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Improving Communication to Reduce Patient Falls in a 48-Bed Medical-Surgical Unit

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Abstract

Problem: Patient falls has been associated with increased morbidity, mortality and decreased quality of life. The increase in total patient falls for 2018 relative to 2017, and a spike of 10 patient falls for the month of June 2018 from a baseline of 5.3 falls per month has gained greater attention to reduce patient harm from falls while hospitalized. Prevention of falls minimizes patient exposure to the possibility of being injured. Despite efforts to curtail patient falls, improvement in communication is essential to address the safety issues surrounding improving quality of care practices, and consequentially reduce un-reimbursable hospital costs associated with patient injuries.

Context: The improvement project was implemented in the Medical-Surgical microsystem located at a suburban Level II trauma center. The patient population consist of trauma, orthopedics and general medical-surgical patients where approximately 50% of the patients have a SCHMID fall risk score of 3 or more. Efforts at patient falls prevention has been centered at addressing the root causes of the falls, however the focus on effective communication to raise staff awareness of the urgency of addressing patient risk has not been consistently integrated into the standard practice and emphasized enough during the shift hand off report huddles.

Interventions: The interventions employed in this improvement project were based upon assessment of the root causes of the falls. The interventions were consistent implementation of the fall prevention strategies, communication improvement in disseminating the fall risk patients through listing of the SCHMID scores in the assignment sheet, and verbal communication of the fall risk patients during shift huddles. Safety discussion of adherence to falls prevention practices

and highlighting of the fall risk patients increases staff awareness to be mindful of the patients who are at risk for falls and injury.

Measures: Outcome measure of patient falls reduction with a target goal of preventing 1 patient fall per month from a baseline of 5.3 falls per month will be gauged by tracking historical patient falls trend. Another outcome measure is the HCAHPS patient satisfaction indicators with the goal of 4.0 STAR rating from a baseline of 3.5 STAR score. Process measures will be assessed whether adherence in listing of the SCHMID scores is consistently included in the assignment sheet with a goal of 50% compliance. A balancing measure will be evaluated whether the shift huddles were completed within 5 minutes and whether incremental overtime were incurred as a result of the communication plan.

Results: Run chart pattern showed a decrease in total patient falls in the medical-surgical microsystem relative to the total falls within the hospital from 40% in July 2018 to 27% in September 2018. The HCAHPS STAR rating for September 2018 4.5 (prelim.) exceeded the goal for patient satisfaction related to nurse responsiveness and communication. Inclusion of SCHMID scores in the assignment sheet rose to 48.9% in September 2018 from 0% in July 2018, there was a decrease use of fall risk “FR” only at 8.3% in September 2018 from 30% in July 2018, and the use of none-listed was down to 37.2% in September 2018 from 69.9% in July 2018. Shift huddles were kept at 5 minutes and no incurred incremental overtime resulting from inclusion of the communication improvement during the shift huddle.

Conclusions: Improvement in communication during shift huddles in tandem with adherence to the falls prevention protocol resulted in a leveling in the number of patient falls in the Medical-Surgical microsystem whereas other hospital units without the communication improvement showed an overall incline in the number of patient falls starting July until September 2018.

Continued adherence in the communication of fall risk patients during shift huddles, adherence to the falls prevention strategies currently in practice are essential in the sustainability of falls prevention. Continued monitoring of patient falls is needed in order to correlate the communication improvement with reductions in patient falls.

Introduction

The Institute of Medicine (IOM) report *To Err is Human, Building a Safer Health System* is a call for action for healthcare organizations to address the safety gaps along the continuum of care that we continue to see today (IOM, 2001). Efforts to improve patient outcomes as outlined by the Quality and Safety Education for Nurses (QSEN) incorporate patient-centered care, interprofessional collaboration, use of evidence-based practice (EBP), continuous quality improvement, focus on safety, and the use of informatics to improve the care delivery in any microsystem (Stalter & Mota, 2018). The prevalence of patient falls and injury in the hospital setting has unfavorable patient outcomes that lead to increased mortality, diminished patient independence, reduced functional capacity and is associated with lower quality of life (Leavy, Byberg, Michaëlsson, Melhus, & Åberg, 2015). Patient falls result in increased costs for the patient due to prolonged hospital stay and inability to be productive due to the sustained disability, and for the healthcare organization due to the incurred un-reimbursable costs associated with longer length of stay in the hospital of about 6.3 days (Tzeng & Yin, 2017). Identification of patient risks factors for falls, adherence to a falls prevention protocol, staff mindfulness regarding patient safety and the environment, a comprehensive nurse handoff report, and ongoing safety conversations during care team huddles strengthens the safety factors within the microsystem in order to mitigate patient falls and injury.

Heightened attention to reduce patient falls and injuries is an organizational priority as this is directly linked to the organizational mission of providing safe, affordable and high-quality healthcare for the patients and local community being served. Patient falls and injury has devastating fiscal impact on the organization, contributes to increased healthcare insurance premiums, decreases reimbursement for Medicare patients for value-driven care, and can be a factor that result in decrease membership in the long run (see Appendix O: SWOT Analysis). Importantly, maintaining market competitiveness through cost avoidance from patient injuries is essential to keep other healthcare organizations at bay when other they encroach and offer competitive pricing for comparable healthcare services.

Problem Description

The setting of this quality improvement project is the 48-bed Medical-Surgical (MS) trauma unit at a Northern California 140-bed Level II Trauma hospital. The MS unit is composed of 3A and 3B, each with 24 bed capacity operating at approximately 70% occupancy. The 3A MS patient population consist of trauma patients, general medical and surgical patients, and on rare occasion pediatric patients. The 3B MS patients are generally orthopedics patients and also comprise of general medical and surgical patients. The average length of stay for 3A and 3B patients is approximately 3 days with the majority of patient age range between 45 to 75 years. The top diagnoses for the MS unit is abdominal pain, sepsis, and orthopedic procedures consisting of hip surgeries and knee arthroplasties. Many of the patient population served in the MS microsystem receive a number of pain medications, spinal blocks, antibiotics, anti-anxiety medications, and other polypharmacy due to one or more chronic medical conditions. Approximately 50% of the patient population in the MS area are identified as a fall risk with a SCHMID score of 3 or greater.

Patient fall is defined as any unintentional patient descent to the floor with or without injury that resulting from physiological or environmental conditions regardless of whether or not the patient was assisted to the ground by the staff to minimize the full impact of the fall (ANA, n.d.). Physiological conditions include fainting, dizziness, syncope and weakness, while environmental conditions include a host of factors such as slippery floor, tripping from obstacles or result from poor lighting conditions conducive to the fall. Current falls prevention practice involves assessment of all patients using the validated SCHMID fall risk assessment tool and this is completed upon admission, every shift, after a fall, after a change in level of care or as needed by scoring the patient "1" point on five areas: mobility, mentation, elimination, prior fall history and current medications. With a score of three or more, the patient is at risk for falls. The SCHMID + ABCS factors in the SCHMID scores and accounts for the ABCS: 1) Age: greater than or equal to 75 years of age; B) Bones: any condition that affects bone strength; C) Coagulation: any patient anti-coagulated or with impaired clotting factors; D) Surgery: first 48 hours post-orthopedic surgery. Patients with SCHMID + ABCS scores have a high risk for injury when a fall is sustained.

Hospital-wide falls prevention practices implemented in the MS unit are in line with the measures recommended by the National Quality Forum (NQF) on falls prevention which include screening for future fall risk assessment and inclusion of a plan of care to prevent falls (NQF, 2017). Current interventions in practice is called the TEAM bundle (Toileting, Environment, Activity, Medication). Toileting includes intentional hourly rounding and scheduled toileting to address the toileting needs of the high fall risk for injury patients. Environment factors necessitate placement of a "leaf" sign outside the room for all fall risk patients, a yellow armband, placement of the fall risk patient in a high visibility room, ensuring that the bed is in a

low and locked position, use of a well-fitted and non-skid footwear, bed and chair alarms are activated, call lights, personal items and mobility devices within patient reach, minimizing clutter, and the use of ambient lighting for the task at hand. Activity relates to whether the patient is confused and has a high risk for fall or injury which necessitate education of the patient and family regarding required assistance by staff whenever the patient is out of bed (OOB). Patients taking medication for anticoagulation therapy, anti-anxiety and anti-psychotic medications, patients with inherent coagulopathies, patients who received a spinal block, and post-orthopedic procedures are especially at high risk for injury and must be assisted continuously when out of bed.

Available Knowledge

The PICO question: What is the best method to identify (I) at risk MS patients (P) to decrease patient falls (O) as compared to the general MS patient population who are not at risk for falls (C)? A database search in CINAHL, PubMed, Scopus, Cochrane Database and Joanna Briggs Institute EBP Database was performed using the words in the PICO question, yielding 125 studies which were further narrowed down to 6 for inclusion after grading the quality of the studies using the John Hopkins Nursing Evidence Based (JHNEB) forms for research and non-research. Refinement of the PICO question and inclusion of the words “cost” and “outcomes” generated an additional 85 studies that was further narrowed down for inclusion along with the EBP studies listed from the PICO question (see Appendix B: Evaluation Tables).

Studies by Yu & Zecevic associated the high prevalence of falls with patients who are on anti-depressants, sedatives and anti-seizure medications and have a high likelihood of fall recurrence (Yu & Zecevic, 2018). Studies by Tzeng & Yin identified the top 9 out of 21 interventions associated with effective fall prevention and they include keeping beds locked, bed

in a low position, call light within patient's reach, floor surface clean and dry, removal of trip hazards, adjustment of lighting based on activities, completion of a fall risk assessment upon admission, use of non-skid well-fitting footwear, and adjustment of care environment tailored to the meet the specific needs of the patient (Tzeng & Yin, 2017). Patients who had joint replacement procedures, falls history, patients taking psychotropic or mind-altering medications has significantly increased risk for falls due to gait disturbances and therefore enhanced toileting practices is essential to decrease the number of falls (Aryee, James, Hunt & Ryder, 2017).

Systematic review of cross-sectional studies examining patient gait, a global marker associated with central, peripheral and neuromuscular dysfunction links better cognition such as memory and thought processing with gait speed in older adults (Demnitz e al., 2016). Male patients with comorbidities who have severe pain at rest, distress due to drowsiness, itchiness, dizziness or extremity swelling and gastrointestinal symptoms is associated with increase fall risk due to the sense of urgency (Lerdal et al., 2018). Nurses have a key role in assessing whether a patient is at risk for falls and whether to implement fall preventive strategies (Cox et al., 2015). Staff nurse training on intentional hourly rounding on fall risk patients to address the toileting needs decreased their patient fall rate when staff engagement, communication, teamwork and adherence to a fall prevention process are set in place (Morgan et al., 2017).

The multiple studies evaluated for inclusion as evidence-based practice emphasized the importance of screening the patient for falls and history of falls, assessment of gait and balance, and implementation of measures to prevent patient falls (see Appendix W: Evaluation of Studies JHNEBP). When organizational domains of teamwork, communication, adequate staffing and staff development are in place and the focus is on patient safety, care experience and outcomes through improvement in responsiveness by hospital staff, the healthcare organization fosters a

care environment for which the nurses are able to meet the diverse needs of patients (Niederhauser & Wolf, 2018). Establishing a rapport with the patient and family to build trust, taking the time needed to contextualize the care, and engaging the patient collaboratively in the care goals enable patient and family understanding of the patient's healthcare needs, risks, promotes care satisfaction and better patient outcomes (Desborough et al., 2018).

