Transforming care through bedside leader rounding: Use of handheld technology leads to improvement in perceived patient satisfaction

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Abstract

When consistently executed, leader rounding has the ability to capture actionable information ensuring delivery of safe and effective patient care, identifying excellence among staff, and bringing opportunities for improvement. Our team set out to create an effective, standardized approach to targeted, daily, technology-driven leader rounding with the goal of integrating real-time patient feedback into the care experience. An application on handheld computer tablets was tailored and integrated with the hospital's admission, discharge, and transfer (ADT) feed, allowing for streamlining of the rounding process by creation of workflow templates. Additionally, capabilities to receive and send alerts across disciplines were integrated in order to respond to patient concerns in real-time. Patients who perceived they were rounded on had 3.53 greater odds of reporting top box scores for Overall Rating of Care compared to patients who perceived they were not rounded on (p<0.001). Patients with documentation that rounding occurred, who also self-reported that rounding occurred, were at 3.43 greater odds of providing a top-box score than patients with documentation that rounding occurred but who did not perceive they were rounded on (p<0.001). Efforts to round and to ensure patients know they are being rounded on may lead to improved patient experience.

Keywords

Patient experience, patient satisfaction, data-driven rounds

Background

Intentional rounding has been widely associated with improved clinical outcomes, patient experience, staff satisfaction, and quality of care.[1] Rounding specifically by nurse managers has been seen to improve responsiveness to patient needs and feelings of safety as reported by patient satisfaction surveys.[2-3] Additionally, rounding by nurse leadership has the ability to improve staff satisfaction through recognition of exemplary behavior shared by patients.[2] When consistently executed, leader rounding has the ability to capture actionable information ensuring delivery of safe and effective patient care, identifying excellence among staff, and bringing opportunities for improvement.[4] In synergy with quality and safety improvements, leader rounding has been identified as an effective tool to enhance the patient experience, providing a platform for identifying and addressing patient priorities in a variety of patient care settings.[4,5] Specifically, rounding captures real-time patient feedback allowing for improvement and service recovery.[5,6] The success of this approach has been touted to improve patient satisfaction scores by as much as 50

percentile points.[6] Patients recalling a leader visiting during their inpatient stay report higher levels of overall satisfaction compared to patients who do not recall a visit from leadership.[6] Despite the potential for success, many rounding approaches fail to fully incorporate the voice of the patient into this process, missing a rich opportunity to integrate patient priorities into the care experience.

Our academic medical center relied on an antiquated process that lacked a standardized approach and used paper-based forms. This process was both cumbersome and prohibitive of trending of data over time. Our team set out to create an automated and streamlined process allowing for identification of trends in patient satisfaction, to proactively address patient complaints and concerns, to recognize great work among staff, and to hold staff accountable for the patient experience. We hypothesized that this enhanced leader rounding approach would ultimately improve the patient care experience as measured by patient satisfaction scores.

Methods

Setting

This initiative was conducted at a major teaching hospital located in Chicago, Illinois. With an inpatient capacity of 600 beds, the health system sees more than 20,000 hospitalizations per year and almost 500,000 outpatient visits annually. The medical center provides a full spectrum of care from primary care through tertiary and quaternary care. This initiative was deemed quality improvement and not human subjects research and was therefore not reviewed by the Institutional Review Board.

The Tool

A team of frontline staff, nursing leadership, and representatives from patient experience and clinical effectiveness analytics set out to create a standardized, efficient approach to collecting actionable data during care rounds. After a critical assessment of platforms for capturing and tracking data from the rounding experience, an application on a handheld computer tablet was chosen for implementation throughout seventeen adult inpatient units. Prior to implementation of this tool, focus groups of frontline leaders were held to capture anticipated benefits and barriers associated with implementing a technology-based daily rounding process into current workflows. Insights were used for customizing and developing the rounding tool. Using this feedback, the hospital's admission, discharge, and transfer (ADT) feed was incorporated into the application, allowing for streamlining of the rounding process by creation of workflow templates. During rounding, data was entered into this tool, triggering integrated cross-disciplinary alerts that allowed for real-time response to identified patient needs. In addition to structured templates, patient comments were documented during rounding at the discretion of the nurse leader.

The Content

Once the technology infrastructure was established, unit leadership and staff were actively engaged in formalizing

the new rounding process using targeted feedback. Quality was prioritized over quantity- each unit was tasked with identifying opportunities for meaningful engagement of patients during their care, using the rounding process as a platform for engagement. This lead to the development of twelve standard questions, each designed to address key areas impacting the service experience of patients and families across the inpatient setting. The ability to incorporate key performance questions into the template allowed for prioritization and management of information exchanged during rounding. The questions chosen are displayed in Figure 1.

