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Combining Patient-Centered-Care and Technology to Reduce Falls in a Medical/Telemetry Unit

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Abstract

PROBLEM: From October 2017 through June 2018 there were 25 patient falls recorded on the 5th floor medical surgical telemetry unit. Top factors contributing to this high fall rate include: poor patient-centered-care planning, and inadequate set-up for use of technology.

CONTEXT: According to the Joint Commission, 2015, each fall with injury costs \$14,000. This estimate doesn't include the potential indirect costs that account for the long-term effects of injuries such as disability, dependence on others, lost time from work, household duties, and reduced quality of life.

INTERVENTIONS: Staff education was introduced and focused on using a new mindfulness script, combined with expectations for connecting all beds to the Responder 5 technology. An emphasis was placed on fall prevention conversations, which occurred during Nurse Knowledge Exchange (NKE) and Authentic Hourly Visits (AHV). Validation of these discussions were monitored through admission assessment documentation review and direct staff observation. MEASURES: The expected outcome of the fall reduction project aimed for a 90% compliance with usage of the Mindfulness Script and the Responder 5 system. Daily audits for both interventions were performed by nursing leadership.

RESULTS: From July 2018-September 2018 there was a drastic reduction in falls; the rate decreased from 3 falls per month to 3 falls in 3 months, averaging 1 fall a month.

CONCULSION: Using a generalized risk stratification tool is inadequate to prevent falls, as it excludes some subsets of fall risk patients. By combining a risk assessment tool with standardized scripts, customized care plans, and integrating technology, a successful bundle for preventing falls was adopted in the medical telemetry unit.

Keywords: fall prevention, bundle, technology, mindfulness, risk stratification, patient-centered.

Introduction

According to the Joint Commission (TJC) (2015), the nation's largest and oldest standards-setting and accrediting body in health care - falls with injury are a serious safety concern for hospitalized patients. This risk is applicable for patients of all ages as medical conditions and physiological changes can place anyone at risk. Every year there are hundreds of thousands of patients who fall in the acute care setting with 30-50% resulting in injury. Such injuries could create an extended hospital stay with associated costs, estimated to be \$14,000/fall with injury (TJC, 2015). This statistic is alarming and highlights the need to focus on fall risk anticipation, prevention and safety. Based on a review by TJC, the common underlying factors were identified: inadequate assessment, communication failures, lack of adherence to protocols and safety practices, absence of staff orientation, inconsistent supervision, staffing levels or skill mix, deficiencies in the physical environment and lack of leadership (TJC, 2015).

The Centers for Disease Control and Prevention (CDC) also highlights falls as a widespread safety risk in the community. In 2013, CDC found that 1/3 of adults ages 65 and older had experienced a fall and two million older adults sought emergency treatment, annually, due to falls (Silva, 2017). Because of the number of individuals who seek medical treatment related to a fall, the CDC predicted that by year 2020 the combination of the direct and indirect costs associated with falls with injuries would reach almost 70 billion dollars, thus making falls one of the most expensive medical conditions (Silva, 2017). Based on a study conducted on a medical surgical floor that was experiencing an increase in patient falls, Silva determined that most patients who were falling did not screen positive for fall risk and therefore the fall bundle that was in place did not help prevent injury for this group of patients. The key to successful implementation of interventions was a detailed nursing assessment, including clinical conditions

that could contribute to an increased fall risk (Silva, 2017). Patient-centered-care planning was initiated, and a thorough analysis of the data was reviewed with front line staff to promote involvement and ownership.

Problem description

The 5th floor Medical Telemetry unit has deficits in a few of the identified areas in the Joint Commission report. In October 2017 through June 2018 there were 25 patient falls recorded. The identified underlying factors for this unacceptable fall rate were a) poor patientcentered-care planning, b) inadequate consideration of the patient's clinical condition (medications, hemodynamic instability, stroke, disorientation), c) inadequate environmental set up and use of technology (Responder 5 technology, which is a cable that connects the patient's bed with the nurse call system, and then integrates with wireless devices the nurses and aides carry throughout their shift), and d) poor communication of fall risk during nurse knowledge exchange and authentic hourly visits. These gaps in clinical oversight highlighted the drift from best practices and the need for a microsystem assessment and interventions to drive patient safety and hospital acquired injury prevention.

Available knowledge

In the setting of this community hospital, medical telemetry unit, an evidencebased appraisal was conducted by the Clinical Nurse Leader (CNL) student to determine best practices to implement for fall prevention, and to promote successful outcomes.

PICOT question. How does the utilization of a mindfulness script (see appendix A Mindfulness Script) and Responder 5 technology (I) improve fall prevention (O) on a

medical/surgical/telemetry/stroke/oncology unit (P) compared to just using risk stratification tools (C) over a 3-month period (T)?

Literature search. A thorough electronic search was conducted in April 2018, reviewing evidence that evaluates fall prevention to help answer this question (see appendix B Fall Prevention Research Evaluation Table). Search strategies included risk stratification tools, diagnosis evaluation, electronic medical records, and environmental factors. The search explored CINAHL Complete and Pub Med databases. These databases were searched using combinations of the following search terms: fall prevention, risk stratification, technology, care planning, acute care, and diagnosis. Limitations were set to include English only, peer reviewed, research, systemic reviews, randomized controlled trials, and publication dates no earlier than 2000. The searches yielded seventy-eight articles and six were selected for review. The Johns Hopkins Nursing Evidence-Based Practice Evidence Appraisal Tool, developed by Dang and Dearholt (2017), was used to appraise the evidence for this review; this appraisal tool separates research and non-research and includes criteria to evaluate the strength and quality of the evidence.

Synthesis. A research article written by Lunsford (2015) discusses strategies for assessing patients risk for falls; the research highlights that among older adults, 38% to 78% of falls can be anticipated. One third of reportable falls with injuries in hospitalized older adults are linked to bathroom use, more than half are associated with medications known to contribute to falls, and about 40% occur within 30 minutes of an hourly rounding visit by healthcare providers (Lunsford, 2015). However, these numbers indicate that a significant percentage of falls are not anticipated under traditional assessments and show that other assessment methods are required to identify factors that are responsible for falls that are termed as "unanticipated falls"

under traditional assessment methods. Considering this, one study assumed that all patients have some risk of falling in an acute care setting, so they implemented basic interventions for universal application regardless of fall risk level. Additional strategies were selected as the fall risk increased (Poe et al, 2005).

