2015

Relevant decision criteria and their level of importance in consumers' choice of hospital

Jordan Brelje
University of Northern Iowa

RELEVANT DECISION CRITERIA AND THEIR LEVEL OF IMPORTANCE IN CONSUMERS' CHOICE OF HOSPITAL

A Thesis Submitted

in Partial Fulfillment

of the Requirements for the Designation

University Honors with Distinction

Jordan Brelje

University of Northern Iowa

May 2015

This Study by: Jordan Brelje

Entitled: Relevant Decision Criteria and Their Level of Importance in Consumers' Choice of Hospital

has been approved as meeting the thesis or project requirement for the Designation University Honors with Distinction

_____	_____
Date	Dr. Matthew Bunker, Honors Thesis Advisor
_____	_____
Date	Dr. Jessica Moon, Director, University Honors Program

Introduction

Over the course of the past several years, the health care industry in America has witnessed a shift in focus from simply providing quality care to providing both quality care and service. Now more than ever, individuals demand a high level of information, personalization and autonomy when making their health care decisions. Today's patients are able to access portions of their medical records electronically, schedule appointments and order prescriptions through online patient portals, and even communicate with physicians via text message. This increase in the ease of access to information, as well as the newfound rapidity in patient-provider communications, has necessitated a greater concern with overall patient satisfaction. Patient satisfaction has become so critical because it is a motivating factor in patient retention, evidenced by hospitals with higher reported levels of patient satisfaction also claiming high levels of patient loyalty and retention (Prakash, 2010). While patient retention is vital to the success of any hospital, it is also incredibly important to determine what brings an individual to a particular health care institution in the first place.

There are a number of considerations which may influence an individual's choice of hospital. Some of the most logical determinants would include physician referrals, proximity, health insurance coverage, and hospital performance reports. However, little research has been performed in an effort to pinpoint which of these factors, if any, hold greater weight in individuals' choice of health care institution or provider. This study sought to shed light on the choice of hospital decision process in an attempt to provide health care marketers with recommendations to more effectively target consumers.

As the health care industry becomes increasingly consumer-driven, it is crucial for hospitals to understand the considerations involved in their patients' choice of health care

institution. The purpose of this study was to determine the factors which most heavily influence consumers' choice of hospital, as well as to make recommendations to health care marketers based upon the conclusions reached. This study also hoped to provide beneficial insights to public policy makers who desire to give consumers more control in the health care decision-making process. Very little research has been performed in recent years as to consumers' choice of hospital decision process. As such, the significance of this study is not only that it produces findings which support decades-old conclusions, but that it also provides insights which are not presently in the literature.

Literature Review

While this study aimed to produce novel research on the topic of consumer hospital decision factors, previous findings and perspectives had to first be considered. No single variable has ever been undeniably determined to carry the most weight in an individual's choice of hospital. However, a number of decision factors have consistently appeared in the literature. Javalgi, Rao, and Thomas (1991) found that the myriad considerations in one's choice of hospital could be narrowed down to a list of nine relevant criteria. This list included the location of the hospital, whether or not it employs specialist doctors, the type of hospital, its reputation, whether it offers modern equipment and technology, the cost of care, the courteousness of employees, the recommendation of a doctor, and recommendations of friends and relatives. A thorough examination of existing research on the topic revealed that these nine criteria formed a sufficiently inclusive compilation of important decision criteria in consumers' choice of hospital. Many of these factors were mentioned in the findings of multiple studies, suggesting that they are frequently taken into consideration when an individual is selecting a hospital.

Location of Hospital

In their study, Javalgi et al. (1991) found that the location of the facility was deemed the most important decision criteria in consumers' choice of hospital. However, more recent research found that an individual's proximity to a hospital may actually have little to do with him or her choosing to go there. According to a study performed by the BlueCross BlueShield of Tennessee Health Institute (2012), in today's mobile culture, distance may no longer be a barrier to patients seeking certain health services. The study explained that the availability of rapid-response transportation, such as helicopters, has also made the transportation of the critically ill a much less time-consuming process, thereby diminishing the importance of a hospital's location. It also surmised that these factors were the most likely causes of the decreased emphasis today's consumers place on the geographic proximity of a health care facility. In light of the BlueCross BlueShield study's findings, the current study sought to examine whether location remains the most important factor in people's choice of hospital or if this potential barrier has been effectively diminished in modern society.

Specialist Doctors

In the 1990s, experts in the medical field predicted that managed care and capitation payment arrangements would reduce the demand for specialist doctors. As Jaklevic (1999) found, however, "demand for specialty services has never been higher, thanks to aging baby boomers and the patient-choice movement" (p. 35). An aging U.S. population implies an inevitable rise in the prevalence of chronic disease, as well as a spike in complex medical conditions. Such increases stand to have a profound impact on the future of the health care delivery system, and they also suggest a rise in the demand for specialists. According to Dall et

al. (2013), the Census Bureau predicts a 9.5 percent increase in the U.S. population between 2013 and 2025. Of that population, the number of individuals ages sixty-five and older is projected to grow by nearly 45 percent. Based upon these numbers, the expected growth in the demand for specialty services is quite significant. To illustrate this, "the number of both cardiology and rheumatology office visits is projected to increase by 18 percent. Urology and neurology visits are projected to increase 17 percent, and dermatology visits by 16 percent" (Dahl et al., 2013, p. 2016). Though these may simply be projections, it would be naive to deny the likelihood of an impending increase in patient demand for specialist physicians. As the pervasiveness of chronic and complex medical conditions rises, it is only logical to assume that the demand for specialty services will rise with it. As such, it follows that health care consumers will continue to consider the availability of specialist doctors in making their selection of hospital. However, the modern-day importance of this consideration, which ranked second on the list of criteria compiled by Javalgi et al. (1991), had yet to be quantifiably determined.