Rationale

The conceptual framework of this quality improvement project is based upon the Institute for Healthcare Improvement (IHI) Model for Improvement (MFI) to identify patients at risk for falls, implementing measures to address risk in the environment of care, and to gather and track patient fall trends and injury metrics (AHRQ, 2013). Assessment of current falls prevention processes and amending current practices using the Plan-Do-Study-Act (PDSA) process by adherence to accurate falls assessment and falls prevention processes with the overall goal of reduction in the number of patient falls, decrease in the number of patient injury, improvement of the safety processes within the microsystem, foster collaboration and team approach to care, and increase staff awareness of evidence-based practice of falls prevention. Purposeful hourly rounds include scheduled toileting for high risk for falls and injury patients where the patient must not be left in the shower alone is a top area to improve in regard to patient fall prevention, while cumulatively, it is also essential to obtain an accurate SCHMID and SCHMID + ABCS assessment scores, ensuring that the bed and chair alarms are activated, and to educate family members to call for assistance whenever the high fall risk for injury patient is out of bed (see Appendix C: Run Charts Patient Falls in 3A, 3B, All Units and Opportunities). Staff engagement, being present for the patient, authenticity in action and thought, mindfulness and caring actions to meet the patient's specific needs, intentions and incorporation of patient past

experiences can create a trusting and caring environment (Bent et al., n.d.). Authentic presence provides understanding and connectivity to the needs of the patient and anticipates potential risks that patients can be exposed to. Nurse engagement in the caring practices strengthens the nurse-to-nurse interaction, improves interprofessional collaboration and teamwork efforts which in turn positively impacts patient experience and outcomes.

Specific Project Aim

The specific aim of this improvement project is to prevent one patient fall per month in the MS unit from a baseline of 5.3 patient falls per month by September 30, 2018. A corollary aim is to improve patient satisfaction STAR rating to 4.0 from a baseline of 3.5 by September 30, 2018. The project will focus on improving the start of shift huddle by incorporating the fall risk SCHMID scores in the assignment sheet and highlighting the high fall risk patients as a safety message to raise staff awareness of the fall risk patients. In addition, providing a Falls Prevention Instrument (FPI), a tool for the staff to reference as a quick guide on actionable items needed in order to address the specific care needs of the patient to reduce the number of falls. Continued staff education is essential in regard to specific factors that contributed to past patient falls in the facility and the approach on using the FPI is to identify factors to help reduce the incidence of patient falls.

On August 1, 2018, a meeting with the care team stakeholders was done to identify patient factors who are at-risk for falls, identify elements of the current falls prevention process that need to be emphasized to reduce number of patient falls. The high fall risk patients were identified by the Administrative House Supervisors (AHS) during admission and to ensure appropriate placement of high fall risk patients close to nurse's station for direct observation and ease of access as needed. By September 1, 2018, the goal for the Assistant Nurse Manager

(ANM) is to identify the fall risk patients and list their SCHMID scores on the assignment sheet prior to the shift huddle. The ANM also need to cite the high risk for fall patients during the start of shift huddle with the incoming staff to raise awareness of the fall risk patients. By mid-September, the goal is for stakeholders to formulate an outline of the FPI and to get clearance from Quality Department regarding the use of the FPI. The FPI will be posted at the doorway similar to the one currently in use for the Hospital Acquired Pneumonia (HAP) prevention and staff can easily reference actionable items. By September 30, 2018, will longitudinally track adherence to SCHMID score listing in the assignment sheet, track the use of FPI, track the number of patient falls and the STAR Scores.

Methods

In support of the mission and vision of the organization, a strategic plan of action is imperative to achieve a high level of quality, safety and efficiency goals for the continued affordability of care for the patients and local community being served. Retrospective data collected by the Quality Department regarding patient falls minus patient identifiers will be trended and analyzed during the period of 2017 to the current month-to-date in 2018 (see Appendix C: Run Charts Patient Falls in 3A, 3B, All Units and Opportunities). A microsystem assessment was performed for the Medical-Surgical unit to appreciate the environment of care, and in conjunction using the Quality Department Performance Indicators, nurse feedbacks, and patient falls data trends were compiled and analyzed for opportunities for improvement.

Reduction in patient falls and injury requires a commitment to the safety of patients and nurses from a multi-disciplinary approach. The increased number of patient falls contributes to the negative perception by the patient and the public of poor quality care and can ultimately result in decreased membership and increased in insurance premium costs due to the longer

length of stay associated with patient falls and injury (see Appendix O: SWOT Analysis). One patient fall results in additional 4.8 hospital days at a cost of approximately $6,000 per day, which amounts to $28,800 per patient (KP internal information, 2018). Prevention of one patient fall per month can result in a cost avoidance of $345,600 per year (see Appendix P: Cost Benefit Analysis). The cost utility of falls avoidance results in better patient outcomes, improved quality of life, and consequentially decreased cost for the patient and the organization.

Interventions

The continued trend and sporadic spikes in patient falls necessitate improvement in falls prevention efforts from a number of avenues and to focus on the data that suggests where opportunities for improvement exists. Retrospective data from the Quality Department suggests that opportunities exist in intentional hourly rounding to address toileting needs, not leaving high fall risk patients in the bathroom or shower alone, accurate and consistent SCHMID and SCMHID + ABCS fall risk assessments and documentation in HealthConnect, activation of bed or chair alarms, and return demonstration of family member understanding to call for assistance when the high fall risk patient will be out of bed (See Appendix C: Run Charts Patient Falls in 3A, 3B, All Units and Opportunities). To address the multiple areas of concern, collaboration from frontline staff is essential in order to obtain insight and feedback to help address the patient fall issues in a sustainable manner. Improving staff communication during start of shift huddles to raise staff awareness of the high falls risk patients is essential as feedback from Assistant Nurse Managers (ANMs) and frontline staff that this is not consistently performed. To address the multiple factors that lead to patient falls, establishing a Falls Prevention Instrument (FPI), a checklist will be presented to frontline staff for development, appropriateness and sustainability,

and in consultation with the Quality Department for HIPPA compliance, will function as a quick guide for staff to use as a reference that is pertinent to patient condition.

An initial assessment of the MS microsystem was performed using the Institute for Healthcare Improvement (IHI) Healthcare Team Vitality Instrument (HTVI) to obtain baseline staff perception of a supportive work environment, effective communication and team collaboration available to them (IHI, 2009). The IHI HTVI anonymous survey is a validated tool that provides a pulse of the staff perception, and in conjunction with data from the Falls Prevention Opportunity will guide the interventions to be implemented. The initial IHI HTVI survey outliers showed that staff is able to speak up for safety, however staff ideas to improve conditions in the unit were not considered (see Appendix V: Result of Assignment Sheet Audit and Shift Communication Audit). Post-intervention IHI HTVI survey did not result in any significant deviation from the initial survey. Inclusion of SCHMID and/or SCHMID + ABCS scores on the assignment sheet issued by the Assistant Nurse Manager at the start of shift huddle and disseminated to the incoming group of nurses highlight patients who are at high risk for falls. Inclusion of this safety overview during start of shift huddles and on the Nurse Knowledge Exchange (NKE) at the bedside is needed to increase incoming staff awareness of the patient risks.

Study of the Intervention

The current validated fall preventions measures in place requires consistent implementation by the frontline staff for it to be successful. Employment of the safety huddle message for the incoming staff is essential and evidence-based practice (EBP) studies support the process of improving communication to increase staff awareness. Limitations of this process are the inconsistent listing of SCHMID and SCHMID + ABCS scores in the assignment sheet and

variability in citing the high fall risk patients during the shift huddles. In consideration of the ANM plight and departure of 3 ANMs and 1 ANM who transitioned to the manager role, deficits in ANM role from a baseline of 5 ANMs short based upon organizational goals will pose addition burden on the ANM group. Until a dedicated group of ANMs are brought onboard, the successful implementation of this communication improvement process will be inconsistent.

Adherence to a falls prevention protocol necessitates a method by which the staff can easily visualize items needed items and quickly reference prompts for tasks to perform. Formulation of a Falls Prevention Instrument (FPI), a small laminated checklist sheet with the necessary tasks needed will be based upon pertinent patient condition, staff appropriate feedback and will be posted at the patient doorway to remind staff of the precautions and needed items before entering and leaving the patient room. The FPI will be initiated and updated by the staff nurses as needed. Audit of the use of the FPI can easily be surveyed with direct visualization during patient rounding. To determine whether the changes will result in an improvement, tracking the measures before and after implementation of the change process is essential (see Appendix B, Table 2: Interventions, Rational and Measurement).

Measures

Adherence to the current evidence-based practice of falls prevention and implementation of small changes to improve the process can contribute to reduction in patient falls. The overall goal is prevention of 1 patient fall per month from a current baseline of 5.3 falls per month by October 1, 2018, and will be tracked using the run chart (see Appendix C: Run Charts Patient Falls in Medical-Surgical 3A, 3B, All Units and Opportunities). Moreover, patient satisfaction scores regarding staff responsiveness and nurse communication can be tracked from HCAHPS

patient surveys and the target goal is 3.7 STARS from a baseline of 3.5 (see Appendix C: Care Experience STAR Rating).

Process measures of staff compliance to safe toileting activities, environmental checks, educational interventions and patient fall prevention process are implemented in order to keep the patient safe. Compliance to a falls prevention protocol is can be randomly audited and through direct observation of patient and environment.

Ethical Considerations

During the course of hospitalization, upholding patient autonomy and self-determination empowers patients to make decisions that is right for them. Nurses and healthcare providers have an ethical obligation of beneficence and non-maleficence to ensure that the environment of care and care provision prevents patient harm. Communication with patients in order for them to make an informed decision that is in line with their values, desires and goals is essential, and enables them to practice their right to free will. Disclosure and discussion of pertinent information regarding their understanding of the risks and benefits of their care is essential. In regard to patients who are identified as high risk for falls and injury, assistance in toileting needs will be essential and can contribute to decreased autonomy for patients who otherwise would have been able to independently care for themselves at home. Family members who normally care for patient at home take the initiative of getting the patient OOB without realizing the changes in patient physiological condition. Nurses need to communicate with the patient and family regarding the fall risk status of the patient and necessity that the patient and family verbalize the seriousness and consequence of a patient fall. There is also a potential for HIPPA violation if detailed items are listed in the FPI and posted in the doorway. To address the potential HIPPA issue is to just check medication or surgery and to not list specific details.

This quality improvement project was not subject to the Institutional Review Board (IRB) approval as the improvement processes is non-research and is an evidence-based improvement project. The CNL internship host hospital has an agreement with the university and no funding was received from Federal Agencies or research organizations which can have undue influence on the goals and outcomes.

