

Association of Clinician Denial of Patient Requests With Patient Satisfaction

Anthony Jerant, MD; Joshua J. Fenton, MD, MPH; Richard L. Kravitz, MD, MSPH; Daniel J. Tancredi, PhD; Elizabeth Magnan, MD, PhD; Klea D. Bertakis, MD, MPH; Peter Franks, MD

IMPORTANCE Prior studies suggesting clinician fulfillment or denial of requests affects patient satisfaction included limited adjustment for patient confounders. The studies also did not examine distinct request types, yet patient expectations and clinician fulfillment or denial might vary among request types.

OBJECTIVE To examine how patient satisfaction with the clinician is associated with clinician denial of distinct types of patient requests, adjusting for patient characteristics.

DESIGN, SETTING, AND PARTICIPANTS Cross-sectional observational study of 1319 outpatient visits to family physicians (n = 56) by 1141 adults at one Northern California academic health center.

MAIN OUTCOMES AND MEASURES We used 6 Consumer Assessment of Healthcare Providers and Systems Clinician and Group Adult Visit Survey items to measure patient satisfaction with the visit physician. Standardized items were averaged to form the satisfaction score (Cronbach α = 0.80), which was then percentile-transformed. Seven separate linear mixed-effects models examined the adjusted mean differences in patient satisfaction percentile associated with denial of each of the following requests (if present)—referral, pain medication, antibiotic, other new medication, laboratory test, radiology test, or other test—compared with fulfillment of the respective requests. The models adjusted for patient sociodemographics, weight, health status, personality, worry over health, prior visit with clinician, and the other 6 request categories and their dispositions.

RESULTS The mean (SD) age of the 1141 patients was 45.6 (16.1) years, and 902 (68.4%) were female. Among 1319 visits, 897 (68.0%) included at least 1 request; 1441 (85.2%) were fulfilled. Requests by category were referral, 294 (21.1%); pain medication, 271 (20.5%); antibiotic, 107 (8.1%); other new medication, 271 (20.5%); laboratory test, 448 (34.0%); radiology test, 153 (11.6%); and other tests, 147 (11.1%). Compared with fulfillment of the respective request type, clinician denials of requests for referral, pain medication, other new medication, and laboratory test were associated with worse satisfaction (adjusted mean percentile differences, -19.75 [95% CI, -30.75 to -8.74], -10.72 [95% CI, -19.66 to -1.78], -20.36 [95% CI, -29.54 to -11.18], and -9.19 [95% CI, -17.50 to -0.87]), respectively.

CONCLUSIONS AND RELEVANCE Clinician denial of some types of requests was associated with worse patient satisfaction with the clinician, but not for others, when compared with fulfillment of the requests. In an era of patient satisfaction-driven compensation, the findings suggest the need to train clinicians to deal effectively with requests, potentially enhancing patient and clinician experiences.

JAMA Intern Med. 2018;178(1):85-91. doi:10.1001/jamainternmed.2017.6611
Published online November 27, 2017.

← Editor's Note page 92

+ Supplemental content

Author Affiliations: Department of Family and Community Medicine, University of California Davis School of Medicine, Sacramento (Jerant, Fenton, Magnan, Bertakis, Franks); Division of General Medicine, Department of Internal Medicine, University of California Davis School of Medicine, Sacramento (Kravitz); Department of Pediatrics, University of California Davis School of Medicine, Sacramento (Tancredi).

Corresponding Author: Anthony Jerant, MD, Department of Family and Community Medicine, University of California Davis School of Medicine, 4860 Y St, Ste 2300, Sacramento, CA 95817 (ajerant@ucdavis.edu).

The importance of striving to improve patients' subjective experiences of care, commonly referred to as *patient satisfaction*, is acknowledged by clinicians, administrators, policymakers, and the general public.¹ Nonetheless, controversy exists regarding the interpretation and use of patient satisfaction measures seeking to assess the quality of patient-clinician interactions.²⁻⁴ In some studies, patient responses to such measures seem to partly reflect the clinician's interpersonal communication abilities.⁵⁻⁷ The current practice of incentivizing (or penalizing) clinicians based on patient satisfaction is predicated on the notion that the scores reflect clinician interpersonal performance.^{8,9}

While a patient-centered style has been associated with higher satisfaction with clinicians in some studies, such findings offer limited guidance to clinicians. Clinicians face the challenge of attaining favorable satisfaction ratings in time-limited office visits, with multiple competing demands.^{10,11} There is a need to explore how clinician handling of discrete issues or tasks that commonly arise in office visits influences patient satisfaction with clinicians, to help uncover priority targets for clinician communication efforts and, potentially, skills enhancement training.

