

Do Unmet Expectations for Specific Tests, Referrals, and New Medications Reduce Patients' Satisfaction?

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BACKGROUND: Patient-centered care requires clinicians to recognize and act on patients' expectations. However, relatively little is known about the specific expectations patients bring to the primary care visit.

OBJECTIVE: To describe the nature and prevalence of patients' specific expectations for tests, referrals, and new medications, and to examine the relationship between fulfillment of these expectations and patient satisfaction.

DESIGN: Prospective cohort study.

SETTING: VA general medicine clinic.

PATIENTS/PARTICIPANTS: Two hundred fifty-three adult male outpatients seeing their primary care provider for a scheduled visit.

MEASUREMENTS AND MAIN RESULTS: Fifty-six percent of patients reported at least 1 expectation for a test, referral, or new medication. Thirty-one percent had 1 expectation, while 25% had 2 or more expectations. Expectations were evenly distributed among tests, referrals, and new medications (37%, 30%, and 33%, respectively). Half of the patients who expressed an expectation did not receive one or more of the desired tests, referrals, or new medications. Nevertheless, satisfaction was very high (median of 1.5 for visit-specific satisfaction on a 1 to 5 scale, with 1 representing "excellent"). Satisfaction was not related to whether expectations were met or unmet, except that patients who did not receive desired medications reported lower satisfaction.

CONCLUSIONS: Patients' expectations are varied and often vague. Clinicians trying to implement the values of patient-centered care must be prepared to elicit, identify, and address many expectations.

KEY WORDS: patient expectations; patient satisfaction; veterans.

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Health care providers increasingly recognize the need for patients to participate in decisions about their health care, and for this care to reflect the priorities and values of the patient. Such "patient-centered" care has been shown to enhance interactions between doctors and patients and to improve health outcomes.^{1,2} At the same time, physicians are asked to use health care resources prudently, for instance by avoiding the use of unnecessary or marginally beneficial tests, medications, or referrals. A patient-centered approach to cost containment recognizes that patients must be participants in these decisions about the value of tests, medications, and referrals.

Health care providers are increasingly likely to embrace a negotiated approach to health care.³ One of the first steps in establishing a partnership between doctor and patient begins with identifying the patient's expectations for the visit.⁴ Consequently, fulfillment of patients' expectations has become a major—if not *the* major—concern for clinicians.⁵ This is particularly true in an era in which employers and payers have developed assessment tools to measure patient expectation fulfillment as one measure of quality care.⁶

Many studies have examined patient expectations for care, and have frequently found that unmet expectations for care are associated with lower patient satisfaction.⁷⁻¹¹ Patient satisfaction is intrinsically important, but is valued also for instrumental and institutional reasons. Patient satisfaction is associated with adherence to therapy,¹² health care utilization,¹³ malpractice litigation,¹⁴ switching doctors or health plans,¹⁵ and is a common method by which physicians and health care systems are compared and evaluated.¹⁶ However, research on the relationship between expectations and satisfaction has been impeded by at least three shortcomings. First, many studies do not consider the conceptual distinctions between expectations and requests. An expectation refers to what a patient wants to happen or thinks will happen, while a request refers to what a patient asks of the clinician.¹⁷ Kravitz et al. have documented and characterized patient *requests* for services.¹⁸

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Their Taxonomy of Requests by Patients (TORP) shows that patients' requests may be characterized generally by 11 different categories of requests for information and 8 different categories of requests for action. Kravitz and colleagues found that unmet requests were associated with lower satisfaction with the visit. What happens, however, when patients do not explicitly voice their expectations as requests? Given the power imbalance in the doctor-patient relationship¹⁹ and some patients' reluctance to advocate with physicians,²⁰⁻²² it is important to understand how fulfillment of patient expectations affects patient satisfaction.

Second, relatively little is known about the *specific* expectations patients bring to the clinical encounter. Most previous studies focus on patients' general concerns, such as expectations for "tests" in general, rather than patients' expectations for a specific test such as prostate-specific antigen (PSA).²³ Little is known about how fulfillment of specific expectations affects satisfaction, although it is reasonable to hypothesize that satisfaction may vary substantially depending on the specific expectation. For instance, an expectation for pain medication, if unfulfilled, may impact satisfaction more profoundly than an expectation for an antihistamine. Finally, most previous studies have been restricted to one specialty or a single condition,²⁴ rather than a general medicine clinic where patients are likely to bring more and varied expectations. The more we know about patient expectations in a variety of settings, the better we will be able to design clinical delivery systems and educational programs to help health care providers meet patients' needs in a cost-effective manner.

