

Hourly Rounding: A Replication Study

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While the concept of hourly rounding is not new, it is undergoing resurgence in hospitals throughout the United States. During the mid-20th century, nurses commonly rounded on their patients. As staffing shortages worsened, however, rounding occurred less frequently. Hourly rounding now offers a protocol to delineate actions that result in better patient outcomes (Meade, Bursell, & Ketelsen, 2006).

The medical-surgical clinical nurse specialist (CNS) at a northeast hospital examined unit data regarding fall rates and patient satisfaction for a 15-month period and call light usage for a 4-week period. Fall rate was 1.73-3.37 per 1,000 patient days. Call light usage data from the computerized data retrieval system showed 2,237-4,223 individual uses of the call light within a 2-week period. Of these calls, 57.75% were related to requests for toileting, pain management, personal needs, or comfort concerns such as positioning. Post-discharge patient satisfaction data showed 25% of patients were not highly satisfied nor would they definitely recommend the hospital to others. Data demonstrated significant opportunity for improvement.

The CNS convened a team to identify interventions to improve patient fall rates, call light usage, and patient satisfaction scores. In addition to the medical-surgical CNS, the team included a geriatric CNS, two nurse managers, a nurse researcher, and a statistician. The team decided to replicate the study by Meade and colleagues (2006).

Purpose

The purpose of this study was to determine the effect of hourly rounding on fall rates, call light usage, and patient satisfaction in an

Preventing falls in hospitalized patients, increasing patient satisfaction, and decreasing call light usage are constant challenges nurses face every day. This quasi-experimental study replicates Meade, Bursell, and Ketelsen's (2006) study on a rounding protocol, demonstrating improvements in the above variables.

inpatient medical-surgical patient population.

Literature Review

A literature search of Medline and CINAHL (1950-2007) found three studies on hourly rounding. Meade and co-authors (2006) used a quasi-experimental design and non-equivalent groups to study hourly and 2-hour rounding for 6 weeks. Nurses and nurse aides followed a specific protocol during rounding. The protocol consisted of eight actions (see Table 1). When patients were asleep, staff did not awaken them but performed environmental checks only. Reasons for call-light usage were documented by nurses in a call-light log. These data were analyzed jointly by the researchers and placed into one of 26 categories (see Table 2). Results indicated both hourly and every 2-hour rounding decreased call-light usage and increased patient satisfaction. Patient satisfaction increased significantly on the units using hourly rounding, from 79.9 on a 100-point scale to 91.9 ($p=0.001$), and on the every 2-hour rounding units from 70.4 to 82.1 ($p=0.001$). Patient call-light usage decreased significantly in the hourly rounding units ($p=0.007$) and every 2-hour

rounding units ($p=0.06$). Falls decreased only when rounding was done hourly. Limitations of this study included non-equivalence between the control and the experimental units because the units were not assigned randomly. Additionally, nurses from the experimental units may have performed some rounding behaviors when working on the control units.

Culley (2008) replicated the study by Meade and co-authors (2006) as a pilot on three units over 8 weeks after collecting 1 month of baseline data. It is unclear if control units were used. Patient satisfaction increased and call-light usage decreased on the three units. Call-light reductions were 77% on the step-down unit, 31% on the surgical unit, and 56% on the medical unit. The author did not examine patient falls.

A third study on hourly rounding was published as a brief (Assi, Wilson, Bodino, Bogner, & Lemenski, 2008). The study could not be evaluated because design, sample size, protocol, and analysis were not discussed. Authors found a decrease in the patient fall rate from 6.1 to 2.65 falls per 1,000 patient days, a reduction in call-light usage (62.5%), and an increase in patient satisfaction to 87%.

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TABLE 1.
Actions During Hourly Rounding

The following items will be checked for <i>each</i> patient:
1. Nursing staff enter room, greet patient, and say, "Hi, Mrs./Mr. Jones, I am here to do my rounds to check on your comfort."
2. Pain assessment using a pain intensity scale (if staff other than RNs are rounding and the patient is in pain, RNs will be contacted immediately by the person rounding so the patient does not have to use the call light for analgesia).
3. An hour prior to analgesia is due, the patient will be asked if she/he is starting to feel pain. If the answer is "yes," the RN will schedule analgesia administration.
4. Toileting assistance will be offered.
5. A patient positioning and comfort assessment will occur, including covering the patient if needed.
6. Environmental check <ul style="list-style-type: none"> • Call light within reach • Telephone within reach • TV control and bed light switch within reach • Bedside table close to bed • Tissue box and water within reach
7. Prior to leaving the room, each staff member asks, "Is there anything I can do for you before I leave? I have time to do it."
8. Staff also will tell the patient when rounding next will be conducted (in 1 hour).

