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Fall Reduction with Nursing Interventions

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Abstract

The aim of the project is to reduce the patient's fall rate in the medical surgical unit at an acute care hospital through improving the fall precaution process. The unit consists of 37 bed with a population of stroke, medical, and surgical patients. The focus of the nursing staff education using handouts, brochures, and poster will be based on the results from pre and post intervention audits. The goal of this fall reduction project is to have the nursing staff learn, review, and apply fall prevention interventions for fall risk patients in order to help reduce fall rate by 50 percent within a six month period, from October 2015 through March 2016. The CALNOC (Collaborative Alliance for Nursing Outcomes) and NDNQI (The National Database of Nursing Quality Indicators) data on fall rate will be compared before and after the intervention. Results indicate that as staff knowledge and implementation of fall prevention interventions increase, the patient fall rate will decrease.

Clinical Leadership Theme

The global aim for this project is to reduce the patient fall rate in the medical surgical unit at an acute care hospital through improving the fall precaution process. This project focuses on the Clinical Nurse Leader (CNL) curriculum element of Clinical Outcomes Management. The CNL role will be to serve as the Educator using current evidence-based information to facilitate the learning process of other health professionals to improve outcomes and patient safety.

Statement of the Problem

The rate of falls in my microsystem unit shows a rising trend. When the chart audit was conducted to assess the cause, the findings show that the nurses were not complying with the fall prevention strategies even when a patient had a Schmid fall score of 3 or greater (Appendix Q). Nurses did not apply fall prevention interventions (Appendix P) such as utilizing water fall signs, activating bed exit alarms, and applying yellow fall risk armbands and yellow nonskid socks on fall risk patients. Evidence has shown that staff education and their compliance to the fall prevention program are crucial in reducing patient fall rate (Wilbert, 2013). The purpose of this fall prevention project is to have nursing staff learn, review, and apply fall prevention interventions for patients in order to help reduce patient fall rate.

Project Overview

The goal of this fall reduction project is to have the nursing staff learn, review, and apply fall prevention interventions for fall risk patients in order to help reduce fall rate by 50 percent within a six month period starting from the fourth quarter after the intervention period. The plan is to educate nursing staff on fall prevention interventions using handouts, brochures, and a poster board in a 15 minutes teaching session. Following the 15 minute teaching session, the nursing staff are required to identify at least five fall prevention interventions, describe the

correct way to complete the Schmid fall risk assessment tool (Appendix Q), initiate fall protocol for patients with Schmid fall risk score 3 or greater, recognize the significance of connecting the bed to the wall plug, and verbalize an agreement to indicate whether the patients are at fall risk and write their muscle skeletal deficits on the patient's dry erase board. The fall precaution process will begin with the initial patient assessment of each shift. The primary nurse will ensure the fall precaution strategies have been initiated for the fall risk patients. The fall precaution process will end with the bedside handoff at change of shift. The oncoming shift nurse will check with off going shift nurse at the patient's bedside to ensure that the fall precaution strategies for the fall risk patients have been initiated and maintained throughout the shift. As staff knowledge and implementation of fall prevention interventions increase, patient fall rate will correspondingly decrease.

Rationale

When working on this fall reduction and nursing intervention education project, the CALNOC (Collaborative Alliance for Nursing Outcomes) and falls per 1000 patient days from NDNQI (The National Database of Nursing Quality Indicators) data will be used to compare the patient fall rate. Both CALNOC and NDNQI define a patient fall as when a patient experiences an unplanned descent to the floor with or without injury to the patient (AHRQ, 2013). This includes assisted falls (CALNOC, n.d.). For example, when a staff member attempts to minimize the impact of the fall, it is still considered a fall (CALNOC, n.d.). The NDNQI defines fall injury into five categories. The first one is none, which means patient had no signs or symptoms of injuries resulting from the fall (AHRQ, 2013). The second one is minor, which means the injury has resulted in application of a dressing, ice, cleaning of a wound, limb elevation, topical medication, bruise or abrasion (AHRQ, 2013). The third one is moderate,

which means the injury has resulted in suturing, application of steri-strips or skin glue, splinting or muscle or joint strain (AHRQ, 2013). The fourth one is major, which means the injury has resulted in surgery, casting, traction, required consultation for neurological or internal injury, or patients with coagulopathy who receive blood products (AHRQ, 2013). The last one is death, which means the patient died as a result of injuries sustained from the fall (AHRQ, 2013).

The CALNOC is a benchmarking data registry which conducts collaborative outcomes assessment, reporting and research with voluntarily participating hospitals and health systems across 9 states (CALNOC, 2013). The graph in appendix A page 1 shows that the number of patient falls at my microsystem unit started to increase from the second quarter in 2015. The NDNQI is the only national nursing quality measurement program that enables the hospital to compare measures of nursing quality against national, regional and state norms for hospitals of its type down to the unit level (Press Ganey Associates, 2015). This program has been used by 2000 hospitals nationwide (Press Ganey Associates, 2015). Patient falls is one of the nursing-sensitive measures. The graph in appendix B shows the number of falls per 1000 patient days from the fourth quarter in 2012 to fourth quarter in 2014. According to the graph, the rate of falls per 1000 patient days at my microsystem unit has been decreasing since the fourth quarter in 2013. However, there has been a rebound in the fourth quarter in 2014.

When assessing nurses' compliance to the fall prevention strategies for the fall risk patients who had a Schmid fall score of 3 or greater, a chart audit has been created (Appendix C) and conducted on 18 fall risk patients. The results in Appendix D indicate the low compliance rate in applying yellow fall risk arm band and utilizing the white board.

A fishbone diagram from root cause analysis (Appendix F), SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis (Appendix G), detailed process flowchart

(Appendix H), and stakeholder analysis (Appendix I) have been created to assist in analyzing the cause of the increased fall rate and to make changes to improve the fall rate.

The main contributing factors that lead to the rising fall rate as shown in the fishbone diagram are nursing staff, process, materials, and equipment. Factors in the nursing staff category are nurses' non-compliance with the fall reduction strategies, fall prevention interventions knowledge deficit, and failure to communicate fall prevention knowledge to the new hired or float nursing staff. The most common non-compliance reasons are time constraint and forgetting to apply prevention strategies. Some nurses even forget to reactivate the bed exit alarm system once they help patients return to their bed. New nurses show a lack of fall prevention knowledge, claiming that they have no idea of how to activate or operate the bed exit alarm system. This may be attributed to charge nurses or the fall champions having failed to educate or communicate our unit specific fall prevention interventions to the new hired or float nurses. In terms of the process category, there are compliance issues in initiating fall prevention protocol for patients with Schmid fall assessment score equal or greater than 3. Some nurses stated that they are too busy to apply yellow fall risk band or grab a pair of yellow nonskid socks from the clean utility room. There are also low compliance in communicating patient information using the white board, such as indicate a patient's musculoskeletal deficit. Nurses stated that they don't have time to update the white board. There are also variations in the handoff process. For example, some oncoming nurses did not check whether the fall risk patients' bed brakes are on, bed exit alarm on, and bed position is low with off going nurse during shift change report. In terms of the materials category, nurses were complaining that there are not enough supply of dry erase board markers so they were unable to write information on patients' whiteboard. As for the equipment category, equipment malfunction and

maintenance are the issues which might possibly increase the fall rate. For example, bed exit alarm is unable to activate or broken and the front wheel walker is missing in the room. These contributing factors can be improved with ongoing education and appropriate interventions.

Cost-Analysis

According to the CDC (2014), the direct medical costs of falls were $30 billion in 2012. Each patient fall with serious injury could cost more than $13,316 and the hospital stay could be extended 6.3 days longer than patients who do not fall (Tzeng & Yin, Perceived top 10 highly effective interventions to prevent adult inpatient fall injuries by specialty area: a multihospital nurse survey, 2014, p. 10). Since October 1, 2008, Medicare no longer pays additional costs for hospital-acquired conditions which includes falls and trauma (National Guideline Clearinghouse, 2015). Therefore, staff education on fall prevention interventions for patients is essential to decreasing the fall rate and preventing prolonged hospitalization due to fall incidents. The fall prevention project to educate staff will have minimal cost (Appendix J) because other necessary materials have been purchased and stocked in the unit, such as yellow fall risk arm band, yellow nonskid socks, dry erase chisel tip marker, yellow gait belt, water fall sign, patients' white boards, and front wheel walkers. Staff will receive education during their working hours and pre-budgeted unit based and staff meeting. The only cost would be the color brochures handout for each nursing staff during the education session. We have a total of 100 employees in the unit, including registered nurses and certified nurse assistants. It costs $155 to print a total of 100 double-sided and full color printing for brochures. For nurses' convenience for pocketing, fine point dry erase markers can be considered for purchase. It costs $1 per each fine point markers, so the total will be $100 for 100 markers. Therefore, the total cost for this project will only be $255. The cost of this project is insignificant when compared to the $13,316 cost for

each patient fall with serious injury and extended hospital stay. With minimal cost, this project will increase patient satisfaction and provide significant cost saving for the hospital.

Methodology

A pre-intervention audit (Appendix D) has been conducted to examine the areas where education is most needed. First, I checked all patients in the unit who has Schmid fall score 3 or greater in the Epic system. Knowing nurses are naturally compliant with completing the fall risk assessment tool since it is one of the required admit and shift documentations, I clicked and opened each patient's chart to see whether there was a fall risk message on their summary page (Appendix Q, p.3). Then I started making round to those fall risk patients and collecting data. Results showed a low compliance rate in applying yellow fall risk arm band and utilizing the white board. One-on-one education with handout (Appendix K) began two days after the audit was completed. I spent three minutes with each staff nurse and nursing assistants during their shift time. The education was focused on yellow armband, bed plugs, and white board. Staff nurses who received education verbalized their understanding and agreed to make the change. One week later, there were total of 80% staff nurses that had received one-on-one education. During the July unit based council meeting, I presented more fall prevention knowledge with a poster board (Appendix O) to the unit leaders. The unit leaders verbalized their understanding and agreed to disseminate information to their nursing staff. Post-intervention audit has been conducted a month after the education. Results show a great improvement on the yellow armband and white board utilization (Appendix E, p.1). Poster presentation to staff nurses continued on the August staff meeting. My manager was responsible for educating day and evening shift staff. I was responsible for educating night shift staff. Fall prevention brochures have been distributed to all attendees (Appendix L). A quarterly post-intervention audit was

conducted to assess nurses' compliance to the fall prevention strategies. Results show 100% compliance in applying bed brakes, plugging the bed to the wall plug, and utilizing the white board (Appendix E, p.2). Quarterly number of falls from CALNOC data and the rate of falls per 1000 patient days from NDNQI data will be assessed to check if my project is effective. I expect the rate of falls will decrease when the nurses' compliance to the fall prevention strategies increase.

To increase the effectiveness of this project, Kotter's 8 step process change theory was used as the guidance in my fall reduction project. Step 1 is to create a sense of urgency, by bringing attention to the increasing fall rate. Step 2 is to build a guiding coalition. Unit nurse leaders will be presented with fall prevention knowledge at the monthly unit based meetings. Step 3 is to form a strategic vision and initiatives. The vision for this project is to expect increased patient satisfaction and decreased patient's fall rate. Step 4 is to enlist a volunteer army, which are the nurse leaders who attend the unit based meeting. Step 5 is to enable action by removing barriers, which is to persuade nurses who are resistant to making change. Step 6 is to generate short term wins. Monthly and quarter monthly fall rate report will be generated to show accomplishments in fall rate reduction after education on fall prevention interventions. Step 7 is to sustain acceleration. When nurses complete the education session, they will be awarded a fine point dry erase marker and become a fall champion in the unit. Fall champions have the responsibilities to teach, motivate, and reinforce their colleagues in compliance to the fall reduction strategies which in turn will help reduce the fall rate. Step 8 is institute change. Implementing and complying with the fall prevention interventions as a team will lead to the reduction of patient fall rate and increase patient satisfaction.