Clinician fulfillment or denial of patient requests might be expected to influence patient satisfaction, yet the issue has received little study.¹² Patient requests are ubiquitous; prior studies suggest over three-fourths of primary care visits include 1 or more requests.¹³ Clinicians have long surmised that denial of requests can lead to less favorable patient satisfaction,^{14,15} and preliminary studies provide some support for this hypothesis.¹³ However, the studies did not adjust extensively for patient characteristics, many of which confound ratings of satisfaction with clinicians.¹⁶ Thus, the independent influences of request denial on satisfaction ratings remain unclear. Furthermore, the studies did not separately examine how patient satisfaction was associated with clinician fulfillment or denial of distinct categories of patient requests (eg, for diagnostic tests vs treatment). This is an important gap, since research suggests that the strength of patient expectations varies across different aspects of care, and that clinicians perceive some types of requests as more difficult to address than others.^{17,18}

We examined the associations of clinician denial of 7 categories of patient requests on patient satisfaction with clinicians.

Methods

We conducted the study from July 2015 to May 2016. We obtained ethics approval from the University of California Davis (UCD) institutional review board. Research assistants enrolled a convenience sample of patient participants from the UCD Family Medicine Clinic waiting room. They met the following eligibility criteria and provided written informed consent: (1) age of least 18 years; and (2) able to read, speak, and understand a survey written in English. The clinic conducts approximately 35 000 patient visits per year. We collected most study data via questionnaires that patients completed immediately

Key Points

Question How is denial of specific types of patient requests during office visits associated with patient satisfaction with the clinician?

Findings This was a cross-sectional study of 1141 adults making 1319 office visits to 56 family physicians. Compared with fulfillment of the respective request type, denials of requests for referral, pain medication, other new medication, and laboratory tests were associated with worse patient satisfaction with the clinician.

Meaning Denial of some types of requests was associated with worse patient satisfaction with the clinician, but not for others, when compared with fulfillment of the requests, suggesting the need for clinician training in request handling.

diately after office visits with a resident or faculty family physician, before departure from the office. We collected data on the identity of the visit physician and patient's body mass index (BMI) (calculated as weight in kilograms divided by height in meters squared) from electronic health records. Patients completed the postvisit questionnaire using a study touch screen tablet device. We provided participants with a \$10 gift card following questionnaire completion, to compensate them for their time.

Measures

Patient satisfaction with the clinician was measured using a scale comprising 6 items from the Consumer Assessment of Healthcare Providers and Systems Clinician and Group (CG-CAHPS) Adult Visit Survey.^{19,20} Four of the items were from the CG-CAHPS Doctor Communication Composite. Of these, the first asked whether the physician gave them easy-to-understand information about their health questions or concerns (yes, definitely; yes, somewhat; uncertain/mixed; or did not have any health questions or concerns), while the other 3, respectively, asked whether the physician knew important information about their medical history, showed respect for what they had to say, and spent enough time with them (yes definitely, yes somewhat, or no). The fifth CG-CAHPS item was the Overall Doctor Rating item, which asked the patient to rate the physician on a scale of 0 (worst physician possible) to 10 (best physician possible). The sixth CG-CAHPS item was the Recommend Doctor Rating, which asked the patient whether they would recommend the physician to their family and friends (yes, definitely; yes, somewhat; or no).

Participants also responded to a series of previously validated items asking whether they had made requests in any of the following service categories (yes/no) and, if so, whether they perceived that the clinician had fulfilled or denied the request: referral to another clinician; pain medication; antibiotic; other new medication; laboratory testing; radiology testing; or other testing (eg, sleep study).^{21,22}

We also measured a number of factors previously shown to be associated with patient satisfaction with clinicians.^{6,16,23-30} Sociodemographics measured included age, sex, race/ethnicity, education level, and marital status. Body mass index was gathered from visit vital signs documentation in the electronic health

erecord. Overall self-rated health was assessed with a single validated item: “In general, would you say your health is (excellent, very good, good, fair, or poor)?”³¹ Mental health status was assessed using the validated Mental Health Inventory, a 5-item measure assessing both depressive and anxiety disorders (range of scores, 4-100, higher scores indicate fewer symptoms).³² Patients’ degree of skepticism regarding medical care was assessed using a validated 4-item scale (range of scores, 1-5; higher scores indicate more skepticism).^{33,34} Five Factor Model (FFM) personality factors—agreeableness, conscientiousness, extraversion, neuroticism, and openness—were measured with the well-validated Big Five Inventory.³⁵ The Big Five Inventory consists of 44 statements; for each statement, patients are asked to indicate their level of agreement or disagreement on a 5-point scale (strongly disagree to strongly agree) (range of scores for each factor, 1-5; higher scores indicate higher standing on the factor). Global life satisfaction was assessed using the 5-item Satisfaction with Life Scale, a validated measure of subjective well-being with high temporal reliability (range of scores, 5-35, higher scores indicate greater life satisfaction).³⁶ Three questions with 5-point Likert response scales, assessing bothersomeness of and worry and concerns about any symptoms the patient was experiencing, respectively, were combined into a “worry about symptoms” measure (range of scores, 3-15; higher scores indicate greater worry).^{21,22} Finally, patients were asked to indicate whether they had previously seen the clinician.¹⁶

Statistical Analysis

Analyses were conducted using Stata statistical software (version 15.0; StataCorp). We standardized (ie, Z score transformed) each of the 6 CG-CAHPS items and averaged them to form each patient’s satisfaction score. Cronbach α for this scale in our sample was 0.80. The satisfaction score distribution was highly skewed, with most scores clustered around an upper limit. To reduce the skewness of the distribution, we percentile-transformed the satisfaction scores, replacing ties with the mean percentile.^{37,38} Higher percentiles indicate higher satisfaction. Percentiles are more generalizable across a sample of visits than absolute rankings, since absolute rankings depend on the number of visits being ranked, while percentiles do not.

