

# Behind Closed Doors

## Management of Patient Expectations in Primary Care Practices

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**Background:** Managed care restrictions on resource use may affect communication between patients and health care professionals.

**Methods:** To characterize negotiations between primary care physicians and patients with expectations for new medications, tests, or referrals, this observational study combined survey data with audiotape recordings of clinical encounters. Fifty-five physicians from 20 randomly selected primary care practices in a managed care network and 211 patients who voiced specific expectations in a previsit survey were included. From the recorded clinic visits we determined modes of negotiation of patient expectations and requests. From the surveys we determined patient previsit expectations, postvisit fulfillment of expectations, satisfaction, and trust.

**Results:** Two-hundred fifty-six self-reported expectations were captured in 200 audiotape-recorded encounters. Of the previsit expectations, 97.3% were discussed during the encounter. Expectations were expressed by

direct patient request (40.6%), mentioning of symptoms related to request (29.7%), or physician-initiated discussion (27.0%). Most expectations were met (66.8%); physicians suggested an alternative 21.6% of the time. Expectations for medications and tests were met more frequently than expectations for referrals (75.6% and 71.4% vs 40.8%). Patient satisfaction and trust remained high regardless of whether expectations were met. Physicians reported that they would not have ordered 62 (44.9%) of 138 requests had the patients not directly asked, and they were uncomfortable filling 8 requests (12.9%).

**Conclusions:** Previsit expectations for medications, tests, or referrals were discussed at the visit, and physicians met or offered alternatives for nearly 90%. Patients generally received what they asked for and altered physician behavior nearly half of the time.

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PATIENTS MAY APPROACH MEDICAL encounters concerned that their expectations will not be met owing to constraints on medical spending and the intercalation of managed care systems directly into their relationship with the physician. This may be particularly true about expectations for new medications, diagnostic tests, and specialist referrals, where direct-to-consumer marketing and media hype inflate such expectations. When patients bring expectations that cannot be met, or request services that physicians perceive to be medically unnecessary, tension may arise and challenge the communication between physician and patient.<sup>1</sup>

Recent studies<sup>2-5</sup> offer insight into the impact of patient requests on physician behavior. When patients voice requests, physicians are more likely to prescribe the desired treatments.<sup>5</sup> At the same time, unmet expectations are common. Requests for

treatments or interventions are not fulfilled 12% to 30% of the time,<sup>2,3,6-9</sup> and up to two thirds of patient expectations for specialty referrals remain unmet.<sup>3,10,11</sup>

Direct evidence concerning the management of expectations during the clinical encounter is lacking.<sup>2</sup> We studied this dynamic by listening directly to the language of a clinic visit in which requests and expectations are negotiated. We audiotape recorded conversations between physicians and patients with previsit expectations for medications, tests, and referrals; characterized the dialogue; and measured fulfillment of expectations, patient satisfaction, and trust.

### METHODS

#### SITES AND PARTICIPANTS

Study sites were recruited from primary care practices affiliated with WellPath Select Inc offering health maintenance organization, pre-

**Table 1. Expectation Coding Categories for Audiotape Recording Analysis**

Category Pertaining to Individual Patient Expectations	Specific Codes
Communication of expectation	Patient directly requested, patient mentioned symptoms,* physician initiated, and not mentioned
Physician response or outcome	Met, alternative,† postponed, unmet, discussed with no action, not discussed‡
Physician rationale (if expectation not met)	Medical necessity, cost, availability, not covered by health care plan (coded only if a rationale was given, and multiple rationales could be selected)
Patient reaction (if expectation not met)	Questioned plan, refused/elected not to comply (coded only if patient reaction was articulated)

\*"Patient mentioned symptoms" also includes indirect requests by patients.

†The "alternative" category consists of alternatives in the same class and any other alternatives.

‡Codes of "discussed with no action" and "not discussed" were folded into the "unmet" category.

ferred provider organization, point-of-service, and open-access health plans to 1.8 million members in North Carolina and South Carolina. Eligible sites included practices within a 40-mile radius of Duke University. Seventy-five potentially eligible practices existed in 9 counties.