Data Source

The unit consists of 37 bed with a population of stroke, medical, and surgical patients. The focus of the study will be based on the results from pre and post intervention audits. The nursing staff education will be reinforced based on the audit results. The CALNOC and NDNQI data on fall rate will be compared before and after the intervention.

Literature Review

The articles included in this literature review support the implementation of the fall reduction project at my microsystem unit in the hospital. A search of the CINAHL Complete database and Google Scholar was conducted using the PICO search strategy of *nurses*, *fall prevention*, and *hospital.* Six articles with dates that range from 2008 to 2014 were found and all were relevant for the review.

Krauss et al (2008) proves that fall rates decreased while the nursing staff's knowledge and use of prevention strategies increased. Nursing staff on intervention floor were educated regarding fall prevention and strategies from April to December 2005 and data was collected before and after implementation. A pre and post-intervention test on fall knowledge of the nursing staff has shown a difference of $P<0.001$ when compared with the control floor. Fall rate decreased from 6.64 falls per 1000 patient days to 5.09 falls per 1000 patient days on the intervention floor. Fall rate was lower after implementation of interventions although the result was not statically significant. Fall interventions included educating patients with fall prevention pamphlets, implementing a toileting schedule and safety rounds, reviewing and discussing medications that may contribute to a patient's fall risk with patients and their families, and alerting other staff to the patient's risk of falling. The purpose of Krauss et al was to evaluate fall prevention interventions at the hospital in order to help reduce the fall rate. The intervention components outlined in the research will be included in my project.

Saleh, Nusair, Zubadi, and Shloul (2011) proves the effect of the nursing rounding system (NRS) on the number of incidences of patients' fall. All patients in the male stroke unit were involved in the study. From December 2009 to February 2010, call light and patients' needs data would be collected. Implementation of NRS started in February 2010 and lasted for 8 weeks. Post-implementation data was collected immediately after the 8 weeks of implementation. Results showed a drastic reduction in fall incidence after rounding with P level <0.01. The authors' purpose was to implement the NRS at the stroke unit in order to help reduce hospital's patients' use of the call light, increase patient satisfaction, and reduce the rate of patient falls. The actions that were taken by nursing staff during rounding will serve as reference and will be included in my project.

Tzeng (2011) explains that lack of knowledge and lack of caring attitude from nurses play a role as the underlying barriers to implementing a successful fall prevention program. Tzeng stated that a successful fall prevention strategy may include two education goals. The first one was to promote nurses' professional knowledge and skills in implementing a fall prevention program. The second one was to cultivate nurses' attitudes in treating patients as their own families. Patient-centered care theory helps nurses to change their perceptions of caring and understanding patients' expectations. Tzeng's purpose was the discussion of the barriers and its interventions in order to ensure successful implementation of fall prevention programs in the acute care hospitals. Patient-centered care theory will be used as the framework for nurses when learning fall preventions.

Graham (2012) emphasizes that nurses play a vital role when developing plans for fall prevention. Evidence-based interventions for preventing falls included medication review, fall alarms, and environmental aids. Fall risk needs to be reassessed continually during patients'

hospitalization stay so the appropriate fall prevention interventions can be applied. Graham's purpose was to remind the nurses that it is their responsibilities to assess and select the most appropriate interventions for their fall risk patients in order to reduce falls and associated injuries. Staff's fall risk assessment skill is a critical factor in determining how effectively they will be able to select and utilize appropriate fall intervention measures to reduce fall rate.

Wilbert (2013) asserts that the fall prevention or management program in a rural Veteran Medical Center was effective in the reduction of patients' falls and injuries. Retrospective medical records review of 70 patients who fell from January 1 to March 31, 2009 were compared to 70 patients who did not fall during this time period and had been assessed to be at risk of falls on their admission assessments. A Fall Prevention Program was developed and taught to staff one year prior the study. With staff compliance to the Fall Prevention Program, there was a reduction in the number of falls from 4.5 per 1000 patient days in 2008 to 3.9 per 1000 in 2009. Wilbert's purpose was to evaluate the effectiveness of nursing staff in utilizing the Fall Prevention Program in order to reduce patients' falls and injuries. Staff education and their compliance to the Fall Prevention Program are essential to achieve the goal of my project.

Tzeng and Yin (2014) conclude that each specialty area in the hospital had its own top 10 effective interventions identified by RNs. This was a cross-sectional nurse survey conducted at five U.S. health systems in 68 units and 10 specialty areas from July 2011 to February 2012. Tzeng and Yin's purpose was to identify the perceived top 10 highly effective interventions in order to prevent patients' fall injuries based on the perception of RN staff in each specialty area. Since each unit has different needs, enabling staff to choose the most effective fall prevention measures to use for their respective units would provide the best results.

Staff education and their compliance to the fall prevention program are crucial in reducing patient fall rate (Wilbert 2013). Lack of knowledge and lack of caring attitude from nurses are the barriers in implementing a successful fall prevention program (Tzeng 2011). Increased staff knowledge about the fall prevention interventions have been proven to be significant in decreasing the rate of fall in Krauss et al (2008). It is nurses' responsibilities to assess and reassess patient's fall risk using their knowledge and apply the most appropriate fall prevention interventions (Graham 2012). Actions that have been done during nursing rounding on patients have resulted in a significant decrease in fall rate (Saleh, Nusair, Zubadi, and Shloul 2011) Since different units have different fall prevention needs, enabling nurses to choose the most applicable fall prevention measures could increase their compliance to the fall prevention program (Tzeng &Yin 2014).

Timeline

Gantt timeline (Appendix N) has been created to keep the project on track and monitor the progress. On July 8, 2015, I completed the pre-intervention audit on a total of 18 fall risk patients who had the Schmid fall score 3 or greater. Data has been analyzed and the results have been used for further education for this project. From July 10 to July 17, 2015, one-on-one education with handout began for all shift nurses. On July 14, 2015, I presented a fall prevention with nursing interventions presentation with a poster board at the monthly unit based meeting. On August 9, 2015, I completed the post-intervention audit on a total of 13 fall risk patients who had the Schmid fall score 3 or greater. From August 19 to August 20, 2015, my manager and I presented the poster presentation on fall prevention with nursing interventions at the staff meeting for three different shifts. Brochures have been distributed to each attendees to enhance their knowledge on fall prevention. On November 7, 2015, a quarterly post-intervention audit

was conducted on a total of 10 out of 18 fall risk patients to assess nurses' compliance to the fall prevention strategies. On December, 1, 2015, fall rate will be reviewed for the July to September quarter.

Expected Results

With the one on one education in regards to the nursing interventions on fall precaution, the compliance rate of applying fall prevention interventions to the fall risk patients has increased as expected. A post intervention chart audit was conducted a month after the one on one education. Results (Appendix E page 1) have shown a great improvement in nurses applying yellow arm bands, applying the water fall sign, and utilizing the white board for the fall risk patients. The second post intervention chart audit was conducted on November 7th. Results (Appendix E page 2) showed nurses sustained and improved upon the fall prevention strategies compliance rate when compared with the initial post intervention chart audit results. When reviewing the number of falls in the fourth quarter 2015 from CALNOC data at my microsystem unit, the number of falls should have decreased 25% or below 5.25 when compared with the number of falls occurred in April to June 2015. At the end of the first quarter in 2016, the number of falls should have decreased another 25% or below 3.94 when compared with the number of falls goal in the fourth quarter of 2015. Similar to the CALNOC data, the falls per 1000 patient days should have decreased 25% during the fourth quarter in 2015. At the end of the first quarter in 2016, the falls per 1000 patient days should have decreased another 25% when compared with the rate of the fourth quarter in 2015. If the nurses' compliance rate to the fall prevention interventions decrease and the fall rate increases, this means further fall prevention education is required for nurses and the aim of this project might need to be reassessed.

Nursing Relevance

This fall reduction with nursing interventions project is relevant to the nursing profession in numerous ways. With the ongoing fall prevention education for nurses, it helps strengthen the relationship between team members, enhance staff knowledge on fall prevention, and improve patient satisfaction. During the education session at the unit based and staff meeting, staff are encouraged to provide feedback in regards to the fall precaution interventions. This provides great opportunities for team building. Those interactions at the meetings help to enhance staff knowledge on fall prevention. Ultimately, the compliance rate in applying the fall prevention interventions for fall risk patients will increase. When the compliance rate increases, the patient satisfaction will increase correspondingly. Patients will appreciate their nurses' effort in preventing them from falling to the floor and enhancing their safety during their hospitalization. With the hourly rounding implementation as part of the fall prevention interventions, it shows nurses' caring and positive attitude to their patients which helps increase patient satisfaction.

Summary Report

The aim of this fall reduction project is to have the nursing staff learn, review, and apply fall prevention interventions for fall risk patients in order to help reduce fall rate by 50 percent within a six month period, from October 2015 through March 2016. The setting for this project is in one of the 37 bed medical-surgical units at the hospital which consists of a population of stroke, medical, and surgical patients.

The number of falls from CALNOC data and falls per 1000 patient days at my microsystem unit have shown a rising trend (Appendix A and B). When a chart audit was conducted to assess the cause, the findings (Appendix D) showed that the nurses were not complying with the fall prevention strategies even when patients had a Schmid fall score of 3 or greater. Based on the results, a fishbone diagram (Appendix F) was created to assess the fall rate

factors with four categories which are nursing staff, process, equipment, and materials. In the nursing staff category, the reasons which might increase the fall rate include non-compliance to the fall reduction strategies, knowledge deficit related to fall prevention interventions, and communication failure in relaying the fall prevention knowledge to new hire or float nursing staff. In the process category, there are compliance issues in initiating fall prevention interventions for patients with Schmid fall score of 3 or greater, checking bed braking system, and activating the bed alarm. In the equipment category, maintenance and malfunctions are the issues that increase patient fall rate. In the materials category, inventory and supply insufficiency are the issues.

One on one education with handout (Appendix K) regarding the audit results and improvement highlights have been completed with 80% of nursing staff within a week. Nursing staff verbalized their understanding and agreed to utilize the white board to indicate whether a patient is at fall risk and any musculoskeletal deficits. All participants were given a dry erase marker so they can write patient's information on the white board. A post intervention audit was completed a month later. To reinforce nursing knowledge on fall prevention, a poster presentation (Appendix O) with brochures (Appendix L) was completed at a monthly staff and unit based meeting. All Charge Nurses are responsible for reminding and reinforcing bedside nurses to initiate fall precaution interventions for all fall risk patients. For the equipment maintenance and malfunction issue, the Charge or bedside nurse will contact the engineering department to have it checked and repaired if needed. For the materials inventory and supply issue, the unit manager will communicate with the Store Room manager to ensure that sufficient supplies will be stocked in the unit.