We used 7 linear models (1 for each type of request under study), each with patient satisfaction percentile as the dependent variable, and each excluding visits without the type of request under consideration. Cross-nested mixed models were used to allow adjustment for the possible nesting of patient visits within clinicians and clinicians within patients. The key independent variable in each analysis was whether the respective request type was either denied or fulfilled (the latter used as reference). *Negative* parameter estimates in the model indicate *lower (worse)* adjusted mean patient satisfaction percentiles, while *positive* estimates indicate *higher (better)* adjusted mean satisfaction percentiles. All models adjusted for the following patient characteristics, previously found to be associated with patient satisfaction ratings^{6,16,23-30}: age, sex, race/ethnicity, education, marital status, BMI, overall self-rated health, mental health status, medical skepticism, FFM personality factors, life satisfaction, worry about symptoms, and

prior visit with the clinician (vs none). Finally, all models also adjusted for the other 6 types of requests (using 3-level variables for each: no request in category, request in category denied, or request in category fulfilled [reference category]).

We also conducted a single-model sensitivity analysis of all study visits. The model included all 7 request categories (each represented by 3-level variables: no request in category, denied request in category, or fulfilled request in category [reference category]) and adjusted for all of the patient characteristics listed herein.

Results

The questionnaire was completed immediately following 1319 visits, made to a total of 56 physicians by 1141 patients. The mean age of the 1141 patients was 45.6 (16.1) years, and 902 (68.4%) were female. Characteristics of patients, by visit, are summarized in **Table 1**. Regarding the distribution in total requests (all categories combined), 422 visits (32.0%) had 0, 432 visits (32.8%) had 1, 265 visits (20.1%) had 2, 115 visits (8.7%) had 3, 55 visits (4.2%) had 4, 17 visits (1.3%) had 5, 12 (0.9%) visits had 6, and 1 visit (0.1%) had 7. The sample mean (SD) unstandardized patient satisfaction score was 23.2 (2.5) (range of scores, 9.0-25.0).

Patients reported that 1441 (85.2%) of their requests were fulfilled by the clinician. **Table 2** shows patient requests and rates of clinician fulfillment by service category. Laboratory tests were most frequently requested, followed by pain medication, other medication, and referrals, while antibiotics were least frequently requested. Patient-reported request fulfillment exceeded 80% for all service categories except radiology testing (66% fulfilled) (**Table 2**).

Table 3 summarizes the adjusted results of the 7 cross-nested mixed models of patients’ adjusted mean satisfaction with the clinician conducting the visit, as a percentile by visit. The full results of the models are available in eTable 1 in the **Supplement**. As depicted in the **Figure**, compared with fulfillment of a request in the respective category, denials of requests for pain medication, referral, other new medication, and laboratory tests were associated with significantly *lower (worse)* adjusted mean patient satisfaction percentile. Denials of requests for radiology tests and other tests (each compared with fulfillment of the respective request type) were associated with non-statistically significantly lower adjusted mean satisfaction percentiles. Denial of requests for antibiotics was not associated with lower satisfaction.

The sensitivity analysis of all study visits with all 7 request types in 1 model revealed findings consistent with those of the 7 separate analyses (results are available in eTable 2 in the **Supplement**).

Discussion

We found that clinician denial of various types of patient requests during office visits, compared with fulfillment of the respective request types, was associated with patient satis-