Results

Inclusion of SCHMID and SCHMID + ABCS scores in the patient assignment sheet for use during the shift huddle communication with incoming staff is essential and is subject to the ANM ability and availability. Inconsistency of ANM availability and lack of a shift huddle on the night shift in 3A MS unit prompted the consolidation of 3A and 3B shift huddles on the night shift in order to provide leadership and to increase incoming staff awareness of the global and safety care needs of patient population in the unit. Results of the IHI HTVI staff survey, Assignment Sheet Audit for inclusion of SCHMID and SCHMID + ABCS, and the Shift Huddle Communication Audit will be discussed.

The anonymous IHI's HTVI staff survey before and after implementation of the communication improvement and verbal communication of the fall risk patients and safety discussion during shift huddles suggested two significant items which are outliers in the data obtained during the survey. The data from the interprofessional staff within the MS microsystem who responded to the survey suggest that staff were able to voice their concerns for the safety issues within their unit (see Appendix Q: IHI HTVI Pre-Intervention and Post-Intervention Surveys). However, the results also suggest that the staff was not supported to make improvements in the care rendered in the unit (see Appendix Q: IHI HTVI Pre-Intervention and Post-Intervention Surveys). Overall, the IHI HTVI survey indicate that although staff were able

to verbalize their concerns, they were not empowered enough to make meaningful improvements in the provision of care for the patients in the MS unit.

The Assignment Sheet Audit for inclusion of SCHMID and SCHMID + ABCS into the assignment sheet used by the ANMs and disseminated to the incoming staff during shift the shift huddle indicate that there is a progressive but inconsistent inclusion of the SCHMID and SCHMID + ABCS scores. In July 2018, there was 0% inclusion, while in September 2018 there was 48.9% inclusion of the SCHMID and SCHMID + ABCS scores in the assignment sheet. The use of fall risk (FR) only was 30% in July and decreased to 8.3% in September 2018 showed due to the decrease non-specific usage of FR only. Lastly, there was a decrease use of not listing any information about the fall risk patients from approximately 70% in July 2018 to 37% in September 2018 (see Appendix U: Result of Assignment Sheet Audit and Shift Communication Audit).

The Shift Huddle Communication Audit was initiated in September 2018 suggest that verbal communication during the shift huddles highlighting the fall risk patients has 100% compliance of verbal communication to incoming staff in identification of the fall risk patients. The audit also indicate that there was only 75% compliance in the use of safety discussion with the incoming staff (see Appendix U: Result of Assignment Sheet Audit and Shift Communication Audit). Overall, the audit suggest that there was verbal communication to the incoming staff of the fall risk patients but safety discussion going forward in the shift was not emphasized enough.

Patterns in patient fall in MS as compared to all the units suggests that patient falls in the MS unit leveled off during the implementation period between July 2018 and September 2018, while patient falls in other units where the falls prevention efforts of communication

improvement were not implemented indicate an increase in the number of patient falls (see Appendix C: Run Charts Patient Falls in 3A, 3B, All Units and Opportunities).

Discussion

Key findings of the improvement project is the importance of identification of fall risk patients, communication of the SCHMID and SCHMID + ABCS scores in the assignment sheet to disseminate to the incoming staff during shift huddle, the verbal communication of the high fall risk patients to the incoming staff during shift change, and the importance of the safety discussion and urgency of falls prevention. The emphasis of this improvement project is the communication portion of fall prevention approach and does not disregard the importance of adherence to fall prevention policies already set in place within the organization.

Continued adherence to ensuring the safety of patients by addressing the environmental factors of bed and chair alarm activation, call light, personal items and mobility equipment within patient reach, minimizing clutter and clearing the pathway, scheduled toileting, intentional hourly rounds to address the patient needs, the urgency in responding when alarms are activated, accurate assessment of fall risks taking into consideration patient history, procedures, medications and current physical and mental state of the patient, and the patient and family education of the need to call for assistance whenever the high fall risk patient is out of bed. Opportunities for improvement exists in the areas of consistent with intentional hourly rounding, staying with the high fall risk patients in the bathroom/shower, accurate fall SCHMID/SCHMID + ABCS assessment, consistent activation of the bed and chair alarm, and the avoidance of complacent approach in the care of high fall risk patients. Factors that contribute to make the change process successful are the ANMs who drive the implementation of documentation of the fall risk patients in the assignment sheet and the safety communication

during shift huddles. The interdisciplinary staff plays a significant role in being preemptive and extend themselves to ensure adherence to continuous patient safety efforts.

Summary

The overall goal of this patient falls prevention project is to improve communication and to raise staff awareness of the high fall risk patients in the Medical-Surgical unit with the specific goal of reduction of 1 patient fall per month from a baseline of 5.3 falls per month. The setting of this improvement project is in the 48-bed Medical-Surgical unit at a Northern California Level II Trauma hospital and the patient population consists of trauma, orthopedic, medical and surgical patients whereby approximately 50% are fall risk patients with a SCHMID score of 3 or more. Patient fall data since 2017 suggest that an intermittent pattern in patient falls occur with no clear indication of a cyclical pattern attributed to the time of year. This project implemented a communication process to raise staff awareness of the fall risk patients by improvements in communication by listing the SCHMID and SCHMID + ABCS scores in the assignment sheet, verbal communication of fall risk and safety issues during shift huddles, and the use of a falls prevention instrument to remind the staff of the actionable items to be undertaken with fall risk patients. Improvement in the communication plan is dependent upon consistency in ANM availability as they play a central role in all patient care activities that is crucial in the delivery of high quality and safe patient care. Unavailability of ANM hampers any improvement processes within the organization as many of the core activities within the microsystem is highly reliant upon the ANM.

Conclusion

Factors that contribute to make the change process successful are the ANMs who drive the implementation of inclusion of the SCHMID/SCHMID + ABCS scores in the assignment

sheet and discussion of the safety issues during shift huddles. The interdisciplinary staff plays a important role in the preemptive approach for falls avoidance and accountability in adherence to continuous patient safety efforts. Prevention of patient falls is a top organizational priority in avoiding harm to patients while hospitalized. Annual cost avoidance of approximately $345,600 can be achieved through avoidance of 1 patient fall per month (see Appendix P: Cost Benefit Analysis of Adverse Fall Event). The cost utility of patient falls prevention is the overall improvement in patient safety and communication within the hospital, improvement in patient outcomes by preventing falls that could result in debilitating injuries, improvement in the patient care experience, and ultimately meeting the mission of the organization in the provision of safe and quality care for the patients.

The sustainability of the communication improvement process will be dependent upon the continued efforts of the ANM and staff to be pre-emptive rather than reactive in addressing the risks within the system. Dissemination of the fall risk information pre-emptively increases staff awareness and empowerment in order to appropriately deploy efforts to keep the patients safe. Knowledge dissemination regarding patient falls risk must be included in the transitions of care as omission of the relevant information poses significant risks for the patient and care cannot be appropriately tailored to meet the specific needs of the patient. Improvement in communication has widespread implications for the nursing practice as relevant information is central to the nursing practice. The important role of the Clinical Nurse Leader (CNL) with this improvement project is understanding the workings and risks within the microsystem, garnering support from stakeholder groups regarding urgency of the improvement project, collaboration with frontline staff for obtain insight to the issues, and incorporation of benched-marked and evidence-based practices and tailoring it specific for the microsystem needs. The CNL training

provides the needed knowledge and skills that can be adapted in any setting along the continuum of care.

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Appendices

Appendix A: IRB Non-Research Determination Form.

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CNL Project: Statement of Non-Research Determination Form

Student Name: Chris Gella, RN

Title of Project:

Improving Communication to Reduce Patient Falls in a 48-Bed Medical-Surgical Unit.

Brief Description of Project:

This quality improvement project will focus on reducing the number of patient falls by 50% by identification of fall risk patients upon admission, compliance in the use of falls prevention process, RN adherence to purposeful rounding to address the 5P's (pain, potty, position, possession and pathway), and improve the communication between nurses to foster support and collaboration with other nurses to maintain a safety network for all the nurses and patients in the unit.

A) Aim Statement: By October 1, 2018, to reduce the number of patient falls by 1 patient fall per month from a baseline of 5 falls per month.

B) Description of Intervention:

1. Compliance of nursing staff to implement use the falls prevention process
2. Purposeful hourly RN rounding to address the 5P's: Pain, Position, Potty, Possession & Pathway.
3. To improve communication between nurses to enable nurse-to-nurse partnership and support each other in the provision of care for all the patients in the unit.

C) How will this intervention change practice?

Reduction in patient fall will result in increased quality of life for patients resulting less injury while hospitalized, decrease mortality and maximize recovery from their illness with less complication associated with falls. Reductions in longer length of hospital stay stemming from complications of a fall results in significant cost avoidance for the organization, maintain affordability of premiums, and the ability to meet the vision and mission of the organization to provide affordable and high-quality care to local community that it serves. Adherence to falls prevention practices and fostering collaboration promote a network of nurses who can support each other and for all patients in the provision of safe care.

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D) Outcome measurements:

1. Outcome –Track and trend the number of falls over time-goal 50% reduction in falls; and track HCAHPS STAR score – goal 4.0 STAR score.
2. Process - Staff compliance to use of Fall prevention checklist – goal 100% compliance.
3. Balancing – Improve communication, collaboration and teamwork to support each other and all patients.

To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (http://answers.hhs.gov/ohrp/categories/1569)

X This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.

☐This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**X**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**X**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**X**	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to	**X**	

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ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.		
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**X**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**X**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**X**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**X**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: "*This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.*"	**X**	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): Chris Gella, RN

Signature of Student: _____ **DATE 07/21/2018**

SUPERVISING FACULTY MEMBER NAME (Please print):

Signature of Supervising Faculty Member

DATE_____

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Appendix B: Evaluation Tables.

Table 1: IHI Healthcare Team Vitality Instrument Anonymous Survey Results:

Institute for Healthcare Improvement's Healthcare Team Vitality Instrument (HTVI)										
35 total of annonymous survey, 22 responded. Response rate of 62.9%	Access to supplies & equipment	Timely response from support services	Discuss challenging issues with care team members	My ideas count in this unit	I can speak up for patient safety concern	Care team member can question decisions & actions of supervisors	Impt information is exchanged during shift changes	Managers & staff willing to try my ideas to make things better in unit	Complete patient information communicated during hand-off	Essential care equipmnt in good working condition
Survey date 9/11/2018 to 10/12/2018	3	3	3	1	3	3	4	2	3	2
	5	5	5	5	5	5	5	5	5	5
	5	4	5	4	4	2	4	4	4	4
	2	4	3	3	5	4	4	3	3	2
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	2	3	3	2	5	2	3	2	4	3
	1	2	3	3	5	2	3	2	4	5
	2	3	5	4	5	2	2	2	4	2
Mean	3.545	3.364	3.864	3.227	4.545	3.227	3.682	3.045	3.545	3.364

Table 2: Interventions, Rational and Measurement:

Intervention	Measures Before Implementation	Intervention and Rational	Measurement
1. Staff Communication: Inclusion of fall risk patients in the staff shift huddle and NKE report.	Inconsistent practice and randomly done.	Identification and inclusion of high fall risk patients to increase staff awareness of the patients with safety issues.	Cited and facilitated by Assist. Nurse Manager (ANM)
PDSA Cycle:	a. Obtain and provide feedback from ANM regarding the importance identifying which patients are high risk for fall in their unit. b. Inclusion of SCHMID and SCHMID + scores in the assignment sheet c. Highlight and cite high fall risk patients during shift huddle.	a. Obtain feedback and buy-in from ANM group engages them to identify fall risk patients. b. Inclusion of SCHMID scores in assignment sheet can easily be cited during shift huddle. c. Citing fall risk patients to oncoming staff during shift huddle increases staff awareness.	a. Audit of assignment sheet for compliance for all shift huddles. b. Direct NKE report citing of fall risk patients.

