance Improvement Coordinator of the

Clinical Quality Management Department and the Director of Integrity and Compliance, Security, and Guest Services to get approval from a data use perspective.

The purpose of the next meetings was to have these stakeholders review the data collection form, ensure the patient's data were de-identified, to query The Joint Commission (TJC) regarding data security, and to confirm the existence of a current business associate agreement. All of these meetings were held in June over a series of four weeks. While the project team was waiting for approval the organization received an accreditation visit from TJC. This visit was unrelated to the TST as the tool has no bearing on accreditation, but contributed to a delayed response giving approval to use the tool. It was not until August 2016 before approval was received to proceed with use of the tool.

During the time of this delay the team continued to meet with other key stakeholders that had been working to help reduce falls. Steps were taken to meet with the unit manager of the project unit, and with a clinical manager and CNL that works with the organization-wide fall team and approval was granted. Through these conversations it was suggested to the team to seek approval from the Internal Review Board (IRB) chair and the Executive Director of Research and Innovation in order to confirm that the project was quality improvement versus research.

At this point, data entry was already in process, but the project faced a potential interruption until the nature of the project was clearly identified as either research or quality improvement. This process prompted the Director of Nursing Practice and Development to get involved to help clarify and validate that the project to reduce falls was quality improvement and not research. There was also a meeting with a director of a local, specialty care hospital that had implemented the TST on a unit in his/her organization. This meeting provided an opportunity to hear firsthand how the tool works which provided great insight.

Some of the insights shared was the challenge of attempting to train all of the nurses how to use the TST fall event forms. The organization determined it would not be feasible to train the entire nursing staff. They identified a data collector that would enter the falls event data based on reports from the staff. Another insight was viewing the findings that were generated by the tool. The data generated was presented in the organized fashion as advertised by the TJC. The contributing factors to the falls at this organization were accurate as confirmed by the director. The challenge for the organization was that the solutions suggested by the TST were tailored more for the inpatient care setting. Reviewing this information helped to validate the potential use of the TST in the identified microsystem of this protocol.

This was a challenging experience that required patience and persistence. Performing quality improvement projects requires that the project be vetted. These type of projects have the potential to affect the safety and wellbeing of the patient. There are liability issues that could affect the organization. Walking through this process helps the project to be owned by the organization and not just built around one individual. It took 6 months to get through the above process, but now potential solutions are being indicated by the TST in hopes to reduce the occurrence of this complex clinical problem.

Strengths

Some of the strengths of this project include a strong support from key stakeholders; the benefits of using the TST outweigh the cost of implementation; and the use of the TST would not necessitate additional workload for the staff as the use of the TST was just a different process. Overall the project team interacted directly or indirectly with 14 different key stakeholders to seek approval and among this group there was favorable response to proceed with the falls prevention project. This was not a smooth process and was met with many challenges. The

leaders examined the tool with an almost microscopic approach. This is a strength because buy-in was received from the key stakeholders and the project team did not have to proceed unilaterally.

Weaknesses and Limitations

One weakness will be getting staff trained. Staff are so busy caring for patients that it is difficult to prioritize time during the day to receive education. Educational offerings on the unit are not budgeted such as to allow staff to complete them during off shift hours but must be completed during their workday.

Changing the process for post fall assessments could also be a weakness. Change can ignite many emotions ranging from hostility to acceptance (Langley et al., 2009).To help with possible resistance, efforts have been underway to keep the staff informed throughout the project. Such venues as staff meetings, leadership meetings, the falls representative meetings, and the unit based council meetings were utilized. Information and updates are shared with staff on how this change will affect and improve current fall processes as well as benefit the patient.

Sustainability

Sustainability is necessary to ensure the patient continues to receive the best care. As part of the sustainability plan, the project lead will be the unit's CNL. This project will have shared governance between the CNL, unit based council, and the unit's fall representatives. Discussions are taking place to decide how and when staff will be trained so there is complete ownership by every staff member on the unit. To ensure sustainability, leadership will need to hold staff accountable to following the new process.