Hospital Reputation

In prior studies of decision criteria in consumer choice of hospital, there appeared to be a great deal of importance placed on the institution's reputation. In their research, Hibbard, Stockard, and Tusler (2005) found that when hospital performance reviews were made public, "consumers exposed to the public reviews were much more likely than other consumers to have accurate perceptions of the relative quality of local hospitals, and these perceptions persisted for at least two years after the release of the report" (p. 1159). These findings suggest that exposure to a hospital's reputation and performance reviews can increase the accuracy of an individual's perception of the institution, thereby affecting his or her likelihood of choosing that hospital for

future health services. The study also found that, after being exposed to hospital performance reports, "24 percent [of respondents] had talked to others about the report in the immediate post period, and almost half had talked to others in the next two years." Evidently, participants in this particular study found hospital performance reports to be valuable enough to relay the information to others. By doing so, these individuals acted to strengthen the pre-existing reputations of those facilities, regardless of whether that reputation was positive or negative. Although the findings provided no data as to respondents' use of this information in future hospital selections, it was suggestive of the importance of hospital reputations and performance reviews in the minds of consumers.

Cost of Care

Intuitively, one would assume that the cost of health care plays a highly significant role in an individual's choice of hospital. In a number of past studies, however, this variable had ranked surprisingly low on the list of consumers' decision criteria. Though this may be true, Gooding (1995) found that "while the cost of care as a factor contributing to hospital choice is ranked relatively low in most studies in which it is included, it is mentioned more frequently than most factors, suggesting it is of greater importance than the face-value findings suggest" (p. 24). In their synthesis of prior studies on the subject, Lane and Lindquist (1988) came to a similar conclusion, finding in the studies reviewed that cost was ranked "eighth of 10 and tenth of 14. Only convenience and location were mentioned as frequently, however. Hence cost may be of greater importance than was found by these scholars" (p. 7). It appeared that, while frequently mentioned as an important consideration in choosing a hospital, cost did not rank highly when compared to other hospital decision criteria. It is possible that the salience of other criteria, such

as location or physician recommendations, simply outweighed that of cost of care. In any case, further exploration into the importance cost of care plays in consumers' choice of hospital was certainly warranted.

Recommendations of Others

Though studies have shown that consumers can objectively recognize differences in the service quality and clinical performance of hospitals, they continue to make health care choices which are highly influenced by others, including physicians, relatives and friends. As Smithson (2003) noted, "when choosing a hospital, consumer considerations are most often based on issues relating to physicians and special clinic needs" (p. 4). A testament to this can be seen in a report published by Voluntary Hospitals of America (2003), which found that one-third of patients will go to what they have determined to be a substandard hospital, simply because it was recommended by their doctor. Similarly, a series of studies funded by the Florida Agency for Health Care Administration (ACHA), discovered that "consumers tended to rely heavily on the physician's recommendation. Once trust was established between the physician and the patient, the recommendations were taken very seriously" (Sarel, et al., 2005, p. 16).

The recommendations and quality perceptions of family and friends also appeared to have an impact on consumers' choice of hospital. The Voluntary Hospitals of America report (2003) found that casual contact with a hospital, through visits to family and friends, directly affected individuals' perceptions of the quality of that hospital. The findings suggested that a conscious effort to make favorable impressions on the family members and friends of patients will result in significant pay-off for hospitals in the long run.

Other Variables to Consider

Due to gaps in the literature, only six decision criteria in individuals' choice of hospital were explored in the review of relevant research. However, the current study examined the importance of a number of other factors in the consumer hospital decision process. Three such factors, which were listed in the Javalgi et al. (1991) study, include the type of hospital, whether or not it possesses modern medical technology and equipment, and the courteousness of hospital employees. Due to the passage of the Affordable Care Act (ACA), the effect of the type and scope of an individual's health insurance plan on his or her hospital choice was another variable this study examined. Because this legislation was so recently enacted, little research is available as to its impact on consumers' choice of hospital decision process. Additional decision criteria also emerged throughout the course of the study. Regardless of the number of factors consumers considered in choosing a hospital, the level of importance each factor held in making that decision is what the current study attempted to determine.

Methodology

Research Design

This study sought to discover which decision criteria consumers consider in selecting a hospital and which of those criteria weigh most heavily in the choice of hospital decision-making process. In order to address the goals of this study, a quantitative research approach was used. Quantitative data was gathered in the form of survey questionnaires. The questionnaires were constructed and were then administered to a sample of individuals, representative of the target population.

Subjects

The desired target population for this study was individuals age 26 and older who live in the United States and had sought medical care in the past or may seek it in the future. These specifications ensured that respondents no longer received health insurance coverage as a dependent child and that health care services had been or could become a consideration. Upon approval by the University's Institutional Review Board, members of the target population were contacted, and their participation in the study was requested. Respondents ranged in age from 26 to 86 years old, and they geographically represented 25 states across the U.S. Eighty-two percent (n=106) of participants were female, while 18% (n=23) were male. Ninety-six percent (n=123) indicated that they were of White ethnicity.

Instrument Used

An original survey questionnaire was developed (see Appendix A) to conduct this study. The questionnaire was constructed using Qualtrics survey creation and monitoring software and consisted of 20 questions total. The first 13 survey questions addressed the factors respondents consider in selecting where to go for three different types of medical services. The final seven questions involved demographic information, such as age, highest degree of education, and type of health insurance plan.

Surveying Procedure

A sample of the target population was obtained using the convenience method of sampling. The survey questionnaire, including a brief, electronic display consent form (see Appendix B), was distributed through two social media platforms, LinkedIn and Facebook. The

survey was distributed to contacts of both the study's primary researcher and the thesis advisor. Dr. Matthew Bunker, the advisor on the study, first solicited contacts to complete the survey via his personal LinkedIn account and his wife's Facebook page. Additional respondents who satisfied target market specifications were then solicited via the primary researcher's personal Facebook and LinkedIn accounts.

