Reducing Falls in a Neuro Trauma Intermediate Care Unit Through Intentional Rounding

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Abstract

Problem & Purpose: In US hospitals, an estimated 2% of patients will fall during their hospital stay, and 10% of individuals who fall will sustain serious injuries. When a hospitalized individual falls, the cost can be as high as $13,616 per patient. A Neuro Intermediate Care Unit (IMC) at a university medical center in the eastern US experienced an increase in falls from 12 in the fiscal year 2022. to 26 in the fiscal year 2023 (ending June 30th). This project aimed to assess adherence to intentional rounding on 100% of Neuro IMC patients with a Morse Fall Scale (MFS) score > 24 (medium-high fall risk) by implementing in-room erasable rounding boards and a 4-item rounding survey with the overarching goal of decreasing the number of falls on the unit. **Methods:** Includes documenting hourly to every two hours rounding on erasable, in-room, check-off whiteboards that displayed the "4 Ps" –four common risk factors for falls (Potty, Position, Personal belongings, and Pain). Intentional rounding ranged from hourly (day) to every two hours (night). The project lead (PL) instructed staff to check off rounding completion every one to two hours on each in-room whiteboard. The protocol called for the staff member at shift end to review the whiteboard to determine if staff marked off completion of rounding per QI protocol. Next, the staff member used their personal cell phone to access a 4-item survey via a QR code connected to REDCap, a secure HIPAA-compliant server, to report if staff checked off rounding every one to two hours. The PL compiled data into a time series chart to examine staff adherence to rounding. **Results:** Out of a maximum possible 5,040 12-hour shifts over 15 weeks, staff completed 117 surveys, (2.32% compliance). Seven falls occurred on the unit during the project. **Conclusion:** Low end-of-shift survey completions suggest low adherence to a hospital policy that requires intentional rounding on patients with increased fall risk factors.

Keywords; inpatient falls; intentional rounding; hospital falls; falls prevention.

Reducing Falls in a Neuro Trauma Intermediate Care Unit Through Intentional Rounding

Approximately 2% of patients will fall during their hospital stay, with one in four falls resulting in injury, and 10% with serious injury (LeLaurin & Shorr, 2019). A metropolitan university medical center developed a renewed focus on reducing falls after a recent increase. Historically, the medical center has had lower rates of falls amongst the adult trauma population; more recently, falls have been on the rise. For example, in 2022, the Neuro Trauma IMC's falls increased to 47, more than doubling from the previous year, which had 19 falls. This rising rate continues into 2023, with 13 falls as of March 15, 2023. Many factors were leading to these falls, including limitations placed on staff due to the pandemic (Liang et al., 2021), staffing shortage (Buerhaus, 2021), equipment issues, and many others. Chief among these issues is staffing, as seen on the Fishbone Diagram in Figure 1. Staffing has become a serious issue not only with this medical center but across the entire healthcare field, with an increasing rate of patient safety incidents, including falls (Brooks Carthon et al., 2019).

The specific site where the intervention occurred is a 24-bed Neuro Trauma Intermediate Care (IMC) unit with a mixture of post-operative and preoperative patients. The patient population includes people 18 and older with no upper age limit. Injuries range from elective surgery to traumatic orthopedic injuries. The staff, including newly graduated nurses participating in a scholarship program, veteran nurses with various experiences caring for patients with orthopedic injuries and other specialties, and travel nurses on contract, plays a crucial role in fall prevention. The average staffing consists of three nurses, one charge nurse, two patient care technicians, and a secretary for seven staff members, providing a 1:4 nurse-patient ratio, typical for this type of nursing unit. This unit had more falls associated with impulsive, confused, and impatient patients. A higher level of fall rates is consistent across the many hospital units focusing on neurological

care (Koç et al., 2020) and congruent with the doubling of the number of falls in the target unit from the previous year.

This quality improvement project aimed to assess staff adherence to the implementation of intentional rounding on 100% of Neuro IMC patients with a Morse Fall Scale (MFS) score > 24 (medium-high fall risk) with the overarching goal of decreasing the number of falls within the target population.

Available Knowledge

Targeted rounding combined with education and a standard fall prevention program has strong support based on the evidence synthesis and evidence table (See Appendix A and Appendix B). Barker et al. (2016) looked at a cluster of interventions known as 6-PACK. This study included 46,245 participants which consisted of a control and intervention group in a cluster randomized controlled trial. This study did not decrease the rate of falls, but improved patient satisfaction and documentation surrounding falls. Di Massimo et al. (2022) used a sample size of 779 in a cluster randomized controlled trial and examined intentional rounding as a method to decrease falls. Their research demonstrated a statistically significant drop in falls associated with intentional hourly rounding. Kim et al. (2021) conducted a systematic review and metanalysis and identified seven studies that met their qualifications for inclusion. Fall prevention programs decrease the overall fall rates within an institution; a metanalysis of the seven studies demonstrated statistical significance in the interventions using rounding as an effective way to reduce falls ($p < 0.30$).

A frequent approach includes examining the effects of medication on falls. For example, Morris et al. (2022) and Tricco et al. (2017) looked at a cluster of intervention medication and medication education. They found that proper education and administration of medications such as Vitamin D and calcium, combined with a holistic approach mitigated falls and injuries. In contrast, Seppala et al. (2022) explored if medication administration, education, and discontinuation of

unneeded medications would decrease falls and injuries. Seppala et al. postulated that while education is beneficial, education alone is not enough to prevent falls. France et al. (2017) found that a multi-faceted, unit-based approach that included unit leadership, education, rounding, environmental factors, and data transparency resulted in a decrease in falls over time.

The purpose of this QI project was to assess staff adherence to an evidence-based intervention known to reduce falls in a Neuro Trauma IMC (NTIMC), on patients who have Morse Fall Scale (MFS) scores in the medium to high fall risk range (> 24) to reduce falls to zero. This evidence synthesis supported the implementation of an intervention that included rounding and staff education.

Rationale

The framework chosen for this intervention was the PARiHS (Promoting Action on Research Implementation in Health Services), as seen in Figure 3. The framework selection is congruent with the style of a hospital-based intervention in an inpatient unit. The underpinning concepts included evidence from literature reviews and facilitation by a willing hospital culture. Based on the literature review, the evidence supports implementation of an intervention utilizing targeted rounding to prevent falls. The culture and the leadership of the chosen NTIMC floor in a large metropolitan medical center were prepared to support a QI project targeting falls. These factors combine to create a system improvement that eases the workload involved in preventing falls by utilizing resources already present within the unit to facilitate intervention implementation.

Several senior clinical nurses on the orthopedic IMC with a history of project implementation had already demonstrated the ability to transition a plan or process to the practice arena. Newer nurses stated that they had a desire to move up the professional advancement model (PAM) within the hospital and expressed motivation to implement quality improvement projects on their units. The unit culture, leadership, and highly motivated,

clinically prepared staff were very supportive and willing to seek opportunities to improve the quality of patient care and staff satisfaction; staff seemed to be highly motivated early adopters who wanted to make a change. Clinical resources included many experienced nurses and also technological resources accessible to staff such as easier ordering systems to obtain resources such as newer beds and more effective chair alarms.

Unit structures already available to prevent falls consisted of several factors. Nurses were familiar with the Morse Falls Scale evaluation tool to determine a patient's fall risk. Current hospital policy to mitigate fall risk already included posting high fall risk signage, activating bed alarms, and implementing lap belts for patients when in a chair. When unit staff nurses are in rooms, they make a conscious effort to declutter the environment and ensure beds are in low positions to prevent injuries should a patient fall. Finally, nurses conducted education on medications when appropriate and provided call bells within reach of the patient. These practices occurred only when the nurse was in the room or if requested by the patient. The intervention included hourly rounding to address patient needs and differs from current practice. The next section will describe the project methods.

Methods

A multi-faceted approach to fall prevention was utilized for the QI which included rounding on those patients graded as a medium to high fall risk based on the Morse Fall Scale results. Rounding varied hourly to every two hours, depending on the shift. For example, nurses and staff conducted hourly rounding between 0600 to 2200, which switches to every two hours from 2200 to 0600. Every two hours for rounding at night promotes good sleep hygiene, a significant health factor (Herscher et al., 2021). Nurses, patient care technicians, secretaries, and nursing students conduct rounding. Including staff in addition to nurses in theory reduced the increased workload associated with hourly rounding and increased buy-in from staff. As a part of

standard documentation, nurses and staff already reassess the Morse Fall Scale scores every shift for accuracy. Nurses and staff documented targeted rounding on the Fall Awareness Safety Table (F.A.S.T.) form (Figure 2), an hourly rounding erasable documentation white board created by the project lead (PL). The F.A.S.T. form intent was to ensure implementation of all safety measures to include lowered beds, call bells in reach and patient belongings within reach. Rounding comprised of the 4 Ps of fall prevention rounding: Pain, Potty, Position and Periphery (Althobaiti, 2019).