Table 1. Characteristics of 1141 Patients Who Made 1319 Visits

Characteristic	Total (N = 1319)
Age, mean (SD) [range], y	45.6 (16.1) [18-92]
Female, No. (%)	902 (68.4)
Race/ethnicity category, No. (%)	
Non-Hispanic white	625 (47.4)
Non-Hispanic black	154 (11.7)
Non-Hispanic Asian	88 (6.7)
Non-Hispanic other or multiple races	106 (8.0)
Hispanic (any race)	299 (22.7)
Decline to state	47 (3.6)
Education level, No. (%)	
Less than high school	46 (3.5)
High school degree	201 (15.2)
Some college	488 (37.0)
College degree	285 (21.6)
Some graduate education	299 (22.7)
Marital status, No. (%)	
Married or in a domestic partnership	571 (43.3)
Member of nonmarried couple	133 (10.1)
Divorced	171 (13.0)
Separated	40 (3.0)
Widowed	85 (6.4)
Never married	319 (24.2)
Self-rated health, No. (%)	
Excellent	145 (11.0)
Very good	388 (29.4)
Good	497 (37.7)
Fair	232 (17.6)
Poor	57 (4.3)
Mental Health Inventory, mean (SD) ^a	73.0 (18.7)
Medical skepticism, mean (SD) ^b	3.03 (0.65)
Five-Factor Model personality factors, mean (SD) ^c	
Extraversion	3.44 (0.78)
Agreeableness	4.15 (0.57)
Conscientiousness	3.92 (0.64)
Neuroticism	2.73 (0.79)
Openness	3.79 (0.58)
Life satisfaction ^d	25.3 (6.5)
Worry about symptoms, mean (SD) ^e	8.11 (2.82)
BMI, mean (SD)	29.9 (7.4)
≥1 Prior visit with study visit physician, No. (%)	573 (43.4)

Abbreviation: BMI, body mass index (calculated as weight in kilograms divided by height in meters squared).

^a Range of scores, 4-100; higher scores indicate fewer depression and anxiety symptoms.

^b Range of scores, 1-5; higher scores indicate greater skepticism regarding medical care.

^c Range of scores for each personality factor, 1-5; higher scores indicate higher standing on the factor.

^d Range of scores, 5-35; higher scores indicate higher life satisfaction.

^e Range of scores, 3-15; higher scores indicate greater worry about symptoms.

faction with the clinician, adjusting for patient factors previously shown to be associated with such ratings. Specifically, denials of requests for referral, pain medication, other (non-

pain, nonantibiotic) new medication, and laboratory tests were associated with significantly lower (worse) adjusted satisfaction percentiles, each relative to fulfillment of requests in the respective category. Our findings may have relevance given the prevailing focus on patient satisfaction in US health systems. Clinician handling of requests for pain medication, other new medications, referrals, and laboratory tests seems the most critical. For visits wherein patients' requests for these services were denied, patient satisfaction ratings were 10 to 20 percentiles lower when compared with visits wherein requests for these services were fulfilled. The sizes of the associations suggest that clinicians who are less likely than their colleagues to fulfill patient requests for these services could face a penalty in satisfaction ratings, potentially affecting clinician career satisfaction, compensation, and handling of subsequent requests for these services. Additional studies exploring these possibilities are warranted.

The mechanisms of our findings are uncertain; our study was not designed to address this issue. However, it is not surprising that denial of requests for pain medication would be associated with less favorable patient satisfaction, given research suggesting that patients bring high expectations for pain control to visits.³⁹ Similarly, prior work indicates that patients often request diagnostic testing to help assuage worries about having a serious health condition, potentially explaining the association of laboratory test fulfillment with satisfaction with clinician ratings in our study.⁴⁰ The same mechanism may largely explain the association we observed between referral denial and lower satisfaction with clinician.⁴¹ The mechanisms of the association of denial of other (nonpain, nonantibiotic) new medication requests with patient satisfaction with clinician are less clear, given the breadth of medications encompassed by this category; additional studies will be required to explore this issue. The absence of a negative adjusted association between antibiotic request denial and satisfaction may reflect the small sample size for that request category (and associated wide 95% CIs; see Table 3 and the Figure). It may also be that clinicians have more experience at denying antibiotic requests than other types of requests, given sustained and publicized efforts to improve antibiotic stewardship.⁴²

Regardless of their mechanisms, in the current era of clinician compensation tied partially to patient satisfaction ratings, we believe our findings provide guidance to clinicians and health care administrators charged with delivering high technical quality, cost-effective care while also optimizing patients' subjective experiences of care.⁴³ Recommendations to clinicians for optimizing patient satisfaction ratings assert this can best be achieved by using a patient-centered communication approach.⁹ Yet the patient-centered communication construct is broad in scope and relatively complex to apply, and its use in primary care has been associated with increased visit length.^{7,44} It is challenging for clinicians to approach the many tasks and issues they face in brief office visits using the patient-centered communication paradigm while still meeting clinical productivity targets (also influencing clinician compensation).⁴⁵ In the face of these competing imperatives, clinicians may be tempted to adopt a default approach of simply acquiescing to patient requests, including requests for low-value care, in an

Table 2. Patient Requests and Clinician Responses by Service Category

Request Category	Visits With a Request in the Indicated Category, No. (% of All Visits) (n = 1319) ^a	Clinician Handling of Requests, No. (% of Visits With a Request in the Indicated Category)	
		Fulfilled	Denied
Referral	294 (21.1)	264 (89.8)	30 (10.2)
Pain medication	271 (20.5)	222 (81.9)	49 (18.1)
Antibiotics	107 (8.1)	92 (86.0)	15 (14.0)
Other new medication	271 (20.5)	225 (83.0)	46 (17.0)
Laboratory test	448 (34.0)	404 (90.2)	44 (9.8)
Radiology test	153 (11.6)	101 (66.0)	52 (34.0)
Other test	147 (11.1)	133 (90.5)	14 (9.5)

^a Sum of percentages in column exceeds 100% since some visits had requests in more than 1 category.