To address these issues, we conducted a prospective study of the nature and prevalence of patients' specific expectations in a general medicine clinic. Building on Kravitz et al.'s similar work with requests,¹⁸ we designed the study to answer three questions concerning patients' expectations for specific physician action. First, what expectations for specific tests, referrals, and/or new medications do patients most frequently bring to their primary care visits? Second, which of these expectations are most likely to go unmet? and third, what is the relationship between met or unmet specific expectations and patient satisfaction? We chose to study expectations for tests, referrals, and new medications because they drive health care costs and are most likely to be regulated through managed care practices.²⁵⁻²⁸

METHODS

Research Setting and Patient Subjects

Study patients were recruited from the general medicine outpatient clinics at the VA Medical Center in Durham, North Carolina, over a 6-month period in 1999. These clinics are staffed by general internists, physician assistants, and nurse practitioners who provide primary care for veterans. The clinicians were aware of the research project, but blinded to the hypotheses.

We randomly selected seven half-day clinics per week from which to draw subjects. Once a clinic was selected, all patients with a scheduled appointment with a physician were potential study subjects. When more than one patient was scheduled in a time slot, patients were selected at random from within the time slot. Patients were identified from the daily appointment schedules and approached while waiting to see their providers. Patients were considered eligible for the study if they were able to speak and understand English and had a scheduled appointment with their primary care provider. Because the clinic population was overwhelmingly male (98%), we excluded women from the study.

After obtaining consent, trained interviewers administered a structured previsit questionnaire to assess patients' expectations for tests, referrals, and new medications at that day's visit, as well as patient demographics, self-reported health status, and health literacy.²⁹ After the visit with the doctor, we asked patients which services were provided or scheduled during their visit and their satisfaction with the visit and physician.

Patient Expectations

To assess patients' general expectations for tests, referrals, and new medications, we asked patients how necessary it was for the doctor to provide or schedule any of 12 potential health services at that day's visit. Expectations for diagnostic tests, referrals to specialists, and new medications were nested within the longer list of 12 services. A more detailed list has been shown to increase the number of expectations elicited, but does not tend to alter satisfaction levels.^{30,31} Subjects who responded that it was "absolutely" or "somewhat necessary" for the doctor to provide a service were coded as having an expectation for that service.* Patients who expected one of these services were then asked which specific test, referral, or medication they desired. We included an open-ended question to which patients could respond with an expectation not listed. One of the investigators (JAT) coded the responses into the appropriate category of expectation (test, referral, new medication, symptom, etc.).

Expectations for tests, referrals, and new medications were coded as binary variables. Each endorsed service category counted as one expectation. For example, if a patient indicated he wanted a new prescription for pain medication and a new prescription for an antihistamine, that patient was coded as having an expectation for a new medication. Thus, the number of general expectations ranged from 0 (no expectations for test, referral, or new medication) to 3 (at least one expectation for a test, referral, and new medication). Within each category, specific expectations were measured as simple counts of the total number of services a patient indicated he desired.

Fulfilled expectations were defined as expected services identified in the previsit interview and reported as received in the postvisit interview. Unmet expectations

were defined as expected services reported as not received. Patients whose expectations were fulfilled for all services identified in the previsit interview were categorized as having met expectations overall. Patients with at least one unmet expectation for any service were categorized as having unmet expectations overall. We also categorized specific expectations as met or unmet.

