FALLS IN THE EMERGENCY DEPARTMENT

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A DNP Project Manuscript
Submitted in Partial Fulfillment of the Requirements for the
Doctor of Nursing Practice Degree

University of Maryland School of Nursing
May 2019

Abstract

Background

Patient falls in hospitals have been a long-standing issue for many inpatient units as well as emergency departments (ED). Studies have been conducted to find a reasonable solution to this issue. A literature review was conducted and found that bundled interventions that include multiple interventions, such as a falls wristband; supportive, non-skid footwear; patient education; and hourly rounding can be helpful to reduce falls numbers in the hospital setting. Overall, the literature supports a multi-pronged approach to reducing falls.

Local Problem

A local suburban hospital ED had experienced an increase in falls and requested a nurse practitioner student to assist them by implementing a falls prevention bundle for high falls risk patients. The student utilized information from the literature review and formulated a plan to implement a falls prevention bundle in the ED, including educating patients on their individual falls risk, providing the high falls risk patients with falls wristbands, non-skid footwear and auditing the use of hourly rounding.

Interventions

Over the course of two weeks, the project leader educated registered nurses and patient care technicians on the project, and how and where to locate the bundle items on the unit. After these two weeks, the bundle was officially implemented by the staff members and the project leader began auditing 5 randomly chosen high fall risk patients per week, to evaluate the usage of the bundle. After 14 weeks of implementation, monthly falls rates were evaluated, and electronic chart audits were completed by the project leader.

Results

In September, the project leader educated 51 nurses and patient care technicians out of 174 staff members, or 29.31% of the total ED staff. The unit had three falls noted on the incident report for the month of October. In October's audits, 60% of high fall risk patients had received their non-skid socks upon entry to the ED. Seventy-six percent of nurses self-reported use of hourly rounding as well. In the month of November, there were zero falls, a great accomplishment. However, per the audit results, some of the bundle usage numbers had decreased. Of note, the project leader did not record any patients with the falls education handout in audits during the entire project. In the first week of December, data on patients who had fallen from 8/22/18-11/26/18 was collected. This data shows that zero of these patients had hourly rounding documented on them within the electronic chart.

Conclusions

Overall, it appeared that the falls numbers decreasing over the implementation period was not due to individual aspects of the intervention bundle, but perhaps due to the auditing process. The project leader's presence on the unit every week, reminder emails sent to staff, and a poster with falls information were all incorporated once audits revealed that aspects of the bundle were not being consistently utilized. Perhaps re-education provided during the audits coupled with the presence of the project leader on the unit helped to increase falls awareness in order to decrease the falls rate for the unit.

Introduction

Background and Significance

A fall can be defined in multiple ways. An operational definition often includes the characteristic of an unintentional lowering to the ground. Falls, especially in the elderly, have long-lasting effects on mobility and overall health. Approximately 30% of adults over the age of 65 will experience a fall. Falls in the elderly can be deleterious due to increased morbidity and mortality related to injuries in people over the age of 65. (Kim, et al., 2017). Falls within the hospital setting are common as well. A recent study looked at 1,263 hospitals nation-wide and noted that adults in medical and surgical units fall 3.56 per 1,000 patient days. Twenty-six percent of falls result in an injury, which could lead to permanent disability or death. Compared to patients who have not fallen in the hospital, fallers stay in the hospital 6.9 days longer than their counterparts. Their hospitalizations typically cost $13,806 more than those who have not fallen. (Walsh, Liang, Grogan, Coles, McNair, & Nuckols, 2018). The emergency department (ED) poses a unique challenge, as it is a transient location for patients to remain in the hospital. Older adults with an ED-related falls visit are at an increased risk for further falls, hospital readmission, functional decline, and mortality (Pua, Ong, Clark, Matcher, & Lim, 2017). The particular emergency department where this project was implemented has seen an overall rise in the number of falls over the past year. Overall, ED patients with falls prove to have costly lengths of stay. An ED can be an important place to intervene before further harm is done to the patient's functional mobility.

Purpose Statement

This quality improvement project aimed to reduce the number of falls in the ED of a suburban hospital on the east coast by implementing a falls prevention bundle. The first step for

the quality improvement was to review the literature for evidence pertaining to falls prevention. The research began broadly with support for the need of a broader approach to a falls intervention in the emergency department setting, its potential impact on patient length of stay, and impact on cost to the hospital. Next, focus was narrowed to what specific activities would support the intervention for the nurses in the ED. Overall, the review supported the usage of a multi-pronged approach including education and resources already available to the unit to decrease falls on the unit.

Literature Review

Individual Interventions

Specific fall risk interventions have support in recent literature. For example, Huey-Ming and Chang-Yi (2017) supported the use of supportive footwear in the prevention of falls. This cross-sectional study involved multiple centers in the Midwest and surveyed registered nurses on the perceived effectiveness of the interventions involving supportive footwear based on a Likert scale. According to Hartung and Lalonde (2017), three of six studies summarized in this review researched the impact of non-skid socks on falls rates on hospital units. One study found an increase of falls by 41% for all high fall risk patients, whereas the other two studies produced reductions in falls rates, though not to significant degrees ($p = >0.05$). Overall, these studies supported the use of footwear for patients that were a high falls risk.

Bundled Interventions

As part of the review of the literature, many studies had included interventions bundled together in a group, which had included falls education, non-skid footwear, and door signs to name a few. In a single-center, case control study by Flarity, Pate and Finch (2013), a bundled intervention of patient education, falls risk band, door signs, and non-skid socks was delivered to patients who were scored as high falls risk patients by the nurses. One hundred and ten patients

had falls out of over 90,000 patients who came through their ED. Overall, limitations of the study included not being able to include findings of the study to patients who were intoxicated as many were not receptive to the bundle.

According to Goodwin, et al. (2014), in a systematic review of the literature, which included seventeen randomized control trials; researchers found that a multi-pronged approach to a falls intervention reduced falls rates in these hospitals. The interventions were not specifically tailored to the individual persons and their falls risks, but had multiple components following a risk assessment, which had the most success when compared to a single intervention. Some of the sample interventions included medication modifications, exercises, and education about falls risks. A limitation with this review was that it lacked a true comparison of interventions across the studies, because each trial did not complete the same group of interventions.

Tricco et al. (2017) conducted a meta-analysis of multiple interventions in randomized control trials which utilized bundled interventions like vitamin D supplementation, exercises, visual assessments, calcium supplementation, and different combinations of these interventions in ambulatory care settings. The researchers discovered that the studies that had the combined modalities of exercise (odds ratio [OR], 0.51); combined exercise, vision assessment and treatment, and environmental assessment and modification (OR, 0.30); combined exercise, and vision assessment and treatment (OR, 0.17); and calcium supplementation, and vitamin D supplementation (OR, 0.12) were significantly associated with reductions in falls with injuries. Overall, more research would be needed to see how interventions alone compared to the multi-pronged approaches performed.

According to Walsh, Liang, Grogan, Coles, McNair, and Nuckols, (2018), in a prospective, longitudinal study at UCLA, falls decreased over a ten-year period through a step-wise fashion in falls prevention. Initially, the hospital reorganized its Falls Committee and found an initial drop

in hospital falls due to the structure change. Next, it incorporated a falls risk assessment tool.

Over the next several years, other interventions were incorporated, and more upward and

downward trends were noted in the overall hospital fall rates. Next, an hourly rounding tool was

introduced to the hospital. Hourly rounding has been proven to increase patient satisfaction and

to decrease call bell use. After ten years, the hospital noted an overall downward trend in its falls

rate. Overall, these studies associated a decrease in falls rates at hospitals with bundled

interventions.