Table 3. Adjusted Mean Difference in Patient Satisfaction Percentile (by Visit) Associated With Denial of Requests

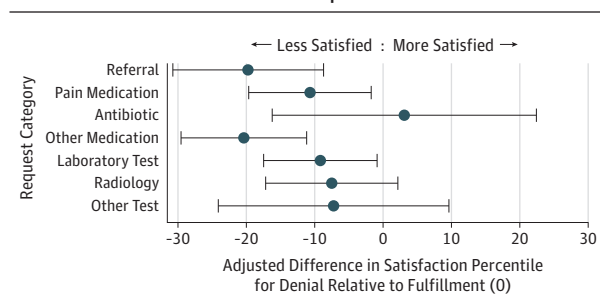
Request Type (Reference Category)	No.	Adjusted Mean Difference in Patient Satisfaction Percentile (by Visit) (95% CI) ^{a,b}	P Value
Referral request denied (fulfilled)	294	-19.75 (-30.74 to -8.74)	<.001
Pain medication request denied (fulfilled)	271	-10.72 (-19.66 to -1.78)	.02
Antibiotics request denied (fulfilled)	107	3.06 (-16.25 to 22.39)	.76
Other new medication request denied (fulfilled)	271	-20.36 (-29.54 to -11.18)	<.001
Laboratory test request denied (fulfilled)	448	-9.19 (-17.50 to -0.87)	.03
Radiology test request denied (fulfilled)	153	-7.51 (-17.14 to 2.12)	.13
Other test request denied (fulfilled)	147	-7.26 (-24.17 to 9.59)	.40

^a Positive parameter estimate indicates higher (better) satisfaction percentile; negative parameter estimate indicates lower (worse) satisfaction percentile.

^b Table gives results for 7 separate analyses, 1 for each request type. Each analysis excludes visits with no request in the respective category and adjusts for the following patient characteristics: age, sex, race/ethnicity, education,

marital status, body mass index, overall self-rated health, mental health status, medical skepticism, Five Factor Model personality factors, life satisfaction, worry about symptoms, and prior visit with the clinician. Each analysis also adjusts for the 6 other request types (3-level categorical variables: no request in category, request in category denied, or request in category fulfilled).

Figure. Adjusted Mean Differences in Patient Satisfaction Percentile Associated With Clinician Denial of Requests



Dots indicate point estimates; bars indicate 95% CIs. Number of visits in each analysis: referral, 294; pain medication, 271; antibiotics, 107; other medication, 271; laboratory test, 448; radiology test, 153; other test, 147. Analytic reference (vertical line) for all request categories indicates fulfillment of request in the respective category. All analyses adjusted for the following patient characteristics: age, sex, race/ethnicity, education, marital status, body mass index, overall self-rated health, mental health status, medical skepticism, Five Factor Model personality factors, life satisfaction, worry about symptoms, and prior visit with the clinician. All analyses also adjusted for the 6 other request types (3-level categorical variables: no request in category, request in category denied, or request in category fulfilled).

effort to maintain both favorable patient satisfaction ratings and clinical productivity targets.⁴⁶ Further reflecting these competing demands, prior work indicates that clinicians perceive visits in which patients request diagnostic testing as being more difficult than visits without such requests.¹⁷

Taken together, the foregoing observations suggest the potential utility of targeted clinician training in brief communication techniques to address patient requests. Training might be developed to provide clinicians with communication approaches that foster a positive patient experience without simply acquiescing to requests for low-value care, thereby avoiding the harms of unnecessary evaluation and treatment, maintaining good stewardship of resources, and potentially enhancing clinician career satisfaction.⁴⁷⁻⁵⁰ One potentially fruitful strategy may be to train clinicians to offer a watchful waiting (“wait and see”) option in response to patient requests when appropriate (eg, in handling requests for services that are not clearly indicated based on the clinician’s initial evaluation).⁵¹ Such an approach has face appeal in being focused and relatively brief while also involving the patient in decision-making and offering a middle ground between immediate acquiescence and flat denial of requests, consistent in spirit with the broader, patient-centered communication paradigm.⁷ In an observational analysis, we found that a clinician offer of a watchful waiting option was associated with less low-value test ordering, with no decrement in patient satisfaction.⁵² However, few randomized clinical trials of watchful waiting have been conducted, and none have examined the effectiveness of the approach, specifically in responding to patient requests in primary care or the resulting impact on satisfaction, underscoring the need for work in this realm.⁵³⁻⁵⁵

Strengths and Limitations

A key strength of our study was adjustment for a broad array of patient characteristics known to influence patient satisfaction with clinicians.¹⁶ Nonetheless, patient characteristics and contextual factors (eg, the details of the requests) not measured in our study might also influence patient satisfaction with clinician, warranting further study. Our study had other limitations. The sample sizes for some request categories were relatively small. Still, the findings of the 7 separate analyses were consistent with those of a single-model sensitivity analysis with a larger sample size (all study visits included) (eTable 2 in the Supplement). The observational cross-sectional nature of the analyses precludes causal inference. The study was conducted within a convenience sample of English-speaking adults in a single family medicine residency training clinic at an academic health center in Northern California, and focused on only 1 aspect of the patient experience. Thus, the generalizability of the findings to other geographic regions, care settings, patients, and satisfaction ratings (eg, with the health system in general) is uncertain.