We set 20 participating practices as the goal. To achieve a representative sample of rural and urban sites, all 7 clinics that were in rural metropolitan statistical areas were recruited. We approached the first 28 urban sites from a randomly ordered list. Nine declined and 6 were contacted but had not yet enrolled when we reached the target of 20 sites. All primary care physicians from enrolled clinics were eligible, as were English-speaking patients older than 18 years scheduled to see consulting physicians. On selected days, research assistants were present in the clinic and consecutively approached patients identified from daily appointment sheets. Patients were asked 10 screening questions assessing their expectations for the visit and were eligible if they endorsed a desire for a new medication, test, or referral.

## DATA COLLECTION

Research assistants set up audiotape recorders in the examination rooms of consented patients before they were seen by the physician. Study staff were not present during the clinical encounters. Patients were interviewed after the visit, and those who could not stay were contacted by telephone within 2 weeks.

In the postvisit interview patients completed the American Board of Internal Medicine Patient Satisfaction Questionnaire (PSQ) and the Visit-Specific Questionnaire.<sup>12,13</sup> The PSQ rates the physician's performance on humanistic aspects of care, whereas the Visit-Specific Questionnaire assesses the visit overall. Patients' trust in their physician and empowerment were measured, as were services provided or scheduled during the visit.

Patients reporting unmet expectations were called within 2 weeks of the visit to discuss unmet expectations candidly outside of the clinic environment. Physicians completed a postvisit survey that assessed whether the patient had requested a medi-

cation, test, or referral. Survey forms were created using Satellite Forms version 3.1 software (Thacker Network Technologies, Inc, Lacombe, Alberta) and were administered in person by research assistants using a personal digital assistant. Audiotapes were converted into digital [waveform] files using Creative Recorder (Creative Labs, Inc, Milpitas, Calif) and SoundForge (Sony Media Software, Madison, Wis) software and were transcribed using WavPedal software (The Programmers' Consortium, Inc, Reston, Va).

Physicians and patients were recruited and enrolled during an 18-month period (September 18, 2000, through March 22, 2002). The Duke University Medical Center institutional review board approved the study, and informed consent was obtained from all the study physicians and patients.

## CODING OF AUDIOTAPE-RECORDED TRANSCRIPTS

A coding instrument containing 13 categories was developed that focused on communication about patient expectations (available at <http://www.va.gov/durham/palliative/instruments.asp>). Three raters coded pilot conversations to adjust stringency and develop coding rules. This article focuses primarily on patient communication of expectations and physician actions described in 4 coding categories: (1) how individual expectations were communicated, (2) physician response or outcome, (3) physician rationale for expectations that were not met, and (4) patient reaction to expectations that were not met (**Table 1**). Examples of verbatim text for each coding category are given in **Table 2**.

Encounters were coded in random order using line-by-line analysis of written transcripts while listening to the audiotape files to ensure attention to tone, affect, and context. Three reviewers, including 1 physician (S.A.K.), independently coded 20 randomly selected encounters (10%), and interobserver agreement ( $\kappa$  statistic) was measured. Scores were good ( $\kappa > 0.6$ ) in most measures; therefore, 2 reviewers coded the remaining 180 transcripts. Discrepant responses were resolved by consensus, and reconciled codes were double entered into the database.

## STATISTICAL METHODS

Kappa statistics were used to assess interobserver agreement for all 256 previsit expectations.<sup>14</sup> For initial assessment of coding items (10% of the sample), agreement was calculated among all 3 coders using a multiple-rater  $\kappa$ . For final assessment of coding items, agreement was calculated by averaging standard 2-rater  $\kappa$  scores across the 3 pairwise combinations of raters. More than half of the codes had a final  $\kappa$  score of 0.6 or greater, reflecting fair to good agreement beyond chance.

General study results for patients and physicians are analyzed using descriptive statistics. Continuous variables are summarized as mean  $\pm$  SD or as medians with interquartile ranges if not normally distributed. Categorical variables are summarized as frequencies and percentages.

Associations between the dichotomized physician response (met/alternative vs postponed/unmet; also, met vs alternative) and previsit expectation type were assessed using  $\chi^2$  statistics. Similar analyses were performed to examine the relationship between physician response and communication method.

