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Reducing Patient Falls Through Purposeful Hourly Rounding

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This Manuscript Partially Fulfills the Requirements for the
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**University of St. Augustine for Health Sciences
DNP Scholarly Project
Signature Form**

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Abstract

Practice Problem: Falls significantly affect patients, resulting in temporary or permanent harm, even death. In a large acute care facility, patient falls increased from 444 in 2016 to 556 falls in 2019.

PICOT: In an adult inpatient hospital setting, does purposeful hourly rounding (PHR), compared to no rounding, reduce patient falls over a period of 30 days during the same time period from the previous year?

Evidence: Of the 360 articles reviewed, 12 articles, varying from evidence levels two (1), level three (4), and level five (7), supported PHR as effective in reducing harm from falls in adult hospital settings. The majority of this lower level evidence supported implementation of PHR as a pilot.

Intervention: PHR, shown to improve fall rates using the proper application of tools, specifically the Studer Group Purposeful Hourly Rounding LogSM (2020a), was implemented to decrease falls over a period of 30 days during the same period from the previous year, without the previously used bedside sitters.

Outcome: The falls rate for the baseline period was 4.11 falls per 1,000 occupied bed days; and 5.07 falls per 1,000 occupied bed days for the implementation period. The incidence rate ratios of the falls rate between baseline and implementation was 0.81 ($\chi^2(1) = 0.140, p = 0.708$; 95% CI = [0.27, 2.42]).

Conclusion: In this EBP change project, PHR did not result in a decrease in patient falls; however, the potential ramifications from the clinical significance of PHR should be considered.

Reducing Patient Falls Through Purposeful Hourly Rounding

According to the Joint Commission (2015), falls with serious injury resulting in severe or permanent harm are consistently among the top 10 sentinel events reported in health care facilities (Fridman, 2019). Falls are defined as a patient's unplanned descent to the floor or other lower surface with or without injury or even death and are consistent problems that significantly affect patient care in hospitals across the country (Bouldin et al., 2013; Hitcho et al., 2004; Najafpour et al., 2019). Even with the use of bedside sitters, the hospital for this Evidence-Based Practice (EBP) change project, being a 411-bed acute care facility, had 444 falls in 2016 that increased to 556 in 2019, which included 143 falls with injury (Eastern Maine Medical Center [EMMC], 2020). Najafpour et al. (2019) discussed a direct correlation between falls and poor outcomes, increased cost of care, a longer length of stay, and permanent harm such as death. With the number of falls increasing in this organization, an intervention such as PHR was indicated to address this major patient safety issue.

The purpose of this paper is to describe the Doctor of Nursing Practice (DNP) scholarly EBP change project that examined whether PHR, the process of intentionally checking on patients at regular intervals to meet their needs proactively, impacted the reduction of patient falls (Hutchings et al., 2013). It provides reviews of evidence-based literature with Ronald Lippett's model for change and the Johns Hopkins Nursing Evidence Based Practice model (JHNEBP) as a framework for the EBP change project's implementation, on which the practice recommendation to pilot PHR is based (Dang & Dearholt, 2017). This EBP change project consists of a description of PHR, implementation, data analyses, findings, evaluation results, implications, as well as plans for dissemination.

Significance of the Practice Problem

Falls are a significant issue globally, nationally, regionally, and locally. For example, patients in Australia experienced 1,330 falls and 418 falls injuries from 27,026 hospital admissions, yielding 3.6% of patients involved in at least one fall and 1.2% in at least one fall with injury (Morello, 2015). In 2018, hospitals in the United States reported approximately 700,000 to 1,000,000 patient falls annually, with up to half resulting in injury (Radecki et al., 2018). These numbers mirror the global trend as patients in adult medical and surgical units have fall rates at 3.56 times per 1000 patient days, with 26.1% of falls resulting in patient injuries (Walsh et al., 2018). In the state of Maine, there were 556,092 falls in 2017. The hospital for this EBP reported 95,565 (Maine Health Data Organization, 2013). Zhao et al. (2019) points out an association between advanced ages, inpatient falls, and falls with injury, which is a concern in Maine due to its large older population. The median age in Maine is 45.1 years, the oldest in the country, and 20.6% of the population is over the age of 65 (United States Census Bureau, 2019). Fifty percent of inpatient falls, occur in patients who are 60 years of age or older, notably, patients over the age of 80 are at the highest risk for falls and falls with injury (Zhao et al., 2019).

The national standard and expectation for patients in healthcare facilities established the goal of zero harm (Joint Commission Center for Transforming Healthcare, 2019). As of October 1, 2008, the Centers for Medicare and Medicaid Service (CMS) deemed falls "never events," meaning they should never occur during a patient's hospitalization (Bouldin et al., 2013). CMS refused to pay for associated health care costs if the patient had experienced a fall while hospitalized, and as a result, falls have become an enormous hospital expense. There is an increase in hospital charges by approximately \$4,200 in patients who have sustained a fall

compared to those who did not, due to increased use of resources and hospital length of stay (Hinks, 2015). The Joint Commission (2020) estimated the cost of a fall with injury at \$14,000 per patient, and the Agency for Healthcare Research and Quality (AHRQ) (2020a) estimated the cost of a fall at \$12,965 per patient. By 2020, the annual direct and indirect cost of fall injuries is projected to exceed \$54 billion across the country (Hinks, 2015).

Evidence shows that inpatient falls and falls with injury are complicated phenomena involving multiple factors that can be intrinsic to the patient, such as age, physical or mental condition, and extrinsic or environmental factors (Zhao et al., 2019). Lack of knowledge of a patient's fall risk, such as what occurs when a fall risk assessment is not completed, is an extrinsic factor that puts the patient at risk (AHRQ, 2013). Another example of an extrinsic risk factor is a high patient-to-staff ratio, which obviates effective PHR. As staffing shortages worsen, rounding occurs less frequently, adversely affecting health care quality and patient safety (Clarke & Donaldson, 2008; Olrich et al., 2012).

Seventy-nine percent of falls take place in patient rooms (Tzeng & Ying, 2008). Structured PHR, using an interdisciplinary care team and including specific nursing actions, aims to meet patient needs proactively, thereby decreasing falls (Olrich et al., 2012; Radecki et al., 2018). In seven hospitals throughout the country, that participated in a study using pilot units to reduce patient falls, purposeful rounding reduced falls by 62% over a 1-year period (The Health Research & Educational Trust, 2018). The Institute for Healthcare Improvement (n.d.) endorsed PHR as the best way to not only reduce call lights and fall injuries but also to increase patient quality of care and satisfaction (Daniels, 2016).

In 2019, the hospital for this EBP change project reported 556 falls of which 143 falls were with injury (EMMC, 2020). On the medical-surgical unit, there were 67 falls reported with

17 reported injuries, which cost the organization \$934,851 for this unit alone (EMMC, 2020).

Literature shows that patient falls increase suffering through risk of injury, longer length of stay, pain, distress, and loss of confidence, independence, or even life (Hiyama, 2017). The site of this EBP change project, like all healthcare organizations, has the ethical obligation to reduce preventable hospital-acquired conditions, such as falls, reducing the physical, psychosocial, and financial burden to the patient and the community (AHRQ, 2019).

PICOT Question

The PICOT question is a clinical question relevant to a problem at hand, phrased with the mnemonic device "PICOT" to facilitate the search for an answer (Richardson et al., 1995). For the current EBP change project, the PICOT question is: "In an adult inpatient hospital setting (P), does purposeful hourly rounding (I), compared to no rounding (C), reduce patient falls (O) over a period of 30 days from the previous year (T)?"

The target patient population was specific to adult patients over 18 years of age who were admitted to the medical-surgical unit. Excluded from this EBP change project were all patients under the age of 18, and any patients noted for suicidal ideation who required a bedside sitter.

A PHR strategy, developed by Studer Group (2020b), was used as an intervention for patient falls, which includes eight rounding behaviors:

1. Use opening key words to reduce anxiety.
2. Perform scheduled tasks.
3. Address the 3 P's: pain, potty, and position.
4. Assess additional comfort needs.
5. Conduct an environmental assessment.
6. Ask (before leaving the patient), "Is there anything else I can do for you? I have time."

7. Tell each patient when you will be back.
8. Document the round on the patient chart.

Patients who received PHR were compared to patients who received no rounding the prior year within a 30-day period. The outcome, which the EBP change project aimed to accomplish, was a reduction in patient falls via PHR within this given time.

Evidence-Based Practice Framework and Change Theory

Ronald Lippitt's change theory and the JHNEBP model were used to develop and implement this EBP change project. Described as a practical guide for the bedside nurse to use the best evidence to make care decisions, the JHNEBP Practice Question, Evidence, Translation (PET) model's permissions were accepted and used as a framework to implement this EBP change project (Dang & Dearholt, 2017; Schaffer et al., 2012) (see Appendices A and B). In the process of PHR, using the PET model as a guide, nurses thought critically as they asked questions and applied evidence to care for their patients while adjusting their environments to reduce patient falls. As Wyant (2017) maintains, the JHNEBP model is a comprehensive clinician-focused model, allowing the rapid and appropriate application of current EBP practices addressing all essential components of the EBP process (Schaffer et al., 2012). Ronald Lippitt's change theory has seven phases: diagnose the problem, assess motivational/capacity for change, assess the change agent's motivation and resources, select a progressive change objective, choose the appropriate role of the change agent, maintain change, and terminate the helping relationship (Mitchell, 2013). This aligns with the language of the nursing diagnosis process: assessment, planning, implementation, and evaluation. Lippitt's work is known to be more detailed, which helps generate change at the bedside. Lippitt's theory, alongside a democratic style of leadership, is a popular, effective combination (Mitchell, 2013). Good communication is a prominent feature

of every phase of the change process, and almost all project managers cite it as fundamental to effective implementation (Robb, 2004). Strong, open communication across teams strengthens the chance of firmly embedding change by supporting the development of therapeutic relationships and removing barriers (Murphy, 2006). Attempts to implement planned change face numerous barriers, but using a framework, such as Lippitt's, proactively rather than retrospectively can help eliminate some of the potential problems, and address and act on others (Mitchell, 2013). Unique to nursing, is the skill of observational assessment of the clinical environment, meaning collect data to answer questions that could not be answered through other methods to enhance patient healing (Kelley & Brandon, 2012). Even with the use of bedside sitters, patient falls were trending upward at this EBP change project site. Therefore, the use of Lippitt's change theory and the idea of bringing in an external change agent to put a plan in place to effect change with the implementation of PHR were utilized to reduce patient falls. The intervention of PHR included frequent patient assessment, as well as addressing patient needs such as hygiene, toileting, comfort, and access to food/drink.

Evidence Search Strategy

A thorough systematic review of nursing and health-related literature from 2010-2019 was conducted. Keywords used in search of literature included: hourly rounding, purposeful rounding, rounds, falls, fall prevention, adult patients, acute care, acute setting, sitters, and companions. The search phrases included: *nursing+ falls, inpatient + adults, hourly + rounding, quality + improvement, and safe + patient care*. Assessed literature comprised of English language, peer-reviewed journals via search methods in the PubMed, ProQuest, Medline, CINAHL, OVID, and Google Scholar databases.

Evidence Search Results and Evaluation

A review of 360 articles was performed resulting in 12 retained (see Appendix C). The studies exhibited design variation to include systematic and narratives reviews, empirical studies, mixed methodology research, qualitative studies, and expert opinions. These remaining items were reviewed further for their level of evidence and quality of the study.

All matched articles were organized based on adult inpatient falls, falls with injury, hourly rounding, and the use of sitters, which was also the inclusion criteria for this evidence search. Exclusion criteria were the following: articles in outpatient practices, pediatrics, ambulatory services, and the use of bedside sitters with documented suicidal ideation. This available knowledge assisted in building the answer to the PICOT question: "In an adult inpatient hospital setting, does purposeful hourly rounding, compared to no rounding, reduce the patient falls over a period of 30 days during the same time period from the previous year?"