Scripted Education

In four particular studies, scripted patient education aimed to decrease falls in the hospital

setting. Kuhlenschmidt, et al (2016) found that tailoring education to fit a patient's falls risk was

advantageous to increasing patients' awareness about their falls risk. The outcome of this

particular study was perceived risk for the patient. This study took place with a convenience

sample, which could impact its validity. The researchers also looked at perceived falls risk, and

not at falls rates, which may limit its ability to be compared to other studies.

McCarty et al. (2017) conducted a prospective, multi-center trial to study the impact of falls

education for nursing staff while implementing a multi-pronged approach to falls reduction. The

focus was on emergency departments in more rural areas of the Midwest. The outcome

measured in this study was on nursing attitudes on teaching for patients, and the attitudes were

positive towards the tools for falls risk reduction.

Harper et al. (2017) conducted a prospective, single-center designed study to focus on the

impact of scripted education and its impact on falls on an intervention group in a six-month

period. This intervention was not successful (p=0.97) in reducing falls rates; however, more

research could have been conducted on a larger sample size than the one in this study (n = 115).

Hilscher, Niesen, Tynsky, and Kane (2017) conducted a single center prospective trial based on a nursing-driven falls education program designed to increase knowledge about falls risk for high falls risk patients. Out of the 892 patients included in the intervention, zero patients fell, which was a phenomenal success for this intervention.

Overall, this evidence supports the intervention of bundling education and items such as a wristband and non-skid socks. Some of the evidence reviewed supports individual interventions, but many of the studies supported multiple interventions simultaneously implemented as a bundle to reduces falls risk. Many of the interventions focused on inpatient hospital units, so generalizing to an ambulatory ED population is challenging. However, many patients in the hospital are simply high falls risk patients and can benefit from these bundled interventions. The ED presents a unique location for providers and nurses alike to provide an intervention to address potential high-risk fallers at risk of falling within the hospital or at home.

Theoretical Framework

The Plan Do Study Act framework is helpful for this project as it allowed for repeated alterations to the intervention. The framework was initiated by forming a team at the institution. This team consisted of the stakeholders (nurse manager, information technology personnel, and nurses on the unit) that served as unit champions. Next, the framework called for the stakeholders to set aims that were time-specific. Then, stakeholders set goals that were measurable and realistic. For this intervention, the goals included the short and long-term goals regarding falls rates. The short-term goals included increasing usage of the bundled intervention of socks, wristbands, hourly rounding, and education for patients by 50% upon initiation in Fall 2018. The long-term goal was to decrease the falls rate to zero falls by Spring 2019. This is a goal that could be tracked by the clinical site representative in the future as the project does not extend to that time period. The zero-tolerance policy is more pertinent now as patient safety is

the ultimate goal in hospitals. Next, one would select and implement the changes necessary for improvement (Plan-Do-Study-Act (PDSA) Worksheet, 2017).

Periodically, the project leader assessed progress and planned from the outset for predetermined actions to take place if the fall prevention intervention was not going according to plan. For example, if the nurses in the ED did not achieve the short-term goal, then additional training could occur to increase awareness of the importance of utilizing these resources. This framework was appropriate to this particular project because in the ED, there is constant turnover of patients. The framework provided the opportunity for adjusting the deliverables quickly depending on the results. Due to the high patient volume, the interventions can be attempted on a greater number of people in a shorter amount of time.

Implementation Plan

Project Description

The ED of a community hospital in Maryland made a request for a DNP student to assist with a falls prevention project. The sample included high fall risk patients who entered the ED in September through December of 2018. This emergency department sees a large volume of patients, and the estimated sample size, n=100, was based on estimates from staff members.

Procedures and Timeline

The quality improvement project took place over a thirteen-week period. Originally, the plan was that during the first week, the project leader, along with the ED unit falls champion, would recruit and train unit staff members on falls education. These volunteers were selected due to their different work schedules and ability to disseminate the project's information to a wider array of staff members. See Appendix B for this lesson plan. However, the original plan was not feasible in practice. The project leader was unable to get clear communication from the clinical site representative on when to initiate staff education on the unit. The project leader was unable

to get responses from the unit falls representative, who was the initial volunteer to assist with

staff education and audits on the unit. Prior to the fall of 2018, the project leader had two

previous clinical site representatives who had left their positions in the hospital, so this was now

the third clinical site representative for the quality improvement project. As a result, the project

leader had to conduct individual education sessions for staff members on the unit starting in

week two. The education session went over the timeline of the project, the purpose of the

project, and how to complete audits. The education session also covered how to complete audits

after the project was completed in order to continue utilizing the project once it was officially

finished within the original implementation timeline.

   During weeks two through four, the project leader conducted education sessions for staff

members as to where the falls bundles were located and who should receive the bundles. These

quick training sessions, or in-services, took approximately 10 minutes and took place on the unit

over a two-week span (See Appendix C for in-service information). This practice allowed the

project leader the opportunity to reach larger numbers of staff members on the unit at one time.

The project leader reached fifty-one staff members in the first week of training for day and night

shift, out of a total of one hundred and seventy-four staff members. The project leader signed off

the other staff members with the competency checklist in Appendix C. The competency

checklist was kept in a Falls QI Project folder at the main desk next to the charge nurse's desk on

the unit.

   After this learning phase, the implementation phase began during weeks five through

thirteen. The staff members utilized the training and bundles on high falls risk patients as they

came through the ED (see Appendix D for education sheet for patients). The project leader

conducted a weekly paper audit to ensure that staff members were utilizing the falls bundles

appropriately (see Appendix E). As audits were completed, re-education was also done in the

moment to ensure that the handouts were being used, and that patients were being appropriately assessed as high fall risk. The project leader checked the audit forms and saw a need for additional education, so a poster was made for the unit to be placed in the break room. An email was also sent out to the entire ED staff as a reminder to be vigilant on falls and to score patients appropriately so that the high risk patients received the bundle.

During weeks fourteen and fifteen, the project leader and nurse manager met to discuss the monthly falls rates from the previous three months during which the project had occurred to see if a downward trend has occurred, or not. In the final month of the project, zero falls occurred.

Data collection plan

Nurses in the ED evaluated patients on their falls risk according to the Johns Hopkins Fall Risk Assessment Tool (JHFRAT). The project leader received permission to utilize this tool from Johns Hopkins (see Appendix F). These assessments were completed by each nurse upon admission for the patient. Of note, the ED used a shorter, edited version of the tool (see Appendix F). All patients selected for the weekly audits were considered to be high falls risk patients per nurse scoring.

Upon a patient's fall, his or her falls risk was entered into the risk assessment report, or RL6, which was received by the nurse manager each week. This information was retrieved and run in a report by the unit manager. Depending on the score, it would rate the patient as a low (score < 6), moderate (6-13), or high (>13) fall risk. In one analysis of the tool by Poe, et al. (2018), an intra-class correlation coefficient (ICC) was calculated to measure to inter-rating reliability between two different falls ratings of the same patient by two different nurses and the tool was found to be a reliable tool for use in the ED.

Data from the RL6 reports, like hourly rounding, was also included on the event report after a patient fell. It included circumstances about how the patient fell, and if there was an injury to the

patient or not. The monthly number of falls was tracked to see if the bundle was effective or not.

As discussed previously, the volunteers and project leader ensured that the bundle was being

utilized by completing the audit tool weekly. The audit tool was completed by the project leader

on the unit for high-fall risk patients who are on the unit at that particular time. The audits were

kept on the unit in the falls folder. The clinical site representative in the ED assisted by running

these RL6 reports each week. The project leader was later able to complete chart audits to see

how nurses were documenting on the high fall risk patients.

