ENHANCING BEDSIDE SHIFT REPORT WITH SAFETY CHECKS TO REDUCE FALLS

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STACY SKEENS, MSN, RN, CMSRN, CNL

Shawn Zembles, DNP, APRN, CEN, CCRN, NPD-BC, ACNS-BC, Committee Chair
Bridgett Robbins, DNP, RN, Committee Member
Lisa Smith, MSN, RN, Committee Member
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Patient safety is a principal concern in healthcare. Falls represent a significant safety risk to patients, particularly in hospitals and acute care settings. United States hospitals incur an estimated $17 billion in preventable adverse events annually (Dykes et al., 2023). The most significant category of preventable adverse events is patient falls during hospitalization, with a per-patient cost ranging from an estimated $351 to $13,616 (Dykes et al., 2023). Organizations do not receive reimbursement for care from the Centers for Medicare and Medicaid Services (CMS) if a fall-related injury occurs during a hospital stay, creating a considerable economic motive for hospitals to prevent falls (Turner et al., 2022). Previous literature has shown that bedside reporting increases patient safety, including falls (Bressan, 2020). According to Johnston and Mangnan (2019), using a fall checklist during handoffs can reduce falls in an inpatient setting.

Statement of Purpose and PICOT Statement

This project aims to implement BSR with targeted safety checks to reduce falls at MU Health Care. The specific PICOT question for this project is as follows: In hospitalized adults (P), does bedside shift report with safety checks (I) compared to other methods of report (C) affect the fall rate on Oncology (O) within 45 days (T)?

The scope of this change is relevant to the nursing leaders at MU Health Care. This academic medical center has no formal training in bedside shift reporting or safety checks to reduce falls. While the literature shows bedside reporting increases patient safety, there has been a decline in the practice of BSR. The primary objectives of this project are:

1. A 10% increase in BSR in addition to safety checks on the participating unit.
2. A 10% decrease in reported patient falls on the participating unit.

Review of Literature

An extensive literature search revealed three themes: bedside shift report to increase patient safety, perceptions and barriers of bedside shift reports, and implementation of bedside shift reports.

Bedside Shift Report to Increase Patient Safety

Five descriptive studies addressed aspects of patient safety when BSR is performed. Hada & Coyer (2020) report that their literature review shows that implementing nursing handover interventions positively affected patient outcomes, specifically a reduction in falls ranging from 9.3% to 80%. However, while the reduction in falls was clinically meaningful, no statistically significant decrease was noted (Hada & Coyer, 2020). Basic et al. (2021) found that structured interdisciplinary bedside rounds significantly reduced falls from 10.6 falls per 1,000 occupied bed days (OBD) to 7.4 falls per 1,000 OBD. Sun et al. (2020) reported falls associated with specific shifts and days of the week but no association with BSR. Malfait et al. (2019) also noted a reduction in falls in units that participated in BSR that were not statistically significant but were clinically significant. Patient safety during BSR is supported through technology solutions, standardized communication tools or checklists, and face-to-face contact between patients and nurses. Bressan et al. (2020) noted that reliable communication during BSR increased patient safety and falls explicitly, and adopting standardized tools and a minimum dataset along with BSR increased the quality of nursing care, resulting in increased patient safety.

Perceptions and Barriers of Bedside Shift Report

Six descriptive studies included perceptions and barriers of BSR. According to Oxelmark et al. (2019), patients prefer bedside shift report and perceive their level of involvement in their care as essential. Patients prefer to hear bedside nurses' interactions so they can contribute

meaningfully to their care (McCloskey et al., 2019). Additionally, patients desire the chance to ask questions during BSR and want to be involved and at the center of the nursing care process. Patients want a voice for critical issues, which can then result in higher patient satisfaction (Bressan et al., 2019; Clari et al., 2021).

