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**Reshaping Nurses' Attitudes Toward Hourly Rounding to Increase Patient Safety and
Instill Values-based Care: A Quality Improvement Initiative**

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Abstract

Background: Hourly rounding is a form of intentional rounding (IR) to standardize care for patients to prevent adverse outcomes. Visiting patient rooms every hour and documenting any changes in client status is used as a general format for hourly rounding. Research reveals consistent hourly rounding is strongly linked with value for performance of this form of IR. Nurses' Perceptions of Patient Rounding Scale (NPPRS) is a tool for assessing nurses' value for their work. An educational video combined with NPPRS were utilized to create change for patients to continue to receive care that is safe, high quality, and cost-effective.

Local problem: At a federally microsystem, hourly rounding was not consistent. Performing hourly rounding is time consuming and difficult for nurses to perform with patients who have behavioral issues. Allocating adequate time for patient care is variable due to client behaviors and competing demands for daily tasks. Opportunities for improvement arose from a sentinel event related to consistency of hourly rounding.

Methods: The Plan, Do, Study, Act (PDSA) model was the framework utilized for this quality improvement (QI) initiative. One PDSA cycle was performed to test for changes in nursing staff perspectives towards hourly rounding after watching an educational video using audio, visual, and reading tactics for instilling knowledge.

Interventions: Nursing staff were briefed on the expectations for this QI initiative. NPPRS was used as a pre- and post-survey to analyze staff perspective towards hourly rounding. The data from NPPRS were compared to observe a change in nurses' value for performing their rounding duties.

Results: NPPRS scores collected revealed a 35% increase in nursing staff value towards hourly rounding. Open-ended statements provided in dedicated portions of NPPRS offered the microsystem relevant feedback for future PDSA cycles to improve hourly rounding consistency.

Conclusion: There was an increase of nursing staff perspective towards hourly rounding. Further exploration of nursing staff feedback to continue another PDSA cycle may be tested to observe for any improvements with hourly rounding.

Key words: hourly rounding, intentional rounding, purposeful hourly rounding, education, perspective, value, quality improvement

Reshaping Nurses' Attitudes Toward Hourly Rounding to Increase Patient Safety and Instill Values-based Care: A Quality Improvement Initiative

At a New England federally funded medical center, there exists an assisted living facility which served clients in a home-like setting (*VA.Gov | Veterans Affairs*, n.d.). The patients within this microsystem received holistic, skilled nursing and medical care from an interdisciplinary team of diverse staff (*VA.Gov | Veterans Affairs*, n.d.). This microsystem aimed to provide accessible, high quality, and cost-effective care to eligible clients. Within the interdisciplinary team, registered nurses (RNs), licensed practical nurses (LPNs), and nursing assistants (NAs) performed and documented hourly rounding on patients using a system called Caribou. The microsystem required nursing staff to visit each patient's room and document safety checks, environment observations, patient activity, and any interventions provided on Caribou every hour.

Problem Description

At the microsystem, nursing staff performed and documented hourly rounding on Caribou. Primarily, LPNs and NAs documented and performed hourly rounding, but assistance from RNs may be utilized in collaboration to provide care. While rounding, nursing staff aimed to address the 5 Ps: pain, position, possessions, potty, and peaceful environment (E. Albanese, personal communication, March 23, 2023). Additionally, intentional hourly rounding satisfied the 4Ms framework of an age-friendly health system to better patient outcomes by providing quality care that tends to their mentation, medications, mobility, and what matters most (Avallone et al., 2021). Microsystem locations across the United States were focusing their efforts toward providing an age-friendly health system to properly address the health needs of

their aging clients. By combining the 4Ms and 5 Ps, the microsystem created a basis for providing care to patients.

There were several benefits to implementing hourly rounding. Research reveals hourly rounding increased patient satisfaction, decreased call bell use, increased staff efficiency, and lessened the prevalence of falls (Grillo et al., 2019; Johnson & Bryant, 2020; Ryan et al., 2019; Vickrey et al., 2019). Using Caribou allowed nurses to document patient activity as well as review previously provided care. At the microsystem, there was a lack of motivation for completing hourly rounding. However, the unit was encouraging nursing staff to perform hourly rounding to increase patient interactions and boost safety measures.

Hourly rounding was time-consuming and more difficult for nurses to perform with patients who have behavioral issues. With a mix of geriatric psychiatric and chronically ill patients, allocating adequate time between clients was difficult and highly variable. To add on, instilling the importance of documenting on Caribou and staff motivation were recognized barriers to providing age-friendly care. To increase rounding consistency, nursing staff needed to value the task (Adolfo et al., 2021). Moreover, empowering employees and informing them of the benefits of performing hourly rounding may create a culture of proactive care for patients. Further investigation of the barriers to hourly rounding and nurses' perception on documenting findings on Caribou are needed to proceed with improving the workflow of the microsystem. Using surveys and a short educational video, perceptions towards hourly rounding were analyzed.

Available Knowledge

Intentional rounding (IR) was a method utilized to check on patients at specific intervals to reduce adverse events, tend to patient needs, and provide comfort. A common form of IR was

the use of hourly rounding. During hourly rounding, IR was performed every hour in a variety of clinical settings. Hourly rounding was performed and documented by nursing staff to provide updates on patients and reduce negative health outcomes (Vickrey et al., 2019). Using the Plan, Do, Study, Act model, the hospital assessed nurses' ability to perform purposeful hourly rounding on a medical-surgical unit (Grillo et al., 2019). Before performing rounds, nursing staff received employee training requiring employees to round on patients once every hour during the day but once every two hours during the evening on a unit with an average daily census of 108 patients (Grillo et al., 2019). After implementation, fall rates and call bell usage decreased (Grillo et al., 2019). The decrease in call bells on the medical-surgical unit offered insight on how different types of rounding reduce fall rates.

