

# PATIENT SATISFACTION MEASURES AND THEIR IMPACT ON PATIENTS' RATING OF A HOSPITAL

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## ABSTRACT

*As healthcare costs continue to escalate and patients become increasingly aware of the quality of healthcare, patients' satisfaction is growing in importance to health care providers due to the changes in the reimbursement of hospitals decreed by the Affordable Healthcare Act of 2010. This research examines the relationship between the twenty-seven items on the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey and patients' overall satisfaction with a hospital. Nurse communication with patients and providing patients with information before they go home were found to have a significant impact on the overall hospital rating given by patients. It was also determined that hospital size as measured by total revenue had a significant impact on overall hospital rating.*

*Keywords:* Patient satisfaction measures, hospital ratings, hospital size

## INTRODUCTION

Patient satisfaction has become an increasingly important topic in healthcare in the last decade. Research was conducted in the early 2000s by Centers for Medicare and Medicaid Services (CMS) and the Agency for Healthcare Research and Quality (AHRQ) to develop standard measures of patient satisfaction. The standardized survey, the *Hospital Consumer Assessment of Healthcare Providers and Systems* (HCAHPS) survey, developed by CMS and AHRQ is now distributed to patients across the country by their hospital. The results for each hospital are submitted to CMS where they are aggregated into a total score or satisfaction measure. The results are made publicly available on the Internet by CMS and include the scores for each patient satisfaction measure by hospital. This has allowed everyone to have access to patients' feedback on hospitals around the country. Furthermore, for fiscal year 2013, CMS is using patient satisfaction scores to help determine payment amounts for their new Hospital Value-Based Purchasing (Hospital VBP) program. Part of the payment for Inpatient Prospective Payment System (IPPS) hospitals is linked to patient satisfaction scores for the hospital. This recent development has further increased hospitals' focus on patient satisfaction.

Much of the early research in customer satisfaction was with tangible product evaluations while much of the more recent research of customer (patient) satisfaction in the healthcare industry has been grounded in the effect of service quality on patient satisfaction. But what exactly constitutes high service quality in the healthcare industry? What types of service provided by the hospital lead to high customer satisfaction? What service provided by the hospital do patients value other than just living or dying? The purpose of this exploratory study is to search for an answer to those questions by examining the measures of patient satisfaction reported for each hospital to determine which measures of patient satisfaction have a significant impact on the patient's overall hospital rating.

## LITERATURE REVIEW

### Patient Satisfaction

Sherif and Hovland (1961) developed a theory of satisfaction which they called contrast theory. Contrast theory calls the difference between expectations and actual outcomes a disconfirmation. If product performance is greater than expectations, it is called “positive disconfirmation”. Product performance which falls below expectations is considered “negative disconfirmation”. Contrast theory “would predict outcomes differing from expectations would cause the subject to react favorably or unfavorably to the disconfirmation in that a negative disconfirmation is believed to result in a poor product evaluation whereas a positive disconfirmation should cause the product to be highly appraised” (Oliver, R. 1977 p480-1).

Within the healthcare setting, disconfirmation theory was an early theory that attempted to explain customer satisfaction. Newsome and Wright (1999) suggested that disconfirmation theory was “by far” the most dominant theory to explain patient satisfaction. They also suggested that the role of expectations played a central component in the satisfaction process. Parasuraman and Berry (1988) suggested the service attributes customers placed the most emphasis on were:

- reliability – ability to perform the promised service dependably and accurately
- responsiveness – willingness to help customers and provide prompt service
- assurance – employees’ knowledge and courtesy and their ability to inspire trust and confidence
- empathy – caring, individualized attention given to customers
- tangibles – appearance of physical facilities, equipment, personnel and written materials

Studies by Linder-Pelz (1982) offered conflicting evidence however finding that patient expectations only accounted for eight percent of the variation in patient satisfaction.

Due to the growing concern with patient satisfaction ratings, there has been an increase in the studies conducted on the topic. Reasons patient satisfaction is important to hospitals have been included in much of the literature. The first reason discussed by Otani, Waterman, and Dunagan (2012) is that patients who are satisfied with their hospital are more likely to obey treatment procedures. The authors also mention that satisfied patients are less likely to look for a new doctor. Patients who look for a new doctor are more likely to have tests redone. Therefore, if patients are satisfied with their doctor, the additional costs for both the patient and the hospital of these duplicate tests can be saved. Another reason noted by Otani, Waterman, and Dunagan is that managed care organizations often use patient satisfaction data to determine the reimbursement rates to be paid to providers (2012). In an earlier study, Otani, et al. (2009) added that patients who are satisfied with their hospital are likely to return. Patient loyalty generates revenue for hospitals.

