

Patient Evaluation of the Hotel Function of Hospitals

(#2001-22345 ... January 4, 2001)

Mehmet C. Oz, MD, Joseph Zikria, BA, Christopher Mutrie, BA,
James P. Slater, MD, Christine Scott, RN, Susan Lehman, RN,
Mark W Connolly, MD, Daniel T. Asher, BA, Windsor Ting, MD,
Pearila B. Namerow, PhD

Columbia University, College of Physicians and Surgeons, New York, New York



Dr. Oz

ABSTRACT

Background: A means of measuring patient satisfaction is essential in the effort to improve the quality of health care delivered in our nation's hospitals. Accurate feedback allows employers to better meet patients' needs and allows hospital administrators to improve service delivery. Patients are empowered by having a voice in the manner in which their health care is delivered. Moreover, improving the efficiency of the health care delivery system decreases health care costs. Hospital comparisons can be made readily available to a large audience through the Internet, resulting in empowerment of the patient and a universal improvement in hospital care. This is the first multi-institutional analysis of patient satisfaction among New York City and northern New Jersey area tertiary care hospitals. In this study, we evaluated the patient-assessed hotel function of hospitals in a single geographic region to determine whether clinically and statistically significant differences would be revealed that could provide beneficial information to stakeholders in the healthcare system.

Methods: Patients (n = 261) who had spent a night during the past year in one of eleven hospitals within 60 miles of New York City were chosen at random from doctors' waiting rooms. On average, 24 patients from each hospital were surveyed. They were asked to complete a questionnaire that rated the various departments in the hospital on qualities such as courtesy, promptness, and cleanliness. The questionnaire also rated important characteristics of the patient experience, such as the ease of parking and the taste of the food. Each item on the survey was coded on a scale of 1 to 10 with 10 being the most positive response. The 26 specific questions were divided into 14

domains. Averages in each domain were compared by gender, age, and hospital identity, attractiveness, and setting. All statistical calculations were performed using SPSS/PC, and means were compared using t-tests.

Results: Analysis designed to evaluate outcomes between each of the possible 54 pairs of hospitals comparisons revealed statistically significant differences as often as 44% of the time in some outcomes measures (logistics), but as rarely as 7% of the time in others (billing function). Clinically significant differences (>2 units per scale) were frequently evident, although the ranges differed dramatically depending on the domains surveyed. Although age, gender, and race/ethnicity were generally not predictive of satisfaction, non-urban setting was correlated with greater patient satisfaction.

Conclusion: By having access to patient satisfaction comparisons among hospitals, patients are empowered to make better choices, employers can identify and adapt to patient preferences, and administrators can improve the services delivered and decrease health care costs by improving efficiency. Although our study was somewhat limited by patient selection biases, the study's results suggest that Internet-based tools of comparison will enable patients to make free and informed decisions about their health care by comparing local hospitals and voting on their impressions of the facilities from which they receive care.

INTRODUCTION

Historically, hospitals have been rated by the quality of the medical services provided [New York State Cardiac Surgery Database 1998]. This information has become more accessible to the public following publication in the lay press and more recently on the Internet on sites such as Healthreportcards.com and Healthgrades.com. However, in-patients are often more affected by the quality of the support services provided by the hospital than the actual quality of care provided by physicians. These services can be considered the "hotel-function" of hospitals and include

Address correspondence and reprint requests to: Mehmet C. Oz, M.D., 177 Fort Washington Ave., New York, NY 10032, Phone: (212) 305-4434, Email: mco2@columbia.edu

Presented at the NewEra Cardiac Care Conference, Dana Point, CA, January 4-7, 2001.

Table 1. List of Hotel Function Domains Assessed

Logistics
Cleanliness
Admitting
Billing Office
Nursing Staff
Escort
X-ray
Staff Courtesy
Staff Efficiency
Promptness
Informativeness
Food
SW/Discharge
Summary

issues of cleanliness, staff courtesy, and food. Information concerning the hotel function of hospitals, which is a quality measure for in-patients and hospital-based health care professionals, has been difficult to obtain. Accurate feedback could allow hospital personnel to better increase patient satisfaction and hospital administrators to improve services delivered. In turn, patients would reward hospitals that have improved customer service with increased loyalty. Patients would also be empowered with a voice in evaluating their health care delivery system.