Evaluation

The second post intervention chart audit has been conducted on November 7th per the project timeline to compare the nurses' compliance rate to the fall prevention strategies with the first post intervention chart audit data. When comparing the audit data from the pre-intervention to the second post-intervention, which was four months after the initial data collection, results (Appendix E, p.3) show a significant improvement for the white board utilization. The result increased from 22% to 100%. The bed brakes application and the bed being plugged to the wall plug remained 100% compliance after the initial intervention. The compliance of applying yellow armband, yellow non-skid socks, and activating bed exit alarm have been sustained in the expected range. For the water fall sign utilization, it decreased from 92% to 70%. According to the bedside nurses, the cause factors could be time and environmental constraints. Even though the unit census has remained low, the nurse to patient ratios would not be affected. Each nurse is responsible for five patients. When the acuity of patients were high, nurses claimed that they did not have time to check whether the water fall sign has flipped over on the wall above the patient's bed. Also, because most of our patients' room are semi-private, there are limited space between two beds. Therefore, nurses might have to squeeze in between patient bed and table to reach for the sign on the wall which is hanging above the patient's bed. Further improvement is needed after this evaluation. The placement of the water fall sign can be changed to improve the rate of utilization.

In terms of fall rate, quarterly number of falls from CALNOC data and the rate of falls per 1000 patient days from NDNQI data will not be available until the mid of 2016. However, the Quality Coordinator was able to obtain the number of falls for my microsystem unit from the Midas incident report system. This Midas incident report number is the number that is sent to CALNOC to represent our hospital's fall rate. According to the Midas fall report (Appendix A,

p.2), there was only 2 falls in the month of October compared with 7 falls in the months of April to June. So far, the result has met the goal of the project, which was the number of falls should have decreased 25% or below 5.25 when compared with the number of falls occurred in April to June 2015. In other words, if the number of falls in the quarter of October to December remains below 5.25, it proves the success of the project.

Conclusion

As staff knowledge and implementation of fall prevention interventions increase, patient fall rate will correspondingly decrease. Ongoing education is essential to sustaining the success of this project. The fall champions are responsible for continuing to educate their colleagues in following the fall prevention strategies. PDSA (Plan-Do-Study-Act) cycle will also be utilized to sustain the success of this project (Appendix R). The action plan from each cycle will be modified as needed based on the study results from the previous plan.

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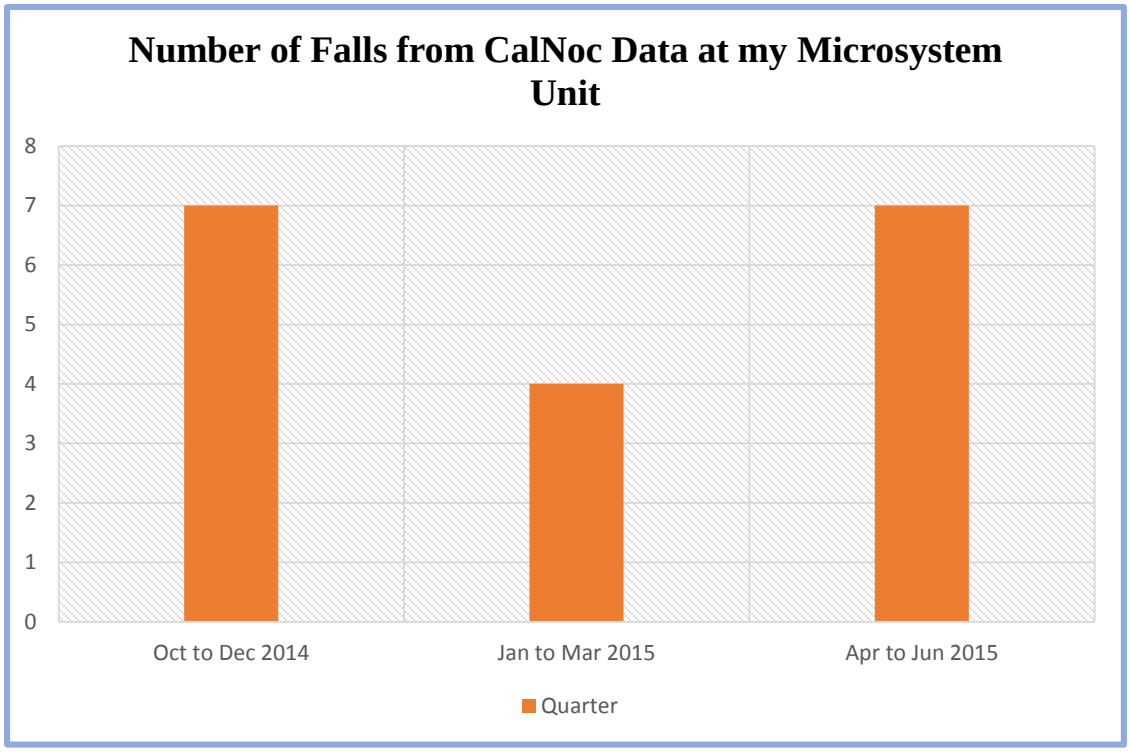
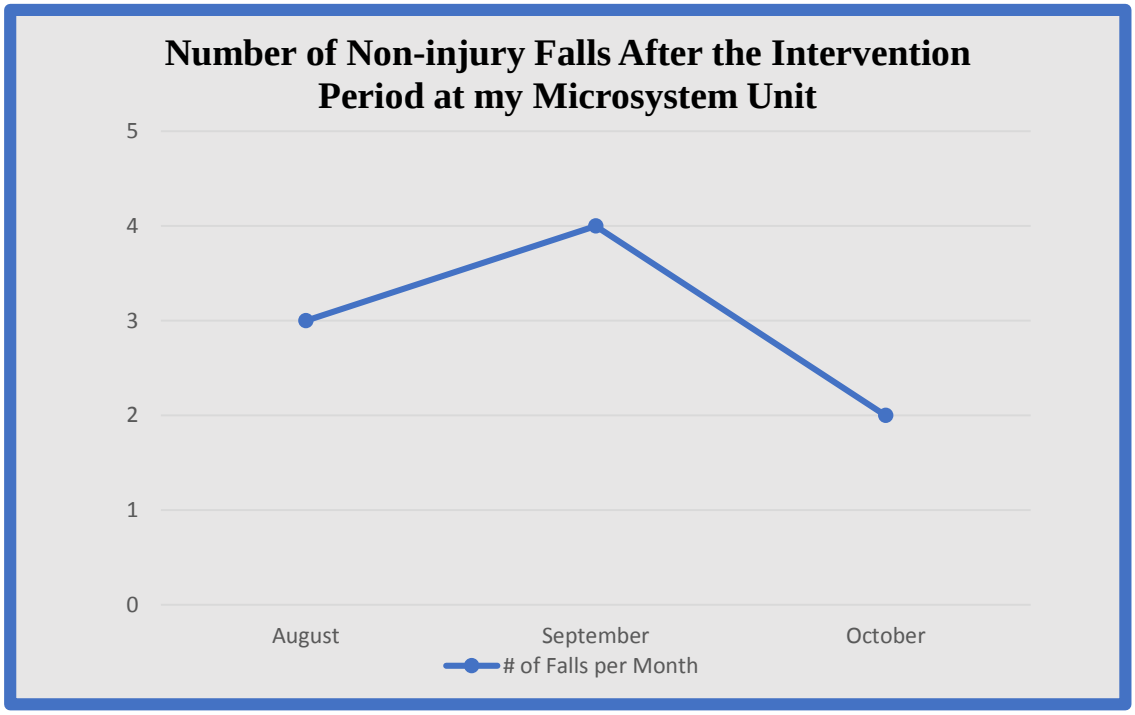
Appendix A