Because the questionnaires were administered via the Internet, respondents controlled where and when they took the survey. This provided them with as much privacy as they desired during their participation. Survey responses were collected by Qualtrics, where the data was securely stored. The survey was designed to allow only one response per IP address, preventing respondents from completing additional questionnaires on the same device.

Over the course of three weeks, a total of 153 surveys were completed. After cleaning the data, 134 viable responses were identified. The remaining responses were omitted because they were incomplete, the respondent was not 26 years of age, or the individual did not consent to participating in the study. The collected data was analyzed using SPSS predictive analytics software, which is freely available to students of the University of Northern Iowa (UNI). Conclusions were drawn from the results of this analysis.

Results

Factors in Selecting a Location for a Doctor's Visit, Outpatient Service, or Hospitalization

Survey respondents were given a list of ten pre-determined factors and asked to rank their importance in selecting where to go for three types of medical services: doctor's visits, outpatient services, and hospitalizations. Respondents ranked each factor using a seven-point scale ranging from "not at all important" to "extremely important." The mean for each factor was calculated by

assigning values of one to seven to each level of importance, with "not at all important" being a value of one and "extremely important" being a value of 7. A one sample t-test with $\alpha = 0.5$ was conducted to determine which of the ten factors was most important to respondents. The following table displays the results for the importance of each factor in selecting where to go for a doctor's visit (see Table 1).

Table 1: Importance in selecting where to go for a doctor's visit

Factor	$\bar{X}$	Standard Deviation	T	P
Insurance Requirements	6.06	1.391	17.135	< 0.001
Reputation of Institution	5.71	1.357	14.567	< 0.001
Courteousness of Employees	5.65	1.280	14.832	< 0.001
Cost of Care	5.49	1.485	11.573	< 0.001
Technology/Modern Equipment	5.46	1.319	12.776	< 0.001
Recommendation of Family/Friend	5.26	1.456	10.029	< 0.001
Location (Proximity to Home)	5.25	1.323	10.903	< 0.001
Availability of Specialists	5.22	1.293	10.864	< 0.001
Referral by Doctor/Nurse	5.09	1.427	8.837	< 0.001
Size of Institution	3.99	1.443	-0.06	0.952

As seen in Table 1, respondents considered nine of the ten given factors to be important in selecting where to go for a doctor's visit. The data suggests that insurance was the most important consideration ($\bar{X}$=6.06, SD=1.39, t(133)=17.14, p<.001), while size of institution had little to no impact on most individuals' decisions ($\bar{X}$=3.99, SD=1.44, t(133)= -0.06, p=0.952).

Participants were next asked to determine the importance of the same ten factors in selecting an institution for outpatient services, which are defined as procedures and tests completed without an overnight hospital stay. Again, a one sample t-test with $\alpha = 0.5$ was performed to determine which factor respondents determined to be most important. The results of this analysis can be seen in Table 2.

Table 2: Importance in selecting where to go for outpatient services

Factor	$\bar{x}$	Standard Deviation	T	P
Insurance Requirements	6.19	1.209	20.478	< 0.001
Referral by Doctor/Nurse	5.88	1.094	19.390	< 0.001
Technology/Modern Equipment	5.84	1.153	18.089	< 0.001
Reputation of Institution	5.77	1.210	16.505	< 0.001
Courteousness of Employees	5.70	1.256	15.266	< 0.001
Availability of Specialists	5.69	1.260	15.157	< 0.001
Cost of Care	5.68	1.408	13.494	< 0.001
Location (Proximity to Home)	5.30	1.204	12.161	< 0.001
Recommendation of Family/Friend	5.24	1.457	9.623	< 0.001
Size of Institution	4.41	1.503	3.058	0.003

Again, respondents determined that insurance requirements were the most important factor in selecting an institution ($\bar{x}$=6.19, SD=1.21, t(128)=20.48, p<.001). Unlike the responses seen in Figure 1, however, size of institution was of somewhat significant importance to choice of location for outpatient services ($\bar{x}$=4.41, SD=1.50, t(128)=3.06, p=.003).

Finally, participants were asked to rank the importance of the ten factors in deciding where to go in the event that they were hospitalized. Even if the respondent had not been hospitalized in the recent past, or at all, he or she was asked to determine how important each factor would be if a future hospitalization were to occur. Results of a one sample t-test of the responses were as follows (see Table 3).

Table 3: Importance in selecting where to go for a hospitalization

Factor	$\bar{X}$	Standard Deviation	T	P
Insurance Requirements	6.24	1.162	21.200	< 0.001
Availability of Specialists	6.18	1.068	22.548	< 0.001
Reputation of Institution	6.11	1.082	21.508	< 0.001
Technology/Modern Equipment	6.10	1.048	21.122	< 0.001
Referral by Doctor/Nurse	5.93	1.104	19.354	< 0.001
Cost of Care	5.84	1.282	15.825	< 0.001
Courteousness of Employees	5.76	1.174	16.408	< 0.001
Location (Proximity to Home)	5.40	1.180	13.025	< 0.001
Recommendation of Family/Friend	5.32	1.386	10.515	< 0.001
Size of Institution	4.94	1.392	7.477	< 0.001

Here, too, insurance requirements proved to be the most important factor to respondents ($\bar{X}$=6.24, SD=1.16, t(122)=21.2, p<.001). Interestingly, availability of specialists ranked second in level of importance for a hospitalization ($\bar{X}$=6.18, SD=1.07, t(122)=22.55, p<.001), while it was not even in the top five considerations for the two previous situations.