Risk Anticipation and Etiology. A fall risk assessment provides a systematic means of checking valid and reliable causes of falls and helps to identify factors for which interventions are known to reduce the fall risk (Lunsford, 2015). Staff nurses need a practical blueprint to use when reviewing and critiquing evidence (Poe et al, 2005). One approach to implementing a more efficient assessment method is to create a computerized documentation solution that would insure fall risk assessment no less than every twelve hours. Indicators would be embedded in pre-existing assessments providing timely, accurate (rather than pasted) assessment without increasing charting time. The fall risk information is integrated into care plans, report sheets, audits, and care conferences to produce an interdisciplinary communication network. Because the majority of fall risk indicators were duplicated in nursing shift assessment approach identified four broad categories of falls that required a substantially different approach to safety intervention. These categories were: disorientation, activity, post medication, and toileting (Browne et al, 2004).

Comprehensive Fall Assessment – a Team Approach. Falls often have multi-factorial causes. Because of this, an inter-professional team should collaborate on a comprehensive assessment. Falls occur through complex interactions between patient-related and environmental risk factors, suggesting the need for multifaceted fall prevention approaches (Choi et al, 2011). The main reasons for the lack of precision in assessments are: [1] The

b

measurement of fall risk factors is static; and [2] the context in which falls occurred is not considered. Risk factors may change over time and their interaction with contextual factors may vary. For example, physical function varies with acute illnesses but is usually only measured at one time. Most studies do not consider exposure to hazardous situations and environmental factors. Multiple activities undertaken at the same time are not assessed. A dynamic fall risk model helps to conceptualize the causal pathways and circumstances leading to falls and gives practitioners a structured perspective on falls that may lead to new areas regarding the research on fall prevention (Klenk et al, 2017).

Role of the Patient Environment. A multi-systematic fall prevention strategy that considers the benefits of physical environment-related interventions can be beneficial to the well-being of patients and caregivers. Choi and colleagues (2011) found that hospitals should consider as part of a fall prevention intervention: medication review and modification; patient education; volunteer programs; bedrail reduction programs; nuclear unit layouts with decentralized nursing stations; carpeted flooring with wooden sub-flooring; a reduction in transfers; increased patient visibility; and a patient exercise program.

Success Factors in Fall Prevention. Energy, enthusiasm, and passion are essential ingredients in achieving positive outcomes in a successful fall prevention program. These factors coupled with positive communication help to prevent medical errors or incidents of patient harm. One such program utilized the following to increase communication throughout their hospital: development of in-patient and home fall prevention brochures; reevaluate policies and procedures; create fall prevention posters; watch for the five "P" (Potty, Pain, Position, Possession, and Pumps); and create a fall prevention video (Bonuel et al, 2011).

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In summary, employing a systematic process to identify and address the fall risk can nearly eliminate the number of anticipated falls, prevent unanticipated falls from recurring, and significantly decrease accidental falls (Lunsford, 2015). Utilizing methodology found in successful fall prevention programs can help to reach these goals.

Rationale

The ability to change is connected to the ability to listen, communicate, and influence. The change model this CNL student used to motivate change is Lewin's force-field model of change. Lewin's model consists of 3 phases; unfreezing, changing, and refreezing (Finkelman, 2016). Lewin's change theory focuses on improving the change process, working collaboratively to identify problems (unfreezing), creating objectives of change and outcomes that are desired – this includes developing new approaches, values, and attitudes (moving) and when change is studied and successful then implementing change throughout (re-freezing), standardizing best practices (Finkelman, 2016). Lewin's theory thrives on the motivation to change and the desire to evaluate the forces that may be creating barriers to change; creating recommendations on how to address barriers by increasing driving forces, decrease the number of restraining forces and/or a combination of both (Finkelman, 2016).

Theory applied. Lewin's theory guided this project. The first steps included assessment of compliance to patient specific care planning for fall prevention and consistent use of responder 5 technology. The change agent team completed a fishbone diagram that identified gaps in quality fall prevention interventions (see appendix C

Fall Prevention Fishbone Diagram). The team looked for trends that are consistent, that allowed focus and leveraged the unfreezing portion of the theory. Once the recognition of the problem occurred, objectives inspired the interventions put into place; this is the movement phase of the theory. Once interventions were evaluated and barriers were removed, change started to occur, and the project moved into refreezing. The team socialized change by involving point of care leaders, who were the storytellers of success and lead by example; through collaboration and focus on speaking up, change was sustained.

Project Aims

Specific Aim. Front line staff on the 5th floor Med tele unit will hardwire the use of a mindfulness script, created by the fall prevention team, focusing on patient centered care planning to increase script usage from 0 to 90%; this will occur concurrently with leveraging technology by using Responder 5 (nursing call system) to increase technology utilization from 75% to 90% by October 3, 2018.

Global Aim. The nurses on Medical Telemetry Unit will utilize a fall prevention bundle (patientcentered-care planning strategies and responder 5 technology) to decrease fall rate from baseline (October 2017-June 2018) of 3 falls per month to 1 fall a month by the end of September 30, 2018.

Methods

Context. Using the theoretical framework of Caring Science, and the Voice of Nursing professional practice model, the vision of the 5th floor Medical Telemetry unit puts patients and their families at the center of their care. The focus is on people and is achieved by supporting a

caring environment that is rooted in self-care, resilience, and relationship-based leadership. The purpose to this approach is focused on outcomes that are created when point-of-care teams are inspired, connected to quality and safety, feel supported, and have a voice. Building trust from a

relationship-based leadership foundation is essential to foster a just culture where learning continually occurs to achieve process improvement and best practices.

Microsystem Assessment. This microsystem is a 48-bed unit that is split into two wings with a total of 24 beds per wing; each room is private and created with the intent for patients' families to stay in the room. The average age breakdown for patients admitted to this unit are 15% ages 19-50, 30% ages 51-65, 35% ages 66-75 and 25% ages 76 and older. The unit is mixed with regard to ratio and skills; there are a wide variety of medical and surgical diagnoses that this unit cares for, the most common being congestive heart failure, stroke, sepsis, acute respiratory failure, cancer, altered level of consciousness and heart attacks/disease. This microsystem receives patients from the emergency department, intensive care unit downgrades, and direct admissions from home for patients who require chemotherapy.