Patient Satisfaction

We measured patient satisfaction using the American Board of Internal Medicine Patient Satisfaction Questionnaire (PSQ) and a modified version of the Visit-specific Questionnaire (VSQ).^{32,33} The PSQ focuses on humanistic attributes and the interpersonal skills of the physician. The VSQ, in contrast, focuses on the overall clinic experience and satisfaction with the specific visit. Responses for individual questions in both instruments were recorded using an ordinal scale ranging from 1 (excellent) to 5 (poor). An average satisfaction score was calculated for each instrument. Scores were dichotomized at the median for analyses. Both measures have strong internal reliability ($\alpha = .94$ and $\alpha = .83$ for the PSQ and VSQ, respectively) and are correlated ($r = .61$, $P < .0001$), but measure different elements of satisfaction.^{32,33}

Data Analysis

All data analyses were performed using SAS-PC, version 6.12 (SAS, Inc., Cary, NC). Pearson χ^2 tests were used to examine associations between met and unmet general expectations and patient satisfaction, demographic characteristics, income, literacy, and education. Because patient age was not normally distributed, a Wilcoxon rank-sum test was used to compare the median age of patients who had all of their expectations met with those patients with at least one unmet expectation. Spearman's correlation coefficient was calculated to determine the correlation between the satisfaction scales.

RESULTS

Study Population

We approached 401 patients, of whom 253 (63%) completed both the previsit and postvisit interviews. The remaining 148 patients refused (16%), did not complete the interview (21%), or failed the enrollment criteria (<1%). The median age of the study population was 65; 68% were white, and on average, the subjects had completed a high school education (Table 1).

Description of General Expectations

Over half (56%) of the patients came to clinic with at least 1 expectation for a test, referral, or new medication (Table 2). Thirty-one percent of patients had only 1 expect-

Table 1. Patient Demographic Characteristics

Number of respondents	253
Median age, y	65.0
Education, %	
Less than high school	25.8
High school	57.9
College graduate	16.3
Race, %	
White	68.4
Black	28.3
Other	3.2
Married, %	69.7
Health status, %	
Fair or poor	45.0
Health literacy, %	
≤8th grade level	16.3
>8th grade level	83.7
Income, %	
Less than \$20,000	61.5
\$20,000 to \$40,000	24.6
\$40,000+	13.1
Refused	0.8

tation, while 25% had 2 or more expectations. Thirty-three percent of patients reported at least 1 expectation for a test, 28% for a referral, and 31% for a new medication. We found no statistically significant associations between met and unmet general expectations and patient characteristics, including health status, age, income, literacy, or education.

Expectations for Specific Tests

Specific tests that patients expected fell into 19 categories, including an "unspecified" category (Table 3). Blood test was the only category endorsed by more than 10 patients ($n = 22$). In addition to expectations for distinct tests, one category was labeled "symptoms" to identify patients who indicated they expected a test of some kind, but when asked what kind of test they answered with a symptom. Representative responses in this category include "test for my feet," "knee test," or "itching." Some of the expectations in the "symptoms" category are clearly not specific and others do not require a medical test to diagnose or treat. However, in each case the patient specifically

Table 2. Number of Expectations for Tests, Referrals to Specialists, and New Medications

Number of Expectations	Number of Patients	%
0	111	44
1	78	31
2	35	14
3	28	11
Total	252	100

The number of patients in the table is 1 less than the total because 1 patient refused to answer if he had an expectation for a new medication.

Table 3. Expectations for Specific Tests

	Expected and Received	Expected but Not Received	Total Number of Expectations
Type of test			
Blood sugar	7	1	8
Blood test, unspecified	15	7	22
Cat scan/MRI	0	2	2
Cholesterol	7	1	8
Digital rectal exam	0	1	1
Drug level	2	0	2
ECG	0	1	1
EMG	0	1	1
Exercise tolerance	0	1	1
Fertility	0	1	1
Hearing	0	2	2
Liver function	0	3	3
PSA	7	2	9
Pulmonary function	2	1	3
Urinalysis	2	1	3
Vision	0	2	2
X-ray	5	2	7
Symptoms	6	7	13
Unspecified test*	–	–	15
Total (%)	53 (60)	36 (40)	104

* Because expectations in this category were not specified, we do not know whether the expectation was met or unmet. Therefore, these numbers are not included in the totals or percents.

MRI, magnetic resonance imaging; ECG, electrocardiogram; EMG, electromyogram; PSA, prostate-specific antigen.

expressed a desire for a test to assess the problem. There was also a large category labeled “unspecified” (14%). The category represents patients who indicated they expected to receive some kind of test, but could or would not name a specific test. In response to prompting about the specific test they expected, a typical response was “whatever test the doctor thinks I need.”