Research on patient satisfaction has changed in focus since the early 2000s. While much of the earlier research on patient satisfaction focused on developing measures for patient satisfaction, the recent studies have shifted focus. Newer research analyzes healthcare attributes to determine which are more or less likely to increase patient satisfaction ratings (Otani, Waterman, and Dunagan, 2012). Otani, et al. (2012) examined previous patient satisfaction studies and their objectives. The first area of research discussed is the impact of patient demographics on overall satisfaction. These studies found that older patients were generally more satisfied than younger patients. The studies also discovered that female patients were typically more satisfied than males. Otani, Waterman, and Dunagan (2012) also discussed

studies that examine which areas of healthcare have a greater impact on overall patient satisfaction. These studies have found “nurse care and staff care” have a significant relationship to the changes in overall patient satisfaction. Nursing care was also found to be a significant indicator previously by Otani and Kurz (2004). Further investigation into nursing care was done by Kutney-Lee, et al. (2009) when they investigated the relationships between nurse work environment, patient-to-nurse ratios, and patient satisfaction. They found both nurse work environment and patient-to-nurse ratios have a significant impact on patient satisfaction ratings.

According to Stevens, Reininga, Boss, and van Horn (2006), there are three factors that impact the ratings given by patients. The three factors are “social desirability response bias,” “integrating response bias,” and survey timing. The first factor, “social desirability response bias,” describes patients that feel that they should give the hospital a higher ranking because it is more socially acceptable. These patients may report higher satisfaction than they actually experienced. The second factor, “integrating response bias,” occurs when patients utilize the survey in an attempt to win the favor of the medical staff. This bias is caused by a patient’s feeling of dependency on their caregivers. The last factor, survey timing, is when the survey is given to the patient. In their study, Stevens, Reininga, Boss, and van Horn (2006) focused on the impact of the survey timing for orthopedic patients. In their study, surveys were given upon the patient’s discharge from the hospital and then again 1 to 12 months after discharge. Through a paired samples t-test, they found there was a significant difference in the scores. The scores from the surveys given 1 to 12 months after discharge were significantly lower than those given upon discharge. The factors described above could have had an impact on this study. For example, the drop in satisfaction ratings 1 to 12 months after discharge could have been caused by a decrease in the dependency that patients felt as time passed.

Liu, et al. (2010) investigated ways to impact patients’ loyalty to a hospital. They conducted an observational study of caring behaviors in an emergency department setting. Patients were asked to complete an exit survey with questions on patient loyalty, caring behaviors and demographic information. Based on the collected data, Liu, et al. found that caring behaviors did have an impact on patient loyalty.

### **Hospital Consumer Assessment of Healthcare Providers and Systems Survey**

The HCAHPS Survey is the first standard patient satisfaction survey method to be developed in the United States. Results of the HCAHPS survey are based on the past four consecutive quarters and made publicly available online by CMS quarterly. Due to the standardized nature of the HCAHPS survey, the results can be compared across hospitals, and patients can access and compare hospitals on their own. Individuals can compare the results for hospitals locally, regionally, or nationally. Many hospitals were collecting patient satisfaction data prior to the development of HCAHPS; however, the HCAHPS survey made the data uniform across all hospitals. In addition, CMS has allowed for anybody to view and analyze the data (Centers for Medicare & Medicaid Services 2012). Making this information publicly available, incentivizes hospitals to provide excellent care and makes the hospitals accountable for the level of care that they are providing to their patients (Centers for Medicare & Medicaid Services 2012; Cunningham, Weber, & Cook 2007).

The HCAHPS survey was created by CMS and AHRQ. Development of the survey began in 2002 when the two agencies started conducting extensive research on which measures should be included in the survey. Methods of research included “a public call for measures; literature

review; cognitive interviews; consumer focus groups; stakeholder input; a three-state pilot test; extensive psychometric analyses; consumer testing; and numerous small-scale field tests” (Centers for Medicare & Medicaid Services, 2012). The pilot test of the survey included hospitals in Arizona, New York and Maryland. There were 24 hospitals in the core group that were used for the majority of the analyses conducted. There was a mix of large and small hospitals, rural and urban hospitals, and academic and nonacademic hospitals included in the core group. Survey results were also collected on 85 hospitals that made up the noncore group. The survey used for the pilot test included 66 items that were arranged into six groups (CAHPS® II Investigators and Agency for Healthcare Research and Quality, 2003).