Checking on patients more often developed a better habit for nurses to become more attentive to patient needs. Other microsystems may reflect on these results to create an enhanced quality improvement (QI) design for replication with statistically significant results. The increase in call bell use was a result of patients understanding of adhering to fall protocols in the hospital (Grillo et al., 2019). Other benefits of hourly rounding were not limited solely to reduced fall rates. Increased understanding of patient fall risk was one of many possible aspects hourly rounding may help improve. Another article explained the difficulties of implementing rounding, with at least 80% adherence by nursing staff (Hicks, 2015). In contrast to performing hourly rounding to prevent falls, there were two studies yielding no changes with falls (Hicks, 2015). The current evidence presented contradictory means for implementing hourly rounds to reduce a patient's risk for falls. Given the facts about the outcomes in different clinical settings, the lack of trending results created a weak basis for integrating hourly rounding on other units long-term.

Although the studies aimed to investigate the relationship between hourly rounding and fall rates, decrease in patient call bell use and improved patient and staff satisfaction poses significant consideration for other benefits. More research was required to investigate other benefits of adhering to hourly rounding. Across the collected literature, decrease in fall rates remained statistically insignificant. Due to the conducting of studies within one year, the sustainability of hourly rounding was questionable and the change in fall rates limits validity of implementing a similar intervention. Despite its limitations, nursing staff recognized a clinical change in fall rates, which continues to protect patients from future falls. Lengthening the time span of hourly rounding to over a year may yield statistically significant results for falls and the other benefits it seemed to generate in the clinical setting.

The noticeable decrease in alarms and call bell usage raised questions as to whether they are interrelated with fall rates and patient satisfaction. The lack of statistical significance prevented the establishing of conclusions but offers ideas on next steps for QI. Staff education for adherence to hourly rounding helped with the goal of decreasing call bell usage, but little statistically significant evidence on change in falls were noted. At a cancer center, alarms decreased by 28% and call bell usage declined by 22% (Johnson & Bryant, 2020). Perhaps other methods alongside reminders and education decreased alarms and call bell usage. Other examples of factors to consider were staffing, work culture, and nursing environment. By expanding the scope for considerable factors of hourly rounding benefits, greater generalizability was created.

One participatory action study (PAS) in Canada examined four effects of performing IR. The four observed measures were nurses' practice environment, call bell frequency, fall rates, and patient satisfaction (Maddigan et al., 2019). Generally, IR implementation acted as a positive

force in the workplace, leading to better handoff reports due to more frequent visits into the patients' rooms (Maddigan et al., 2019). Improvement observed with all four measures provided insights on the various benefits of IR. However, addressing mixed reactions for the use of IR in the workplace was pertinent for enhancing its utility for the nursing environment in a more cohesive way.

An integrative literature review tracked the correlation between hourly rounding, patient and nursing staff perceptions, and client satisfaction scores in the United States, Iran, and Australia (Ryan et al., 2019). Data showed there was limited statistical evidence to support the benefits of hourly rounding, but there were noticeable clinical decreases in ulcers and falls (Ryan et al., 2019). IR implementation led to a decrease in falls and ulcers across various clinical settings (Ryan et al., 2019). The data provided vast variations between patient and nursing perceptions. In addition, the mixed feelings surrounding IR required more investigation as to why implementation was not easily accepted by nurses. Investigating more deeply into the discrepancies between feelings of utilizing IR and level of education were implications for more successful application in the clinical setting. Furthermore, the collection of data presented a preference of utilization of IR on units with 8-hour compared to 12-hour shifts, which drew attention to the sustainability of IR over long periods of time. Perhaps sustainability of IR depended on attitudes of staff as well shift duration. Considering these factors provided relevance on where, when, and how to implement IR in a way that benefitted nursing staff and patients congruently. Together, this information offered a wider scope for utilizing hourly rounding in a way that was advantageous for patients and nurses.

Rationale

This data was measured by utilizing pre- and post-surveys and to evaluate changes in behavior, opinions, and following of macrosystem and microsystem mission statement and values. The pre- and post-surveys contained statements related to importance of rounding in the workplace along with open-ended questions. The statements related to hourly rounding gauged staff members' feelings towards performing routine checks on patients. Together, the surveys served to gauge the importance of job performance to observe if there were any variations between staff feelings and facility values.

Comparing the surveys provided concrete evidence of staff feelings towards hourly rounding. Using the Plan, Do, Study, Act (PDSA) model, pre-survey data was utilized to examine value of purposeful hourly rounding (Nelson et al., 2007). Throughout the microsystem conference room, there were walls filled with quality assurance and performance improvement (QAPI) visuals and information. Purposeful hourly rounding (PHR) was strongly correlated with decrease in falls, call bell use, and staff burnout (Johnson & Bryant, 2020; Mooney et al., 2022; Ryan et al., 2019; Vickrey et al., 2019). Presenting data pertaining to hourly rounding in an online video where staff may watch on their own time was a simple way to remind the team of why they were required to round on patients and the importance of their efforts. Promoting the data and utilizing surveys helped incorporate relevant information to instill value of hourly rounding on patients.

Specific Aims

This quality improvement (QI) project aimed to improve hourly rounding of the microsystem at the federally funded medical facility in New England. We aimed to increase value of hourly rounding and documentation by 30% by June 29, 2023. During a root cause

analysis (RCA), an opportunity was noted to strengthen the hourly rounding procedure. The microsystem was investigating ways to prevent a sentinel event from occurring on the unit.

Methods

Context

The microsystem was a 24-hour inpatient unit at a federally funded medical facility in New England. This microsystem was nationally spread across the United States and served as patient nursing homes (*VA.Gov | Veterans Affairs*, n.d.). At this facility, patients were provided with multiple services such as hospice and palliative services, skilled nursing care, and step-downs for those who are experiencing a transition in care related to living situation or requiring rehabilitation after acute hospitalization (*VA.Gov | Veterans Affairs*, n.d.). Generally, the microsystem provided a community-based environment in a healthcare setting with clinical resources in every room. Throughout the unit, the microsystem was equipped with typical hospital-like resources such as call bells, electric beds, intravenous (IV) pumps, and more. At the microsystem, up to 35 patients may be housed. Currently, there were 13 patients, with openings for more admissions due to the lifting of restrictions from the coronavirus disease 2019 (COVID-19) pandemic. Having a microsystem at the federally funded medical facility was convenient for patients who lived there to receive care from departments in other buildings. At this patient-specific nursing home, all aged patients were welcomed to stay at the microsystem.

