The Cost of Satisfaction

A National Study of Patient Satisfaction, Health Care Utilization, Expenditures, and Mortality

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Background: Patient satisfaction is a widely used health care quality metric. However, the relationship between patient satisfaction and health care utilization, expenditures, and outcomes remains ill defined.

Methods: We conducted a prospective cohort study of adult respondents (N = 51 946) to the 2000 through 2007 national Medical Expenditure Panel Survey, including 2 years of panel data for each patient and mortality follow-up data through December 31, 2006, for the 2000 through 2005 subsample (n = 36 428). Year 1 patient satisfaction was assessed using 5 items from the Consumer Assessment of Health Plans Survey. We estimated the adjusted associations between year 1 patient satisfaction and year 2 health care utilization (any emergency department visits and any inpatient admissions), year 2 health care expenditures (total and for prescription drugs), and mortality during a mean follow-up duration of 3.9 years.

Results: Adjusting for sociodemographics, insurance status, availability of a usual source of care, chronic disease burden, health status, and year 1 utilization and expenditures, respondents in the highest patient satisfaction quartile (relative to the lowest patient satisfaction quartile) had lower odds of any emergency department visit (adjusted odds ratio [aOR], 0.92; 95% CI, 0.84-1.00), higher odds of any inpatient admission (aOR, 1.12; 95% CI, 1.02-1.23), 8.8% (95% CI, 1.6%-16.6%) greater total expenditures, 9.1% (95% CI, 2.3%-16.4%) greater prescription drug expenditures, and higher mortality (adjusted hazard ratio, 1.26; 95% CI, 1.05-1.53).

Conclusion: In a nationally representative sample, higher patient satisfaction was associated with less emergency department use but with greater inpatient use, higher overall health care and prescription drug expenditures, and increased mortality.

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WHILE MOST HEALTH care quality metrics assess care processes and health outcomes, patient experience or satisfaction is considered a complementary measure of health care quality.[1] Patient satisfaction data may empower consumers to compare health plans

See also page 435

See Invited Commentary at end of article

and physicians,[1,2] and both the Centers for Medicare & Medicaid Services and the National Committee on Quality Assurance require participating health plans to publicly report patient satisfaction data.[3] Health plans use patient satisfaction surveys to evaluate physicians and to determine incentive compensation, and consumer-oriented Web sites often report

patient satisfaction ratings as the sole physician comparator.

Satisfied patients are more adherent to physician recommendations and more loyal to physicians,[4,5] but research suggests a tenuous link between patient satisfaction and health care quality and outcomes.[3,6,7] Among a vulnerable older population, patient satisfaction had no association with the technical quality of geriatric care,[8] and evidence suggests that satisfaction has little or no correlation with Health Plan Employer Data and Information Set quality metrics.[3,7]

In addition, patients often request discretionary services that are of little or no medical benefit, and physicians frequently accede to these requests, which is associated with higher patient satisfaction.[9,10] Physicians whose compensation is more strongly linked with patient satisfaction are more likely to deliver discretionary services, such as advanced imaging for acute low back pain.[11]

Although benefits of discretionary care are by definition limited or absent, discretionary services may lead to iatrogenic harm via overtreatment, labeling, or other causal pathways.[12] In a national Medicare sample, health care intensity varied widely among patients across US regions, despite similar illness burdens.[13,14] Within 3 chronic illness cohorts, greater health care intensity was associated with increased patient satisfaction with some aspects of care but also with higher mortality and without improvement in the quality of care.[13,14] Discretionary care has been similarly associated with added risks and costs in other studies.[15-20]

The associations among patient satisfaction, health care intensity, and outcomes have not been studied within a national sample that includes adults of all ages. Therefore, we used Medical Expenditure Panel Survey (MEPS) data to assess the relationship between patient satisfaction and health care utilization, expenditures, and mortality in a nationally representative sample.