Data Analysis

In order to analyze the data from the RL6 reports, chart reviews were conducted throughout

the project period. The project leader analyzed falls risk data for the patients who had fallen in

August, September, October and November. The audit responses were tracked weekly and were

compared to prior weeks' responses to ensure that more patients had received the bundles. The

project leader along with the nurse manager collected monthly falls reports via the weekly risk

reports. Frequency measures were employed to track falls rates from before the intervention was

implemented in September and can be tracked throughout the implementation period into

December.

Risk Reduction

In order to maintain security, the event reports are kept on a password-protected computer,

which was allowed to contain patient information. The computer was located in a locked room,

which would be needed to be opened with a key. The project proposal was submitted for

Institutional Review Board for a Non-Human Subjects Research determination and approved on

July 24, 2018.

Plan for sustainability

In order to sustain the project beyond the timeframe allotted, the unit would turn this project into a permanent practice change. The unit has had difficulty with sustaining the unit's falls committee, as the fall's representative has been out on sick leave. This would assist with furthering the practice change on the unit and help to disseminate new ideas or methods for falls prevention. Active participation in a hospital-wide falls committee would help to disseminate new ideas or methods for falls prevention and could also assist in sharing prior failures with ideas as well. Due to the involvement of the nurse manager and the unit representative for the unit's fall committee, resources exist on the unit to develop more in-depth information on falls prevention that could be included in new nurse orientation on the ED. Another possibility for sustainability would be to continue usage of the fall's education handout for high falls risk patients. The education forms have been laminated to help ensure that they last a longer time for more patients. These forms remained on the unit for further use. Overall, a more concrete plan for sustainability for the ED would include incorporating this intervention into new nurse orientation and ongoing reinforcement as a part of day-to-day operations of the unit for addressing high falls risk patients.

Results

In looking back to the timeline that was predetermined before starting the project, certain goals were met, and others were not. The project started with a one to two-week delay but was allowed to extend beyond the original end date, and so implementation lasted for the planned amount of time. With the absence of the unit falls champion due to sickness, and high turnover in clinical site representative, it was difficult to find volunteers to help with the auditing in the beginning, so all of the auditing was completed by the project leader.

In the month of September, the first two weeks of the project were spent attempting to train staff members about implementing the bundle. There were six falls on the unit during

September. Please see Figure 1 for the number of falls over the duration of the project. The

project leader educated 51 nurses and patient care technicians out of 174 staff members, or about

29% of the total staff. Due to the complicated staffing of the ED, with different staff arriving at

different times of the day, the project leader stayed on the unit throughout the different shifts in

an effort to reach more staff. Due to the amount of time required to train staff members, the first

week that data was audited on the unit was the final week of September. Please see Figure 2 for

September audit result data.

In the month of October, more staff members were aware of the project, as the project

leader spent significant time on the unit each week promoting the use of the bundle. The unit

had three falls noted on the RL6, or incident, reports for the month of October. Of note in the

audits, 60% of high fall risk patients had received their non-skid socks upon admission to the

ED. Seventy-six percent of nurses self-reported use of hourly rounding as well. The project

leader did not have electronic chart access at that time to access the chart to audit this, so self-

report was used to collect data on the hourly rounding for the high fall risk patients. Please see

Figure 3 for a summary of October's audit results.

In the month of November, there were zero falls, a great accomplishment. However, per

the audit results, some of the bundle usage numbers had decreased. For example, the yellow

falls wristband use was only 40% and the hourly rounding was only completed on 55% of high

fall risk patients audited. Non-skid socks usage was 45% on the audit as well. The data

collection ended in the final week of November. Of note, the project leader did not record any

patients with the falls education handout in audits during the entire project. Nurses were always

re-educated after auditing a patient about the use of the bundle and where to find objects they

might need. It is also possible that patients were educated but the education was not documented

and therefore not discerned with the audit tool. Please see Figure 4 for data on November's

Audit Results.

In the first week of December, data on patients who had fallen from 8/22/18-11/26/18

was collected. Chart audits were completed on these patients to see how effectively they were

scored on the JHFRAT as well. Please see Figure 5 for more data. A bar graph was utilized to

show any changes between the falls numbers on the units to discern any change in rates. This

data shows that zero of these patients had hourly rounding documented on them within the

electronic chart. It also showed that only 60% of the patients who had fallen were listed as a

high fall risk before falling on the unit. It also showed that only 60% had documented

individualized falls interventions after the patients had fallen. Please see Figure 6 for a summary

of weekly audit data. There remains much room for improvement in implementing this falls

prevention bundle in this busy, community hospital ED. Additional cycles of quality

improvement efforts will continue to contribute to decreasing the number of falls and reaching

the goal of zero falls in the ED.

Discussion

The falls prevention interventions included the non-skid socks, yellow falls wristband, hourly

rounding and falls education handout for high falls risk patients. The outcomes studied included

the number of falls that occurred each month on the unit, as well as the documented hourly

rounding for the patients that had fallen. There appeared to be little association between the

increased usage of the individual aspects of the bundle and the impact on the monthly falls

numbers. Upon examination of the figures, it was difficult to associate one aspect of the falls

intervention bundle with the ultimate result of zero falls in November 2018. Although this was

the ultimate goal, it is not likely that all or one of the pieces of the bundle solved the problem of

falls on the unit, and this was likely a fortunate coincidence.

Some conflicting information regarding results of falls prevention interventions is reported in the literature as well. Many studies have looked at nursing self-report scores and the impact that nurses had on the interventions to prevent falls on their units, noting that falls were still occurring, but nurses reportedly enjoyed being involved and integrated into the solutions (McCarty, Woehrle, Waring, Taran & Kitch, 2018). This bundle was to be implemented by nurses primarily, and real-time feedback was given to the nurses if the entire bundle was not provided to a high falls risk patient. This was designed to increase buy-in to the project and increase usage for certain aspects of the bundle, such as the falls education handout. However, the project leader was unable to verify its usage at any point in the duration of the project. This could indicate lack of buy in by the nurses on the unit, the need for additional reinforcement of education, and/or lack of incentives to act to prevent falls among busy staff with high turnover.

There were some differences between observed and anticipated outcomes. For example, in the charting of hourly rounding, many nurses verbally reported charting this prevention activity, but a review of the electronic medical record indicated that few had actually documented their actions. The project leader did not have access to the electronic chart initially, and many of the nurses were either in other person's charts or away from the computer at the time of re-education. Therefore, when asked if they had charted on hourly rounding for a patient being cared for in the ED, the project leader had to trust the nurses at their word. However, when completing separate audits of patients who had fallen on the unit, and now having access to the electronic chart, it was evident that there was a lack of charting on hourly rounding. None of the patients who had fallen from late August through November had hourly rounding documented in the patient's chart by the nurses or patient care technicians. It became clear that more education was needed for the patient care team regarding what was required documentation for this patient population.

Some strengths of the project included recognition of the problem of falls on the unit and the barriers for the unit in implementing a plan to change practice. The lack of documentation for high fall risk patients indicated that either 1) ED nurses and patient care technicians did not prioritize documenting this particular intervention, and/or 2) a lack of education for new nurses prohibited the spread of the intervention throughout the entire staff. These were important observations, according to the unit's emergency department staff. The unit was undergoing significant staff turn-over during the time periods immediately before, during and after implementation of this project; the clinical site representative changed two times. Perhaps having the project leader on the unit every week was helpful in bringing more awareness of the problem to staff members and subsequently making staff feel more involved and engaged in the project.

