The Impact of Revised Discharge Instructions on Patient Satisfaction

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Abstract
Introduction: The impact of discharge instructions on a patient’s experience is not fully understood. This research explored whether nurse- and physician-generated discharge instructions had a positive effect on patient perceptions regarding their discharge experience.

Methods: We compared Press Ganey discharge-related patient satisfaction scores for the year prior to and the year subsequent to implementing revised discharge instructions for all patients admitted to a 180-bed community-based hospital.

Results: Following the implementation of our revised discharge instructions, patient satisfaction significantly improved (84.7% vs 83%, \( P < .01 \)). Patients responded that they felt ready for discharge (86.6% vs 84.9%, \( P = .01 \)) and were satisfied with instructions for home care (87.8% vs 85.3%, \( P < .01 \)). Discussion: This study finds that a novel discharge instruction set produced by both the nursing and physician staff may improve patient perceptions with the discharge process.

Keywords
patient satisfaction, discharge, discharge instructions, patient education, physician-generated discharge instructions

Introduction
The period of discharge from the hospital is one of the most vulnerable and complex times for a patient during their journey through the health-care continuum. Approximately 19% of patients have an adverse event postdischarge (1). Patients often experience anxiety, uncertainty, or a lack of understanding regarding discharge instructions, which may produce unnecessary telephone calls, contribute to hospital readmission rates, and impact the overall perception of the hospital experience. Unfortunately, the quality of discharge instructions can vary between the providers responsible for producing and educating patients about their hospitalization and postdischarge care.

Enhancing and standardizing provider–patient communication is a key factor in improving a patient’s ability to comprehend discharge instructions and can ultimately improve the patient experience (2,3). Attesting to the importance of discharge instructions to improve the patient experience, the Centers for Medicare and Medicaid Services distributed guidelines to facilitate the standardization of instruction categories for patients prior to discharge (4). A variety of modalities exist to help patients understand discharge instructions, including videos, postdischarge telephone calls, and diseasespecific education (5–7). Furthermore, written information explaining the postdischarge plan of care including symptom management, follow-up recommendations, and medication use improves patients’ ability to understand and comply with discharge instructions (8).

It is becoming a common practice for hospitals to evaluate a patient’s satisfaction with their discharge process following a hospitalization (9). The Press Ganey Inpatient Survey was first developed in 1987 and then revised in 1997 to improve the accuracy of representation of a patient’s experience (10). In 2007, 11 questions were removed from the standard question set to create a shorter patient survey that could still provide a highly reliable quality improvement tool. The revised survey consists of 10 reliable subscales (11), which include the domains of admission, room, meals, nurses, tests and treatments, visitors and family, physicians,
discharge, extent felt ready for discharge, speed of the discharge process, instructions about care at home, help arranging home care services, overall rating of the discharge process, personal issues, and overall assessment.

Patients’ ratings of discharge instructions are positively correlated with overall satisfaction (11,12). However, patient ratings of discharge instructions at our hospital have not been improving in recent years. A discharge process analysis revealed that discharge instructions were generated and discussed with the patient primarily by nursing staff. We sought to determine whether revising patient instructions by directly incorporating both nursing and physician inputs might lead to improved patient satisfaction upon discharge from the hospital stay.

Methods

Overview

The data in this study represent our hospital’s Press Ganey Inpatient Survey responses from September 20, 2011, to September 20, 2013. No responses were excluded. The study was undertaken at a 180-bed community-based hospital in Massachusetts, serving a predominantly Latino population. The study focused on data from the “Discharge” section of the Press Ganey Inpatient Survey. The responses of Hospital Consumer Assessment of Healthcare Providers and Systems were not included in this study as they were not readily available for the entire study period.

The Press Ganey Inpatient Survey is sent to all adult inpatients after discharge, excluding psychiatric patients. The response rate at the study hospital is 30%. The survey is sent in either English or Spanish, based on the patient’s preferred language, which is indicated at the time of admission. If a patient indicates Spanish, he or she will receive the survey in Spanish. Patients indicating other languages other than Spanish receive the survey in English.

Intervention

The tool used to provide discharge instructions to patients upon discharge is comprised of both a nursing and a physician education tool, which is referred to as the transition record.