Comparing the Importance of Hospital Selection Criteria across Medical Services

Clearly, the ten factors respondents were asked to assess had varying levels of importance when considering different types of medical services. This is evidenced by the different rank orders displayed in Tables 1, 2, and 3. However, it was necessary to determine whether the differences in the means of these distributions were truly significant. Therefore, paired sample t-tests were conducted in order to compare the mean values of each of the three distributions. The results of these analyses can be seen in the tables on the following pages (see Tables 4, 5, and 6). Only those factors which returned statistically significant mean values are included.

Table 4: Comparison of selection criteria in doctor's visits vs. outpatient services

Factor	$\bar{X}$	Standard Deviation	T	P
Referral by Doctor/Nurse - Doctor's Visit	5.07	1.454		
Referral by Doctor/Nurse - Outpatient	5.88	1.094		
			-7.078	<0.001
Availability of Specialists - Doctor's Visit	5.22	1.309		
Availability of Specialists - Outpatient	5.69	1.263		
			-4.588	<0.001
Size of Institution - Doctor's Visit	3.98	1.466		
Size of Institution - Outpatient	4.41	1.503		
			-4.575	<0.001
Technology/Modern Equip - Doctor's Visit	5.45	1.327		
Technology/Modern Equip - Outpatient	5.84	1.153		
			-4.41	<0.001
Cost of Care - Doctor's Visit	5.47	1.5		
Cost of Care - Outpatient	5.68	1.408		
			-2.231	0.027

Table 5: Comparison of selection criteria in outpatient services vs. hospitalization

Factor	$\bar{X}$	Standard Deviation	T	P
Size of Institution - Outpatient	4.39	1.524		
Size of Institution - Hospitalization	4.94	1.398		
			-4.767	<0.001
Availability of Specialists - Outpatient	5.74	1.230		
Availability of Specialists - Hospitalization	6.18	1.072		
			-4.547	<0.001
Reputation of Institution - Outpatient	5.79	1.187		
Reputation of Institution - Hospitalization	6.11	1.083		
			-4.180	<0.001
Technology/Modern Equip - Outpatient	5.87	1.110		
Technology/Modern Equip - Hospitalization	6.09	1.049		
			--3.026	.003
Cost of Care - Outpatient	5.67	1.393		
Cost of Care - Hospitalization	5.84	1.285		
			-2.212	.029

Table 6: Comparison of selection criteria in doctor's visits vs. hospitalization

Factor	$\bar{x}$	Standard Deviation	T	P
Size of Institution - Doctor's Visit	4.01	1.497		
Size of Institution - Hospitalization	4.94	1.392		
			--6.916	<0.001
Availability of Specialists - Doctor's Visit	5.30	1.289		
Availability of Specialists - Hospitalization	6.18	1.072		
			-7.890	<0.001
Referral by Doctor/Nurse - Doctor's Visit	5.11	1.410		
Referral by Doctor/Nurse - Hospitalization	5.93	1.104		
			-6.807	<0.001
Technology/Modern Equip - Doctor's Visit	5.48	1.319		
Technology/Modern Equip - Hospitalization	6.10	1.048		
			--5.714	<0.001
Reputation of Institution - Doctor's Visit	5.70	1.346		
Reputation of Institution - Hospitalization	6.10	1.083		
			-4.026	<0.001
Cost of Care - Doctor's Visit	5.48	1.489		
Cost of Care - Hospitalization	5.84	1.282		
			-3.871	<0.001
Insurance Requirements - Doctor's Visit	6.04	1.399		
Insurance Requirements - Hospitalization	6.24	1.162		
			-2.424	0.017

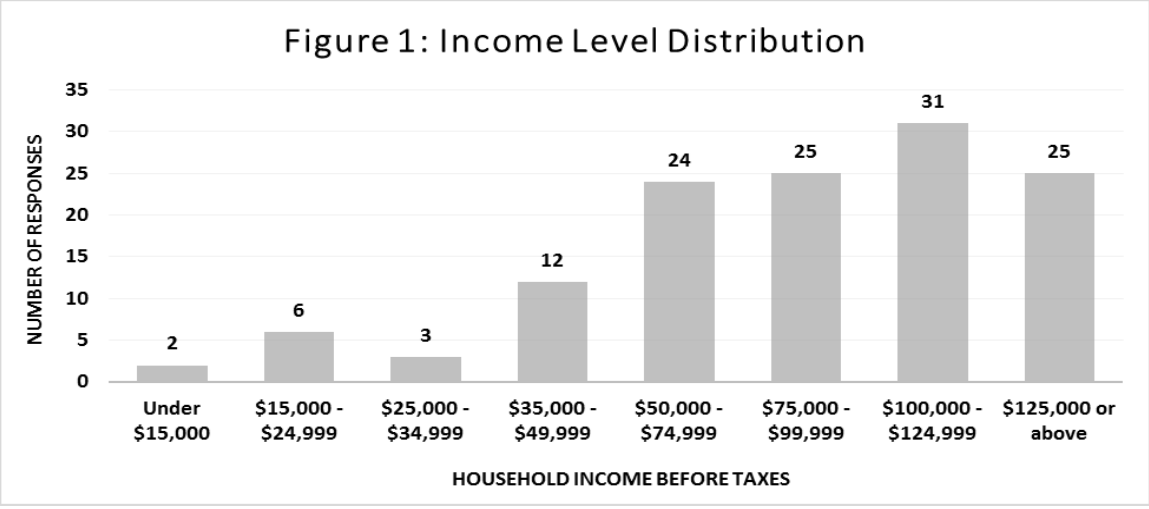
The data displayed in Tables 4, 5, and 6 shows that there is a statistically significant difference in the mean values of several selection criteria when considering different types of medical services. This suggests that respondents assigned varying levels of importance to the same factors depending on whether they affected selection of institution for a doctor's visit, outpatient service, or hospitalization. There were four especially striking differences present in the analyses. The first was that respondents determined referral by doctor/nurse to be significantly more important in selecting where to go for outpatient services ($\bar{x}$=5.88, SD=1.09) than a doctor's visit ($\bar{x}$=5.07, SD=1.45), t(128)= -7.08, p<.001. Second, size of the institution was considered more important in selecting where to go for a hospitalization ($\bar{x}$=4.94, SD=1.39) than a doctor's visit ($\bar{x}$=4.01, SD=1.50), t(121)= -6.92, p<.001.