The relationship between physician response and trust in physician and satisfaction outcomes were examined using Kruskal-Wallis statistics. Two sets of patient categorization were used: (1) patients with all rater-assessed expectations falling into a single category (directly met, alternatives, or postponed/unmet) and (2) patients with multiple expectations that had varying physi-

**Table 2. Transcript Examples of Expectation Coding Categories for Audiotape Recording Analysis**

Category and Code	Patient's Previsit Expectation	Examples From Transcripts
Communication		
Patient directly requested	Cholesterol test Podiatry referral	PT: "Well, I guess I should have my cholesterol test first." PT: "Yeah, I need to see a foot specialist; my left foot is cracking severely."
Patient mentioned symptoms	Medication for menopause	PT: "I'm just a basket case. My hormones are just awful. The children hate me."
Physician initiated	Antibiotic	MD: "Your urine sample does look like you may have a bladder infection. Is it burning when you pee or anything like that?"
Physician response or outcome		
Met	Liver test Dermatologist and eye referrals	MD: "I'll get a liver panel like we usually do." MD: "Here are your referrals. They'll schedule you out front."
Alternative	Referral for leg symptoms	MD: "I wrote for the capsule (Indocin), but if you want Motrin, I can write for the Motrin."
Postponed	Medication for blood pressure	MD: "And then we'll check your blood pressure in 2 weeks and if it's high, we need to start something else."
Unmet	Gall bladder referral	MD: "If you're okay with it, I would like to see what another 10 lb off will do."
	Cholesterol test	MD: "Well, your total cholesterol was 200, your HDL was very high at 51, which are good and the recommendations are really only every 5 years as an adult. Yours are good enough that we don't have to worry about it."
Physician rationale		
Medical necessity	Blood test	MD: "You had some blood tests in the hospital."
Availability	Flu shot	MD: "We're finished with the flu shot."
Cost	Blood test	MD: "Yeah, but you don't have to pay for it."
Patient reaction		
Questioned plan	Hormone medication	PT: "I have an issue with saying that I'm on an antidepressant."*

Abbreviations: HDL, high-density lipoprotein; MD, physician; PT, patient.  
\*Patient reaction to physician response of prescribing an antidepressant.

cian responses. Patients with at least 1 expectation postponed/unmet were included in the postponed/unmet category, and those who had a combination of directly met and alternative physician responses were included in the directly met category.

Sensitivity analyses accounting for within-patient and within-physician clustering were performed using generalized estimating equation methods. The results did not differ from the  $\chi^2$  and Kruskal-Wallis analyses (data not shown). All statistical analyses were conducted using a software program (SAS for Windows version 9.1; SAS Institute Inc, Cary, NC).

## RESULTS

### SITES

Four of the 20 participating clinics were rural practices and 16 were urban. Eleven practices were self-described as physician-owned or private practices, 5 as hospital/university owned, and 3 as federal or state owned; 1 was unspecified. Fourteen of the clinics estimated that 40% or more of their total patients had health maintenance organization or preferred provider organization coverage.

### PARTICIPANTS

Fifty-five internal or family medicine physicians were enrolled in the study, with an average of 3.8 patients per physician (range, 0-9 patients per physician). Two physicians did not contribute any encounters to the study. The characteristics of the remaining 53 participating physicians and 211 participating patients are given in **Table 3**.

Patient recruitment is shown in the **Figure**. We approached 1011 patients, representing 43.6% of all pa-

tients scheduled on the days that the research assistants were in the clinic. Not all scheduled patients were approached owing to no shows, cancellations, and time constraints. The screening interview was completed by 842 patients. Sixty-five patients refused or could not complete the screening interview, and 104 patients were called in to see the health care professional before completing the interview. Of patients who completed the screening interview, 310 were eligible for the study based on the presence of appropriate visit expectations, and 211 consented. We collected recordings on 200 participants. Reasons for not recording included technical problems (n=6), cancelled visits (n=1), patient declined audiotaping (n=2), and physician declined audiotaping (n=2). One previsit survey was lost. We did not complete postvisit interviews on 19 patients. We collected complete data (previsit and postvisit surveys and audiotaped encounters) on 185 patients.

Of the study patients, 68.2% reported having private insurance and 15.6% reported having Medicare with or without other insurance. Self-reported insurance status was verified using clinic records for 133 of 211 patients with excellent agreement ( $\kappa=0.84$ ).

