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Assess effect of Dynamic Real-Time Feedback apply on Patient Satisfaction

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Abstract

Introduction: Effective communication skills among healthcare providers significantly influence patient satisfaction, which in turn correlates with positive healthcare and financial outcomes. The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is commonly used to assess patient satisfaction in the inpatient setting. This study aimed to assess the influence of providing real-time feedback to providers based on HCAHPS scores.

Methods: A randomized study was conducted . Over a 7-month period, 1110 patients were interviewed by a research assistant using three provider communication-specific questions from the HCAHPS survey. The intervention involved daily computer-generated emails to providers, highlighting their HCAHPS performance (specifically the proportions of "always" responses) compared to peers and Medicare benchmarks.

Results: The intervention and control groups, matched for baseline HCAHPS scores and clinical experience, showed a statistically significant increase in "always" responses related to provider communication in the intervention group compared to the control group (86% vs. 80.5%, p-value 0.00001). Notably, HCAHPS scores were generally lower in house-staff teams and higher in teams with APPs.

Conclusion: Providing real-time patient feedback to inpatient providers, coupled with peer comparisons via email, positively influences provider-specific HCAHPS scores.

INTRODUCTION

Effective communication between patients and healthcare providers is crucial for high-performing healthcare organizations and is a key factor in performance-based reimbursement systems. Patient satisfaction in hospital settings is assessed using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, which has been utilized by the Centers for Medicare and Medicaid Services (CMS) since 2012 as part of the Value-Based Purchasing (VBP) program. The impact of patient satisfaction extends beyond the hospital stay and is associated with better health outcomes, medication adherence, preventive care utilization, and reduced resource utilization like readmissions and length of stay. Physicians' communication skills significantly influence patient satisfaction, leading to improved scores. (Becker et al., 2021)

The use of performance feedback to enhance care quality is increasingly common in healthcare. Previous studies have examined the effect of real-time performance feedback on patient satisfaction scores in hospitals. While some studies have shown improvements, others have not, and none have included peer comparison in their feedback systems, which

is considered beneficial for physicians. Hospitalists in academic medical centers may work in various roles, such as leading teams independently, collaborating with advanced practice providers (APPs), or supervising resident physicians. Studies have shown varied results regarding patient satisfaction scores based on these roles, but prospective data on this is lacking, especially regarding the impact of real-time feedback on hospitalist attendings working with APPs or resident teams. (Ivers & Barrett, 2018)

Our randomized controlled trial aimed to assess the effectiveness of daily email-based feedback, including peer and benchmark comparison, on improving top-box scores in provider-specific communication questions on the HCAHPS survey. Additionally, we aimed to explore differences in patient satisfaction scores in the physician communication domain of the HCAHPS based on hospitalists' roles in different teams, including sole hospitalist-led teams, teams with hospitalist attendings and APPs, and resident teams. (Richards et al., 2018)

METHODS

Our study was conducted at a 550-bed in medical center . These teams comprised six resident (house-staff) teams and six direct care teams. Resident teams consisted of an attending hospitalist, PGY 2 or 3 resident, PGY 1 residents, and medical students. Direct care teams included an attending hospitalist, advanced practice provider (APP), and medical student. Hospitalists were randomly assigned to either the intervention or control group, with informed consent obtained from all participants and approval from the Institutional Review Board.

A research assistant selected a random sample of patients daily from the ward teams, alternating between intervention and control groups. Patients were interviewed about provider communication using three specific questions from the HCAHPS survey. Patients' responses were recorded on a scale and entered into a project website. The website calculated percentages of patients in the intervention group responding "always" to each question and compared these with overall hospitalist performance. Emails were sent daily to intervention group hospitalists, providing feedback on their performance compared to benchmarks and peers. Patients were excluded based on specific criteria, and data collection occurred over 7 months with high participation rates.

The study analyzed top-box (or "always") responses using statistical tests, aligning with CMS reporting standards for HCAHPS scores. This methodology ensured consistency with established reporting practices.

RESULTS

The physicians in both the intervention and control groups were similar in terms of demographics, experience, and initial HCAHPS survey scores, as shown in Table 1.

The intervention group demonstrated a significantly higher proportion of "always" responses (86%, 1290/1500) to the provider-specific communication questions compared to the control group (80.5%, 1239/1539), with a p-value below 0.00001. This difference was particularly notable for questions 1 and 3 of the survey, which assess how well doctors explain things and how respectfully they treat patients (Table 2).