We took steps to reduce the skewness of our patient satisfaction score distribution. Nonetheless, the tendency for scores to cluster near the top end of the range (a common issue in satisfaction studies) may still have limited our ability to capture the impact of clinician request handling on satisfaction.

Patients self-reported requests and whether they were fulfilled or denied by the clinicians. Both underreporting and overreporting of requests and of clinician fulfillment or denial of the requests may have occurred, with the potential

for variation in overreporting and underreporting by request type and patient characteristics, yielding uncertain net impact on the study findings. Nonetheless, other ascertainment methods also have drawbacks. For example, making audio or video recordings of the visits to allow coding of patient requests and clinician responses might well alter patient and clinician behaviors related to request making and handling, respectively.^{56,57}

We also lacked a measure of longitudinal continuity with the clinician, which may influence satisfaction. We did adjust for whether the patient had ever seen the clinician, which was associated with satisfaction in most of our models (eTable 1 in the Supplement).

Conclusions

We found that clinician denial of some types of patient requests was associated with reduced patient satisfaction with the clinician, but not for others, when compared with fulfillment of the requests, accounting for patient factors also associated with patient satisfaction. Specifically, patients were less satisfied with clinicians who denied requests for referral, pain medication, other (nonpain, nonantibiotic) new medication, and laboratory tests than with clinicians who fulfilled such requests. In an era of satisfaction score–driven compensation of clinicians, the findings suggest the need to explore the utility of training clinicians to help better handle patient requests, potentially optimizing the patient experience while also enhancing clinician career satisfaction.

ARTICLE INFORMATION

Accepted for Publication: September 24, 2017.

Published Online: November 27, 2017.
doi:10.1001/jamainternmed.2017.6611

Author Contributions: Dr Jerant had full access to all data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Jerant, Fenton, Kravitz, Magnan, Bertakis, Franks.

Acquisition, analysis, or interpretation of data: Jerant, Fenton, Kravitz, Tancredi, Magnan, Franks.

Drafting of the manuscript: Jerant, Franks.

Critical revision of the manuscript for important intellectual content: All authors.

Statistical analysis: Fenton, Tancredi, Franks.

Obtained funding: Fenton.

Administrative, technical, or material support: Jerant, Fenton, Bertakis.

Study supervision: Fenton, Bertakis, Franks.

Conflict of Interest Disclosures: None reported.

Funding/Support: This work was supported by a grant from the University of California Davis Department of Family and Community Medicine. Dr Magnan was supported by the National Center for Advancing Translational Sciences, National Institutes of Health, through grant No. UL1 TR001860 and linked award KL2 TR001859.

Role of the Funder/Sponsor: The funders had no role in the design and conduct of the study; collection, management, analysis, and

interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Meeting Presentation: This study was presented in part at the Society of Teachers of Family Medicine Annual Spring Conference; May 5-9, 2017; San Diego, California.

Additional Contributions: We are grateful to the following individuals, all of whom were employed and compensated as study support staff at the University of California Davis: Rimaben Cabrera, MSW, who managed the project and contributed to study recruitment and data collection; and Eliot Lee and Leyleh Salem for assistance in data collection.

REFERENCES

- Merlino JI, Raman A. Understanding the drivers of the patient experience. *Harvard Business Review*. <https://hbr.org/2013/09/understanding-the-drivers-of-the-patient-experience>. Accessed May 30, 2017.
- Epstein RM, Street RL Jr. The values and value of patient-centered care. *Ann Fam Med*. 2011;9(2):100-103.
- Kupfer JM, Bond EU. Patient satisfaction and patient-centered care: necessary but not equal. *JAMA*. 2012;308(2):139-140.
- Zgierska A, Rabago D, Miller MM. Impact of patient satisfaction ratings on physicians and clinical care. *Patient Prefer Adherence*. 2014;8:437-446.
- Rathert C, Wyrwich MD, Boren SA. Patient-centered care and outcomes: a systematic review of the literature. *Med Care Res Rev*. 2013;70(4):351-379.
- Tzelepis F, Sanson-Fisher RW, Zucca AC, Fradgley EA. Measuring the quality of patient-centered care: why patient-reported measures are critical to reliable assessment. *Patient Prefer Adherence*. 2015;9:831-835.
- Mead N, Bower P. Patient-centred consultations and outcomes in primary care: a review of the literature. *Patient Educ Couns*. 2002;48(1):51-61.
- Japsen B. Ouch! Patient satisfaction hits physician pay. *Forbes*. <https://www.forbes.com/sites/brucejapsen/2013/07/02/patient-satisfaction-hits-physician-pay/>. Accessed May 1, 2017.
- Rickert J. Patient-centered care: what it means and how to get there. *Health Affairs blog*. <http://healthaffairs.org/blog/2012/01/24/patient-centered-care-what-it-means-and-how-to-get-there/>. Accessed May 2, 2017.
- Jaén CR, Stange KC, Nutting PA. Competing demands of primary care: a model for the delivery of clinical preventive services. *J Fam Pract*. 1994;38(2):166-171.
- Nutting PA, Baier M, Werner JJ, Cutter G, Conry C, Stewart L. Competing demands in the office visit: what influences mammography recommendations? *J Am Board Fam Pract*. 2001;14(5):352-361.