<div style="text-align:center">**METHODS**</div>

DESIGN, SETTING, AND PATIENTS

We conducted a prospective cohort study of adult respondents to the 2000 through 2007 MEPs. The MEPS is an annual nationally representative survey of the US civilian noninstitutionalized population assessing access to, use of, and costs associated with medical services.[21] The MEPS household component uses an overlapping panel design in which individuals are interviewed successively during 2 years. During each year, respondents complete self-administered questionnaires about health status and their experiences with health care. The MEPS sampling frame is drawn from respondents to the National Health Interview Survey, an annual in-person household survey conducted by the National Center for Health Statistics. The National Health Interview Survey data are linked with death certificate data from the National Death Index, enabling mortality ascertainment among MEPS participants. Mortality outcomes through December 31, 2006, were available for the subsample initially enrolled in panel years 2000 through 2005. Response rates to the household component of the MEPS ranged from 66.5% to 70.5% during the study years.

In each year, we included respondents aged at least 18 years reporting having 1 or more physician or clinic visits in the prior year. Capitalizing on the panel survey design, we assessed the association between patient satisfaction in the first panel year (year 1) and health care utilization and expenditures during the subsequent panel year (year 2). Therefore, for respondents enrolled in 2000, we assessed satisfaction (and other baseline variables) in 2000 (year 1), utilization and expenditures in 2001 (year 2), and mortality through 2006. This prospective design enabled adjustment for year 1 utilization and total health care expenditures and greater adjustment for baseline health status and propensity to use care.

OUTCOMES

Health Care Utilization

During each survey round, the MEPS collects detailed information about health service use, including office and emergency department visits, inpatient hospitalizations, and prescription drug use. Self-reported health care utilization is validated and verified by standardized medical record abstrac-

tion among a subsample of respondents. We used these data to specify in year 2 whether participants had 1 or more emergency department visits and 1 or more inpatient admissions.

Health Care Expenditures

The MEPS ascertains from respondents and physicians the sum of insurance payments and out-of-pocket costs for services received. The MEPS aggregates payments to estimate total expenditures and expenditures within service categories. We used these data to estimate year 2 total health care expenditures and year 2 expenditures for prescription drugs.

Mortality

We assessed mortality by National Health Interview Survey linkage with the National Death Index.[22] For analyses, we measured survival time for respondents enrolled in panel years 2000 through 2005 from the beginning of the initial observation year until the date of death or December 31, 2006 (≤6 years).

PATIENT SATISFACTION

At the midpoint of study years, patients responded to questions from the Consumer Assessment of Health Plans Survey, which evaluates patient satisfaction across 5 dimensions, ranging from physician communication to health plan customer service.[23] Patient satisfaction with physician communication is strongly correlated with other Consumer Assessment of Health Plans Survey dimensions and with global satisfaction.[24] Therefore, we used responses to 4 items pertaining to physician communication, specifically how often in the past 12 months patients' physicians or other health care providers performed the following: (1) listened carefully, (2) explained things in a way that was easy to understand, (3) showed respect for what they had to say, and (4) spent enough time with them. We also used a fifth item in which patients rated their health care from all physicians and other health care providers on a scale of 0 to 10 (from the worst to the best health care possible). We created a scale by standardizing (to weight each question equally) and averaging responses to the 5 items (mean, 0; median, 0.22; interquartile range, −0.47 to 0.72; Cronbach α = 0.88), in which higher numbers indicate greater patient satisfaction. We categorized patient responses into quartiles of the year 1 satisfaction scale.

COVARIATES

We identified year 1 covariates to address potential confounding by sociodemographics, health behaviors, health care access, propensity to use health care, and health status. Sociodemographic covariates included age, sex, race/ethnicity (white, Hispanic, black, or other), urban metropolitan statistical area vs nonurban residence, census region (West, Midwest, Northeast, or South), household income (<100%, 100%-124%, 125%-199%, 200%-399%, or ≥400% of the federal poverty level), and education (less than high school, some high school, high school graduate, some college, or college graduate). We assessed health care access by health insurance coverage status (uninsured, privately insured, or publicly insured) and by the presence of a usual source of care, and we assessed health behaviors by smoking status.