More than half (60%) of all expectations for tests were fulfilled. Because the number of expectations in individual response categories was small, we can only generalize cautiously about which expectations were more or less likely to be fulfilled. For example, expectations for blood tests, blood sugar, cholesterol, PSA tests, and x-rays were met over two thirds of the time. On the other hand, expectations for CT scans/MRIs, hearing tests, hepatitis/liver tests, and vision tests were not met at all.

Expectations for Specific Referrals to Specialists

Like expectations for tests, patients' expectations for specific referrals were spread across many categories (Table 4). The only expectation reported more than 10 times was for referral to a podiatrist ($n = 12$). Again, many patients' responses fell into the “symptoms” category. Although these patients specifically expressed a desire for a referral to a specialist for these symptoms, representative responses in this category were “referral for my lungs,” “referral for pain,” or “someone to look at my leg.” Thirteen percent of

expectations fell into the “unspecified” category, patients who indicated a desire for a referral but did not name who they wanted to see for the problem.

Slightly less than half (46%) of the specific expectations for referrals were fulfilled, making it the expectation category least likely to be met. Referrals to eye specialists and orthopedists were most likely to be fulfilled (83% and 71%, respectively), while referrals to the dentist, dermatologist, neurologist, plastic surgeon, and urologist were least likely to be fulfilled. Only 25% of the expectations were fulfilled for dental and dermatology referrals, and none of the expectations were fulfilled for plastic surgery or urology referrals.

Expectations for Specific New Medications

Subjects identified 27 different categories of new medications (Table 5). Nearly one fifth (18%) of these expectations were for pain medication. The remaining expectations were distributed relatively evenly among the other categories. Again, a substantial number of expectations (11%) were not specified. Expectations for new medications were met slightly more than half the time (56%).

Expectations and Satisfaction

Overall, patient satisfaction was very high. The median VSQ score was 1.50 (on a 1 to 5 scale with 1 representing “excellent” on all questions). The median PSQ score was even higher at 1.00 (scored same as VSQ). Half of the subjects (49.8%) responded “excellent” to all 10 questions

Table 4. Expectations for Specific Referrals

	Expected and Received	Expected but Not Received	Total Number of Expectations
Type of referral			
Cardiologist	2	0	2
Dentist	1	3	4
Dermatologist	1	3	4
Diabetes class	0	1	1
Dietician	1	0	1
Eye clinic	5	1	6
Gastroenterologist	1	0	1
Neurologist	2	5	7
Orthopedist	5	2	7
Otolaryngologist	2	3	5
Physical therapist	0	1	1
Plastic surgeon	0	2	2
Podiatrist	7	5	12
Psychiatrist	1	0	1
Rheumatologist	0	1	1
Urologist	0	2	2
Symptoms	5	10	15
Unspecified referral*	–	–	11
Total (%)	33 (46)	39 (54)	83

* Because expectations in this category were not specified, we do not know whether the expectation was met or unmet. Therefore, these numbers are not included in the totals or percents.

Table 5. Expectations for Specific New Medications

Type of medication	Expected and Received	Expected but Not Received	Total Number of Expectations
Acne	1	0	1
Antibiotics	2	2	4
Anti-inflammatory	1	0	1
Arthritis	4	2	6
Blood pressure	4	3	7
Cholesterol	1	3	4
Cold	3	2	5
Diabetes	3	2	5
Earache	1	0	1
Erectile dysfunction	0	1	1
Heart	3	2	5
Itching	0	1	1
Kidney	0	1	1
Legs	1	0	1
Lump	0	1	1
Lungs	1	0	1
Pain	9	8	17
Psychiatric	1	1	2
Sinus	1	0	1
Skin cream	2	1	3
Sleeping agent	2	0	2
Sterile water	0	1	1
Stiff neck	1	0	1
Stomach	2	1	3
Sweating	1	0	1
Weight loss	0	1	1
Change prescription	2	3	5
Unspecified medication*	-	-	10
Total (%)	46 (56)	36 (44)	92

* Because expectations in this category were not specified, we do not know whether the expectation was met or unmet. Therefore, these numbers are not included in the totals or percents.

concerning satisfaction with provider clinical and interpersonal skills.