A third notable difference was that availability of specialists was more important to selecting an institution for a hospitalization ($\bar{x}$=6.18, SD=1.07) than a doctor's visit ($\bar{x}$=5.30, SD=1.29), t(120)= -7.89, p<.001. Finally, referral by doctor/nurse was of greater importance in selecting where to go for a hospitalization ($\bar{x}$=5.93, SD=1.10) than a doctor's visit ($\bar{x}$=5.11, SD=1.41), t(121)= -6.81, p<.001. Though these four comparisons were the most prominent, a number of other factors possessed significantly different levels of importance in their consideration across the three types of medical services.

Only three factors did not return statistically significant differences across the three types of medical services. These factors included recommendations of family/friends, location (proximity to home), and courteousness of employees. It follows, then, that these factors remained of similar or equal importance to respondents, regardless of whether they were applied to selecting an institution for a doctor's visit, outpatient service, or hospitalization.

Income Level and its Effect on the Importance of Hospital Selection Criteria

In the demographic portion of the survey, respondents were asked to select one of eight brackets as representative of their annual household income before taxes. The distribution of responses is shown below (see Figure 1).



In order to examine the effect of income level on respondents' perceived importance of the ten hospital selection criteria, one-way ANOVA tests were conducted. In an effort to make the income levels as evenly represented as possible, the first four brackets (under $15,000 to $35,000-$49,999) were combined for these analyses. Three ANOVA tests were performed in total, one for each of the three types of medical services considered: doctor's visit, outpatient services, and hospitalization. Statistically significant findings are displayed in the following tables (see Tables 7, 8, and 9).

Table 7: Income's effect on the importance of factors in selecting where to go for a doctor's visit

Factor	Income Level	Mean	Standard Deviation	F	P
Location (Proximity to Home)	Under $15,000 - $49,999	5.83	0.937		
	$50,000 - $74,999	4.42	1.932		
	$75,000 - $99,999	5.40	1.291		
	$100,000 - $124,999	5.29	0.973		
	$125,000 or above	5.20	1.118		
				3.763	0.006
Cost of Care	Under $15,000 - $49,999	6.04	1.065		
	$50,000 - $74,999	5.46	1.744		
	$75,000 - $99,999	5.64	1.440		
	$100,000 - $124,999	5.52	1.151		
	$125,000 or above	4.68	1.796		
				2.812	0.028

According to ANOVA analysis, there was a significant difference between income levels as to the importance of two factors, location and cost of care, when selecting where to go for a doctor's visit. A Post Hoc Tukey test was conducted to discover between which brackets the variation(s) occurred. The Tukey test determined that, when it came to location, the significant difference was seen between the two lowest income brackets. In the case of cost of care, however, the variance occurred between the lowest and highest income bracket.

Table 8: Income's effect on the importance of factors in selecting where to go for outpatient services

Factor	Income Level	Mean	Standard Deviation	F	P
Location (Proximity to Home)	Under $15,000 - $49,999	5.83	0.834		
	$50,000 - $74,999	4.83	1.642		
	$75,000 - $99,999	5.46	1.179		
	$100,000 - $124,999	5.35	0.950		
	$125,000 or above	4.96	1.197		
				2.702	0.034
Cost of Care	Under $15,000 - $49,999	6.26	0.964		
	$50,000 - $74,999	6.04	1.224		
	$75,000 - $99,999	5.76	1.332		
	$100,000 - $124,999	5.68	1.107		
	$125,000 or above	4.67	1.903		
				4.984	.001

As in the previous ANOVA analysis, the location and cost of care factors were assigned varying levels of importance across income levels when selecting where to go for outpatient services. A Post Hoc Tukey test determined that the variation in the location factor was again seen between the two lowest income brackets. Differences in the importance of cost of care, however, were witnessed when each of the four lower brackets was compared to the top bracket.

Table 9: Income's effect on the importance of factors in selecting where to go for a hospitalization

Factor	Income Level	Mean	Standard Deviation	F	P
Cost of Care	Under $15,000 - $49,999	6.41	0.854		
	$50,000 - $74,999	5.95	1.214		
	$75,000 - $99,999	6.08	1.222		
	$100,000 - $124,999	5.77	0.817		
	$125,000 or above	4.95	1.838		
				4.416	0.002

As Table 9 shows, when selecting where to go for a hospitalization, cost of care was the only factor which resulted in varying levels of importance between income brackets. The Post Hoc Tukey test determined that these variances occurred between the lowest and highest income bracket and the middle and highest income bracket, respectively.

Income Level in Relation to the Type of Health Insurance Held by Respondent

In this study, health insurance requirements emerged as the most important factor to respondents in selecting where to go for all three types of medical services considered. As such, further analysis was performed to examine the potential influence demographic variables had on the type of insurance held by a respondent. A cross tabulation test was conducted in order to compare a respondent's income level with the type of health insurance he or she reported having. The results of this cross tabulation are shown in Table 10.