In contrast, a limitation of the project was high staff turnover, particularly, in the clinical site representative position. It was also difficult to re-engage new unit leadership with the project when such a long period of time had passed since the project leader had first signed on to do the initial project. It was challenging to initiate contact during the implementation period with a new clinical site representative, and the project had started late as a result. Another challenge was that the unit's falls representative did not hold unit falls committee meetings during the project timeline, which would have been a great place to disseminate information to the unit nurses and staff. The project leader instead asked the clinical site representative to send an email, written by the DNP project leader, to the unit in order to share information about the project and the findings that had been made thus far. At the same time, the project leader made an informational poster about how to more uniformly assess patients on their falls risk score, and where to locate the falls bundle on the unit.

Another limitation was the small sample size of the patients audited. Even when falls are more prevalent that one would want, they are still a relatively rare event. Small sample size can detract from the ability to generalize the results to a larger audience. Due to the lack of unit representatives to assist with audits, the project leader was the only person completing audits on the unit and so audits were only done on days that the DNP project leader was present. Another limitation was the misidentification of high fall risk patients by the nurses on the unit. Upon identifying patients to audit, the project leader would ask the nurses why patients were in the ED, and many would say that patients had fallen at home, but they were not a high fall risk patient. This misidentification of high fall risk patients mirrors that of another study completed by Flarity, Pate and Finch (2013). Overall, providing education to these nurses on how to accurately identify high fall risk patients would help to prevent future fallers.

Conclusions

This project has proven useful for this particular unit, demonstrating that there was much more education to be done for the nurses and patient care technicians in regard to the care of the high fall risk patient. This data would be very interesting for those on the unit to see so that charting could be documented more completely for this particular patient population. In order to make this project move forward in further quality improvement cycles and continue its progress, one could continue to check the charts of patient who have fallen, to see if hourly rounding had been documented or not. One could also incorporate a falls education PowerPoint presentation and subsequently test the staff members on the information as part of the new nurse orientation for the unit. Due to the high nurse turnover on the unit, having a sufficient education on falls prevention for new nurses is paramount for a competent workforce.

In order to spread the findings of this project, placing the poster from the presentation on other units could also be helpful. This would show how important documentation is to patient

care and falls prevention. For example, when nurses performed their hourly rounding, but did not go back and document it, it was as if it was not completed for the high fall risk patients. Perhaps other units within the same organization can use the information discovered in this project and disseminate the findings to staff members as a reminder to document your falls assessments appropriately. For future projects in the ED, the project leader recommended reassembling and maintaining the falls committee or incorporating the falls committee with other units' falls committees in order to share ideas about falls prevention. In the future, the unit should continue tracking the falls rates and see if hourly rounding compliance increases after future quality improvement cycles that might include implementing a mandatory falls education session on the unit and/or more involvement of falls prevention champions that work on the unit. Education is a very important component of falls prevention, both for staff members of the ED and for patients who enter through the ED. The staff of the ED would benefit from an education program on at least on annual basis to reinforce the basics of falls prevention.

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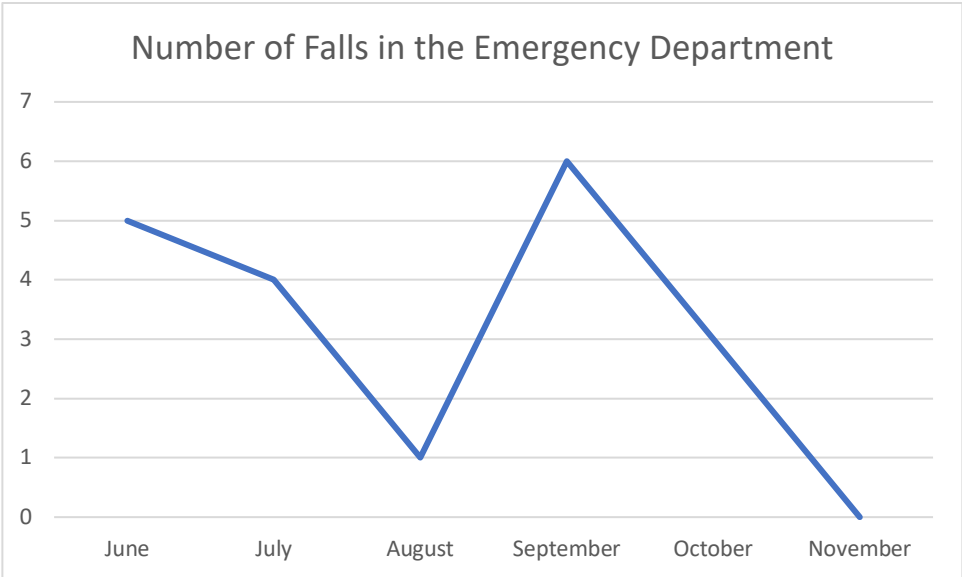
83. doi:10.1016/j.jcjq.2017.08.009

Tables and Figures

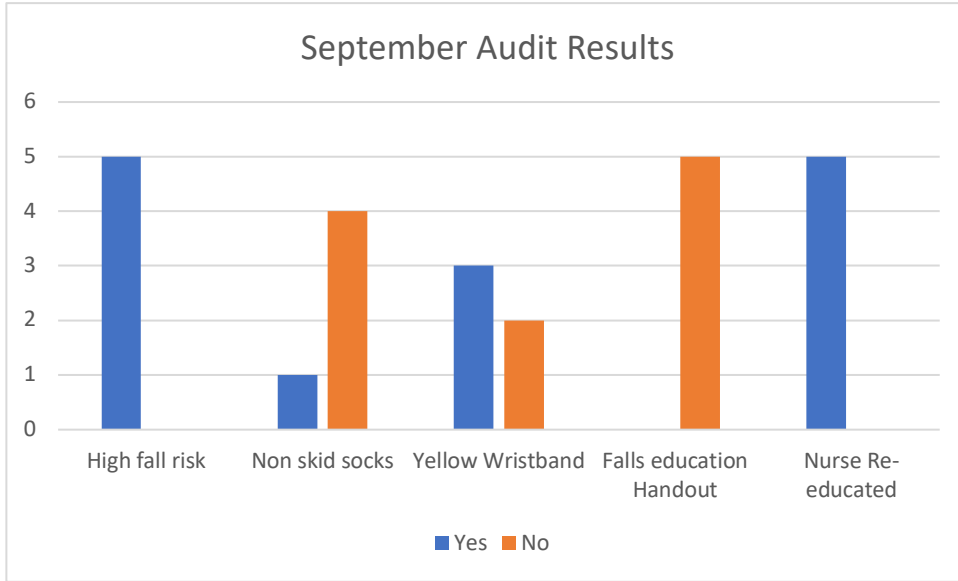Figure 1: Number of Falls in the Emergency Department

Figure 2: September Audit Results*
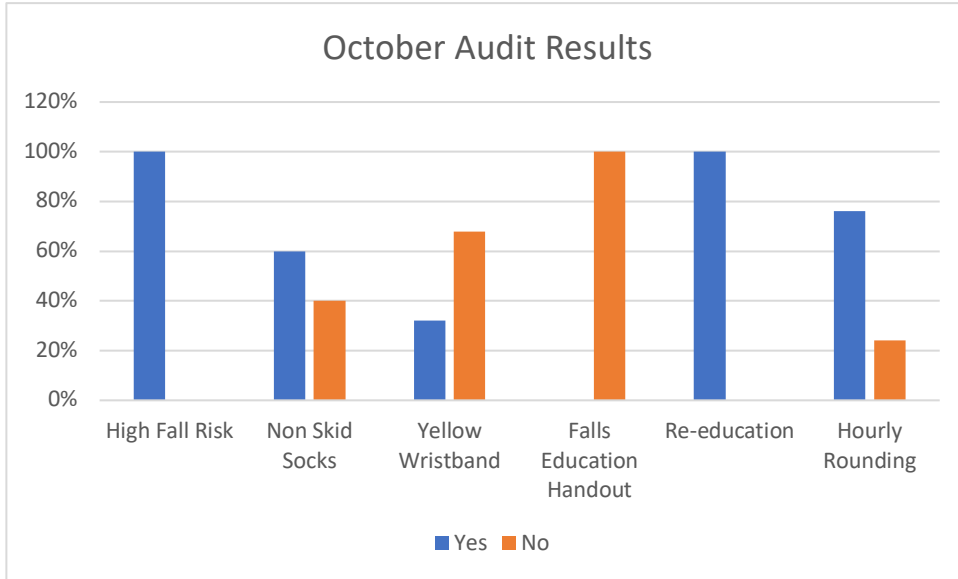
*- Only one week of data