### COMMUNICATION OF EXPECTATIONS

Previsit expectations are given in **Table 4**. One hundred sixty-three patients reported a single expectation, 33 reported 2 expectations, 13 reported 3 expectations, and 1 reported 4 expectations. Of the patients, 83.3% had 1 or more requests in a single category (ie, medication, test, or referral), 14.8% had requests in 2 categories, and 1.9% had requests in 3 categories.

**Table 3. Demographic Characteristics of the Study Participants\***

Characteristic	Patients (n = 211)	Physicians (n = 53)
Age, mean (SD), y	49.0 (15.4)	42.9 (7.7)
Male sex	76/211 (36.0)	36/53 (67.9)
Race		
White	153/207 (73.9)	46/52 (88.5)
African American	42/207 (20.3)	2/52 (3.9)
Other	12/207 (5.8)	4/52 (7.7)
Physician specialty		
Family medicine	NA	26/52 (50.0)
Internal medicine	NA	26/52 (50.0)
Years in practice, median (IQR)	NA	11 (11)
Patient care, mean (SD), h/wk	NA	41 (12.7)
Patient education		
≤High school	63/208 (30.3)	NA
Some college	60/208 (28.9)	NA
Completed college or graduate school	85/208 (40.9)	NA
Married	126/207 (60.9)	NA
General health		
Good to excellent	166/206 (80.6)	NA
Fair to poor	40/206 (19.4)	NA
Income, \$		
≤25 000	44/208 (21.2)	NA
25 001-70 000	88/208 (42.3)	NA
>70 000	52/208 (25.0)	NA
Refused/do not know	24/208 (11.5)	NA
Visits to PCP in past 6 mo, No.		
1-2	134/205 (65.4)	NA
≥3	71/205 (34.6)	NA
Patient insurance		
Private insurance	131/192 (68.2)	NA
Medicaid (or Medicaid with Medicare)	12/192 (6.3)	NA
Medicare with or without other insurance	30/192 (15.6)	NA
Self-pay only	19/192 (9.9)	NA

Abbreviations: IQR, interquartile range; NA, not applicable; PCP, primary care physician.

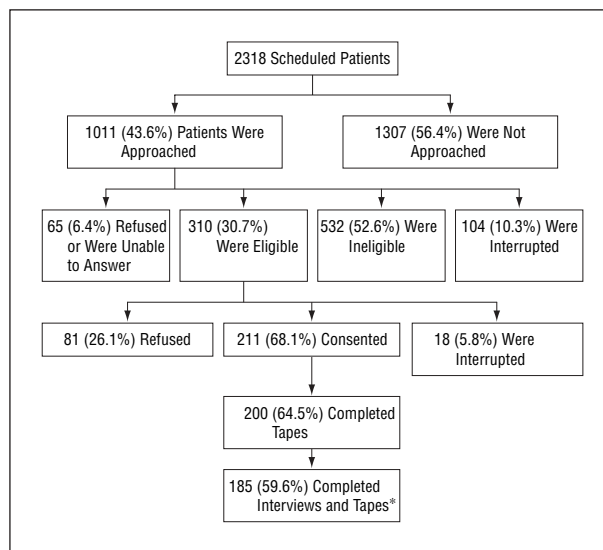
\*Data are given as number/total number (percentage) except where otherwise indicated. Except for income, responses of "do not know" and "refused" were considered missing data.

### AUDIOTAPE RECORDING ANALYSIS

Trained coders listened to and analyzed the 200 audiotape-recorded encounters that captured 256 of the 272 self-reported expectations. Eleven encounters without audiotape recordings accounted for the remaining 16 self-reported expectations.

For 40.6% of previsit expectations, patients made direct requests to their physicians (**Table 5**). For 29.7% of expectations, patients did not make direct requests but instead mentioned symptoms relating to this expectation. For 27.0% of expectations, physicians initiated discussion about the expectations before any mention by the patient (physician initiated). Only 2.7% of the expectations were not mentioned at any time either by the physician or the patient during the visit.

Overall, 167 (66.8%) of 250 expectations were met, and 83 (33.2%) were coded into 1 of the other categories (**Table 6**). Physicians suggested an alternative 21.6%



**Figure.** Patient recruitment. \*Consists of 185 completed previsit and postvisit interviews and audiotapes (some audiotapes may be incomplete).

of the time. An alternative could be a medication, test, or referral provided by the physician instead of the original stated expectation. These alternatives included suggestions within a class, such as one medication in place of another, or crossover between classifications, such as a medication instead of a requested referral. Of the expectations, 4.8% were postponed until another visit or a later time, and 6.8% went unmet.