Several revisions of the nursing and physician transition record were based on the input from a multidisciplinary team and our patient and family advisory council. The goal of this team was to create an informative patient-centered tool that highlights components of the discharge instructions (see Supplement Appendix A and B). The transition record took several months to develop and was used in a pilot study on a medical–surgical floor for a few months prior to hospital-wide implementation. Once implemented, the discharge instructions are reviewed by the floor nurse and physician for every patient being discharged from the hospital. The transition record was available in both English and Spanish and was developed for reading at the fifth grade level, similar to other hospital documents prepared for patients.

Design

Patient satisfaction scores obtained from the Press Ganey database were compared from 1 year before to 1 year after implementation of the revised discharge instructions. There were approximately 1600 to 1900 patients per year, with sample size varying depending on the survey question (see Tables 1 and 2).

Each question on the Inpatient Survey asks the patient to rate their satisfaction, on a scale of 1 to 5 (1 being very poor, 5 being very good). Descriptive statistics are utilized to present the data, which often include a frequency of each rating, mean score for each item, and percentile ranking. Our study utilized aggregate percentile rankings to facilitate statistical comparison and analysis. We chose to evaluate only 1 year of data since other interventions were also implemented subsequently in an effort for continuous improvement of the hospital. We felt that the effect of the change in the transition record would be diluted in subsequent years, given our concurrent implementation of other interventions within this time period such as implementing an electronic discharge process. The postintervention period started the day after the revised discharge instructions were implemented.

The research team reviewed these items and hypothesized that the satisfaction scores relating to questions 1, 3, and 5 would be significantly improved by the revamped discharge process. The number of patients requiring home care was disproportionately low, and therefore, item number 4 was omitted. Once data were obtained for the year before and year after, as well as quarterly, to monitor for time trends, the data were analyzed using basic statistical comparison models including t tests and analysis of variance to determine whether there was a statistically significant improvement in patient satisfaction scores on the target items.

Results

Our analyses indicated that patient satisfaction scores for the overall discharge process improved postimplementation of the revised transition record (see Table 1 and Figure 1). Significant differences between pre- and posttransition record implementation included satisfaction with discharge overall (84.7% vs 83.0%, \( P < .01 \)), extent patients felt ready for discharge (86.6% vs 84.9%, \( P = .01 \)), and satisfaction with instructions for home care (87.8% vs 85.3%, \( P < .01 \)). No significant differences were found between pre- or postmeasures of satisfaction with nurses and physicians. Satisfaction scores did rise significantly from the second to fourth quarter following implementation (see Table 2 and Figure 2). The discharge instructions are positively associated with improved patient satisfaction.

Discussion

Our study found that revised discharge instructions are positively correlated with improved patient satisfaction upon discharge. Prior to conducting the study, we
hypothesized that, of the available discharge domains, patients would rate readiness for discharge and home care instructions higher, while the speed of discharge would not be improved.

The revised process required slightly more nurse and physician time. The findings from our study support our hypothesis that an improved discharge process can impact patient satisfaction. The times involving discharge (discharge overall, extent felt ready for discharge, and instructions for home care) showed statistically significant improvements (see Table 1). Although other nondischarge-specific satisfaction items including “nurses or physicians keeping you informed” had higher mean scores after intervention, these ratings were nonsignificant. We also found that patient satisfaction scores did not improve in the first quarter. This finding could be related to an initial lack of buy in to the new discharge process. However, by the end of the

Table 1. Aggregate % Press Ganey Scores the Year Before and the Year After Implementation of Revised Transition Record.