When synthesized, the amassed literature supported PHR as an effective strategy for reducing harm through falls in the adult inpatient hospital setting. With the use of an evidence-based practice rounding tool, proper application, education on PHR, and surveillance of adherence to rounding practice, a decrease in falls was purported to be evident.

The Johns Hopkins Nursing Evidence-Based Practice Quality Grading Tool (2020) was used to review the 12 articles for levels of evidence I through VI and quality ratings A through C. The hierarchy of evidence grade varied between levels I to VI, based on the strength of the methodological quality of design, validity, and application to patient care. The strength of the evidence was found relevant. One article with evidence level I had a high-quality grade, consistent results for the sufficient sample size, and the recommendations were consistent based on other literature reviews. There were four articles with evidence level III ranging from quality

grades A, B, and C, comprised of systematic reviews or quasi-experimental studies categorized as high, good, or low quality (see Appendix D). The remaining seven articles were evidence level V with quality grades A and B. These were based on experiential and non-research evidence and had high or good EPB improvement methods (see Figure 1).

Themes

The evidence on PHR was gathered and synthesized related to the medical-surgical adult inpatients and how PHR reduced falls. Also included, were information and data regarding bedside sitters to reduce falls, since the EBP practice site had used sitters during the previous year. The themes expressed in the synthesis table (see Appendix E) were assessed using four queries:

1. Does the literature support stand-alone documentation to standardize and prevent harm related to falls?
2. Does the literature support competency-based hardwiring (use of a process to ingrain systems and tools) for fall prevention? (Studer Group, 2007)
3. Does the literature support the best practice bundle to prevent injury related to falls?
4. Does the literature support hardwiring change in the implementation of PHR?

The studies reviewed, whose settings were mainly large urban hospitals with trial implementation over a few months, met inclusion criteria of being relevant in terms of nursing practice relationship, strategic rounding, adoption rates, potential barriers to practice change, and evidence of successful implementation. The net resulting 12 articles proffer many similarities, differences, and controversies, summarized within each of the four themes as follows.

Stand-Alone Documentation to Standardize and Prevent Harm Related to Falls

Radecki et al. (2018) supports that fall assessments need to shift from clinical-centric to patient-centric. Moving from strictly focusing on filling out the assessment tool, looking at lab values, medication changes, and diagnosis, focusing on understanding patient perspectives and developing strategies in partnership with them. Silva and Hain (2017) believe that using each fall risk factor number as an action plan is irrelevant. Positive outcomes were found with the addition of a seven item practice fall prevention plan, which consisted of organizational support for a fall prevention program, fall risk evaluation on admission, risk assessment to identify risk factors, communication of risk factors, observation and surveillance, auditing, continuous learning, and working toward improvement (Spano-Szekely et al., 2018).

Competency-Based Hardwiring for Fall Prevention

Empowering staff and providing education, consistency, auditing, and follow-through are critical to hardwiring a fall prevention process. Education on a multidimensional fall prevention program utilizing an incremental approach, fall prevention screening tools, PHR, and fall bundles, all decrease fall numbers (Silva & Hain, 2017; Walsh et al., 2018). PHR alone, showed results in fall reduction and positive clinical outcomes, through improved patient perception of staff responsiveness, call light reduction, and improved patient satisfaction (Mitchell et al., 2014).

Best Practice Bundle to Prevent Injury Related to Falls

Three articles showed similarities in best practice through bundling standardization of fall prevention practices including safety huddles, PHR, fall risk scale, individual care plans, and post fall debriefing. Fridman (2019) expressed a clear relationship between delirium, toileting, high-risk prescription medications, and ambulation impairment with a high risk of falls. The

implementation of PHR including use of bundles, which is time spent with patients, policies, and processes, enabling a safe environment that supports fall prevention.

Significant contributing barriers to PHR are lack of education, consistency, and staffing. Mitchell et al. (2014) found that PHR and patient perceptions of staff responsiveness improved patient satisfaction and positively impacted patient outcomes, including falls. Inadequate staffing challenges nursing staff in the implementation of appropriate fall prevention interventions (Zhao et al., 2019). The intentional presence of nursing staff during PHR, rather than addition of fall risks, fall prevention, post fall huddles, rounding, and presence of a sitter, translated into a decrease in falls and other quality metrics (Adams & Kaplow, 2013).

Hardwiring Change in the Implementation of Purposeful Hourly Rounding

The majority of reviewed articles showed evidence regarding hardwiring change in order to gain buy-in and drive the wanted outcome. Hicks (2015) revealed literature reviews that indicate that structured PHR encourages positive patient outcomes, including decreased fall rates. When faced with the need to find a solution to a fall-related problem, PHR is frequently practiced. Olrich et al. (2012) yielded a clinically significant reduction in falls with PHR by nursing teams who work collaboratively through increased compliance with safe patient outcomes. Barrett et al. (2017) found effective care planning between the groups by utilizing a targeted strategy to increase the understanding of patients that are high risk for falls. When a multifaceted fall prevention program was employed over 11.5 years, the result was a 27.7% reduction in falls. Structured PHR aims to proactively meet patients' needs, however, no one exact method has proven to consistently decrease falls (Radecki et al., 2018).

Practice Recommendations

The increased financial, physical, and social costs that result from patient falls have made reducing their numbers a major priority for healthcare organizations (Najafpour et al., 2019). Results of the literature search showed moderate strength evidence suggesting that effective PHR can promote patient safety by decreasing falls and improving patients' perceptions of nurse responsiveness, leading to higher satisfaction scores, especially when used with the bundled approach of an evidence-based practice rounding strategy and Studer Group Purposeful Hourly Rounding LogSM (Mitchell et al., 2014; Studer Group, 2020a) (see Appendix F). Success requires the permissions (see Appendix F) and proper application of the tools, education on PHR, and surveillance of adherence to rounding practice (see Figure 2). No study attested that PHR alone is the best method for decreasing falls; however, the literature demonstrated support for its use (Studer Group, 2020b) (see Appendices C and D). Results of the literature evaluation for this EBP change project showed lower levels of evidence in 7 of 12 articles reviewed (see Figure 1). According to the Johns Hopkins Level of Evidence Tool (2020) rather than a systems-wide change, lower levels of evidence recommend a pilot study of an intervention.

Consistent with the synthesis of evidence, the practice recommendation was to pilot PHR using the Studer Group Purposeful Hourly Rounding LogSM (2020a) on the medical-surgical floor of this large acute care facility to decrease the number of inpatient falls. Education with implementation of PHR and the Studer Group Purposeful Hourly Rounding LogSM (2020a) were used to standardize rounding and hold the staff responsible to the expectations of addressing the eight rounding behaviors with the patients.

There were threats to internal validity of the EBP change project, such as, the short timeframe, that is, only a 30-day comparison of falls from 2019 to 2020. Other factors affecting

internal validity included: COVID-19's effects on the patient population, staff call outs that compromised nurse-to-patient ratios, patients' admitting diagnosis, number of inpatients at the time of the intervention, and staff adherence to the rounding logs. The short, 30-day evaluation period resulted in a limited data analysis and the low daily patient volume also presented limitations.

Project Setting

The practice setting is a Level II trauma, rural teaching community hospital, which services multiple communities throughout the state with an average daily census of 360 patients per day. Part of nine hospitals, it provides integrated care for patients of all ages seeking emergency, medical-surgical, oncology, neurology, women's health, and palliative care. The staffing ratio is typically five patients to one registered nurse (RN) depending on patient acuity, and the certified nursing assistant (CNA) can care for up to 12 patients.

Prior to the implementation of the EBP change project, the staff worked collaboratively to prevent falls among patients at risk, by using an electronic scoring rubric to request a bedside sitter to be assigned by a house manager. However, this process had not led to a reduction in falls, but rather, falls were on the rise. In 2016, there were 444 falls or 4.01 per patient days compared to 2019 with 556 falls or 4.72 per patient days (EMMC, 2020). The benchmark for healthcare facilities is 3.4 falls per 1000 patient days (AHRQ, 2020b). Establishing an organizational need for the implementation of this PHR project was essential to the stakeholders, the organization, and to quality care.

Organizational Culture

The practice setting is passionate about safe, quality patient care, as evidenced by its vision to become a national leader in healthcare excellence, which aligns with its mission to

embrace the values of integrity, respect, compassion, and accountability (Northern Light Health, 2020). It is a cause and effect organization, responding to areas of need with immediate attention. For example, the Centers for Medicare and Medicaid Services requires all hospitals in the United States to provide patient surveys to each patient. A low Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) score on patient satisfaction surveys, caused the organization to focus on that immediate area of need at that time.

Facilitators

The practice setting comprised a fair and just culture that improves patient safety by empowering employees to proactively monitor the workplace and participate in safety efforts (Boysen, 2013). With the support of advanced practice organizational leaders, who utilize proactive EBP within this just culture, the organization is held accountable while focusing on risk, system design, human behavior, and patient safety (Boysen, 2013).

Stakeholders

Key stakeholders in the PHR project included patients, who benefited from safe care; the organization, which benefited financially from decreased falls with injury and length of hospital stays; and staff, particularly nurses, who benefited from the improved communication with patients and family, potentially impacting job satisfaction and retention.

Sustainability

Once the project data were analyzed and disseminated, the project would be sustained through ongoing education across the organization, which included the steps outlined in the process of PHR with staff and leaders. Plans included collaborating with the Evidence-based Practice Council (EBPC) and the Performance Improvement/Project Management team to standardize the project to the care continuum by adding PHR to everyday work, opposed to an

add-on to routine clinical care. The goal of this EBP change project is to achieve sustainable change that would become the "new way of working" (Silver et al., 2016, p. 3).

Strength, Weakness, Opportunity, Threat Analysis

A Strength, Weakness, Opportunity, and Threat (SWOT) analysis is a strategic planning mechanism that can take large quantities of data within these four areas and organize them into specific concerns (Phadermrod et al., 2019; Walden, 2018). For this project, some of the strengths were: high-quality, safe patient care focus, large facility, skilled team members, new innovative leadership, a strong culture of safety, and fall prevention in place. Weaknesses noted were: inpatient falls below metric baseline, lower quadrille scores of patient experience HCAHPS surveys, high acuity on floors, high staff call-outs and turn over, lack of education on fall prevention and PHR.

Opportunities and threats are external to the organization, but can provide openings to advantage of opportunities and protect against threats. Some opportunities included: reimbursement, patient satisfaction, leaders to revisit PHR, community growth, building relationships with interdisciplinary care providers to work more collaboratively to eliminate potential fall risk factors, and staff benefiting from additional education. Threats were: financial stability, patient flow, acuity of patients, staffing challenges, age of inpatient population in the community, and an increase in comorbidities, delirium, alcoholism, and drug use (see Appendix G).

Project Overview

The mission and vision of this EBP change project coincided with the mission of the organization to provide safe, quality patient care. This is based on the objective of implementation of PHR with the support from the EBP best practice tool, Studer Group

Purposeful Hourly Rounding LogSM (2020a). Just as the medical center is a "cause and effect" organization and strives to address areas of immediate needs, the EBP change project aimed to address fall rates that were trending upward.

This EBP change project's short-term objectives were to increase transparent patient-nurse communication on quality metrics already in place at the organization and to provide educational events about PHR to staff, measured as pre- and post-tests (see Appendix H). The long-term objective was to decrease the amount of patient falls, using a pilot to implement PHR.

Unintended Consequences and Missing Data

With EBP change projects, there are unintended consequences and even missing data. One area of concern of unintended consequences was the sample size. During the 30-day trial, the unit had an average daily census below the standard census of 52 patients. This was assumed to be due to COVID-19, which caused the general population to shelter in place rather than seek optional medical care. Unit staffing caused unintended consequences. Frequently, the unit was staffed below the census of 52, equating to nursing and nursing tech assignments larger than usual. This caused challenges to the support of PHR and added risk to patient safety since nurse-to-patient ratios influence many patient outcomes, most markedly in-hospital mortality (Driscoll et al., 2018).

Missing data occurred. Rounding sheets had been thrown out. Errors in the documentation included patient room numbers. Missing data and incorrect information on the PHR sheets added risk that the change results would be skewed. Possible limitations on data collection could have occurred in the quality of data, manual documentation from staff, what was defined as a fall, and whether it was reported.