We assessed morbidity by a count of 8 self-reported chronic diseases (diabetes mellitus, hypertension, coronary heart disease, myocardial infarction, cerebrovascular disease, asthma, emphysema, and arthritis). We used the 12-Item Short Form Health Survey mental and physical component summaries as

measures of mental and physical health status, respectively.[25,26] These measures also served as indirect measures of chronic disease severity.[27]

We also included a single-item self-rated health measure in which patients rate their health as excellent, very good, good, fair, or poor. This single-item predicts mortality and inpatient and outpatient utilization independent of the 12-Item Short Form Health Survey.[28]

To address otherwise unmeasured morbidity and propensity to use care, we included the following year 1 utilization measures: total health care expenditures, number of office visits, indicators of any emergency department visits and any inpatient admissions, and the number of drug prescriptions.

STATISTICAL ANALYSIS

We performed descriptive analyses to compare patient characteristics and unadjusted outcomes across patient satisfaction quartiles. To identify independent associations between patient characteristics and high satisfaction, we used logistic regression analysis to model highest patient satisfaction quartile (vs lower) as a function of patient sociodemographic and clinical characteristics.

We conducted analyses of health care utilization, expenditures, and mortality outcomes that adjusted for the range of covariates listed in the previous subsection. We used logistic regression analysis to model binary year 2 outcomes (emergency department visits and inpatient admissions) as functions of year 1 patient satisfaction quartile. We modeled year 2 total and prescription drug expenditure outcomes using 1-part generalized linear models with logarithm links and Poisson distributions.[29] Parameter estimates (PEs) from log cost models yield percentage differences in costs relative to the reference group: % Cost Difference = $[\exp(PE) - 1] \times 100$. For utilization and cost outcomes, we used fitted models to estimate adjusted marginal differences in outcomes by patient satisfaction quartile.

We used Cox proportional hazards regression to model mortality as a function of year 1 patient satisfaction quartile. We found no graphical or statistical evidence of violation of the proportional hazards assumption.

We repeated each model with the exclusion of patients with poor self-rated health and 3 or more chronic diseases. This was done because of the possibility that these patients may be more dependent on (and satisfied with) their physicians but more likely to use hospital care and to die.

Descriptive statistics, PEs, and SEs are adjusted for the MEPS survey design. Analyses were performed using commercially available software (STATA/MP 12.0; StataCorp LP). Hypothesis tests were 2-sided with $\alpha = .05$. The study had no external funding source.

RESULTS

The sample included 51 946 adult respondents to the 2000 through 2007 MEPS, including 36 428 respondents from 2000 through 2005 with mortality outcomes through 2006 (mean follow-up duration, 3.9 years). Highest year 1 patient satisfaction was significantly associated with older age, female sex, black race/ethnicity, and health insurance coverage (**Table 1**). In adjusted analyses, patients with highest satisfaction also had higher 12-Item Short Form Health Survey scores (ie, better physical and mental health status) and were more likely to self-rate their health as excellent or poor (**Table 2**).

HEALTH CARE UTILIZATION AND EXPENDITURES

In adjusted analyses, the odds of any emergency department visit were lower among patients in the more satisfied quartiles relative to patients in the least satisfied quartiles, although the association was of borderline significance among patients in the highest satisfaction quartile (adjusted odds ratio [aOR], 0.92; 95% CI, 0.84-1.00; $P = .06$) (**Table 3**). Relative to the least satisfied patients, the adjusted odds of any inpatient admission during year 2 were higher among the most satisfied patients (aOR, 1.12; 95% CI, 1.02-1.23; $P = .02$).

