Abstract

Association of Provider Communication and Inpatient Hospital Readmissions

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Introduction: Inpatient hospital readmission rates represent an important clinical and economic problem. Clinical interventions have shown significant decreases in preventable readmissions, but are costly to implement. Another approach is to better equip patients with the knowledge and resources to manage their care after discharge. Patients receive instruction from both nurses and physicians, as well as information pertaining to post-discharge care and instructions for care while at home. This study examines the association between provider communication and inpatient hospital readmissions.

Methods: This study used survey data from the 2013 and 2014 Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS). Our sample included all inpatient facilities (n=4,063) for demographic and patient experience data, and a subset (n=MIN 1,906 MAX 2,283) of facilities where hospital acquired infections data were available. Shapiro-Wilk test and ordinary least squares (OLS) regression analysis were performed to analyze the data. The key communication variables tested were Nurse Communication, Physician Communication, Information for Recover, and Understood Care for Recovery.

Results: Nurse Communication, Physician Communication, and Information for Recovery were found to have significant association with readmission rates, while Understood Care for Recovery was found not significantly associated with readmissions. Nurse Communication was surprisingly found to have a positive correlation with readmissions (β=0.054, 95% CI 0.035-0.074, $p < .000$). Physician Communication was found to have a negative correlation with readmissions (β= -0.033, 95% CI -0.052 - -0.014, $p < .001$), as did Information for Recovery (β = -0.072, 95% CI -0.090 - -0.054, $p < .000$).

Conclusion: Physician Communication is directly tied to a decrease in readmissions, with each percentage point (scale of 0 to 100) where patients identify the physician communication well relating to a decrease of .033 in inpatient 30-day readmission rates. Patients who indicate they had proper information for recovery at home were found to have a significant decrease of .072 in admissions using the same scale. The increase in readmissions for improved nurse communication was not expected and raises several questions that cannot be answered in the scope of this research.

One additional finding in the study that was not part of the study, yet warrants future research, is the significant positive correlation between methicillin-resistant staphylococcus aureus infections (MRSA) and readmissions. Each 1% increase in MRSA rates resulted in an increase in readmissions by 0.12%.

While the findings were all statistically significant, with p-values well below 0.05 for the three discussed variables, one large limitation of this study is the small R2 value. With the infection rates added into the regression, the R2 maxed out at 0.1815 with an adjusted R2 of 0.1750. Further attempts to utilize the data, such as log-transformation, were not successful in increasing the R2. It is important to note that while the findings are statistically significant, they do lack explanatory power.