In addition to the fall prevention rounding program which was introduced through a series of nursing in-services on the floors, the project lead encouraged the continued use of standard fall prevention. Fall prevention education included the importance of decluttering environments, ensuring beds are in lowest position, easy access to call bells, bed alarms are on, high falls risk identification signage was up, and patients received education on certain medications. In addition, the project director performed weekly chart audits of Morse Falls Scale results with the F.A.S.T. forms and cross checked them with the electronic health record (EHR) to ensure that nurses and staff conducted intentional rounding on those patients who scored medium to high fall risk. In the event of a fall, the PL performed a cross-reference with the hospital reporting system and the Morse Fall Scale score to determine if nurses and staff had conducted rounding on the patient who fell.

The project included all medium to high fall risk IMC patients. The PL included all patients with a Morse Fall Scale (MFS) score > 24. (See Appendix C) The rationale for choosing the Morse Fall Scale (MFS) included its reliability which has a sensitivity of 66.7% and specificity of 81.6.% (Mousavipour et al., 2022). The target hospital already uses the MFS score to identify inpatients at increased risk for fall. The MFS is a validated tool designed to identify patients at increased risk for fall (Agency for Healthcare Research and Quality, 2021).

The process measure included the number of rounding surveys completed by staff per shift throughout the 15-week project period as the numerator; the denominator was the maximum number of potential survey opportunities during the 15-week project. The denominator was calculated as follows: fourteen 12-hour shifts per week x 24 unit beds =336. 15 weeks x 336 = 5,040 opportunities to complete intentional rounding, if every bed was occupied and every patient had an MFS score > 24. See Appendix D for the Intentional Rounding Survey Run Chart, and Appendix E for a Data Dictionary. Appendix F displays the Hourly Rounding Process Flow Chart (Desired), and Appendix G displays the Hourly Rounding Process Flow Chart (Current).

The outcome measure was the number of falls that occurred during the project period. The definition of "fall" was that of the Centers for Medicare and Medicaid Services (CMS): The hospital ethics board and Institutional Research Board committee requirements state that before submission all principal investigators complete Protection of Human Subjects Training, Good Clinical Practice Training, HIPAA Training, and Required Principal Investigator Training. The project lead completed these requirements by January 30th, 2023. Additionally, the project lead received approval from the Clinical Site Representative (CSR), unit manager and the director of nursing. Upon completion of these requirements, the approved project proposal was designated by the institution's IRB committee non-human subject research.

Results

Upon completion of the project the following results were identified: Results indicate low staff adherence with completing rounding surveys. During the 15-week project period, staff completed 117 surveys for 12-hour shifts out of a maximum potential 5,040 shifts for this 24-bed unit. This implementation adherence rate approximates to 2.32%. (117/ 5,040). Among the 117 patients who had rounding surveys completed, the average MFS score was 60.68, with an MFS

score range from 25 to 110. The PL excluded data for three patients who had an MFS score of zero, 16, and 20, recorded in error by the staff, and outside the inclusion criteria of MFS score = ≥ 24. See Appendix H, Percentage of Staff Completion of Intentional Rounding Surveys.

Seven falls occurred on the IMC unit during the project period. In a future similar project, it may be helpful to determine the MFS scores on patients who fall, if intentional rounding occurred, and if any contributing fall risk factors were present. See Appendix I, Frequency of Falls on the Neuro IMC.

Discussion

Due to the lack of attendance at the project rollout presentation, the PL realized that many staff members were not aware of the QI project. Based upon feedback from both the Nurse Manager and CSR, the PL increased the number of days at the site from one day a week for four hours to multiple days a week for shorter durations. In addition to this, an email was sent to staff with the pertinent information about the QI project. Once this was done, the PL observed that during the change of shift, staff were discussing the hourly rounding during their shift handoff.

To help increase initial compliance, the PL attached a dry-erase marker and colorful QR code outside each room next to each hourly rounding sheet as a reminder (Figure 2). When examining the cost effectiveness and benefit of this QI project. The potential financial benefit fare superseded the cost. The entire project cost $100 in total to implement on a 24-bed unit. While this expense can add up quickly when extrapolated to a hospital wide improvement project it still falls far short of the potential cost of a patient fall which can cost up to $13,616 per patient (Dykes et al., 2023)

Staff members were instructed to enter data via the REDCap survey at the end of each shift. Initially, some staff requested to change the collection method. The desired change was to switch from a dry-erase board to paper that could be stored without any patient identifiers in the

charge office behind a locked door. Staff requested that the PL enter all data as they did not feel comfortable entering data in to the REDCap database. To overcome this, the PL contacted the nurse manager and the project CSR to discuss overcoming their hesitance. They agreed the storing fresh rounding sheets and completed rounding sheets in the charge office without any patient identifiers was a sound solution. Regarding data entry, the nurse manager pulled hospital census data to match with the room and data on the rounding sheet so that accurate data could be entered into the REDCap survey. This plan required the PL to access the EHR weekly to collect the survey data to be manually entered into REDCap. The survey would remain the same; only the documentation and collection method would change. However, after continued examination, this did not increase staff participation, and the initial data collection plan was deemed more feasible. To increase compliance, more QR codes were posted, and dry-erase markers were attached to the rounding board to facilitate participation.

Several barriers and limitations to successful implementation emerged throughout the project. Barriers included inconsistent staffing patterns with some nurses not being present for the project orientation, increasing high workload, and uninformed contract staff- travel nurses who were not aware of the QI project or were not interested in participating. Additional barriers included survey burnout from other ongoing projects and hospital initiatives. Staff did not trust using their personal cell phones to access the survey because it required entering protected health information (PHI) - the patient medical record number. Despite reassurance provided to staff by the PL regarding the inability to store PHI on their cell phones and IRB review, staff reluctance persisted.

Project results suggest several recommendations for future sustainability. Early in the project, the PL and the CSR discovered an existing hospital policy that requires intentional rounding to be done on patients deemed to be at high risk for fall based on their MFS score. An increase in

survey completion near the end of the project suggests that a longer project period might have better results (see Figure 7). To increase participation in intentional rounding, both staff and the PL identified that the use of EHR tools may better promote rounding documentation especially if rounding documentation became part of all required documentation, as it should per hospital policy. The PL of a future similar project may be better positioned to leverage the fact that there is an existing policy on rounding to reduce fall risk. The use of hospital phones or a designated input device to enter all survey and PHI information into the REDCap database may be better accepted by staff, if a future implementation of a similar QI project occurs. Another recommendation is to provide more pre-project focus on strategies to increase staff participation and understanding.

After examining the results, several key concepts emerged after the completion of the QI. Like Di Massimo et al., (2022) small sample sizes and limited time for intervention prevented a fully robust amount of data to be collected. In Di Massimo the advent of Covid-19 prevented a large sample size and the limiter of only a semester in the case of this QI. In addition, this aspect of the QI showed little evidence that the intervention provided any true falls prevention which echoes both Barker et al., (2016) and Kim et al., (2021) who identified that rounding alone did not overtly decrease falls.

Conclusion

This 15-week project explored two new strategies to improve adherence to intentional rounding on patients with medium to high fall risk who are hospitalized on a Neuro Trauma IMC unit. In-room erasable rounding white boards displaying fall risk factors, and a brief 4-item survey about performance of intentional rounding accessed within a HIPAA-compliant secure database by the staff's personal cell phone/QR code did not achieve 100% staff compliance to intentional rounding. Staff had very low compliance (2.32%) for completing a 4-item Item Rounding Survey, so it was difficult to tell if they actually performed the rounding but did not document it or did not perform the rounding. This project identified many barriers to implementation of intentional rounding performance.

As a result of this project, an existing hospital policy mandating intentional rounding on high risk fall patients was discovered. Awareness of the existing hospital policy and barriers to this project are lessons learned that may positively impact future projects seeking to mitigate fall risk on this IMC.