 # OF FALLS FROM CALNOC DATA (Before intervention)
Page 1



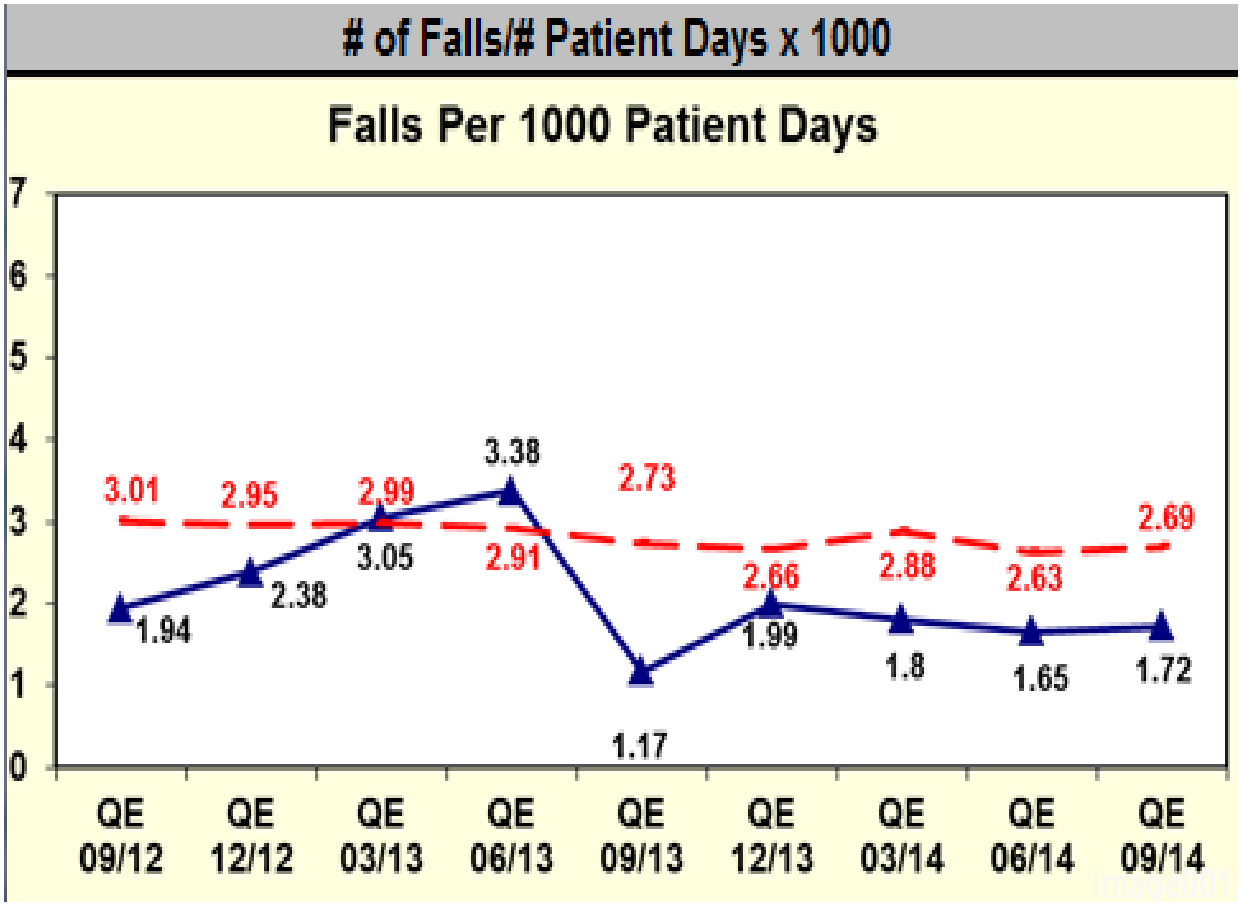
Appendix A

 # OF FALLS (After Intervention)
Page 2



Appendix B

NDNQI-FALLS PER 1000 PATIENT DAYS



Appendix C

PRE AND POST INTERVENTION AUDIT TOOL

Pre and Post Intervention Audit Tool **Date:**

Room #	Fall Risk? (Schmid score equal or greater than 3)	Yellow armband?	Yellow non skid socks?	Water fall sign?	Bed alarm on?	Bed brakes on?	Is the bed connected to the wall plug?	Has the white board been utilized to indicate that patient is at fall risk or other fall related information? (i.e. L sided weakness, SBA to BR using FWW, x2 person when OOB, etc.)
1bed1								
2bed1								
2bed2								
3bed1								
3bed2								
4bed1								
4bed2								
5bed1								
5bed2								
6bed1								
6bed2								
7bed1								
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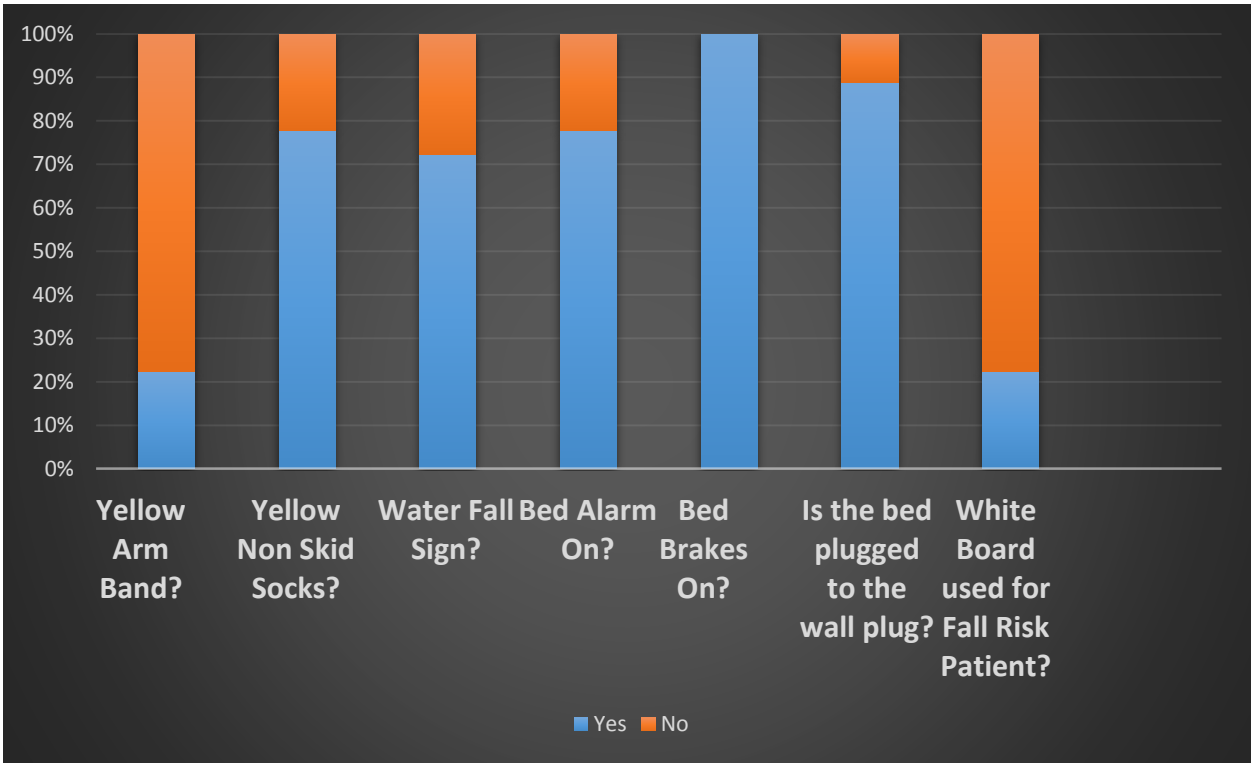
Appendix D

PRE-INTERVENTION CHART AUDIT RESULTS

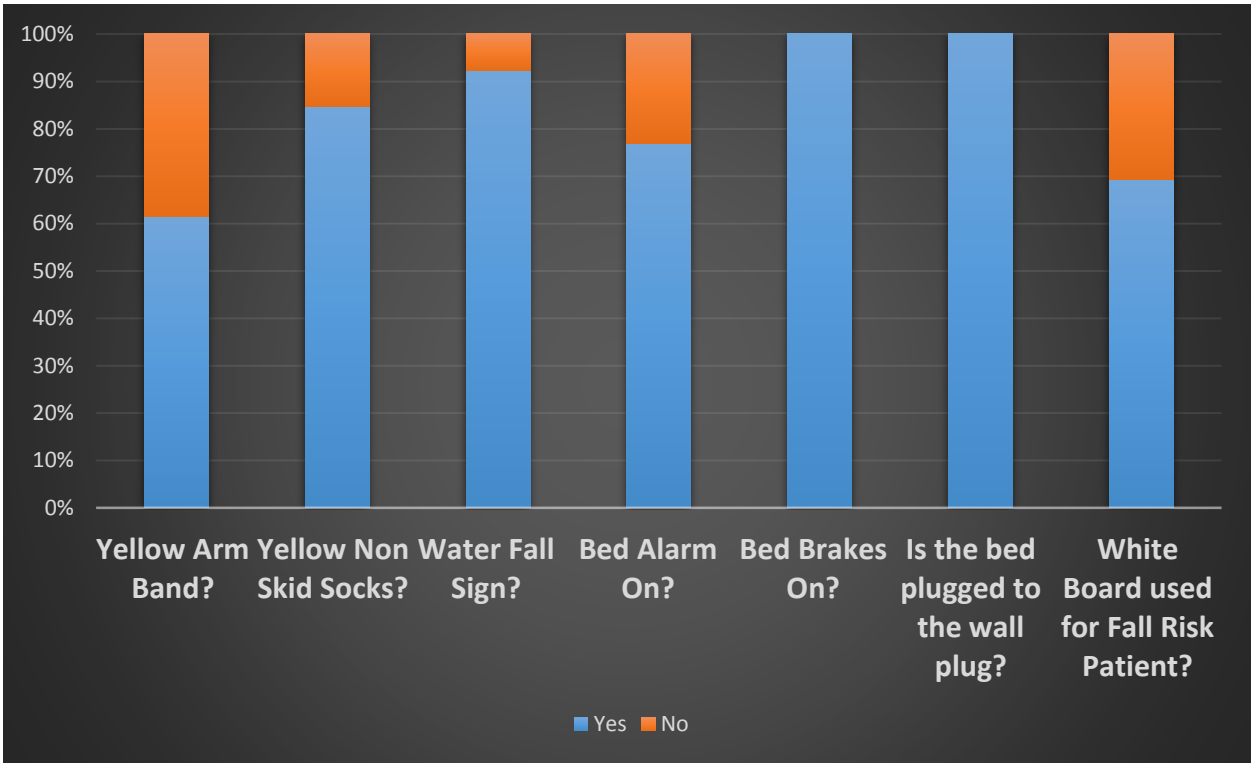
Pre-Intervention Chart Audit completed on July 8th. There was a total of 18 patients out of 31 patients who had Schmid score equal or greater than 3.



Appendix E

POST-INTERVENTION CHART AUDIT RESULTS
Page 1

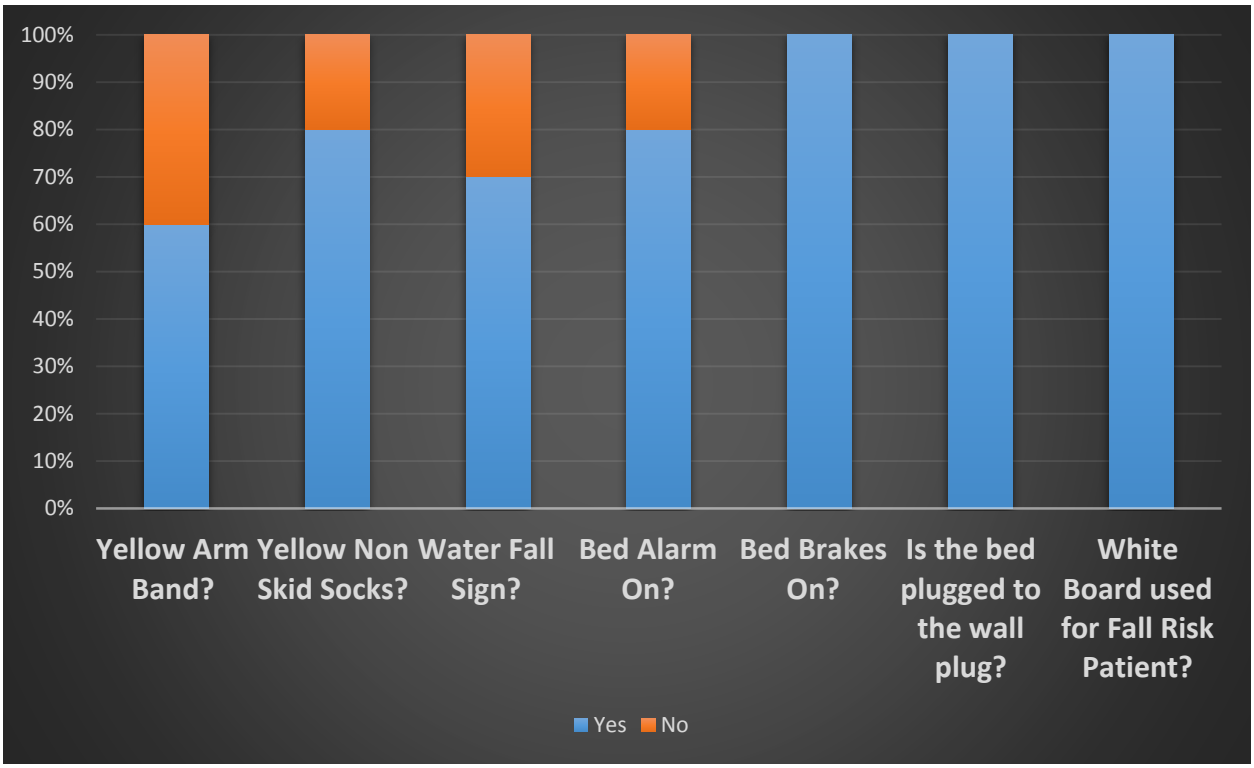
Post-Intervention Chart Audit completed on August 9th. There was a total of 13 patients out of 25 patients who had Schmid score equal or greater than 3.