We sought to answer two questions. First, could we design an instrument that accurately gathered data from patients on a variety of domains? In particular, would patients understand the survey and feel comfortable completing the questions? Second, would the tool identify statistically and practically important differences in the hotel

Table 2. Patient Satisfaction Questionnaire

The first few questions ask you to consider your feelings about some of the physical and logistical attributes of the hospital. For each question, circle the number between 1 and 10 that best describes your feeling. The meaning of "1" and "10" are noted under numbers "1" and "10". If you have no opinion about the item, put a check mark in the box.

1.	How was your trip to the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion
	Very difficult											Very easy
												☐
2.	What was the cost of parking near the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion
	Very expensive											Very inexpensive
												☐
3.	How would you rate the cleanliness of the public areas of the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion
	Very dirty											Very clean
												☐
4.	How would you rate the cleanliness of your hospital room?	1	2	3	4	5	6	7	8	9	10	No opinion
	Very dirty											Very clean
												☐
	The next set of questions asks you about specific functions of the hospital, and the employees in those areas.											
5.	How would you rate the efficiency of the billing office?	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all efficient											Very efficient
												☐
6.	How courteous was the staff of the billing office?	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all courteous											Very courteous
												☐
7.	Were you admitted to the hospital through the emergency room or the admitting office?											
	1. 16 Emergency Room 2. 4 Admitting Office 3. 5 No Opinion (Circle the number next to the appropriate response)											
8.	How efficient was the emergency room/admitting office?	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all efficient											Very efficient
												☐
9.	How courteous was the staff of the emergency room / admitting office	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all courteous											Very courteous
												☐
	The next set of questions asks you about the care your received while you were an in-patient.											
10.	How well did the Nursing Staff explain your care with you?	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all well											Very well
												☐
11.	How courteous was the Nursing Staff?	1	2	3	4	5	6	7	8	9	10	No opinion
	Not at all courteous											Very courteous
												☐

continued on page XX

Table 2. Continued

12.	How promptly did the Nursing Staff respond to your calls?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all promptly Very promptly											☐	
13.	How courteous was the Escort Service Personnel?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all courteous Very courteous											☐	
14.	How promptly did the Escort Service Personnel respond when they were needed?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all promptly Very promptly											☐	
15.	How well did the x-ray Technicians explain what they were doing?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all well Very well											☐	
16.	How courteous were the x-ray Technicians?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all courteous Very courteous											☐	
17.	How courteous were the Housekeeping Staff?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all courteous Very courteous											☐	
	The next set of questions asks you about the food services at the hospital.												
18.	How would you rate the taste of the food served in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all tasty Very tasty											☐	
19.	How would you rate the temperature of the food served in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all appropriate Very appropriate											☐	
20.	How often did the food you received in the hospital match your menu choice?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all often Very often											☐	
	The next questions pertain to your experiences in the hospital.												
21.	In general, how promptly were your tests obtained when you were in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all promptly Very promptly											☐	
22.	In general, how well were you informed about your care plan while you were in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all well Very well											☐	
23.	How adequate was the social worker support that you received while you were in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all adequate Very adequate											☐	
24.	How adequate was the process of discharge planning while you were in the hospital?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all adequate Very adequate											☐	
25.	How likely would you be to recommend this hospital to a relative or friend?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all likely Very likely											☐	
26.	Overall, what grade would you give the hospital, based upon your recent stay?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all acceptable Highly acceptable											☐	
27.	How strongly do you feel about the grade you gave the hospital in the previous question?	1	2	3	4	5	6	7	8	9	10	No opinion	
	Not at all strongly Very strongly											☐	
	Finally, we would like to know a little bit about you.												
28.	What is your date of birth?												
		Month	Day	Year									
29.	Are you a male or a female?	(Circle the number next to the appropriate answer)											
	1. Male 2. Female												
30.	What is your race/ethnicity?	(Circle the number next to the appropriate answer)											
	1. African-American 2. Asian 3. Hispanic 4. Native American 5. White 6. Other												

Thank you for taking the time to complete this survey. Your input will support our efforts to improve all areas of hospital functioning.