Analyses were conducted on the validity and reliability of the 66 items included on the test survey. To test reliability, Cronbach’s Alpha was computed for each of the six groups. Following the computation of the alphas, sensitivity analyses were performed to determine if the removal of any items from the group would increase the alpha for the group. Once reliability of the data was determined, tests were performed to determine the validity of the data. The scores for each group of questions were calculated as the average for the items included in each group. The adjusted R-square value was then calculated as the variance in the hospital ratings or recommendations adjusted for the number of items included in the group. Subsequently, multivariate analyses were performed to determine the relationship of each measure by itself to the hospital’s global rating and the patient’s willingness to recommend the hospital. The multivariate analyses found the highest significance on items related to nurses listening to patients, treating patients with respect, and helping the patient’s visitors (CAHPS® II Investigators and Agency for Healthcare Research and Quality, 2003).

Based on their research and the pilot test results the survey was revised; and CMS and AHRQ were able to get HCAHPS endorsed by the National Quality Forum in May 2005. The current survey contains 27 items. There are six summary measures, two individual items, and two global items. Each summary measure contains two to three items (Centers for Medicare & Medicaid Services, 2012).

### **Hospital Value-Based Purchasing**

The Value-Based Purchasing program was developed by the Affordable Care Act of 2010. The program provides hospitals with financial incentives for meeting quality performance standards that have been established (Cliff 2012). For fiscal year 2013, the “Total Performance Score (TPS)” for each hospital is determined based on the hospital’s “Clinical Process of Care Domain” and “Patient Experience of Care Domain.” The weights of these domains are 70% and 30% respectively. The “Patient Experience of Care Domain” score for the hospital is largely determined based on their HCAHPS scores. The Patient Experience of Care Domain score is calculated based on “the percentage of a hospital’s patients who chose the most positive, or “top-box,” survey response” in the HCAHPS dimensions of satisfaction (Centers for Medicare & Medicaid Services, 2012).

There are two time periods for the scores that are used in the calculations. The first time period is the “Baseline.” For fiscal year 2013, this time period is based on patients discharged from the hospital from July 1, 2009 through March 31, 2010. The second time period is the “Performance Period.” The “Performance Period” for fiscal year 2013 is based on patients discharged from the hospital from July 1, 2011 through March 31, 2012. The calculation of the “HCAHPS Base Score” includes “Improvement or Achievement” scores for each of the

HCAHPS dimensions based on the two time periods. According to CMS, “Improvement” is defined as “the amount of change in an HCAHPS dimension from the earlier Baseline Period to the later Performance Period.” “Achievement” is defined as “the comparison of each dimension in the Performance Period to the national median for that dimension during the Baseline Period.” In addition to the time period scores, there are “HCAHPS Consistency Points” which provides motivation for hospitals to improve their lowest performing HCAHPS dimension (Centers for Medicare & Medicaid Services, 2012).

The changes have prompted studies of patient-centered hospitals. According to Cliff (2012), patient-centered hospitals “look to patients to help define a positive and satisfying patient experience.” Furthermore, Planetree Designated Patient-Centered Hospitals “represent the highest level of achievement in patient-centered care.” Cliff discusses studies indicating that Planetree Designated Patient-Centered Hospitals outperform the national average for all 10 HCAHPS categories. In addition, Cliff discusses the benefits for hospitals that work to increase their patient satisfaction scores. Improvements in patient satisfaction can lead to higher patient loyalty and improved reputation; and subsequently, increases in patient loyalty can produce revenue gains. An improved reputation can lead to higher patient volumes and profits, a reduction in the number of malpractice claims, and greater efficiency (2012).

In another study, Otani, et al. (2009) investigated the relationship between patient reactions to questions about the admission process, nursing care, physician care, staff care, food and room and the dependent variables. The dependent variables for this study were overall hospital rating, willingness to recommend the hospital, and willingness to return to the hospital. The results indicated that staff care was the “most influential attribute” for the patients’ “excellent” ratings of their overall view of the hospital. Nursing care was found to be the second most significant indicator of an “excellent” rating for overall view of the hospital.