SWOT analysis. Through the development of a SWOT analysis, which focuses on the strengths, weaknesses, opportunities, and threats of any project, emphasizes the different variables that could influence the outcomes of this project. The most important aspect to highlight from the strengths portion is the built-in support from senior leadership; the highlight from the opportunities section lives in the reliability and the culture of the microsystem, specifically its commitment to change. Consistent messaging is key, along with oversight and follow-up to ensure understanding of project components and compliance with practice changes. It is also important to highlight resistance to change, especially when new technology is introduced to staff who are comfortable with their own practice and may become stressed with deviation from

their norm. Supporting staff with an open mind, involvement, and education will help to mitigate stress, build trust and enhance the care environment (see appendix D Fall Prevention SWOT Analysis).

Project Cost. There are costs involved in the implementation of this fall reduction program. No additional equipment costs are anticipated. The costs consisted of educational expenses associated with 14 weeks of biweekly team planning meetings involving three RN's, one PCT, and one UA. Additionally, four hours of in-service were provided for the staff of 150. With staff costs averaging \$80 per hour and PCT and UA costs at \$30 per hour, the total costs associated with this fall reduction program equals \$52,000 (See appendix E Project Cost).

Return on Investment. Developing a financial analysis of a project, return on investment (ROI), enhances the strength and longevity in a project. A ROI also helps tell a story and proves the impact of a project, in addition it protects the budget and builds relationships which helps to provide the support needed for any project's success. There are benefits beyond the hospital's potential direct cost savings from the fall reduction program. Direct costs do not account for the long-term effects of injuries such as disability, dependence on others, lost time from work and household duties, and reduced quality of life (Centers for Disease Control and Prevention, 2016). The estimated cost per patient for a fall with injury was \$9,468 in 2012 (\$10,330 in 2018 dollars), showing that the costs per fall exceeds the expenses incurred by the hospital (Burns, Lee & Stevens, 2016). Further, there is no accounting for the good will that is established for the hospital by the establishment of a successful fall prevention program (see appendix F Return on Investment).

Benefits of Fall Prevention Project. The benefits of the program come from cost avoidance, both direct and indirect. With the hospital's average cost incurred for an injury fall of \$14,000,

the successful reduction of two falls a month during the program's 3-month implementation period would avoid \$84,000 in direct costs, a benefit of \$32,000 over the cost of the program. Further, indirect benefits such as avoided litigation and rehabilitation care are not quantifiable but are tangible benefits of a successful fall reduction program (Healthcare Finance, 2018).

Intervention

The fall prevention bundle was reinforced by nurse leaders, educators and CNL. Staff teams were educated regarding the mindfulness script and the expectation and support for connecting all beds to the Responder 5 technology (see appendix G Fall Prevention Communication Deck). Fall prevention was discussed and documented during admission assessment and reinforced during NKE and AHV; validation of these discussions was made through documentation review and by observation of front line staff. Learning boards in the breakrooms were utilized as a visual reminder of tests that rolled out and staff meetings acted as a space for further exploration of fall prevention. Real time assessment, patient interviews, and also consistent huddle messages were a part of the change bundle.

Study of the Intervention

The number of falls in med/tele patients is measured using the outcome from the STATIT reports and electronic responsible reporting forms (eRRfs). The Schmid Score Assessment information is pulled from Health Connect with the numerator representing the number of patient with greater than three Schmid scores as assessed by an RN and the denominator being the number of patients admitted to the Med/tele Unit.

Responder 5. The measure of the number of connected Responder 5's is calculated by dividing the number of patient beds connected to Responder 5 by the number of patients admitted to the med/tele unit. The process for assessing the Responder 5 usage is achieved through random

audits conducted by Assistant Nurse Managers two days per week (see appendix H Detailed Audit of Responder 5 compliance).

Mindfulness Script. A patient safety script is measured by dividing the number of patients who were admitted with the mindfulness script documented in their admission assessment by the total number of patients who were admitted (see appendix I Detailed audit of Mindfulness Script compliance). Observations of NKE and AHV are conducted to validate the use.

Measures

The expected outcome of the fall reduction project was achieved, which was to increase the use of both fall prevention care planning and the Responder 5 system. Daily audits are used with a goal of a 15% increase in usage. The process utilized for the Responder 5 assessment will be daily audits with minimum usage rate of 90%. For the Mindfulness Script documentation of education will be present on patient's admission assessment in their medical record will be utilized. Again, an 80% threshold is the target. Through thoughtful education and purposeful implementation of the interventions a fall reduction of 2 per month was achieved (see appendix J Fall Occurrence Data).

Balancing measures. During implementing of this program, the number of workplace injuries from connecting the technology was zero; this was validated through a work place injury report. AHV was measured by AHV by direct observation and review of documentation in the medical record. Incremental overtime was reviewed by data collected by PRISM; no increase was noted as it relates to this project.

Ethical Considerations

The implementation of this fall reduction program is consistent with the provisions of the American Nurses Association (ANA) Nursing Code of Ethics (ANA, 2015). All aspects of the project reflect compassion and respect for the inherent dignity, worth, and unique attributes of every patient. All procedures were implemented for the purpose of improving patient care. The primary commitment is to the patient. Reducing fall risk promotes, advocates for, and protects the rights, health, and safety of the patient. By focusing on fall reduction, the nurses take action consistent with the obligation to provide optimal patient care (ANA, 2015).

Through this program, the nurses advance the profession through research and scholarly inquiry, professional standards development, and the generation of both nursing and health policy. The development of a successful fall reduction program will produce a best practice standard for others in the field to emulate.

Results

The impetus of this project originated when 25 falls that occurred on the 5th floor medical/telemetry unit from October 2017-June 2018, this represents 3 falls per month. There were noted gaps in the consistent use of Responder 5 technology, as well as patient specific care planning, which is inclusive of patients who might not assess as a fall risk but are at risk related to their diagnosis. After implementing the fall prevention measures, there was an increase from 75% to 100% with consistency of connecting the responder 5 technology and from 0% to 81% consistency with utilizing the mindfulness script for patients when they are admitted, customizing their care plan. The fall rate from July 2018 – September 30, 2018 decreased from

3 falls a month to 1 fall a month, which hit the goal of a 2 falls per month reduction. These results fulfilled the specific and global aims of this project and will continue to be monitored on a quarterly basis.

Discussion

Summary. The key findings in this fall prevention project indicated that high risk fall patients were not being identified from the Schmid risk assessment tool which is limited in range. Patients who were not assessed as a fall risk were based on diagnosis and clinical presentation. Leveraging technology and including an additional layer of orientation for all patients admitted to the hospital, in the form of the mindfulness script, were very successful adjunctive interventions in fall prevention. To be successful, unit leaders learned that front-line staff members need to have a deep understanding of the "why" behind the additional interventions to be implemented. The CNL student leveraged point-of-care leaders for consistency with education, support, validation and follow-up with compliance related to the new practice changes.