The number of staff members varied depending on the time of day for a shift. Typically, there were always at least two registered nurses (RNs) and two licensed practical nurses/nursing assistants (LPNs/NAs) working on the floor, with each pair (LPN/NA and RN) working in the east or north wing. During day shift (7:30AM-4:00PM), there were usually three RNs and four LPNs/NAs on the unit. At night shift (11:30PM-8:00AM), the number of RNs and LPNs/NAs

dropped by one due to less staff needed while patients are sleeping. Lastly, evening shift (3:30PM-12:00AM) assigned three to four RNs and three LPNs/NAs on the unit to assist with nightly baths, treatments, and activities. On all weekdays, there were medical support assistants working in the office to support staff with clerical duties. Overall, weekdays at the microsystem were busier, with day and evening shifts requiring more employees to help deliver quality care to clients.

The microsystem hosted many opportunities for improvement. Closer observation of the patterns of performance at the microsystem have led to a deeper understanding of what the facility needed to operate in a more efficient manner. In November 2022, a sentinel fall occurred with a patient at the microsystem (E. Albanese, personal communication, March 22, 2023). During a root cause analysis (RCA) of the event, an opportunity was noted to strengthen the procedure of hourly rounding (E. Albanese, personal communication, March 22, 2023). Since then, the microsystem medical director has issued a new standardized operating procedure for nursing staff to check on patients every hour and document the current state of the patient using the five Ps: positioning, pathway, potty, personal belongings within reach, and pain (E. Albanese, personal communication, March 22, 2023). Overall, 35 registered nurses (RNs) and licensed practical nurses (LPNs) were closely examined participants for the quality improvement project. With permission from microsystem nurse manager, 21 LPNs and 14 RNs were selected to query perceptions surrounding purposeful rounds every hour. The community-based clinical setting provided insight for the nurse manager, assistant nurse manager, geriatricians, and Minimal Data Set (MDS) nurse on how to encourage positive perceptions of hourly rounding which may lead to changed behavior.

Cost Benefit Analysis

By educating nursing staff and implementing the intervention to encourage positive perceptions which may change attitudes towards hourly rounding, costs towards future falls were prevented and fall rates reduced. The cost of a fall with injury was about \$14,000 for 6.3 days in the hospital (Joint Commission, 2015). The cost of one single-sided page of black and white page at FedEx printing was \$0.19 (*Copies & Custom Documents*, n.d.). Nurse's Perceptions of Patient Rounding survey (NPPRS) was four pages long and took 10 minutes to complete (Neville et al., 2012). In total, each survey cost \$0.76 with a total of less than \$53.20 market price to print 33 copies for their nursing staff using the microsystem's printers. Dedicated amount of time to complete the pre- and post-survey of NPPRS is a total of 20 minutes with an extra 10 minutes added for watching a recording of an educational video to build value towards hourly rounding. In total, 30 minutes nursing staff's paid time during their shift was used to analyze perceptions surrounding purposeful hourly rounding. Compared to the cost of a fall, the microsystem will invest a small fraction of the price to print pre- and post-surveys of the NPPRS for nursing staff to complete.

Interventions

After staff were briefed on the upcoming implementation of the quality improvement project, staff were given Nurse's Perceptions of Patient Rounding survey (NPPRS) before receiving a video learning intervention. Filling out the paper copy of NPPRS was the same process staff follow when verifying the nursing team reviewed new standard operating procedures (SOPs) for the microsystem. At the nurses' station, a folder contained copies of NPPRS. Within the folder, the top of the stack of NPPRS copies had a paper containing two columns. One column was titled "Name" and presented a printed list of the staff members'

names in separate tables. The second column was titled “Signature” with blank tables for nurses to complete their handwritten signatures. Once staff members finished completing the form, they may write their signature next to their name in the second column. The nursing staff had eight days to finish completing the NPPRS to note initial thoughts towards performing hourly rounding. After collecting NPPRS forms, scores were calculated following the instructions contained in the NPPRS form (see Appendix A). After completing the form, staff scores ranged from 40-200. Higher scores reflected positive attitudes towards hourly rounding. The original scores from the NPPRS were documented to compare to post-educational video intervention scores.

Completing the NPPRS document was the first step to gauge initial perceptions towards performing hourly rounding. Next, nursing staff watched a 10-minute video of facts gathered from the literature review containing pertinent information related to the importance for purposeful hourly rounding. The video uniform resource locator (url) link and Quick Response (QR) code were provided in a folder at the nurses’ station. In the video, multiple learning modalities such as audio, visual, and reading were utilized to follow the visually, aurally, read/write, kinesthetic (VARK) model (Fleming & Mills, n.d.). Using this model, multiple learning styles were presented to cater to the various learning styles of viewers. The video followed a *Khan Academy* style format with words and audio presenting the following reasons for performing hourly rounding: decreased falls and call bell use, patient and staff satisfaction, tending to patient needs, and increased safety (*Khan Academy* | Free Online Courses, Lessons & Practice, n.d.). Watching a tutorial style video helped the nursing team gain insight on why hourly rounding is valuable. Following a similar format to signing SOPs, a signature sheet was presented in a folder at the nurses’ station for the team to sign confirming viewing of the

educational video. Nurses had eight days to provide a signature next to their name in the second column.

Nurses' perceptions surrounding hourly rounding after watching the educational intervention was collected using NPPRS 14 days after the deadline for signing their review of the video. Nursing staff had eight days to complete the NPPRS form. The same procedure for filling out the NPPRS form before the educational video was performed. Within the folder, the top of the stack of NPPRS copies had a paper containing two columns. Staff signed the second column containing blank slots to write out their signatures next to their printed names. Scores were calculated following the instructions contained in the NPPRS form and compared to the initial scores. The post-educational video scores were compared with pre-educational video scores to observe any improvement in overall scores. The overall goal was to observe improved overall NPPRS scores of nursing staff at the microsystem.