## **OBJECTIVE**

This is an exploratory study and the main objective of this study is to determine which measures of patient satisfaction significantly impact patients’ overall rating of the hospitals included in the sample. The first problem addressed in this study is the impact of high ratings for the six summary HCAHPS measures and two individual HCAHPS items on patients giving the hospital a high overall rating. Also, this study looks at hospital size variables, number of employees, number of volunteers, and total revenue to determine if they have a significant impact on patients’ overall rating of the hospital.

## **METHODOLOGY**

### **Sample and Data Collection**

This study examines Illinois hospitals where both HCAHPS survey data and Form 990 data could be located. There were 182 Illinois hospitals listed on CMS’s Hospital Compare website. Of the 182 hospitals listed, there were 33 hospitals that did not have HCAHPS data available. There were another 50 hospitals that were not included in this study due to problems locating their Form 990 data. Therefore, the final sample for this study included a total of 98 hospitals. The majority of the hospitals used for the study (i.e. 82 hospitals) had HCAHPS and Form 990 data available at the hospital level. The remaining 16 hospitals were grouped into four different health systems. The information gathered from the health system’s Form 990 was

reported at the system level rather than the hospital level. For that reason, those 16 hospitals were not included when analysis was done using size variables. The hospital data for these variables was collected from the HCAHPS survey published by CMS. Also, size variables were collected and analyzed to determine if hospital size impacts the patients' overall hospital rating. The data for the size variables was documented based on the values entered on the hospitals' Form 990s.

### ***Patient Satisfaction Data***

The patient satisfaction data used in this study was retrieved from the Centers for Medicare & Medicaid Services' websites. The Centers for Medicare & Medicaid Services (CMS) allows for hospital patient satisfaction data to be retrieved a couple different ways. Data can be retrieved from the Hospital Compare website or the Data.Medicare.gov website. In completing this study, both methods of data collection were utilized.

The first method used is the Hospital Compare website. It allows users to enter location criteria into the search function. On the results page, individuals can select an individual hospital or select up to three hospitals and compare them side-by-side. This method of data collection was the starting point for this study, but was not found to be useful. The Hospital Compare website is more suitable to individuals who are looking for information on a small set of hospitals (Centers for Medicare & Medicaid Services, 2013).

The second method of data collection that CMS offers is their Data.Medicare.gov website. This website allows users to better filter the data to fit their needs. On Data.Medicare.gov, users select "Survey of Patients' Hospital Experiences (HCAHPS)" to view the HCAHPS data. This link brings up the database which can be filtered to the criteria necessary. For this study, the data was filtered to hospitals in the state of Illinois only. Once filtered, the data can be easily exported into Microsoft Excel (Centers for Medicare & Medicaid Services).

### ***Hospital Size Data***

The hospital size information for this study was collected from the hospitals' Form 990s. The Form 990s were obtained using the GuideStar website. The Advanced Search allows users to search nonprofit companies by state and NTEE code. For this study, the state was filtered to Illinois. To obtain information for all hospitals used in this study's sample, NTEE codes E20 Hospitals and Primary Medical Care Facilities, E21 Community Health Systems, and E22 Hospitals (General) were used. A list of the NTEE codes is available through a link on the Advanced Search page on GuideStar. On the results page, users can click on the organization name to view all available information for that organization. For the purposes of this study, the information on hospital size (employees, volunteers, and total revenue) was collected from the most recent Form 990 available for each of the hospitals (GuideStar USA, Inc., 2013).

## **MEASUREMENT OF THE VARIABLES**

### **Independent Variables**

The data for the variables listed below was gathered from CMS' Hospital Compare website. For purposes of this study, the percentage of patients giving the hospital the highest rating was used for each measure of patient satisfaction (2013).

- Percentage of patients who reported that their nurses “Always” communicated well
- Percentage of patients who reported that their doctors “Always” communicated well
- Percentage of patients who reported that they “Always” received help as soon as they wanted
- Percentage of patients who reported that their pain was “Always” well controlled
- Percentage of patients who reported that staff “Always” explained about medicines before giving it to them
- Percentage of patients who reported that their room and bathroom were “Always” clean
- Percentage of patients who reported that the area around their room was “Always” quiet at night
- Percentage of patients at each hospital who reported that YES, they were given information about what to do during their recovery at home

The hospital size variables were measured based on the hospitals’ Form 990s. To determine the hospital’s size, the number of employees was taken from Box 5 of the form, the number of volunteers was taken from Box 6, and total revenue for the current year was taken from Box 12 (GuideStar USA, Inc. 2013).