The plan to compare fall rates from pre-intervention to post-intervention created summative data; however, there was a subjective measure of adherence to the Studer Group Purposeful Hourly Rounding LogSM (2020a). While it was expected that all staff would work hard and comply with PHR, there were limitations on the fidelity of employees. For example, equating the staff signature on the rounding sheet confirmed that the patient's needs were addressed upon entering the room, which was reliant on the veracity of staff members.

Project Plan (Method)

Descriptions of the Approach and Methods Employed

The JHNEBP model forms the framework for the EBP change project (Dang & Dearholt, 2017). After acquiring permissions (see Appendix A), the PET management guide (see Appendix B) facilitated PHR's implementation. The first step identified the practice questions that helped to develop and refine the EBP question: "In the adult inpatient hospital setting, does PHR reduce falls during a determined time period?". Falls were analyzed on the medical-surgical unit, key stakeholders identified, and pre fall data obtained and evaluated before the EBP method was implemented.

The second step focused on the evidence. The Johns Hopkins Nursing Evidence-Based Practice Quality Grading Tool (2020) was used to review the 12 articles for levels of evidence I through VI and quality ratings A through C. The hierarchy of evidence grade varied between levels I to VI, based on the strength of the methodological quality of design, validity, and application to patient care. If the lower level of evidence in seven or 12 articles suggested a recommendation of a pilot rather than a systems change project.

The final step was translation, where a plan was created, and the implementation to pilot PHR using the Studer Group Purposeful Hour Rounding LogSM (2020a) was completed. Results were evaluated, shared with stakeholders, and findings were further disseminated.

Method for Understanding Variation of Data

Methods for understanding the variation of data involved statistical analysis utilizing SPSS 24 software (Field, 2018). Pre- and post- assessment surveys were needed for quantitative analysis, and a chi-square statistical test was used. Quantitative data were collected at 0-, 15-, and 30- days, as outlined, utilizing an unpaired *t*-test. Tableau, software that allows the ability to exploit the best data visualizations concepts and techniques, was used to disseminate information (Terhaar & Taylor, 2018) (see Appendix I).

Barriers

Barriers during the implementation of the EBP change project were new leadership, lack of consistent staffing, inconsistency in the volume of patients, and longer lengths of inpatient stays. New leaders, who find the barriers overwhelming, may become too stressed to provide support for bedside nurses, and although bedside nurses understood the importance of EBP change, the lack of support and increased expectations resulted in a decreased ability to fulfill patients' needs.

Ethical Considerations

Aspects relating to ethics of this EBP change project included: data storage, privacy, and safety of vulnerable populations. Ethical codes of conduct, such as Nursing Codes of Ethical Conduct espoused by the American Nurses Association, were observed and utilized (Zahedi et al, 2013). This EBP change project incorporated Studer Group Purposeful Hourly RoundingSM

(2020a) to increase patient surveillance and assistance, which helped mitigate risk and safety issues.

Budget

The cost savings associated with PHR is significant due to the potential increase in satisfaction scores, insurance reimbursement due to better quality numbers, and the cost of a fall to the organization. This EBP change project did not receive any specific grants or funding. Table 1 displays the direct and indirect expenses along with the net revenue. This amount of savings was significant to the organization.

Evaluation Results

This EBP change project evaluated the effectiveness of PHR on the reduction of patient falls. The evaluation used formative and summative evaluation strategies and quantitative data analysis to measure pre- and post-intervention outcomes, which ensured that the patients' needs were met every hour.

Formative Evaluation

Staff who worked on the medical-surgical unit received a pretest before educational events to assess their knowledge of how PHR affected the reduction of falls. Those who worked on the unit were assigned a PHR education competency module (see Appendices H, J, and K), followed by unit huddles, lunch and learns, and question and answer sessions to bridge educational gaps. Staff participation in PHR was identified by their adherence to the Studer Group Hourly RoundingSM eight rounding behaviors (2020b) and filling out the Studer Group Purposeful Hourly Rounding LogSM (2020a).

Staff received education regarding actions to take during PHR, such as scripting and attending to patients' immediate personal needs, how to fill out the Studer Group Purposeful

Hourly Rounding LogSM (2020a), and the benefits of PHR. Education particular to float staff was provided to maintain consistency throughout the units. During leadership rounding, unit leadership round throughout the week to model the behavior of rounding, the efficiency of rounding, and identify any areas of opportunity for change. Once the pre-education was given, the go-live date for PHR implementation was initiated.

Summative Evaluation

The interdisciplinary team of leadership: the project manager, executive leadership support, staff, clinical and non-clinical staff, and IT team initiated the EBP practice change; collected primary data which were stored on a secure drive, and physical data in a locked file cabinet on the unit, only accessible to the project manager; and evaluated for success (see Appendix L). PHR was documented by staff using the Studer Group Purposeful Hourly Rounding LogSM (2020a) (see Appendix M) and assessed daily with the use of the Studer Group Purposeful Hourly RoundingSM Daily Count (2020a) (see Appendix N). Inpatient fall rates and the focus of the evaluation were documented and calculated. Daily analysis was completed using the cause and effect diagram and a check sheet (see Appendix O and Appendix P), respectively, which provided a method to identify prevalence of and reasons for falls on the medical-surgical unit. Next, the frequency of patient checks was examined on the check sheet. This information provided an understanding of patients' needs in relation to their safety at the bedside, the need to round in order to monitor cause and effect, and the need to keep staff accountable for the improved quality outcomes when rounding occurred.

The Approach Used to Establish Observed Outcomes through the Intervention

The effectiveness of using a valid and reliable tool coupled with fall risks assessment and post fall huddles has been supported in the literature to decrease falls (King et al., 2018). The

information gained from the two assessment tools, advanced the need for the development of a plan for this EBP change project as it brought attention to the areas of need and people who could help drive the change. The information from the tools provided only a snapshot but served as indicators of the need the organization was not meeting. The cause and effect diagram gave way to brainstorming the areas of people, environment, materials, methods, and equipment that the organization needed to address to decrease falls successfully.

Recruitment of Participants and Data

Participants were inpatients on the medical-surgical unit with exclusion criteria of patients who had a sitter due to suicidal ideation and any patients under the age of 18. On admission, all patients were educated about PHR. A sign was posted in all rooms to inform the patients and families of the practice. Staff wore buttons, which sparked conversation and their dedication to PHR (see Appendix Q). Nursing staff utilized the bedside whiteboard to increase communication and address any specific questions. The results were shared throughout the organization. The interdisciplinary team of leadership, the project manager, executive leadership support, staff, clinical and non-clinical staff, and IT team, initiated the practice change, collected data, and evaluated for success (see Appendix R).

Data Collection and Data Analysis

Patient clinical and demographic characteristics data were collected through review of falls huddle reports and compared to an electronic report from the medical record documentation. They were utilized for analysis on patients who had fallen or had fallen sustaining injuries. The demographic data consisted of (a) age; (b) room number; (b) gender; (c) activated bed alarm; (d) fall risk socks; (e) confusion; (f) documentation of fall risk; (g) the time of day/night if they had

fallen. Data were collected at 0000 daily of the house-wide census, unit census, and any falls noted at 0-, 15-, and 30- days.

The medical-surgical unit fall rates from the same time frame one year prior to implementation were analyzed to evaluate the impact of PHR. Each day, data were collected from the hard copy Studer Group Purposeful Hourly Rounding LogSM (2020a), which measured the compliance of rounding. The tool was reviewed 30 days after the education and implementation of the new rounding process. Each week, the Studer Group Purposeful Hourly Rounding Daily CountSM (2020a) was evaluated for compliance. The collected data, which would determine the EBP change project's success, were put into an SPSS and Excel spreadsheet and analyzed for the following:

1. The effect of the PHR on falls rates using the recommended calculation by the AHRQ (2020a) which is, taking the total occupied beds and dividing the number of falls for that month into that number: This calculation is: falls per patient days. Falls and falls with injury rates are calculated per 1,000 occupied bed days. The fall data were collected and stored from the Electronic Medical Record (EMR) and RL Solutions Risk software, an electronic incident reporting system used at the institution.

Example: $3(\text{falls})/879 (\text{occupied bed days}) = 0.034 \times 1000 = 3.4$ fall rate per 1000 occupied bed days.

2. Compliance with PHR as documented on the Studer Group Purposeful Hourly Rounding Daily CountSM Tool (2020a) and measured as a percentage. Twenty rounds were expected to be completed in 24 hours; compared to the number actually done.

Example: $19 (\text{actual documented rounds})/ 20 (\text{rounds that should be done}) = 95\%$ compliance.

3. Comparison of descriptive analyses of demographic and clinical characteristics collected on patients with falls and falls with injuries. To compare group differences, chi square and unpaired *t*-tests were used. A *p* value was set at < 0.5 .

Percentage differences were used to calculate change in falls rate from pre- to post- PHR implementation. Data were imported into and analyzed using SPSS version 24 (Field, 2018). Frequency tables and descriptive statistics summarized characteristics of patient falls. Descriptive statistics were computed for percentage of the Studer Group Purposeful Hourly Rounding Log (2020a) compliance during the study period. Figures such as bar charts and line charts were created using Microsoft Excel. The rate of falls per 1000 occupied bed days for the baseline period of June 22 to July 21, 2019 and the implementation period of June 22 to July 21, 2020, was compared using incidence rate ratio and 95% confidence intervals (*CI*) (Giles et al., 2006; Rosner, 2011; Sahai & Khurshid, 1996). For any tests, a *p* value less than 0.05 was considered significant.

Evaluation

There are many measures and benchmarks associated with PHR. The primary categories of measures are the outcome, process, balancing, finance, and sustainability. In this EBP change project, the primary outcome was to decrease inpatient falls. This metric was measured by the number of patients per 1000 patient days noted by the National Database of Nursing Quality Indicators benchmark, which was 3.4 falls per 1000 patient days (AHRQ, 2020b). Other measures identified were the raw number of patients rounded on, patients who had a fall risk charted, patients who had fall risk interventions in place, the number of post falls huddles for patients who had fallen, the number of documented post falls huddles, the number of weekly

shifts adequately staffed to cover the average daily census of 52 beds, and the total payroll and cost savings for the organization.

There was feasibility, which was an option to compare the process measure of falls as it helped to improve safe quality patient care at 0-, 15-, and 30- days and determined if the planned change was implemented as intended. Fidelity was encouraged through the education portion of this EBP change project to improve staff buy-in and accountability, specifically by the presence of fall champions and the collaborative effort of sharing the EBP change project that was underway with patients through postings in rooms, staff buttons, and on whiteboards (see Appendices Q and S).

Demographics of Patients Falls

There were a total of five patients, three females and two males, who fell a total of seven times on the medical-surgical unit during the implementation period from June 22 to July 21, 2020. Of the seven patient falls, two had refused and three had agreed to have fall risk interventions. There were no falls with injury as shown in Table 2, which presents the characteristics of patient falls. Nearly 60% of the patients who had fallen had activated the bed alarm. The data shows 71.4% of patient falls had fall risks socks and 85.7% had documented confusion. There was 100% compliance of the documentation of fall risk for all patients, 71.4% of post falls huddles were completed.

The frequency counts of the diagnosis of patient falls are presented in Figure 3, and the time of falls are presented in Figure 4. Three patient falls occurred around noon; two occurred in the evening after 1900; one occurred in the early morning at 0425; and one occurred in the afternoon at 1447.

The Studer Group Purposeful Hourly Rounding Log

On each day of the study intervention, the numbers of PHR documented and the number of PHRs expected were recorded in the Studer Group Purposeful Hourly Rounding LogSM (2020a). The percentage of PHR compliance was computed as $100\% \times (\text{number of PHR documented}) / (\text{number of PHR expected})$. The summary statistics of these measures, daily number of PHR documented, daily number of PHR expected, and daily percentage of PHR compliance are presented in Table 3.