Study of the Interventions

Scores from before presenting the educational video were compared with scores obtained after watching it. Pre- and post-survey methods were used to observe any changes with staff perceptions towards performing hourly rounds. Higher NPPRS scores represented more positive attitudes pertaining to intentional rounding while lower scores portrayed negative perceptions (Neville et al., 2012). Improved overall NPPRS scores reflected the success of the educational video method. After watching the video, staff had 14 days to perform hourly rounding with a time frame to reflect and change their actions and/or attitudes towards purposeful rounds with patients. The overall scores were analyzed to observe if there was a 30% increase in value of scores after the post-survey.

Measures

Survey

The Nurse's Perceptions of Patient Rounding survey (NPPRS) was used to study the outcomes of the project. NPPRS contained a total of 44 items 1-43 contain questions with Likert scale answers and items 26 and 29 were excluded from scoring, totaling a number of 40 items included for scoring (Neville et al., 2012). Nurses chose from strongly disagree (SD), disagree (D), uncertain (U), agree (A), or strongly agree (SA) all numbered from 1-5 (Neville et al., 2012). The beginning of the survey and items 43-44 contained open-ended questions for staff to have an opportunity to define, recommend, and explain influences surrounding patient rounding in their own writing (Neville et al., 2012). Through the simple Likert scale rating and opportunity to write their own opinions, staff perceptions regarding hourly rounding were clearly understood.

Operational Definitions

At the microsystem, purposeful rounds were used to describe performing rounding on clients every hour along with documentation on Caribou (E. Albanese, personal communication, March 22, 2023). Other definitions utilized in the literature review to support the quality improvement project were intentional rounding (IR), purposeful hourly rounding (PHR), rounding, and patient rounding (Grillo et al., 2019; Hicks, 2015; Johnson & Bryant, 2020; Maddigan et al., 2019; Mooney et al., 2022; Ryan et al., 2019). In other research articles, rounding referred to checking on patients every hour during the day and every two hours during the evening (Grillo et al., 2019). The previously listed operational definitions were used throughout the entirety of the quality improvement project literature. NPPRS was used to analyze perceptions related to the thoughts and perspectives towards hourly rounding.

Psychometric Testing

NPPRS was developed at Somerset Medical Center in Somerville, New Jersey (Neville, 2010). The initial use of NPPRS demonstrated strong psychometric properties using Cronbach's alpha coefficient. Since then, NPPRS was currently a copyright tool available for use by permission and signing of a consent form. Permission was gained to use NPPRS for this QI project. Validity of scores were recorded using *Microsoft Excel*. The success of the project was dependent on the presence of staff who were available to complete the initial NPPRS form, educational video signature sheet, and post-educational video NPPRS. Together, all three signature lists confirmed the stages of progression of employee completion of the intervention to compare scores to its entirety.

Analysis

Quantitative Data

Continuous data was collected from the pre- and post-education video NPPRS forms. The continuous data scores ranged from 40-200 (Neville, 2010). From the varied scores, the mean, standard deviation, and range were collected and subject to descriptive statistical analysis using *Microsoft Excel*. Within the NPPRS, items 1-42 contained statements with perceptions to be selected on 5-point Likert scale. Cronbach's Alpha coefficient was calculated in *Microsoft Excel* to analyze internal consistency with items 1-42.

Qualitative Data

The provided space to openly write answers at the top and in items 43-44 of the NPPRS were collected as qualitative data. Positive and negative feedback regarding the definition, explanation, and influences surrounding hourly rounding were reviewed to provide the microsystem with insight on how to improve their standard operating procedure for checking on

patients and limiting unwanted patient outcomes in the future. All comments on items from the top page and items 43-44 of NPPRS were analyzed for themes and patterns.

Ethical Considerations

Before beginning this quality improvement project, nursing staff were briefed on the reasons for conducting this QI project and target information gathered. Providing the NPPRS and educational video to nursing staff at the microsystem presented no perceived harm to patients or workers since nursing staff viewed this video during breaks or during their own recreational time. The cost of performing this quality improvement project was not expected to be withdrawn from the microsystem or its individual nursing staff members. All responses were anonymously collected with signatures of employees used only for confirming number of staff members who completed the steps of the project for completion and analysis of future data. There was no declared conflict of interest or bias in this project. This capstone project was reviewed by the University of New Hampshire Department of Nursing Quality Review Committee to determine Institutional Review Board (IRB) status.

Results

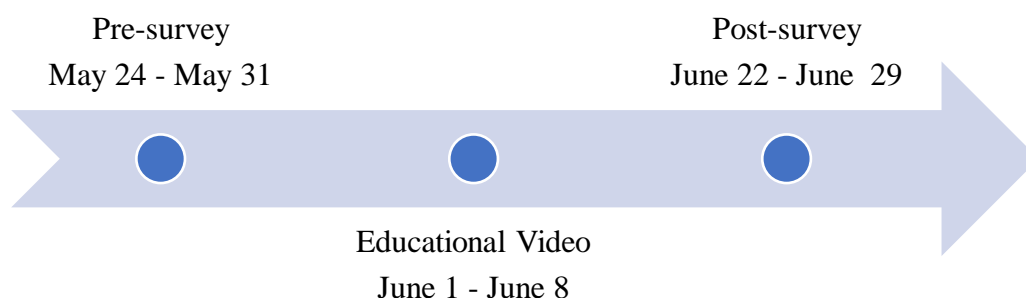
Initial Steps

Pre-implementation steps began by virtually attending Unit Practice Council (UPC) meetings to learn about gaps in care that may align with the goals of the microsystem. Additionally, participating in staff meetings offered insight on the current state of the microsystem and any updates to care methods. After learning more about the unit's wish to decrease fall rates by 30%, initial meetings began between the Minimal Data Set (MDS) nurse and project lead to understand the hourly rounding training and procedures at the microsystem. Subsequently, meetings between the nurse manager and project lead were organized to discuss

the project goal, NPPRS tool, and dates for the phases of the quality improvement initiative. Each period lasted 8 days in total. The time between the educational video intervention and post-survey lasted a total of 14 days to allow nursing staff to reflect on the material from the video and apply the knowledge to their hourly rounding methods.