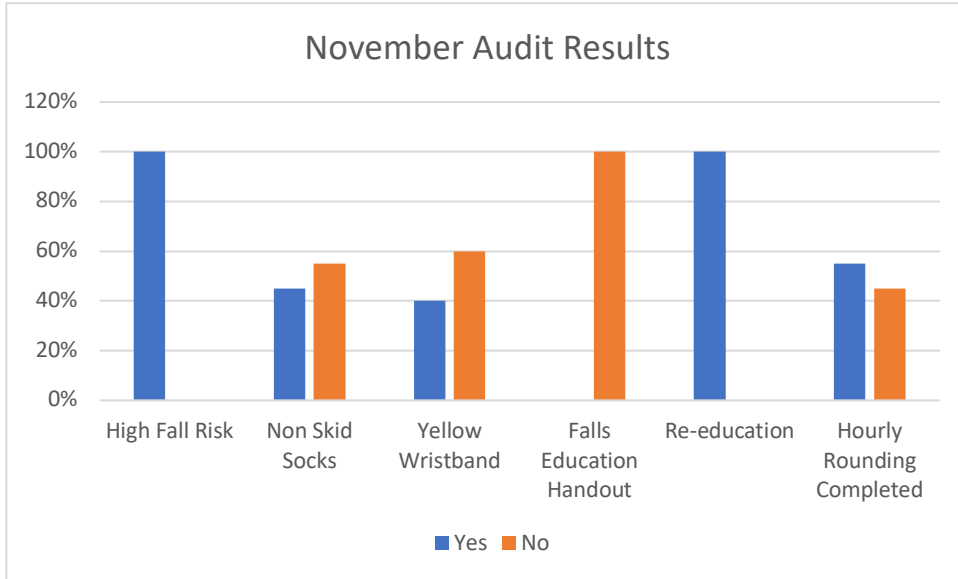Figure 3: October Audit Results
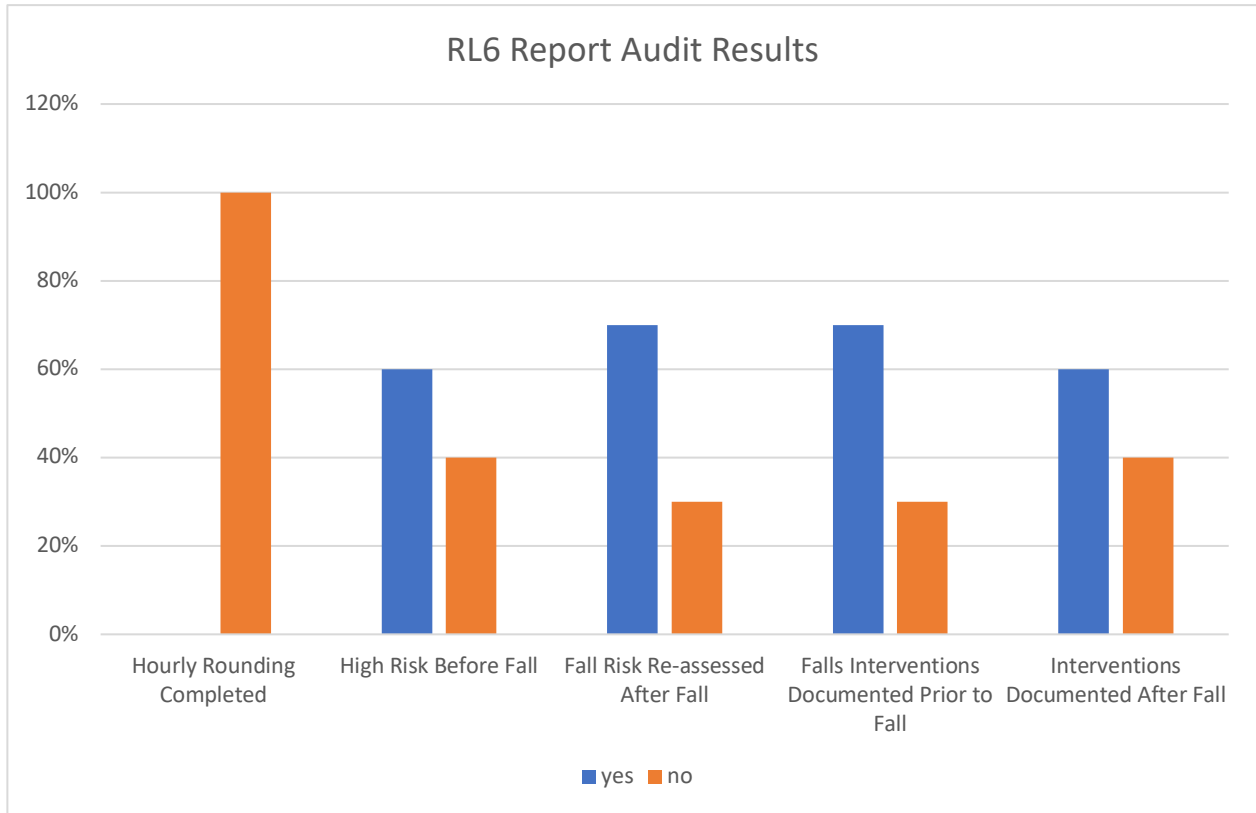
Figure 4: November Audit Results
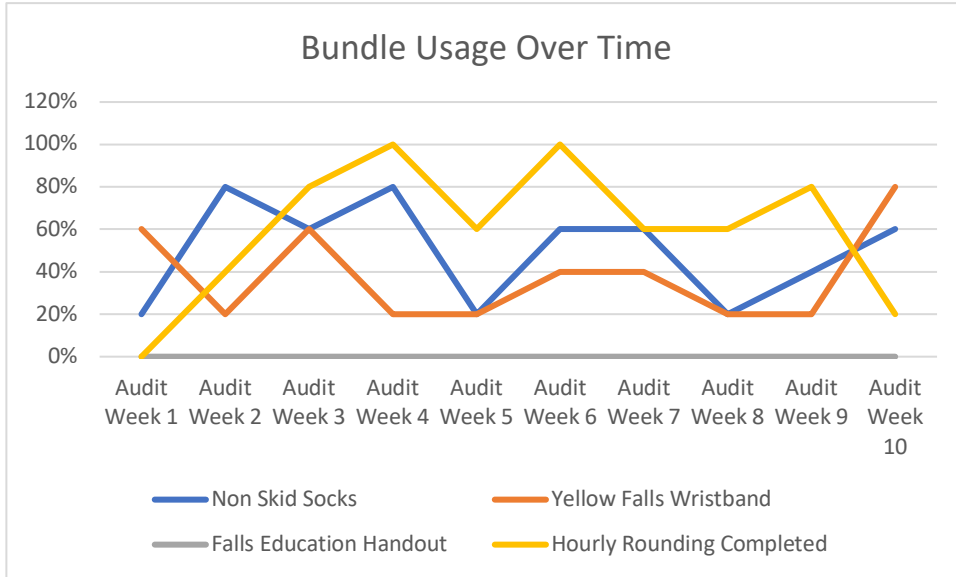
Figure 5: Incident Report Data

Figure 6: Utilization of the Falls Bundle in the ED over Implementation Period

Appendix A: Implementation Plan

Project proposal summary

The emergency department in this hospital has experienced an increase in falls over the past several months. According to conversations with staff members, falls rates are consistently occurring on the unit without interventions. Compared to patients who have not fallen in the hospital, fallers stay in the hospital 6.9 days longer than their counterparts. Their hospitalizations typically cost $13,806 more than those who have not fallen. (Walsh, Liang, Grogan, Coles, McNair, & Nuckols, 2018).