While the literature contained only three studies about hourly rounding, there are many reports of fall-prevention interventions in the acute care setting. According to Krauss and co-authors (2005), falls among hospitalized patients account for 70% of hospital accidents. In U.S. hospitals, fall rates range from 2.3 to 7 falls for every 1,000 patient care days. Many falls occur during unassisted, elimination-related activities. Healy, Oliver, Milne, and Connelly (2008) indicated 25% of falls result from falling out of bed. Approximately 30% of these falls result in injury, with 4%-6% serious. Injuries include fractures or death. Fractures in older adults, who are most at risk for falling, are notable (Hayes, 2004). Injuries related to falls can lead to extended hospitalization and increased costs. According to Amador and Loera (2007), hospital costs for patients injured during falls are \$4,200 higher than for patients who do not fall.

A systematic review from the Joanna Briggs Institute examined falls in acute care hospitals (Evans, Hodgkinson, Lambert, Wood, &

Kowanko, 1998). The objective of the review was to examine the effectiveness of fall interventions. Authors reviewed 100 studies, two of which were randomized control trials and the rest quasi-experimental. Interventions included alarm systems, identification bracelets, evaluation of fall-incidence reports, and programs using multiple fall-prevention strategies. Authors found none of the interventions were effective in fall prevention. Hourly rounding was not reviewed in this document, which demonstrated the need to continue research on effective fall-prevention interventions.

Oliver and co-authors (2006) completed a meta-analysis examining strategies to prevent falls in hospitals and care homes. The analysis included 43 studies, but only 13 of them pertained to hospitalized patients. Of these, five were randomized and eight were prospective studies. Authors deemed all but one of the eight studies to be poorly designed. Most of the studies used multiple fall-prevention strategies but not hourly rounding. Some did show statistical significance.

TABLE 2.
Identified Categories

Pushed the call light accidentally
Bathroom/Bedpan assistance
Bed problem
Call-light problem
Door needs to be closed.
Equipment problem/question
Food or drink request
IV problems/pump alarm
Medication request
Miscellaneous
No reason was written on log.

Coussement and co-authors (2008) also performed a meta-analysis examining strategies to prevent falls in hospitals and long-term care facilities. Their analysis of eight studies found no fall-prevention programs that reduced the number of falls. Lastly, Healy and colleagues (2008) systematically reviewed 24 studies of the effect of bedrail use on falls. They found bedrail use did not increase the risk of falls or injury from falls.

Roszell, Jones, and Lynn (2009) identified the call light as a "fundamental communication tool that connects the nursing staff and their patients" (p. 69). According to Meade and colleagues (2006), call lights can be a lifeline for patients. However, answering lights imposes considerable demands on nurses' time. Research findings noted the negative impact of frequent use of call lights on the effectiveness of inpatient care management (Meade et al., 2006). In hospitalized patients, use of call lights often is related to the need for assistance with basic self-care tasks, such as toileting, ambulating, and eating. Therefore, satisfaction with nursing care may depend principally upon a patient's perception of how well the nursing staff has met those needs (Deitrick, Bokovoy, Stern, & Panik, 2006; Roszell et al., 2009). Rounding by nursing personnel leads to decreased call-light usage and patient falls, and increased patient satisfaction (Meade et al., 2006).

Methods

The site for this quasi-experimental study was a 506-bed teaching hospital in the northeast United States. Approval from the institutional review boards (IRB) of both the hospital and the university associated with the study was obtained. Informed consent of research participants was waived by the IRB because no patient identifiers were used and only aggregate data were reported.

Two medical-surgical units were selected based on their similar size, significant fall rates, and mix of post-operative and medical patients. Data were collected for patient falls, patient satisfaction, and call-light usage prior to the implementation of nurse rounding. One unit was designated as the experimental unit and one the control. The experimental unit was chosen based on the nurse manager's strong desire to be involved in the study. In addition, the experimental unit served as its own control, with data compared before and during the intervention. The sample consisted of all patients discharged from the units during the 1-year study period (N= 4,418).

Data concerning number of falls and level of patient satisfaction were collected for 6 months before the intervention and 6 months during the intervention using occurrence reports and post-discharge patient satisfaction surveys. Call-light data were collected from the call-light retrieval system for 2 weeks before the study and 4 weeks during the intervention. Reasons for call-light usage were documented by nurses on a log similar to the tool used by Meade and co-authors (2006).

Two weeks prior to implementing nurse rounding, all nurses and unlicensed assistive personnel (UAP) on the experimental unit attended a CNS-led educational session about performance of hourly rounding. Medical-surgical float pool RNs and UAP also were trained on rounding during this time period.