2. Fall Prevention Instrument:	a. Validate with stakeholder and frontline staff for input, feedback, appropriateness and sustainability of the instrument for staff to use as a reminder of tasks and needed actions to prevent patient fall. b. Consult with Quality Department for HIPPA compliance when PFI is posted at patient room doorway.	a. Education of staff in implementing the Fall Prevention Instrument (PFI) b. Implement use of the PFI available in the Falls Cart and will be post at the patient room doorway.	Audit of fall risk patients with direct visualization of the use of PFI.
3. Healthcare Team Vitality Instrument: Perform an anonymous survey of staff working in the MS microsystem.	Obtain baseline level of staff perception regarding microsystem environment of care and collaboration.	Perform anonymous survey before and after implementation of interventions.	Comparison before and after data after interventions are in place.
4. Track and trend HCAHPS STAR scores.	Obtain baseline level of patient satisfaction with care obtained.	Track and trend STAR Scores	Comparison of before and after data.

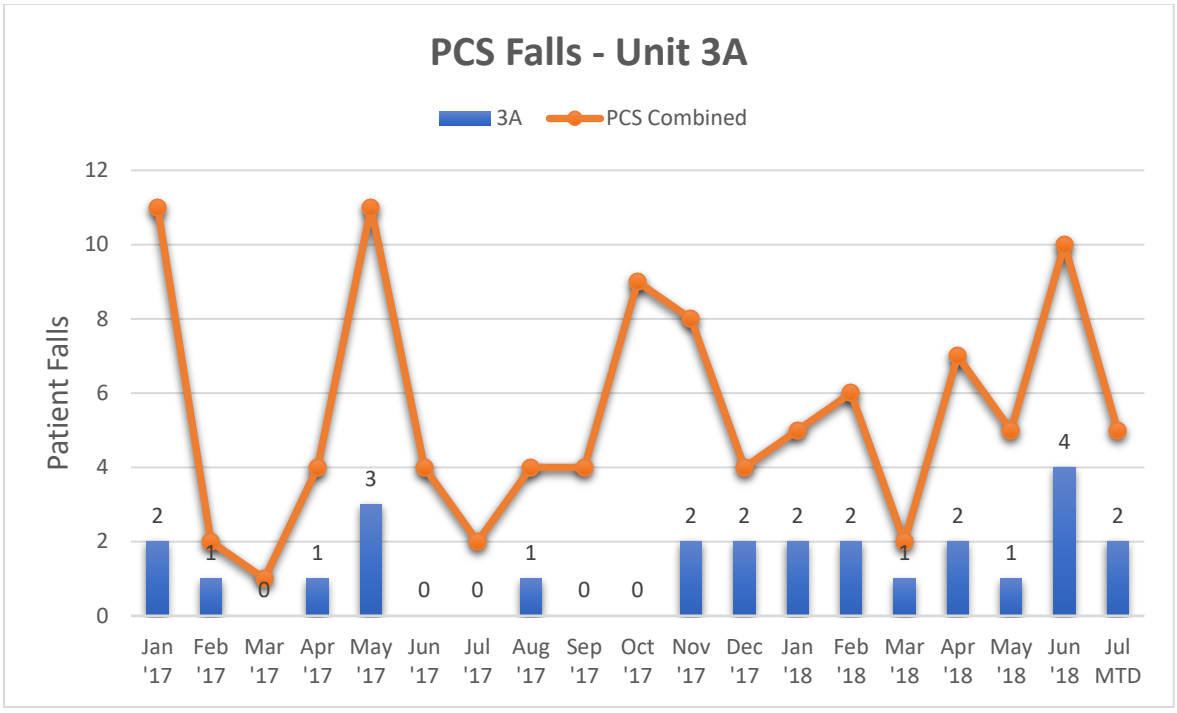
Table 3: Audit of Assignment Sheet with Fall Risk Scores:

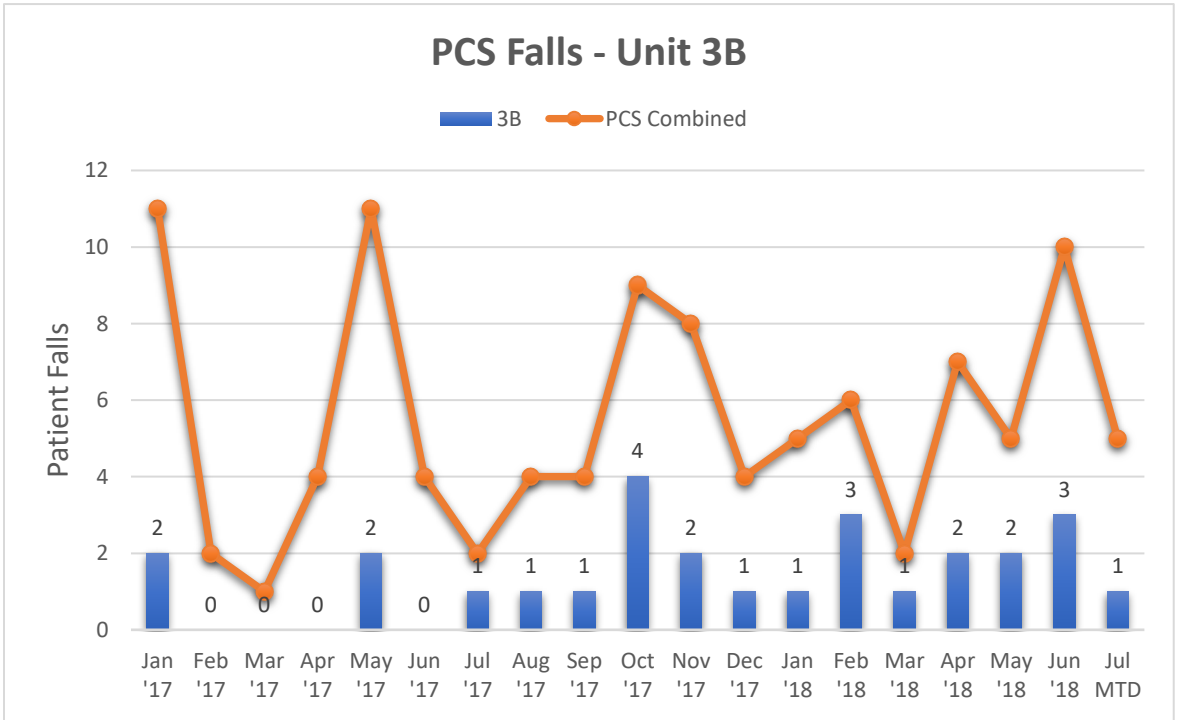
	DAY	PM	NIGHT
Number of Assignment Sheet Audited	TBD	TBD	TBD
Number of Assignment Sheet Audited with Fall Score	TBD	TBD	TBD
Number of Assignment Sheet with incomplete Fall Score	TBD	TBD	TBD
Percentage of Assignment sheet with Fall Score	TBD	TBD	TBD

Table 4: Audit of Patient Falls from January 2017 to September 2018:

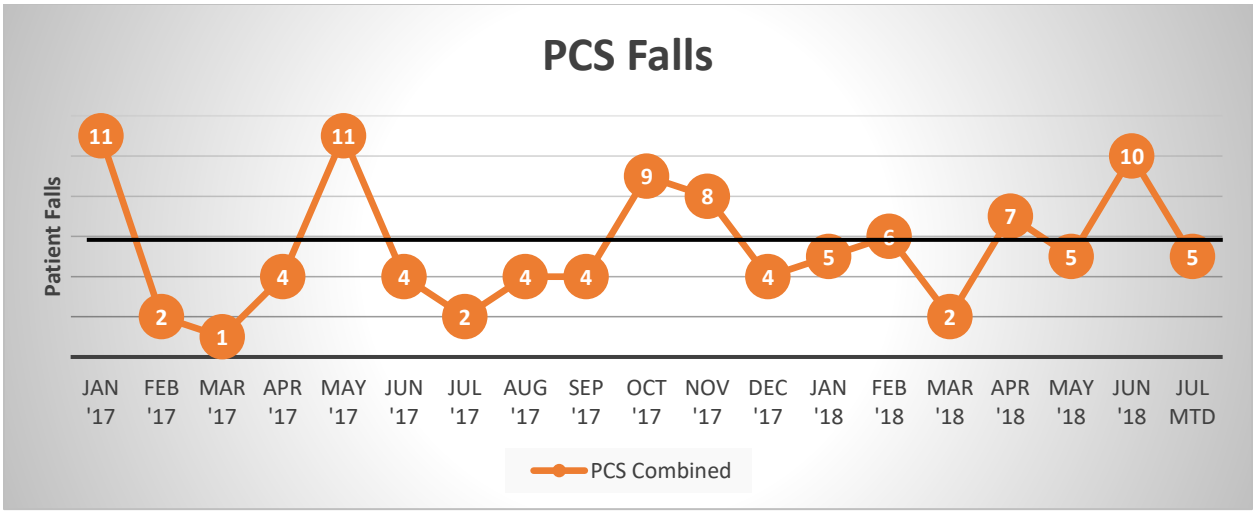
	Number of Patient Fall in MS (3A and 3B)	Number of Patient Falls in all Unit
January 2017	4	11
February 2017	1	2
March 2017	0	1
April 2017	1	4
May 2017	5	11
June 2017	0	4
July 2017	1	2
August 2017	2	4
September 2017	1	4
October 2017	4	9
November 2017	4	8
December 2017	3	4
January 2018	3	5
February 2018	5	6
March 2018	2	2
April 2018	4	7
May 2018	3	5
June 2018	7	10
July 2018	3	5
August 2018	TBD	TBD
September 2018	TBD	TBD
Mean 2017	26/12=2.17	64/12=5.33
Mean 2018 Month-To-Date	27/7=3.86	40/7=5.74

Appendix C: Run Charts Patient Falls in 3A, 3B, All Units and Opportunities:

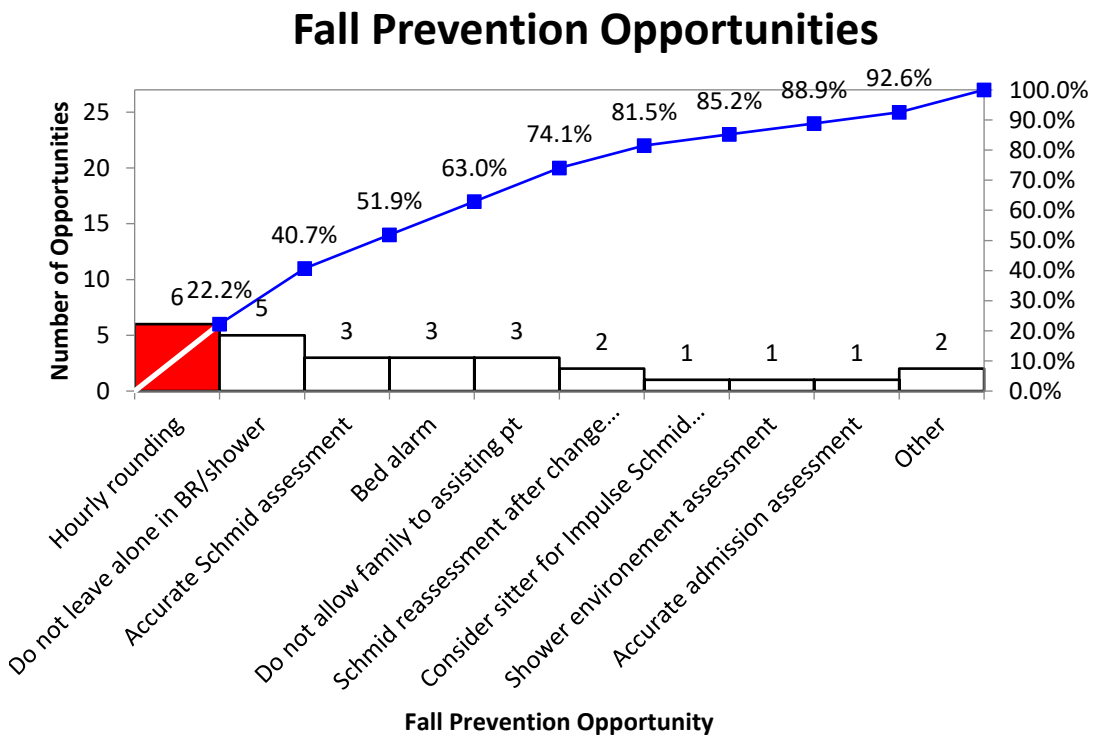




Patient Falls in All Units.



Patient Fall Prevention Opportunities in all Units.



Appendix D: Care Experience STAR Rating.

CARE EXPERIENCE	Baseline (2017)	Target	PYTD 2018	Last Closed	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18	Jul-18	Aug-18	Sep-18
Hospital Overall Star Rating	3.6	3.7	3.1	May-18	3.0	3.3	3.1	2.8	3.1	2.6	2.9	3.4	
Responses	1,486		1,038		126	88	95	100	91	101	95	13	0

Appendix E: Project Charter.

Global Aim

To improve communication by identification and implementation of falls risk process in a 40-Bed Medical-Surgical unit at a Level II Trauma hospital.

Specific Aim

To decrease the number of patient falls in the MS unit by 1 fall per month from a baseline of 5.3 falls per month by September 30, 2018, and to improve the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) STAR scores to 4.0 STAR score from baseline of 3.5 STAR score by September 30, 2018.

Background

The Institute of Medicine (IOM) report *To Err is Human, Building a Safer Health System* is a call for action for healthcare organizations to address the safety gaps along the continuum of care that we continue to see today (IOM, 2001). Efforts to improve outcomes outlined by the Quality and Safety Education for Nurses (QSEN) incorporate patient-centered care, interprofessional collaboration, use of evidence-based practice (EBP), continuous quality improvement, focus on safety, and use of informatics to improve care delivery in any microsystem (Stalter & Mota, 2018). Adverse events of patient fall with injury impacts the quality of life of the patient resulting in extended stay in the hospital and incurring cost due the life-changing consequence of the injury. The organization incurs costs with due to reduced reimbursement or un-reimbursable costs with Medicare patients through value driven care when the patients stay longer in the hospital due to the adverse events.

Despite the current fall prevention processes in place, patients continue to fall and incur life-changing outcomes. The Institute of Healthcare Improvement (IHI) Model for Improvement (MFI) will be utilized to effect changes and to improve the falls prevention process. Implementation of the Plan-Do-Study-Act (PDSA) with interventions will be applied in the Medical-Surgical (MS) unit (Nelson, Batalden, & Godfrey, 2007).

Appendix F: Measures

Outcome Measure	Data Source	Target	Result
Fall reduction in MS unit.	Track and trend historical data	Reduction of 1 fall per month in the MS unit from a baseline of 5.3 falls per month	Decrease total falls in M-S from 50% to 27% even though there was an increase of 9.7 falls per month from a baseline of 5.3
Patient satisfaction score on nurse communication and nurse responsiveness.	HCAHPS Survey	4.0 STARS from a baseline of 3.5	STAR Scores August 2018= 4.1 Sept 2018= 4.5 (prelim.)
Process Measure	**Data Source**	**Target**	**Result**
Adherence to communicating SCHMID Scores in assignment sheet	Audit of assignment sheets	Average compliance for all shifts in M-S using SCHMID scores: 50%	SCHMID=48.9% FR Only= 8.3% None=37.2%
Balancing Measure	**Data Source**	**Target**	**Result**
Incur incremental overtime due to increased length of staff huddle.	Observation and feedback from ANMs	Keep huddles at 5 minutes with no incremental overtime.	Staff huddles were kept at 5 minutes huddles and no incremental overtime.

Appendix G: Sponsors

Role	Name
Chief Nursing Officer	Cherie Stagg
Finance Leader, Napa-Solano Area	Sanjit Sodhi
Quality Director	George McEnroe

Appendix H: Team

Role	Name/Title
Administrative Services Director	Marta Hudson
Patient Care Services Director	Clervie V.
Medical-Surgical (MS) Unit Manager	Lee Montgomery
Administrative House Supervisor	Christina Thompson
Hospitalist Physician	Dr. Parmar
Assistant Nurse Manager	Ray Mamon, Sam Frost Reggie Restauro
Project Director Strategic, Data Source	E.V., FACHE, DBA, MBA
Quality Consultant	Laura Chan
Staff Nurse IV	Ron Coloma
Staff Nurse II	Agnes RN

Appendix I: Data Collection Method

1. Data will be obtained from historical records of the number of patient falls in the MS unit to create a run chart.
2. The cause of falls will be differentiated and grouped together to create a Pareto chart and to focus on the area with the highest factors contributing to the falls.
3. Chart audits will be performed for patients who are admitted to the MS unit as to whether an initial fall risk assessment was performed. Data will be tracked for compliance and placed into a run chart.
4. Random surveys of environmental checks will be performed to ensure compliance with the falls prevention process. Audits will be track based upon observation and feedback.
5. Anonymous and informal survey from the Institute of Healthcare Improvement Healthcare Team Vitality Instrument will be used to assess microsystem work environment.

Appendix J: Timeline

This falls prevention project was initiated on July 2018 due to re-prioritization of organizational focus and will continue until October 2018. Data for patient falls over the past months will be tracked and analyzed for trends. A microsystem assessment had already been performed. Staff surveys and feedback was obtained front frontline staff regarding factors that contribute to patient falls. Feedback from Assistant Nurse Managers was obtained regarding inclusion of SCHMID and SCHMID+ fall scores in the assignment sheets prior to the start of the shift. The IHI Healthcare Team Vitality Instrument anonymous survey was performed to assess the environment of care in the MS unit (see Appendix S: IHI Healthcare Team Vitality Instrument).

1. By August 1, 2018, to meet with 100% of the care team stakeholders to identify patient factors who are at-risk for falls, identify elements of the current fall prevention process that need to be expanded to strengthen the chain of safety.
2. By August 15, 2018, placement of 100% high risk patients in appropriate room such as high Schmidt score patient in the nurse's station with direct nurse visibility of patient.
3. By September 1, 2018, the nurse will adhere to implementation of Fall Prevention Process (see Appendices) by 100% compliance through ongoing audits.
4. By September 1, 2018, the nurse will identify, institute falls prevention protocol, document in HealthConnect, and provide information during the nurse knowledge exchange (NKE) handoff report on patients with high risk for falls.
5. By September 1, 2018, the ANM will list the SCHMID and SCHMID + scores on the assignment sheet and cite the high fall risk patients to the incoming staff during the start of shift huddle.
6. By mid-September, a Fall Prevention Instrument will be discussed with the team to obtain feedback and timeline for implementation.
6. By October 1, 2018, will monitor and longitudinally track adherence to falls prevention checklist and track the number of patient falls.
7. By November 1, 2018, finalize compilation of data and writing of impact of the stated interventions as it pertains to patient falls.