The purpose of this project is to decrease falls rates in the emergency department of a suburban hospital on the east coast by implementing an intervention through a falls bundle including falls wristband, non-skid socks, hourly rounding, and patient education. According to Goodwin, et al. (2014), in a systematic review of the literature, which included seventeen randomized control trials; researchers found that a multi-pronged approach to a falls intervention reduced falls rates in these centers. Bundled interventions were supported by multiple studies, including those with education (Flarity, Pate and Finch (2013), but this particular study found that out of 90,000 patients, only 111 patients had fallen with the bundled intervention.

The project includes a plan to educate certain volunteer staff members on the way to educate other unit staff members on where the materials for the intervention are located and which patients should receive them.   These volunteers will complete weekly audits to ensure other staff members are completing the intervention bundle for appropriate patients. Data on monthly falls rates will be completed at the end of the project to see if the bundle had any impact on falls rates. Demographic data will be collected on the patients who had fallen via the event reports and a statistician from the facility will assist with the gathering of this information. The statistician will assist in comparing fall rates between months before and after the intervention occurred to see if the intervention had any impact on falls rates for the unit. Some short-term

goals include completing education for at least 50% of the ED staff members. It is a larger unit, so trying to reach every staff member would be unlikely. Another short-term goal would include completing >80% of the weekly audits. A long-term goal would be to reduce the unit's falls rate to 0 for one month. This would be ideal as that would indicate that some of the education had been effective for the patients and staff members. The project was presented for IRB approval at University of Maryland to ensure that it met guidelines for quality improvement. Privacy of patients was protected by only having reports available on a password-protected computer in a locked room.

Appendix B: Lesson Plan for Falls Champions

Learning Objectives	Content Outline	Method of Instruction	Time Spent	Method of Evaluation
Staff will be able to identify what is in the falls bundle	- staff will be educated on the use of wristbands that are typically placed on patients' wrists by EMS or staff upon entry to ED - staff will be educated on the use of the education sheet for patients per the AAMC policy (AAMC policy NAP12.1.21) - Hourly rounding can be documented in the EHR	Verbal Verbal	10 minutes	- Attendance sheet - Verbal feedback
Staff will be able to identify who should receive the falls bundle	-staff will be educated on utilizing the Johns Hopkins Falls Risk assessment tool (already within the electronic health record) -if a patient scores as a high, then they receive the falls bundle	Verbal Demonstration	5 minutes	Verbal feedback Return demonstration
Staff will be able to identify where the materials are located	-Staff will be informed that if emergency medical staff does not place a falls risk band on the patient, then one should	Verbal	5 minutes	Verbal feedback

	be placed on them with their fall's assessment, as well as the nonskid socks and be given the education form -all can be located in the supply room			
Staff will be able to verbalize the timeline for the project	- The project begins in September 2018 and ends in December 2018, with the intention of the practice to continue beyond that timeframe	Verbal	5 minutes	Verbal feedback
Staff will be able to verbalize expectations as the volunteers on the unit	-Volunteers will complete weekly audits on at least 5 patients each in order to gain information on the utilization of the bundle	Verbal and return demonstration	10 minutes	Verbal Feedback and Return demonstration

Appendix C: Falls Education Competency Checklist For Unit
    I.   Name: _____
    II.   Unit: _____
    III.   Completed Education Session: ____Yes ____No
    IV.   Demonstrated knowledge of where bundle is kept? ___ Yes ____ No
    V.   Demonstrated knowledge of study population: ____ Yes ____ No

Appendix D: Patient Education Handout

Call! Don't Fall!

09.2018 L.Schultz

Goals

1. Understand your falls risk and what that means for your hospital stay

2. Know your resources, like your call bell, and how to utilize them appropriately

3. Educate the patient on risks and benefits of staying safe in the hospital

Overview

- Did you know that one out of every five falls results in a serious injury, like a broken bone or a head injury?
- Did you know that more than 95% of hip fractures are caused by a fall?

- What can cause falls? → Lower body weakness, certain medications like sedatives, pain medication, and anti-depressants, poor footwear, hazards in the room, and poor vision

Plan

- Follow the nurse's instructions about walking and getting out of bed safely.

- Use the call bell and wait for a staff member to help you in and out of the bed, stretcher, chair, or bathroom safely.
- Use the non-skid footwear provided, with the yellow bracelet to help identify your falls risk to others working in the hospital.

Source: Home and Recreational Safety. (2017, February 10). Retrieved June 9, 2018, from https://www.cdc.gov/homeandrecreationalsafety/falls/adultfalls.html

Appendix E: Audit Form

I.   Date:_____ Time:_____

II.   Is the patient listed as a high falls risk patient? ____ Yes ____ No

III.   Does the patient have on non-skid socks? ____ Yes ____ No

IV.   Does the patient have on a yellow wristband? ____ Yes ____ No

V.   Did the patient receive the falls education paper? ____ Yes ____ No

VI.   Did the nurse complete hourly rounding? ____ Yes _____ No

Appendix F: Johns Hopkins Fall Risk Assessment Tool

Johns Hopkins
Fall Risk Assessment Tool

If patient has any of the following conditions, check the box and apply Fall Risk interventions as indicated.

High Fall Risk - Implement High Fall Risk interventions per protocol
- ☐ History of more than one fall within 6 months before admission
- ☐ Patient has experienced a fall during this hospitalization
- ☐ Patient is deemed high fall-risk per protocol (e.g., seizure precautions)

Low Fall Risk - Implement Low Fall Risk interventions per protocol
- ☐ Complete paralysis or completely immobilized

Do not continue with Fall Risk Score Calculation if any of the above conditions are checked.

FALL RISK SCORE CALCULATION – Select the appropriate option in each category. Add all points to calculate Fall Risk Score. (If no option is selected, score for category is 0)	Points
Age *(single-select)* ☐ 60 - 69 years (1 point) ☐ 70 -79 years (2 points) ☐ greater than or equal to 80 years (3 points)	
Fall History *(single-select)* ☐ One fall within 6 months before admission (5 points)	
Elimination, Bowel and Urine *(single-select)* ☐ Incontinence (2 points) ☐ Urgency or frequency (2 points) ☐ Urgency/frequency and incontinence (4 points)	
Medications: Includes PCA/opiates, anticonvulsants, anti-hypertensives, diuretics, hypnotics, laxatives, sedatives, and psychotropics *(single-select)* ☐ On 1 high fall risk drug (3 points) ☐ On 2 or more high fall risk drugs (5 points) ☐ Sedated procedure within past 24 hours (7 points)	
Patient Care Equipment: Any equipment that tethers patient (e.g., IV infusion, chest tube, indwelling catheter, SCDs, etc.) *(single-select)* ☐ One present (1 point) ☐ Two present (2 points) ☐ 3 or more present (3 points)	
Mobility *(multi-select; choose all that apply and add points together)* ☐ Requires assistance or supervision for mobility, transfer, or ambulation (2 points) ☐ Unsteady gait (2 points) ☐ Visual or auditory impairment affecting mobility (2 points)	
Cognition *(multi-select; choose all that apply and add points together)* ☐ Altered awareness of immediate physical environment (1 point) ☐ Impulsive (2 points) ☐ Lack of understanding of one's physical and cognitive limitations (4 points)	
Total Fall Risk Score (Sum of all points per category)	
SCORING: 6-13 Total Points = Moderate Fall Risk, >13 Total Points = High Fall Risk	