Patients in the highest year 1 patient satisfaction quartile (vs those in the lowest) had adjusted 8.8% (95% CI, 1.6%-16.6%; $P = .02$) greater year 2 total health care expenditures and 9.1% (95% CI, 2.3%-16.4%; $P = .01$) greater prescription drug expenditures. These results are summarized in Table 3.

After excluding patients with poor self-rated health and 3 or more chronic diseases, associations between patient satisfaction and health care utilization and expenditures were little changed. Details are available from the authors.

MORTALITY

During 142 565 person-years of follow-up duration from 2000 to 2006, a total of 1396 patients died (3.8% of 36 428 patients). In adjusted survival analyses, relative to the least satisfied patients at baseline, the most satisfied patients had a 26% greater mortality risk (adjusted hazard ratio [aHR], 1.26; 95% CI, 1.05-1.53; $P = .02$) (**Table 4**). The association between higher patient satisfaction and mortality remained significant in an analysis that excluded patients with poor self-rated health and 3 or more chronic diseases (aHR, 1.44; 95% CI, 1.10-1.88; $P = .008$).

COMMENT

In a nationally representative sample, we found that higher patient satisfaction was associated with lower emergency department utilization, higher inpatient utilization, greater total health care expenditures, and higher expenditures on prescription drugs. The most satisfied patients also had statistically significantly greater mortality risk compared with the least satisfied patients.

In combination with reduced emergency department use, increased inpatient care among the most satisfied patients raises the question of whether more-satisfied patients may be differentially hospitalized for elective or less urgent indications, because nonelective urgent hospital admissions often begin with emergency department visits. It is also possible that patients who are least satisfied with their physicians may be more likely to seek health care at emergency departments rather than at outpatient clinics.

Patients typically bring expectations to medical encounters, often making specific requests of physicians,[30,31] and satisfaction correlates with the extent to which physicians fulfill patient expectations.[10,31,32] Pa-

Table 1. Patient Characteristics by Year 1 Patient Satisfaction Quartile [a]

	Patient Satisfaction Quartile				
Characteristic	1, Least Satisfied (n = 12 287)	2 (n = 13 567)	3 (n = 11 274)	4, Most Satisfied (n = 14 818)	Overall (N = 51 946)
Age, mean, y	44.4	47.6	48.5	50.8	48.0
Female sex, %	58.1	59.1	56.5	58.6	58.2
Race/ethnicity, %					
White	72.6	77.7	74.3	77.2	75.6
Hispanic	10.6	8.5	9.1	8.1	9.0
Black	9.7	8.2	11.4	11.0	10.0
Other	7.2	5.6	5.2	3.7	5.4
Education, %					
<High school	6.0	5.1	5.5	6.0	5.6
Some high school	12.1	9.2	9.5	10.6	10.3
High school graduate	31.4	29.4	31.1	32.5	31.1
Some college	23.6	24.4	24.1	23.0	23.7
College graduate	26.9	32.0	29.7	28.0	29.2
Household income relative to percentage of federal poverty level, %					
<100	12.0	8.3	8.9	9.4	9.6
100-124	4.4	3.1	3.7	4.0	3.8
125-199	13.1	11.6	11.9	12.4	12.2
200-399	31.8	30.5	29.8	29.3	30.3
≥400	38.8	46.5	45.7	44.9	44.1
Urban metropolitan statistical area vs nonurban,%	82.3	82.5	82.5	80.5	81.9
Health insurance coverage, %					
Private	72.1	79.7	78.5	77.0	76.9
Public	15.9	13.5	15.0	16.9	15.4
None	12.0	6.8	6.5	6.1	7.7
Usual source of care, %	83.0	88.5	88.7	90.0	87.7
Current smoker, %	24.3	17.2	17.9	17.3	19.0
Count of chronic diseases, % [b]					
0	47.4	45.4	45.4	43.7	45.3
1	27.0	27.2	27.6	28.0	27.5
2	15.3	15.7	16.2	17.1	16.1
3	6.1	6.8	7.0	6.8	6.7
≥4	4.3	5.0	3.8	4.5	4.4
12-Item Short Form Health Survey component summary score, mean [c]					
Physical	46.6	48.0	48.7	49.1	48.1
Mental	46.4	49.9	51.1	52.9	50.2
Self-rated health, %					
Excellent	15.7	20.0	22.0	27.9	21.7
Very good	31.8	35.5	35.6	34.3	34.3
Good	31.3	29.6	28.7	25.1	28.5
Fair	15.6	11.4	10.6	9.3	11.6
Poor	5.6	3.6	3.2	3.4	3.9
Year 1 total health care expenditures, mean, $	4542	4795	4372	4534	4570
Year 1 health care utilization					
Office visits, mean	5.0	5.5	5.0	5.0	5.1
Any emergency department visits, %	19.6	16.6	15.8	14.4	16.5
Any inpatient admissions, %	11.2	12.5	10.7	11.2	11.4
Drug prescriptions, mean	15.4	17.0	16.0	17.3	16.5