Hourly rounding was performed from 6:00 a.m. to 10:00 p.m. and included all eight actions (see Table 1). After each round, staff completed

the log kept outside the door. From 10:00 p.m. to 6:00 a.m., rounding occurred every 2 hours. If the patient was asleep, staff completed the environmental check only.

The nurse managers (NM) and CNSs routinely completed leadership rounds three times a week on the experimental unit to ensure staff completed hourly rounding. They asked patients if rounding was occurring, reviewed rounding logs, and reminded staff to round. Rounding also was discussed at every staff meeting. The NMs and CNSs worked to remove barriers to rounding to help in staff success. Four months after the start of hourly rounding, all staff on the experimental unit attended a 1-hour refresher course taught by one of the CNSs. This class reinforced rounding behaviors and gave staff feedback on the rounding process.

Data Analysis

Three variables were analyzed: patient falls, call-light usage, and patient satisfaction. Measures of central tendency and spread were calculated for all variables. Chi-square tests and rank sum tests were used to compare baseline and post-intervention demographic characteristics and reasons for call-light usage between experimental and control units.

Results

Before the study, the fall rate on the experimental unit was 3.37/1,000 patient days. The rate decreased to 2.6/1,000 patient days with the rounding intervention. While this was not significant statistically ($p=0.672$), the 23% reduction in falls was significant clinically. Patient fall rate on the control unit increased during the intervention time period.

Analysis of means (ANOM) u-charts (SAS version 9.1) were generated to determine if statistically different rates of call-light usage occurred for pre-, initial, or post-implementation time periods. Decision limits based on $\alpha = 0.05$ were computed from the data. In ANOM, subgroups within the decision limits are not significantly different, while subgroups outside the

decision limits are significantly different. Based on this analysis, a statistically significant call-light usage occurred during the first week of the intervention. However, a statistically significant rise in call-light usage occurred in the next 2 weeks due to one delirious patient (see discussion in "Limitations"). The final week of call-light data showed no statistically significant change. The small sample size used in this study made it difficult to validate a statistically significant change.

The proportion of patients who indicated they were satisfied with their care on each unit before and after the intervention also was calculated and compared. No statistically significant differences ($p=0.383$) occurred in patient satisfaction between the pre-rounding and post-rounding groups. These data were garnered from post-discharge patient surveys. While rounding did not affect the patient satisfaction on the discharge surveys, anecdotal evidence from the nurse leaders' rounds showed increased patient satisfaction.

Discussion

Study findings suggest hourly rounding by nursing personnel positively impacts the three variables studied: patient fall rates, call-light usage, and patient satisfaction. Although not statistically significant, patient fall rates decreased 23% on the experimental unit. Satisfaction scores also have the potential for showing long-term positive gains based upon patient feedback during leader rounds. Patients who had frequent admissions to the unit noted a difference after implementation of hourly rounding. They perceived the nursing staff to be more attentive. Although statistically significant differences were not identified in call-light usage or patient satisfaction during the study, researchers anticipate continued improvement with persistent re-enforcement of rounding behaviors and data collection.

Hospital-wide patient census also decreased during the study. No attributable reasons could be correlated with this decline. Because of this, many nurses from other units

floated to the experimental unit. Because they were not trained to follow the rounding protocol and appreciate the importance of rounding, many of them did not perform rounding. Based on feedback from leader rounds, hourly rounding appeared effective when the patient trusted a staff member will return. Patients who did not trust this would happen were more apt to use the call light. With a large number of nurses floating from other units, this trust was broken many times. Floating of nurses to a rounding unit should be limited as much as possible, or all staff in the hospital should be educated in the hourly rounding protocol.

Limitations

The major limitations of this study were a non-randomized sample and the small sample size. Replication of the study with a larger sample is needed. Because the sample was small, an outlier impacted the study perhaps to a greater degree than if there was a larger sample. The outlier, a delirious patient, used the call light 187 times in a 6-day period. He did not need a nurse but, in his delirium, kept ringing the light. This biased the call-light data significantly for the 2nd and 3rd weeks of the intervention. If the data from this patient were eliminated from the study, a significant change in call light usage the 2nd week and a lower than average number of call lights the 3rd week would have been seen. Hourly rounding has the potential to impact call-light usage, and may have demonstrated significance had the sample size been larger.

Researchers also recognized the need for staff champions, the necessity of sharing results with staff in a timely manner, and the need to train all staff in rounding procedures. Although staff members appeared supportive of hourly rounding, staff champions were not enlisted. Neither of the CNSs was based primarily on the experimental unit; both had responsibilities for other units. Second, the temporary transfer of the NM to another unit halfway through the implementation phase possibly affected the suc-

cess of rounding. Without consistent support on all three shifts, achieving change became more difficult.