Implementation

The rollout of this initiative was spearheaded by unit leaders, many of whom were nurses. Starting in July 2014, managers and their teams set targeted goals for using this electronic process with goal setting assistance provided by patient experience personnel. At first, quality of the process was prioritized and reviewed at the unit level. Over time, while quality rounding interactions remained at the forefront of this initiative, as nurses became more confident rounding, units set daily goals to reach a pre-defined number of patients through leader rounds. Ultimately, each unit aimed to spread daily rounding to every patient cared for. The gradual integration of this new process and a quantifiable process metric were identified as facilitators to uptake of the rounding tool through staff conversations. Once technology supported leader rounding was established, often spearheaded by nurse leaders, physician leaders were invited to participate, using the standardized approach and questions. This promoted multidisciplinary education and integration of the tool across inpatient medical specialties.

To optimize the use of data collected through this process, a "Care Rounds Report" was developed by our clinical effectiveness analytics team. Four-week trend reports included the number of care rounds completed on each unit, by week, as well as patient comments and actionable items for service recovery. This report was integrated into

Figure 1. Twelve standardized questions chosen for rounding in the inpatient setting

1. When the care team has checked on you, have they been responsive to your needs?
2. Have you been included in the nursing handover at shift change?
3. Has your communication board been used effectively?
4. Have we done everything we can to manage your comfort/pain?
5. Have you received clear communication about your medications and potential side effects?
6. Have you clearly understood communication from your doctor(s)?
7. Has your environment been comfortable, quiet and restful?
8. Has your room been kept clean to your satisfaction?
9. Has the quality (taste/temperature) of your food been acceptable?
10. Do you understand your plan of care and discharge plan from your nurse?
11. Have you been orientated to GetWell Network on your TV?
12. Have you had the opportunity to watch any educational videos?

routine quality reporting processes and is distributed weekly to all unit leadership and the Chief Nursing Officer.

Analysis

Impact of this initiative on patient satisfaction with their care experience was measured using data routinely collected from post-discharge self-administered surveys managed by a third party survey vendor (Press Ganey, South Bend, IN). The metric "Overall rating of care," a 5-point Likert-type scale from Very Poor to Very Good, was the primary outcome used to assess patient satisfaction. The survey also includes the question "During your stay, did the nurse manager check on you daily to address your care and comfort needs?" Responses to this question were used to categorize respondents as either 'perceived exposed' or 'perceived not exposed' to the new leader rounding initiative. Mean scores for "Overall rating of care" were compared between patients self-identified as rounded on and those who did not report they were rounded on during their inpatient stay.

In addition to patient perception of leader rounding exposure, data from the application was merged with patient satisfaction survey data in order to identify patients with documentation that leader rounding had in fact occurred. Demographic variables including age, sex, and race as well as clinical outcomes including Charleson Comorbidity Index and length of stay (LOS) were incorporated into the dataset to allow for identification of trends in both perception of rounding and overall rating of care.

Following common practice in patient experience and engagement data analysis, overall rating of care was dichotomized into "top box scores" of 5 and scores less than 5, identifying those most satisfied with their care compared to others. Logistic regression was then used to quantify the relationship between patient perception of rounding exposure and overall rating of care, controlling for actual rounding status as well as a number of demographic and clinical variables. STATA 13 (College Station, Texas) was used for all analysis. A p-value of less than 0.05 was considered statistically significant. This initiative was deemed to be quality improvement, not incorporating human subjects research, and was thus not governed by the Institutional Review Board.

Results

Between July 1, 2014 to June 1, 2016 leaders completed 47,687 rounds for more than 25,984 patient encounters. Linked to these patient encounters, 5624 surveys with responses to the questions 'overall rating of care' were returned. After merging rounding and clinical data, 5,989 patient encounters tied to 5624 patient surveys remained in the cohort used for analysis. Average age among patients was 58 years of age, 59% were Caucasian, and 53% were women.