The average daily number of PHR documented was 592.13 ($SD = 117.93$) and the average daily number of PHR expected was 794.37 ($SD = 114.87$). The average daily percentage of PHR compliance was 74.16% ($SD = 8.55$). Figure 5 further presents a line chart for the daily percentage of PHR compliance. The daily percentage of PHR compliance over the 30-day study period appears stable.

Falls Rate Assessment

Falls per 1000 occupied bed days were computed for two periods: baseline period of June 22 to July 21, 2019, and implementation period of June 22 to July 21, 2020. For the baseline period, there were six falls and 1459 occupied bed days; for the implementation period, there were seven falls and 1382 occupied bed days. Thus, the falls rate for baseline period was 4.11 falls per 1000 occupied bed days (95% $CI = [1.85, 9.15]$). The falls rate for implementation period was 5.07 falls per 1000 occupied bed days (95% $CI = [2.42, 10.62]$) (see Table 4). The incidence rate ratio of the falls rate between baseline and implementation was 0.81 ($\chi^2(1) = 0.140, p = 0.708; 95\% CI = [0.27, 2.42]$), indicating that there was no statistically significant difference in fall rates between the baseline period and the implementation period. These results were compared to the findings from other publications.

Missing Data Details and Data Storage

A carefully scripted plan for any missing data was utilized. All falls were checked against the EMR and RL Solutions used at the institution. Electronic data were stored on a secure drive and physical data in a locked file cabinet on the unit, accessible only to the project manager. To ensure privacy, the falls data were collected in a de-identified manner and stored with the use of a password-protected computer and distributed in aggregate. Compliance with PHR was documented on the Studer Group Purposeful Hourly Rounding Daily Count SM (2020a).

Statistical and Clinical Significance

Statistical significance indicates the reliability of study results (Ranganathan et al., 2015). This study did not have statistical significance. Despite the implementation of PHR, the number of patient falls did not decrease compared to the year prior 30 day period. However, the sample size (unit census), on which statistical significance depends, varied daily from 40 to 52.

While there are established, traditionally accepted values for statistical significance testing, this is lacking for evaluating clinical significance (Fethney, 2010, as cited in Ranganathan et al., 2015). More often than not, it is the judgment of the clinician, and the patient, which decides whether a result is clinically significant (Ranganathan et al., 2015). This study is clinically significant because of its impact on clinical practice. The outcomes led to a better understanding of hospital falls on the medical-surgical unit, why falls happen, and the use of PHR as a possible strategy to prevent them. There were also added benefits of PHR that are not measured in this EBP change project, such as increased patient-nursing staff communication, which potentially impacts patient satisfaction scores and how patients view their care.

With PHR being known as a fall prevention, patient safety intervention, and a goal of preventing additional harm to patients while in the hospital, this EBP change project was

identified as clinically significant. Preventing falls means protecting against fall-related longer hospital stays, which are costly and potentially harmful. Through the rigorous process required by the University of St. Augustine for Health Sciences and the EBP change project site, this EBP change project was designed so that processes and outcomes were evaluated to guide practice and policy and provide a foundation for future practice scholarship (American Association of Colleges of Nursing, 2020).

Protection of Human Rights

Protection of rights was ensured through the review of this EBP change project both pre-initiation and ongoing. The EBPC reviewed the EBP change project proposal and determined the appropriate nature of the project. All information collected as part of evaluating the impact of this EBP change project from the providers involved was described in the aggregate only and did not include any potential identifiers. Each staff member who participated in this EBP change project remained anonymous.

Limitations

There were limits to the generalizability of the work. Limitations that had been considered thus far supporting PHR included the sample size and staffing levels. The impact for this EBP change project helped to decrease fall rates on this medical-surgical unit and had the ability to show improvement in other areas such as, length of stay, early ambulation, call light usage, patient satisfaction, and staff retention. Through the evidence presented in this scholarly EBP change project the implication of PHR was useful, sustainable, clinically significant, and essential.

Impact

This EBP change project was clinically significant because of its impact on clinical practice. It helped bring light to this significant safety issue and how bedside nursing can positively impact patient falls. The outcomes led to a better understanding of the types of and reasons for hospital falls on the medical-surgical unit and PHR as a possible prevention strategy. Staff identified ways to alter their care and adapt to future implications for safe quality care. In addition, there was a clear focus on the nursing team and the patient to create collaborative relationships and work toward the same goal.

The added benefits of PHR that were not measured in this EBP change project was the noted improvement of patient-nursing staff communication, which potentially has a positive impact on patient satisfaction scores, as effective communication subsequently affects how patients view their care. Nurses recognized that the protection from falls translated into safeguarding against fall-related longer hospital stays, which are both costly and potentially harmful.

The EBP change project had an impact on the organization as it was determined there was a large number of projects being implemented simultaneously. Due to this determination, projects are to be vetted through the EBPC for consistency, timelines, and ongoing evaluation of effectiveness and follow up. Falls were highlighted as a hot spot, and the need was identified to form a team of process improvement and practice managers to work on sustainability of PHR. With a substantial focus on the lessons learned, the next steps include a robust education plan, documentation in "now time" in the EMR, and a proactive care approach to address this practice problem and potential project replication.

Plans for Dissemination

The plan for dissemination, which is the process of sharing findings with stakeholders and wider audiences, is essential for uptake. Through acceptance and the use of findings, the success and sustainability will be on target for long term utilization. Presenting the EBP change project's findings to stakeholders, executive leaders, managers, and both clinical and non-clinical staff via poster presentation and through visual aids, handouts, and interactive discussions is an essential component of dissemination. The EBP change project's findings and impact of the project were presented identifying the differences between observed and anticipated outcomes, which included the influence of context, cost, strategic tradeoffs, and opportunity costs. By showcasing the hard work being done, the results of the EBP change project, and the plans for continuing to work on safe and quality patient outcomes to stakeholders and leadership and the importance of ongoing adjustments and continued work of PHR, decreased falls and improved patient outcomes is anticipated.

The organization supported this mode of delivery and encouraged sharing the findings internally and externally. One possible venue for this EBP change project is a regional chapter of Sigma Theta Tau International Honor Society of Nursing, where a poster presentation would allow for sharing of information to a broad audience that supports EBP change.

Plans to submit to peer-reviewed nursing journals that appeal to bedside nurses and nursing leaders are underway, such as *The Journal of Nursing Practice Applications & Reviews of Research (JNPARR)*, the official international, peer-reviewed publication of the Philippine Nurses Association of America, accepts DNP EBP change projects for publication as written, but cut down to a 20 page limit. Similar to an article published in *Nursing Management* about PHR in 2015, a query will be sent to the journal editor to ask whether there would be interest in an

article on factors that enhance the success of PHR. Submission to The Scholarship and Open Access Repository will occur after peer review and approval.

Conclusion

Patient falls are consistent problems that have a significant impact on patient care in hospitals across the country, leading to injury or even death (Najafpour et al., 2019). In keeping with the literature, which supports PHR as one successful strategy to reduce inpatient falls, this EBP change project was implemented as a pilot to compare the impact of PHR, using the Studer Group's Purposeful Hourly Rounding ToolSM (2020a). This EBP change project was implemented in a large acute care facility over a period of 30 days during the same time period from the previous year. The results revealed no statistical significance between baseline falls rates and implementation on this medical-surgical unit. In fact, falls rose from 4.11 to 5.07 per 1000 occupied bed days. Although PHR with the use of the Studer Group Purposeful Hourly Rounding LogSM (2020a) did not result in a decrease in patient falls, the interpretation of the results of this EBP change project should take into account the clinical significance by looking at the impact of improved patient care rather than *p* values and statistical significance. The clinical significance and whether the intervention made a real difference to patients' lives should be considered, even when subjectively interpreted. PHR has clinical significance in patients' lives through increased touch points that improve their perception of staff responsiveness, which yields positive patient outcomes. Other ramifications of the clinical significance from this EBP change project's intervention included increased patient-nursing staff communication, patient satisfaction scores, and decreased call light usage, and hospital lengths of stay.

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Walsh, C., Liang, L., Grogan, T., Coles, C., McNair, N., & Nuckols, T. (2018). Temporal trends in fall rates with the implementation of a multifaceted fall prevention program: Persistence pays off. *The Joint Commission Journal on Quality and Patient Safety*, 44(1), 75-83. <https://doi.org/10.1016/j.jcjq.2017.08.009>

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<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3712593/>

Zhao, Y., Bott, M., He, J., Kim, H., Park, S., & Dunton, N. (2019). Evidence on falls and injurious fall prevention interventions in acute care hospitals. *The Journal of Nursing Administration*, 49(2), 86-92. <http://10.1097/NNA.0000000000000715>

Table 1

Budget

EXPENSES		REVENUE	
<u>Direct</u>		Billing	0.00
Student Salary and benefits	0.00	Grants	0.00
Supplies and Services (laminating and copying)	\$100.00	Institutional budget support	0.00
Snacks for Lunch and Learn	\$200.00	Reduction of 2.2 FTE Sitter per year	(\$72,000.00)
Staff Training (one hour)	0.00	Reduction of Falls by 1 fall	(\$13,953.00)
Cost of Fall with injury (13,953x10)	\$139,530.00	Reduction of Patient Experience (22%) Value Based Purchasing	(\$92,840.00)
<u>Indirect</u>			
Overhead	0.00		
Total Expenses	\$139830.00		
Net Balance	\$178793.00	Total Revenue	-\$38,963.00

Table 2*Characteristics of Patient Falls*

	No	Yes
Falls with injury	7 (100)	0
Activated bed alarm	3 (42.9)	4 (57.1)
Fall risk socks	2 (28.6)	5 (71.4)
Confusion	1 (14.3)	6 (85.7)
Documentation of fall risk	0	7 (100)
Post falls huddle	2 (28.6)	5 (71.4)

Table 3*Summary Statistics of PHR*

	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>
# PHR documented	592.13	117.93	313	805
# PHR expected	794.37	114.87	555	1014
% of PHR compliance	74.16	8.55	54.91	88.17

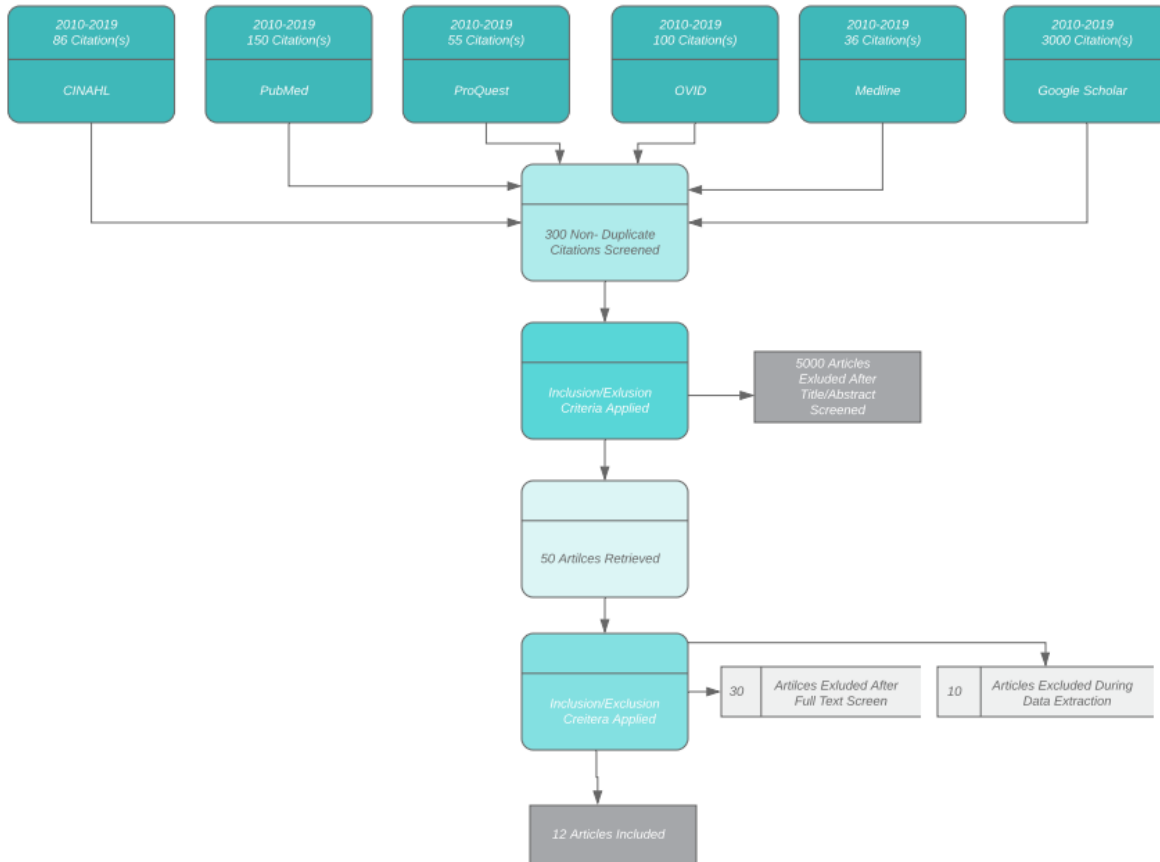
Table 4*Falls per 1000 Occupied Bed Days*

	Number of falls	Occupied bed days	Fall rate [95% CI]
B	6	1459	4.11 [1.85, 9.15] falls per 1000 occupied bed days
I	7	1382	5.07 [2.42, 10.62] falls per 1000 occupied bed days

Note. B = baseline period and I = implementation period. Fall rate = (Number of falls/Occupied bed days)*1000.

