


When Is My Care Team Rounding? A Simple Signage Intervention to Increase Awareness of Rounding Times

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Abstract

Patient and caregiver awareness of multidisciplinary rounds (MDR) times, and their subsequent involvement in MDR, aids in decreasing adverse health outcomes, reducing average length of stay, and increasing satisfaction. The objective of this study was to increase patient and caregiver awareness of MDR times using signage interventions and to assess the state of rounding processes with patient and caregiver satisfaction pre- and post-intervention. We administered survey questions to assess MDR interaction and awareness regarding MDR times. Patient and caregiver awareness of rounding times increased significantly by 25.87% ($P = .0043$) post-intervention. Although patients' confidence in the physician remained largely unchanged after the intervention due to high initial confidence levels, MDR satisfaction metrics increased slightly post-intervention. Thus, our signage intervention increased rounding time awareness in the MDR process.

Keywords

multidisciplinary rounds, bedside rounding, signage, repeated measures, neurology, team rounding

Introduction

Patient care, especially in the inpatient setting, involves a multidisciplinary health care team. To avoid errors and to increase efficiency, effective communication is imperative. Bedside daily standardized multidisciplinary rounds (MDR) have been shown to improve efficiency in care delivery, nurse-physician teamwork, and increase patient, physician, and resident satisfaction (1,2). Multidisciplinary rounding has also been shown to decrease daily resident work, patient length of stay, and 30-day readmission rates (3-9). Likewise, patient and caregiver involvement with standard bedside rounding has been shown to increase the quality of care and patient satisfaction (3,7).

Despite noted importance of MDR, awareness about rounding times and round structure is not guaranteed. Our Neuromedicine Patient and Family Advisory Committee (PFAC; an engaged group of current or former neurology or neurosurgery patients and their caregivers), reported not being aware of the best practices of MDR and, importantly,

at what time daily MDR were conducted. The PFAC elaborated on several opportunities for improvement related to multidisciplinary communication during their inpatient hospitalization. Foundational to the PFAC's reported experience was the opportunity related to what MDR was, when MDR occurred, and that their involvement was perceived paramount to reach improved outcomes.

Guided by evidence in the literature (10,11) and clinician feedback from pilot Plan-Do-Study-Act (PDSA) cycles, we

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Figure 1. Multidisciplinary rounding initiative: signage intervention.

implemented a signage intervention for the General Neurology patients in the medical–surgical unit in an effort to increase patient and caregiver awareness of rounding—that patients and their families understand what rounding entails—and the awareness of rounding times. The purpose of this study was to evaluate the effectiveness of a simple, evidence-based, PFAC directed, patient-facing signage intervention at increasing patient and caregiver awareness of rounding and specifically, of rounding times.

Methods

Study Design

We implemented a pre/post intervention study design using convenience sampling. Each study participant served as their own control and was asked an identical set of survey items before and after implementation of the intervention. Of a total of 7 PDSA cycles, pilot data from cycles 1 to 2 was used to establish this study design. Data from the remaining cycles 3 to 7 were used in the final analysis.

Participants and Setting

This study took place at a 34-bed Medical—Surgical Unit of a tertiary, level-one trauma and academic medical center located in the Southeastern United States. All English-speaking general neurology inpatients between January 2018 and November 2019 who displayed alert behaviors, and who did not have a sign affixed to their door indicating a need for translator services due to a primary language different from English were included in the study. Only English-speaking patients participated because the intervention questions were in English and we did not have certified medical

translators in the quality improvement (QI) data collection team.

Intervention

Multidisciplinary teams in general neurology rounded each day between 9:00 AM and 12:00 PM. After the MDR of the first 24 hours of the patient stay, a trained undergraduate intern conducted a preintervention survey and then immediately implemented the intervention of affixing a laminated sign in the patient’s room within the patient’s field of view. The sign displayed rounding time information as well as encouraging language for caregivers to be involved with patient’s health care (Figure 1). The following business day (Monday-Friday) the observer administered a post-intervention survey and then immediately removed the sign from the room.