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Figures

Figure 1

Fishbone Analysis- Root Cause Analysis for Falls

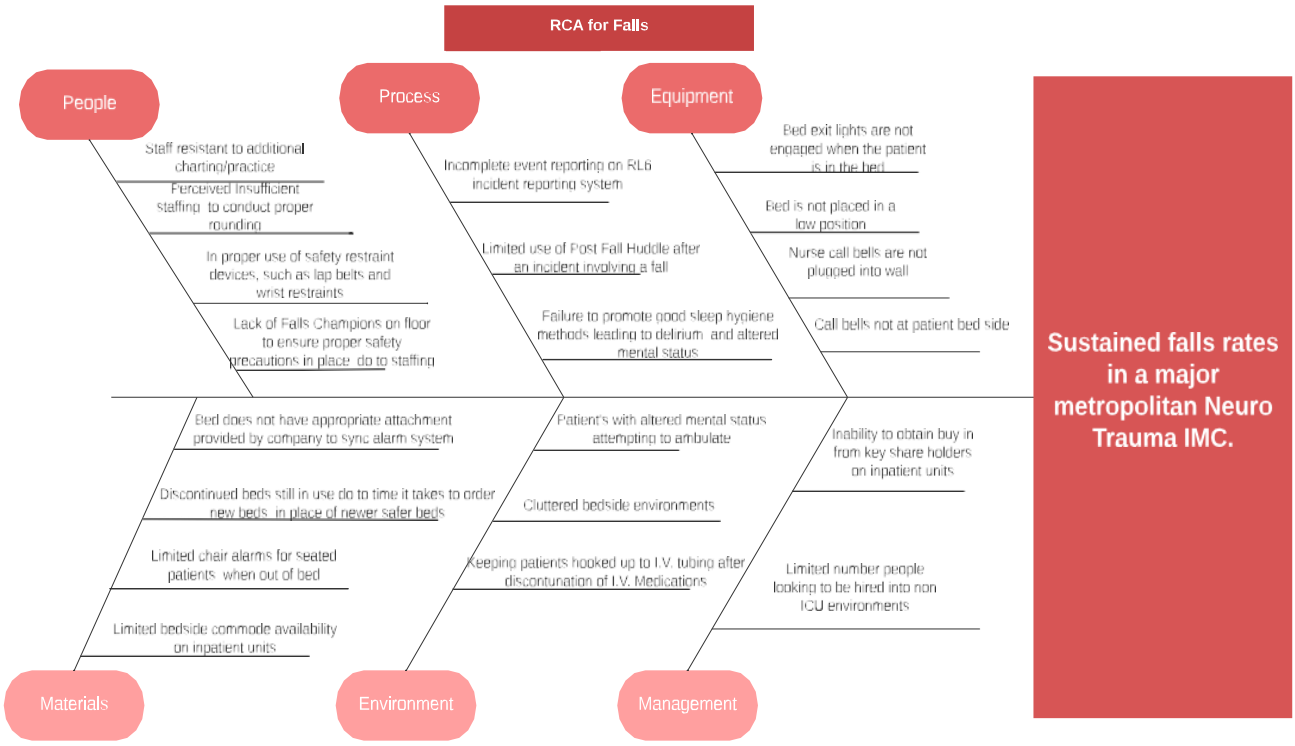


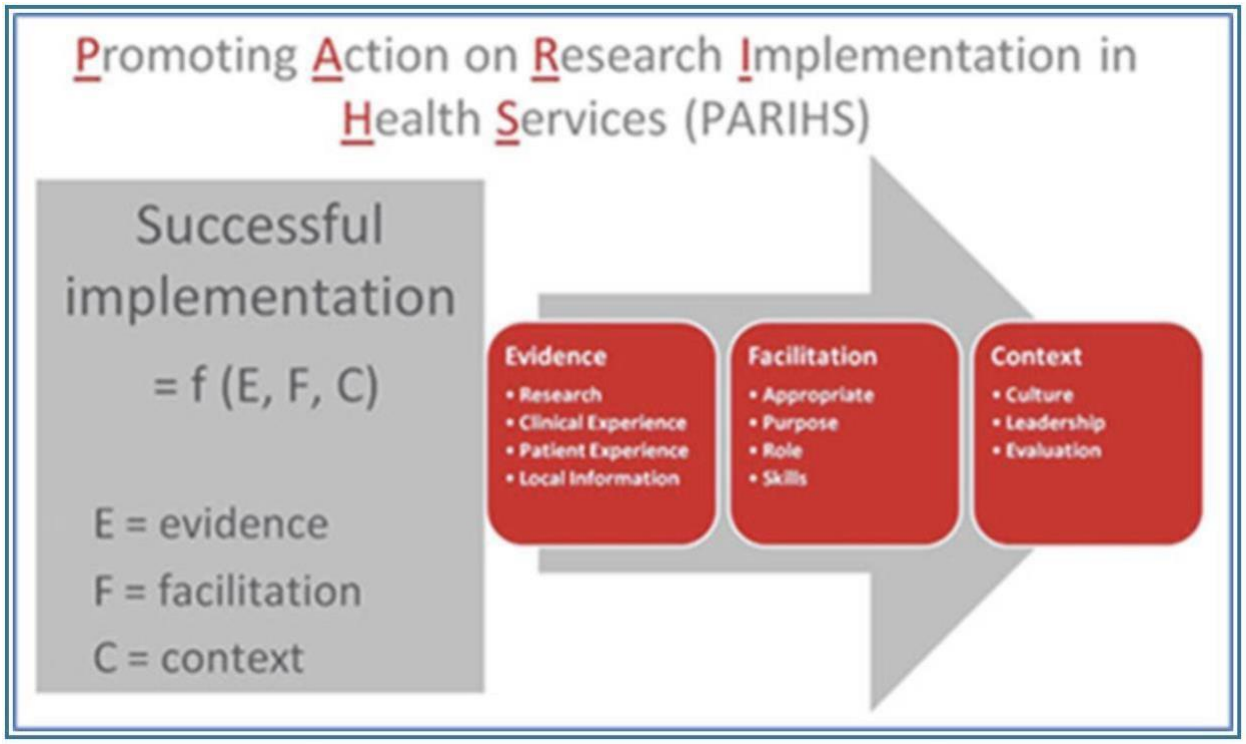
Figure 2

Fall Awareness Safety Table Form (F.A.S.T.)

Fall Awareness Safety Table (F.A.S.T.)		
	Call Bell Bed Low Safety Alarm Rails Up	Water Toileting Belongings Repositioning
	Patient Safety	Patient Comfort
0800/2000		
0900/2100		
1000/2200		
1100/2300		
1200/0000		
1300/0100		
1400/0200		
1500/0300		
1600/0400		
1700/0500		
1800/0600		
0700/1900		

Figure 3

The PARIHS Framework



Appendix A

Evidence Synthesis Table

Project Title: Fall Prevention: A Multi-Faceted Approach

PICOT:

In an adult hospitalized Orthopedic Patient, does an evidence-based fall prevention program using an interprofessional approach to accomplish comprehensive hourly rounding using the 4P's based on patient-specific risk scores derived from the Morse Fall Scale as well as patient education, decrease the fall rate over a 4-month period from August 1 to December 1 2023

JHNEBP Model Level	Total Number of Sources	Author and Quality Rating of each study	Synthesis of Findings
Level 1 Experimental study · Randomized Controlled Trial (RCT) · Systematic review of RCTs with or without meta-analysis	1 Cluster Randomized Trial 1 Cluster-randomized controlled study 4 Systematic Reviews with meta-analysis	(Barker et al., 2016) **B** (Di Massimo et al., 2022) **A** (Kim et al., 2021) **A** (Morris et al., 2022) **A** (Seppala et al., 2022) **B** (Tricco et al., 2017) **A**	The different studies all looked at various aspects of fall prevention to include intentional rounding, increased signage patient education, call bell usage and various environmental factors that can lead to falls. Barker et al., (2016) looked at a cluster of interventions known as 6-PACK which according to their data did not improve the rate of falls however it did improve patient satisfaction and documentation surrounding falls which is important for safety because it enables further insight in to why a fall is occurring. Di Massimo et al., (2022) looked at intentional rounding as a method to decrease falls and was able to show a statistically significant drop in falls. Like this Kim et al., (2021) was able to identify rounding as an effective way to decrease falls. Another approach that is often examined is medication and its effects on falls. Both Morris et al., (2022) and Tricco et al., (2017) looked at a cluster of intervention medication and medication education. They found that with proper education and administration of medication such as Vitamin D and calcium falls and injuries from falls could be mitigated when combined with a holistic approach. Seppala et al., (2022) took this research one step further to determine if medication administration, education and discontinuation could lead to a decrease in falls and injuries. According to their research while education is beneficial it alone is not

			enough to prevent falls and they recommend inclusion of other measures to prevent falls and fall related injuries.
Level II Quasi-experimental studies · Systematic review of a combination of RCTs and quasi-experimental studies, or quasi-experimental studies only, with or without meta-analysis	1 Pretest-Posttest Study	(France et al., 2017) **A**	France et al., (2017) found that a multi-faceted and unit-based approach that included Unit Leadership, Education, Rounding, Environmental factors and Data Transparency would lead to a decrease in falls over time.
Level III Non-experimental study · Systematic review of a combination of RCTs, quasi-experimental, and non-experimental studies, or non-experimental studies only, with or without meta-analysis · Qualitative study or systematic review of qualitative studies with or without meta-synthesis			
Level IV Opinion of respected authorities and/or reports of nationally recognized expert committees/consensus panels based on scientific evidence			
Level V Evidence obtained from literature reviews, quality improvement, program evaluation, financial evaluation, or case reports · Opinion of nationally recognized expert(s) based on experiential evidence			
Overall Quality Rating w/rational and Recommendation: Overall quality rating is an A. Based upon the synthesis of the information the overall recommendation is indicative of a practice change focusing on a multi-faceted approach to implement this change, to include education for staff and patients on falls and its antecedent factors, purposeful hourly rounding, involvement of all members of the healthcare team and appropriate safety measures such as signage, call bells and bed alarms.			