Figure 1

Adapted PRIMSA Methodology



Note: Adapted from The PRISMA Statement and the PRISMA Explanation and Elaboration document are distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited (PRIMSA, 2020).

Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G., the PRISMA Group. (2009, July 21).

Preferred reporting items for systematic reviews and meta-analyses: *The PRISMA Statement*. *PLoS Med* 6(7): e1000097. <https://doi.org/10.1371/journal.pmed.1000097>

Figure 2

Practice Recommendation for Decreasing Falls

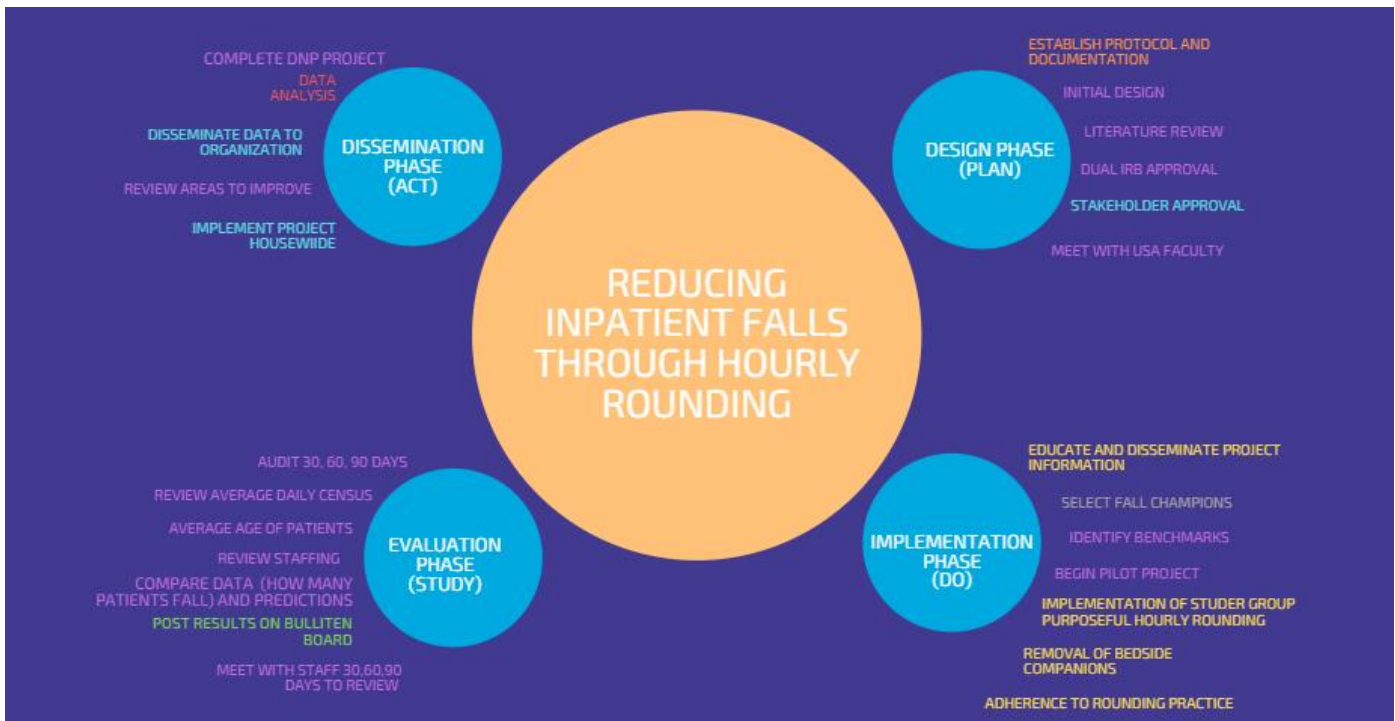
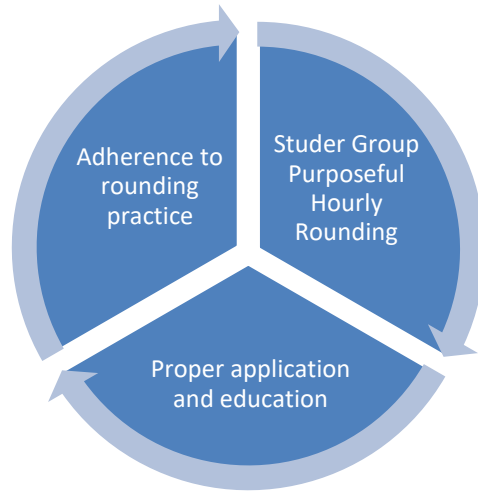


Figure 3

Diagnosis

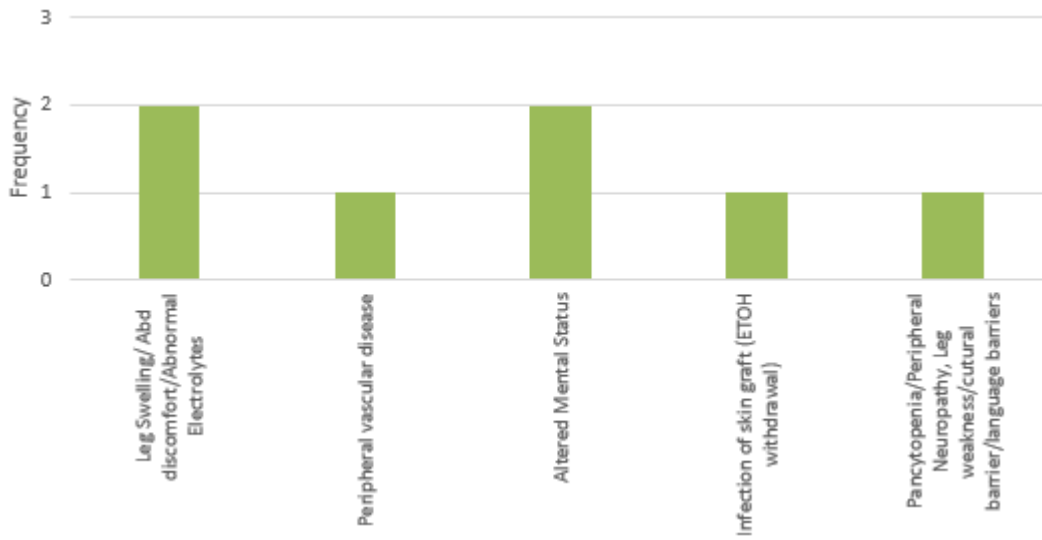


Figure 4

Fall Time

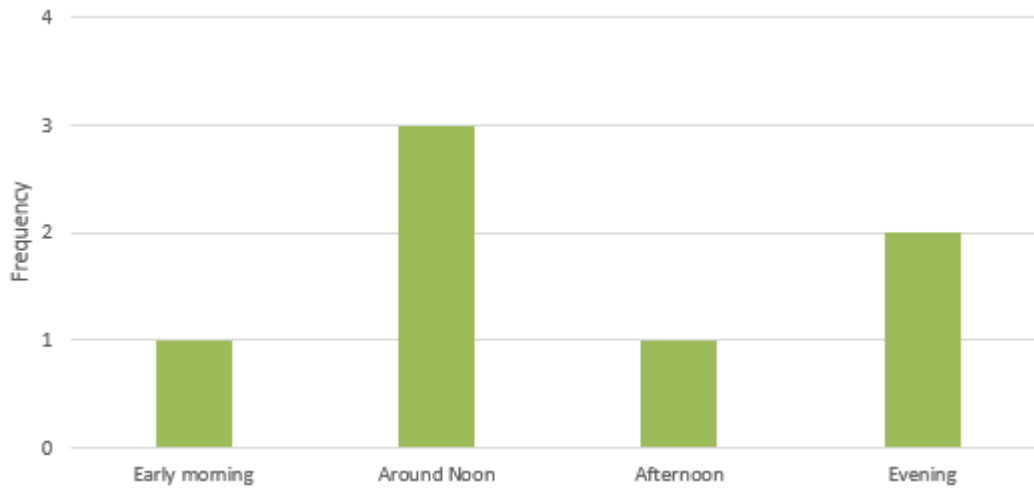
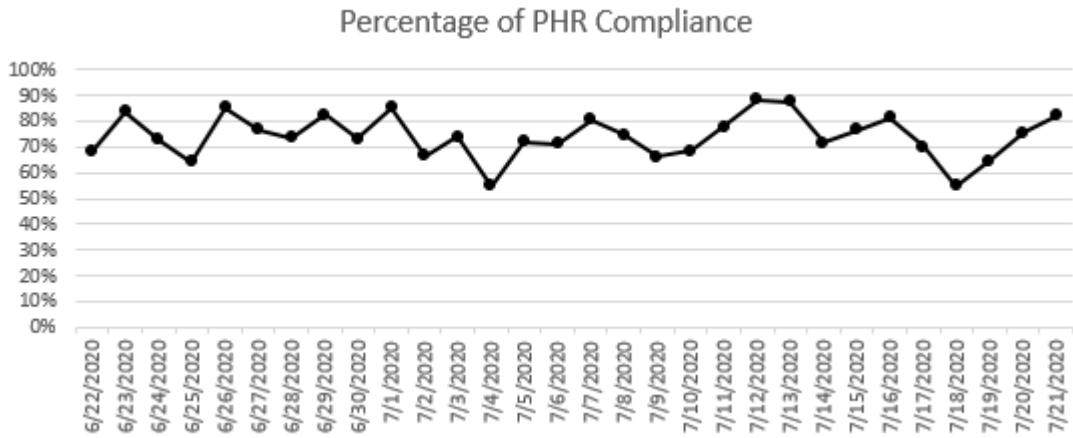


Figure 5

Daily percentage of PHR compliance



Appendix A

Accepted Permission From Johns Hopkins to use Nursing Evidence Based Practice Model



Thank you for your submission. We are happy to give you permission to use the JHNEBP model and tools in adherence of our legal terms noted below:

- You may not modify the model or the tools without written approval from Johns Hopkins.
- All reference to source forms should include "©The Johns Hopkins Hospital/The Johns Hopkins University."
- The tools may not be used for commercial purposes without special permission.

If interested in commercial use or discussing changes to the tool, please email ijhn@jhmi.edu.

Appendix B

JHEBP Model PET Management Guide

PET Management Guide



Through the use of Johns Hopkins Nursing Evidence-Based Practice the PET management guide facilitated the EBP change project through the steps below.