Conclusion. In conclusion, the implementation of the mindfulness script, coupled with the responder 5 technology, and an increase in awareness of front-line staff lead to a decrease in the fall rate of more than 50% in 3 months. Using visual management tools, supportive front-line leaders and educators elevated the staff knowledge with evidence-based practices. These supportive measures enhanced staff compliance with technology and increased their understanding of the limitations with the Schmid risk assessment tool. The best practice of utilizing a mindfulness script is now hardwired for all patients admitted / transferred into the 5th floor medical/telemetry unit; a culture shift occurred with front line staff as they were invited to

lead change based on understanding. This work is sustainable and is woven into practice and supported by leadership. The use of technology has already spread throughout nursing units in the hospital and compliance with connectivity is reported out daily on a leadership safety call. The mindfulness script has been a successful intervention with staff support and has driven quality outcomes and patient-centered-care. Clearly, the rationale for combining multiple fall risk assessment tools, a mindfulness script and augmenting its application with existing, heretofore underutilized technology, can lead to reduced patient morbidity and increased accountability in nursing practice.

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Appendix A

Mindfulness Script for Patient-Centered-Care Planning

Mindfulness Script – the 3 P's PAUSE - Mr. or Mrs. Smith, as you know you were admitted to the hospital for (insert diagnosis) which could make you feel dizzy or not balanced when you get up. PLAN - We want to orient you to your room and ensure that your path is kept clean and clear. We will be using a bed alarm to ensure we are able to assist you when you would like to be out of bed, we will adjust the sensitivity for your comfort. PREPARE- If at any point you feel dizzy or imbalanced we would like to plan with you to sit down on your bed, chair or the floor – when we plan it prevents falls and potential for injury.

Note: Mindfulness script created by the fall prevention team, with influence from an internal

Work Place Safety concept (the 3 P's) and adapted by fall prevention team in May 2018.

Appendix B

Fall Prevention Evaluation Table

Study	Design	Sample	Outcome/Feasibility	Evidence rating
Browne, J., Covington, B., &Davila, Y. (2004) Using information technology to assist in redesign of a fall prevention program. <i>Journal of Nursing</i> <i>Care Quality</i> , 19(3), 218-225.	Literature review; Create an evidence- based assessment tool.	6402 records evaluated; 2438 fall risks.	The ADAPT Tool automates fall assessment, individualizes fall protection and facilitates fall risk communication without increasing nurse workload. The ADAPT Tool demonstrates smart use of information technology to increase patient safety.	III, B
Klenk, J., Becker, C., Palumbo, P., Schwickert, L., Rapp, K., Helbostad, J. L., Todd, C., Lord, S. & Kerse, N. (2017). Conceptualizing a dynamic fall risk model including intrinsic risks and exposures. <i>Journal of</i> <i>The American Medical Directors</i> <i>Association</i> , <i>18</i> (11), 921-927. doi:10.1016/j.jamda.2017.08.001	Literature review; Assessment tool evaluation	None	A dynamic fall risk model helps to better conceptualize the causal pathways and circumstances leading to falls. The main reasons for the lack of precision are (1) the measurement of fall risk factors is static; and (2) the context in which falls occur is not considered.	IV, B
Lunsford, B. (2015). Assessing your patients' risk for falling. <i>American Nurse</i> <i>Today</i> , <i>10</i> (7), 29-31.	Expert opinion	None	A standard assessment: combines a systematic assessment with clinical decision making, targeted interventions, care planning, and communication with	V, B

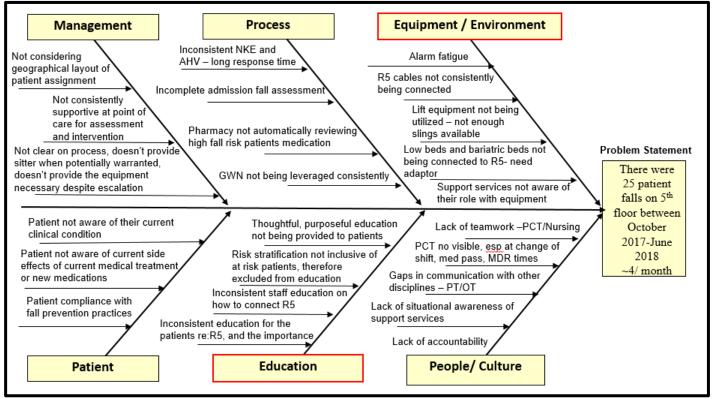
			other healthcare professionals.	
Choi, Y., Lawler, E., Boenecke, C. A., Ponatoski, E. R., & Zimring, C. M. (2011). Developing a multi-systemic fall prevention model, incorporating the physical environment, the care process and technology: a systematic review. <i>Journal of</i> <i>Advanced Nursing</i> , 67(12), 2501-2524. doi:10.1111/j.1365- 2648.2011.05672.x	Literature review; Used a quantitative systematic review without a meta- analysis. A narrative summary reported findings.	None	A multi-systemic fall prevention model that establishes a practical framework was developed from the evidence. Interventions: (1) the physical environment, (2) the care process and culture and (3) technology-related interventions. several effective single interventions that hospitals should consider as part of their multifaceted fall prevention intervention: (1) medication review and modification, (2) patient education, (3) volunteer programs and (4) bedrail reduction programs	IV, A
Poe, S., Cvach, M., Gartrell, D., Radzik, B., & Joy, T. (2005). An evidence-based approach to fall risk assessment, prevention, and management: lessons learned. <i>Journal Of Nursing</i> <i>Care Quality</i> , 20(2), 107-118.	Literature review; Pilot study.	196	Fall-risk-assessment tool: age, fall history, mobility, elimination, mental status changes, medication, and patient care equipment. Basic interventions for universal application are recommended regardless of fall risk level. Most important: the need for a simple, guided, and time- efficient approach to implementation.	III, A

Bonuel, N., Manjos, A., Lockett,	Quality	None	• C—Collaborative	V, B
L., & Gray-Becknell, T. (2011).	Improvement		interdisciplinary	,
Best practice fall prevention	Project - Fall		practice	
strategies. Critical Care Nursing	prevention		• A—Active	
<i>Quarterly</i> , <i>34</i> (2), 154-158.	program		leadership	
			engagement	
			• T—Technology	
			support for processes	
			• C—Communication	
			strategy	
			• H —House wide	
			culture change	
			Emphasis: Lack of	
			communication has	
			been identified as one	
			major reason for	
			medical errors or	
			incidents of patient	
			harm.	