Table 10: Income level in relation to type of health insurance

Income Level	Private (Through HealthCare.gov)	Private (Outside of HealthCare.gov)	Medicare	Medicaid	Other	Total
Under $15,000	1		1			**2**
$15,000 - $24,999	3	1		1	1	**6**
$25,000 - $34,999	2	1				**3**
$35,000 - $49,999		10			2	**12**
$50,000 - $74,999	1	17	5		1	**24**
$75,000 - $99,999		20	4		1	**25**
$100,000 - $124,999		28			2	**30**
$125,000 or above	1	22	1		1	**25**
TOTAL	**8**	**99**	**11**	**1**	**8**	**127**

As Table 10 shows, a large majority of respondents in this sample possessed a private health insurance plan outside of HealthCare.gov, a.k.a. "Obamacare." The data collected in this study suggests that individuals with lower income levels are more likely to have a health insurance plan through HealthCare.gov than those with higher income levels. This conclusion is supported by national data released in the March Department of Health & Human Services (HHS) health insurance marketplace enrollment report. According to the HHS (2015), 40 percent of 2015 HealthCare.gov exchange enrollees had incomes between 100 and 150 percent of the federal poverty level (FPL), or $11,770 to $17,655. This percentage decreased significantly as income level rose, however. Those individuals with incomes between 301 and 400 percent of the FPL, or $35,427 to $47,080, represented only eight percent of 2015 exchange enrollees. The findings displayed in Table 10 are consistent with the data released by the HHS, even in a sample of only 127 respondents.

Additional Choice of Hospital Decision Criteria

In addition to ranking the given ten criteria, participants were also asked to type an explanation of other factors, if any, which would affect their selection in these three situations. No clear patterns of additional considerations emerged in the case of either outpatient services or hospitalization. However, two distinct themes were evident in the reasons listed for selecting where to go for a doctor's visit.

The first theme was that respondents often selected a certain institution for a doctor's visit based on their prior relationship with the physician. Many individuals seemed to have developed an almost fierce loyalty to their doctors and were far more concerned with the person treating them than the institution itself. As one respondent described, "I have a doctor that I trust;

where she goes, I go." The second theme dealt with the availability of the doctor and the length of time patients had to wait to get an appointment with him or her. Here, the effort made by a doctor's office to accommodate scheduling preference was also important to respondents. One individual explained, "We chose our doctor's office due to their efforts to make sure we can see our doc or one of their associates as we need. Often they will work hard to squeeze us in or have us visit with a nurse for things like a simple strep test if their schedule is full."

Discussion

The data displayed in Tables 1, 2, and 3 supports this study's primary assumption: although several decision criteria play a part in an individual's selection of hospital, the criteria possess varying levels of importance in that selection. This concept was broken down even further by asking respondents to rank the importance of the decision criteria in selecting a hospital for three different types of medical services. Results suggest that the importance of hospital selection criteria vary not only when selecting a hospital, but also based upon the type of medical service sought. This has important implications for hospital marketers because it provides suggestions as to how their messaging may best be directed.

If an individual is in charge of marketing for an institution whose primary business is doctor's visits (small clinics or primary care practices), he or she may choose to emphasize the organization's long-standing reputation within the community or the friendliness of its employees. This suggestion is given because, according to this study, consumers value the reputation of an organization and the courteousness of its employees when selecting where to go for a doctor's visit. If a marketer is promoting an organization whose main focus is outpatient services (imaging centers or private testing labs), on the other hand, he or she should emphasize

the technology and equipment available at that particular location. It would also be beneficial to develop cooperative relationships between the organization and area physicians, as referrals by doctors/nurses were the second most important factor to respondents in selecting where to go for outpatient services.

When promoting hospitals which serve as trauma centers or perform procedures which require hospitalizations, marketers should look to the data presented in Table 3 for guidance. The second most important factor to respondents in selecting where to go for a hospitalization was the availability of specialists. This is notable because the "availability of specialists" factor did not even make the top five in rank order of importance for the other two types of medical services. Considering this, marketers attempting to publicize these institutions should emphasize the outstanding reputations and achievements of any specialty departments within the organization. Placement on national ranking lists, such as the "50 Top Cardiovascular Hospitals" or "Best Hospitals for Adult Cancer" would be of particular interest to hospitals of this kind.

There is no question that respondents assigned varying levels of importance to the ten given hospital decision factors depending upon the type of medical service being sought. However, one cannot ignore the fact that insurance requirements were determined to be the most important factor in all three cases. Hospital marketers do not generally have an iota of control as to which health insurance plans the institution they represent will accept. That does not mean that they cannot cater their messaging to address this obviously important consideration, however. In communications regarding health insurance requirements, ensuring that the information is clear and easily available is of utmost importance. One method of accomplishing this is posting lists of acceptable insurance plans in the hospital itself, as well as on any of its web properties. Another would be to send announcements via email and direct mail when insurance plans are either no

longer or newly accepted. Marketing departments must also communicate openly with hospital management and express the increasing salience of health insurance in consumers' choice of hospital decision processes. Such conversations may prompt management to better align the hospital with popular insurance providers in the area, if they are not already working to do so.

Limitations

This study is limited because the survey received only 134 viable responses. A larger sample would have provided more representative data regarding the target population. Another limitation of this study was the lack of ethnic diversity among respondents. Ninety-six percent of respondents identified themselves to be of White ethnicity, which is clearly not representative of the target population. A sample with greater ethnic diversity may have resulted in different conclusions. In the same vein, the overwhelmingly large proportion of female to male respondents may have skewed results, limiting this study.

Because it is impossible to develop an exhaustive list of choice of hospital decision criteria, it is conceivable that this study neglected to examine a number of important factors in relation to consumer choice of hospital. Therefore, this study is limited to the number of factors specifically examined, as well as those which emerged in the course of the research.

Future Research

The landscape of the health care delivery system in the U.S. is continuously evolving, and, therefore, research as to the consumer choice of hospital decision process will remain a constant endeavor. What is a crucial consideration to patients in today's world may not be so even ten years from now. However, the results of this study do provide some suggestions as to

future research possibilities. First, it may be valuable to further examine the importance of prior patient-provider relationships and availability of physicians in selecting where to go for doctor's visits. These two themes became evident in the course of this research study, and while they were not explicitly investigated here, it may be beneficial to do so.