PRACTICE QUESTION

- Step 1: Recruit interprofessional team
- Step 2: Define the problem
- Step 3: Develop and refine the EBP question
- Step 4: Identify stakeholders
- Step 5: Determine responsibility for project leadership
- Step 6: Schedule team meetings

EVIDENCE

- Step 7: Conduct internal and external search for evidence
- Step 8: Appraise the level and quality of each piece of evidence
- Step 9: Summarize the individual evidence
- Step 10: Synthesize overall strength and quality of evidence
- Step 11: Develop recommendations for change based on evidence synthesis

TRANSLATION

- Step 12: Determine fit, feasibility, and appropriateness of recommendation(s) for translation path
- Step 13: Create an action plan
- Step 14: Secure support and resources to implement an action plan
- Step 15: Implement an action plan
- Step 16: Evaluate outcomes
- Step 17: Report outcomes to stakeholders
- Step 18: Identify next steps
- Step 19: Disseminate findings

Dang & Dearholt, S. (2017). *Johns Hopkins nursing evidence-based practice: Model and guidelines* (3rd. ed.). Sigma Theta Tau International

Appendix C

Summary of Primary Evidence

Citation	Design, Level Quality Grade	Sample Sample size	Intervention Comparison	Theoretical Foundation	Outcome Definition	Usefulness Results Key Findings
<p>Olrich, T., Kalman, M., & Nigolian, C. (2012). Hourly rounding: A replication study. <i>Medical Surgical Nursing</i>, 21(1), 1-5. https://www.researchgate.net/publication/223961466_Hourly_rounding_A_replication_study</p>	<p>Evidence Level 2 Quality A</p>	<p>506 bed teaching hospital. 1 year 4,418 patients</p>	<p>PHR vs. no intervention</p>	<p>Not disclosed by author</p>	<p>Falls rate 3.37/1000 to 2.61/1000 23% reduction in falls was clinically significant not statistically significant (p = 0.672)</p>	<p>PHR by nursing personnel positively impacts three variables: patient fall rates, call light usage, and patient satisfaction.</p>
<p>Radecki, B., Reynolds, S., & Kara, A. (2018). Inpatient fall prevention from the patient's perspective: A qualitative study. <i>Applied Nursing Research</i>, 43(1), 114-119. https://doi.org/10.1016/j.apnr.2018.08.001</p>	<p>Evidence Level 3 Quality C</p>	<p>12 patients mean age 65.2</p>	<p>Interviews patients perspective of their own fall risk of the fall prevention intervention implemented by staff</p>	<p>Not disclosed by author</p>	<p>Three themes: How I see myself, how I see the interventions, and how I see teamwork 90% believed they shared the same prevention plan as the nurse.</p>	<p>Fall assessment needs to shift from clinician - centric to patient-centric. Structured Rounding, which includes specific nursing actions, aims to meet patients' needs proactively</p>

						through 1 or 2 hourly rounds.
Hodgson, L. (1012). Hourly rounding in a high dependency unit. <i>Nursing Standard</i> , 27(8), 35-40. https://search.proquest.com/docview/1130216113?accountid=158603	Evidence Level 5 Quality B	51 patients	Rounding logs for assignment of two patients	Not disclosed by author	No patient falls during trial (also no falls two months before trial or after trial)	25 patient logs documented for PHR. Inconclusive on falls with implementation
Trepanier, S., & Hilsenbeck, J. (2014). A hospital system approach at decreasing falls with injuries and cost. <i>Nursing Economics</i> , 32(2), 135-141. http://search.ebscohost.com/login.aspx?direct=true&db=heh&AN=96936044&site=eds-live	Evidence Level 5 Quality A	50 hospitals 12 month of implementation	Interdisciplinary team initiated a standardized fall prevention program	Not disclosed by author	Decrease in anticipated falls by year 2 72% and decrease in falls by 58.3%. Potential cost avoidance reduction of \$776,064	An EBP standardized fall prevention program resulted in a decrease in anticipated falls with injuries
Silva, K. & Hain, P. (2017). Fall prevention: Breaking apart the cookie-cutter approach. <i>Medical Surgical Nursing</i> , 26(3), 198-213. https://www.thefreelibrary.com/Fall+prevention%3a+breaking+apart+the+cookie+cutter+approach.-a0502001247	Evidence Level 5 Quality B	408 beds on 13 adult med surgical rehab units	Fall prevention using screening tools, PHR, fall bundle (yellow socks, bracelet, own shoes, signs, bed/chair alarm, self-releasing belt, 1:1 observer, fall video in several languages)	PSDA Model	69% of unassisted falls in patients 18-64. Common cause 33% muscle weakness, loss of balance 24%, and altered mental status 24%,	Fall risk numbers seem to be irrelevant Action plan to each risk factor Patient specific initiative Empower staff, facilitate immediate debrief.

					slipped/tripped 19%. 40% of falls happened from 12-7pm	
Barrett, M., Vizgirda, V., & Zhou, Y. (2017). Registered nurse and patient care technician perceptions of toileting patients at high fall risk. <i>Medical Surgical Nursing</i> , 26(5), 317-323. https://www.thefreelibrary.com/Registered+Nurse+and+Patient+Care+Technician+Perceptions+of+Toileting...-a0514512712	Evidence Level 3 Quality B	4 hospital health system 221 RN 186 PCT	RN perception of Toileting regimen for high risk fall patients	Not disclosed by author	Significant differences were found between RN and PCTs in identification of patient characteristics associated with risk of toileting-related falls (pt. mobility, toileting habits, med use, med conditions, and schedule for toileting pts with AMS, waking patients for toileting, routine toileting, and diapers as alternative toileting strategy.	Effective care planning between RN and PCT is a targeted strategy that may increase the understating of needs of patients at high risk for falls. Toileting is important component of fall reduction program on medical surgical patients.

<p>Walsh, C., Liang, L., Grogan, T., Coles, C., McNair, N., & Nuckols, T. (2018). Temporal trends in fall rates with the implementation of a multifaceted fall prevention program: Persistence pays off. <i>The Joint Commission Journal on Quality and Patient Safety</i>, 44(1), 75-83. https://doi.org/10.1016/j.jcjq.2017.08.009</p>	<p>Evidence Level 3 Quality A</p>	<p>466 bed academic center</p>	<p>Fall committee, flagged high risk patients, improved all reporting, increased scrutiny of falls, instituted PHR, reorganized leadership system, standardized fall prevention equipment, routinely investigated root cause, mitigated fall risk during PHR, educated patients on falls, taught nurse to think critically about risk.</p>	<p>Not disclosed by author</p>	<p>Falls rate reduced from 3.07 to 2.22 per 1,000 patient falls a 27.7% reduction in 11.5 years</p>	<p>Multidimensional fall prevention program incremental approach and persistence pay off</p>
<p>Jong, L., Kitchen, S., Foo, Z., & Hill, A. (2017). Exploring fall prevention capabilities, barriers and training needs among patient's sitters in a hospital settings: A pilot survey. <i>Geriatric Nursing</i>, 39(1), 263-270. https://www.sciencedirect.com/science/article/pii/S0197457217302434?via%3Dihub</p>	<p>Evidence Level 3 Quality B</p>	<p>31 participants completed survey</p>	<p>Exploring barriers and training needed for patient sitters as a fall prevention strategy.</p>	<p>COM-B is a health behavior change framework</p>	<p>90% of sitters felt confident in their role, 91% of falls were pt. related 64% said sitter capacity was limited 84% of sitters would like further training.</p>	<p>Sitters have limited capability regarding fall prevention</p>

<p>Adams, J., & Kaplow, B. (2013). A sitter reduction program in an acute health care system. <i>Nursing Economic</i>, 31(2), 83-89. http://husson.idm.oclc.org/login?url=https://www.proquest.com/docview/1347609778?accountid=27496</p>	<p>Evidence Level 5 Quality B</p>	<p>6 month period</p>	<p>Decrease sitters without impacting fall rates</p>	<p>Not disclosed by author</p>	<p>Decrease sitter use 50% in one fiscal year. Savings of 1.2 million in annual savings without negatively impacting fall rates</p>	<p>Presence of sitters did not decrease falls. It was intentional presence of nursing staff (PHR) that was successful in the reduction of sitter use</p>
<p>Fridman, V. (2019). Redesigning fall prevention program in acute care: Building on evidence. <i>Clinical Geriatric Medicine</i>, 35(1), 265-271. https://doi.org/10.1016/j.cger.2019.01.006</p>	<p>Evidence Level 5 Quality B</p>	<p>13.3% of participants addressed toileting</p>	<p>PHR as a meaningful task to decrease falls</p>	<p>PSDA Model</p>	<p>Fall prevention is complicated and careful planning, implementations and evaluations are required for successful nursing practice change.</p>	<p>A clear relationship between deliriums, patient toileting needs, high-risk prescriptions medications, ambulation, and impairment increase in the number of patient falls.</p>
<p>Rachh, P., Wilkins, G., Capodilupo, T., Kilroy, S., Schinder, M., Repper-Delisi, J. (2016). Redesigning the patient observer model to achieve increased efficiency and staff engagement on a surgical trauma inpatient unit. <i>The Joint Commission Journal on Quality and Patient Safety</i>, 42(2), 77-85. https://www.sciencedirect.com/science/article/abs/pii/S155372501642009X</p>	<p>Evidence Level 5 Quality B</p>	<p>950 bed academic center, pilot 27 bed adult inpatient surgical trauma unit</p>	<p>Patient observer hours decreased 46% in utilization. Fall rates remained unchanged. Staff satisfaction increased from 9-72% with patient observer model.</p>	<p>Not disclosed by author</p>	<p>CAM positive patients</p>	<p>Practice change included the ability to hold the patient falls rate steady</p>

<p>Spano-Szekely, L et al. (2019). Individualized fall prevention program in an acute care setting: An evidence-based practice improvement. <i>Journal of Nursing Care Quality</i>, 34(2), 127-132. http://doi.org/10.1097/NCQ.0000000000000344</p>	<p>Evidence Level 5 Quality A</p>	<p>54% reduction in falls from 2.51 falls per 1000 patients to 1.15 fall per 100 patient. 72% reduction in sitters usage = 84,000 annual savings noted.</p>	<p>CPG identified 7 practices for effective fall prevention: organizational support for a fall prevention program, evaluation of the patient on admission for fall risk, risk assessment to identify risk factors, communicate risk factors, observation and surveillance, auditing, continuously learning, and improvement.</p>	<p>EBPI model. PDSA cycle</p>	<p>Implementation proves, feedback from staff, and learning from real time debriefs reinforce learning and sustainability.</p>	<p>Added video monitoring. Debriefing key to sustainability</p>
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Appendix D

Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/Implications
Hicks, D. (2015). Can Rounding reduce patient falls in acute care? An integrative literature review. <i>Medical Surgical Nursing</i> , 24(1), 51-55. https://search.proquest.com/openview/7891afc5d54f14c1e75dacf018155793/1/advanced	Quality A	PHR	nursing+ falls, inpatient + adults, hourly + rounding, quality + improvement, and safe + patient care	Inclusion fall prevention program and PHR utilized	Systematic Review	14 studies were analyzed to identify patterns, similarities, and differences	Promising effects of PHR decrease fall rates
Zhao, Y., Bott, M., He, J., Kim, H, Park, S., & Dunton, N. (2019). Evidence on falls and injurious fall prevention interventions in acute care hospitals. <i>The Journal of Nursing Administration</i> , 49(2), 86-92. http://10.1097/NNA.0000000000000715	Quality A	Staffing and PHR	nursing+ falls, inpatient + adults, hourly + rounding, quality + improvement, and safe + patient care	Inclusion fall prevention program and PHR. Also addresses adequate staffing	Systematic Review	CMS and Medicaid services no longer reimburses hospitals for treatment of preventable injuries, including fall-related injuries. Hospitals will pay the extra cost for these falls and hospitals in revenue losses.	Without adequate staffing, it is challenging for nursing staff to implement appropriate fall prevention interventions to prevent falls and injurious falls.
Mitchell, M., Lavenberg, J., Trotta, R., & Umscheid, C.	Quality A	PHR	nursing+ falls, inpatient + adults, hourly + rounding,	Included PHR and nurse responsiveness	Systematic Review	Positively impact patient outcomes	Improves pt. perception, of staff responsiveness, reduces

Citation	Quality Grade	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/ Implications
(2014). Hourly rounding to improve nursing responsiveness: A systematic review. <i>Journal Nursing Administration, 44</i> (9), 462-472. https://doi.org/10.1097/nna.0000000000000101			quality + improvement, and safe + patient care				call light and improves patient satisfaction scores.