Figure 1

Project Timeline



Process Measures

Implementation of the “Do” aspect of the PDSA cycle contained three phases: pre-survey, educational video, and post-survey period. At the start of each phase, a mass email was sent to nursing staff containing brief instructions of the purpose of the phase, the dates of the eight-day period, and where to find the forms to fill out. Additionally, a reminder email was sent for staff to complete the survey or watch the video then write their signature. After sending the initial mass email, staff rounding was also performed on the unit to encourage nurses to participate for microsystem and project lead use.

The pre-surveys were left at the nurses’ station for nursing staff to complete on their own time. The printed copies of the NPPRS were available for nursing staff in a folder at the nurses’

station to complete over the span of eight days. Of the 18 returned pre-surveys, 10 pre-surveys were not completed fully. A total of eight out of the 10 incomplete pre-surveys were due to absence of response in the beginning and/or end of the pre-survey where there is space for nursing staff to freely write. There were portions of NPPRS containing open-ended questions for staff to define, recommend changes, and share issues faced while trying to complete rounding duties. Two out of the 10 incomplete pre-surveys were due to skipping of ranking items on the Likert scale. The two pre-surveys missing the ranking of items were excluded from analyzing statistical data trends. Without all items rated on the Likert scale, the scoring of nursing staff perspectives on hourly rounding was skewed. Sixteen pre-surveys were used for scoring and statistical analysis. The scores from the 16 completed pre-survey period ranged from 111-159. The Cronbach's alpha coefficient was 0.790074123. This coefficient close to 1 represented high internal reliability for the Likert scale items.

Table 1

Pre-Survey Data

Mean	142.125
Standard Deviation	11.78629147
Minimum	111
Maximum	159
Range	48

The educational video intervention period began the day after the pre-survey period ended. This educational video period also spanned the course of 8 days. Nursing staff were provided with a hyperlink and Quick Response (QR) code to access the 10-minute educational video on YouTube via employee email and with printed copies at the nurses' station. The email

contained brief information for viewing, instructions on how to confirm watching of video, and timeline of the video period. Twenty-two nursing staff wrote their signature next to their name of the staff list to verify they watched the 10-minute educational video. The response rate of nursing staff was consistent with the number of views stated on the YouTube link under the video.

Artifact views were accounted for during the education video period.

Table 2

Post-survey Data

Mean	151.2
Standard Deviation	16.03211064
Minimum	125
Maximum	195
Range	70

Two weeks after the video intervention period, the post-survey period began. During this period, the nursing staff completed the NPPRS to analyze changes with perception towards hourly rounding. In total, 15 nurses completed the post-survey. Like the pre-survey period, there were incomplete post-surveys due to missing ranking of Likert scale items and absence of response in the open-ended portions of NPPRS. A total of 12 post-surveys were marked incomplete. Of the 12 post-surveys, 11 were incomplete due to absence of response from staff members to freely write their thoughts. One of the 12 incomplete post-surveys was excluded from scoring due to one item missing for ranking on a Likert scale. In total, 14 post-surveys were still included to analyze statistical trends. Scores from post-survey period ranged from 125-195, which revealed a higher rating of nurses' perceptions on hourly rounding at the microsystem. The

Cronbach's alpha coefficient was 0.889251324. This coefficient was close to 1, which represented high reliability for the Likert scale.

Contextual Elements

The highest response rate was during the video intervention period. This was possibly due to its technological aspect. During this phase, staff were only required to watch the video then sign their name, which was less tedious to complete than NPPRS. The ease of scanning the QR code or clicking the hyperlink directing staff to the video was more feasible for nurses to perform during work hours. The ability of the video to be paused, sped up, slowed down, or watched with closed caption provided nurses with ease in accessibility and accommodated various video watching preferences.

Shift times were also a considerable factor for affecting rates for staff to write their signatures after completing any of the phases for implementation. For instance, the surveys and staff signature list were left at the nurses' station in a folder. Throughout the day, papers and other documents accumulated at the nurses' station, which was where NPPRS surveys and educational video materials could be found. The accumulation of documents possibly obstructed the view for nurses to remember to complete each implementation task. Although mass email reminders were sent to staff, the inability to see the materials provided for each phase in person is a considerable factor for response rates. Staff rounding on the unit was performed by the project lead to ask nurses to complete the surveys and video intervention when available.

Associations

The response rates of the pre- and post-survey period were relatively similar. The response rate of the pre-survey period was 54.5% while the post-survey phase was 45.5%. The video intervention period contained the highest response rate of 66.7%. The time to complete

NPPRS is 10 minutes (Neville et al., 2012). To match the time to complete the pre- and post-surveys, the length of the video intervention also spanned 10 minutes.

Unintended Consequences

Unintended consequences included incomplete surveys due to method of instruction. As previously mentioned, there were incomplete pre- and post-surveys for ranked items and open-ended statements. Having this information would have provided more insight on staff knowledge, preferences, and considerations for improving hourly rounding at the microsystem.

Other unintended consequences were consideration of survey burnout. Alternative tools were considered for analyzing nursing perspectives towards hourly rounding, but other surveys were not as specific and applicable as NPPRS. For this reason, NPPRS was considered as the best method to understand microsystem nursing staff perspectives. Survey burnout was a potential reason for staff not choosing to participate in the pre- and post-survey period along with incomplete surveys. The process for completing NPPRS may be time consuming for many staff members to complete during work hours. Balancing daily nursing duties and participating in this QI initiative presented competing means for prioritization throughout implementation.

Missing Data

Missing data was apparent during all periods of implementation. As previously mentioned, there was missing ranked items and open-ended statements in the pre- and post-survey period. Additionally, there was missing data from the staff signature list. Not all staff members wrote their signature next to their name after completing NPPRS forms. It was unclear if this occurred during the video intervention period as well.