### **Dependent Variable**

There was one dependent variable used in this study - the percentage of patients who gave their hospital a rating of 9 or 10 on a scale of 0 (lowest) to 10 (highest). The data for this variable was obtained from the Hospital Compare website (Centers for Medicare & Medicaid Services, 2013).

### **Statistical Techniques**

SPSS 19.0 was used for statistical analysis. A backward stepwise regression analysis was used to determine which measures of patient satisfaction resulted in a significant impact on the overall patient rating. The backward regression used a probability of F of .05 for entry into the model and a removal value of .10. Backward regression was chosen because it has less risk of making a Type II error than forward stepwise, due to suppressor effects. Suppressor effects occur when a predictor variable has a significant effect, but only when another variable is held constant (Field, 2005).

## **DISCUSSION OF FINDINGS**

### **Overall Hospital Rating**

Overall hospital rating was the dependent variable and the patient satisfaction measures acted as independent variables. This resulted in two different models (see Table 1). The best model for determining the overall rating of the hospital was the second model which had an Adjusted R Square of .751. This model used the “nurse communication” and “received information before going home” scores as predictors. Both predictors showed a significant positive impact on determining the overall hospital rating. The p-values for both variables were listed as .000 (see Table 2).

**Table 1**  
**Overall Hospital Rating - Stepwise Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.839 <sup>a</sup>	.704	.701	.04627
2	.869 <sup>b</sup>	.756	.751	.04228

a. Predictors: (Constant), NurseCommunicate

b. Predictors: (Constant), NurseCommunicate, RecInhome

**Table 2**  
**Overall Hospital Rating - Stepwise Model Details**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.256	.062		-4.152	.000
	NurseCommunicate	1.210	.080	.839	15.123	.000
2	(Constant)	-.448	.071		-6.323	.000
	NurseCommunicate	.900	.101	.625	8.947	.000
	RecInhome	.514	.115	.312	4.473	.000

a. Dependent Variable: HospitalRating

### Overall Hospital Rating with Size Variables

In previous studies (Kennedy, et al., 2010; Branson, Buxton, Chen and Smith 2014) hospital size was discovered to be a significant factor in analyzing hospital operations, especially related to their decisions regarding charity care. In order to see if characteristics of hospital size had a significant impact on perceived satisfaction the final set of analyses performed in this study added the number of employees, number of volunteers, and the total revenue for the hospital as additional independent variables. Because the Form 990s for the health systems did not report at the hospital level it was not possible to determine the number of employees in each hospital. In this case, those hospitals had to be eliminated from the data for this analysis.

Overall hospital rating was used as the dependent variable. The analysis returned three different models. The third model was the best with an adjusted R square of .795 (see Table 3). The predictors for the dependent variable in this model were nurse communication, received information before going home, and total revenue. All predictors in this model had a positive impact on the dependent variable (see Table 4). The first two models returned did not include any of the size variables as significant indicators of overall hospital rating.



**Table 3**  
**Overall Hospital Rating - Stepwise Model Summary with Size Variables**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.844 <sup>a</sup>	.712	.708	.04804
2	.875 <sup>b</sup>	.766	.760	.04353
3	.896 <sup>c</sup>	.803	.795	.04026

a. Predictors: (Constant), NurseCom2

b. Predictors: (Constant), NurseCom2, RecInfoHome

c. Predictors: (Constant), NurseCom2, RecInfoHome, Revenue2

**Table 4**  
**Overall Hospital Rating - Stepwise Model Details with Size Variables**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.254	.066		-3.856	.000
	NurseCom2	1.204	.086	.844	14.058	.000
2	(Constant)	-.448	.075		-5.983	.000
	NurseCom2	.858	.112	.601	7.664	.000
	RecInfoHome	.551	.128	.337	4.292	.000
3	(Constant)	-.458	.069		-6.611	.000
	NurseCom2	.892	.104	.625	8.586	.000
	RecInfoHome	.516	.119	.315	4.334	.000
	Revenue2	5.482E-11	.000	.191	3.792	.000

a. Dependent Variable: OverallRating

The residuals from the above regression were graphed and tested for normality of distribution by the Shapiro-Wilk test which reported a test statistic of .988 with degrees of freedom of 98 and a significance factor of .539. When the test is non-significant ( $p > .05$ ) we can conclude that the distribution of the residuals is not significantly different than a normal distribution. The Shapiro-Wilk test was chosen over the Kolmogorov-Smirnov test of normality because it tends to be more accurate (Field, 2005). The graph of the residuals did not reveal any concerns for a departure from the normality assumption.