| Questions                                | Year Before (September 2011-September 2012) | Year After (September 2012-September 2013) | T Statistic | P Value |
|------------------------------------------|--------------------------------------------|--------------------------------------------|-------------|---------|
| Nurses kept you informed                 | Mean: 87.8, SD: 18.6, N: 1559              | Mean: 88.4, SD: 18.1, N: 1783              | -0.942050626 | 0.346236631 |
| Overall MD                               | Mean: 85.5, SD: 18.3, N: 1556              | Mean: 86.6, SD: 17.5, N: 1797              | -1.771320793 | 0.076601484 |
| Time MD spent with you                   | Mean: 82.2, SD: 20.9, N: 1554              | Mean: 83.2, SD: 20.5, N: 1780              | -1.38562142  | 0.165958496 |
| MD concern about questions/worries       | Mean: 85.3, SD: 19.7, N: 1523              | Mean: 86.5, SD: 19.2, N: 1762              | -1.76519187  | 0.078234086 |
| MD kept you informed                     | Mean: 84.1, SD: 21, N: 1520                | Mean: 85.4, SD: 20.6, N: 1760              | -1.783593317 | 0.074584812 |
| Friendliness/courtesy of MD              | Mean: 88.3, SD: 18, N: 1525                | Mean: 89.2, SD: 16.6, N: 1767              | -1.482786426 | 0.138231903 |
| Skill of MD                              | Mean: 89.6, SD: 17.3, N: 1486              | Mean: 90.4, SD: 16.4, N: 1728              | -1.338821462 | 0.180727511 |
| Discharge overall                        | Mean: 83, SD: 18.7, N: 1542               | Mean: 84.7, SD: 17.9, N: 1774              | -2.663440645 | 0.00773305 |
| Extent felt ready for discharge          | Mean: 84.9, SD: 19.9, N: 1500              | Mean: 86.6, SD: 19, N: 1742               | -2.477826709 | 0.01327011 |
| Speed of discharge process               | Mean: 79.5, SD: 24.5, N: 1513              | Mean: 80.5, SD: 24.1, N: 1725              | -1.167671615 | 0.243027179 |
| Instructions for home care              | Mean: 85.3, SD: 21.1, N: 1437              | Mean: 87.8, SD: 18.5, N: 1673              | -3.485724316 | 0.000498141 |
| Overall assessment (of hospital)         | Mean: 88.4, SD: 16.7, N: 1589              | Mean: 89.7, SD: 17.3, N: 1850              | -2.238415971 | 0.025258606 |
| Overall rating of care given             | Mean: 89.4, SD: 17.4, N: 1559              | Mean: 90, SD: 18.1, N: 1819               | -0.980703973 | 0.326809966 |

Abbreviations: SD, standard deviation; MD, Physician.

Table 2. Aggregate % Press Ganey Scores 4 Quarters Following Implementation.

| Questions                                | October 2012 to December 2012 | January 2013 to March 2013 | April 2013 to June 2013 | July 2013 to September 2013 |
|------------------------------------------|-------------------------------|---------------------------|--------------------------|----------------------------|
| Nurses kept you informed                 | Mean: 87.4, SD: 20, N: 389   | Mean: 88.3, SD: 17.2, N: 484 | Mean: 89.6, SD: 16.4, N: 546 | Mean: 87.9, SD: 18.7, N: 445 |
| Overall MD                               | Mean: 85.9, SD: 18.4, N: 400 | Mean: 85.6, SD: 18.3, N: 484 | Mean: 88.3, SD: 15.2, N: 549 | Mean: 86.2, SD: 17.5, N: 454 |
| Time MD spent with you                   | Mean: 81.9, SD: 21.6, N: 400 | Mean: 83, SD: 21.2, N: 476 | Mean: 84.4, SD: 18.8, N: 545 | Mean: 83.1, SD: 20.3, N: 449 |
| MD concern about questions/worries       | Mean: 86.1, SD: 19.8, N: 395 | Mean: 85.3, SD: 20.1, N: 470 | Mean: 88, SD: 17.7, N: 539 | Mean: 85.9, SD: 18.7, N: 447 |
| MD kept you informed                     | Mean: 85.3, SD: 21, N: 392   | Mean: 84.7, SD: 21, N: 468 | Mean: 86.6, SD: 18.6, N: 542 | Mean: 84.8, SD: 20.8, N: 444 |
| Friendliness/courtesy of MD              | Mean: 88.3, SD: 17.4, N: 397 | Mean: 88.1, SD: 17.1, N: 472 | Mean: 90.9, SD: 14.7, N: 541 | Mean: 88.8, SD: 17.1, N: 445 |
| Skill of MD                              | Mean: 89.7, SD: 17.8, N: 390 | Mean: 89.5, SD: 16.4, N: 459 | Mean: 92.1, SD: 14.4, N: 532 | Mean: 89.7, SD: 16.7, N: 435 |
| Discharge overall                        | Mean: 82.6, SD: 20.9, N: 405 | Mean: 84.5, SD: 16.4, N: 473 | Mean: 86.9, SD: 15.3, N: 542 | Mean: 84.7, SD: 18.4, N: 444 |
| Extent felt ready for discharge          | Mean: 83.9, SD: 23.2, N: 396 | Mean: 85.5, SD: 18.1, N: 465 | Mean: 89.5, SD: 16, N: 532 | Mean: 86.3, SD: 19.2, N: 442 |
| Speed of discharge process               | Mean: 78.4, SD: 26.5, N: 81   | Mean: 82.3, SD: 22.3, N: 454 | Mean: 81.8, SD: 23.1, N: 536 | Mean: 80.9, SD: 24.4, N: 432 |
| Instructions for home care              | Mean: 86.6, SD: 20.6, N: 374 | Mean: 87.1, SD: 18.7, N: 441 | Mean: 89.6, SD: 15.9, N: 527 | Mean: 88.6, SD: 18.5, N: 417 |
| Overall assessment (of hospital)         | Mean: 88.3, SD: 18.3, N: 414 | Mean: 89.7, SD: 17.4, N: 503 | Mean: 91.1, SD: 16.5, N: 564 | Mean: 89.6, SD: 15.9, N: 460 |
| Overall rating of care given             | Mean: 88.5, SD: 19.6, N: 406 | Mean: 90, SD: 18.1, N: 494 | Mean: 91.4, SD: 17.2, N: 558 | Mean: 90.3, SD: 16.1, N: 452 |