Discussion

Summary

The specific aim of increasing value of hourly rounding and documentation by 30% was achieved. Between the high scores of the pre- and post-surveys, there was an increase by 35%. The scores from the pre-survey increased from 62.5% to 97.5% in the post-survey. The higher range of maximum scores from NPPRS explicated an increased value towards hourly rounding amongst nursing staff. NPPRS scores closer to 200 demonstrated more positive perspectives towards patient rounding. The highest score in the post-survey period was 195, which was 5 points away from a perfect score. By obtaining higher NPPRS scores in the post-survey period, the value related to the importance of hourly rounding was successfully increased through the presentation of information in a stimulating way.

The open-ended portions of NPPRS provided insight on staff thoughts towards hourly rounding. The recommendations for change between the pre- and post-survey varied from communication, teamwork, staffing, knowledge of patient routines, education on the importance of rounding, streamlining *Caribou* documentation process, patient education on hourly rounding, and surveying patient thoughts on hourly rounding. There were various factors influencing hourly rounding varied in the pre- and post-surveys. Factors written by staff include patient behaviors, 1:1 observation, staffing issues, patient sleeping hours, fall and elopement risk, illness, dementia, and patient preferences. The provided answers from staff are useful for nurse management in future changes to their hourly rounding process and teaching.

The open-ended portions of NPPRS helped nurse management understand staff perceptions towards hourly rounding duties. A provided space for staff to openly define, express concerns, and offer recommendations for performing hourly rounding the microsystem may

utilize this information to create a method that was more cohesive for the workplace.

Furthermore, the information open-ended portions of NPPRS allowed nurse management and project lead to assess the current knowledge of staff. The established baseline of knowledge during the pre-survey period determined the starting point of proficiency with hourly rounding. The post-survey period further affirmed staff knowledge of hourly rounding duties. Together, the pre- and post-survey open-ended portions contributed to the understanding of barriers to performance and gaps in knowledge for nursing staff in the microsystem.

Interpretation

The educational video period offered information for nursing staff to reflect on when performing hourly rounding. In the post-surveys, staff responses in the open-ended portions of NPPRS were facts from the educational video. It was clear staff remembered the teachings from the video 14 days after the educational period ended. The purpose of distributing the post-surveys 14 days after the educational video period was to allow staff members to reflect on the teachings and find value in their performance of hourly rounding duties. By reiterating the teachings from the video into the open-ended responses, the project lead and nursing management team saw a noticeable difference on staff values towards hourly rounding in addition to the higher NPPRS scores. This qualitative data assists with assessing nurses' attitudes towards hourly rounding. The data coincides with available knowledge found in a literature review related to a decrease in falls and increasing patient safety with hourly rounding (Grillo et al., 2019; Hicks et al., 2015). By receiving additional knowledge about the benefits of hourly rounding the education video period, nursing staff may be more proactive with patient care and prevent falls or other adverse events in the future. Future PDSA cycles may be performed by the microsystem to enhance the performance of hourly rounding to benefit nurses and patients.

The NPPRS scores from the pre- and post-surveys reflect the impact the educational video had on nursing staff in the microsystem. The higher maximum scores reflect a most positive perspective on hourly rounding. The focus on staff education was key to boosting NPPRS scores during the posts-survey period. In addition, the reiterated facts in the open-ended portions of the post-surveys determine staff members' ability to recall information learned from a different mode of learning. By utilizing the VARK model, nurses were able to learn about the benefits of hourly rounding using multiple learning modalities such as visual, aural, and reading (Fleming & Mills, n.d.). Higher post-survey scores by over 30% in the post-survey period indicates a reshaping of nurses' perspectives towards hourly rounding, which further establishes a stronger value for patient care. The more positive perspective and value towards hourly rounding duties increase patient safety. Learning about the benefits of hourly rounding for patient safety and nurse benefits may prevent the microsystem from experiencing a sentinel event in the future.

After completing all three phases of implementation, there was a perceived difference in outcomes in the pre- and post-survey periods. In both periods, there was missing qualitative data in the open-ended portions of NPPRS. More information related to discrepancies with staff value towards hourly rounding were expected to be found in the open-ended portions of NPPRS. However, the results of the nursing staff participation with the video intervention period offered insight on the interest of participating in a different learning modality. Instead of reading through training modules in a self-study setting at work, nursing staff were able to watch a video in a short, lecture-like format. The ease of watching the video with graphics and words on the screen along with audio recordings provided a more stimulating way for presenting information to nursing staff.

There were little perceived opportunity costs by performing this QI initiative. By utilizing pre-/post-surveys and an educational video that is 10 minutes in duration, staff were not diverted from their nursing responsibilities. The short 10-minute video and NPPRS forms were realistic to complete during employee down time or during breaks. Although the 10 minutes may also be utilized towards proactive patient care, the supportive amount of nursing staff during the work shifts are manageable in a team environment. Dedicating 10 minutes of work time towards learning about the benefits of hourly rounding was pertinent to increase staff value and therefore improving patient outcomes. To add on, completing NPPRS forms in 10 minutes also provided the microsystem with innovative ways to improve their hourly rounding procedures and teaching in an anonymous way. This direct feedback from staff provided honest statements regarding current knowledge, concerns, and suggestions pertaining to hourly rounding.

Limitations

This QI initiative had limited generalizability with other microsystems. More specifically, this microsystem was federally funded with resources that greatly vary from other units. Through its affiliation, this microsystem provided vulnerable populations with exclusive resources. Overall, the context of the microsystem's setting and patient census were not vast enough to apply this QI initiative to other clinical settings. Other clinical sites choosing to follow this QI initiative may yield varied results due to staffing, patient census, and acuity of clients.

The timing of the beginning of the implementation period also contributed to limitations in this QI initiative. For instance, the pre-survey period began two days before the start of Memorial weekend and continued until two days after Memorial Day. In addition, the both the pre- and post-survey periods intertwined with the personal vacations of nursing staff. During the summer, there was a high occurrence of staff vacations in the microsystem. A combination of

callouts, staff vacations, holidays, and short implementation period affected all three phases of the implementation process. Due to the short timeline of the QI initiative implementation, the brief period to perform this project affected response rates and potential variations in results. Without full staffing and a longer period to complete each phase, nurses were unable to have an equal opportunity to complete the NPPRS surveys or watch the educational video.

