Examining the Relationship Between Perceived Quality of Care and Actual Quality of Care as Measured by 30-Day Readmission Rates

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Objective: To test the relationship between patient experience, as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), and actual quality of care, as measured by 30-day readmission rates. **Data Sources:** Both HCAHPS data and outcome data reported to the Centers of Medicare & Medicaid Services (CMS). **Study Design:** This secondary, nationwide (N = 4060), hospital-level study focused only on acute care hospitals. HCAHPS question 22 "Would you recommend this hospital to your friends and family?" was used to determine level of overall satisfaction, and 30-day readmission rates, as reported to the CMS, was used as a proxy for actual quality of care. **Principal Findings:** A statistically significant relationship was found between patient experience and actual quality outcomes. **Conclusion:** The results of this study reinforce the inclusion of patient experience in Medicare's Value Based Purchasing program as a matter of good public policy.

Key words: HCAHPS, hospital quality, patient experience, patient perception, readmission rates, value based purchasing

The purpose of this study was to examine the relationship between reported patient experience and objective hospital quality. Since the Affordable Care Act (ACA) added patient experience to Medicare's Value Based Purchasing (VBP) formula as an incentive to improve quality, this relationship ought to be examined. A great deal of rhetoric centers on putting the patient at the center of his or her care; yet, the attempt to do so in a formal manner, that is, by measuring satisfaction and incentivizing positive patient satisfaction, has been met with resistance in the health care industry. Much of this resistance comes from skepticism about whether patient experience is actually correlated with quality.

Linking Medicare payment to patient experience, as measured by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey, has been controversial since its inclusion in the VBP established by the ACA in 2010. For FY2015, hospitals are at risk for 1.5% of Medicare payments under the VBP program and patient experience score accounts for 30% of that. While aggregate operating margins appear to be steadily improving, in 2013, 30.5% of US hospitals reported a negative operating margin,[1] making concern over new potential financial risk understandable.

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The formal measurement of patient experience or satisfaction is not new; in fact, it began in 1985 with the development of the first widely used patient experience survey. However, until being included in the VBP program, any data gleaned from patient experience surveys were used primarily for internal purposes and marketing. With its inclusion in the VBP program, not only are hospitals at financial risk for poor patient experience scores but they also must consider that at least some of the information is accessible to consumers through the Hospital Compare Web site.

METHODS

This secondary analysis, using 30-day readmission rates and patient experience scores, is intended to examine the relationship between patient satisfaction and health care quality in short-stay US hospitals. The level of measurement is the individual hospital and the sample size is all US nonfederal short-stay hospitals for which patient experience and 30-day readmission rates were reported to Centers of Medicare & Medicaid Services (CMS) (N = 4060).

The use of readmission rates as an indicator of overall hospital quality is rooted in a 1997 meta-analysis by Ashton et al.[2] This analysis involved a comprehensive literature search involving studies using the term "patient recidivism" and/or "readmission," which were published between 1966 and 1993. The study concluded that, in cases where process of care elements could be examined, rather than inferred, low-quality care increased the odds of readmission by 55% compared with care of higher quality.[2] Similarly, Halfon et al[3] found obvious quality-of-care issues in 27% of index admissions in a study examining 131 809 hospitalization records.

Dependent variable: 30-day readmission rates

The dependent variable in this study is 30-day readmission rate, which is defined by the Agency for Healthcare Research and Quality as a subsequent hospital admission within 30 days following an original admission or index stay.[4] This includes unplanned readmission to the same or different hospital and may not be for the same condition as the original stay.[4] The reported score, coded as READM, is composed of readmission rates from 5 clinical categories: medicine, surgery/gynecology, cardiorespiratory, cardiovascular, and neurology. In each of the categories, rates are adjusted on the basis of comorbid conditions that existed prior to the index stay. Rates are further risk adjusted on the basis of the hospitals service mix.[5]

Independent variable: HCAHPS question 22

The independent variable, HCAHPS question 22 "Would you recommend this hospital to your friends and family?" is intended to be a global measure of satisfaction.[6] Possible answers to this question are *definitely no, probably no, definitely yes,* and *probably yes*; however, the CMS reports only *definitely yes, definitely no,* and *probably no.* This study used *definitely yes,* coded as YRECMND, as the single variable for patient experience.

The HCAHPS survey is administered by acute care hospitals participating in the VBP program. Respondents must be at least 18 years of age at the time of hospitalization; they must have spent at least 1 night in a medical, surgical, or maternity unit; they must be alive at the time of discharge; and they must have a nonpsychiatric MS-DRG/principal diagnosis at the time of discharge.[7] The HCAHPS survey may not be administered to patients discharged to hospice care or nursing homes, law enforcement patients, no publicity patients, or patients with a foreign home address.

DATA

Data sources

All data are derived from the CMS's Data.Medicare.gov, Hospital Compare data sets in CSV flat file format. Data were imported into IBM SPSS Statistics, where they were first analyzed for missing values (n = 1916). Missing values were eliminated, leaving a sample size of 4060 hospitals.

Descriptive statistics

The independent variable, READM, had a mean statistic of 15.59, with a standard deviation of 0.964 and a range of 10.30 (max = 21.40, min = 11.10). The variable was normally distributed, with a skewness of 0.51 (SE = 0.038) and kurtosis of 1.72 (SE = 0.077).