Note: Fall prevention research evaluation table was created using the Johns Hopkins Medicine tool (Dang & Dearholt, 2017) by author after literature search conducted in April 2018. The findings of this literature search reinforced that using a generalized risk stratification tool is not enough to prevent falls, as it excludes some subsets of fall risk patients.

Appendix C

Fall Prevention Fishbone Diagram



Note: Fishbone diagram completed by fall prevention team, April 2018. The red outlined boxes

indicate the priority areas of focus.

Appendix D

Fall Prevention SWOT analysis

Strengths	Weaknesses
*Engaged staff, supportive leadership.	*Change in practice can be challenging.
*Prevention of harm, increase patient satisfaction and quality outcomes- alignment with organizational goals.	*Weak workflow for: technology, hourly rounding practice, fall assessment tool.
*Committee time for staff, equipment and technology funding, support services backing.	*Large unit - wide scope of influence, complex care patient population, leadership coverage gaps.
*Enhance care environment, decrease patient harm, increase efficiency - decreased length of stay related to decreased harm, better financial stewardship.	*Lack of knowledge related to how to best use technology (Responder 5), lack of equipment to ensure all beds, including special beds, can connect to R5.
*Improve quality of care by: refining risk assessment; understand definitions; and promoting interventions for risk population.	*Inconsistent messaging, need to ensure all shifts receive the same education and communication re: PDSA to ensure we are consistent and have sustainable practices.
*Leverage: an imbedded PI culture to identify process gaps; the voice of the front line and the customer.	*Holding staff accountable for non-compliance with care expectations could cause frustration with front line staff.
Opportunities	Threats
*Leverage technology to support more efficient workflows and safer care environment	*Constantly new and advanced technology, not all equipment is compatible.
*Progressive solutions for a long-time care delivery challenge	*During project roll out being able to secure committee hours could be challenging related to hospital staffing needs.
*Review literature and implement evidence based best	*Healthcare affordability and accessibility increasing the
practices, use diagnosis related fall risk assessment vs. risk	variation with patient population and an increase in daily
assessment tool which excludes patients who are at risk from falls	census. High volume is a threat to the care environment.
*Be creative and combining established process such as hourly	*Potential increase in overtime related to more detailed hourly
rounding with innovative use of technology to provide a stable	rounds, safety checks and change of shift bedside handoffs.
safe and effective process for patient care/safety.	Increase in budget related to more equipment and support staff (IT/engineering) required to support the technology.
*Develop relationships with vendors and other community	*Increase in alarm fatigue related to bed alarms being engaged
leaders to establish best practices and standards.	on large volume of patients on the unit related to the increase scope of fall risk patients.

Note: SWOT analysis evaluating the strengths and weaknesses of fall prevention project created

by author in June 2018.

Appendix E

Project Cost

Project Implementation Costs							
Education: All Staff							
Hou	rs		Staff	Cost per	·Hour	Sub-Total	
4			150	\$80)	\$48,000	
				Team			
Personnel	Number		Hours	Duration	Cost/ Hour	Sub-Total	
RN		3	2 every 2 weeks	14 weeks	\$80	\$3360	
PCT		1	2 every 2 weeks	14 weeks	\$30	\$420	
UA		1	2 every 2 weeks	14 weeks	\$30	\$420	
	Total Cost						
\$52,200							

(Responder 5 Cables and Cisco Phones are in place so no additional costs beyond the educational expenses listed above are associated with their use).

Budget created by author, with the help of finance department, in May-June of 2018.

Appendix F

Return on Investment

Potential savings by reducing 3 falls/month to 1 fall/ month:

(Cost Avoidance / Return on Inv	estment
Hospital Cost per Fall Injury	Projected Fall Reduction	Total Cost Savings
\$14,000	2	\$28,000/month
	Total Costs for 3-month pro	ject
	\$52,200	
	Balance for the 3-month pro	ject
\$84,000 (reducing	g by 2 falls a month) -52,000 (pro	oject expenses) =\$32,000

Return on Investment created by author, with the help of finance department, in May-June of 20

Appendix G

Fall Prevention Communication Deck

Fall Prevention Communication Deck

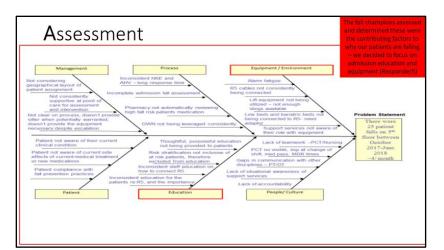
Megan Mira

Situation

- According to the Joint Commission falls with injury are a serious safety concern for patients who are admitted to the hospital
 - This risk is applicable for patients of all ages as medical conditions and physiological changes can put anyone at risk.
- There were 25 patient falls on 5th floor between October 2017 through June 2018
- This is on average 3 falls per month

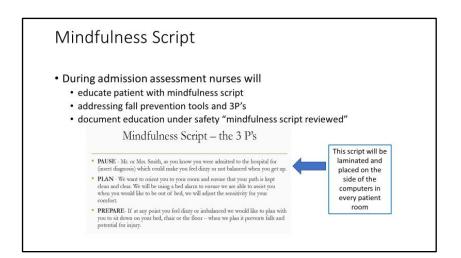
Background

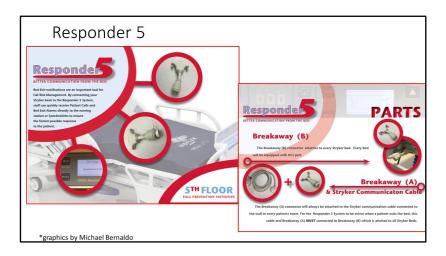
- The identified underlying factors for this unacceptable fall rate were
 a) poor patient centered care planning
 - b) inadequate consideration of the patient's clinical condition (medications, hemodynamic instability, stroke, disorientation)
 - c) inadequate environmental set up and use of technology (Responder 5)
 - d) poor communication of fall risk during nurse knowledge exchange and authentic hourly visits.
- These gaps in clinical oversight highlighted the drift from best practices and the need for a microsystem assessment and interventions to drive patient safety and hospital acquired injury prevention.