Although one half of all patients who expressed an expectation did not receive the test, referral, or new medication they desired, satisfaction was not related to whether the patients' expectation was met or unmet. Among patients with at least 1 expectation (Table 6), satisfaction did not differ between those with unmet expectations and those

with all expectations met (VSQ: $\chi^2 = 0.90$, $P = .342$, 95% confidence interval [CI], -8.4 to 24.2; PSQ: $\chi^2 = 0.352$, $P = .553$, 95% CI, -11.5 to 21.5).

To determine whether patient satisfaction was related to category of unmet expectation (i.e., test, referral, or new medication), we examined the percentage of patients with high satisfaction who did and did not have an unmet expectation within each category (Table 6). Again, we found almost no significant differences. The one exception was the association between satisfaction, measured by the PSQ, and unmet expectations for new medications. Among patients who wanted and received a new medication, 65% reported high satisfaction. In contrast, among patients who wanted a new medication but did not receive it, only 29% fell into the high-satisfaction group ($P < .003$).

We collapsed expectations into binary categories for each type of expectation, thus allowing from 0 to 3 expectations for each patient. We also ran analyses using the total number of specific expectations (e.g., pain medication, PSA test, referral to a psychiatrist). The number of specific expectations ranged from 0 to 5. The median number of expectations for patients who expressed a specific expectation was 2. The number of specific expectations that were met ranged from 0 to 4. The median number of unmet expectations was 0 (mean = 0.58). We created a dichotomous variable to compare those subjects who had less than half of their specific expectations met to those who had at least half of their specific expectations met. The results of these analyses did not differ from those using the binary categorical definition of expectations.

DISCUSSION

We conducted this study to identify and describe the specific expectations patients bring to their primary care medical visit, to identify which expectations were most often met or unmet, and to examine the relationship between specific expectations for tests, referrals, and new medications and patient satisfaction. The study produced several key findings.

First, we found little support for the relationship between fulfillment of specific expectations and patient satisfaction. There are several possible explanations for

Table 6. High Patient Satisfaction and Expectation Fulfillment for New Medications, Referrals, and Tests

	High Satisfaction by Patient Satisfaction Questionnaire				High Satisfaction by Visit-specific Questionnaire			
	Met Expectation	Unmet Expectation	P Value*	95% CI Percent Difference	Met Expectation	Unmet Expectation	P Value*	95% CI Percent Difference
New medication, %	65.5	29.2	.003	36.3 (14.2 to 58.4)	58.2	50.0	.501	8.2 (-15.7 to 32.1)
Referrals, %	55.6	55.9	.978	-0.3 (-23.6 to 23.0)	50.0	55.9	.622	-5.9 (-29.2 to 17.5)
Tests, %	55.7	68.2	.309	-12.4 (-35.6 to 10.7)	60.7	45.5	.217	15.2 (-9.0 to 39.4)
Overall, %	61.4	53.5	.342	7.9 (-8.4 to 24.2)	54.3	49.3	.553	5.0 (-11.5 to 21.5)

* P values calculated from Pearson χ^2 test. CI, confidence interval.

this negative finding. Fulfillment of expectations for tests, referrals, and new medications, in fact, may not be a key determinant of patient satisfaction. Although considerable research has shown that unfulfilled expectations are related to lower patient satisfaction,^{7,8,10-12,24,34} that same body of research suggests that “nonmedical” services may affect patient satisfaction more than medical or technical services. For example, several studies have shown that patients were more satisfied when they received “nontechnical” interventions, such as education and stress counseling⁷ and services related to information.¹⁰ In our study, we measured only expectations for technical medical services. Another explanation for the lack of association between unmet expectations and satisfaction may be found in the encounter between the physicians and patients during the visit. Physicians may have responded to patients’ expectations in ways that left patients satisfied despite not receiving the services they expected. A related issue is that patients may have altered their expectations during the visit. Both of these issues suggest that the study physicians may, in fact, already be engaging patients in their own care.