Healthcare Trends

Organizations like the Center for Medicaid and Medicare Services have deemed falls a preventable event (Quigley, 2016). Not attending to these fall events could potentially affect reimbursement and accreditation of healthcare organizations. The Joint Commission has identified the reduction of falls and falls with injury as part of their National Patient Safety Goals (Bemis-Dougherty & Delaune, 2008). Kwan and Straus (2014) have cited falls and falls with injury as a multifactorial problem that should be combated with multifactorial interventions. The TST follows a multifactorial approach in the tool's assessment of the problem and offers multiple targeted solutions to prevent falls and falls with injury.

MSN/CNL Essentials

The Essentials helped with goal and objective setting for the immersion experience. Every project should have a plan and tools to help the team achieve the plan. The MSN/CNL Essentials provided guidance for the master's prepared nurse to lead process improvements and to provide lateral integration of care throughout the healthcare continuum. Following the review of the Essentials, an opportunity presented itself to develop specific, measurable, agreed upon, realistic, and time sensitive goals (SMART goals) (Lawlor & Hornyak, 2012). Each step of this process improvement project was guided by the SMART goals.

The SMART goals are (1) Implement the Targeted Solutions Tool (TST) to lead a change initiative that will produce evidenced based outcomes related to preventing falls and falls with injury by December 12, 2016 (2) Disseminate data r/t the evidenced based protocol improvement project related to falls and falls with injury by December 9, 2016. The Essentials are *Essential IV:* Translating and Integrating Scholarship Into Practice Competencies, *Essential V:*

Informatics and Healthcare Technologies Competencies, *Essential VI:* Health Policy and

Advocacy Competencies, and *Essential VII:* Inter-professional Collaboration for Improving

Patient and Population Health Outcomes Competencies (AACN, 2013).

Essential IV was accomplished through providing evidenced based literature to validate

the project and the clinical problem; and to lead change initiatives; using inter-professional

collaboration across the healthcare team to improve patient care outcomes related to falls.

Essential V guided the process of analyzing and collecting data related to fall events from the

electronic health record (EHR) and working with the online Targeted Solutions Tool. Guidance

for partnering with organizations such as The Joint Commission (TJC) displayed the use of

Essential VI to help provide advocacy, and collaboration with key stakeholders, and regulatory

agencies to foster process improvement. Throughout the entire project Essential VII has been

enacted. It would be challenging to implement a process improvement project without the

collaboration of key stakeholders that need to embrace, endorse, and help lead change initiatives