Appendix E

POST-INTERVENTION CHART AUDIT RESULTS
Page 2

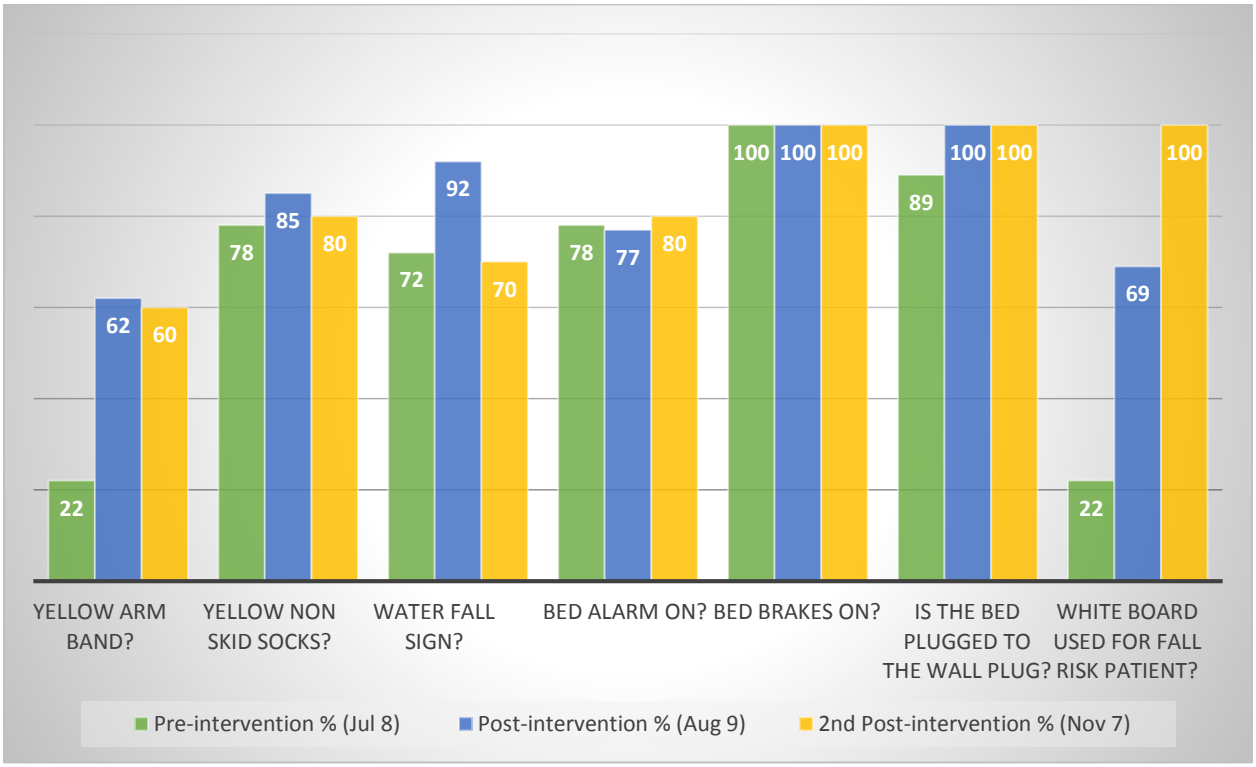
2nd Post-Intervention Chart Audit completed on November 7th. There was a total of 10 patients out of 18 patients who had Schmid score equal or greater than 3.



Appendix E

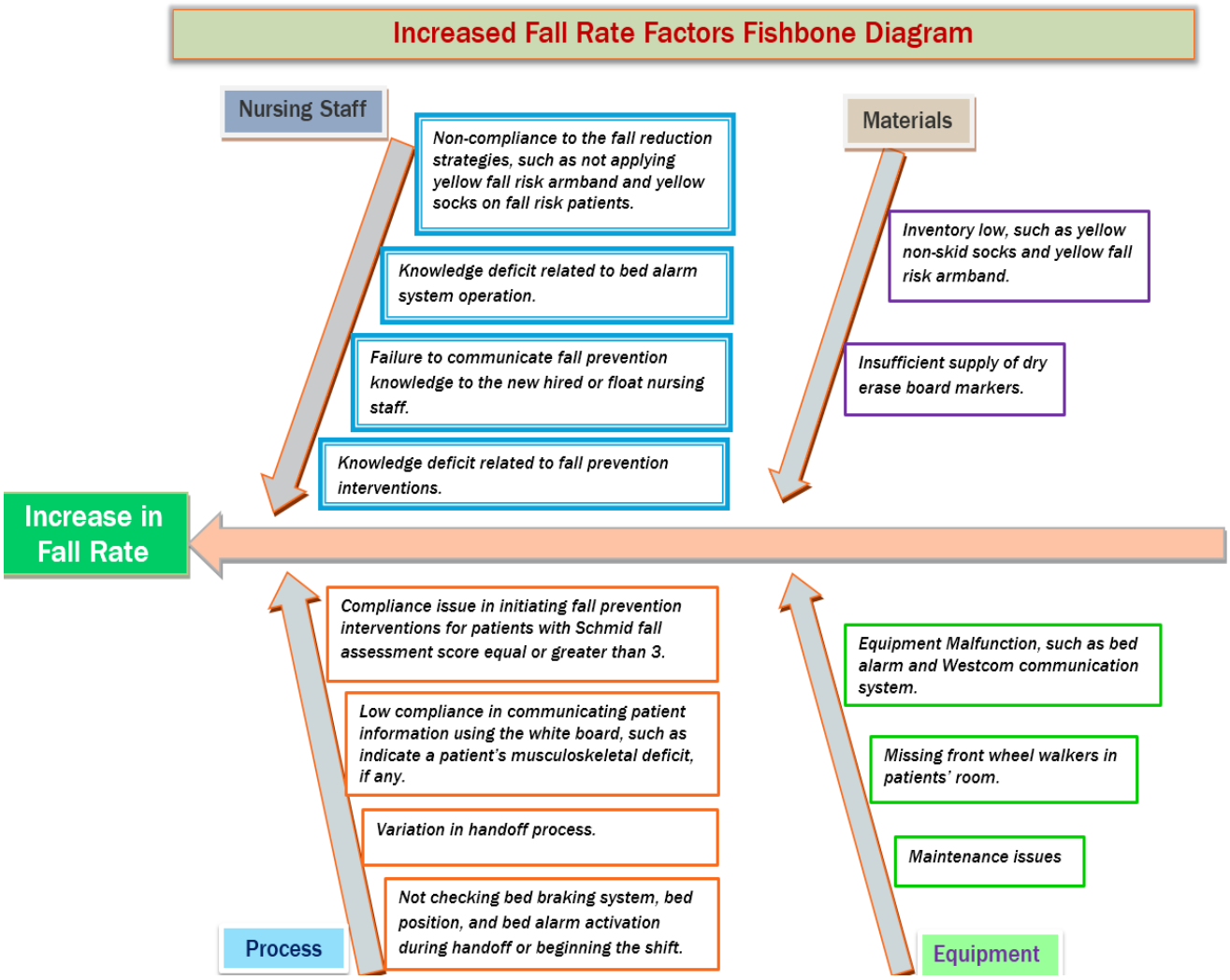
PRE and POST-INTERVENTION CHART AUDIT RESULTS
Page 3

Below is a graph showing the results from the pre-intervention and post audit results, which were conducted on August 9th and November 7th.



Appendix F

ROOT CAUSE ANALYSIS FISHBONE



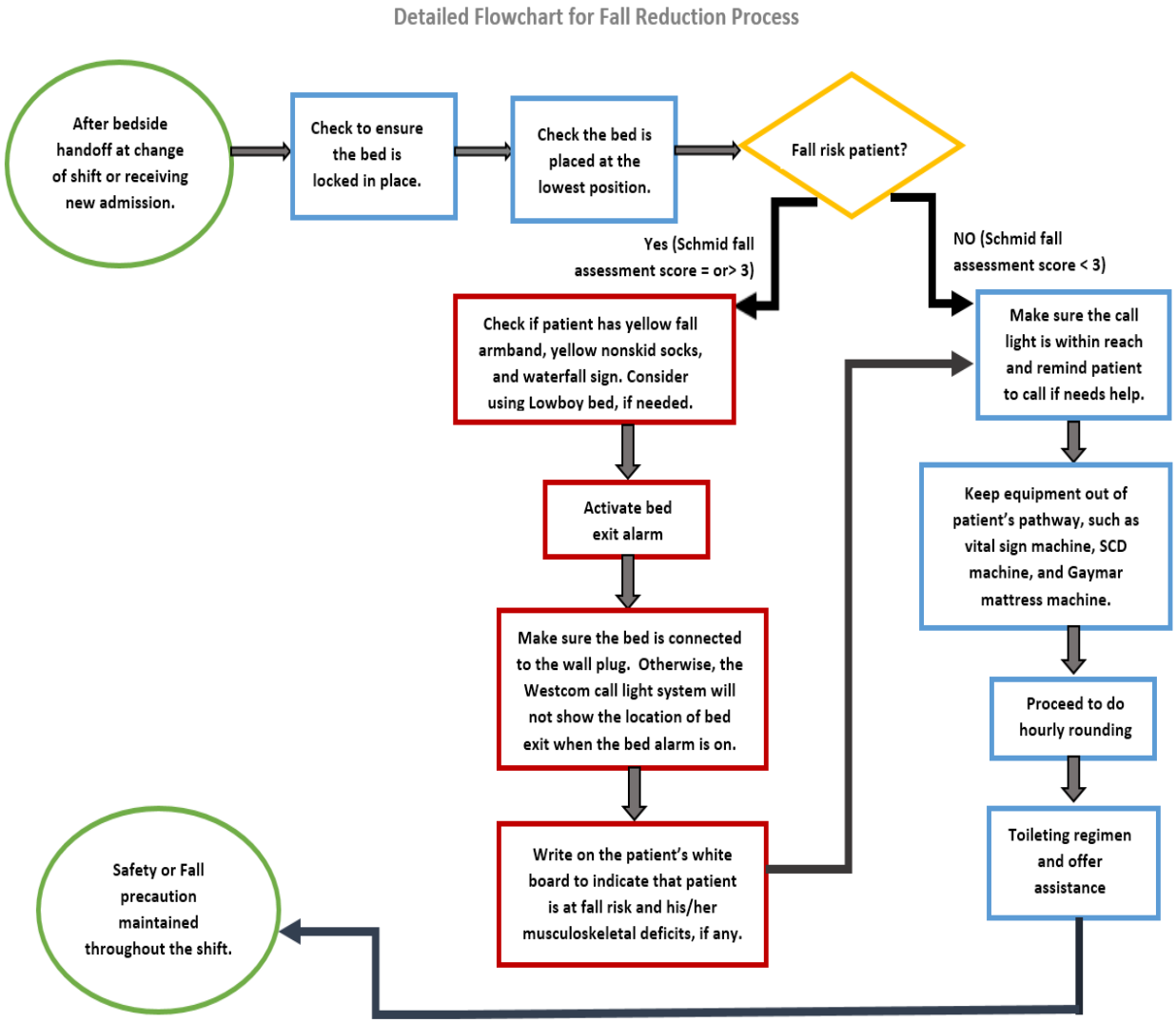
Appendix G

SWOT ANALYSIS

Strengths	**Weakness**
➢ High expectations for positive patient outcomes ➢ High expectations for decreased fall rate ➢ Effective dissemination of fall precaution knowledge throughout communication tree ➢ Easy access to fall precaution supplies, such as yellow belt, yellow non-slip socks, and yellow fall risk band ➢ Competent well trained staff ➢ Built-in safety alarm feature in all patients beds	▪ Low commitment in following fall prevention strategies ▪ Lack of communication of the fall prevention knowledge to the new hired nurse or float nurse ▪ Equipment malfunction issues
Opportunities	**Threats**
✓ Team building ✓ Ongoing fall prevention education ✓ Ongoing staff knowledge enhancement ✓ Improving patient satisfaction.	❖ Ongoing educational needs ❖ Nurses and patients' non-compliance to the fall prevention strategies ❖ Fall precaution supplies unavailable ❖ Equipment malfunction.