We also examined the "always" responses based on the hospitalist's role within the team, whether working with residents on house-staff teams, collaborating with APPs on direct care teams, or working independently on direct care teams. The intervention group showed higher "always" response rates when hospitalists worked independently (87% vs. 81%, $p < 0.0001$) or with residents (86% vs. 78%, $p = 0.05$), but there was no significant difference in responses when working with APPs (Table 3).

Additionally, we compared "always" response rates based on the attending hospitalist's role in the control group. Responses were lowest on house-staff teams (78%) and highest when hospitalists worked with APPs on direct care teams (86%) (Table 4).

Table 1: Baseline Characteristics

Characteristic	Intervention Group (N = 13)	Control Group (N = 13)	p-value
Age (mean)	37.4 years	36.2 years	0.23
Gender	7 male, 6 female	7 male, 6 female	NA
Baseline HCAHPS scores	76%	74%	0.62
Years since completion of medical school	7.9 years	10.8 years	0.08
Years of hospitalist experience	5.3 years	6.3 years	0.54

Table 2: Proportion of "Always" Responses to HCAHPS Questions

Question	Intervention Group*	Control Group*	p-value
Doctors explain things in a way you could understand	82% (1230/1500)	74% (1140/1539)	0.0034
Doctors listen carefully to you	83% (1245/1500)	78% (1200/1539)	0.05
Doctors treat you with courtesy and respect	93% (1395/1500)	89% (1371/1539)	0.03

Table 3: Proportion of "Always" Responses by Provider Role

Provider Role	Intervention Group	Control Group	p-value
Attending on their own	87% (757/870)	81% (701/864)	< 0.0001
Attending with APP	85% (178/210)	86% (203/237)	0.79
Attending with house-staff	86% (361/420)	78% (344/438)	0.005

Table 4: Proportion of "Always" Responses by Attendings' Role in Control Group Patients

Attendings' Role	Proportion of Responses	p-value
Attending with APP	86% (203/237)	0.02/0.10**
Attending on their own	81% (701/864)	0.27*
Attending with house-staff	78% (344/438)	

DISCUSSION

Our study reveals that real-time feedback significantly enhances provider-specific HCAHPS scores, particularly in aspects related to clear communication and respectful treatment of patients. Interestingly, we observed differences in HCAHPS scores across different hospitalist teams, with higher scores seen on teams with advanced practice providers (APPs). (Lappé et al., 2020)

Previous research has highlighted the effectiveness of individual performance feedback in improving physician quality metrics. Combining target sharing and performance feedback has shown to be more effective than using either strategy alone. Feedback plays a crucial role in goal attainment by making individuals aware of performance gaps and encouraging adjustments in effort and strategies. (Seiler et al., 2017)

Our study is one of the few randomized trials assessing the impact of real-time feedback on HCAHPS scores. Unlike previous studies, we delivered feedback via email without in-person coaching. This method yielded significant improvements in patient satisfaction scores, contrasting with Indovina et al.'s findings where improvements were not observed. (Indovina et al., 2016)

Other techniques to enhance physician communication skills include workshops, seminars with standardized patients, medical simulations, scripted communication models, and small group reflections. However, these methods face challenges such as time constraints and variable efficacy. Our approach of email-delivered feedback with peer comparison and goal performance is efficient and practical, potentially sustainable with minimal resource requirements. (Iannuzzi et al., 2015)

While our study did not find significant differences in patient satisfaction scores between attendings and APPs, our findings regarding team structure's impact on scores differ from some previous studies. Further research is needed to explore these discrepancies and understand how team composition influences patient satisfaction. (Wray et al., 2016)

Despite our study's strengths, including randomization and comparability between groups, it has limitations. These include potential residual confounding, single-center design limiting generalizability, and the lack of patient-level data on demographics and comorbidities. Additionally, there are concerns about overemphasis on patient satisfaction scores and the potential impact on healthcare practices and provider well-being, which require further investigation. (Ivers & Barrett, 2018)

In summary, our study underscores the positive impact of real-time patient feedback on provider-specific HCAHPS scores. This approach presents a practical model for academic centers to enhance patient-centered care, improve communication skills, and navigate value-based healthcare systems. (Richards et al., 2018)

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