Appendix E

Synthesis Matrix

	Hourly Rounding	Toileting	Hardwire Change	Bundle (fall risk, rounding, debrief)	Fall Risk	Rounding Logs	Staff Empowerment	Sitters	Medication	Video Monitoring
Olrich, T., Kalman, M., & Nigolian, C. (2012)	X		X							
Radecki, B., Reynolds, S., & Kara, A. (2018)	X		X		X					
Hodgson, L. (2012)	X		X	X		X				
Trepanier, S., & Hilsenbeck, J. (2014)	X		X	X						
Silva, K. & Hain, P. (2017)			X	X	X		X			
Barrett, M., Vizgirda, V., & Zhou, Y. (2017)		X	X				X			
Walsh, C., Liang, L., Grogan, T., Coles, C., McNair, N., & Nuckols, T. (2018)			X	X			X			
Jong, L., Kitchen, S., Foo, Z., & Hill, A. (2017)			X					X		
Adams, J., & Kaplow, R. (2013)	X		X					X		
Fridman, V. (2019)		X	X	X					X	
Rachh, P., Wilkins, G., Capodilupo, T., Kilroy, S., Schinder, M., & Repper-Delisi, J. (2016)			X		X					
Spano-Szekely, L. et al. (2019)			X	X						X

Appendix F

Accepted Permission from Studer Group to Use Tools

 Aubrie Offerdahl <aubrie.offerdahl@studergroup.com>
Tue 5/26/2020 8:53 AM
To: Amanda L Savage
Cc: Aubrie Offerdahl <aubrie.offerdahl@studergroup.com>



 HR5-2019 FINAL.pdf 41 KB	 HR4-2019-FINAL.pdf 96 KB
---	---

2 attachments (137 KB) Download all Save all to OneDrive - University of St Augustine

Hi Amanda,

So glad we are able to help! You may use the attached documents. Please let me know if you have any questions.

Best,
Aubrie Offerdahl
Associate, Knowledge Management and Content
Mobile 850-516-9851
Aubrie.Offerdahl@studergroup.com



Appendix G

SWOT Analysis

Northern Light Health
Northern Light Eastern Maine Medical Center
SWOT ANALYSIS

STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • High-quality safe patient care focus • Large facility • Skilled team members • New innovative leadership • Strong culture of safety • Fall prevention in place • Leaders committed to reducing falls. 	<ul style="list-style-type: none"> • Inpatient falls below metric baseline • Patient experience HCAHPS in lower quadrille • High Acuity on floors. • Staffing: High staff call outs and turn over. • Lack of education on fall prevention • Lack of education on hourly rounding 	<ul style="list-style-type: none"> • Reimbursement • Patient satisfaction • Leaders to revisit hourly rounding • Community growth • Build relationships with IPE care providers to work more collaboratively to eliminate potential fall risk factors. • Staff will benefit from additional education 	<ul style="list-style-type: none"> • Financial stability • Patient Flow • Acuity of patients • Staffing Challenges • Age of in patient population in the community. • Increase in comorbiltites, delirium, alcoholism, and drug use.

Appendix H

Pre- and Post- Education on Purposeful Hourly Rounding

PRE and POST Education on hourly rounding

(please circle Y or N)

1. Have you heard about Hourly Rounding? Y/N
2. Are the 3 P's: Pain Potty and Position? Y/N
3. Do you currently utilize hourly rounding practice? Y/N
4. Does hourly rounding improve communication and patient outcomes such as falls? Y/N
5. Is patient safety increased with hourly rounding? Y/N
6. Is hourly rounding performed every hour during the day and every two hours at night? Y/N

Appendix I

Gantt Chart

Design (Plan) Phase				
Initial Design	Project Manager (author)		1/10/20	1/20/20
Literature Review	Project Manager		1/20/20	1/30/30
ERPC Approval	Project Manager		5/18/20	5/30/20
Seek Executive Stakeholder Approval at NL EMMC	CNO (Executive Liaison)		2/20/20	4/25/20
Organizational Gap and SWOT Analysis	Project Manager		2/25/20	3/1/20
Establish Hour Rounding Protocol and Necessary Documentation	AVP of Med/Surgical		2/25/20	3/1/20
Meet with USA Faculty	Project Manager		1/10/20	4/25/20
Implementation (Do) Phase				
Educate the medical surgical unit and Disseminate Project Information	Nurse Manager (NM) and Assistant Nurse Manager (ANM)		6/1/20	6/7/20
Select Fall Champions	RN and CNA		6/1/20	6/1/20
Identify benchmarks for falls	Project Manager		6/1/20	6/1/20
Begin pilot project	Project Manager		6/1/20	6/1/20
Implementation of PHR and charting	NM & ANM		6/1/20	6/1/20
Removal of bedside sitters	NM & ANM		6/1/20	6/1/20
Evaluation (Study) Phase				
Post on Bulletin Board first month implementation audits (falls, falls with injuries)	NM & ANM		7/1/20	7/6/20
Meeting with Staff at 15 days	Project Manager		7/1/20	

15 day of implementation audits	NM	6/1/20	6/5/20
Meeting with Staff at 30 days	Project Manager	7/1/20	
Compare data and predictions	Project Manager	7/1/20	7/1/20
Process Measures: How many patients fall	Project Manager	7/1/20	7/1/20
Contextual Measures: Daily staffing ratios	Project Manager	7/1/20	7/1/20
Contextual Measures: Average daily census	Project Manager	7/1/20	7/1/20
Contextual Measures: Average age of the patient	Project Manager	7/1/20	7/1/20
Dissemination (Act) Phase			
Data analysis and apply to outcomes	Project Manager & Data/IT Informatics RN	8/1/20	9/1/20
Complete DNP Project	Project Manager	9/1/20	9/2/20
Disseminate applied data to the organization	AVP, CNO, & Project Manager	9/5/20	10/1/20
Look at areas to improve	Project Manager	1/10/20	9/1/20
Look to implement project housewide	CNO	9/1/20	9/1/20

Appendix J
ICARE Pretest Score

Test Scores Report

Report Generated: Jul 13, 2020, 10:58 am ET



Eastern Maine Medical Center
Test Scores Report
Completed Date Range: Jul 14, 2019 through Jul 13, 2020
Data as of: Jul 13, 2020, 1:00 am ET
Report Generated: Jul 13, 2020, 10:58 am ET

ALL TESTS

TEST NAME	AVERAGE STUDENT SCORE	AVERAGE NUMBER OF ATTEMPTS
Purposeful Hourly Rounding Pre-test	98%	1.2
Averages:	98%	1.2

Appendix K

ICARE Posttest Score

Test Scores Report

Report Generated: Aug 24, 2020, 10:53 am ET



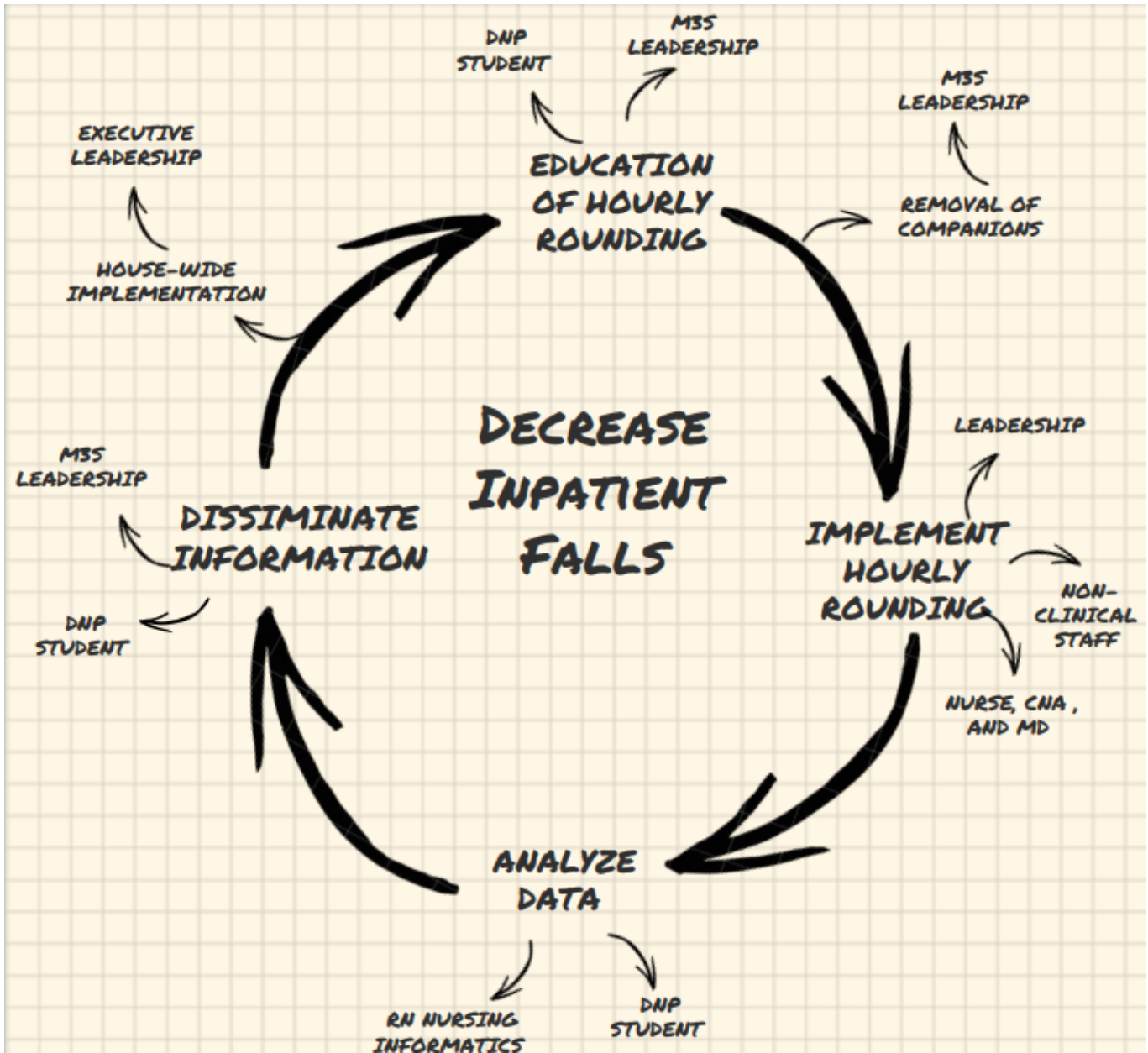
Eastern Maine Medical Center
Test Scores Report
Completed Date Range: Aug 25, 2019 through Aug 24, 2020
Data as of: Aug 24, 2020, 1:00 am ET
Report Generated: Aug 24, 2020, 10:53 am ET

ALL TESTS

TEST NAME	AVERAGE STUDENT SCORE	AVERAGE NUMBER OF ATTEMPTS
Follow Up for Purposeful Hourly Rounding	99%	1
Averages:	99%	1

Appendix L

Action Plan



Appendix M

Data Collection Tool for Evaluation: Daily Hourly Rounding Log

HR4: Daily Hourly Rounding® Log – Sample

Note: All patients in this unit are visited hourly by the nursing staff between 6:00 a.m. and 10 p.m., and every two hours between 10 p.m. and 6:00 a.m. Please place your initials in the corresponding time box after round has been complete. (Round is only complete if all 8 Key Behaviors have been done)

DATE: _____ Room Number: _____

DAY OF WEEK:	Mon <input type="checkbox"/>	Tue <input type="checkbox"/>	Wed <input type="checkbox"/>	Thu <input type="checkbox"/>	Fri <input type="checkbox"/>	Sat <input type="checkbox"/>	Sun <input type="checkbox"/>
---------------------	---------------------------------	------------------------------	---------------------------------	------------------------------	------------------------------	------------------------------	------------------------------