Appendix H

FLOWCHART FOR FALL REDUCTION PROCESS



Appendix I

STAKEHOLDER ANALYSIS

Stakeholder Name	Impact (How much does the project impact them?)	Influence (How much influence do they have over the project?)	What is important to the stakeholder?	How could the stakeholder contribute to the project?	How could the stakeholder block the project?	Strategy for engaging the stakeholder
Unit Manager	High	High	Maintain optimal quality of care and safety for patients.	Communicate with other stakeholders the importance of the fall prevention project.	Cancel staff meeting due to budget issue, then the other stakeholders will not receive information effectively.	Unit leaders disseminate information during monthly unit based meetings.
Charge Nurses	High	High	Maintain patients' safety, prevent falls, and address nurses and patients' needs.	Stress and communicate the importance of the fall prevention project to staff nurses and CNA.	Lack of time to follow up and remind nurses to follow the fall prevention protocol.	Monthly unit based meeting discussion of the fall rate.
Staff Nurses	High	High	Maintain patients' safety, prevent falls, and address patients' needs.	Initiate and apply fall prevention strategies to all fall risk patients who have the Schmid fall score of 3 or greater.	Non-compliance to the fall prevention protocol.	Chart audit fall rate results and share with nurses quarterly to compare the difference after the implementation of the project.
Certified Nursing Assistants (CNA)	High	High	Maintain patient's safety and prevent patient falls.	Apply fall prevention strategies when patient has yellow armband on.	Non-compliance to the fall prevention strategies, such as leaving patient in the bathroom and not activating bed exit alarm after helping the patient return to bed.	Reinforce education at the quarterly CNA meeting.

Appendix J

COST ANALYSIS

Category	Details	Cost
Brochures	Total of 100 double-sided and full color printing	$155
Dry erase fine point markers	Total of 100	$100
Total		$255

Appendix K

FALL PREVENTION HANDOUT

Fall Prevention Tip Sheet

- ✓ Always use the bed exit alarm for the high fall risk patients
- ✓ Keep the bed brakes locked
- ✓ Place patient in low position at all the time
- ✓ Keep floor surfaces clean and dry
- ✓ Keep equipment out of patient's pathway and reduce tripping hazards
- ✓ Toileting regimen and offer assistance
- ✓ One-on-one support while the patient is in the bathroom
- ✓ Keep nonskid socks on patient
- ✓ Use yellow gait belt while ambulating with patient
- ✓ Have call light within patients' reach
- ✓ **Make sure the bed is connected to the wall plug. Otherwise, the Westcom call light system will not show the location of bed exit when the bed alarm is on.**
- ✓ **Utilize the patient's dry erase board (white board) to indicate whether the patients are at fall risk and their musculoskeletal deficits, if any.**

***Let's work as a team to promote patients' safety and prevent falls.*

Appendix L

FALL PREVENTION BROCHURE

Fall Prevention Tips

- Always use the bed exit alarm for the high fall risk patients
- Keep the bed brakes locked

- Place patient in low position at all the time
- Keep floor surfaces clean and dry
- Keep equipment out of patient's pathway and reduce tripping hazards

- Toileting regimen and offer assistance
- One-on-one support while the patient is in the bathroom
- Keep yellow armband and yellow nonskid socks on patient

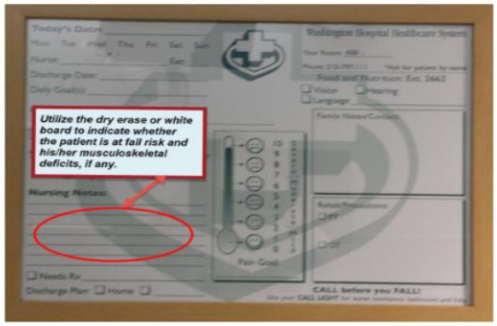
- Use yellow gait belt while ambulating with patient
- Have call light within patients' reach

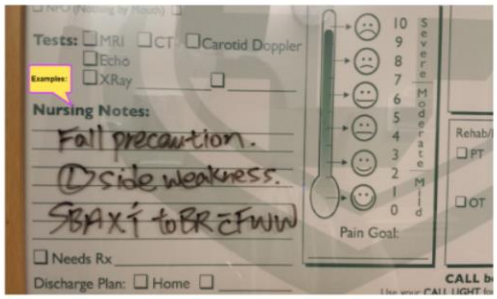
- **Make sure the bed is connected to the wall plug. Otherwise, the Westcom call light system will not show the location of bed exit when the bed alarm is on.**
- **Utilize the patient's dry erase board (white board) to indicate whether the patients are at fall risk and their musculoskeletal deficits, if any.**

Fall Prevention

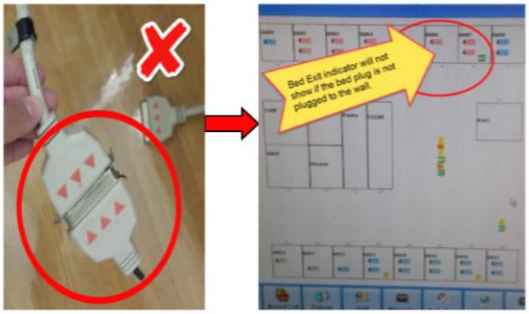
***** Let's work as a team to promote patients' safety and prevent falls. *****

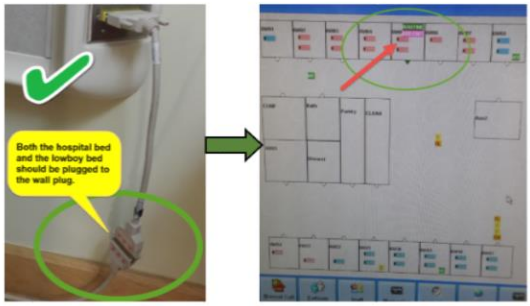
Utilize the patient's dry erase board (white board) to indicate whether the patients are at fall risk and their musculoskeletal deficits, if any.





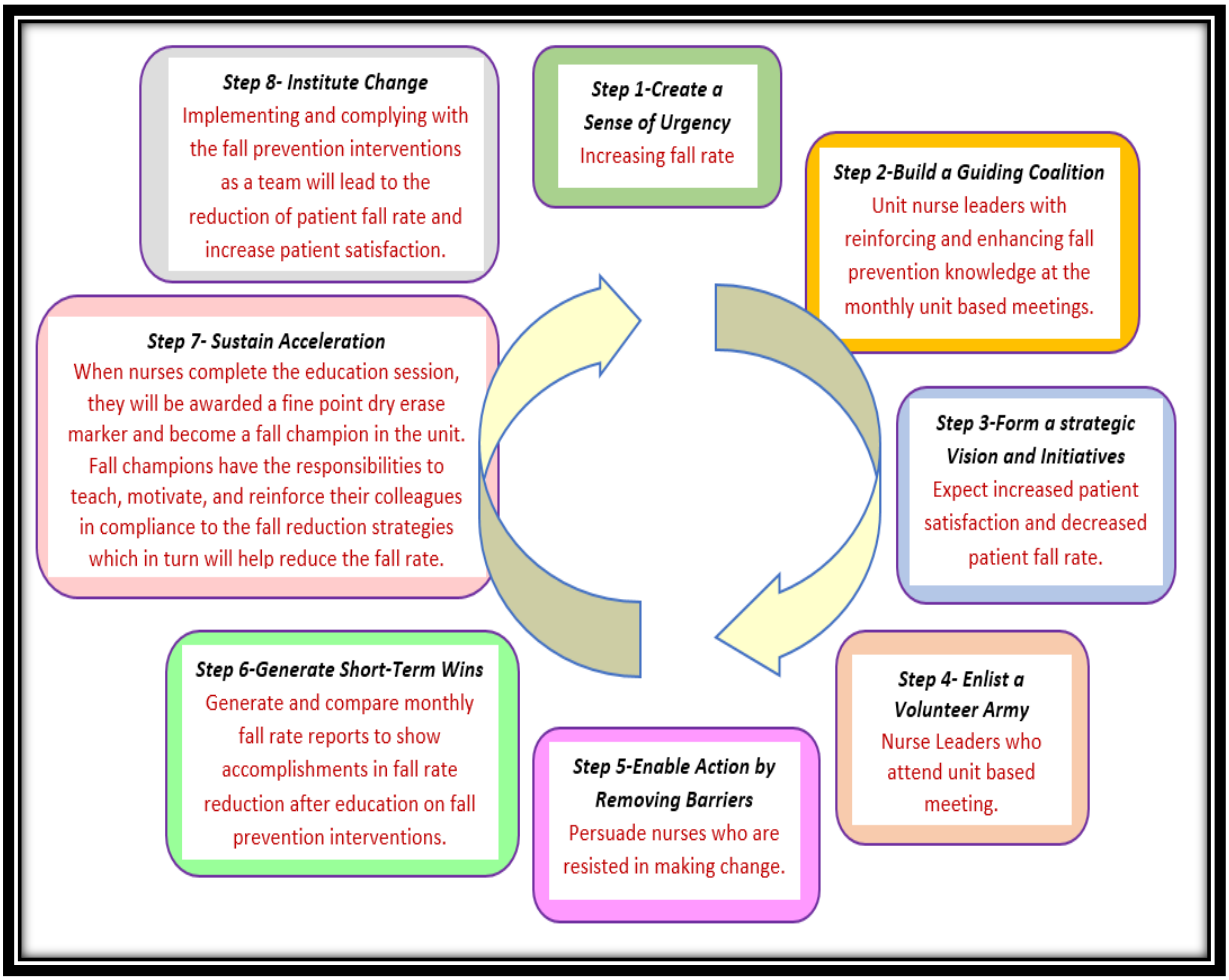
Make sure the bed is connected to the wall plug. Otherwise, the Westcom call light system will not show the location of bed exit when the bed alarm is on.