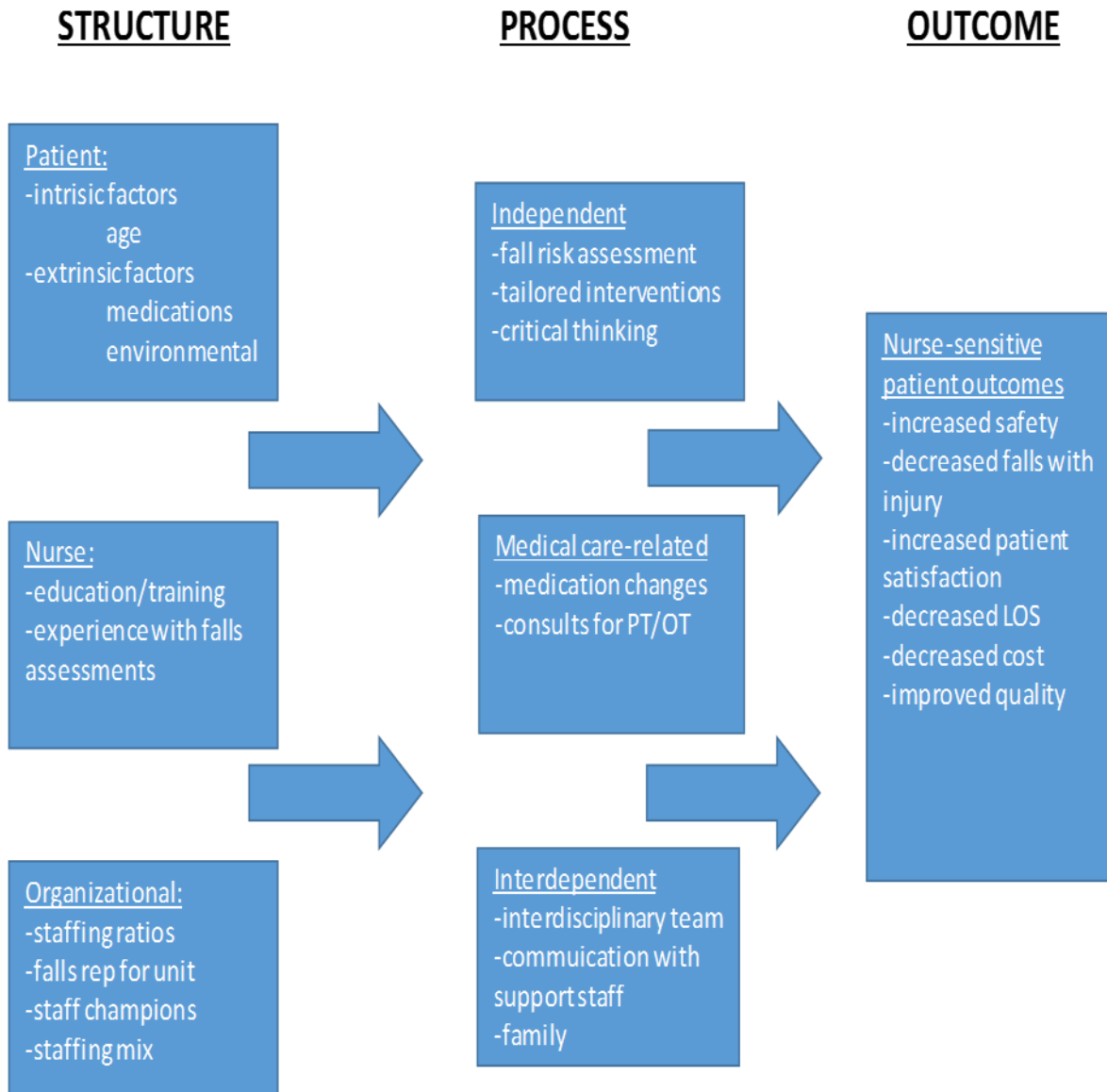to increase the potential for success.

These Essentials help the MSN prepared nurse to take a view of the horizontal and

vertical levels of the health care system to ensure all the key stakeholders are engaged on the

macrosystem, mesosystem, and microsystem level to prevent gaps in care for the patient (Nelson,

Batalden, Godfrey, & Lazar, 2011). Every step described above, from working with

organizational leadership, inter-professional collaboration, and clinical prevention is for the

purpose of improving patient outcomes. These Essentials help to narrow the focus from a broad

view to a more targeted view at the microsystem level. Utilizing this approach prevents key

components from being overlooked.

Conclusion

Falls and falls with injury can have devastating effects on patients and their families. Reducing these harmful events is a worthwhile cause on behalf of patients. Use of the Targeted Solutions Tool has been shown to reduce falls with injury by 62% and falls by 35% (TJC, 2016). This tool has the potential to help organizations reduce lengths of stay, prevent harm to patients, and save a significant amount of money in healthcare cost. Falls are a complex clinical problem but with a multifactorial approach and coordinated effort, potential solutions can lead to reductions in these harmful events.