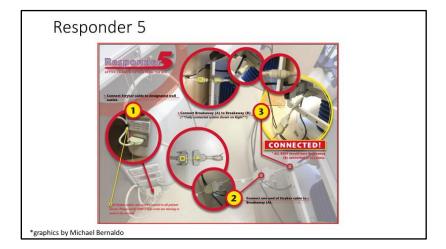


Recommendation

- 5th floor Med tele nurses and PCTs will hardwire the practices of patient centered fall prevention by:
 - Using the mindfulness script for all patients admitted to the 5th floor
 - leveraging technology by increasing the utilization of the Responder 5 technology
- Where can you add or capture fall prevention practices?
 - Use of chair alarm
 - Bring attention to "Call Don't Fall Signage"
 - Effective RN/PCT communication/Hand-Off
 - Situational awareness, escalation and mindfulness

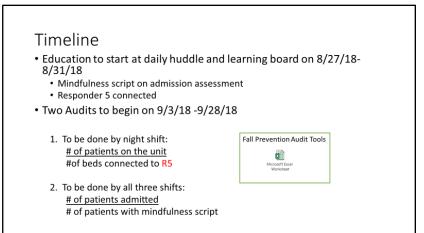






Educational Plan

- The fall prevention bundle will be shared by nurse leaders and educator.
- Staff will be educated regarding the mindfulness script and the expectation and support for connecting all beds to the responder 5 technology.
- Fall prevention will be discussed during admission and reinforced during
 - NKE AHV
 - Leader rounding
- Communication will occur:
 - On learning boards in the breakrooms
 At staff meetings
 Consistent huddles messages

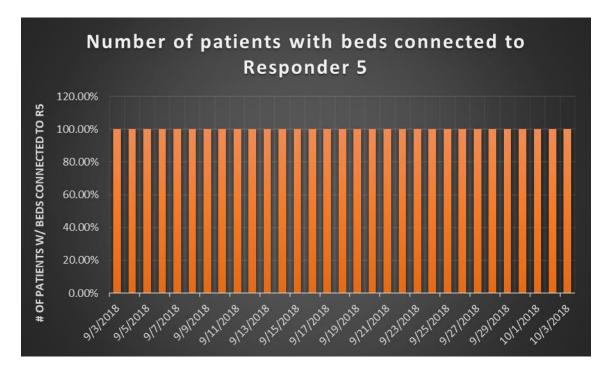


		onder 5 audit tool		-	d/Tele Mindfulness Script audit to # of patients admitted # of patients admitted				
Date	# of patients	# of beds connected to R5	Date	NOC	DAY	EVE	NOC	DAY	EVE
9/3/2018			9/3/2018			LVL	NOC	PAI	
9/4/2018			9/4/2018						
9/5/2018			9/5/2018						
9/6/2018			9/6/2018						
9/7/2018			9/7/2018						
9/8/2018			9/8/2018	-					
9/9/2018			9/9/2018						
9/10/2018			9/10/2018						
9/11/2018			9/11/2018						
9/12/2018			9/12/2018						
9/13/2018			9/13/2018	-					
9/14/2018			9/14/2018						
9/15/2018			9/15/2018						
9/16/2018			9/16/2018						
9/17/2018			9/17/2018						
9/18/2018			9/18/2018	-					
9/19/2018			9/19/2018						
9/20/2018			9/20/2018						
9/21/2018			9/21/2018						
9/22/2018			9/22/2018	8					
9/23/2018			9/23/2018						
9/24/2018			9/24/2018	1					
9/25/2018			9/25/2018	5					
9/26/2018			9/26/2018						
9/27/2018			9/27/2018	5					
9/28/2018			9/28/2018						

Note: Communication deck was created by fall prevention team in July 2018 for use in staff

meetings and huddles to educate staff and reinforce key measures.

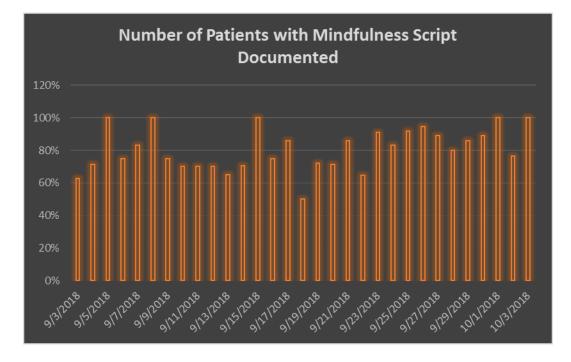
Appendix H



Responder 5 Audit Compliance

Note: This audit represents 100% compliance with Responder 5 bed connection for the patients who were admitted to the med/tele unit during the audit period (9/3/18-10/3/18). This audit was created by the fall prevention team and completed by unit leadership.

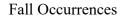
Appendix I

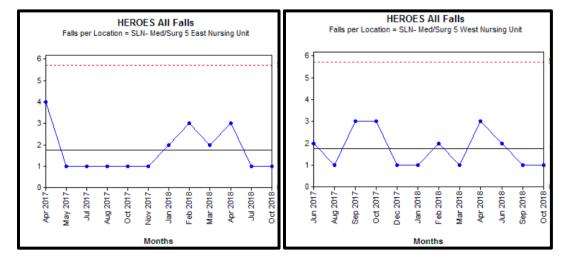


Mindfulness Script Documentation

Note: This audit represents the 81% compliance with the number of patients who were admitted on the 5th floor med/tele unit with the mindfulness script documented in their admission assessment compared to the number of patients admitted that day; this was created by the fall prevention team and completed by unit leadership from 9/3/18-10/3/18.

Appendix J





Note: These run charts, pulled from STATIT, HEROS data, highlight fall reduction from baseline October 2017-June 2018 through the test phase July 2018-September 2018.



CNL Project: Statement of Non-Research Determination Form

Student Name: Megan Mira

Title of Project:

Combining Patient Centered-Care and Technology to Reduce Falls in a Medical/Telemetry Unit

Brief Description of Project:

Looking through the lens of a CNL, as a risk anticipator, identifying opportunities to improve nursing practice that support fall prevention. This is done by leveraging evidence-based best practices that are associated with patient-centered care planning, and technology.

A) Aim Statement:

The nurses on Medical Telemetry Unit would utilize fall prevention bundle (patient centered care planning strategies and responder 5 technology) to decreased fall rate from baseline (October 2017-April 2018) of 3 falls per month to 1 falls a month by October 1, 2018.