12. Anhang Price R, Elliott MN, Cleary PD, Zaslavsky AM, Hays RD. Should health care providers be accountable for patients' care experiences? *J Gen Intern Med*. 2015;30(2):253-256.
13. Kravitz RL, Bell RA, Azari R, Krupat E, Kelly-Reif S, Thom D. Request fulfillment in office practice: antecedents and relationship to outcomes. *Med Care*. 2002;40(1):38-51.
14. Zikmund-Fisher BJ, Kullgren JT, Fagerlin A, Klamerus ML, Bernstein SJ, Kerr EA. Perceived barriers to implementing individual Choosing Wisely® recommendations in two national surveys of primary care providers. *J Gen Intern Med*. 2017;32(2):210-217.
15. Sirovich BE, Woloshin S, Schwartz LM. Too little? too much? primary care physicians' views on US health care: a brief report. *Arch Intern Med*. 2011;171(17):1582-1585.
16. Fenton JJ, Jerant A, Kravitz RL, et al. Reliability of physician-level measures of patient experience in primary care [published online September 12, 2017]. *J Gen Intern Med*. doi:10.1007/s11606-017-4175-y
17. Fenton JJ, Franks P, Feldman MD, et al. Impact of patient requests on provider-perceived visit difficulty in primary care. *J Gen Intern Med*. 2015;30(2):214-220.
18. Bowling A, Rowe G, Lambert N, et al. The measurement of patients' expectations for health care: a review and psychometric testing of a measure of patients' expectations. *Health Technol Assess*. 2012;16(30):i-xii, 1-509.
19. Dyer N, Sorra JS, Smith SA, Cleary PD, Hays RD. Psychometric properties of the Consumer Assessment of Healthcare Providers and Systems (CAHPS®) Clinician and Group Adult Visit Survey. *Med Care*. 2012;50(suppl):S28-S34.
20. Hargraves JL, Hays RD, Cleary PD. Psychometric properties of the Consumer Assessment of Health Plans Study (CAHPS) 2.0 adult core survey. *Health Serv Res*. 2003;38(6, pt 1):1509-1527.
21. Kravitz RL. Measuring patients' expectations and requests. *Ann Intern Med*. 2001;134(9, pt 2):881-888.
22. Bell RA, Kravitz RL, Thom D, Krupat E, Azari R. Unmet expectations for care and the patient-physician relationship. *J Gen Intern Med*. 2002;17(11):817-824.
23. Voutilainen A, Pitkaaho T, Vehviläinen-Julkunen K, Sherwood PR. Meta-analysis: methodological confounders in measuring patient satisfaction. *J Res Nurs*. 2015;20(8):698-714.
24. Perneger TV. Adjustment for patient characteristics in satisfaction surveys. *Int J Qual Health Care*. 2004;16(6):433-435.
25. Heje HN, Vedsted P, Sokolowski I, Olesen F. Patient characteristics associated with differences in patients' evaluation of their general practitioner. *BMC Health Serv Res*. 2008;8:178.
26. Fenton JJ, Jerant AF, Bertakis KD, Franks P. The cost of satisfaction: a national study of patient satisfaction, health care utilization, expenditures, and mortality. *Arch Intern Med*. 2012;172(5):405-411.
27. Bertakis KD, Franks P, Azari R. Effects of physician gender on patient satisfaction. *J Am Med Womens Assoc* (1972). 2003;58(2):69-75.
28. Fenlon MR, Sherriff M, Newton JT. The influence of personality on patients' satisfaction with existing and new complete dentures. *J Dent*. 2007;35(9):744-748.
29. McLeod TG, Costello BA, Colligan RC, et al. Personality characteristics of health care satisfaction survey non-respondents. *Int J Health Care Qual Assur*. 2009;22(2):145-156.
30. Mester U, Vaterrodt T, Goes F, et al. Impact of personality characteristics on patient satisfaction after multifocal intraocular lens implantation: results from the "happy patient study". *J Refract Surg*. 2014;30(10):674-678.
31. DeSalvo KB, Fan VS, McDonnell MB, Fihn SD. Predicting mortality and healthcare utilization with a single question. *Health Serv Res*. 2005;40(4):1234-1246.
32. Berwick DM, Murphy JM, Goldman PA, Ware JE Jr, Barsky AJ, Weinstein MC. Performance of a five-item mental health screening test. *Med Care*. 1991;29(2):169-176.
33. Fiscella K, Franks P, Clancy CM. Skepticism toward medical care and health care utilization. *Med Care*. 1998;36(2):180-189.