The dependent variable, YRECMND, had a mean statistic of 95.06, with a standard deviation of 3.335 and a range of 44 (max = 100, min = 56). The variable was not normally distributed, with a skewness of −2.127 (SE = 0.038) and kurtosis of 11.021 (SE = 0.077).

Testing procedure

A Pearson product-moment correlation test was performed to determine the relationship between the 2 variables, READM and YRECMND.

RESULTS

A statistically significant negative correlation ($r = -0.248$) was found between health care quality, as measured by 30-day readmission rates (READM), and overall patient experience, as measured by responses to HCAHPS question 22 (YRECMND) among short-stay hospitals in the United States. Hospitals with higher levels of patient satisfaction, as measured by HCAHPS, tended to have lower rates of readmission (Table).

DISCUSSION

This study set out to test the hypothesis that a statistically significant correlation exists between patient experience and overall health care quality in short-stay hospitals. The findings confirm that hospitals with higher patient experience scores have lower rates of readmission and therefore have higher levels of overall quality. This study, along with other large studies, such as those by Isaac et al[8] (n = 927) in 2010 and Jha et al[9] (n = 4032) in 2008, support the use of patient experience as an element of VBP.

Critics of using patient experience as an element of VBP point to anecdotal tales of providers kowtowing to patients' every whim to keep patient experience scores high. Stories of overprescribing medications, ordering unnecessary tests, or simply overutilizing services are common narratives of opinion pieces, blogs, and even articles in periodicals on the subject.[10-12] One blog by Karen Sibert, MD,[13] claims that physicians may be overprescribing opioids because they are "likely to run afoul of patient satisfaction surveys" or because the CEO of the hospital may have a compensation package tied to the profit of the organization. However, the evidence from large-scale studies of academic medical centers, instead, indicates a negative correlation between care intensity and patient experience scores.[14,15] Second, if these stories are true, we have a serious ethical breach

Table. Correlations

	READM	YRECMND
READM		
Pearson correlation	1	−0.248[a]
P (2-tailed)		.000
N	4060	4060
YRECMND		
Pearson correlation	−0.248[a]	1
P (2-tailed)	.000	
N	4060	4060

[a]Correlation is significant at the .01 level (2-tailed).

in what is supposed to be the most ethical of professions. It is understood that encounters with the health care system carry risks to the patient and therefore the more procedures or tests a patient engages in, the higher the risk for adverse occurrences.[16] The argument being made by Sibert[13] and others would have you believe that some providers are putting patients in peril in order for the hospital to make marginal gains in 25% of 1.5% of Medicare Prospective Payment Systems reimbursement. This study refutes that the effectiveness of such an undertaking would be effective; in fact, it shows that the most direct route to high levels of patient satisfaction is through delivering high-quality care.

The first question we must ask when analyzing public policy is "Does the policy achieve its purpose or goals?" According to the final rule for the Medicare VBP, the purpose of the program is to "revamp how care and services are paid for, moving increasingly toward rewarding value, outcomes, and innovations instead of merely volume."[17] Since patient experience is only one element of the VBP policy, the test should not be whether it alone achieves the purpose or goals but whether it contributes to the overall purpose. The answer is "yes." Hospitals have been forced to become more innovative in how they delivery care in an effort to transition to a patient-centered model from one where the physician is at the center of care.[18] A new emphasis on things such as noise reduction, privacy, room reconfiguration for staff efficiency, and colocation of services[19] is emerging. All of which can improve value and outcomes for patients.

The next point of analysis should be cost and benefit. While there are direct costs associated with administering the survey, it is the costs associated with creating an organization that is focused on patient experience that may be significant. Rice[20] estimated that 60 large hospitals or systems have appointed a chief experience officer, with many more organizations choosing to place the responsibility for patient experience at the director level. These are positions that would have been unheard of a decade ago. Of course, the human resource costs extend beyond the position overseeing patient experience; they can be found in the areas of retraining and even employee turnover. For some organizations, the transition to patient-centered care may be a dramatic one and can cause unrest among employees; however, as with most transitions associated with organizational culture, once the foundation is in place, the costs of maintaining it are marginal. The quantifiable benefits of using HCAHPS are clear. Trivisonns[21] found that high-volume organizations with consistently high HCAHPS ratings in the areas of nurse communication, pain management, and cleanliness/quietness are correlated with process-of-care scores and lower readmission rates and that a 1-point increase in process-of-care scores is associated with a 1% decrease in rates of mortality.

It is important to remember that HCAHPS is only the beginning of the role patient experience will have in the health care system. The desire for increased value in health care is driving the implementation of home health, nursing home, hospice, outpatient surgery, health plan, as well as clinician and group participation in the Consumer Assessment of Healthcare Providers and Systems (CAHPS) surveys.[22] These CAHPS surveys are at various stages of implementation; however, barring some significant change in policy, they will eventually be tied to payment in some manner and private payers will probably follow suit.

LIMITATIONS

This study has some important limitations. First, many hospitals were not included in the data. These included non-Medicare providers such as children's hospitals, military hospitals, veteran's hospitals, and prison hospitals ($n = 315$) for a total of 40 969 beds. This study used hospital-wide patient experience data and did not adjust for service line, race, and primary language, which can all play a role in levels of patient experience.[23]

CONCLUSION

From hospitals to nursing homes and physician practices, we are at the beginning of a value-based delivery system and the evidence from this and other studies validates the role of patient experience in VBP. Whether a hospital is responding to the incentives associated with VBP by increasing fee for value, shared risk, or capitated contracting, patient experience should be top of mind for clinicians and administrators.

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