Figure 2. Impact of Nurse Leader Rounding on Overall Rating of Care
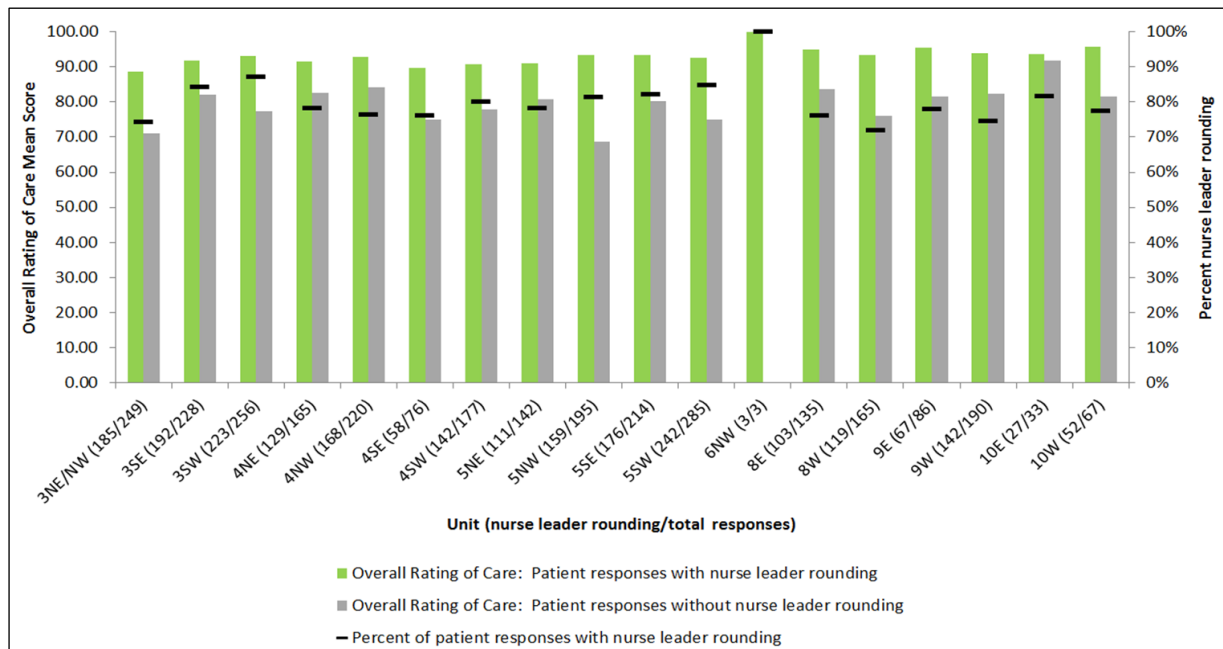
At the hospital unit level, all 18 units experienced an increase in mean overall rating of care scores among patients introduced to technology-supported leader rounds (Figure 2). Among patients with documentation of leader rounding, 59% perceived they were rounded on as measured by self-report on patient satisfaction surveys (Table 1). Among patients with no documentation that leading rounding occurred, 9% perceived they had been rounded on (Table 1). Both actual leader rounding, measured by documentation, and perceived leader rounding were significantly associated with an increase in Top Box scores for "Overall Rating of Care" (Table 2).

Results from multivariate logistic regression, controlling for hypothesized predictors of patient satisfaction including age, race, admission status, number of diagnoses, Charleson comorbidity index, and number of diagnoses are shown in Table 3. Incorporation of the following individual clinical conditions into the logistic model were explored outside of the composite Charleson comorbidity index: myocardial infarction, congestive heart failure, peripheral vascular disease, cerebrovascular disease, dementia, COPD, connective tissue disease, peptic ulcer disease, diabetes mellitus, chronic kidney disease,

Table 1. Total population distribution of Documented Rounding vs. Self-Reported Rounding

Row Percentage	Self-Report = Yes % (n)	Self-Report= No % (n)
Rounding Documentation	41% (2296)	9% (519)
No Rounding Documentation	40% (2219)	10% (590)

hemiplegia, leukemia, malignant lymphoma, solid tumor, liver disease, and AIDS. Of these, mild liver disease and dementia were seen to significantly contribute to reduced odds of reporting top scores for overall rating of care when added into the model. These variables did not remain statistically significant and thus were not included in the final model (Table 2).

When accounting for the effects of actual rounding status, number of times a patient was rounded on during their stay, age, race, admission status, number of diagnoses, and

Table 2. Bivariate predictors of top box Overall Rating of Care

Categorical Variables	Top Box ORC % (n)	% (n)	P-value (Chi-square for independence)
Perceived rounded on (self-report) Yes No	77% (3482) 49% (546)	23% (1035) 51% (563)	<0.001
Actually rounded on (documentation) Yes No	68% (1973) 75% (2055)	32% (913) 25% (683)	<0.001
Race White Other	74% (2098) 69% (1930)	26% (749) 31% (847)	<0.001
Admit Status Emergency/ Urgent Elective	68% (2436) 77% (1592)	32% (1118) 23% (478)	<0.001
Continuous Variables	Top Box ORC (mean value)	ORC < 5 (mean value)	P - value (two-way Student's T-test)
Age	60.4	59.1	0.012
Charleson Comorbidity Index	4.23	4.12	0.303
Number of diagnoses	9.49	10.42	<0.001
Number of times rounded on*	1.68	1.69	0.329