JOHNS HOPKINS
M E D I C I N E

Appendix F: Evidence Review Table

Author, year	Study objective/intervention or exposures compared	Design	Sample (N)	Outcomes studied (how measured)	Results	*Level and Quality Rating
Hartung, B., & Lalonde, M. (2017)	The objective of the literature review was to find the evidence of the impact of non-skid socks alone on the falls risk for adults over the age of 65 in inpatient units	Literature review of 6 primary research studies	6 studies were included in the review	Three of the six studies looked at non-skid socks as a fall prevention intervention	One of the three studies found a reduction in falls overall, but not to a significant degree. A second study found that the non-skid socks, in conjunction with other interventions, did produce a reduction in falls, though not to a significant degree. The third study experienced an increased in the number of falls by 41%, however sample sizes were small.	1 C
Flarity, K., Pate, T., & Finch, H. (2013).	Determine the effectiveness, validity and reliability of an ED-based falls risk assessment and score	Single-center, case control study	During the 1-year period, the ED saw 91,190 patients	Measured the number of falls in the ED	Of the 91,190 patients, 110 fell (47 were high risk and 63 were low risk). The fall risk score triggered interventions like hourly rounding, a fall bundle (non-skid socks, wristband, signs on door, alarm pad), and with patient and family education about falls risk. Overall, the intervention was well received by staff members. The study found that more research could be done to replicate its results in other emergency departments of a	4 B

					similar size, or to also include information on sedating medications.	
McCarty, C. A., Woehrle, T. A., Waring, S. C., Taran, A. M., & Kitch, L. A. (2018)	Nurse-driven education and interventions on patients in an emergency department	Multi-center, prospective study	12 emergency departments in a rural area	Measured nurse satisfaction and falls rates	Only eleven of the twelve emergency departments participated in the education sessions from the study. The nurses' responses indicated a positive reaction to the education they received and were able to share with the high falls risk patients. Falls rates were to be measured at a later date.	2 C
Harper, K. J., Barton, A. D., Arendts, G., Edwards, D. G., Petta, A. C., & Celenza, A. (2017).	The intervention was a scripted education pamphlet based on the patient's fall risk and was based on how to decrease the incidence of falls for that patient	Prospective, single-center controlled clinical trial	Intervention group (n=211) versus the control group (n=201)	Number of falls in the six-month follow-up period	Patients in the intervention group received the scripted falls education and the control group received no scripted education. 115 people fell in the intervention group versus 106 fallers in the control group (p=0.97). This was not a significant difference, so further research would be needed in a larger sample size.	2 C
Tricco, A. C., Thomas, S. M., Veroniki, A. A., Hamid, J.	The objective was to compare interventions from other studies and to see how they impacted fall rates on older adults	Systematic Review and meta-analysis	54 studies were included, and 41,596 participants were included	Number of falls and falls with injuries	The meta-analysis discovered that the studies that had the combined modalities of exercise (odds ratio [OR], 0.51), combined exercise, vision assessment and treatment, and environmental	1 B

S., Cogo, E., Strifler, L., et al. (2017).					assessment and modification (OR, 0.30), combined exercise, and vision assessment and treatment (OR, 0.17), and calcium supplementation, and vitamin D supplementation (OR, 0.12) were significantly associated with reductions in falls with injuries. Overall, more research would be needed to see how interventions alone compared to the multi-pronged approaches performed.	
Hilscher, M. B., Niesen, C. R., Tynsky, D. A., & Kane, S. V. (2017).	A scripted RN-driven falls education piece provided to high falls risk patients; patients are given a yellow fall risk band and instructed to call for ambulation assistance post-procedure	Prospective, single-center trial	892 high fall risk patients	Number of falls	0 patients fell post intervention implementation. Charting of education increased from 67% to 100%. Charting of assistance with patients post-procedure went from 27.9% to 100% post intervention. This shows that RN-driven education has an impact on patients' perceptions.	3 C
Goodwin, V. A., Abbott, R. A., Whear, R., Bethel,	Compare randomized control trials (RCTs) that test interventions related to falls risk	Meta-analysis	17 randomized control trials	Number of falls	RCTs that included multi-pronged approaches to interventions to decrease falls had greater success than interventions that had a singular approach to reducing falls.	1A

A., Ukoumunne, O. C., Thompson-Coon, J., et al. (2014).						
Huey-Ming, T. & Chang-Yi, Y. (2017).	Identify effective fall risk interventions at hospital centers	Multihospital, cross-sectional design	5 health systems across the Midwest- 560 RNs completed surveys about their interventions	RNs would measure the effectiveness of their interventions on a Likert scale- for example- nonskid socks	21 interventions were identified as effective. They were structured around providing a safe environment for the patient, increasing staff vigilance and awareness of the patients' falls risk, providing mobility assistance via a device, and providing effective footwear.	4B
Kuhlenschmidt, M. L., Reeber, C., Wallace, C., Chen, Y., Barnholtz-Sloan, J., & Mazanec, S. R. (2016).	Compare groups to see if education intervention impacts perceived fall risk	Two-group, prospective, randomized control design	44 patients in the intervention group and 44 patients in the control group	Perceived risk of falling	Upon education, patients who had initially thought of themselves as low risk then thought of themselves as high risk. Overall perception of need to use the call bell did not change after the intervention. Overall, perception of falls risk did change with the intervention and was positively impacted by the intervention.	2B
Walsh, C. M., Liang, L.,	Compare bundled interventions to see	Retrospective study	Multi-pronged approach and multi-	Falls and falls with injury	UCLA medical center implemented, in a step-wise fashion, multiple falls	IA

| Grogan, T., Coles, C., McNair, N., & Nuckols, T. K. (2018). | the trends of falls rates | | step approach to falls intervention | | interventions, including an inclusive falls committee, hourly rounding, standardizing falls prevention equipment, investigating root cause analyses of falls, and incorporating patient education. These interventions demonstrated a downward trend in falls for the hospital over a longer period of time. | |

Rating System for Hierarchy of Evidence

Level of the Evidence Type of the Evidence

I (1)	Evidence from systematic review, meta-analysis of randomized controlled trails (RCTs), or practice-guidelines based on systematic review of RCTs.
II (2)	Evidence obtained from well-designed RCT
III (3)	Evidence obtained from well-designed controlled trials without randomization
IV (4)	Evidence from well-designed case-control and cohort studies
V (5)	Evidence from systematic reviews of descriptive and qualitative studies
VI (6)	Evidence from a single descriptive or qualitative study
VII (7)	Evidence from the opinion of authorities and/or reports of expert committees

Melnyk, B.M. & Fineout-Overholt, E. (2014). *Evidence-based practice in nursing & healthcare: A guide to best practice* (3rd ed.). New York: Lippincott, Williams & Wilkins.

Rating Scale for Quality of Evidence

A: High – consistent results with sufficient sample, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific literature

B: Good – reasonably consistent results; sufficient sample, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C: Low/major flaw – Little evidence with inconsistent results; insufficient sample size; conclusions cannot be drawn

Newhouse, R.P. (2006). Examining the support for evidence-based nursing practice. *Journal of Nursing Administration, 36*(7-8), 337-40.