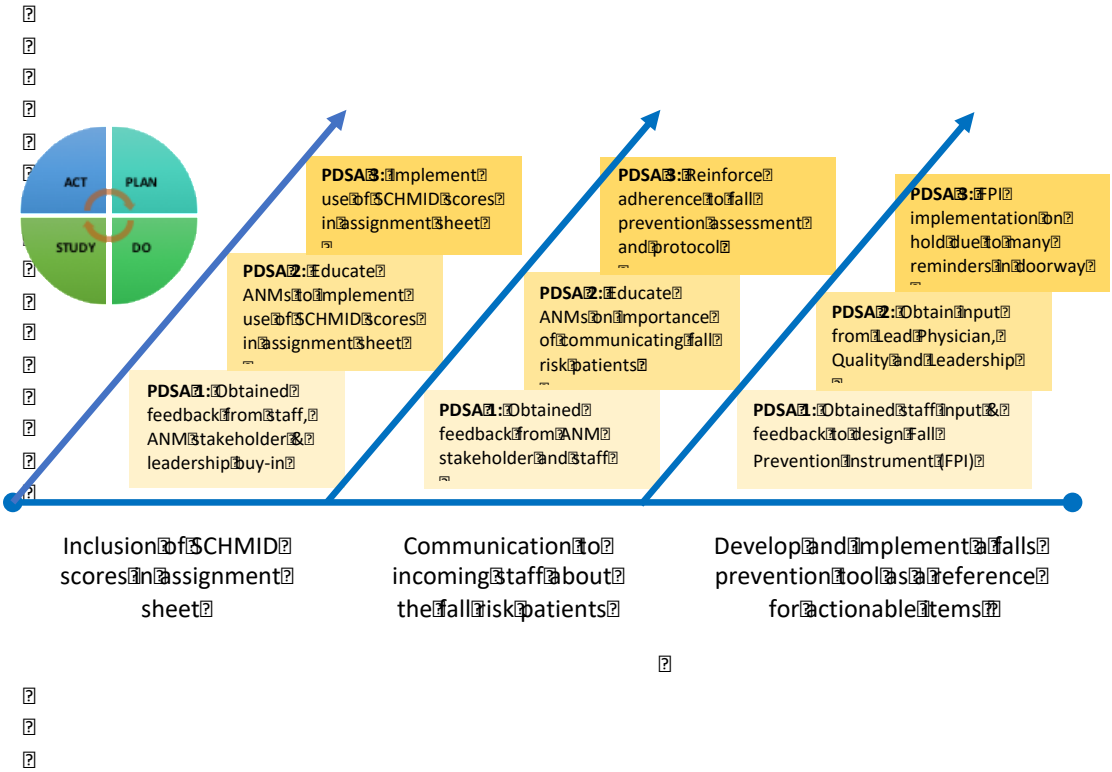
Appendix K: Data Definition

Data Element	Definition
Elimination	4 levels: Independent in elimination; Independent but with frequency or diarrhea; Needs assistance with toileting; and Incontinence.
HCAHPS	Hospital Consumer Assessment of Healthcare Providers and Systems. A nationally standardized and publicly reported survey of patient experience of hospital care.
Medications (high risk)	High risk medications that result in serious injury are anticonvulsants, sedative, psychotropics and or hypnotics and anti-coagulants.
Mentation	4 levels: Alert and Oriented x 3; Periodic confusion or disorientation x2; Confusion at all times; and Comatose or unresponsive.
Mobility	4 levels: Ambulate with no gait disturbance; Ambulates with assistive devices or assistance; Ambulates with unsteady gait and no assistance; and Unable to ambulate or transfer.
Nurse Knowledge Exchange	Change of shift handoff report or transfer of level of care report which occurs at the beside and includes the patient.
Patient Fall	An unplanned descent to the floor (CALNOC). This may be either observed or unobserved or assisted by staff (e.g. while ambulating the patient the nurse assesses the need and assists the patient to the floor to prevent a fall).
SCHMID	Assessment for fall risk factors and include 5 areas: Mobility, Mentation, Elimination, Prior fall history, Medications. Each area is scored 1 point and totaled. A SCHMID score of 3 or more is fall risk.
SCHMID + ABCS	Assessment for high risk for serious injury from a fall. Defined as a Fall Risk with a SCMID score of three or more or RN clinical judgement and one or more of the ABCS factors: Age of 85 or greater, Bones- any condition that affect bone strength; Coagulation- impaired blood clotting from anticoagulation or clinical condition; Surgery- post-surgery with 48hrs especially orthopedic or lower extremity procedures that weakens lower extremity strength.
STAR Scores	A CMS rating pertaining to ratings of quality of care experienced by patients.
TEAM Bundle	An evidence-based intervention to implement for patients assessed at risk for a fall. Toileting, Environment for Patients with Impaired Cognition, Activity, Medication
Utilization	Utilization in the HPPD Tool accounts for the RNs and PCTs needed incorporating the PCH value and factors in the statistical range of staff needed to provide care. Ideal Utilization target is 100-105% and provides an indicator whether staff usage is under-utilized or inefficient (<90%), or staff usage is over-utilized or overworked (>110%).
Watson Caritas Patient Score® (WCPS)	An instrument with five questions to assess authentic human caring practices based upon Watson's Human Caring Theory. (Pending approval for use of proprietary questionnaire).

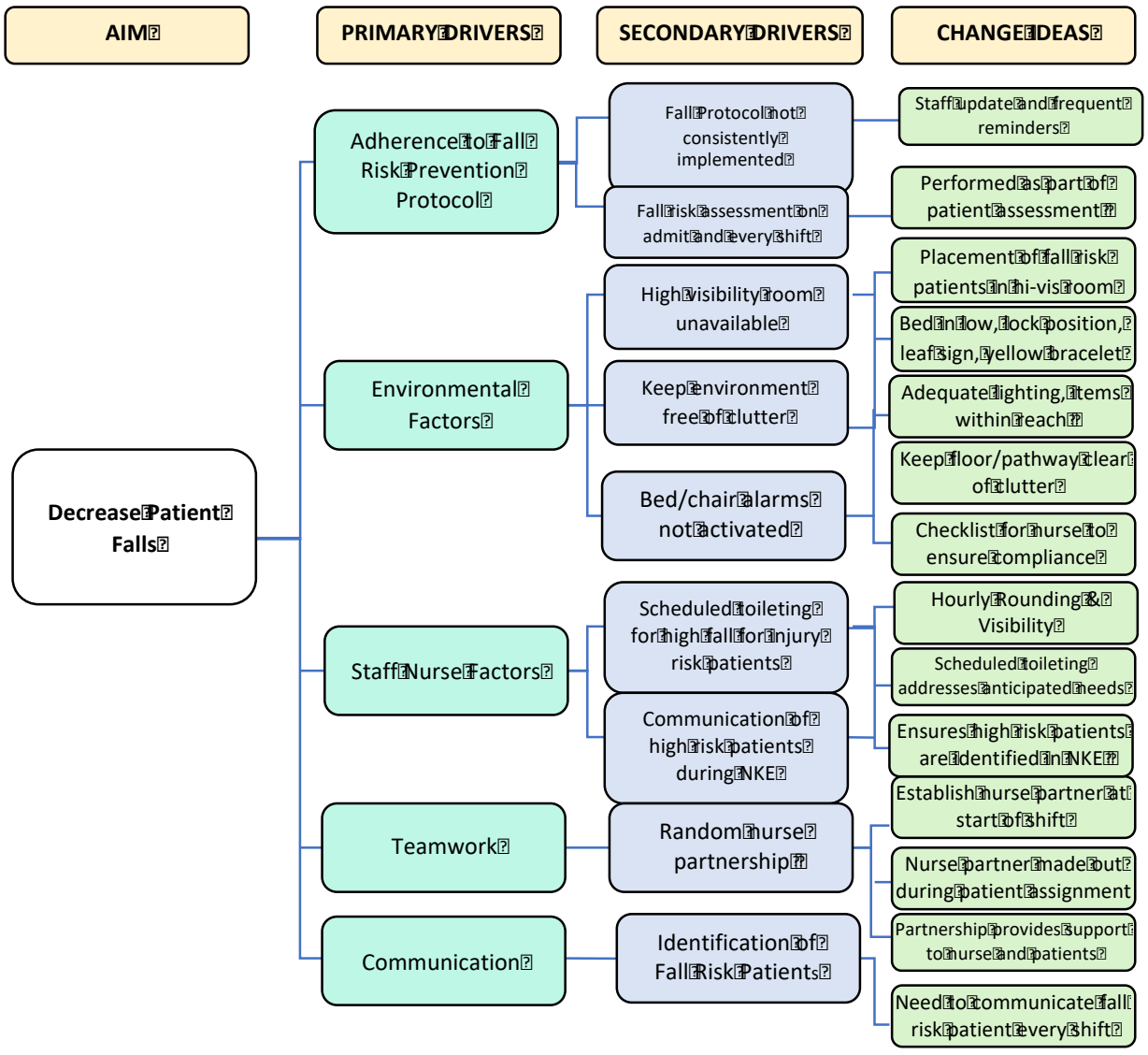
Appendix L: PDSA Cycle and PDSA Diagram

PDSA 1	**PDSA 4**
Plan: To decrease patient falls by assessing the current MS microsystem environment of care whether equipment needed is readily available to staff.	Plan: To provide a tool for the nurses to reference on the tasks need specific for the patient in order to prevent patient falls.
Do: Assess staff using the IHI Healthcare Team Vitality Instrument (HTVI) and compare before and after intervention.	Do: Consult with stakeholder team and Quality Department re: formulation of a checklist that the staff will use and HIPPA compliant.
Study: Results of initial assessment showed there is a range of staff perception that equipment is not readily available.	Study: When approved by Quality that FPI is HIPPA compliant and stakeholder buy-in. Similar project such as HAP prevention have implemented similar action.
Act: Falls Prevention Cart placed in MS microsystem in order for staff can easily access supplies needed for fall risk patients: signs, yellow band, yellow socks (pending), chair alarm.	Act: When approved by Quality, pilot a Falls Prevention Instrument (FPI) that will be posted at the doorway of the room.
PDSA 2	**PDSA 5**
Plan: To decrease patient falls by assessing the patient fall risk information is communicated during shift changes.	Plan: Educate staff on the use of FPI as a reference and to update as needed pertinent to patient condition.
Do: Assess whether SCHMID and SCHMID + scores are consistently communicated during start of shift huddle	Do: Provide short educational update during work shift to update the staff the importance of falls prevention intervention and to reference the use of the FPI.
Study: SCHMID and SCMID+ scores to identify fall risk patients are not consistently communicated during start of shift huddle.	Study: Audit the use of FPI during patient rounds. Monitor fall trends and compliance to fall prevention practices outlined in the TEAM Bundle.
Act: Audit consistency of communication of fall risk patients during start of shift huddle	Act: Provide continued education regarding the importance of adhering to fall prevention TEAM bundle.
PDSA 3	
Plan: To decrease patient falls by identifying and improving communication during shift huddle to increase staff awareness of the risk patients.	
Do: Listing SCHMID and SCHMID+ scores in assignment sheet.	
Study: Inconsistent inclusion of SCHMID and SCHMID+ scores due to decreased number of Assistant Nurse Manager (ANM) who ca	
Act: Continue to educate staff and ANMs of the importance of identifying and listing fall risk patients in the assignment sheet.	