B) Description of Intervention:

-Implementation of mindfulness script - the 3 P's

Leverage technology – Responder 5

-Observation of purposeful NKE and AHV where patient safety is highlighted.

C) How will this intervention change practice?

This will change practice using different ways to identify our patients who are at risk for falls. Instead of using a risk stratification tool, which may exclude fall risk patients, promoting critical thinking, following the nursing process, based on diagnosis to identify risk.

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C) Outcome / Process / Balancing measurements:

- $\mathbf{Outcome}$ - Number of falls for med/tele patients on the 5^{th} floor in San Leandro Kaiser.

- Process -Ensure that Responder 5 technology is connected and engaged.

-Leverage a mindfulness script in the patient safety care plan

- Observe to ensure accurate handoff and purposeful patient round- NKE/AHV

-Balancing- Number of Work Place Safety injury from connecting technology – amount of overtime from purposeful NKE/NKE

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

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

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

Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

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

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

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overrides clinical decision-making.		
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.	x	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience.	x	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	x	
The project has NO funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	x	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	x	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section	x	

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

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

STUDENT NAME: Megan Mira

of Student: Megan MiraDATE5/27/2018

SUPERVISING FACULTY MEMBER NAME: Dr. Nancy Taquino Signature of Supervising Faculty Member

DATE

Appendix K

Project Charter

Clinical Nurse Leader (CNL) Internship Project

Academic Partnership with Community Hospital

and University of San Francisco

Megan Mira

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Introduction:

Project Charter: Clinical nurse leader as risk anticipator, improving nursing practice for fall prevention by implementing best practices associated with patient centered care planning and technology in the medical telemetry unit.

Date: April 1st, 2018.
Student Name: Megan Mira, RN BSN
Facility/Setting: Community Hospital
Preceptor: Nurse Educator, RN MSN

Global Aim: The nurses on Medical Telemetry Unit would utilize fall prevention bundle (patient centered care planning strategies and responder 5 technology) to decreased fall rate from baseline (October 2017-April 2018) of 4 falls per month to 2 falls a month by the end of December 1, 2018.

Project Aim: 5th floor Med tele unit will hardwire the practices of patient centered fall prevention care planning, along with leveraging technology by increasing the utilization of the nursing call system (responder 5) from 75 to 100% by December 1, 2018.

Background:

According to the Joint Commission (TJC) (2015), falls with injury are a serious safety concern for patients who are admitted to the hospital; this risk is applicable for patients of all ages as medical conditions and physiological changes can put anyone at risk. Every year there are hundreds of thousands of patients who fall in the hospital with anywhere between 30-50% resulting in injury, which could create an extended hospital stay with correlating costs, roughly 14,000/fall with injury (TJC, 2015). This statistic is alarming and highlights the need to focus on

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this important preventable safety risk. Based on a review by TJC focusing on the common underlying factors, the following were identified; inadequate assessment, communication failures, lack of adherence to protocols and safety practices, inadequate staff orientation, supervision, staffing levels or skill mix, deficiencies in the physical environment and lack of leadership (TJC, 2015).

The Centers for Disease Control and Prevention (CDC) also see falls as a widespread safety risk for our communities identifying 1/3 of adults ages 65 and older as having experienced a fall and 2 million older adults who seek emergency treatment because of a fall (Silva, 2017). Because of the number of individuals who seeks medical treatment related to a fall, the CDC predicted that by year 2020 the combination of the direct and indirect costs associated with falls with injuries would reach almost 70 billion dollars, thus making falls one of the most expensive medical conditions (Silva, 2017). Based on a study conducted on a medical surgical floor that was experiencing an increase in patient falls determined that most patients that were falling did not screen positive for fall risk and therefore the fall bundle that was in place did not help prevent injury for this group of patients. The key to successful implementation of interventions was a detailed nursing assessment, including clinical condition that could contribute to an increased fall risk (Silva, 2017). Patient centered care planning was initiated and deep dive into data and review with front line staff to promote involvement and ownership.

The medical telemetry unit has deficits in a few of the identified areas in the Joint Commission report; in October 2017-June 2018 a total of 25 patient falls. Underlying factors identified were poor patient centered care planning, considering their clinical condition (medications, hemodynamic instability, stroke, disorientation), inadequate environmental set up and use of technology (Responder 5 technology combined with the nurse call system), and poor

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communication of fall risk during nurse knowledge exchange and authentic hourly visits. These gaps in clinical oversight highlighted the drift in best practices and the need for a microsystem assessment and interventions to drive patient safety and hospital acquired injury prevention.

	Data Source	Target		
Outcome	Decrease in falls by 2/month	STATIT report	15% increase	
	Responder 5 connection	Daily Audit	90%	
Process	Mindfulness Script in the patient safety care plan	AHV documentation in medical record	90%	
	Accurate handoff and purposeful patient round– NKE/AHV	Observation	90%	
Balancing	Number of Work Place Safety	Work Place	0 injuries	
Measure	injury from connecting technology. Amount of overtime from highlighting focus of NKE and AHV	Safety and ES&F Report PRISM	No increase of incremental overtime	

Measures:

Measure Number of falls in	Operational Definition (How is the measure calculated?) Number of falls reported	Type (Outcome, process, balancing?) Outcome	Data Collection Plan (How will you collect data & how frequently?) Statit Report and
med/tele stroke patients	from the STATIT report and eRRfs	Outcome	ERRFs
Schmidt Score assessment	Numerator: Number of patient with >3 schmid scores assessed by RN Denominator: Number of patient admitted to MS/tele Unit	Process	This information will be pulled from Health Connect
Responder 5 connected	Numerator: Number of patient beds connected to responder 5 Denominator: Number of patient admitted to MS/tele Unit	Process	Random audits conducted by ANM, two days/week
Patient safety script	Number of nurses observed adhering to mindfulness script over the number of patients	process	Conduct observations of NKE and AHV to validate the use.
Patient Safety Handling	Number of employee injuries due to patient handling	Balancing Measure	Monthly from Work Place Safety Report

Measurement strategies:

Sponsors:

USF SONHP Faculty Sponsors	KP San Leandro Sponsors
USF Professors	Chief Nurse Executive