We implemented and removed the sign in the presence of the patient to increase the saliency of the sign and decrease visual pollution of the room. Data from the PDSA cycles 1 and 2 guided our decision to evaluate the effects of the sign within one business day in lieu of at discharge. The average length of stay in these units was 4 days and patients often-times left their rooms to receive additional treatments or conduct examinations (e.g., radiologic imaging studies).

Each patient participated in the study once, and they only had the sign affixed in their room for the duration of the study. We kept a detailed log to keep track of patients who had participated in the study and when they required the post-survey. A small team of QI interns conducted the study, based on the schedule the same intern could have conducted both the preintervention and the post-intervention survey or 2 different interns implemented the pre- and post-

Table 1. Total Patient Responses Demonstrating “Agreement” With Survey.^{a,b,c}

Survey item	Preintervention			Post-Intervention		% difference	P value
	n	n	% Yes	n	% Yes		
Did you know your doctor would be checking up on you today?	58	43	74.14	56	96.55	22.41	.0005 ^d
Did you know the time your doctor would be performing rounds today?	58	25	43.10	40	68.97	25.87	.0043 ^d
Your caregiver participates in discussion with the doctor.	95	39	78.00	39	86.67	8.67	.9154
Knowing the specific rounding times would encourage your caregiver to be present.	95	36	75.00	38	80.85	5.85	.8248
Your doctor explains your care to you and your caregiver in a clear manner.	114	55	96.49	56	98.25	1.35	.8783
Your doctor speaks to you in a friendly tone.	114	55	96.49	56	98.25	1.76	.8783
Your doctor makes sure that you and your caregiver fully understand everything.	112	54	96.43	55	98.21	1.78	.8784
You are confident in your doctor’s care and concern for you.	114	54	96.43	56	96.55	0.12%	.7040

^aRight-sided Fisher exact test; $P < .05$ denotes statistical significance.

^bSurvey items have different “n” because only responses demonstrating “agreement” were included. All “neutral” responses removed from the calculations.

^cPost-intervention responses only include match cases.

^dStatistically significant values.

intervention survey. All QI interns were rigorously trained and demonstrated competency in the training before implementing the intervention.

Staff Perception

Throughout the PDSA cycles we asked clinicians for weekly feedback about their perception of the intervention.

Data Collection and Data Analysis

The QI interns collected data by asking each patient 8 dichotomous (“Yes” or “No” questions) and 5-item Likert-type scale questions (see Table 1 survey item for questions). Because the patients were neurological patients, some patients exhibited difficulties in differentiating between the Likert-type scale questions and instead they answered the question by saying “Yes” or “No.” So to not add additional burden to the patients, these responses were accepted in lieu of a Likert-type response and we dichotomized all Likert-type scaled responses using the following criteria: “Yes” = “Strongly Agree” or “Agree” and “No” = “Strongly Disagree” or “Disagree.” We omitted “neutral responses” from any calculations. The interns recorded each response using an internet-enabled smart device.

We calculated the effectiveness of the intervention by comparing the patients pre-post intervention survey response using Student *t* test and Fisher exact test. We completed all statistical testing using Microsoft Excel and SAS 9.4 (SAS Institute Inc). This QI project was approved under a continuous QI designation (Project # 446).

Results

Patient Inclusion and Attrition

During the study period, we completed a preintervention survey and implemented the intervention with 162 general neurology inpatients and completed a post-intervention survey with 58 patients ($n = 116$ verified pre- post-encounters) resulting in an 64.20% attrition rate.

Signage Intervention

Table 1 shows the pre-post intervention survey responses and the significance of each question. Our signage intervention significantly increased patient and caregiver awareness that their physician was going to round by 22.40% ($P = .0005$), and their awareness of the specific rounding time frame by 25.87% ($P = .0043$). In addition to the improvement of awareness of MDR timing, the quality of MDR remained highly satisfactory among the patients and caregivers with less than 2% difference following the signage intervention.