TIME PERIOD	STAFF INITIALS	ROOM EMPTY ✓	PATIENT SLEEPING ✓	COMMENTS
6:00am				
7:00am				
8:00am				
9:00am				
10:00am				
11:00am				
12:00pm				
1:00pm				
2:00pm				
3:00pm				
4:00pm				
5:00pm				
6:00pm				
7:00pm				
8:00pm				
9:00pm				
<i>* Every two hours between 10 p.m. and 6:00 a.m.</i>				
10:00pm				
12:00am				
2:00am				
4:00am				

RN Name (printed) _____	Initials: _____	RN Name (printed) _____	Initials: _____
RN Name (printed) _____	Initials: _____	RN Name (printed) _____	Initials: _____
CA Name (printed) _____	Initials: _____	CA Name (printed) _____	Initials: _____
OTHER Name (printed) _____	Initials: _____	OTHER Name (printed) _____	Initials: _____

Note: This is not part of the permanent medical record

Appendix N

Daily Count

HR5: Daily Count Summary Page

Date:

TOTAL # OF HOURS	
A. Total # of hours rounding was documented:	<input type="text"/>
B. Total # of hours rounding was expected:	<input type="text"/>
Summary: Percent of expected hours in which rounding was documented: (A/B) Goal: 90%	<input type="text"/>

For example:

A. Total #Hours rounding was documented: 60 hours

B. Total # Hours rounding was expected: 60 hours

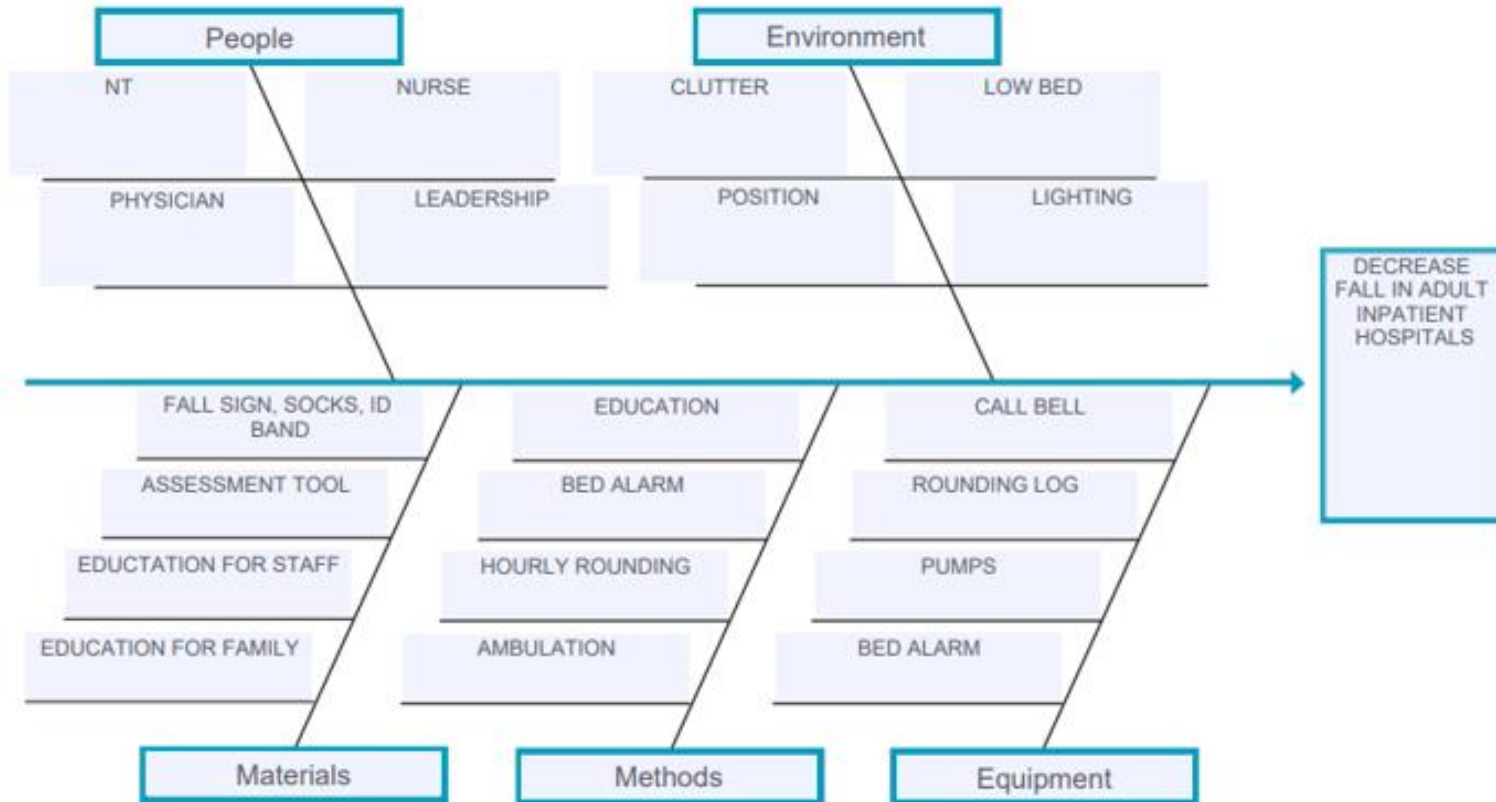
Summary: 60 divided by 60 = 0.63 or 63%

Comments/ Findings:

Name of person preparing report:

Appendix O

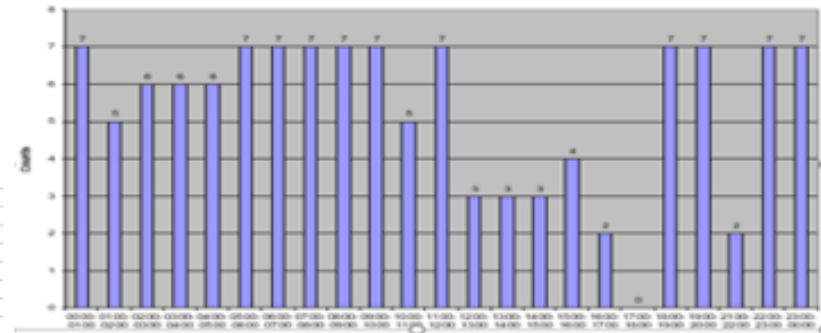
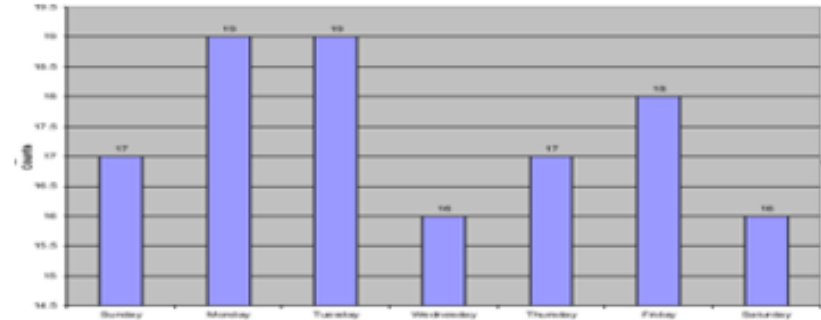
Cause and Effect Diagram



Appendix P

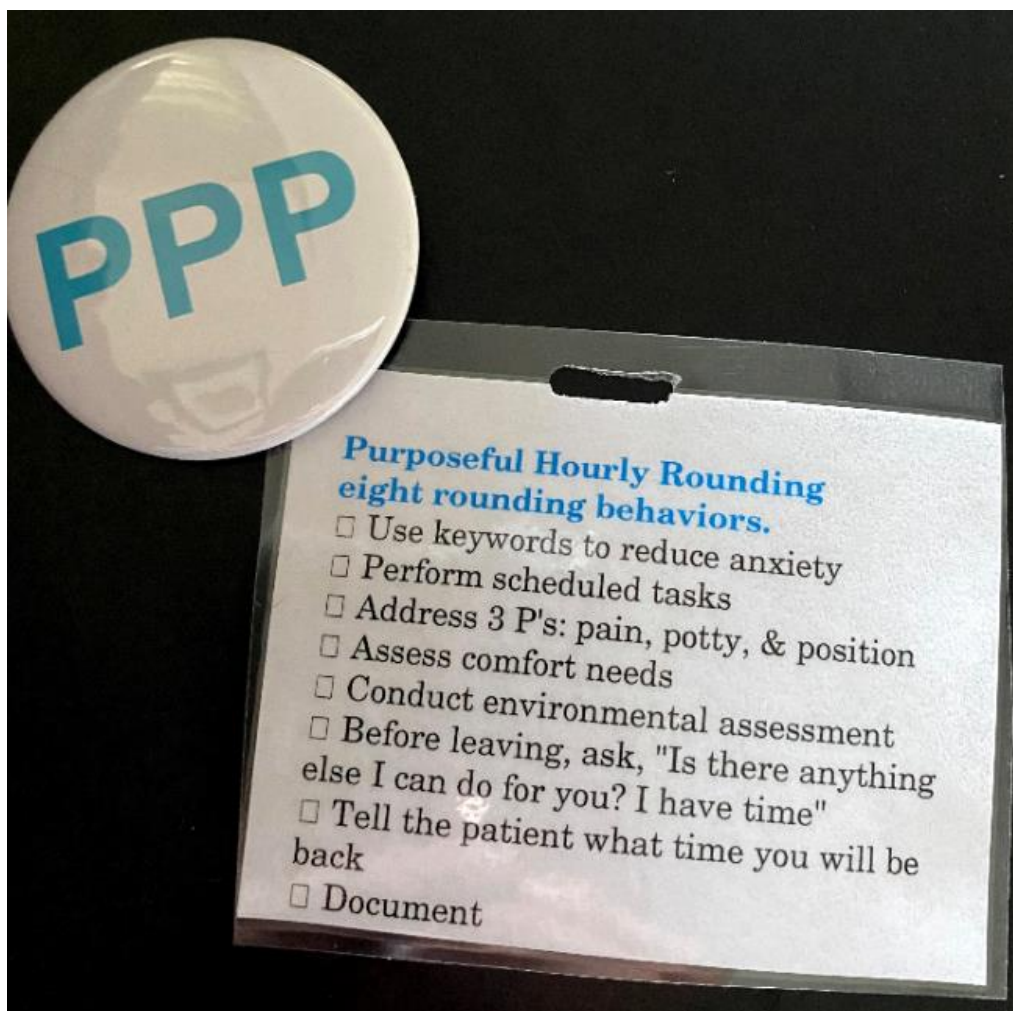
Check Sheet

Defect Types/ Event Occurrence	Dates							TOTAL
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
0000-0100	1	1	1	1	1	1	1	7
0100-0200		1	1	1		1	1	5
0200-0300	1	1	1	1	1	1		6
0300-0400	1	1		1	1	1	1	6
0400-0500	1	1	1		1	1	1	6
0500-0600	1	1	1	1	1	1	1	7
0600-0700	1	1	1	1	1	1	1	7
0700-0800	1	1	1	1	1	1	1	7
0800-0900	1	1	1	1	1	1	1	7
0900-1000	1	1	1	1	1	1	1	7
1000-1100		1	1	1	1	1		5
1100-1200	1	1	1	1	1	1	1	7
1200-1300	1	1		1				3
1300-1400		1				1	1	3
1400-1500	1		1		1			3
1500-1600	1		1			1	1	4
1600-1700		1	1					2
1700-1800								0
1800-1900	1	1	1	1	1	1	1	7
1900-2000	1	1	1	1	1	1	1	7
2100-2200			1		1			2
2200-2300	1	1	1	1	1	1	1	7
2300-0000	1	1	1	1	1	1	1	7
total	17	19	19	16	17	18	16	122



Appendix Q

Staff Buttons and Badge Reminders



Appendix S

EBP Staff Communication Board