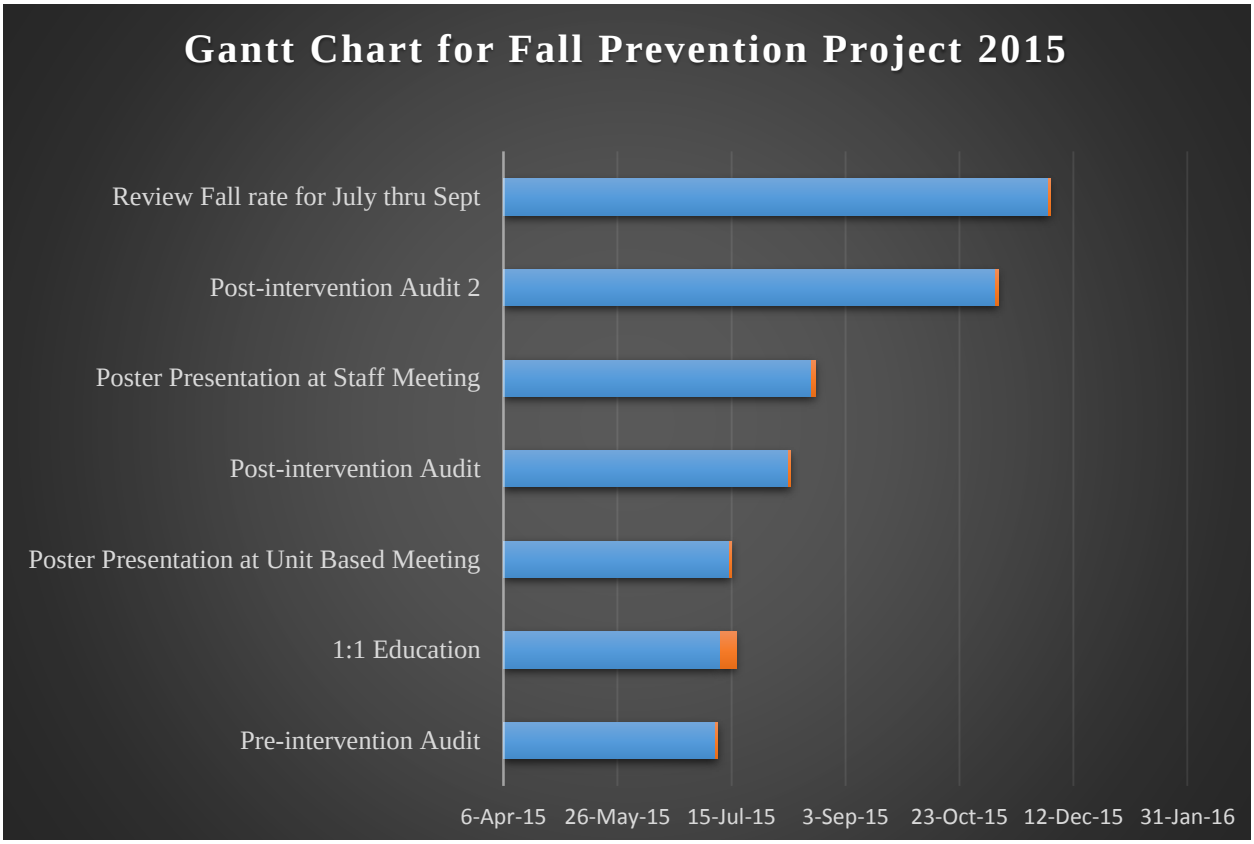
Appendix M

KOTTER'S 8 STEP PROCESS FOR LEADING CHANGE



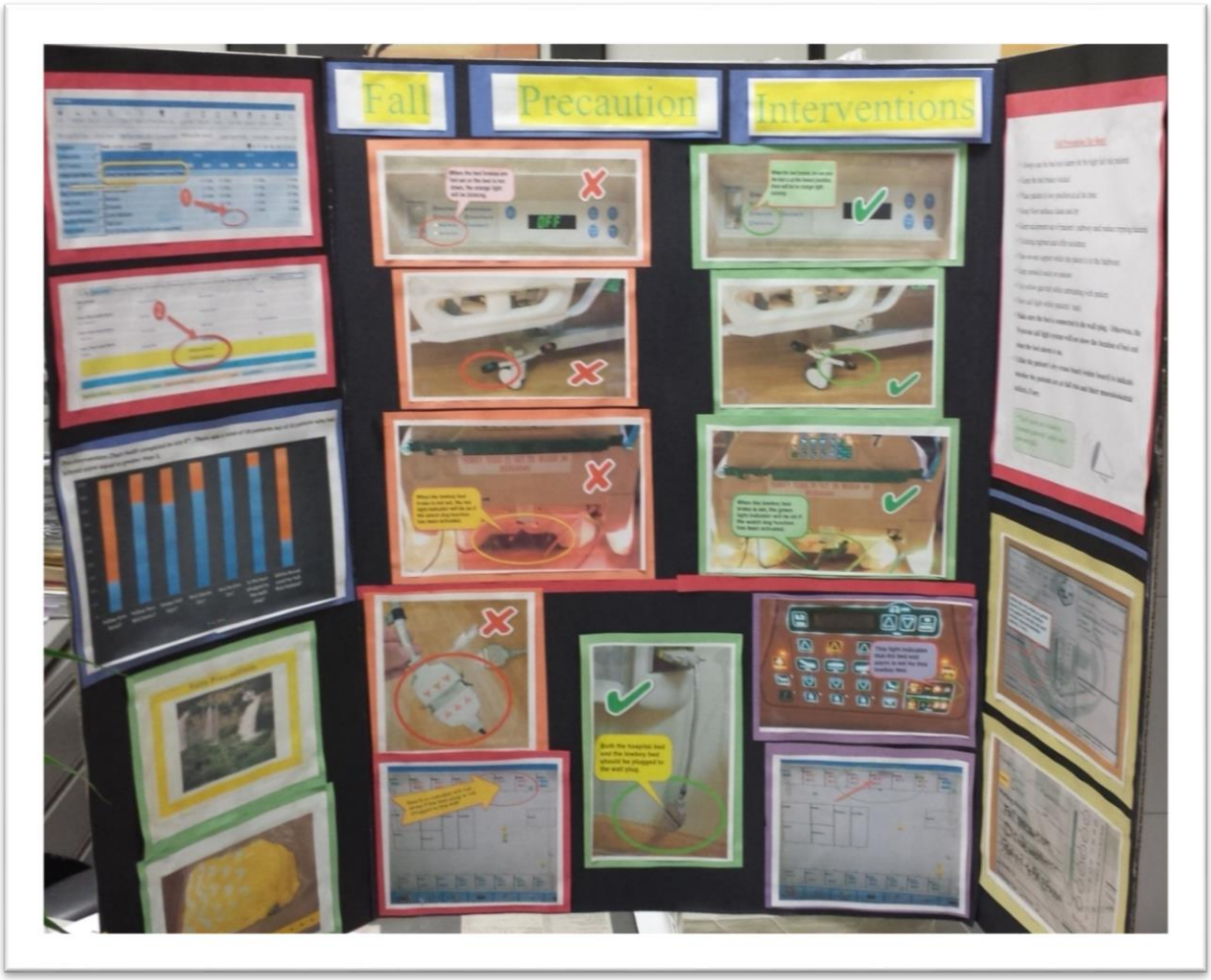
Appendix N

GANTT CHART



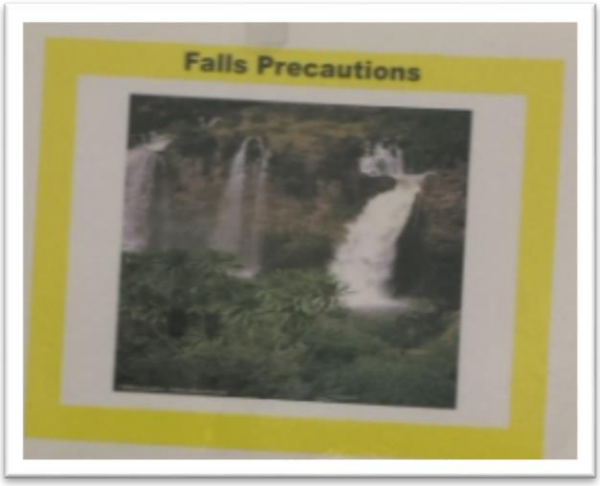
Appendix O

POSTERBOARD PRESENTATION FOR FALL PREVENTION



Appendix P

FALL PREVENTION INTERVENTIONS EXAMPLES



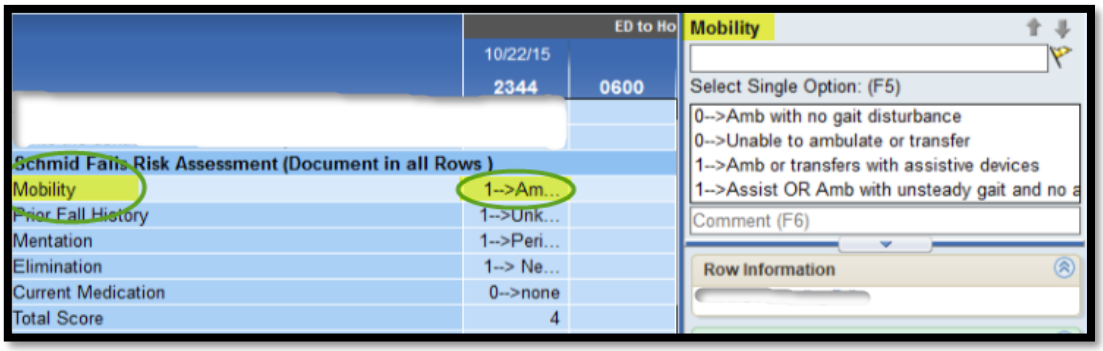
Water Fall Sign

Yellow Nonskid Socks and Yellow Fall Risk Armband

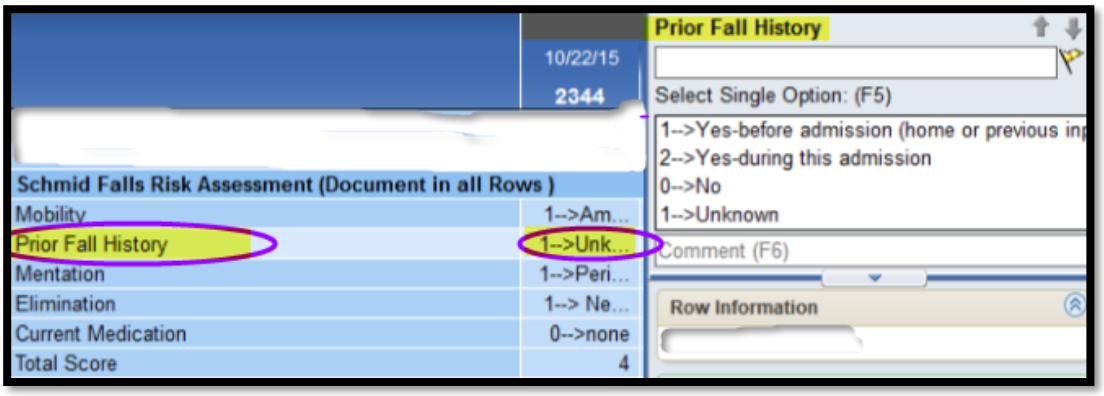
Bed Alarm Activated

Appendix Q

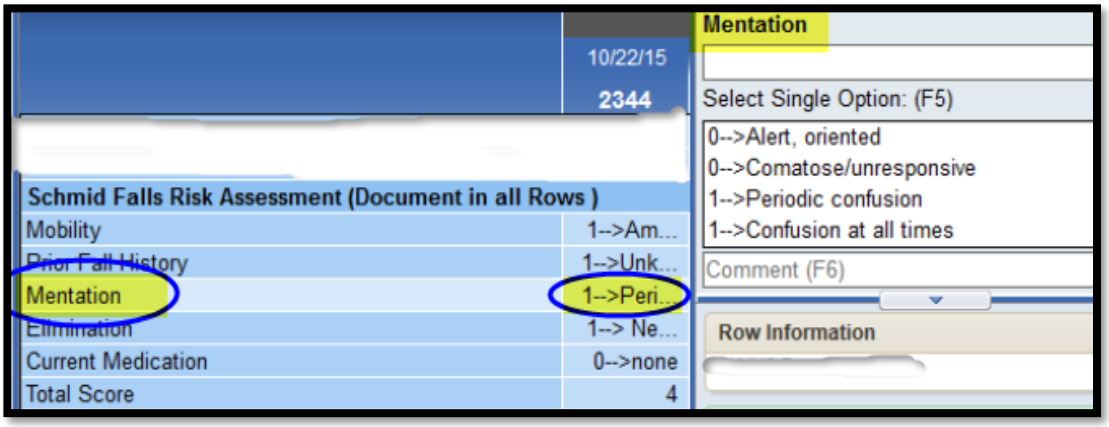
SCHMID FALL RISK ASSESSMENT TOOL
Page 1



Step 1: Select and click on the description (on the right) that describes the patient's mobility status.



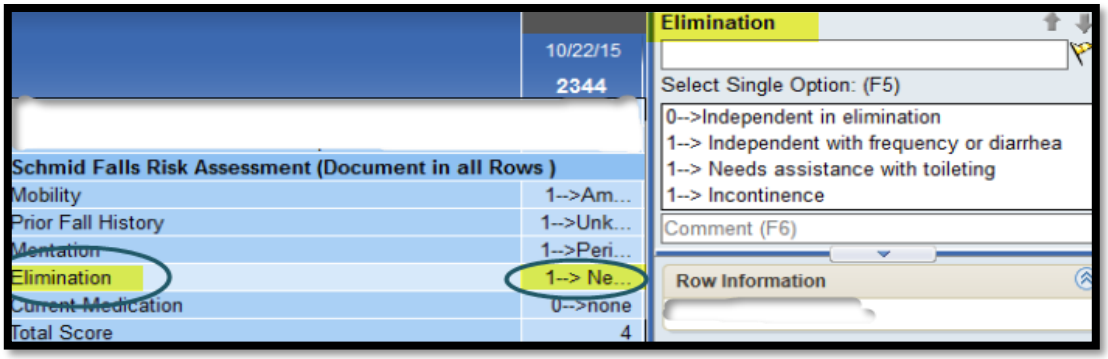
Step 2: Select the answer of whether the patient has the history of fall.