Appendix A

Nursing Role Effectiveness Model for Falls with Injury

STRUCTURE   PROCESS   OUTCOME

Patient:
-intrisic factors
     age
-extrinsic factors
     medications
     environmental

Independent
-fall risk assessment
-tailored interventions
-critical thinking

Nurse-sensitive patient outcomes
-increased safety
-decreased falls with injury
-increased patient satisfaction
-decreased LOS
-decreased cost
-improved quality

Nurse:
-education/training
-experience with falls assessments

Medical care-related
-medication changes
-consults for PT/OT

Organizational:
-staffing ratios
-falls rep for unit
-staff champions
-staffing mix

Interdependent
-interdisciplinary team
-commuication with support staff
-family

Adapted from Doran, D.D. (2011). *Nursing outcomes: The state of the science.* Sudbury, MA:

Jones & Bartlett Learning.

Appendix B

Model for Improvement

What are we trying to accomplish?

How will we know that a change is an improvement?

What change can we make that will result in improvement?

Act | **Plan**

Study | **Do**

Adapted from Langley, G.J., Moen, R.D., Nolan, K.M., Nolan, T.W., Norman, C.L., & Provost,

L.P. (2009). *The improvement guide: A practical approach to enhancing organizational*

performance (2nd ed.). San Francisco, California: Josey-Bass A Wiley Imprint.

Appendix C

Survey on fall

Please complete and thanks in advance.

Why do patients fall and sustain injuries?

What are some ways that could improve or prevent falls with injury from occurring?

Do you feel you have the necessary tools to prevent a fall with injury?

How comfortable are you with completing the Morse Fall Risk Screen? Circle best answer

5=very comfortable **4**=comfortable **3**=moderately comfortable **2**=somewhat comfortable **1**=not comfortable

Do you feel you could benefit from more education on how to complete the Morse Fall Risk?

Does the Morse Fall Risk Assessment adequately capture a thorough assessment of the patient's risk?

Do you know how to evaluate if a fall is with an injury or no injury?

This survey is for gathering information related to falls. Please complete and place in the envelope on the huddle board. Questions see Fred or Beth. Thanks for your help.

Appendix D

Contributing Factors That Led to Falls
Baseline Data
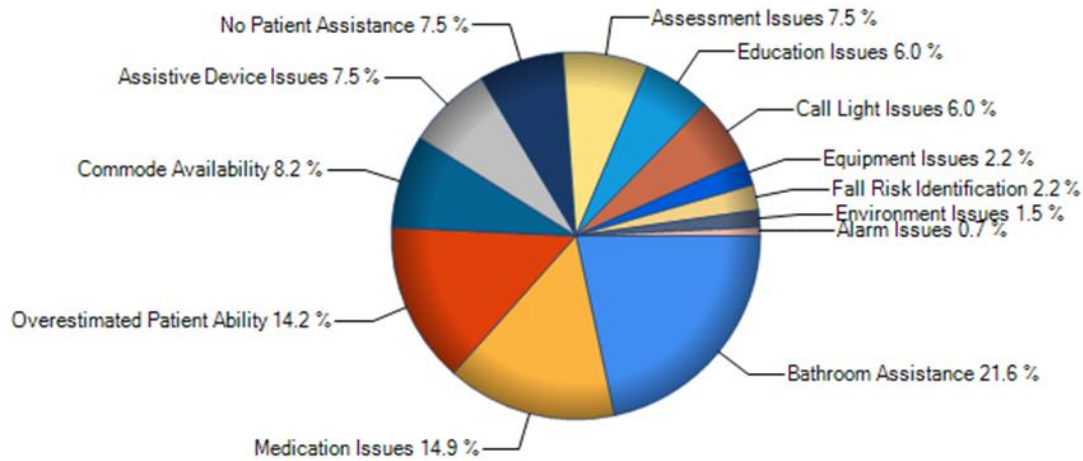
Contributing Factor	Sym	Count	Percentage	Contributing Factor	Sym	Count	Percentage
Bathroom Assistance		29	21.6 %	Education Issues		8	6.0 %
Medication Issues		20	14.9 %	Call Light Issues		8	6.0 %
Overestimated Patient Ability		19	14.2 %	Equipment Issues		3	2.2 %
Commode Availability		11	8.2 %	Fall Risk Identification		3	2.2 %
Assistive Device Issues		10	7.5 %	Environment Issues		2	1.5 %
No Patient Assistance		10	7.5 %	Alarm Issues		1	0.7 %
Assessment Issues		10	7.5 %				

Total Number of Falls = 26

Total Number of Contributing Factors = 134

Adapted from The Joint Commission. (2016). *NEW! Targeted solutions tool for preventing falls*.