Rating System for Hierarchy of Evidence
<u>Level of the Evidence</u> <u>Type of the Evidence</u>

Level	Type
I (1)	Evidence from systematic review, meta-analysis of randomized controlled trails (RCTs), or practice-guidelines based on systematic review of RCTs.
II (2)	Evidence obtained from well-designed RCT
III (3)	Evidence obtained from well-designed controlled trials without randomization
IV (4)	Evidence from well-designed case-control and cohort studies
V (5)	Evidence from systematic reviews of descriptive and qualitative studies
VI (6)	Evidence from a single descriptive or qualitative study
VII (7)	Evidence from the opinion of authorities and/or reports of expert committees

Melnyk, B.M. & Fineout-Overholt, E. (2014). *Evidence-based practice in nursing & healthcare: A guide to best practice* (3rd ed.). New York: Lippincott, Williams & Wilkins.

Rating Scale for Quality of Evidence

A: High – consistent results with sufficient sample, adequate control, and definitive conclusions; consistent recommendations based on extensive literature review that includes thoughtful reference to scientific literature

B: Good – reasonably consistent results; sufficient sample, some control, with fairly definitive conclusions; reasonably consistent recommendations based on fairly comprehensive literature review that includes some reference to scientific evidence

C: Low/major flaw – Little evidence with inconsistent results; insufficient sample size; conclusions cannot be drawn

Newhouse, R.P. (2006). Examining the support for evidence-based nursing practice. *Journal of Nursing Administration, 36*(7-8), 337-40.

Appendix G: MAP IT Tool
DNP Project Name: __Falls in the Emergency Department_____

DNP Project Purpose Statement: The purpose of this project is to implement a falls risk education and risk reduction intervention in order to decrease falls rates in an emergency department setting.

Short-Term SMART Objective: *By December 1, 2018_we will have increased usage of falls education and wristband, socks and alarm usage for high risk patients by 50%.* The unit champion would audit the patients on the unit to ensure that moderate or high fall risk patients would be wearing their wristbands and non-skid socks. Current usage of these interventions is not consistent due to high staff turnover and new staff orienting often. This goal is achievable, as it is starting at a lower percentage of 50%, which is achievable. An audit tool is a realistic item to complete in order to detect if patients are wearing the appropriate footwear and wristbands. The audit tool will include a section on whether the patient has had education on his or her falls risk.

Long-Term SMART Objective: *By May 1, 2019, we will have decreased falls rates in the emergency department to zero.* A long-term goal would be to decrease unit falls and falls with injury to zero for the length of the entire project (one year). Though this is a lofty goal, it should be the ultimate goal to strive for when dealing with a fall's reduction strategy. It would be measured by the reporting system in place at the hospital where registered nurses submit a report after a patient falls.

Population/Context: High risk falls patients in the adult emergency department in a suburban hospital.   The high falls risk patients are delineated according to the nurse's assessment in the falls risk score.

Mobilize: *WHO will help facilitate the changes in structures and processes (practices)?*
List of Core Team Members – Jessica Fluharty (ED manager), Laura Schultz (DNP Student)

Others I will mobilize after the draft plans have been developed- It will be important to include IT personnel and ED nurses who will serve as falls champions. These people will be able to assist with completing the project for which we have initiated. The IT personnel will assist to complete an audit tool to check that nurses are handing out falls education and falls risk bundles. The ED nurses will be vital to the completion of this project.

Assess: *WHAT structures and processes (practices) need to change and WHY? What structure, process, and outcome measures will be used to measure progress?*
The current needs of the ED include a consistent way to report falls with staff members. With a high rate of staff turnover, this remains a difficult barrier to overcome. Many nurses are being trained and with staffing shortages, many travel nurses are being utilized. The travel nurses often have much shorter training periods and may not receive the same orientation to how to report falls and are thus underreporting falls on the unit. The process of educating patients can be altered as well. With the unique environment such as the ED, many patients may

enter and leave the ED rather quickly. The quick timeframe involved in the patient care means that the nurses often have to overcome the barrier of completing many tests and treatments in a short time frame. A barrier to overcome will be to try to reinforce the importance of making sure these patients have on their non-skid socks, yellow wristbands, and received their falls risk education. These are the primary outcome measures to be identified and tracked through audits. These measures are important as patients travel in and out of the ED, it can encounter many more patients than on a typical inpatient unit. This provides an opportunity to educate a larger population of potentially high-risk individuals. Another current practice that could be change is the current practice of placing a yellow star outside patient's doors. Upon report from staff members, due to high patient turnover, often times, these stars do not travel with the patient, and may not reflect the true fall risk of the current patient. Enhancing communication between shifts would make this transition between patients less complicated and make handoff more effective. Perhaps incorporating this intervention to include handoff at the bedside will increase patient satisfaction scores (Scheidenhelm & Reitz, 2017).

Plan: *HOW will these changes be made (strategies and tactics)? WHEN will these changes be made?*

The nurses of the ED will be educated on what changes will be taking place initially. These education sessions will take place in the first week, and as needed. These sessions will address what interventions will be occurring for the patient population. For example, the education sessions will inform the nurses as to what needs to be in place for a sample patient when he or she scores as a high fall risk. That patient should immediately get their socks, a yellow falls risk band and education sheet with illustrations on how to use their call bell and ask for assistance safely. ED staff members will continue with hourly rounding, and document this on the EHR. The RN can verbally provide education to the patient about what makes the patient a high falls risk, for example, a medication they may be taking, as well. This multi-pronged approach will hopefully address many different ways patients learn and process information. For example, the visual learner can refer to the picture handout with instructions on how to safely prevent falls. The auditory learner can listen to the instructions from the nurse. These many ways to reinforce the same message of safe ambulation can help to prevent falls in the diverse population of this emergency department.

The initiation of the project will take place in week two after the education of the nurses on the unit takes place. The nurses will begin to implement the bundle on the high fall risk patients and data collection begins in that week as well. The manager of the ED receives the falls rates on a weekly basis, via the hospital reporting system. Monthly falls rates will be correlated to the number of patients included in the falls bundle through a p-value. This will be conducted for September, October and November of 2018, and hopefully a downward trend will emerge as a result. Throughout the falls rate data collection plan, RNs will complete audits to ensure that patients are receiving the bundles and education as indicated for those who are high falls risk. The goal to complete the education and bundle is 50%, as per the short-term goal listed above. Overall, the plan for this intervention is to have the RNs see a high falls risk patient scored on their falls risk assessment, then provide the patient with the education sheet and falls bundle with socks and wristband. Audits will be completed on a once-weekly basis to ensure that patients are receiving the bundle and education, and if audits reveal that patients are not receiving their falls bundles, then more education to the staff in the ED will be provided to ensure the patients in the ED are provided with these services. These additional education sessions will take place if the audits find that bundles are not being handed out to patients and if falls rates are increasing. If the goals are not

being met to that weekly number, then an education session can be scheduled for the following week to ensure staff members are being educated on its importance. The falls rates will be tracked by monthly rates and compared to how many patients received the bundles, and how many of those patients fells to see if the bundle has been effective, or not.

Implement: *WHAT strategies and tactics were used? WHEN were the desired changes made?*
Step 1: Perform small tests of change

Step 2: Full-scale implementation

Track: *WHAT structures and processes (practices) were changed based on the metrics we used to measure progress (including frequency of assessment)? HOW did these changes affect outcomes? WHAT do we need to do differently to make greater progress toward improving outcomes?*

Date: _____ Re-Assessment Date 1: _____ Re-Assessment Date 2:_____, etc.

Plan Developed by (List all contributors): _____

_____