[a] Means and proportions are population weighted.
[b] Among the following chronic diseases: diabetes mellitus, hypertension, coronary heart disease, myocardial infarction, cerebrovascular disease, asthma, emphysema, and arthritis.
[c] Ranging from 0 to 100. Scales have a population mean of 50, with higher scores indicating higher function.

tient requests have also been shown to have a powerful influence on physician prescribing behavior,[9] and our findings suggest that patient satisfaction may be particularly strongly linked with prescription drug expenditures.

Within 3 chronic illness cohorts of fee-for-service Medicare enrollees, higher regional intensity of care was associated with higher adjusted mortality.[13,14] One potential explanation is that patients in higher-intensity regions receive more discretionary health services, with attendant risk of adverse effects, than similarly ill patients in lower-intensity regions. A similar phenomenon may explain the higher mortality among the most satisfied patients in our study. Alternatively, patient satisfaction may be a marker for illness, identifying patients who rely more on support from their physicians and thus report higher satisfaction. However, in our study, more satisfied pa-

tients were more likely to rate their health as excellent and had better physical and mental health status than less satisfied patients. In addition, the association between high patient satisfaction and increased mortality strengthened after we excluded patients with poor self-rated health and substantial chronic disease burden.

While satisfaction correlates with the extent to which physicians fulfill patients' requests,[6,31] patient satisfaction can be maintained in the absence of request fulfillment if physicians address patient concerns in a patient-centered way.[33-37] In the ideal vision of patient-centered care, physicians deliver evidence-based care in accord with the preferences of informed patients, thereby improving satisfaction and health outcomes, while using health resources efficiently.[35,38] However, patient-centered communication requires longer visits[34,39] and may be challenging for many physicians to implement.[40]

Our study has several strengths. First, study data represent a nationally representative US sample. Second, we assessed the prospective relationship between patient satisfaction and outcomes. Third, although unmeasured confounding is possible in this observational study, we adjusted for a wide range of sociodemographic, clinical, access, and prior use factors that may affect health care utilization. Fourth, the size and structure of the linked data set enabled assessment of the relationships among patient satisfaction, short-term health care utilization and expenditures, and near-term mortality.

Limitations include, first, that the patient satisfaction measure addressed satisfaction with the physician and not other domains of health care satisfaction, although satisfaction with one's physician correlates with other satisfaction dimensions and with global satisfaction.[24] Second, regardless of physician actions, patients may also have fundamental tendencies to be more or less satisfied that are associated with distinct care-seeking patterns; it is possible that patients who are likely to receive discretionary care may also be predisposed to express high satisfaction with their physicians. Third, we assessed the relationship between patient satisfaction in one year and health care utilization and expenditures in the following year, which may differ from the relationship between sustained patient satisfaction and longer-term utilization and expenditures.