Conversely, nurses preferred the handoff to occur away from the bedside for assorted reasons, including time restraints and patient confidentiality (Oxelmark et al., 2019). Nurses believe discussions about BSR should consider time constraints and workflow and propose a modified approach to BSR with discussions away from the bedside (Jimmerson et al., 2020). According to Malfait et al.(2019), another barrier was defined as nurses also felt less socializing with fellow nurses during BSR instead of reporting at the nurse's station.

Implementation of Bedside Shift Report

Six descriptive studies discussed implementation strategies for hard-wired BSR. Le et al. (2023) reported that handoff education in nursing schools is lacking, and new graduate nurses are relying on the handoff experiences they observed during clinical rotations. Choi et al. (2024) reported that 62.6% of nursing students have little or no experience with nurse handoff, and 92% of experienced nurses stated that handoff education comprised of observing their peers or verbal instructions from senior nurses. Simulation has been successful in nursing schools in developing BSR skills and increasing new graduate nurses' confidence (Elgin & Poston, 2019).

Smeulers et al. (2016) reported a trend of improvement in handoff quality using a standardized blueprint for handoffs, and nurses saw the blueprint as improving and refining the current handoff process. Bedside safety checks were performed, which verified medications, equipment, drains, and bandages. These bedside safety checks provided a more complete clinical picture of the patient (Smeulers et al., 2016). Clark et al. (2019) reported using an educational tool kit resource for teaching nurses on BSR. The toolkit included a PowerPoint, a standardized report format, and four hours of education for unit champions. Sharp et al. (2019) found great variability in staff utilization of the handoff checklist provided for their study; however, when the checklist was utilized, many of the subcomponents of the handoff were completed compared to those not using the checklist.

Methods

This quality improvement project utilized a longitudinal pretest-post-test design to evaluate the effectiveness of utilizing a safety checklist during bedside shift reports to reduce falls. To evaluate the efficacy of the intervention, nurses were asked to complete a nurse survey (Appendix C) at two time points: pre-intervention (T1) and following the six-week pilot (T2). The intervention was performed on a 30-bed Oncology unit in a 390-bed academic medical center in Columbia, Missouri. The hospital serves mid-Missouri and is a primary service for oncology care. The target population is a purposive, convenience sample of nurses working on the Oncology unit. Inclusion criteria consisted of nurses employed by the Oncology department. Exclusion criteria consisted of nurses serving in a leadership position on the unit. The investigator provided a 10-minute presentation to the staff on the units during a Clinical Shared Leadership meeting, daily huddles on the unit, and to the leadership team on the unit. The presentation included the fall rates before the trial, literature providing evidence that BSR is best practice, and the safety checklist (Appendix D). The checklist was to accompany each nurse handoff at change of shift. Attendance at this presentation was documented. The survey contained questions regarding bedside report and falls and was distributed to the same group of nurses at T1 and T2.

Calculations for sample size were based on the recommendations from G*Power (Faul et al., 2007). To detect the effect size of Cohen's $d = 0.5$ with 80% power ($\alpha = .05$, two-tailed), G*Power suggests that 35 participants would be needed in a paired samples t-test (Faul et al., 2007). Of the 32 nurses, only 14 completed surveys at T1 and T2. Demographic information collected included: age, age category, race, gender, education level, years of experience, and normal shift worked.

Descriptive statistics were utilized to provide an overview of the project sample. Ordinal data collected from the survey Likert scales at T1 and T2 were analyzed using the Wilcoxon signed-rank test. Nominal data was analyzed using the chi-squared test and McNemar's test, while ratio-level data was analyzed using the paired t-test. Vargha and Delaney (A) determined the effect size of the Wilcoxon-signed rank test with values of small (.56), medium (.64), and large (.71). IBM SPSS version 29 (Chicago, IL) was used for statistical analysis. Statistical significance was defined as $p \leq .05$.