This exploratory research reveals that of all the variables that were included in the study, only the nurses always communicate well, patients that were given information about what to do during their recovery at home, and the size of the hospital as measured by revenues had a positive and significant impact on the patients' satisfaction with the hospital. Initially some of these findings were surprising to the authors because many of the factors that are often considered important to patient satisfaction were not the most statistically significant in predicting patient overall satisfaction with a hospital. One such example is the communication from the doctors. An examination of the more recent literature gives support to our results. In

their study specific to inflammatory arthritis Koksvis, et al. (2013) found that patients had greater satisfaction when they received consultation from nurses rather than the physicians. In their study specific to oncology patients Famiglietti, et al. (2013) found that all four of their dimensions – patient/provider relationship, patient access/environment, wait time and patient education – had a significant correlation with the overall patients’ satisfaction. Further, the two individual components which had the highest odds ratio were: 1) discussion of home healthcare needs with nurses before end of treatment, 1.92, and 2) radiation therapist care, 1.91. Patient expectations’ regarding the other independent variables is no doubt very important. For example, patients have high expectations when it comes to receiving help as soon as they want. If hospitals do not achieve it to the patients’ satisfaction, the overall rating may well be low because the service does not meet expectations.

However, if a hospital achieves the expected response rate, it may not increase the patients’ overall satisfaction with the hospital. Size, as measured by revenues, may indicate that smaller hospitals (less revenue) may have to work with smaller nursing staff levels, and they may not be able to provide the same level of training and support to the nursing staff. How well nurses respond to patient needs and communicate with them (including informing them of information they will need when they return home) is a major factor in overall patient satisfaction. Hospitals with less revenue to support the nursing function may be paying for it with lower overall satisfaction ratings. In addition, hospitals with less revenue may not be able to pay as much attention to the other factors that impact dimensional patient satisfaction. With an increasing interest and importance given to patient satisfaction, this discovery should help hospitals do a better job of managing patient satisfaction by identifying those variables that affect it.

### **LIMITATIONS OF THIS STUDY**

This study explores the relationship between patient satisfaction measures and the patients’ overall satisfaction with the hospital. However, there are some limitations on the findings of this study. The main limitation of the study is the differences in time periods. The HCAHPS data retrieved from the CMS Hospital Compare website was for April 1, 2011 through March 31, 2012. However, the Form 990 time periods varied among the hospitals studied. Some hospitals Form 990s were for calendar year 2011, while others were for the company’s fiscal year. However, this limitation should have minimal impact since the variables measured from the 990 do not change that rapidly over time.

Another limitation of this study was the sample size. All hospitals used for this study were in Illinois which limited the number of hospitals. To further this study, a larger sample size could be collected using hospitals from other states. In addition, there could be factors that were not considered in this study that are impacting the results. Further research in this area could provide additional information concerning other factors that need to be addressed in the analyses of patient satisfaction.

### **FUTURE RESEARCH**

Future research could include a longitudinal study covering the same hospitals before and after the Affordable Healthcare Act is fully implemented. Another option is to replicate the study using data from other states.

## CONCLUSION

As more of an emphasis is placed on patient satisfaction with healthcare, there will likely be many more studies on the factors that impact patients' satisfaction. Studies similar to this one will likely be interesting for hospitals as they look for ways to improve their satisfaction ratings which in turn should increase hospital revenue and profits (or surpluses for not-for-profits). The studies will help determine the areas to focus on in order to have a greater increase in overall patient satisfaction. Nurse communication with patients and providing patients with information before they go home were found to have a significant impact on the overall hospital rating given by patients. It was also determined that total revenue had a significant impact on overall hospital rating. As the revenue for a hospital increases the models would indicate the overall rating for the hospital would also increase.

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