Second, the importance of health insurance requirements uncovered by this study warrants additional exploration. The health insurance industry has witnessed a number of significant changes over the course of the past decade. This is a likely explanation for discrepancies in insurance-related results when comparing this study to similar research of the past. The ACA is still in its infancy, but it will be interesting to track its impact on the importance of insurance requirements in the consumer choice of hospital decision process as the legislation matures. A final suggestion for future research could be to study the level of consumer satisfaction with services received after a hospital is selected. It would then be interesting to examine whether or not level of satisfaction has an effect on future choice of hospital decisions or on the criteria considered in those decisions.

Conclusion

The purpose of this study was to examine the factors involved in consumers' choice of hospital decision process, as well as to determine which factors are considered to be the most important in that decision. This study also sought to make recommendations to health care marketers based upon the conclusions reached. The significance of this research is two-fold. First, the results of this study suggest that, to the modern consumer, health insurance requirements are the most important factor in the choice of hospital decision process, regardless of the type of medical service sought. This is a significant finding because health insurance was

omitted as a potential decision factor in the majority of prior studies performed on this topic. Even if health insurance was considered, its importance was either discounted or disregarded altogether. The findings of the current study are demonstrative of significant changes which have taken place in the health care industry in recent years, especially in regard to insurance coverage. If current trends continue, health insurance is likely to remain a crucial decision criteria in individuals' choice of hospital. The Affordable Care Act (ACA) is also expected to have a significant impact on health insurance conditions in the U.S. The exact implications of this legislation are unknown, however, as the full extent of the act's directives is yet to be witnessed. Therefore, future research on the importance of health insurance in the choice of hospital decision process, as well as the ACA's role in this, is both justified and highly suggested.

This study is also significant because it provides useful suggestions to hospital marketers in targeting health care consumers. Respondents' rankings of ten hospital decision criteria, as displayed in Tables 1, 2 and 3, provide insight into which factors are most important to individuals in deciding where to go for various types of medical services. This knowledge allows marketers to tailor external communications based upon the type of medical service a health care consumer is seeking. Results also suggest key variances in the importance of certain hospital decision factors across income levels, an insight which can help marketers to further segment target audiences.

In an increasingly consumer-driven industry, it is crucial for hospitals to understand the considerations involved in their patients' choice of health care institution. These considerations are in constant flux, as the social, political, and technological environments of the nation rapidly evolve. As such, relevant decision criteria in consumers' choice of hospital is a subject which will require continuous analysis and investigation well into the future.

References

BlueCross BlueShield of Tennessee Health Institute. (2012). *Patterns of Care in Tennessee*. Chatanooga, TN: Coulter, S. L., Jones, S. G., & Carden, J. P.

Dall, T. M., Gallo, P. D., Chakrabarti, R. West, T., Semilla, A. P., & Storm, M. V. (2013). An Aging Population And Growing Disease Burden Will Require A Large and Specialized Health Care Workforce By 2025. *Health Affairs, 32*(11), 2013-2020.

Department of Health & Human Services. (2015). *Health Insurance Marketplace 2015 Open Enrollment Period: March Enrollment Report*. Washington, DC: Office of the Assistance Secretary for Planning and Evaluation.

Gooding, S. K. S. (1995). Quality, sacrifice, and value in hospital choice. *Journal of Health Care Marketing, 15*(4), 24.

Hibbard, J. H., Stockard, J., & Tusler, M. (2005). Hospital Performance Reports: Impact On Quality, Market Share, And Reputation. *Health Affairs, 24*(4), 1150-1160.

Jaklevic, M. C. (1999). Remembering the specialists. *Modern Healthcare, 29*(17), 35-38.

Javalgi, R. G., Rao, S. R,, & Thomas, E. G. (1991). Choosing a Hospital: Analysis of Consumer Tradeoffs. *Journal of Health Care Marketing*, *11*(1), 12.

Lane, P. M., & Lindquist, J. D. (1988). Hospital choice: A summary of the key empirical and hypothetical findings of the 1980s. *Journal of Health Care Marketing, 8*(4), 5-19.

Prakash, B. (2010). Patient Satisfaction. *Journal of Cutaneous and Aesthetic Surgery, 3*(3), 151-155.

Sarel, D., Rodriguez, B., Marmorstein, H., & Barach, P. (2005). Childbirth choices. *Marketing Health Services, 25*(1), 14-19.

Smithson, K. (2003). VHA study: Physician affiliation biggest factor in consumers' choice of hospital. *Health Care Strategic Management, 21*(9), 4-5.

Voluntary Hospitals of America. (2003). *Consumers and Health Care: Boomers at the Gate*. Irving: VHA, Incorporated.

APPENDIX A

Survey Questionnaire

Q1: Are you 26 years of age or older?
- ❍ Yes
- ❍ No

Q2: Have you been to the doctor in the last 12 months?
- ❍ Yes
- ❍ No

Q3: Where do you usually go for your doctor appointments?
- Name of Hospital/Clinic/Health Center
- City and State

Q4: How important is each of the following in selecting where to go for a doctor's visit?

	Not at all important	Very Unimportant	Somewhat Unimportant	Neither important nor Unimportant	Somewhat Important	Very Important	Extremely Important
Referral by doctor or nurse	❍	❍	❍	❍	❍	❍	❍
Location (Proximity to home)	❍	❍	❍	❍	❍	❍	❍
Availability of specialist doctors	❍	❍	❍	❍	❍	❍	❍
Size of the hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Insurance requirements	❍	❍	❍	❍	❍	❍	❍
Technology and modern equipment offered	❍	❍	❍	❍	❍	❍	❍
Cost of care	❍	❍	❍	❍	❍	❍	❍
Reputation of the hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Recommendation of family members or friends	❍	❍	❍	❍	❍	❍	❍
Courteousness of employees	❍	❍	❍	❍	❍	❍	❍

Q5: If you have an additional reason for selecting where to go for a doctor visit, please explain:

Q6: Have you received outpatient medical service in the last 12 months? (Outpatient services are procedures or tests that can be done without an overnight stay).