Results

Of the 34 nurses employed on the Oncology floor, 14 nurses participated in the survey at T1 and 19 nurses participated in the survey at T2. The age range of the nurses was 23 to 47 years, with a mean age of 29.0 years ($SD = 6.2$) and a predominant age category of 20 to 30 (71.4%, $n = 10$). The predominant race was Caucasian (92.8%, $n = 13$). The sample was 92.9% female ($n = 13$) and 7.1% male ($n = 1$). The education level of the nurses was predominately a bachelor's degree (64.2%, $n = 9$), associate's degree (28.6%, $n = 4$) and professional degree (7.1%, $n = 1$). Participants indicated their years of nursing experience, ranging from 0-10 years, with a mean experience of 2.21 years ($SD = .70$). Participants reported predominantly working on the day shift (57.1%, n = 8).

Nurse Bedside Shift Report Survey

When evaluating the survey, the Wilcoxen-signed rank test was used to determine the effect of the BSR presentation and safety checklist, specifically on their perceived confidence levels with BSR and knowledge of patient safety. Of the six questions on the survey, the analysis found four questions demonstrating a large statistically significant increase in median scores: "nursing report encourages patient involvement in care" ($p < .001$, $A = 3.64$), "nursing report assists to identify patient teaching need" ($p < .001$, $A = 2.71$), and "nursing report focuses on the fall risk of each patient" ($p < .001$, $A = 2.71$).

Bedside Shift Report Frequency. There was a statistically significant increase in BSR frequency between T1 ($n = 14$)and T2 ($n = 19$) ($p = .003$).

Fall Risk Focus. There was a statistically significant increase in understanding that nursing reports focus on fall risks of patients between T1($n = 14$) and T2 ($n = 19$) ($p = .01$).

Encourage Patient Involvement. This is a statistically significant increase in the understanding that nursing report encourages patient involvement in care between T1($n = 14$) and T2 ($n=19$) ($p = .01$).

Identifying Patient Teaching Needs. This is a statistically significant increase in understanding that nursing report assists in identifying patient teaching needs between T1 (n=14) and T2 (n=19) ($p = .01$)

Safety Checklist

During the trial period, 254 checklists were collected of the 2,018 opportunities for BSR during the trial period. Of those collected, 223 (87%) were fully completed. Question 1: ID band on patient: 254 answered; 248/254 (98%) yes; 6/254 (2%) no. Question 2: Call light in reach: 249 answered; 247/249 (99%) yes; 2/249 (1%) no. Question 3: Pathways clear: 252 answered; 252/252 (100%) yes; 0/252 (0%) no. Question 4: Bed Alarm engaged: 239 answered 154/239 (64%) yes; 38/239 (16%) no; 47/239 (20%) N/A. Question 5: Activity level ordered: 245 answered: Ad lib 64/245 (26%); assist X1 78/245 (32%); assist X2 32/245 (13%); Total Lift 8/245 (3%); Standby assist 58/245 (10%); PT to see before ambulation 5/245 (2%). Question 6: Assistive device in reach; 246 answered; 32/246 (13%) yes; 8/246 (3%) no; 206/246 (84%) N/A.

Falls Rates

There were 49 pre-intervention falls and one fall post-intervention. Of the 49 falls over the twelve months before the intervention, the age range was from 24 to 87, with a mean age of 58.1 years (*SD* = 14.2) and a predominant age category of 51-60 (26.5%, *n* =13). The predominant race was Caucasian (40.8%, *n* = 20), predominately male (61.2%, *n* = 30) with 38.8% female (*n* = 19). The admitting diagnosis was predominantly neuroendocrine tumor (24.5%, *n* = 12), weakness (14.2%, *n* = 7), and nausea and vomiting (12.2%, *n* = 6). The time of fall was predominantly during the 1901-2300 time frame (26.5%, *n* =13), followed by 0700-1100 (22.4%, *n* = 11) and 1101-1500 (18.3%, *n* = 9). The predominant shift where most falls occurred was the A shift from 0700 – 1900 (55.1%, *n* = 27) versus the night shift from 1900 – 0700 (44.9%, n = 22). Unwitnessed falls occurred more frequently (85.7%, *n* = 42) than witnessed falls (14.3%, n = 7).