Appendix B

Evidence Review Table

Citation: Barker, A. L., Morello, R. T., Wolfe, R., Brand, C. A., Haines, T. P., Hill, K. D., ... & Kamar, J. (2016). 6-PACK programme to decrease fall injuries in acute hospitals: cluster randomised controlled trial. bmj, 352. doi: https://doi.org/10.1136/bmj.h6781					Level: I
PurposeHypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
"To evaluate the effect of the 6-PACK program on falls and fall injuries in acute wards."	Cluster randomized controlled trial.	**Sampling Technique:** Nominated by participating hospitals as being wards where falls commonly occurred. **Eligible:** 46,245 **Excluded**: 0 **Accepted**: 46,245 **Control**: 23,575 **Intervention**:22,670 **Power analysis**: 80% power rating allowing for 5% types on error and a Standard deviation of 2, 12 intervention and 12 control wards were needed, assuming a total of 510 fall injuries, from approximately 212 000 occupied bed days during the trial period. **Group Homogeneity:** The socioeconomic, demographic, and clinical characteristics can be found in Table 1	**Control**: Standard hospital fall prevention protocol to include non-slip socks, constant patient observers and falls alert wrist bands, some of these were also in the 6-PACK intervention but that is due to the standardization of the practices **Intervention**: Received standard care plus the use of the 6-PACK intervention. **Intervention fidelity** (describe the protocol): The 6-PACK protocol consisted of a nine item fall risk prevention tool to include: "falls alert" sign, supervision of patients in the bathroom, ensuring patients' walking aids are within reach, establishment of a toileting regimen, use of a low-low bed, and use of a bed/chair alarm. In addition to this the staff was required to update this fall risk daily for each patient	**Dependent Variable:** The effect of the 6-PACK intervention on the rate of fall within the intervention wards. For this study falls were defined as "an event resulting in a person coming to rest inadvertently on the ground, floor, or other lower level." **Measurement tool (reliability), time, procedure:** Falls were measured by daily audit tools and completion of the 6-PACK tool were done by examine daily medical record audits and structured bedside observations by assessor trained in its use.	**Statistical Procedures(s) and Results:** The research examined the baseline falls data which generated 393 falls and 144 fall injuries which led to 284 admissions. During the RCT period 1,831 falls with 613 fall injuries were recorded leading to 1,333 admissions. Based upon this data the researched conducted an analysis which showed no statistical significance between the intervention and control group for the use of the 6-PACK intervention (rates of falls (incidence rate ratio 1.04, 0.78 to 1.37; P=0.796) and fall injuries (0.96, 0.72 to 1.27; P=0.766)). While the authors did not note a difference in the incidences of falls the rates of documentation and falls risk assessment within intervention group did rise.

Citation: Di Massimo, D. S., Catania, G., Crespi, A., Fontanella, A., Manfellotto, D., La Regina, M., ... & INTENTO Study Group. (2022). Intentional Rounding versus Standard of Care for Patients Hospitalised in Internal Medicine Wards: Results from a Cluster-Randomised Nation-Based Study. Journal of Clinical Medicine, 11(14), 3976. https://doi.org/10.3390/jcm11143976					Level I
Purpose/ Hypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
"The aim of the study was to explore the effects of Intentional Rounding, a regular-based proactive patient monitoring, on falls and pressure ulcers in internal medicine units. "	Cluster- randomized controlled study	**Sampling Technique:** "All patients aged 18 or above and consecutively admitted to the participating internal medicine wards were eligible for the study" only exclusion criteria were not signing the consent waiver. **Eligible**: All patients admitted onto respective floors, in total this was 1,822 **Excluded:** 1,043 **Accepted:** 779 **Control:** 379 **Intervention:** 400 **Power analysis:** "it was calculated that samples of 485 subjects in the IR group and 485 subjects in the SoC group allowed a power of 80% to detect an IRR of 0.5 (i.e., a 50% reduction)"	**Control:** Standard nursing care to include ensuring bed alarms are intact, safety signage is in place and standard patient safety procedures **Intervention:** Consisted of integrated standard practices with additional interventions related to hourly rounding using the 4P's **Intervention fidelity (describe the protocol):** "2 h throughout the 24 h of the day, performed alternately by either nurses or nursing assistants working at the site. IR is based on the assessment of the "4Ps": 1. positioning: make sure the patient is in a comfortable position and evaluate the risk of pressure ulcers; 2. personal	**DV:** The dependent variable was the cumulative incidence of falls and new pressure ulcers, the study defined falls as "an unexpected event in which the participants come to rest on the ground, floor or lower level" **Measurement tool (reliability), time, procedure:** Data collection was done via surveys and raw data extraction from charts and hospital reporting systems based upon occurrence of a fall, pressure ulcer development, and number of call bells twice a week and then again discharge with patient satisfaction only	**Statistical Procedures(s) and Results:** Several statistical analyses were conducted to determine the statistical significance of the intervention which are as follows: a Wilcoxon-type test was performed for continuous variables and the Pearson chi-square test, or Fisher's exact test, whichever was appropriate, was performed for categorical ones. The results for this study show that new falls or and new pressure ulcer was 28 in the interventions group and 42 in the control group. Specifically, with the falls the intervention group had a p-Value of 0.03 indicating there was a significant improvement over the control group who had 19 falls vs the intervention who had 4 after the institution of intentional rounding.

		Group Homogeneity: The socioeconomic, demographic, and clinical characteristics can be found in Table 1	needs: assess patient needs (e.g., to use the bathroom, to change incontinence pad, hydration); 3. pain: ask patients to describe their pain level on a scale of 0 to 10; 4. possession: make sure that any item a patient needs (phone, TV remote control, glass of water, or call bell) are within easy reach" Additionally the management would round once a week to preform sample checks to ensure completion.	being documented at discharge.	

Citation: France, D., Slayton, J., Moore, S., Domenico, H., Matthews, J., Steaban, R. L., & Choma, N. (2017). A multicomponent fall prevention strategy reduces falls at an academic medical center. The Joint Commission Journal on Quality and Patient Safety, 43(9), 460-470. https://doi.org/10.1016/j.jen.2017.10.011					Level 1
Purpose/ Hypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
Purpose of the study is to determine if the implementation of a multi component fall prevention program was effective at decreasing falls.	Pretest-Posttest Study	**Sampling Technique:** a Pareto chart analysis of falls was used to identify the units with highest level of falls. From these three units were determined to be 25% of the falls for the hospital. **Eligible**: All the units at VUMC's units consisting of 649 beds **Excluded:** All other units/beds within the hospital (563 beds) **Accepted:** 3 Units consisting of a 28 Bed Neuroscience Acute Care Unit, a 34 bed Myelosuppression/Stem Cell Transplant Unit; and the 24-bed Acute Care for the Elderly Unit. **Control:** Historical data associated with falls within those three units. **Intervention:** The three units consisting of 86 beds.	**Control:** Intervention was compared to previous years fall rates pre intervention implementation and based this on the standard of care i.e., bed alarms, fall signs and rounding. **Intervention:** Consisted of integrated standard practices with additional interventions related to Unit Leadership, Education, Rounding, Environmental factors and Data Transparency. **Intervention fidelity (describe the protocol):** The multiple interventions consisting of leadership, Education, Rounding, Environment and Data Transparency. For leadership specifically they used unit-based fall leaders, weekly audits for falls	**DV:** Falls defined for the purpose of this study "as unplanned descents to the floor or other lower area that may or may not result in injury are among the most prevalent, dangerous, and costly risks to the safety and well-being of hospitalized patients." **Measurement tool (reliability), time, procedure:** Falls and falls with harm were measured in events per 1,000 patient days. The three types of falls that were identified to be tracked were accidental, anticipated physiological and unanticipated physiological. Rates of falls with and without harm per 1,000 days were compared from pre and post intervention.	**Statistical Procedures(s) and Results:** Several analyses and test were done to determine how effective the interventions were. They conducted a Wald test to determine if the variable were statistically significant, a Segmented regression analysis was done to determine the effect of a month on the falls with her per 10,000 patients days with in the pre/post test period, the Davies test was used to test the hypothesis of the equivalence of the slope in the pre/post intervention time periods and an individual and moving range statistical process control shaft was used to compare post intervention fall rates to the pre intervention fall rate. Based upon the statistics there was a steady decline in falls with in all three units specifically the Wald test showed a statistically

		Power analysis: None provided. **Group Homogeneity:** Demographics were not provided.	with real time coaching, and unit celebration to support success with fall prevention. Education looked at fall education for staff with unit culture improvement, patient and family education, environmental safety education, and Morse fall scale educations for staff. Rounding consisted of toileting focus during purposeful rounding, safety rounding, shift leader rounding and shift safety huddles. With the environment they implemented open doors, mobbing high risk patients closer to the nursing station, visual socks, and the use of call bells/exit chair alarms. And finally, data transparency which consisted performance boards.		significant drop in all three areas being measured by fall type, anticipated physiologic ($p = 0.0052$), unanticipated physiologic ($p = 0.0138$), total falls ($p = 0.0001$), and falls with harm ($p = 0.0014$). This pre-post study indicates that multifaceted approach to address falls is and effective way to not only decrease falls but to build an effective care team.