Another limitation of the study was staff understanding of how to complete NPPRS forms. In the pre- and post-survey periods there were nurses who did not fully complete NPPRS. During the pre- and post-survey periods staff were asked to complete NPPRS. However, there were surveys with missing Likert scaled rankings for one or more items and missing statements in the open-ended portions of the NPPRS forms. It was unclear if nursing staff accidentally skipped these sections or did not understand they were asked to complete the surveys fully. The wording of directions could have been changed by asking staff to “fully complete” pre- and post-surveys as opposed to asking them to “complete” the surveys. Without the open-ended statements and ranked items, further exploration of staff perceptions and scoring surrounding hourly rounding were not thoroughly analyzed in the results.

Although limitations were experienced during the implementation process, efforts were made to minimize discrepancies with staff understanding of completing each phase. Staff rounding was performed by the project lead to remind nurses of the duration of the phase, information required, and where to find NPPRS and the educational video. Nursing staff were also encouraged to ask their coworkers if they completed NPPRS or watching the video. Project lead participation in staff meetings during various shifts was also performed to discuss the QI initiative with staff. In addition to in-person reminders, email reminders were sent to nurses in

the microsystem. The efforts made to minimize limitations were performed by the project lead to provide staff with the opportunity to ask questions in an open or private manner.

Conclusions

Understanding staff nurses' perspectives on hourly rounding was useful for establishing value in their work. By analyzing NPPRS results from nurses, units like this federally funded microsystem may use this information to change staff education, hourly rounding procedures, or streamline *Caribou*. NPPRS provided qualitative and quantitative data to generate more ideas for change. Exploring other modalities for learning may strengthen microsystem resources for training. Collaboration with nurse education, clinical nurse leaders, or other health professionals in the future had the potential to enhance group dynamics in the workplace. Higher value and more positive perspectives towards performing hourly rounding increased consistency for better patient outcomes. The results from this QI initiative provided means for nurse management to reinvent their approach to performing hourly rounding.

Next steps for this federally funded microsystem were to choose which aspects of hourly rounding they wish to change. Starting with education to create a more positive perspective towards hourly rounding was a proactive step to instill values-based care in current and onboarding nurses at the microsystem. In addition, exploring the suggestions from the pre- and post-survey periods provided relevant feedback for changes nursing staff wish to see in their workplace. NPPRS could potentially be used again on this unit in the future to assess for changes in perspective towards performing hourly rounding. Overall, NPPRS surveys and the educational video were impactful resources for improving hourly rounding for nurses. Combining feedback from nurses and a teaching tool were one of the many ways the microsystem may reshape their hourly rounding approach. The nursing staff feedback was pertinent to determine the next steps

for testing new changes to develop an efficient, safe, and effective hourly rounding process.

Utilizing feedback in conjunction with any of the suggestions from staff as a focus for methods

for creating change was key to developing new and relevant PDSA cycles.

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Appendix A

Nurses' Perceptions of Patient Rounding Scale (NPPRS) used for pre- and post-survey periods

Nurse's Perceptions of Patient Rounding (Copyright, Neville, 2010)

In your own words, how would you define hourly rounding at your institution?

Please circle the appropriate response for each item listed below.

Strongly Disagree (SD)	Disagree (D)	Uncertain (U)	Agree (A)	Strongly Agree (SA)	
1	2	3	4	5	
1. I routinely round at least every 2 hours.	1	2	3	4	5
2. Rounding is a constructive use of nurses' time.	1	2	3	4	5
3. Call bell use has not decreased through the use of rounding.	1	2	3	4	5
4. Rounding promotes more effective communication between nurses and patient care technicians.	1	2	3	4	5
5. A more cohesive, collaborative nursing team effort is fostered through nursing rounds.	1	2	3	4	5
6. The benefit of rounding is that it creates a quieter, less chaotic nursing unit.	1	2	3	4	5
7. Rounding does not facilitate improved communication.	1	2	3	4	5
8. Rounding significantly increases my workload.	1	2	3	4	5
9. Based on my assessment, I often round more frequently than q2 hours.	1	2	3	4	5
10. Rounding is an approach that facilitates improved nursing care.	1	2	3	4	5
11. Two hour rounding reduces my stress levels.	1	2	3	4	5

The NPPRS was developed at Somerset Medical Center, Somerville, New Jersey

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

Strongly Disagree (SD)	1	2	3	4	5	Strongly Agree (SA)
12. By rounding on my patients every two hours, I can more easily recognize changes in the health status of my patients.	1	2	3	4	5	
13. If I get delayed with one of my patients, my rounding routine of every 2 hours is not realistic.	1	2	3	4	5	
14. Through rounding, patients experience less anxiety about their care.	1	2	3	4	5	
15. Rounding affords me the opportunity to get to know my patients better.	1	2	3	4	5	
16. I would experience greater satisfaction in my work if I could round (care) for the same patients each shift that I work.	1	2	3	4	5	
17. Rounding affords patients and families the opportunity to communicate more effectively with the nursing team.	1	2	3	4	5	
18. There is no increase in patient satisfaction from rounding every two hours.	1	2	3	4	5	
19. Effective rounding allows me to have more quiet time to manage my nursing care.	1	2	3	4	5	
20. Once I receive my shift report, I need time to plan my day.	1	2	3	4	5	
21. My patients are more comfortable and can rest assured knowing that I will return at designated times during my shift to address their needs.	1	2	3	4	5	
22. Rounding reduces patient and family uncertainty about their illness.	1	2	3	4	5	
23. My patients take too much of my time to allow effective rounding on all patients to occur every 2 hours.	1	2	3	4	5	

The NPPRS was developed at Somerset Medical Center, Somerville, N.J.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