Only one fall occurred after the intervention. The patient demographics were as follows: white male, aged 58 in the age category of 51-60 with the admitting diagnosis of "other". The fall occurred between 1101-0300 on the P shift (7p-7a) and was unwitnessed.

Conclusion

The QI project aimed to implement and evaluate the efficacy of a safety check during bedside shift report to reduce falls. The primary project objective of a 10% increase in BSR while utilizing a safety check was met with a 12.6% increase of BSR and checklists filled out during the pilot compared to no BSR utilized previously during intermittent surveillance which is clinically significant. The secondary objective of a 10% decrease in fall rates was met with a 75.49% decrease in falls from 4.08 average falls per month to one fall during the trial period, which is clinically significant. These results suggest that education for BSR with safety checks substantially benefits nurses and patients in an inpatient setting.

Recommendations

Recommendations have been proposed to stakeholders concerning the importance of BSR with safety checks among nurses in the inpatient setting. It is suggested that BSR with safety check presentation be provided to nurses and leadership on the units annually, and the importance of utilizing safety checks during each nurse handoff should be stressed to ensure sustained effectiveness. Additionally, the presentation and safety check should be updated regularly to reflect changes in the best practices to reduce falls. Furthermore, it is reasonable to extend the program and safety checks to other units in the hospital and adapt the presentation accordingly.

Strengths and Limitations

The strengths of this QI project include the statistical and clinical significance exhibited by the project objective. The project demonstrated a large statistically significant increase in four variables in the nurse survey. The limitations of this project include a short project time interval, the use of purposive convenience sampling, a smaller than-anticipated sample size, and susceptibility to nonresponse bias.

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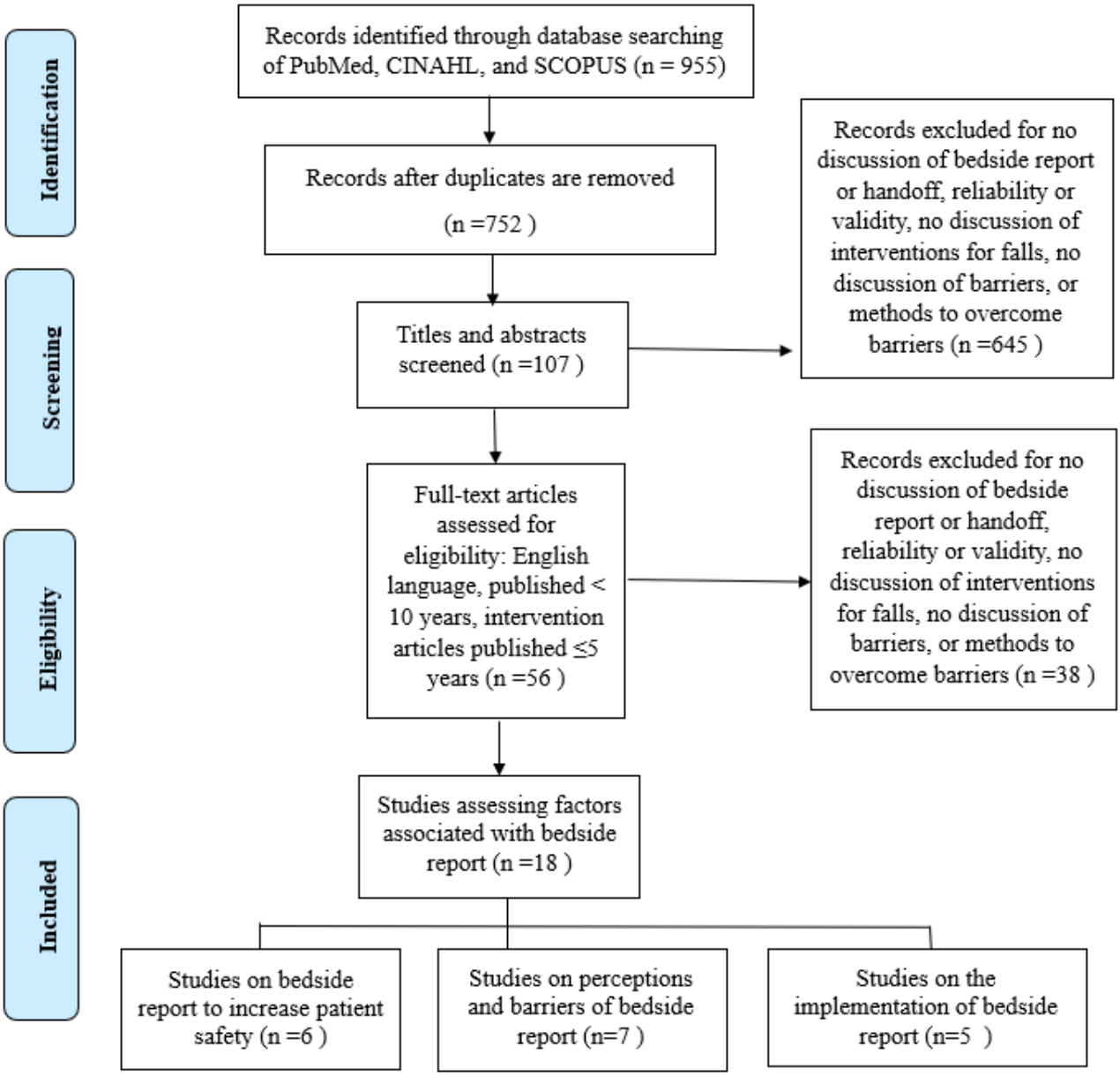
Appendix A: Budge