Advocates of patient experience metrics argue that systematic routine measurement of patient satisfaction is a powerful quality improvement tool for physicians and health plans.[1] While we do not believe that patient satisfaction should be disregarded, our data suggest that we do not fully understand what drives patient satisfaction as now measured or how these factors affect health care use and outcomes. Therapeutic responsibilities often require physicians to address topics that may challenge or disturb patients, including substance abuse, psychiatric comorbidity, nonadherence, and the risks of requested but discretionary tests or treatments. Relaxing patient satisfaction incentives may encourage physicians to prioritize the benefits of truthful therapeutic discourse, despite the risks of dissatisfying some patients.

In a nationally representative sample, higher patient satisfaction was associated with increased inpatient uti-

Table 2. Adjusted Associations Between Sociodemographic and Clinical Characteristics and Highest Year 1 Patient Satisfaction

Independent Variable	Adjusted OR (95% CI) (N = 51 946) Most Satisfied vs Less Satisfied[a]
Age, per year	1.02 (1.01-1.02)
Female sex	1.12 (1.08-1.16)
Race/ethnicity	
White	1 [Reference]
Hispanic	0.98 (0.90-1.06)
Black	1.17 (1.09-1.25)
Other	0.75 (0.67-0.83)
Education	
<High school	1 [Reference]
Some high school	1.04 (0.94-1.15)
High school graduate	0.96 (0.87-1.06)
Some college	0.88 (0.80-0.97)
College graduate	0.78 (0.71-0.86)
Household income relative to federal poverty level, %	
<100	1 [Reference]
100-124	1.02 (0.90-1.15)
125-199	0.95 (0.87-1.04)
200-399	0.87 (0.80-0.95)
≥400	0.87 (0.80-0.95)
Urban metropolitan statistical area vs nonurban	0.90 (0.84-0.95)
Health insurance coverage	
Private	1 [Reference]
Public	1.14 (1.06-1.23)
None	0.81 (0.74-0.89)
Current smoker vs nonsmoker	1.05 (0.99-1.11)
12-Item Short Form Health Survey component summary score, per 10-point increase[b]	
Physical[c]	1.33 (1.29-1.37)
Mental	1.53 (1.48-1.57)
Self-rated health	
Excellent	1 [Reference]
Very good	0.72 (0.67-0.76)
Good	0.67 (0.63-0.72)
Fair	0.77 (0.70-0.86)
Poor	1.33 (1.15-1.54)

Abbreviation: OR, odds ratio (also adjusted for census region and panel year).
[a] Most satisfied (patient satisfaction quartile 4) vs less satisfied (patient satisfaction quartiles 1-3).
[b] Scales have a population mean of 50, with higher scores indicating higher function.
[c] Physical component summary score and count of chronic diseases were highly correlated (ρ = 0.52), so only physical component summary score was included in the model. When count of chronic diseases (0-2 vs ≥3) was substituted for physical component summary score in the model, having 2 or fewer chronic diseases was significantly associated with higher patient satisfaction (adjusted OR, 1.24; 95% CI, 1.16-1.33; $P < .01$) relative to having 3 or more chronic diseases.

lization and with increased health care expenditures overall and for prescription drugs. Patients with the highest degree of satisfaction also had significantly greater mortality risk. These associations warrant cautious interpretation and further evaluation, but they suggest that we may not fully understand the factors associated with patient satisfaction. Without additional measures to ensure that care is evidence based and patient centered, an

Table 3. Health Care Utilization, Total Expenditures, and Prescription Drug Expenditures by Patient Satisfaction Quartile