Strongly Disagree (SD)	Disagree (D)	Uncertain (U)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5
				1 2 3 4 5
24. Patients benefit from my visible presence every two hours.				1 2 3 4 5
25. Having to inform patients and families about their care during rounds takes too much time.				1 2 3 4 5
26. I have concerns about patient confidentiality during rounding.				1 2 3 4 5
27. Rounding has enabled me the opportunity for more comprehensive, safer patient care, and to more quickly identify and meet the nursing needs of my patients.				1 2 3 4 5
28. Eye contact with my patients makes me uncomfortable.				1 2 3 4 5
29. My cultural background creates a difference in how I am perceived by patients/families.				1 2 3 4 5
30. If patients were assigned nurses they are familiar with, patients would be more satisfied with their care.				1 2 3 4 5
31. Frequent nurse-patient communication at the bedside is an unnecessary task.				1 2 3 4 5
32. During rounding, I tailor my terminology to facilitate effective communication with patients/families.				1 2 3 4 5
33. I consistently round on my patients within 2 hours of beginning my shift.				1 2 3 4 5
34. Rounding will assist me in planning my day.				1 2 3 4 5
35. I frequently engage in open ended questions when I interact with my patients.				1 2 3 4 5
36. If I am uncomfortable with a topic, I avoid face to face contact with my patients.				1 2 3 4 5

The NPPRS was developed at Somerset Medical Center, Somerville, N.J.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

Strongly Disagree (SD)	Disagree (D)	Uncertain (U)	Agree (A)	Strongly Agree (SA)
1	2	3	4	5

- | | | | | | |
|-------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|
| 37. I use appropriate body language to communicate that I am receptive and open to effective communication. | 1 | 2 | 3 | 4 | 5 |
| 38. Rounding is a practice that facilitates improved verbal and nonverbal communication between patients and nurses. | 1 | 2 | 3 | 4 | 5 |
| 39. Patients are more secure knowing that I will be back in two hours to communicate with them and address their needs. | 1 | 2 | 3 | 4 | 5 |
| 40. I am confident that I have the appropriate knowledge base to effectively communicate with my patients. | 1 | 2 | 3 | 4 | 5 |
| 41. Rounding provides the opportunity for me to address my patients' informational needs and preferences. | 1 | 2 | 3 | 4 | 5 |
| 42. I am comfortable saying I don't know, but will find the answers when patients ask me questions. | 1 | 2 | 3 | 4 | 5 |
| 43. What suggestions/recommendations would you make regarding rounding at your institution? | | | | | |
| 44. What patient issues on your unit might influence your practice of rounding? | | | | | |

The NPPRS was developed at Somerset Medical Center, Somerville, N.J.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

SUBSCALE 1 – COMMUNICATION

4. Rounding promotes more effective communications between nurses and patient care technicians.
7. Rounding does not facilitate improved communication.
17. Rounding affords patients and families the opportunity to communicate more effectively with the nursing team.
25. Having to inform patients and families about their care during rounding takes too much time.
28. Eye contact with my patients makes me uncomfortable.
31. Frequent nurse-patient communication at the bedside is an unnecessary task.
32. During rounding, I tailor my terminology to facilitate effective communication with patient and families.
35. I frequently engage in open ended questions when I interact with my patients.
36. If I am uncomfortable with a topic, I avoid face to face contact with my patients.
37. I use appropriate body language to communicate that I am receptive and open to effective communication.
38. Rounding is a practice that facilitates improved verbal and nonverbal communication between patients and nurses.
39. Patients are more secure knowing that I will be back in two hours to communicate with them and address their needs.
40. I am confident that I have the appropriate knowledge base to effectively communicate with my patients.
41. Rounding provides the opportunity for me to address my patients' informational needs and preferences.
42. I am comfortable saying I don't know, but will find the answers when patients ask me questions.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

SUBSCALE 2 – NURSE BENEFITS

- Item 2: Rounding is a constructive use of nurses' time.
- Item 3: Call bell use has not decreased through the use of rounding. (Recode)
- Item 5: A more cohesive collaborative nursing team effort is fostered through nursing rounds.
- Item 6: The benefit of rounding is that it creates a quieter, less chaotic nursing unit.
- Item 8: Rounding significantly increases my workload. (Recode)
- Item 11: Two hour rounding reduces my stress levels.
- Item 12: By rounding on my patients every two hours, I can more easily recognize changes in the health status of my patients.
- Item 15: Rounding affords me the opportunity to get to know my patients better.
- Item 19: Effective rounding allows me to have more quiet time to manage my nursing care.
- Item 34: Rounding will assist me in planning my day.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
(Copyright, Neville, 2010)

SUBSCALE 3 – PATIENT BENEFITS

- Item 10: Rounding is an approach that facilitates improved nursing care.
- Item 14: Through rounding, patients experience less anxiety about their care.
- Item 18: There is no increase in patient satisfaction from rounding every two hours. (Recode)
- Item 21: My patients are more comfortable and can rest assured knowing that I will return at designated times during my shift to address their needs.
- Item 22: Rounding reduces patients and family uncertainty about their illness.
- Item 24: Patients benefit from my visible presence every two hours.
- Item 27: Rounding has enabled me the opportunity for more comprehensive, safer, patient care, and to more quickly identify and met the nursing needs of my patient.

NURSES' PERCEPTION OF PATIENT ROUNDING SCALE
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Negatively worded items on the NPPRS are as follows:

- Item 3: Call bell use has not decreased through the use of rounding.
- Item 7: Rounding does not facilitate improved communication.
- Item 8: Rounding significantly increased my workload.
- Item 13: If I get delayed with one of my patients, my rounding routine of every two hours is not realistic.
- Item 18: There is no increase in patient satisfaction from rounding every two hours.
- Item 23: My patients take too much of my time to allow effective rounding on all patients to occur every two hours
- Item 25: Having to inform patients and families during rounding takes too much time.
- Item 28: Eye contact with my patients makes me uncomfortable.
- Item 31: Frequent nurse patient communication at the bedside is an unnecessary task.
- Item 36: If I am uncomfortable with a topic, I avoid face to face contact with my patients.

Items to exclude from total score

Items not added to comprise total score (total score to be based on 40 items)

Item 26: I have concerns about patient confidentiality during rounding

Item 29: My cultural background creates a difference in how I am perceived by patient/s families

Scoring

Range of total scores: 40 - 200