Finally, technical difficulties with the call-light data collection system did not allow weekly data tracking throughout the study. Lack of immediate weekly feedback on the rounding effects was detrimental in keeping staff interested in rounding. Likewise, reports of falls were not received until almost 4 months into the rounding process.

Nursing Implications

Results of the current study show potentially promising effects of hourly rounding on patient falls, patient satisfaction, and patient call-light usage. If nursing leaders want to implement hourly rounding protocols successfully, attention should be focused on enlisting staff champions to ensure rounding behaviors are performed consistently on all shifts. In addition, data should be generated in a timely manner and distributed to staff as positive reinforcement of rounding outcomes. Strong consideration also should be given to implementing hospital-wide hourly rounding to ensure all nurses have been trained on related protocols. Implemented appropriately, hourly rounding shows potential to increase patient satisfaction, decrease call-light usage, and decrease patient falls.

Recommendations for Future Research

Hourly rounding is an important part of quality patient care. Evaluating call-light usage over a longer period of time than allowed by this study would be beneficial. Future qualitative research should focus on patients' perceptions of how often and how present nurses were during their hospitalization. Future research also should examine a possible correlation between decreased patient complications and staff performance of hourly rounds.

Conclusion

Decreasing patient falls and increasing patient satisfaction are

important goals of any institution. Call-light usage is connected to both patient falls and patient satisfaction (Meade et al., 2006). Falls decreased on the experimental unit in this study but patient satisfaction did not improve, possibly due to small numbers. Anecdotally, patients expressed increased satisfaction. Call-light usage did not improve; however, unexpected issues may have influenced this, including a delirious patient with the ability to use the call light. Continued emphasis must be placed on the need to answer call lights frequently and continue hourly rounding. This study has added to the body of knowledge demonstrating the importance of hourly rounds. **MSN**

REFERENCES

- Amador, L.F., & Loera, J.A. (2007). Preventing postoperative falls in the older adult. *Journal of the American College of Surgeons, 204*(3), 447-453.
- Assi, M.J., Wilson, P., Bodino, J., Bogнар, L., & Lemenski, M. (2008). Why making the rounds makes sense. *American Nurse Today, 3*(2), 12.
- Coussement, J., De Paeppe, L., Schwendimann, R., Denhaerynck, K., Dejaeger E., & Milisen, K. (2008). Interventions for preventing falls in acute- and chronic-care hospitals: A systematic review and meta-analysis. *Journal of the American Geriatrics Society, 56*(1), 29-36.
- Culley, T. (2008). Reduce call light frequency with hourly rounds. *Nursing Management, 39*(3), 50-52.
- Deitrick, L., Bokovoy, J., Stern, G., & Panik, A. (2006). Dance of the call bells: Using ethnography to evaluate patient satisfaction with quality of care. *Journal of Nursing Care Quality, 21*(4), 316-324.
- Evans, D., Hodgkinson, B., Lambert, L., Wood, J., & Kowanko, I. (1998). *Falls in acute hospitals: A systematic review*. Retrieved from <http://www.premierinc.com/safety/topics/falls/downloads/E-13-acute-systematic-review-aus.pdf>
- Hayes, N. (2004). Prevention of falls among older patients in the hospital environment. *British Journal of Nursing, 13*(15), 896-901.
- Healy, F., Oliver, D., Milne, A., & Connelly, J.B. (2008). The effect of bedrails on falls and injury: A systematic review of clinical studies. *Age and Ageing, 37*(4), 368-378.
- Krauss, M.J., Evanoff, B., Hitcho, E., Ngugi, K.E., Dunagan, W.C., Fischer, I., ... Fraser, V.J. (2005). A case-control study of patient, medication, and care-related risk factors for inpatient falls. *Journal of General Internal Medicine, 20*(2), 116-122.

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- Meade, C.M., Bursell, A.L., & Ketelsen, L. (2006). Effects of nursing rounds on patients' call light use, satisfaction, and safety. *American Journal of Nursing, 106*(9), 58-70.
- Oliver, D., Connelly, J.B., Victor, C.R., Shaw, F.E., Whitehead, A., Genc, Y., ... Gosney, M.A. (2006). Strategies to prevent falls and fractures in hospitals and care homes and effect of cognitive impairment: Systematic review and meta-analyses. *British Medical Journal, 334*(7584), 82.
- Roszell, S., Jones, C.B., & Lynn, M.R. (2009). Call bell requests, call bell response time, and patient satisfaction. *Journal of Nursing Care Quality, 24*(1), 69-75.

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