Clinician Feedback

Staff perception and satisfaction of the MDR initiative was positive and any recommendations for the MDR process were incorporated in subsequent PDSA cycles including adjustments to the signage intervention—from a low contrast, text heavy display to a more streamlined, high contrast display (Figure 1). Of the 23 weekly staff perception surveys completed over 3 PDSA cycles, 91.30% (21) of weekly responses indicated that MDR as a whole was suited to improve patient satisfaction. Likewise, 82.61% (19) of weekly staff responses indicated that the signage intervention was beneficial to

patient outcome; 73.91% (17) of weekly responses indicated staff satisfaction with the implementation of the current signage intervention. Although clinician feedback was not a direct metric used to evaluate the effectiveness of the signage intervention, the high proportions of positive feedback demonstrated the perceived benefits of intervention to the patients, caregivers, and MDR rounding team.

Discussion

Our study demonstrated that the use of a simple patient-facing signage material indicating bedside rounding times increased rounding time knowledge and satisfaction. Both patient and caregiver awareness and knowledge of rounding times increased significantly after implementation of our signage intervention. Although we do not have comparative data, the notion of our PFAC—that rounding times, even though implicit for medical teams, were unknown to patients and caregivers—implies that a fact as simple as unawareness of rounding times might preclude health care teams from allowing the well-documented beneficial effects of MDR inclusive of patients and caregivers to unfold. Our findings hence are an important contribution to the field of health care organization. Furthermore, while conducted at a single center, similar implementation of a simple signage intervention is generally feasible and expectedly reproducible. The effect of such engagement may even span further than indication of rounding times. In a systematic review conducted regarding MDR, it was found that when providers used process-oriented tools such as patient lists, the situational awareness, organization, and communication was increased for multidisciplinary care providers (12). Our analysis demonstrated that the addition of a signage intervention with the rounding process only slightly increased the confidence of the patients and caregivers in their providers, which might be rooted in the baseline high confidence rates in their providers even before the introduction of the signage intervention. However, given that we did not measure baseline confidence rates in providers, and no comparative data for the neurology patient population are available, this will be a consideration for future research. Further, the granular quality of communication elements was not assessed in this study.

Strengths

The MDR project was designed to be an integrative element for the general neurology service visiting inpatients from medical-surgery and neurointensive care units. The survey questions used in this project were administered in real time to the inpatients after physicians left the room, and the timeliness of the data recorded was more accurate to the inpatient's experience of the rounding process, as compared to a retrospective telephonic interview or mailed survey bearing the risk of recall bias. Using a repeated study design, the variability between response groups was kept low while increasing the strength of results despite the high attrition

rate of our sample population. Furthermore, our neurology-specific, colorful, and short-lived duration signage emphasized to the patient of the rounding times and helped reinforce the verbal reminder that was given to them by the QI interns. Given these strengths, we were able to demonstrate the effectiveness of signage intervention on increasing patient and caregiver awareness of the rounding times and patient satisfaction with the rounding process. Of note, this intervention is very affordable, making it attractive for various settings and health care systems.

Limitations

There were several limitations for the MDR project. First, there was a significant average attrition rate of 64.20% during this study (above 20%) (11) over each PDSA cycle. One of the main factors that contributed to this high attrition rate was loss to follow-up, where the patient would either be moved to a different unit or discharged without the knowledge of the QI interns. With limited access to patient electronic health records, this presented logistical challenges as QI interns did not have necessary resources to properly track patients for the duration of their stay. In order to account for this, a repeated sample was used, consequently decreasing our sample size for analysis. Secondly, the QI interns who collected the responses could not access patient charts for the purposes to anticipate discharge dates, leading to some loss of follow-up based on their role. Furthermore, the surveys did not undergo internal validity nor accuracy testing before implementation in the new PDSA cycle. The survey items were adjusted based on empirical data and intern feedback from the prior PDSA cycle. Additionally, data on staff perception of the MDR rounds were collected but were not anonymous which may have introduced Hawthorne bias in the results. Although a high proportion of the responses were positive, the multidisciplinary team was asked the staff perception questions as a group and not every participant answered individually. Lastly, we only included English-speaking participants and used a sign written in English. However non-English-speaking patients could benefit from this intervention, especially if they require a caregiver present to assist in translation.