Retrieved from http://www.centerfortransforminghealthcare.org/tst_pfi.aspx

Appendix E

S.M.A.R.T. Goals & Objectives

Implement the Targeted Solutions Tool (TST) to lead a change initiative that will produce evidenced based outcomes related to preventing falls and falls with injury by 12/1/16. (Essential 4: Competency 1) (Essential 5: Competency 4) (Essential 6: Competency 1)

1. Continue to discuss with CNL steps to lead change initiatives by 10/15/2016-- Goal Met, but will be an ongoing discussion
2. Continue to identify key stakeholders in the microsystem that will help lead change initiatives by 10/15/16- Goal Met
3. Attend falls team meeting monthly by 5/5/16. -- Goal Met, but will be ongoing
4. Attend Lacks Leadership meeting to present tool and get buy-in from leadership by 7/22/16. -Goal Met
5. Meet with Jill Kaminski- data analyst to review falls data related to past and current state by 7/22/16-Goal Met
6. Meet with Quality Assurance staff (Laura Maka or Jill Giddens) to discuss the regulatory agencies and their interactions and the use of patient data by 7/28/16-Goal Met
7. Meet with Mark Iverson-Organizational Integrity & Security Officer to seek approval for use of the TST tool r/t patient information by 7/1/16. -Goal Met
8. Discuss with CNL preceptor to gather a list of patient care technologies and information systems used for data mining related to falls by 10/31/16-Goal Met
9. Meet with an Information Systems representative/Nursing Informatics team to learn more about the information systems and patient care technologies that could affect the implementation of the TST tool by 10/22/16. -Goal Met, Staff will use the TST for training and to record fall events information and no changes will be made related to informatics.
10. I will learn how to describe the interaction between the various regulatory agencies requirements by 11/4/16- Goal Met, but will be an ongoing discussion
11. Discuss with CNL how the regulatory agencies affect outcomes and safety by 11/18/16- Goal Met, but will be an ongoing discussion

Disseminate data r/t my EBP improvement project r/t falls and falls with injury by 12/9/2016. (Essential 4: Competency 8) (Essential 5: Competency 7) (Essential 7: Competency 6)

1. Learn more about using A3 problem solving and planning tools by 12/1/16-Goal Met
2. Meet with Jenna Beckman and Collin Chapin-Tovey assistants to Margy Dayton to learn more about A3 use by 6/3/16-Goal Met and again PRN. -Goal Met
3. View You Tube video at https://www.youtube.com/watch?v=JaVMUoQBygE on A3's by 11/18/16.
4. Discuss A3 use with CNL preceptor as a decision making tool to gather data by 9/16/16-Goal Met, but will be an ongoing discussion
5. Continue to discuss with CNL preceptor how she has disseminated changes (poster presentations etc.) in practice in the past by 10/31/16- Goal Met, but will be an ongoing discussion
6. Meet with Tiffany Barnes the Instructional Media Coordinator to learn techniques and tools for presented information that will be disseminated by 10/31/16-Goal Met through poster presentation session with Dr. Davis. Also watched YouTube video related building flowcharts etc.
7. Attend a CNL meeting to learn and hear about information being disseminated by 11/18/16- Goal Met, but will be an ongoing discussion
8. Have the CNL preceptor discuss the different modalities to disseminate healthcare information by 10/31/16- Goal Met, but will be an ongoing discussion
9. Meet with an Information Systems representative to learn more about how to disseminate healthcare information by 11/18/16 Goal met Discussed with preceptor.
10. Develop poster presentation to present to microsystem staff and GVSU by 12/9/16. -Goal Met on 12/9/2016.

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