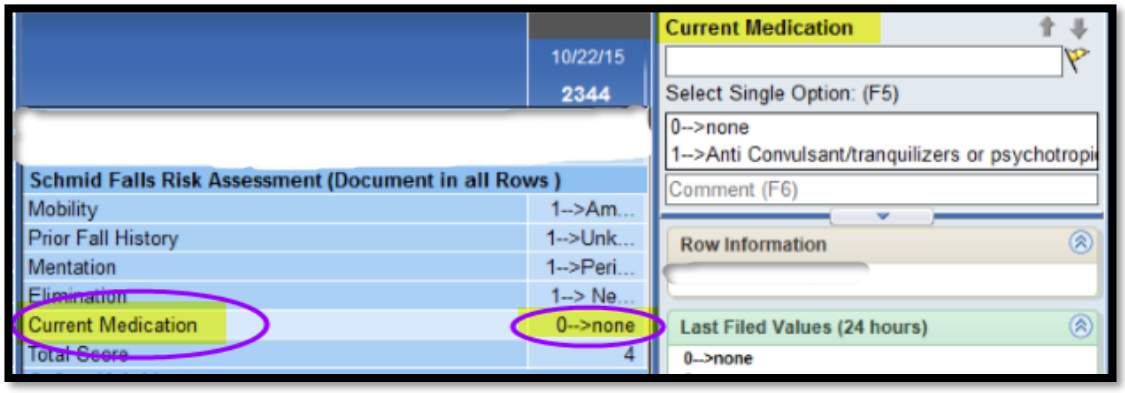
Step 3: Select and click on the description that describes the patient's current mentation status.

Appendix Q

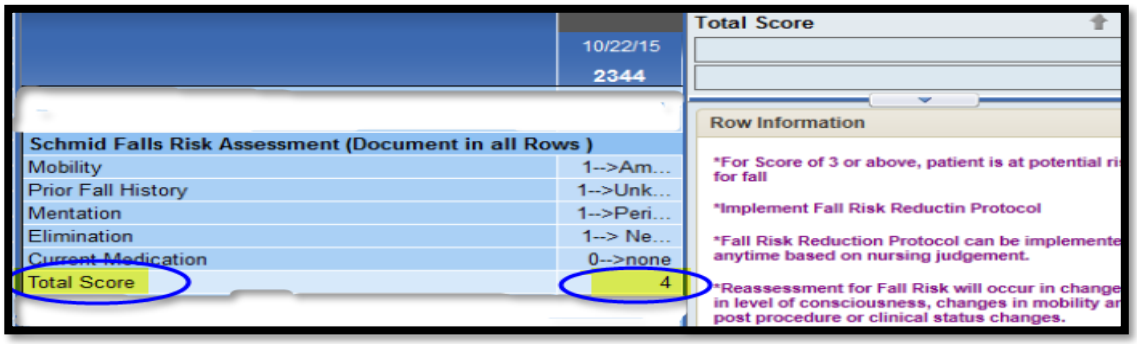
SCHMID FALL RISK ASSESSMENT TOOL
Page 2



Step 4: Select and click on the description that describes the patient's current elimination status. For examples, patient is able to walk to the bathroom or incontinence.



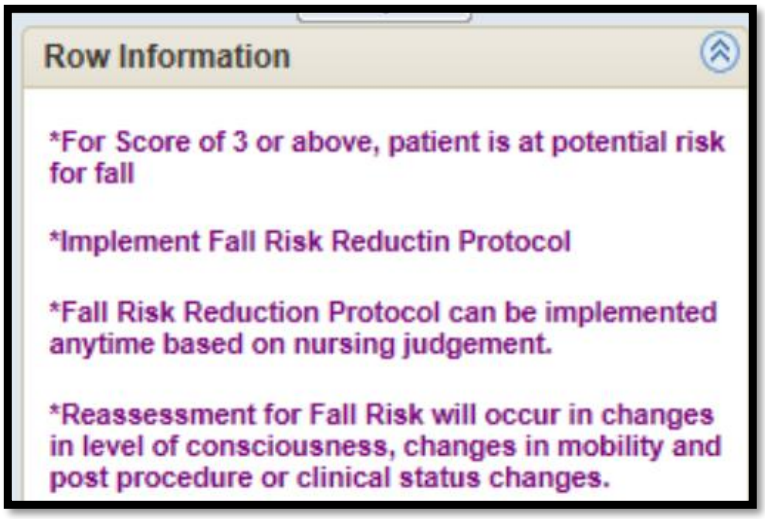
Step 5: Select and click whether the patient is on any anti-convulsant or psychotropic medication which might increase the chance of fall due to the side effects of the medication.



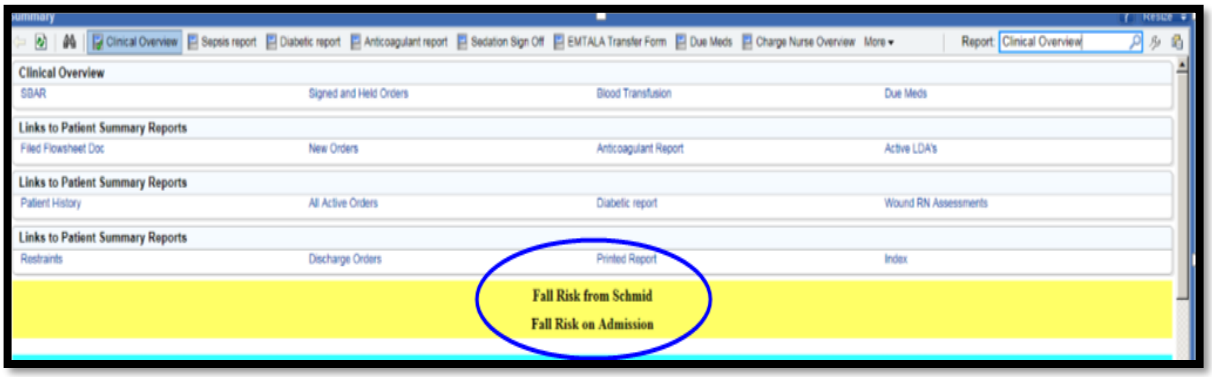
At the end, the total score will be generated automatically after the completion of step 1 to 5. This total number will be the patient's Schmid fall risk score.

Appendix Q

SCHMID FALL RISK ASSESSMENT TOOL
Page 3



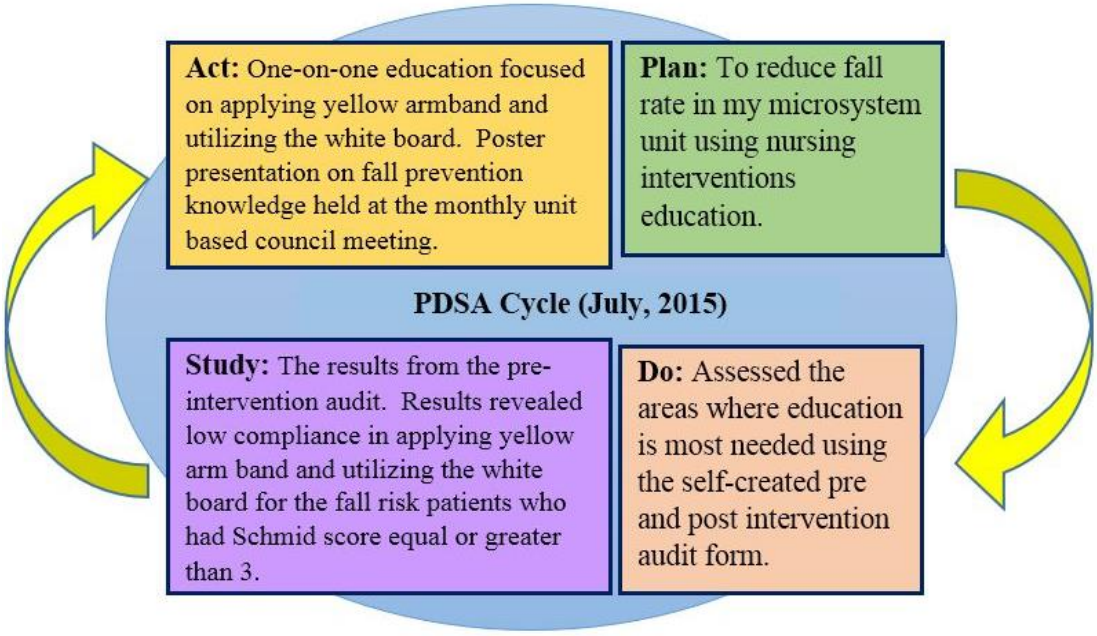
Implement fall risk reduction protocol for Schmid fall risk score 3 or greater.

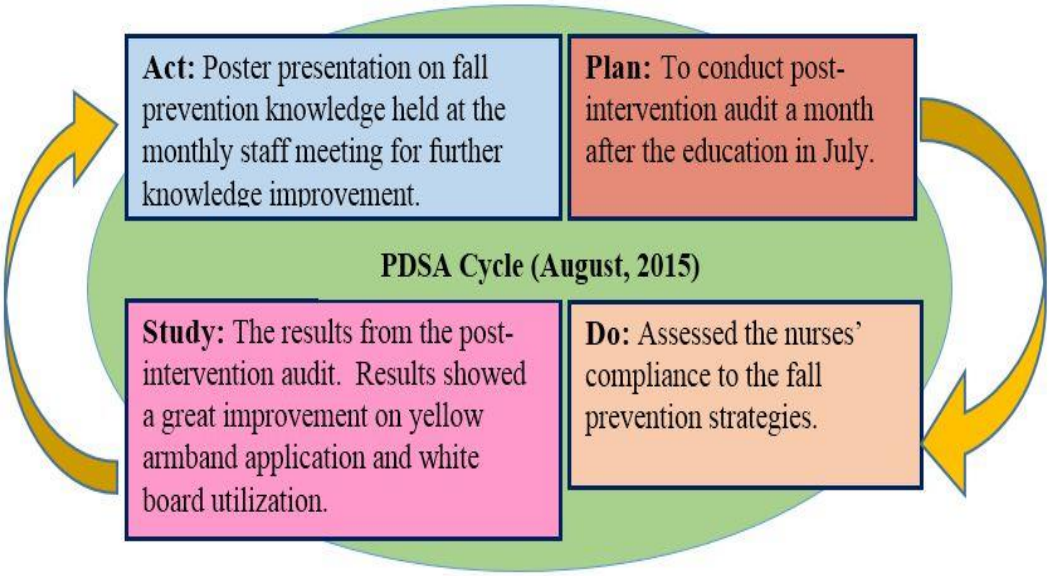


There will be the fall risk sign on patient's summary page if the patient has the score of 3 or greater on the Schmid fall assessment tool. This serves as a reminder for nurses.

Appendix R

PDSA CYCLE
Page 1





Appendix R

PDSA CYCLE
Page 2