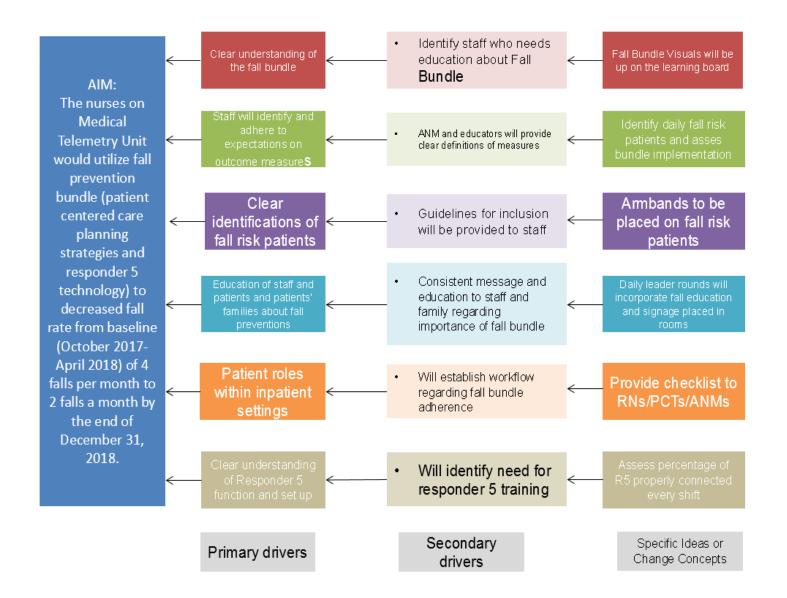
Champion: Educator RN MSN

Team:

Role	Name
MD Champion	HBS Chief
RN Co leads	Fall Prevention RN
	Fall Prevention RN
PCT Co-Lead	Fall Prevention PCT
UA Co-Lead	Fall Prevention UA
CNS Educator	Educator RN MSN
Quality RN	Quality RN, CNL, MSN

Data Definitions:

Data Element	Definition
Health Connect Schmid	Patients are scored based on risk factors,
	patients with a score of 3 or greater are
	identified as a fall risk.
TEAM Bundle	This bundle represents care elements that
	place patients at higher risk of falls, with
	injury.
Responder 5	This is a cable that connects the patients bed
	alarm with the nurse call system, which helps
	with identification of bed exits that place
	patients at risk for falls.
Patient centered care planning – mindfulness	This is a script that will be used with all the
script	patients admitted to the med/tele unit that will
	help to pause, plan and prepare for chance
	that patient may become imbalanced due to
	environmental and clinical conditions.
AHV/NKE	Authentic Hourly Visits (AHV) – are
	purposeful hourly rounds where the
	mindfulness script will be validated.
	Nurse Knowledge Exchange (NKE) – is
	bedside report where nurses involve patients
	and their families in their plan of care, which
	will include fall risk.



Change to Test

The fall prevention bundle will be reinforced by nurse leaders, educators and CNL. Staff will be educated regarding the mindfulness script and the expectation and support for connecting all beds to the responder 5 technology. Fall prevention will be discussed during NKE and AHV and will be validated by front line or leadership staff. Learning boards in the breakrooms will be utilized as a visual reminder of our tests that are rolling out, and staff meetings will act as a space for further exploration of fall prevention. Real time assessment, patient interview and consistent huddles messages will be a part of change bundle.

Mindfulness Script – the 3 P's

- **PAUSE** Mr. or Mrs. Smith, as you know you were admitted to the hospital for (insert diagnosis) which could make you feel dizzy or not balanced when you get up.
- **PLAN** We want to orient you to your room and ensure that your path is kept clean and clear. We will be using a bed alarm to ensure we are able to assist you when you would like to be out of bed, we will adjust the sensitivity for your comfort.
- **PREPARE** If at any point you feel dizzy or imbalanced we would like to plan with you to sit down on your bed, chair or the floor when we plan it prevents falls and potential for injury.

Lessons Learned

The fall bundle is a creative group of interventions that are supported by the literature to that include patients based on diagnosis versus a risk stratification that could exclude fall risk patients. The fall prevention project focused on 2 specific measures using the mindfulness script and care planning with the three P's in mind (pause, plan, and prepare) as well as leveraging technology by ensuring that our responder 5 nurse call alert is consistently being used for all patients. This project required a multidisciplinary approach including physicians, patient care technicians, unit assistants, engineering, environmental services, transport and nursing leadership. Through the guidance of the quality department, we told our story through data and highlight our performance achievements through process improvement model. Our care teams received frequent updates about this project through shift-by-shift huddles and updates on the learning board. Senior leadership support was essential for barrier removal and to provide resources to keep our patients safe from falls.

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Date	4/1/18	4/12/18	4/19/18	4/19/18	4/25/18 & 8/1/18	5/7/18	10-11/2018	Responsible Party
Define Topic								Megan
Aim Statement and Background								Megan
Measures/Develop Charter								Megan
Measurement Strategy								Megan
Identify Change to Test Start Collect Data								Megan/ front line team/quality RN
Complete Charter								Megan and Team
Driver Diagram								Megan
Finalize Charter Prepare Presentation Fall Presentation								Megan/team Megan Megan Megan

CNL Competencies

The CNL leader leverages their role as an advocate and as a risk anticipator to help support performance and prevent harm. The CNL is a point of care leader who can recognize, research, and implement practice changes that will enhance patient outcomes. The CNL leverages evidence to inform decisions influencing patient care, such as, assessing patients outside of a risk stratification tool to be at risk for falls. According to the American Association of Colleges of Nursing, the "CNL designs, implements, and evaluates client care by coordinating, delegating and supervising the care provided by the health care team, including licensed nurses, technicians, and other health professionals" (2007, p.10). The CNL in this setting is responsible for assessing, designing, involving and implementing evidence-based interventions that will address quality of care issues. The CNL acts as an information manager combining technology and clinical skills and uses data to tell the story of the journey. This fall prevention project on the 5th floor medical telemetry unit is leveraging all the CNLs assets to educate and elevate the nursing care around evidence that will keep patients free from harm.

References

American Association of Colleges of Nursing. (2007). AACN White paper on the education and role of the clinical nurse leader. Retrieved from

http://aacn.nche.edu/publications/whitepapers/clinicalnurseleader

- Silva, K. B. (2017). Continuous quality improvement. Fall prevention: breaking apart the cookie cutter approach. *Medsurg Nursing*, *26*(3), 198-213.
- The Joint Commission. (September 28, 2015). Preventing falls and fall-related injuries in health care facilities. Retrieved from https://www.jointcommission.org/assets/1/18/SEA_55.pdf