❍ Yes

❍ No

Q7: Where do you usually go for outpatient medical services?

- Name of Hospital/Clinic/Health Center
- City and State

Q8: How important is each of the following in selecting where to go to receive outpatient services?

	Not at all Important	Very Unimportant	Somewhat Unimportant	Neither Important nor Unimportant	Somewhat Important	Very Important	Extremely Important
Referral by doctor or nurse	❍	❍	❍	❍	❍	❍	❍
Location (Proximity to home)	❍	❍	❍	❍	❍	❍	❍
Availability of specialist doctors	❍	❍	❍	❍	❍	❍	❍
Size of the hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Insurance requirements	❍	❍	❍	❍	❍	❍	❍
Technology and modern equipment offered	❍	❍	❍	❍	❍	❍	❍
Cost of care	❍	❍	❍	❍	❍	❍	❍
Reputation of hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Recommendation of family members or friends	❍	❍	❍	❍	❍	❍	❍
Courteousness of employees	❍	❍	❍	❍	❍	❍	❍

Q9: If you have an additional reason for selecting where to receive outpatient services, please explain:

Q10: Have you been hospitalized in the last 12 months?

❍ Yes

❍ No

Q11: Where did your hospitalization occur?

- Name of Hospital/Clinic/Health Center
- City and State

Q12: How important is each of the following in selecting where to go to for hospitalization? (Even if you have not been hospitalized before, please select the importance of each if you were to be hospitalized in the future).

	Not at all important	Very Unimportant	Somewhat Unimportant	Neither Important nor Unimportant	Somewhat Important	Very Important	Extremely Important
Referral by doctor or nurse	❍	❍	❍	❍	❍	❍	❍
Location (Proximity to home)	❍	❍	❍	❍	❍	❍	❍
Availability of specialist doctors	❍	❍	❍	❍	❍	❍	❍
Size of the hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Insurance requirements	❍	❍	❍	❍	❍	❍	❍
Technology and modern equipment offered	❍	❍	❍	❍	❍	❍	❍
Cost of care	❍	❍	❍	❍	❍	❍	❍
Reputation of hospital/clinic/health center	❍	❍	❍	❍	❍	❍	❍
Recommendation of family members or friends	❍	❍	❍	❍	❍	❍	❍
Courteousness of employees	❍	❍	❍	❍	❍	❍	❍

Q13: If you have an additional reason for selecting where to go for hospitalization, please explain:

Demographic Information

Q14: What is your gender?
- ❍ Male
- ❍ Female

Q15: What is your age?

Q16: What is your ethnicity?
- ❑ White
- ❑ Black or African American
- ❑ Hispanic or Latino
- ❑ Asian
- ❑ Native American
- ❑ Pacific Islander
- ❑ Other _____

Q17: What is your household income before taxes?
- ❍ Under $15,000
- ❍ $15,000 - $24,999
- ❍ $25,000 - $34,999
- ❍ $35,000 - $49,999
- ❍ $50,000 - $74,999
- ❍ $75,000 - $99,999
- ❍ $100,000 - $124,999
- ❍ $125,000 or above

Q18: What is the highest level of education you have completed?
- ❍ Some high school, did not graduate
- ❍ High school graduate
- ❍ Some college, no degree
- ❍ Associate degree
- ❍ Bachelor degree
- ❍ Master degree
- ❍ Doctorate

Q19: What kind of insurance do you have?

- ❍ Private (Through HealthCare.gov, a.k.a. "Obamacare")
- ❍ Private (Outside of HealthCare.gov)
- ❍ Medicare
- ❍ Medicaid
- ❍ Uninsured
- ❍ Other _____

Q20: Who do you receive health insurance through?

- ❍ Your employer
- ❍ A spouse or dependent's employer
- ❍ The government
- ❍ A private, independent plan you purchase on your own

APPENDIX B

Electronic Display Consent Form

You are invited to participate in a research project conducted through the University of Northern Iowa. The University requires that you give your consent to participate in this project. The following information is provided to help you make an informed decision about whether or not to participate.

This study involves research regarding the criteria individuals consider when selecting a hospital. The purpose of the study is to determine which of these factors carry the most weight in individuals' choice of hospital decision process.

Participation in this study will involve completing an online survey questionnaire. The survey will be completed entirely online and should take no longer than 15-20 minutes. Risks to participation are similar to those experienced in day-to-day life. Individual participants will receive no direct benefit, but participation may result in benefits to general knowledge and society.

Information obtained during this study which could identify you will be kept confidential. Your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. The summarized findings with no identifying information will be presented to the director of the UNI Honors Program and in a final Honors Thesis presentation.

Your participation is completely voluntary. You are free to withdraw from participation at any time or to choose not to participate at all, and by doing so, you will not be penalized or lose benefits to which you are otherwise entitled.

If you have questions about the study or desire information in the future regarding your participation or the study generally, you can contact Jordan Brelje at breljej@uni.edu or the project investigator's faculty advisor, Dr. Matthew Bunker, at matthew.bunker@uni.edu. You can also contact the office of the IRB Administrator, University of Northern Iowa, at 319-273-6148, for answers to questions about rights of research participants and the participant review process.

I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I acknowledge that I have received a copy of this consent statement. I am 18 years of age or older.

❍ I agree. Take me to the survey.
❍ I do not agree to participate.