34. Fiscella K, Franks P, Clancy CM, Doescher MP, Bantthin JS. Does skepticism towards medical care predict mortality? *Med Care*. 1999;37(4):409-414.
35. John OP, Srivastava S. The Big-Five trait taxonomy: history, measurement, and theoretical perspectives. In: Pervin LA, John OP, eds. *Handbook of Personality: Theory and Research*. New York, NY: Guilford Press; 1999.
36. Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction With Life Scale. *J Pers Assess*. 1985;49(1):71-75.
37. Kraemer HC. Correlation coefficients in medical research: from product moment correlation to the odds ratio. *Stat Methods Med Res*. 2006;15(6):525-545.
38. Conover WJ, Iman RL. Rank transformation as a bridge between parametric and nonparametric statistics. *Am Stat*. 1981;35(3):124-129.
39. Zgierska A, Miller M, Rabago D. Patient satisfaction, prescription drug abuse, and potential unintended consequences. *JAMA*. 2012;307(13):1377-1378.
40. van Bokhoven MA, Pleunis-van Empel MC, Koch H, Grol RP, Dinant GJ, van der Weijden T. Why do patients want to have their blood tested? a qualitative study of patient expectations in general practice. *BMC Fam Pract*. 2006;7:75.
41. Lin CT, Albertson G, Price D, Swaney R, Anderson S, Anderson RJ. Patient desire and reasons for specialist referral in a gatekeeper-model managed care plan. *Am J Manag Care*. 2000;6(6):669-678.
42. Sanchez GV, Fleming-Dutra KE, Roberts RM, Hicks LA. Core elements of outpatient antibiotic stewardship. *MMWR Recomm Rep*. 2016;65(6):1-12.
43. Institute for Healthcare Improvement. The IHI triple aim. <http://www.ihio.org/engage/initiatives/tripleaim/pages/default.aspx>. Accessed May 2, 2017.
44. Epstein RM, Franks P, Shields CG, et al. Patient-centered communication and diagnostic testing. *Ann Fam Med*. 2005;3(5):415-421.
45. Ryan AM, Shortell SM, Ramsay PP, Casalino LP. Salary and quality compensation for physician practices participating in accountable care organizations. *Ann Fam Med*. 2015;13(4):321-324.
46. Kaul S, Kirchhoff AC, Morden NE, Vogel CI, Campbell EG. Physician response to patient request for unnecessary care. *Am J Manag Care*. 2015;21(11):823-832.
47. Good Stewardship Working Group. The "top 5" lists in primary care: meeting the responsibility of professionalism. *Arch Intern Med*. 2011;171(15):1385-1390.
48. Fisher ES, Welch HG. Avoiding the unintended consequences of growth in medical care: how might more be worse? *JAMA*. 1999;281(5):446-453.
49. Shanafelt TD, Boone S, Tan L, et al. Burnout and satisfaction with work-life balance among US physicians relative to the general US population. *Arch Intern Med*. 2012;172(18):1377-1385.
50. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. *Mayo Clin Proc*. 2015;90(12):1600-1613.
51. Irving G, Holden J. The time-efficiency principle: time as the key diagnostic strategy in primary care. *Fam Pract*. 2013;30(4):386-389.
52. May L, Franks P, Jerant A, Fenton J. Watchful waiting strategy may reduce low-value diagnostic testing. *J Am Board Fam Med*. 2016;29(6):710-717.
53. Spurling GK, Del Mar CB, Dooley L, Foxlee R, Farley R. Delayed antibiotics for respiratory infections. *Cochrane Database Syst Rev*. 2013;(4):CD004417.
54. van Bokhoven MA, Koch H, van der Weijden T, et al. Influence of watchful waiting on satisfaction and anxiety among patients seeking care for unexplained complaints. *Ann Fam Med*. 2009;7(2):112-120.
55. van Bokhoven MA, Koch H, van der Weijden T, et al. The effect of watchful waiting compared to immediate test ordering instructions on general practitioners' blood test ordering behaviour for patients with unexplained complaints; a randomized clinical trial (ISRCTN55755886). *Implement Sci*. 2012;7:29.
56. Mangione-Smith R, Elliott MN, McDonald L, McGlynn EA. An observational study of antibiotic prescribing behavior and the Hawthorne effect. *Health Serv Res*. 2002;37(6):1603-1623.
57. Leonard K, Masatu MC. Outpatient process quality evaluation and the Hawthorne Effect. *Soc Sci Med*. 2006;63(9):2330-2340.