Perhaps the most plausible explanation for the negative finding between unmet expectations and patient satisfaction is our sample, which differs from previous studies in ways that may have raised the baseline rate of satisfaction. Previous research has shown that reported patient satisfaction typically is high, and certain patient characteristics are associated with higher satisfaction.³⁵⁻³⁷ For example, age and educational attainment are consistently associated with patient satisfaction, older people tend to have higher levels of satisfaction than younger people, and lower educational attainment is associated with higher satisfaction.³⁸⁻⁴⁰ Gender and ethnic origin are also related to patient satisfaction, though the relationships are not as strong or consistent as age and educational attainment.³⁷ The direction of the relationship suggests men typically are more satisfied than women and whites are more satisfied than nonwhites.⁴¹ Our sample was comprised largely of patients with the characteristics most associated with high patient satisfaction: men only, mostly older (65 on average) and white (68%), and not well educated (only 16% college educated). Of note, our sample is comparable to those in previous studies in terms of expectations for care, but possibly not the mechanisms that influence satisfaction.

Our second main finding was that a substantial portion of patients present to their clinic visit with vague expectations. When asked what type of test, referral, or new medication they expected from their visit, patients responded most often by describing a physical symptom. Additionally, among patients who responded it was necessary to receive a test, referral, or new medication, approximately 13% could not specify which test, referral, or medication they desired. Previous studies on expectations and their relationship to patient-centered care have focused on the barriers to eliciting,⁴² recognizing,²³ and fulfilling⁴³ patients’ expectations for the visit. The most often-cited barriers involve physicians’ inability to recognize or act

on patients’ expectations due to time constraints,⁴⁴ cost containment,⁴⁵ or not valuing patient input.⁴⁶ Patients, too, face barriers to expressing expectations. The most notable is that patients are often reluctant to make their expectations known⁴⁷ to the physician because of the inherent power differential in the patient-physician relationship.⁴⁸ Implicit in these studies is that patients have specific expectations for care that are not always expressed or recognized. Our findings suggest that patient expectations may not be as specific as previously assumed.

We also found that patients’ expectations are quite heterogeneous. Among 253 patients, we identified 65 different expectations for specific tests, referrals, and new medications. The aggregated specific expectations show that 33% of patients reported an expectation for a test, 28% for a referral, and 31% for a new medication. This is similar to findings from previous studies that examined general expectations. For example, Brody et al.⁷ reported 30% of patients expected medications and 48% expected a test. Reported previsit expectations in our study were in the same general range as actual requests made to the clinician in another study. Kravitz et al.¹⁸ reported that a sample of 139 patients made 110 separate requests for tests ($n = 16$), referrals ($n = 17$), and medications ($n = 77$). In the Kravitz study, patients requested medications more frequently than patients in our study stated such expectations. This difference is likely to be the result of our narrowed focus on medications. The Kravitz study measured requests for new medications and refills for medications. In contrast, we measured expectations for new medications only. We excluded expectations for refills because negotiation over prescribing the medication likely occurred at a previous visit.

This study has several limitations. All data were collected at a single VA general medicine clinic, and our sample included men only. Previous research has shown that men and women have different interaction styles with physicians. For example, men prefer longer visits with their physicians than women. Women, however, prefer more in-depth explanations of their treatment and treatment options.²¹ The patients in this study were also older than the general population. Previous work has shown that older patients ask fewer questions of the physician and often spend less time with their physician, despite generally poorer health.⁴⁹ As a whole, older patients, especially those in the oldest cohorts, tend to have passive relationships with their physicians and communication complications related to low literacy and poor health status.⁵⁰ Finally, due to the number of specific expectations within the three general categories of expectations, and the sparseness of responses within each of these specific expectation groups, we were unable to examine fully the relationships among specific expectations, expectation status, and patient satisfaction.

Despite these limitations, this study provides a better understanding of the nature and prevalence of expectations patients bring to the medical encounter. Clinicians trying

to implement the values of patient-centered care face a number of challenges. They must be prepared to elicit, identify, and address many expectations, and even within a relatively homogeneous setting such as the VA, may encounter a wide range of expectations.

** We also ran analyses using a more narrow definition of expectations than the one described above. Only patients who responded that it was "absolutely" necessary for the doctor to order a test, refer to a specialist, or prescribe a new medication were defined as having these expectations for the visit. We used this narrower definition of expectations to determine whether patients who expressed the highest desire for the service were less satisfied if they did not receive what they wanted. Results were similar when we used a more inclusive definition of expectation. Therefore, we present only the results of expectations defined by patients who responded "absolutely" or "somewhat necessary" for a service.*

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