Generalizability

The results of our MDR initiative are a single-center experience. Although implementation of a signage intervention to indicate rounding times is likely reproducible, not all findings can be generalized for other inpatient settings because the survey questions and protocol were developed specifically for neurology patients. The results obtained set a basis for additional PDSA cycles to perfect the MDR initiative and increase the accuracy and precision of the data collected. The MDR initiative served to demonstrate an intervention aimed at increasing patient satisfaction with provider

rounding by increasing awareness and knowledge of the provider rounding times.

Conclusions

Our study showed that signage as intervention to announce timing of MDR statistically significantly increased patient's and caregiver's knowledge about the daily rounding, and about the specific rounding timing. Future studies should evaluate the signage intervention feasibility and efficacy across patient populations, as well as its impact in patient outcomes.

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References

1. Monash B, Najafi N, Mourad M, Rajkomar A, Ranji SR, Fang MC, et al. Standardized attending rounds to improve the patient experience: a pragmatic cluster randomized controlled trial. *J Hosp Med.* 2017;12:143-9.
2. Vats A, Goin KH, Villarreal MC, Yilmaz T, Fortenberry JD, Keskinocak P. The impact of a lean rounding process in a pediatric intensive care unit. *Crit Care Med* 2012;40:608-17.
3. Epstein N. Multidisciplinary in-hospital teams improve patient outcomes: a review. *Surg Neurol Int.* 2014;5:S295-03.
4. Gonzalo JD, Chuang CH, Huang G, Smith C. The return of bedside rounds: an educational intervention. *J Gen Intern Med.* 2010;25:792-8.
5. Levin AB, Fisher KR, Cato KD, Zurca AD, October TW. An evaluation of family-centered rounds in the PICU. *Pediatr Crit Care Med.* 2015;16:801-7.
6. Luthy C, Francis Gerstel P, Pugliesi A, Piguet V, Allaz AF, Cedraschi C. Bedside or not bedside: evaluation of patient satisfaction in intensive medical rehabilitation wards. *PLoS One.* 2017;12:e0170474.
7. Meis J, Kashima Y. Signage as a tool for behavioral change: direct and indirect routes to understanding the meaning of a sign. *PLoS One.* 2017;12.
8. Oshimura JM, Downs SM, Saysana M. Family-centered rounding: can it impact the time of discharge and time of completion of studies at an academic children's hospital? *Hosp Pediatr.* 2014;4:228 LP-32.
9. Sharma A, Norton L, Gage S, Ren B, Quesnell A, Zimmanck K, et al. A quality improvement initiative to achieve high nursing presence during patient- and family-centered rounds. *Hosp Pediatr.* 2014;4:1-5.
10. Grimstvedt ME, Kerr J, Oswalt SB, Fogt DL, Vargas-Tonsing TM, Yin Z. Using signage to promote stair use on a university campus in hidden and visible stairwells. *J Phys Act Health.* 2010;7:232-8.
11. Mason J. A review of procedural and statistical methods for handling attrition and missing data in clinical research. *Meas Eval Couns Dev.* 1999;32:111-8.
12. Gurses AP, Xiao Y. A systematic review of the literature on multidisciplinary rounds to design information technology. *J Am Med Inform Assoc.* 2006;13:267-76.

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Jacqueline Baron-Lee, PhD, CPHQ, PMP, served as the quality officer and director of the Neuromedicine Interdisciplinary Academic and Clinical Program (NICAP) focusing on process improvement initiatives designed to achieve the Perfect Patient Experience. She received a Doctor of Philosophy in Psychology and a Master of Science in Psychology from the University of Florida.