Citation: Kim, E. J., Kim, G. M., & Lim, J. Y. (2021). A systematic review and meta-analysis of fall prevention programs for pediatric inpatients. *International journal of environmental research and public health*, *18*(11), 5853. doi.org/10.3390/ijerph18115853					Level I
Purpose/ Hypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
The purpose of the systematic review and meta-analysis was to determine what fall prevention interventions were effective at preventing falls in the inpatient pediatric population.	A Systematic Review and metanalysis	**Search Technique:** The literature search was done using PubMed (including Medline), Science Direct, CINAHL, Embase, and Cochrane. The terms that were used to search were (child or pediatric or pediatric or children), (inpatient or hospitalized), (fall or fall down or accident fall or fall risk), prevention, (intervention or program), and randomized control trials (RCTs). This search generated 1,725 studies all of these were examined based upon the inclusion criteria shown below. Independent reviewers extracted the data by using a standardized form that had the author details, publication year, country of origin, study design methods, sample size, intervention, results, and outcome. A Cochran risk of bias instrument was used on	**Control:** Controls varied between studies **Intervention**: The interventions consisted of several different techniques to include, high fall risk signage, patient/parent education, decluttering environments, hourly rounding, documentation, and interdisciplinary care teams for care.	**Dependent Variable:** Decreasing fall rates, increasing patient/caregiver knowledge and decreasing safety events were the key dependent variables within the systematic review. **Measures:** The measures that were examined were the number of falls events, fall rates safety events, and caregiver behaviors	**Level of Measurement:** The systematic review used meta-analysis and a forest plot to determine the effectiveness of fall programs. **Outcome Data Retrieval:** The research compiled the data from all the studies identified for inclusion in the systematic review. **Analysis:** A meta-analysis was done for all 7 studies showing a low level of homogeneity ($I^2 = 70.3$) with an odds ratio of 0.95, with a non-significant z-value = -0.184 ($p = 0.854$). However, a Forest plot and meta-analysis was conducted on 4 of the studies where the outcome was measuring the number of falls, from the I^2 was 32.13 showing random effect while the odds ration of the fall prevention programs was 0.561 (95% Cl 0.333∼−2.173, z-value = −0.363, p = 0.030).

		the RCT's and a risk of bias assessment tool for non-RCT. **Eligible Studies:** The eligible studies had to have an investigation into a fall's prevention program in an impatient setting and an age cutoff of less than 18 years of age. **Included:** A total of 7 studies were included from the initial 1,725. Of these studies 5 were conducted in the USA, one was conducted in Singapore, and one was conducted in Korea. Of the studies three of them were quality improvement (QI) or project studies, two were experimental studies, and one was retrospective chart review study. **Excluded:** Articles were excluded due to duplication, pertaining to non-pediatric population, community acquired injuries, no fall or injury in study, non-English or non-Korean, non-inpatient, did not			**Conclusion:** The authors identified the need for a fall risk assessment instrument as well as a need to create an evidence-based, standardized program to prevent falls. However, they did note that despite this issue a fall-prevention programs did decrease the overall fall rates within an institution as shown by the analysis of the seven studies above which had a $p = 0.030$ indicating statistical significance in the interventions. **Systematic Review Bias Risk:** The authors declare no conflict of interest or bias in in the systematic review.

		provide sufficient info on study design, just inpatient fall risk assessment scale and due to insufficient statistical data results. **PRISMA:** PRISMA protocol and Cochrane guidelines were followed throughout the entirety of the project. **Power Analysis:** A power analysis was not conducted in this study.			

Citation: Morris, M. E., Webster, K., Jones, C., Hill, A. M., Haines, T., McPhail, S., ... & Cameron, I. (2022). Interventions to reduce falls in hospitals: a systematic review and meta-analysis. *Age and Ageing, 51*(5), afac077. https://doi.org/10.1093/ageing/afac077					Level I
Purpose/ Hypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
"Falls remain a common and debilitating problem in hospitals worldwide. The aim of this study was to investigate the effects of falls prevention interventions on falls rates and the risk of falling in hospital."	Systematic Review and meta-analysis	**Search Technique:** The search was done via electronic data base searches to include Medline, CINAHL, PsycInfo, Embase, AMED, PEDro and Cochrane. Key phrases search strategies used were focusing on terms such as 'falls', 'fall prevention', 'accidental fall', 'acute care', 'rehabilitation', 'hospital', 'hospitalization', 'ward', 'clinic', 'randomized controlled trial' (RCT), 'trial', 'controlled clinical trial' and 'study'. In addition to this the use of Boolean phrases "OR" and "AND" were used to narrow down the search criteria. Quality of the data that was extracted was examined by using independent reviewers OR" and "AND" were used to narrow down the search criteria. Quality of the data that was extracted was examined by using	**Control**: Varied controls across the studies reviewed **Intervention:** Interventions ranged from Medication education, clinician education, rehabilitation therapies, hourly rounding and multifactorial interventions aimed at decreasing falls.	**Dependent Variable:** The dependent variable would be the effects of the interventions on preventing falls. **Measures:** Measures varied across the studies from Incident reports, medical records, verbal nurse reports, electronic hospital occurrence reports, daily audit of medical records, Monthly single-day census using the NHS safety thermometer and site coordinators recorded data.	**Level of Measurement:** The systematic review that used a META-Analysis to determine the relation between the intervention used to prevent falls within the different RCT's and a GRADE tools was used to determine the strength of each study. **Outcome Data Retrieval:** The researcher compiled the data from all the studies identified for inclusion in the systematic review. **Analysis:** The meta-analyses of the interventions was broken down into several different categories and are as follows. Education which had an overall summary RaR that was 0.70 [0.51–0.96], $Z = -2.19$, $P = 0.03$ The overall summary OR was 0.62 [0.47–0.83], $Z = -3.20$, $P = 0.001$) Indicating that education was beneficial in decreasing falls. Assistive devices whose results were a RaR = 1.22, CI 0.84–1.78, $Z = 1.03$, $P = 0.30$; OR = 1.1, CI 0.94–1.31, $Z = 1.19$, $P =$

		independent reviewers and a Cochrane Collaboration revised tool of Risk of Bias tool to determine bias within the studies. In addition to this a GRADE instrument as used to determine the strength of each study. **Eligible Studies:** To be considered eligible the studies had to be a published in English, included a falls intervention in a hospital setting, investigated falls as a primary or secondary outcome and falls data were reported and be either a RCT, quasi-randomized, cluster RCT, comparative study or a quasi-experimental study. **Included:** There were 11,212 studies identified from both electronic searches and manuscripts, after duplicates removed there were 8,206 after compared to exclusion criteria this was focused down to 43 studies for inclusion. These studies			0.23 which indicates that it was not statistically significant in decreasing or preventing falls. Rehabilitation and exercise therapies also did not show a significant change in falls risk prevention (OR = 0.72, CI 0.12–4.32; $Z = -0.36$, $P = 0.72$) or a change in the rate of falls (IRR:1.13, 95% CI 0.65–1.96, $P = 0.662$). A Systems approach did not receive a meta-analysis due to the studies not providing sample sizes. However, preventions however it did show some statistical significance when it came to medication review and clinical supervision ($p<0.004$). The was no statistical significance shown for falls prevention with use of hourly rounding though. Environmental modifications which involved changing floor types in patient rooms showed no statistical significance in falls prevention ((OR = 2.87, CI 0.58–14.27, Z = 1.29, P = 0.20). The final observation was made on medication and specifically the use of vitamin D plus calcium in the prevention in falls which did not show a statistically

		consisted of a mix of RCT, quasi-randomized, cluster RCT, comparative study or a quasi-experimental study. **Excluded:** Article were excluded if they were duplicates, not hospital based, no usable falls data or wrong outcomes, no comparison group, trial protocol ore trial registration, abstract only, commentary, summer of another study or a thesis. **PRISMA:** PRISMA was used to identify all relevant studies for inclusion and exclusion. **Power Analysis:** A Power analysis was not conducted.			significant result (RR 0.82 CI 0.59–1.16). **Conclusion:** The authors of the study state that their systematic review of the evidence showed a low to moderate strength in support of the use of medication education to promote falls prevention **Systematic Review Bias Risk:** The authors declare no conflict of interest however the review did identify an overall low risk of bias based upon the Cochrane risk assessment tool, but it was shown that there was some bias within associated with randomization, deviations from planned interventions and issues with measurement outcomes.