Abbreviations: ANOVA, analysis of variance; SD, standard deviation; MD, Physician.

Figure 1. Mean discharge scores by year.
first quarter, the vast majority of physicians did end up adopting the transition record (>80%).

Limitations
There were several limitations to this study. Throughout the same year, we implemented the revised discharge instructions, and our facility was also implementing other interventions aimed at improving the patient experience. One intervention encompassed having a dedicated pharmacist performing medication reconciliation at the time of discharge for our medical home patients.

Furthermore, while this intervention focused on a small subset of high-risk patients (diabetes, heart failure, and/or chronic obstructive pulmonary disease), most of this population spoke only Spanish. Even though the survey was available in Spanish, this subset of patients was less likely to complete the Press Ganey survey. Therefore, our sample may not generalize to this population. This study was also limited by the fact that only 30% of patients returned the survey. This is consistent with the national average but is still very low. Therefore, we do not know whether these survey results represent the larger patient population admitted to our hospital.

Additionally, as our study was limited to our patient population at a community hospital in Massachusetts, these results may not generalize to other types of hospitals in areas outside the state. We also did not systematically involve family members or other patients’ support, recognizing that they do constitute important resources for patients at the time of discharge. We wanted to focus specifically on the discharge instructions without combining other types of interventions. Finally, although the patient population served by the hospital traditionally has a low literacy rate, we could not meaningfully account for the effect this may have had on the patient experience.

Implications for Practice
Our research indicates that a standardized teaching tool targeting communication at discharge positively impacts patient satisfaction. The increased communication from nurses and physicians regarding reasons for admission, significance of tests done in the hospital, and importance of issues requiring follow-up after discharge may collectively help patients understand their care and improve their perception of the quality of care. While one reported downside of such increased communication is increased time required by health-care providers and patients, our data do not demonstrate that patients felt the discharge process took a longer amount of time.

In the future, studies could compare the impact different provider groups (Physician, Physician Assistant, and Nurse Practitioner) may have on the discharge process. The provider group, their experience (resident vs attending), and area of expertise (generalist vs specialist) may use various approaches and strategies when discharge instructions are provided. These differences may influence patient perceptions of both the information provided and the discharge experience, potentially impacting compliance with the instructions. The body of patient experience literature may also benefit from research that assesses how improved patient satisfaction relates to readmission rates, particularly for high-risk groups. Additional studies are needed to determine whether our results can be replicated in other types of hospitals across the country. This research may also “shed light” on the key factors involved with providing patients an optimal discharge process. Our study finds that discharge instructions optimized to educate the patient and/or family on key issues related to posthospitalization care are associated with improved patient satisfaction. Ensuring both nursing and physician staff play an active role in providing well-defined discharge instructions may improve the perception of care by patients.
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Pracha Eamranond is the senior vice president of Medical Affairs and Population Health at Lawrence General Hospital where he works to improve the experience of a largely underserved patient population in the Merrimack Valley in Massachusetts and Southern New Hampshire. Dr. Eamranond teaches at Harvard Medical School and sees patients as a hospitalist and primary care physician. Dr. Eamranond finished his internal medicine residency at Yale, and subsequently completed a research fellowship and Master’s in Public Health at Harvard. In his leadership roles, he is responsible for developing interventions to provide patient-centered, evidence-based care as patients transition across the continuum of healthcare, including improving the patient experience across the network. As a whole, his above quality improvement, research, teaching, and clinical efforts are focused on improving the population health of disadvantaged populations.