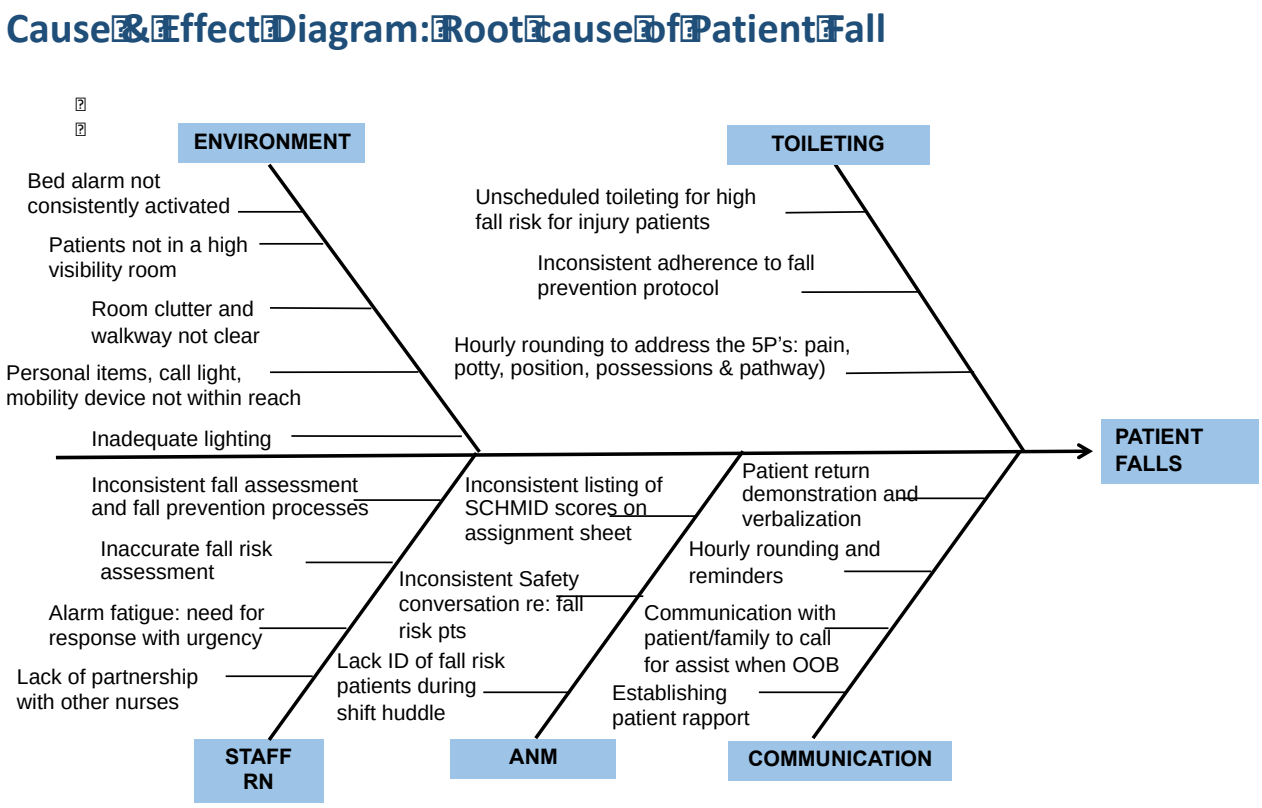
PDSA Diagram



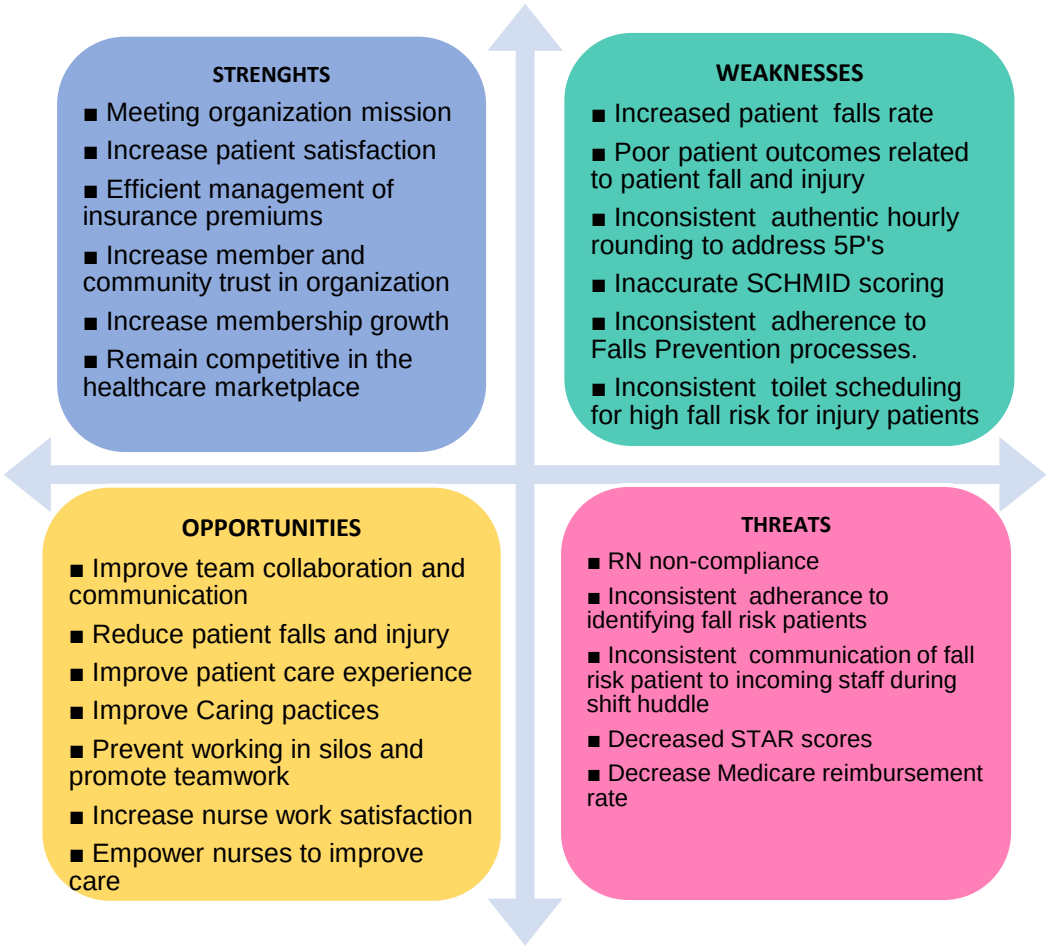
Appendix M: Driver Diagram:



Appendix N: Fishbone Diagram Patient Fall.



Appendix O: SWOT Analysis.



Appendix P: Cost Benefit Analysis of Adverse Fall Event.

Average Extended Length of Stay per Patient Fall	Cost per Adverse Event	Cost Per Adverse Event	Cost Avoidance of 1 Fall Prevention per Month	Cost Avoidance Per Year
4.8 days	$6,000/day	$28,800	$28,800	$345,600

Appendix Q: IHI HTVI Pre-Intervention and Post-Intervention Surveys

Institute for Healthcare Improvement's Healthcare Team Vitality Instrument (HTVI) PRE-INTERVENTION											
PRE-INTERVENTION: 35 total of annonymous survey, 22 responded. Response rate of 62.9%	Access to supplies & equipment	Timely response from support services	Discuss challenging issues with care team members	My ideas count in this unit	I can speak up for patient safety concern	Care team member can question decisions & actions of supervisors	Impt information is exchanged during shift changes	Managers & staff willing to try my ideas to make things better in unit	Complete patient information communicated during hand-off	Essential care equipmnt in good working condition	
Survey date 09/11/2018 to 09/12/2018	3	3	3	1	3	3	4	2	3	2	
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	5	4	5	4	4	2	4	4	4	4	
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	5	4	4	3	5	4	4	4	2	4	
	4	3	5	3	5	5	5	3	4	5	
	4	4	5	5	5	5	5	5	4	4	
	4	2	2	1	3	2	2	1	4	4	
	5	5	5	5	5	5	5	5	5	5	
	4	3	4	4	5	3	4	4	4	4	
	4	3	3	3	4	4	4	3	4	3	
	2	3	5	4	5	2	2	2	4	2	
	2	3	3	2	5	2	3	2	4	3	
	1	2	3	3	5	2	3	2	4	5	
	2	3	5	4	5	2	2	2	4	2	MEAN
AVERAGE	3.545	3.364	3.864	3.227	4.545	3.227	3.682	3.045	3.545	3.364	3.541

Institute for Healthcare Improvement's Healthcare Team Vitality Instrument (HTVI) POST-INTERVENTION											
POST-INTERVENTION: 35 total of annonymous survey, 20 responded. Response rate of 57%	4	3	3	1	5	3	4	2	3	2	
	5	5	5	5	4	5	5	5	4	5	
	2	4	4	1	5	2	4	2	3	2	
	3	2	3	3	4	4	3	3	3	4	
	2	3	3	1	4	2	2	2	5	2	
	4	3	4	3	5	4	4	3	3	2	
Survey date 10/02/2018 to 10/03/2018	5	3	4	5	5	5	5	4	3	3	
	4	4	4	4	5	2	4	4	3	3	
	4	3	4	3	4	4	2	3	3	4	
	5	4	1	2	5	3	3	1	3	4	
	4	4	5	3	5	2	4	4	2	4	
	3	3	5	3	5	4	5	3	4	5	
	4	2	2	5	3	5	5	5	4	4	
	5	5	5	4	5	2	4	1	4	5	
	4	3	4	4	5	5	5	5	2	2	
	4	3	3	3	4	3	4	4	4	3	
	2	3	4	4	5	4	2	3	4	2	
	2	3	3	2	5	1	3	4	4	3	
	1	4	3	3	5	2	3	2	4	5	
	2	3	5	4	5	2	2	2	4	2	MEAN
AVERAGE	3.45	3.35	3.7	3.15	4.65	3.2	3.65	3.1	3.45	3.3	3.5

Appendix R: Budget

The cost of implementing an improvement project will be incorporated to the MS unit budget. Educational hours will be incorporated during shift huddles, safety conversations, and through intentional rounds with the staff nurses. Current budget for the MS unit:

Medical-Surgical Revenue, Expenses & Cost Avoidance

Project Title: Identification and Implementation of Falls Risk Process to Improve Patient Outcomes in a 40-Bed Medical-Surgical Unit.

By: Chris Gella

Measure or Indicator	Revenue	Measure or Indicator	Expenses
Total Patient Days MS (approx)	26,218	Hourly Rate SN2 Step 4 (mean)	$81.19006
Days in Time Period	365	Med-Surg FTEs	21
40 Med-Surg Staffed Beds (75% Occupancy)	30	Number of Med-Surg RNs per shift	10
Number of Kaiser Members (approx)	11,800,000	RN 7-Day Week, 24 hour Coverage Factor	4.2
Average Cost of Annual Kaiser Premium 2015 (Kff.org)	$6,250	Budgeted HPPD	7.7
Gross Revenue from Premiums (approx)	$73,750,000,000	RN Salary for 1 FTE per pay period (80hrs)	$6,495.20
Average Hospital Adjusted Expenses per Inpatient Days 2015 (Kff.org)	$3,800	Total RN Salary in MedSurg PPP	$27,279.86
Gross Expenses PPD (Kff.org), approx	$44,840,000,000	Missed Meal, missed break factor	1.5
Total Net Revenue (approx)	$28,910,000,000	RN OT double shift factor	1.73
		Average Daily Census in Med-Surg	35

STAFFING PER MATRIX & UTIL. OF 90% (January 2018)		STAFFING PER HPPD UTILIZATION OF 100% (April 2018)		STAFFING PER HPPD UTILIZATION OF 105% (June 2018)	
Average #RNs to replace PCT per 24hrs Med-Surg	6	Average #RNs to replace PCT per 24hrs Med-Surg	2	Average #RNs to replace PCT per 24hrs Med-Surg	1
Average Number of Missed Meals (approx)	1	Average Number of Missed Meals (approx)	TBD	Average Number of Missed Meals (approx)	TBD
Average Number of Missed Breaks (approx)	0	Average Number of Missed Breaks (approx)	TBD	Average Number of Missed Breaks (approx)	TBD
Average Number of Incremental OT (approx)	TBD	Average Number of Incremental OT (approx)	TBD	Average Number of Incremental OT (approx)	TBD
Reimbursement tied to STAR Scores	TBD	Reimbursement tied to STAR Scores	TBD	Reimbursement tied to STAR Scores	TBD
Cdiff Rate (per 1,000)	1.22	Cdiff Rate	TBD	Cdiff Rate	TBD
HAP Rate (per 1,000)	0.46	HAP Rate	TBD	HAP Rate	TBD
Costs per Day per Patient approx. Long length	$6,000.00	Costs per Day per Patient approx. Long length	$6,000.00	Costs per Day per Patient approx. Long length	$6,000.00
Average number Employee Injury DAYS	TBD	Average number Employee Injury DAYS	TBD	Average number Employee Injury DAYS	TBD
RN Turnover Rate	TBD	RN Turnover Rate	TBD	RN Turnover Rate	TBD
Training Hours (approx)	0	Training Hours (approx)	0	Training Hours (approx)	0