Citation: Seppala, L. J., Kamkar, N., van Poelgeest, E. P., Thomsen, K., Daams, J. G., Ryg, J., Masud, T., Montero-Odasso, M., Hartikainen, S., Petrovic, M., van der Velde, N., & Task Force on Global Guidelines for Falls in Older Adults (2022). Medication reviews and deprescribing as a single intervention in falls prevention: a systematic review and meta-analysis. *Age and ageing*, *51*(9), afac191. https://doi.org/10.1093/ageing/afac191 https://doi.org/10.1093/ageing/afac191					Level I
Purpose/ Hypothesis	**Design**	**Sample**	**Intervention**	**Outcomes**	**Results**
"Aim was to assess the effectiveness of medication review and deprescribing interventions as a single intervention in falls prevention."	Systematic review with meta-analysis	**Search Technique:** The search was done via electronic data base searches to include Medline, Embase, Cochrane CENTRAL, PsycINFO. Key phrases search strategies used were focusing on terms such as "deprescribing", "falls/healthcare assessment", "geriatric", "specific prescription tools" and "RCT". In addition to this the use of Boolean phrases "OR" and "AND" were used to narrow down the search criteria. Quality of the data that was extracted was examined by using independent reviewers and a Cochrane Collaboration revised tool of Risk of Bias was used to assess the risk of bias by reviewers. **Eligible Studies:** To be considered eligible the studies had to be a	**Control**: Varied controls across the studies reviewed **Intervention:** Interventions ranged from deprescribing or medication review intervention i.e., medication review held by physician, pharmacist, or clinical decision support systems.	**Dependent Variable:** The variable examined were the effects of deprescribing or medication review intervention on reduction in falls. **Measures:** There was no consistent tool used to identify effectiveness of intervention. However, the overall Measures of success of the intervention based upon the if there was a statistical significance to the decrease in falls.	**Level of Measurement:** The systematic review used a META-Analysis for strengths. **Outcome Data Retrieval:** The researcher compiled the data from all the studies identified for inclusion in the systematic review. **Analysis:** The meta-analyses of the medication reviews resulted in a risk ratio (RR) of 1.05 (95% confidence interval, 0.85–1.29, I2 = 0%, 3 studies(s)) for number of fallers, in an RR = 0.95 (0.70–1.27, I2 = 37%, 3 s) for number of injurious fallers and in a rate ratio (RaR) of 0.89 (0.69–1.14, I2 = 0%, 2 s) for injurious falls. **Conclusion:** The authors of the study state that their systematic review of the evidence showed a low to moderate strength in

		randomized controlled trials of adults with the age being greater than or equal to 60 years old where there was a comparison of any medication review or deprescribing intervention with usual care and falls being the outcome. **Included:** There were 5,891 studies identified and after duplicates removed there were 437 after compared to exclusion criteria this was focused down to 49 studies for inclusion. These studies consisted of a mix of Randomized controlled trials (RCTs), including quasi-randomized trials, cluster-randomized trials and trials in which treatment allocations were inadequately concealed. **Excluded:** Article were excluded if they were duplicates, wrong outcomes, only protocol, protocol of included study,			support of the use of medication as a single use for prevention of falls and that it should be included in a multi-faceted approach to care. **Systematic Review Bias Risk:** The authors declare no conflict of interest however the review did state that there was some bias with the studies that may lead to reporting bias.

		conference abstract of included study, only conference abstract, wrong intervention, wrong study type, no access, cost effectiveness analysis of included study, wrong population, wrong control and letter of to the editor included study. In addition to this if the medication review was apart of a multi modal approach it was excluded. **PRISMA:** PRISMA was used to identify all relevant studies for inclusion and exclusion. **Power Analysis:** A Power analysis was not conducted.			

Citation: Tricco, A. C., Thomas, S. M., Veroniki, A. A., Hamid, J. S., Cogo, E., Strifler, L., ... & Straus, S. E. (2017). Comparisons of interventions for preventing falls in older adults: a systematic review and meta-analysis. Jama, 318(17), 1687-1699. https://doi:10.1001/jama.2017.15006	Level I

Purpose/ Hypothesis	Design	Sample	Intervention	Outcomes	Results
The purpose of this study was to conduct a systematic review of the current literature related to interventions associated with falls in older adults	Systematic Review with a Meta-Analysis	**Search Technique:** A Literature review was done via data bases to include MEDLINE, Embase, Cochrane Central Register of Controlled Trials, and Ageline databases. Search terms and key phrases were not included in the article. The search generated 10664 articles all these articles were examined and validated on the inclusion criteria shown below. Extraction was done by independent pairs of reviewers, conflicts were settled by a third party reviewer all of which was done by by using a standardized form that basic falls risk assessment, calcium supplementation, cognitive behavioral therapy, de- vices, diet modification, electromagnetic field therapy and whole-body vibration, environmental assessment and modification, exercise, floor modifications, multifactorial assessment and treatment, osteoporosis	**Control:** Controls varied across the studies **Intervention**: The interventions consisted of several different techniques to include exercise, exercise and vision assessment and treatments, Combined clinic-level quality improvement strategies, multifactorial assessment, calcium supplementation, vitamin D supplementation, Osteoporosis treatment, and a combination of one or all of the above in different portions.	**Dependent Variable:** Decreasing fall rates and fall associated injuries. **Measures:** The measures that were examined were the number of Fractures, Hip fractures, Outpatient physician visits, number of fallers, emergency department visits, quality of life and harms.	**Level of Measurement:** The statistical analysis was done via a meta-analysis and a rank-heat plot to to identify the most effective method to reduce falls. **Outcome Data Retrieval:** The research compiled the data from all the studies identified for inclusion in the systematic review. **Analysis:** Due to the large sample size of studies the following list is the pertinent break down of interventions. 1) Injuries Falls had four specific interventions that provided the highest validity to include Exercise (OR, 0.51 [95% CI, 0.33 to 0.79]; absolute risk difference [ARD], −0.12 [95% CI, −.20 to −0.05]), Combined exercise and vision assessment and treatment (OR, 0.17 [95% CI, 0.07 to 0.38]; ARD, −0.38 [95% CI, −0.53 to −0.22]), Combined exercise, vision assessment and treatment, and environmental

		medications, podiatry assessment and treatment, quality improvement strategies, social engagement, surgery, vision assessment and treatment, and vitamin D supplementation. A Cochrane Effective Practice and Organization of Care (EPOC) Groups' risk-of-bias tool was used to appraise the included studies. **Eligible Studies:** The eligible studies had to have an investigation into a fall's prevention program and a age cut of greater then or equal to 65 years of age. **Included:** Of the total 10664 studies examined 303 studies were included. 155 of the studies had an age range of between 73-84 years of age, in 248 of them at lest 50% were women, in 169 of he studies there was a mixed population of individuals who had fallen and not fallen. In 172 of the studies medicaments were not include. The studies were conducted across Europe, Austral and New Zealand with the setting ranging from at			assessment and modification (OR, 0.30 [95% CI, 0.13 to 0.70]; ARD, −0.23 [95% CI, −0.39 to −0.08]) and Combined clinic-level quality improvement strategies, multifactorial assessment and treatment, calcium supplementation, and vitamin D supplementation (OR, 0.12 [95% CI, 0.03 to 0.55]; ARD, −0.17 [95% CI, −0.33 0.00]) 2) Hospitalization chief intervention consisted of combined clinic level quality improvement strategies, patient-level quality improvement strategies, and multifactorial assessment and treatment relative to usual care (2 RCTs [516 participants]; OR, 0.78 [95% CI, 0.33 to 1.81]; ARD, −0.03 [−0.10 to 0.093]) or for combined patient-level quality improvement strategies and exercise relative to exercise alone (2

		home, clinics, communities and a mixed setting. The duration of the studies ranged from 26 weeks or less to a year or less. **Excluded:** Articles were excluded based upon not including a fall prevention intervention, not being an RCT, participants under the age of 65, no relevant comparator, no relevant outcome, no abstractable data, and duplicate study. **PRISMA:** The review protocol was developed using the Preferred Reporting Items for Systematic Review and Meta-analysis Protocols (PRISMA-P) statement. **Power Analysis:** A power analysis was conducted but based on the fact that 67% of the studies did not have a clear risk of contamination bias it led to a lower power sensitivity analysis.			RCTs [2126 participants]; OR, 1.12 [95% CI, 0.38 to 3.25]; ARD, 0.02 [−0.09 to 0.22]). However, based upon this analysis these interventions there was no significant associate with hospitalizations. 3) Emergency Department visits had no significant association between the intervention and this topic as is evident by the data (multifactorial assessment and treatment relative to usual care (OR, 1.24 [95% CI, 0.86 to 1.77]; ARD, 0.04 [−0.03 to 0.13]). 4) Outpatient physician visits identified no statistically important interventions (OR, 0.62 [95% CI, 0.32 to 1.18]; ARD, −0.10 [−0.19 to 0.04]) 5) Number of Fallers identified several different interventions that proved to be significant in decreasing falls of these there are Exercise (OR, 0.83 [95% CI, 0.70 to