Name of hospital:

Table 3a. Demographic characteristics for 11 anonymous hospitals surveyed.

Characteristics	All sites	Patient Satisfaction Results (N = 261)										
		Hospital 1	Hospital 2	Hospital 3	Hospital 4	Hospital 5	Hospital 6	Hospital 7	Hospital 8	Hospital 9	Hospital 10	Hospital 11
# of questionnaires	261	32	23	29	25	23	11	13	24	30	25	26
Setting		Not Urban	Urban	Urban	Not Urban	Not urban	Urban	Not Urban	Urban	Urban	Urban	Urban
Volume		Low	Low	Low	High	High	Low	Low	High	High	Low	Low
Attractiveness		Attractive	Attractive	Unattractive	Unattractive	Attractive	Unattractive	Attractive	Unattractive	Unattractive	Attractive	Unattractive
Percent Male	52.3	21.9	75.0	64.0	47.8	68.4	44.4	76.9	70.8	57.1	43.5	28.0
Percent White	69.9	87.1	77.8	47.6	72.7	88.9	100.0	100.0	82.6	85.2	47.8	8.7
Percent 60 or older	51.7	40.6	65.0	68.8	50.0	66.7	100.0	76.9	52.2	53.6	28.6	20.0

Table 3b. Patient satisfaction raw data with anonymous hospitals compared according to outcome measure domains.

Outcome Measures	All sites	Patient Satisfaction Results (N = 261)										
		Hospital 1	Hospital 2	Hospital 3	Hospital 4	Hospital 5	Hospital 6	Hospital 7	Hospital 8	Hospital 9	Hospital 10	Hospital 11
Logistics (1,2)	7.5	9.6	6.3	7.4	7.1	8.4	6.2	9.5	7.7	6.3	4.5	6.0
Cleanliness (3,4)	8.4	8.7	8.6	8.9	8	8.7	8.1	8.7	8.2	7.1	8.7	8.2
Admitting (8,9)	8.4	9.4	9.8	8.8	9.1	8.3	9.1	8.1	8.2	8.1	7.7	6.6
Billing Office (5,6)	8.5	8.9	9.5	8.5	8.5	8.5	8.8	7.8	8.5	8.6	8.0	7.7
Nursing Staff (10-12)	8.8	9.4	8.8	9.2	9.5	9.1	9.0	8.7	8.4	8.1	8.2	8.0
Escort (13-14)	8.6	9.3	9.1	9.2	9.2	8.7	7.8	7.7	8.8	8.2	7.6	7.9
X-ray (15-16)	8.8	9.6	9.2	9.2	8.7	9.0	8.8	8.6	8.2	8.6	8.3	8.8
Staff Courtesy (6,9,11,13,16,17)	8.8	9.5	9.3	9.2	9.2	8.9	9.2	8.4	8.4	8.6	8.3	8.0
Staff Efficiency (5,8)	8.2	9.1	9.5	8.7	8.3	7.8	8.3	7.7	8.1	8.4	7.5	7.0
Promptness (12,14,21)	8.4	8.9	8.9	8.9	9.2	8.8	8.1	7.7	8.2	8.2	7.1	7.4
Informativeness (10, 15, 22)	8.7	9.3	8.9	9.2	9.1	9.0	8.7	8.6	8.5	8.4	7.6	8.3
Food (18-20)	6.8	8.1	8.3	6.4	6.8	7.7	7.0	7.3	6.4	5.6	6.5	5.3
SW/Discharge (23,24)	8.3	9.0	8.9	8.6	9.4	7.8	8.7	8.2	8.3	8.2	7.1	6.9
Summary (26)	8.9	9.3	9.1	9.2	9.5	8.8	9.3	9.0	8.9	8.1	7.9	8.5
Number Above Mean		14	12	12	10	10	8	4	3	2	1	0

function of hospitals? We also believed that additional benefits might arise from gathering this type of data from patients. For instance, future surveys might seek to identify trends that would help to predict the quality of hotel function that hospitals provide or explore whether the quality of support services correlates with the quality of medical care as measured by mortality rate or the volume of patients served.