*Note: Among those with documentation that rounding occurred

Table 3. Multivariate logistic regression predicting top box scores for ORC

	Odds Ratio	Std. Error	p-value
Perceived rounded on (self-report)	3.53	0.26	<0.001
Actually rounded on (documentation)	0.87	0.08	0.09
Number of times rounded on	1.03	0.03	0.417
Age	1.01	0.01	<0.001
Race (Other vs. White)	0.82	0.05	0.001
Emergency/Urgent vs Elective Admission	0.79	0.06	0.002
Number of diagnoses	0.98	0.01	0.002
Charleson Comorbidity Index	1.34	0.06	<0.001
Age*Charleson interaction term	0.99	0.01	<0.001

the Charleson Comorbidity Index, patients who perceived they were rounded on had 3.53 greater odds of reporting top box scores for Overall Rating of Care compared to patients who perceived they were not rounded on (p<0.001) (Table 2). Perhaps more intriguing, patients with documentation that rounding occurred, who also self-reported that rounding occurred, were at 3.43 greater odds of providing a top-box score than patients with documentation that rounding occurred but who did not perceive they were rounded on (p<0.001). This effect was stronger among patients without documentation that rounding occurred, with those who perceived they were rounded on at 3.52 greater odds of providing Top Box Scores than those who did not self-report rounding occurred (p<0.001). This perception, rather than documentation that rounding occurred, likely explains the lack of a dose-response between number of leader rounds conducted on a single patient and overall satisfaction with care (OR:1.03, p=0.417). While both increased age and Charleson Comorbidity Index significantly impacted satisfaction, these variables were highly related, creating effect modification (Table 3). Both non-white racial status and an urgent or emergent admission status were predictive of lower satisfaction scores.

As a secondary outcome, patient satisfaction with three dimensions of communication was assessed. First, 'nurses attitude towards requests' received 65.9% (n=2057) mean score among patients with technology supported leader rounding compared to 73.5% (n=3706) mean score among those who were not rounded on. Second, patients who perceived to be rounded on by a nurse leader provided a 75.8% (n=4546) mean score for the question 'staff addressed emotional needs' compared to a 52.1% (n=1217) mean score among those who did not perceive they were rounded on by leadership. Finally, for the question 'nurses kept you informed,' those rounded on provided a mean score of 62.1% (n=2053) compared to 69.2% (n=3698) among those who did not receive leader rounds.

Discussion

This technology-assisted leader rounding was designed to incorporate the voice of the patient and family into the care experience through purposeful rounding and documentation during the inpatient stay. This initiative was seen to improve mean scores for Overall Rating of Care, a well-established metric used to quantify patient satisfaction. However, documentation of patient rounding had a non-statistically significant impact on overall rating of care. It was the perception of having been rounded on by nurse leaders that was highly predictive of satisfaction with the inpatient care experience. This study supports previous findings that patients recalling a leader visiting during their inpatient stay report higher levels of overall satisfaction compared to patients who do not recall a visit from leadership.[3]

This initiative had a number of limitations. Response rates for patient satisfaction surveys at our academic medical center during this time were 24.6% among all patients, each of which were paper-based surveys. However, the national average return rates are 29.9% for paper surveys and 19.3% for electronic surveys.[7]

Conclusions

The standardization of a leader rounding process with generation of actionable data in real-time allowed for cross-disciplinary communication necessary to respond to patient-identified needs. The electronic nature of the tool provided the ability to measure and track feedback, requests, and resolutions, helping pinpoint opportunities for improvement, reducing the need for service recovery, and identifying positive patient experiences. After the establishment of a care-rounding scorecard, at the request of staff, patient comments were integrated into weekly reports as non-edited text at the bottom of the scorecard. This led to employee recognition programs directly linked to patient acknowledgements. Additionally, such reports

promoted transparency, accountability, and recognition across disciplines.

While these types of questions, deployed through patient satisfaction surveys, have been used to measure whether a patient was rounded on by a nurse leader in this initiative as well as previous studies, our results show the importance not only of leader rounding but of the patient perception. Given that patients who perceived they were rounded on by a leader, regardless of whether this actually occurred, were more likely to be satisfied with their care experience, future efforts to ensure that each patient understands that 1) they are being rounded on and 2) the person talking with them is in a leadership role is critical. Additionally, further research is necessary to validate questions such as "Did a nurse manager check on you" to ensure the captured concept matches the intended metric. Specifically, efforts are needed to distinguish whether patient perception of attention provided by leadership or patient perception of the attention given during their care in general is associated with improved satisfaction.

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