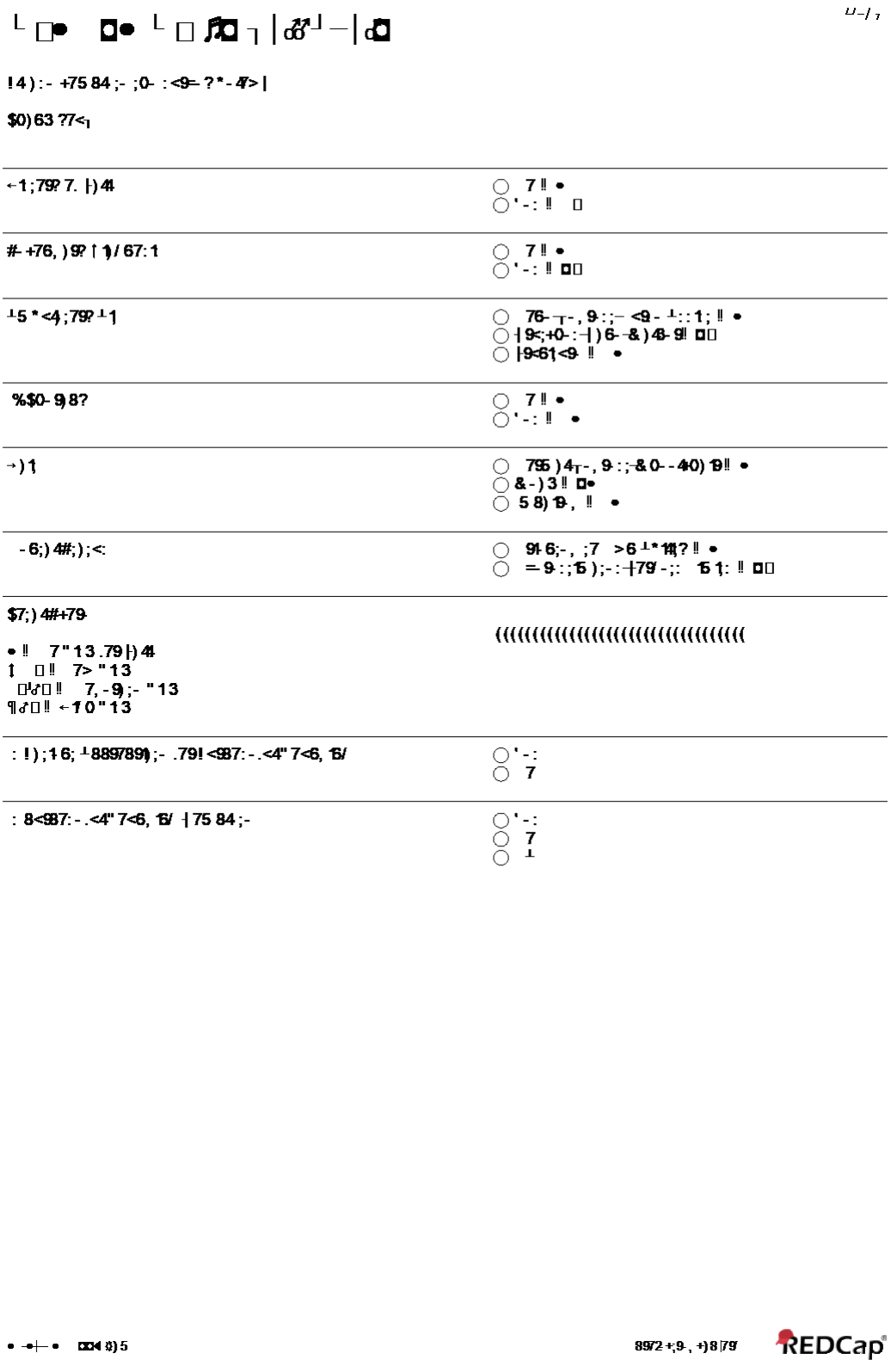
					0.99]; ARD, −0.03 [95% CI, −0.07 to 0.00]), Combined exercise, patient-level quality improvement strategies, clinic-level quality improvement strategies, and multifactorial assessment and treatment (OR, 0.68 [95% CI, 0.49 to 0.94]; ARD, −0.07 [95% CI, −0.13 to −0.01]), Combined exercise, patient-level quality improvement strategies, hip protectors, and environmental assessment and modification (OR, 0.53 [95% CI, 0.29 to 0.97]; ARD, −0.15 [95% CI, −0.28 to −0.03]), Combined patient-level quality improvement strategies, clinic-level quality improvement strategies, dietary modifcations, calcium supplementation, and vitamin D supplementation (OR, 0.36 [95% CI, 0.14 to 0.93]; ARD, −0.13 [95% CI, −0.28 to −0.01]) and

					Combined orthotics and exercise (OR, 0.22 [95% CI, 0.07 to 0.67]; ARD, −0.21 [95% CI, −0.37 to −0.05]). 6) When looking at fracture preventions there were several strategies implemented of these of these, 1 intervention (combined osteoporosis treatment, calcium supplementation, and vitamin D supplementation) showed to have an effect on lower risk of fractures relative to usual care (OR, 0.22 [95% CI, 0.09 to 0.54]; ARD, −0.11 [95% CI, −0.17 to −0.05]) 7) Hip fractures were shown to be able to be prevented via the same as fractures with the use of combined osteoporosis treatment, calcium supplementation, and vita- min D supplementation were associated with a lower risk of hip fracture relative to usual care (OR, 0.18 [95% CI, 0.05 to 0.62]; ARD, −0.08

					[95% CI, −0.13 to −0.03]). **Conclusion:** Based upon the information that was provided in the systematic review exercise and various combinations such as exercise, vision assessment and treatment, environmental assessment and modification, multifactorial assessment and treatment, and vitamin D supplementation were associated the preventing falls and injuries associated with falls. **Systematic Review Bias Risk:** The reviewers conducted a comparison-adjusted funnel plot which showed no evidence of publication bias. However, there was many studies with unclear risk bias associated with allocation concealment, contamination, and selective outcome reporting.

Appendix C

Modified Morse Fall Scale



Appendix D

Intentional Rounding and Falls Prevention Survey

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Appendix E

Codebook

PLEASE NOTE : DO NOT collect live data if project is in development mode .