METHODS

Institutional review board (IRB) approval of the survey was obtained at the institution that organized the study. Patients (n = 261) who had spent a night during the past year in one of eleven hospitals within 60 miles of New York City were chosen at random from hospital and doc-

tors' waiting rooms. Phone surveys were also conducted, but had a much lower yield (< 50%) and were abandoned. Patients were approached by their local health care provider or two students involved in the study and asked to complete a questionnaire that rated the various departments in the hospital on 14 qualities grouped into domains, such as courtesy, promptness, and cleanliness (Table 1, ☉). The questionnaire also rated important characteristics of the patient experience, such as the ease of parking and the taste of the food. Each domain was measured with at least two items, with the exception of the summary measure, which asked patients to provide an overall grade of their hospital experience. Each item was scored on a scale of 1 to 10 with 10 being the most positive response (Table 2, ☉). All statistical calculations were performed using SPSS/PC, and means were compared using t-tests.

RESULTS

This study is the first comparison of patient satisfaction among New York and New Jersey area hospitals. We found that in comparison to phone survey efforts, direct contact with patients while in the physician's office provided us with high rates of survey completion. Important differences among facilities exist that can be measured with as few as 24 patients per site reporting data. Overall, the differences in demographics of the sites were small (Table 3a, ●), although the spread in patient responses was moderate (Table 3b, ●); however, differences were large enough to reach statistical significance in numerous cases. Outcome measures revealed statistically significant differences 44% of the time in some outcome measures (logistics), but only 7% of the time in others (billing function) (Table 4, ●). Clinically significant differences (> 2 unit per scale) were frequently evident, although the ranges differed dramatically depending on the domains surveyed. Several hospitals fared better than the general group as rated by overall patient assessment as well as analysis of subgroup comparisons. Conversely, two facilities fared worse than the average of the entire group. The demographic comparisons were not very revealing: although age, gender, and race/ethnicity were generally not predictive of satisfaction, non-urban setting was correlated with greater patient satisfaction.

DISCUSSION

Patients are often reluctant to answer questionnaires administered in the hospital for fear of repercussions from embarrassing their caretakers. On the other hand, seemingly important problems sensed by a critically ill patient may not be of much concern once the dangers posed by the hospitalization have faded. Consequently, an important obstacle to the creation of hospital comparison tools has been the difficulty in gathering survey data from patients following hospitalization in an anonymous fashion. We overcame this obstacle by having laboratory fellows or practitioners in each institution personally acquire the data. This is not a sustainable technique. The Internet, which has acquired a dominant role in health care information distribution, may also serve as a means of querying patients regarding their perceptions of the quality of care received.

In addition, as Internet-based tools of comparison evolve, patients will be able to make free and informed decisions about their health care by comparing local hospitals online. Patients will thus be empowered in their decision-making, employees can identify and adapt to patient preferences, hospital administrators can improve the services delivered, and improved efficiency can reduce health care costs. In addition, when changes are made, the results will be measurable, thus providing all stakeholders with metrics to evaluate and compare their actions.

Access to information on the quality of medical care at hospitals has been gathered using the large Medicare/AHCPR population [U.S. Agency for Healthcare Policy

Table 4. Two-way contrasts of outcome measures among the 11 sites, highlighting statistically significant differences in the 14 domains.

	Percent statistically significant (p <.05 as measured by t-test)	Percent statistically and clinically significant (minimum 2 point difference on the scale)
Logistics	44	35
Cleanliness	11	0
Admitting	39	11
Billing Office	7	0
Nursing Staff	26	0
Escort	22	0
X-ray	9	0
Staff Courtesy	30	0
Staff Efficiency	20	6
Promptness	31	2
Informativeness	24	0
Food	37	13
SW/Discharge	15	6
Summary	11	0

For each outcome measure, there are a total of 54 possible two way contrasts among the 11 sites.