Appendix B: Prisma Flow Diagram

Figure 1: The PRISMA Flow Diagram of the Review of the Literature: detailing the databases searched, abstracts screened, and full-text articles included.



Appendix C: Timeline

Nurse Survey

* Required

1. Age Category *

- ◯ 20-29
- ◯ 30-39
- ◯ 40-49
- ◯ 50-59
- ◯ 60-69
- ◯ 70+

2. Sex *

- ◯ Male
- ◯ Female
- ◯ Non binary
- ◯ Prefer not to say

3. Race *

- ◯ White/Caucasion
- ◯ Black/African American
- ◯ Asian
- ◯ Native American/Pacific Islander
- ◯ Hispanic/Latino
- ◯ Other

4. How many years have you worked in the nursing field? *

- ◯ One year or less
- ◯ 2-5 years
- ◯ 6-10 years
- ◯ 11-20 years
- ◯ 20+ years

5. What shift do you typically work? *

- ◯ A shift - 0700-1900
- ◯ P shift - 1900-0700
- ◯ Other

6. What is the highest level of education you have completed? *

- ◯ Diploma
- ◯ Associate
- ◯ Bachelor's
- ◯ Master's
- ◯ Doctorate
- ◯ LPN

7. How often do you participate in bedside shift report during a normal week? *

- ◯ 0% of the time
- ◯ 25% of the time
- ◯ 50% of the time
- ◯ 75% of the time
- ◯ 100% of the time

8. Please answer each of the following statements regarding nursing report. *

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
Nursing report helps prevent patient safety issues.	○	○	○	○	○
Nursing report focuses on the fall risk of each patient.	○	○	○	○	○
Nursing report encourages patient involvement in care.	○	○	○	○	○
Nursing report assists to identify patient teaching need.	○	○	○	○	○

9. How confident are you in participating in bedside report? *

- ○ Extremely not confident
- ○ Somewhat not confident
- ○ Neutral
- ○ Somewhat confident
- ○ Extremely confident

Appendix B: Safety Check

Date_____Time_____ Room Number____			
Nurse Initials _____ & _____			
ID bracelet on patient	Yes	No	
Call light in reach	Yes	No	
Pathways cleared	Yes	No	
Bed alarm engaged	Yes	No	N/A
Activity level	_____		
Assistive devices in reach	Yes	No	N/A