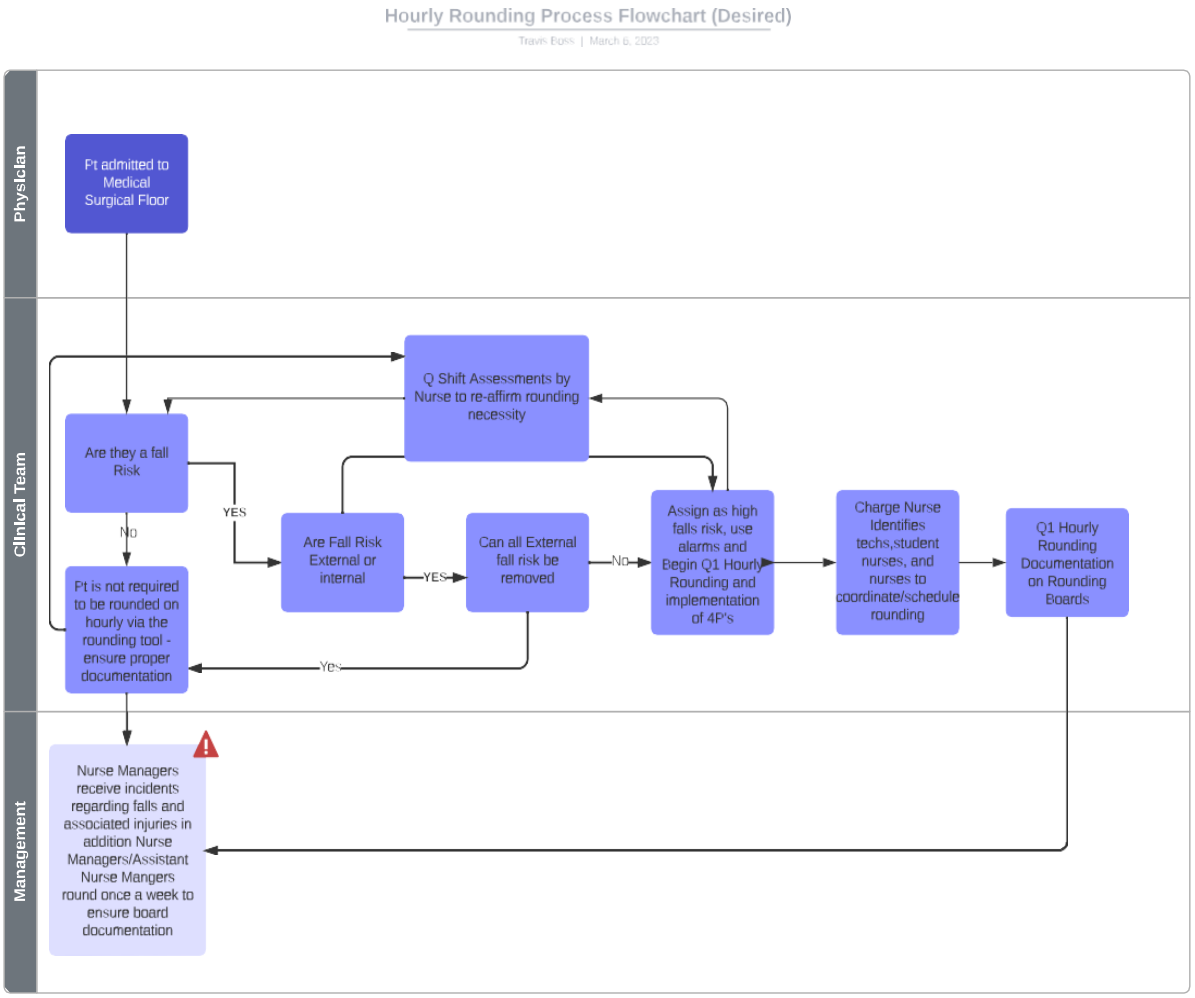
! Data Dictionary Codebook

07/13/2023 6:57pm

	#	Variable / Field Name	Field Label *Field Note*	Field Attributes (Field Type, Validation, Choices, Calculations, etc.)
Instrument: Intentional Rounding and Falls Prevention Survey (intentional_rounding_and_falls_prevention_survey) " **Enabled as survey**				
	1	record_id	Record ID	text
	2	medical_record_number	Medical Record Number	text, Identi! er
	3	total_score_0_no_risk_for	Morse Falls Scale Score 0 = No Risk for Falls < 25 = Low Risk 25-45 = Moderate Risk >45 = High Risk	text
	4	is_patient_appropriate_for	Is Patient Appropriate for Intentional Hourly Rounding	yesno 1 Yes 0 No
	5	hourly_rounding_complete	Was Intentional Hourly Rounding Complete	radio 1 Yes 2 No 3 NA
	6	were_there_any_missed_hour	Were there any missed hours for Intentional Hourly Rounding	yesno 1 Yes 0 No
	7	intentional_rounding_and_falls_prevention_survey_complete	Section Header: *Form Status* Complete?	dropdown 0 Incomplete 1 Unveri! ed 2 Complete

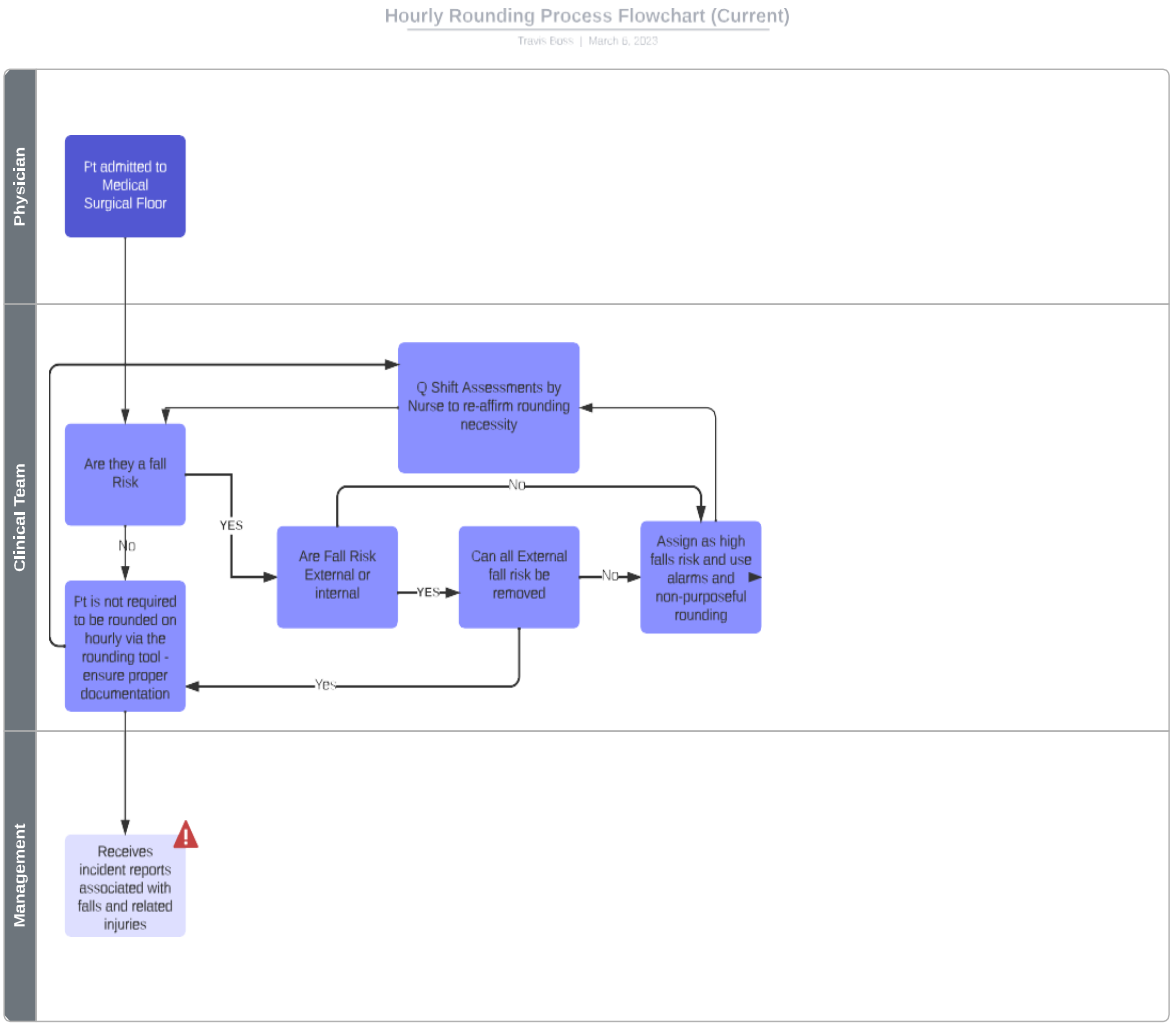
Appendix F

Hourly Rounding Process Flow Chart (Desired)



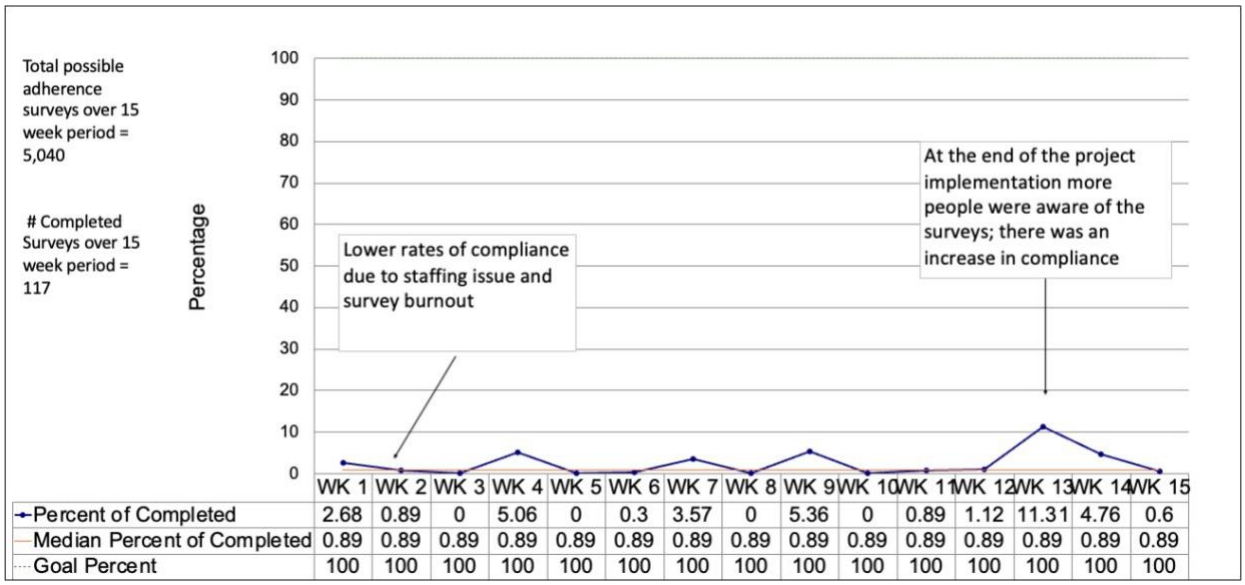
Appendix G

Hourly Rounding Process Flow Chart (Current)



Appendix H

Percentage of Staff Completion of Intentional Rounding Surveys



	WK 1	WK 2	WK 3	WK 4	WK 5	WK 6	WK 7	WK 8	WK 9	WK 10	WK 11	WK 12	WK 13	WK 14	WK 15
Percent of Completed	2.68	0.89	0	5.06	0	0.3	3.57	0	5.36	0	0.89	1.12	11.31	4.76	0.6
Median Percent of Completed	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Goal Percent	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Appendix I

Frequency of Falls on the Neuro IMC