Research 2000], mandatory state systems [New York State Cardiac Surgery Database 1998], and voluntary professional society databases such as that created by the Society of Thoracic Surgeons [Society of Thoracic Surgeons 2000]. Although the tools available often provide crude approximations of quality, the endpoints, such as risk-adjusted mortality, are important factors for patient selection of a facility. In addition to medical care comparisons, patients and health-care providers frequently seek means to assess the non-medical care services provided by hospitals. Providers are often queried more about the quality of the food services or staff courtesy or efficiency than the outcome of a medical procedure. Improving these services has been hindered by the inability of the health care system to compare data across hospitals and geographic regions. In addition, the ability of health care professionals to pressure their hospitals to improve the hotel function of the facility is limited by lack of information and the knowledge that patients without adequate information cannot make health care decisions based on hotel function criteria.

Most of the published literature on the hotel function of hospitals emanates from Europe, where national health care systems have gathered and compared information about the quality of patient services. In particular, concerns over differences between public and private sector hospitals have forced health care providers to address whether differences in "amenities" are important. A report of 2,045 adults discharged from several major private and public facilities in Turkey revealed that private hospitals had substantially greater satisfaction ratings than their public counterparts [Tenglimoglu 1999]. Additional differences between specific services were identified in Great Britain among three hospitals in a questionnaire survey of 2,000 patients that achieved an 83% response rate [John-

son 1999]. On the other hand, overall satisfaction among patients has been observed among users of Great Britain's National Health Service [Fakhoury 1999]. This could be attributed to the observation that dissatisfied customers switch caretakers following a poor experience with a physician or hospital. However, an alternative, but more alarming, possibility is that patients are pessimistic about their ability to influence their hospital care, so they are less demanding in surveys.

Results of patient satisfaction surveys can serve patients as a benchmark by which to choose their hospitals. Likewise, hospital administrators will receive timely feedback from their customers about the quality of their hotel-function services. Comparison of survey scores will likely motivate administrators of hospitals to implement patient service improvement plans. Although some of the domains measured, like logistics, can be difficult to change in the short term, most are remarkably subject to change. Creation of a systematic means of comparing hospitals using these criteria will bring attention to this frequently neglected subject.

Hospital administrators considering changes in patient care services based on the results of patient satisfaction surveys should be aware that certain limitations of those surveys complicate the interpretation of the results. First, the quality of medical treatment that patients receive at the facility may influence their perceptions of the patient support services that the facility provides. Second, preconceived biases about institutions based on reputation will influence patients' perceptions about their care. Finally, the strong bond that generally develops between patients and their individual physicians may lead the patient to attribute a more caring attitude to the hospital than the services they receive actually warrant.

CONCLUSION

Patient satisfaction surveys will allow patients to make better-informed choices among hospitals and permit hospitals and their administrators to identify and adapt to patient preferences, thereby improving services and decreasing health care costs through increased efficiency. With the tremendous growth of the Internet, we believe that patients in the near future will be able to utilize the Web and its resources to provide feedback to caretakers and their institutions as well as to inform the patients' selection of hospitals.

REFERENCES

1. Fakhoury WK. The UK Annual Patient Satisfaction Survey: Can it really reflect quality of the NHS? *J Public Health Med.* 20:484-90, 1999.
2. Johnson RC, Pye JK, Scriven MW, et al. Patients' perception of surgical services in a district general hospital. *Br J Surg* 86:1549-55, 1999.
3. New York State Cardiac Surgery Database, New York State Department of Health, Albany, NY (<http://www.osc.stateny.us>), 1998.
4. Society of Thoracic Surgeons, 401 North Michigan Avenue, Chicago, IL 60611-426 (<http://www.sts.org>), 2000.
5. Tengilimoglu D, Kisa A, Dziegielewska SF. Patient satisfaction in Turkey: differences between public and private hospitals. *J Community Health* 24:73-90, 1999.
6. U.S. Agency for Healthcare Policy Research, 2101 E. Jefferson St., Suite 501, Rockville, MD 20852 (<http://www.ahcpr.gov/>), 2000.