Variable	Patient Satisfaction Quartile (N = 51 946)			
	1, Least Satisfied	2	3	4, Most Satisfied
Any emergency department visits				
Unadjusted, %	17.6	14.7	13.6	14.3
OR (95% CI)[a]	1 [Reference]	0.91 (0.84 to 0.99)	0.85 (0.78 to 0.94)	0.92 (0.84 to 1.00)
Marginal difference, % (95% CI)[a]	0 [Reference]	−1.1 (−2.1 to −0.1)	−1.9 (−3.0 to −0.8)	−1.0 (−2.1 to 0.1)
Any inpatient admissions				
Unadjusted, %	10.7	11.2	10.4	11.5
OR (95% CI)[a]	1 [Reference]	1.07 (0.96 to 1.19)	1.04 (0.94 to 1.14)	1.12 (1.02 to 1.23)
Marginal difference, % (95% CI)[a]	0 [Reference]	0.6 (−0.3 to 1.5)	0.3 (−0.5 to 1.1)	1.0 (0.2 to 1.9)
Total health care expenditures				
Unadjusted, mean (SE), $	4646 (122)	5013 (105)	4610 (114)	4729 (134)
PE (95% CI)[a]	0 [Reference]	0.04 (−0.02 to 0.11)	0.04 (−0.03 to 0.11)	0.08 (0.02 to 0.15)
Marginal difference, % (95% CI)[a]	0 [Reference]	4.5 (−2.2 to 11.6)	4.2 (−3.0 to 11.9)	8.8 (1.6 to 16.6)
Prescription drug expenditures				
Unadjusted, mean (SE), $	1005 (28)	1078 (20)	1086 (30)	1142 (23)
PE (95% CI)[a]	0 [Reference]	0.03 (−0.03 to 0.08)	0.08 (0.01 to 0.14)	0.09 (0.02 to 0.15)
Marginal difference, % (95% CI)[a]	0 [Reference]	2.6 (−3.2 to 8.6)	7.8 (1.0 to 15.2)	9.1 (2.3 to 16.4)

[a] Means, odds ratios (ORs), parameter estimates (PEs), and marginal differences are adjusted for patient age, sex, race/ethnicity, education, household income, census region, urban residence, health insurance coverage, usual source of care, panel year, smoking status, count of chronic diseases, 12-Item Short Form Health Survey mental and physical component summary scores, self-rated health, year 1 total health care expenditures, year 1 office visits, any (vs none) year 1 emergency department visits, any (vs none) year 1 inpatient admissions, and count of year 1 drug prescriptions.

Table 4. Mortality Through December 31, 2006, by Year 1 Patient Satisfaction Quartile

Year 1 Patient Satisfaction Quartile	All Patients (n = 36 428)		Excluding Patients With Poor Self-Rated Health and ≥3 Chronic Diseases (n = 30 674)	
	Adjusted HR (95% CI)	P Value	Adjusted HR (95% CI)	P Value
1, Least satisfied	1 [Reference]	. . .	1 [Reference]	. . .
2	1.08 (0.88-1.31)	.47	1.17 (0.89-1.55)	.25
3	1.02 (0.83-1.26)	.82	1.16 (0.87-1.53)	.31
4, Most satisfied	1.26 (1.05-1.53)	.02	1.44 (1.10-1.88)	.008

Abbreviation: HR, hazard ratio (adjusted for patient age, sex, race/ethnicity, education, household income, census region, urban residence, health insurance coverage, usual source of care, panel year, smoking status, count of chronic diseases, 12-Item Short Form Health Survey mental and physical component summary scores, self-rated health, year 1 total health care expenditures, year 1 office visits, any (vs none) year 1 emergency department visits, any (vs none) year 1 inpatient admissions, and count of year 1 drug prescriptions).

overemphasis on patient satisfaction could have unintended adverse effects on health care utilization, expenditures, and outcomes.

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INVITED COMMENTARY

How to Feed and Grow Your Health Care System

Scan for Author Audio Interview

N ot long before the editorial deadline for this Invited Commentary, I headed off on vacation to warmer climes (this is not difficult when leaving from northern New England). But would a week in tropical paradise be worth the frustration and indignity of commercial air travel? It turns out I was lucky. The lead flight attendant ran a tight ship, assuring us an orderly, safe, and comfortable trip. Maybe I should plan more discretionary travel.

According to the findings of a study published in this issue of the *Archives*, had my recent shoulder surgery gone more smoothly, I might instead be planning more discretionary health care.