Appendix S: Falls Prevention Instrument

FALLS PREVENTION CHECKLIST	APPLICABLE
TOILETING	
Intentional Hourly Rounding	
Toileting Schedule SCHMID	
Toileting Schedule SCHMID Plus ABCS	
ENVIRONMENT	
Leaf Sign	
Yellow Armband	
Bed Low and Locked Position	
Well-fitted Non-skid Footwear	
Alarm Activated Bed or Chair	
Use of Low Bed	
Appropriate Lighting	
Call Light/Items Within Reach	
Minimize Clutter, Clear Path	
Mobility devices within patient reach	
EDUCATION	
Patient/Family Fall Risk Education	
Patient/Family Verbalizes Fall Risk	
Patient/Family Verbalizes Call for Assist	
SCHMID + Staff Assists when OOB	
Update Care Board - Call for Assistance	
Patient/Family Education Documented	
NKE Regarding Fall Risk	
ASSESSMENT	
Accurate SCHMID Assessment q Shift	
Accurate SCHMID + Assessment q Shift	
MEDICATION	
Pharmacy Review of Medications	
High Falls for Injury: Anti-Coagulants	
High Fall Risk: Anticonvulsants	
High Fall Risk: Sedatives	
High Fall Risk: Psychotropics	
High Fall Risk: Hypnotics	
PROCEDURES / STATUS	
Spinal Blocks	
Orthopedic Procedures	
History of Fall	
Orthostatic Hypotension	
Confusion	
BEHAVIORS FOR HIGH FALL RISK FOR INJURY	
Continuous Assist with toileting & ambulating	
Scheduled Toileting	

Appendix T: IHI Healthcare Team Vitality Instrument:

Transforming Care at the Bedside (TCAB)

Healthcare Team Vitality Instrument (HTVI)

(Enter Hospital Name here)

The following questions ask you about your current work environment. Circle the number that most closely indicates the extent to which the item is present in your current job:

Please specify by checking the Respondent Type that most closely matches your position

	Registered Nurse		**Dietary personnel**
	Physician		**Respiratory Therapist**
	LPN		**Physical Therapist**
	Nursing Assistant		**Other**
	Unit Clerk		

Circle the correct numeric response to each question

#	Question	Survey Scale: 1=Strongly Disagree 2=Disagree 3=Neutral 4=Agree 5=Strongly					
1	I have easy access to the supplies and equipment I need to do my work on this unit.		**1**	**2**	**3**	**4**	**5**
2	The support services to this unit respond in a timely way.		**1**	**2**	**3**	**4**	**5**
3	I can discuss challenging issues with care team members on this unit.		**1**	**2**	**3**	**4**	**5**
4	My ideas really seem to count on this unit.		**1**	**2**	**3**	**4**	**5**
5	I speak up if I have a patient safety concern.		**1**	**2**	**3**	**4**	**5**
6	Care team members on this unit feel free to question the decisions or actions of those with more authority.		**1**	**2**	**3**	**4**	**5**
7	Important patient care information is exchanged during shift changes.		**1**	**2**	**3**	**4**	**5**
8	If I have an idea about how to make things better on this unit, the manager and other staff are willing to try it.		**1**	**2**	**3**	**4**	**5**
9	Care professionals communicate complete patient information during hand-offs.		**1**	**2**	**3**	**4**	**5**
10	Essential patient care equipment is in good working condition on this unit.		**1**	**2**	**3**	**4**	**5**

PLEASE COMPLETE SURVEY BY: **(enter due date)**

RETURN TO: **(enter location/person)**

THANK YOU!

Appendix U: Shift Huddle Fall Communication

SHIFT HUDDLE FALL COMMUNICATION

This anonymous survey queries about your current work environment. Please circle the item which closely correspond to your present change of shift huddle:

SHIFT: NIGHT DAY PM

UNIT: **3A** **3B** **DATE:** _____

1) During change of shift huddle, are the incoming staff made aware of the high fall risk patients in the unit?

YES NO

2) During change of shift huddle, does the assignment sheet identify the fall risk patients using the following:

NOT LISTED IDENTIFIED AS FALL RISK (FR) ONLY SCHMID SCORES

3) During change of shift huddle, recent patient fall(s) or the number of days since last fall mentioned?

YES NO

Thank you for participating in this survey. Please forward this audit to the Med-Surg ANM or Chris Gella RN AHS.

Appendix V: Result of Assignment Sheet Audit and Shift Communication Audit:

MONTH	JULY	AUGUST	SEPTEMBER
Ave % Used of SCHMID SCORE in Assign Sheet	0%	0.50%	48.90%
Ave % Used of FR ONLY in Assign Sheet	30.10%	58.30%	8.30%
Ave % used of NONE LISTED in Assign Sheet	69.90%	44.10%	37.20%
Communicated fall risk patients to incoming staff	N.A.	N.A.	100%
Safety discussion of fall prevention	N.A.	N.A.	75%
% w/SCHMID	N.A.	N.A.	25%
% w/FR	N.A.	N.A.	0%
% NONE LISTED	N.A.	N.A.	75%
Number FALLS IN M-S	3	4	4
Total Falls Hospital	5	8	15
% of Falls in M-S relative to all units	60.0%	50%	27%

Appendix W: Evaluation Table of EBP Studies using JHNEBP

Study	Design	Sample	Outcome/Feasibility	Evidence rating
1. Aryee, E., James, S. L., Hunt, G. M., & Ryder, H. F. (2017). Identifying protective and risk factors for injurious falls in patients hospitalized for acute care: a retrospective case-control study. BMC Geriatrics, 17260. doi:10.1186/s12877-017-0627-9 https://drive.google.com/file/d/1CJtnVq-0HjYv_k6jTD1DQeSptdyl1IFB/view?usp=sharing	Retrospective case controlled study	117 injured fallers & 320 controls	No significant differences between 2 groups in age differences or body mass index. Falls occurred evenly between day and night. Significant risk factors are males, history of fall and joint replacement, use of psychotropic drugs. Fall history predicts risk factor for fall in hospital. Joint replacement is a significant risk for fall due to gait disturbances. Cognitive impairment: delirium dementia or cognitive impairment not significant risk factor. Recent surgery was a protective factor as patients have urinary catheter or toilet while in bed. Toileting accounts for 43.6% of documented fall. Enhancing toileting practices for at-risk patients such as joint replacements, history of falls or patients with psychotropic or mind-altering medications can lessen falls.	L3-A
2. Demnitz, N., Esser, P., Dawes, H., Valkanova, V., Johansen-Berg, H., K.P. Ebmeier, K.P. (2016). A systematic review and meta-analysis of cross-sectional studies examining the relationship between mobility and cognition in healthy older adults. Gait & Posture, 20 (2016), 164-174. Retrieved from www.elsevier.com/locate/gaitpost. https://drive.google.com/file/d/1gjMFsTXD5AjbgOEKAD8GzKhRTkj53OVG/view?usp=sharing	Systematic review of cross-sectional, meta-synthesis.	642 articles screened, 26 studies met eligibility criteria. Total of 26,355 participants	Positive association between cognition and mobility in older adults. Association of memory and thought processing speed with better mobility. Gait speed is a global marker of gait disturbance associated with central, peripheral and neuromuscular dysfunction.	L3-A
3. Leavy, B., Byberg, L., Michaëlsson, K., Melhus, H., & Åberg, A. C. (2015). Pre-fall factors and health characteristics of fall-related hip fractures. *Canadian Nursing Home*, 26(2), 12-18. https://drive.google.com/file/d/1apjbORcQRtMcuhngKFN0QAa2bxvTvpTw/view?usp=sharing	Descriptive	125 patients	Falls resulting from postural changes in position are associated with poor functional status such as limited mobility, poor self-rated balance, fear of falling, history of falls and lowest physical activity. Factor contributing to falls: 1. Environmental: trips over mats, inadequate footwear 2. Physiological: loss of balance, dizziness, reduced function or pain 3. Activity related. Orthostatic hypotension results in dizziness due to drop in BP when suddenly	L5-A

			standing, SBP change of 20mmHg or DBP change of 10mmHg.	
4. Tzeng, H.M., & Yin, C.Y. (2017). A multihospital survey on effective interventions to prevent hospital falls in adults. Nursing Economics, 35(6), 304-313. https://drive.google.com/file/d/1vKJX-eyd-vmEnYCiJqJUoAQQ41EGHfE7/view?usp=sharing	Exploratory, cross-sectional study	Total of 2,170 RNs with 560 completed surveys (25.81% response rate)	Total of 21 recommended interventions were: 1. Lighting: adjusting lights for assess and modify environment, keeping the floor surface clean and dry, use non-slip footwear, reduce clutter, reduce tripping hazard, keep equipment out of patient pathway, keeping personal possessions within reach, use of assistive device recommended by physical therapy, have walker/cane available to patient, adjust lighting to activities of daily living, use of night light, minimizing noise, keeping personal items within reach, 1:1 support for patient while in bathroom, placement of patient close to nurses station, bed in low position and locked, bedrails up, patient to demonstrate use of call light, use of non-slip well-fitted footwear, use of assistive devices available, bedside commode available use of gait belt during mobility activities.	L2-A
5. Lerdal, A., Sigurdsen, L. W., Hammerstad, H., Granheim, T. I., Risk Study Research, G., & Gay, C. L. (2018). Associations between patient symptoms and falls in an acute care hospital: A cross-sectional study. *Journal of Clinical Nursing*, 27(9/10), 1826-1835. doi:10.1111/jocn.14364 https://drive.google.com/file/d/1ju7kCsOIrleMPrzxV03McSLWUgn5SooR/view?usp=sharing	Cross-sectional study	1082 patients initially but only 614 patients eligible.	Patient fall were associated with male sex and comorbidities. Symptoms of patient distress was a stronger predictor of patient fall. Gastrointestinal symptoms contribute to fall risk causing a sense of urgency. Severe pain at rest and distress due to drowsiness, itching dizziness or extremity swelling were associated with patient falls.	L5-B
6. Cox, J., Thomas-Hawkins, C., Pajarillo, E., DeGennaro, S., Cadmus, E., & Martinez, M. (2015). Factors associated with falls in hospitalized adult patients. *Applied Nursing Research*, *28*(2), 78-82. doi: 10.1016/j.apnr.2014.12.003 https://drive.google.com/file/d/1gXvtYkjYZ-gnRD_PZ4NbqBSIutVFTqkt/view?usp=sharing	Retrospective correlational study	10000	Patient falls cannot be fully prevented. Use of a validated tool to assess for fall risk and initiation of fall prevention strategies can decrease the likelihood of falls. RNs play an important role in risk determination and fall prevention. age, narcotic/sedative use, and overnight shift, significantly predicted the likelihood of a fall during the hospitalization. Cardiovascular disease, neuro-musculoskeletal disease, evening shift, the implementation of fall prevention strategies and higher RN	L5-B

			to unlicensed assistive personnel staffing ratios decreased the likelihood of a fall during the hospitalization.	
7) Morgan, L., Flynn, L., Robertson, E., New, S., Forde-Johnston, C., & McCulloch, P. (2017). Intentional rounding: a staff-led quality improvement intervention in the prevention of patient falls. Journal of Clinical Nursing, 26(1/2), 115-124. doi:10.1111/jocn.13401 https://drive.google.com/file/d/1yUOskQBLYczmDgjyU3InpNYDYLpMU9YN/view?usp=sharing	Quality Improvement	75 bed neuro-science unit.	Changes: staff education using videos, logs and staff feedback. Nurse intentional hourly rounding on patients with fall risk regarding to toileting. Success of quality improvement stemmed from staff adherence to change strategy, staff engagement and support by leaders.	L5-B