For the 83 unmet expectations, physicians provided at least 1 stated rationale for 43 (51.8%). In 41 (95.3%) of these 43 unmet expectations, medical necessity was cited as a reason for providing an alternative choice or for not granting the request. Rationales citing availability and cost were rare, with physicians explicitly stating a barrier of availability twice and cost only once. No physicians explicitly cited barriers related to insurance coverage. Patients or physicians mentioned cost in 36.5% of encounters and insurance in 39.0%, yet these discussions were not necessarily in the context of the negotiation of the patients' previsit expectations. Patients openly questioned the physician's decision 8.4% of the time.

A higher proportion of expectations was met when a patient made a direct request (77.7%) or when the physician initiated the discussion about that expectation (75.8%) compared with expectations in which patients expressed symptoms as their only means of communication (50.0%) (Table 6). When stratified by type, expectations for medications and tests were met more frequently than expectations for referrals (75.6% and 71.4% vs 40.8%) (Table 6).

### USE OF ALTERNATIVES

Of patients receiving alternatives, a higher proportion of those who mentioned symptoms received an alternative (39.2%) vs those who made direct requests or when physicians initiated the discussion about an expectation (13.6% and 16.7%, respectively) (Table 6). Furthermore, expectations for referrals were more likely to result in the physician suggesting an alternative compared with expectations for medications and tests (42.9% vs 18.3% and 15.1%)

**Table 4. Summary of 272 Previsit Expectations\***

Medications (n = 90)		Tests (n = 132)		Referrals (n = 50)	
Type	No.	Type	No.	Type	No.
Allergy/asthma	9	Blood	31	Allergist	1
Antibiotics/antifungals	11	Blood glucose	12	Cardiologist	1
Arthritis	3	Bone or joint	6	Chiropractor	1
Blood pressure	4	Breathing	1	Dermatologist	9
Bone	1	Cancer	1	Endocrinologist	1
Changed prescription	3	Cholesterol	16	Eye	2
Cholesterol	2	Colon cancer	4	GI	6
Cold/influenza symptoms	5	ECG	3	Neurologist	2
Diabetes mellitus	1	General well-being	1	OB/GYN	2
General well-being	2	GI	3	Orthopedist	3
GI	3	Heart/blood vessel	2	Podiatrist	4
Headache	5	Hepatitis/liver	2	Psychiatrist	1
Heart/blood/vascular	3	Hormone/thyroid	6	Rheumatologist	3
Hormones	3	Infection	3	Surgeon	5
Pain	5	Mammogram	7	Symptoms†	9
Psychiatric	6	Neurologic	1		
Sleeping agent	3	Pap	4		
Symptoms†	11	Pregnancy	3		
Supplement	1	PSA	4		
Topical/skin	6	Radiograph	7		
Unspecified	1	Rectal	1		
Urologic	2	Symptoms†	3		
		Unspecified	3		
		Urine	4		
		Urologic	4		

Abbreviations: ECG, electrocardiography; GI, gastrointestinal; OB/GYN, obstetrics and gynecology; Pap, Papanicolaou; PSA, prostate-specific antigen.

\*Includes all previsit expectations, including patients who did not have postvisit surveys or audiotapes. The previsit data for 1 patient was lost owing to technical problems; therefore, we do not have specific expectations data for this patient.

†“Symptoms” refers to when a patient expressed a nonspecific expectation for a medication, test, or referral but narrowed it down to a region of the body (eg, “test for my arm”).

**Table 5. Summary of 256 Communications by Type of Expectation**

Type of Expectation	Communications, No. (%)				Total
	Patient Directly Requested	Patient Mentioned Symptoms	Physician Initiated	Not Mentioned	
Medications	35 (41.2)	32 (37.7)	18 (21.2)	0	85 (33.2)
Tests	51 (42.2)	25 (20.7)	40 (33.1)	5 (4.1)	121 (47.3)
Referrals	18 (36.0)	19 (38.0)	11 (22.0)	2 (4.0)	50 (19.5)
<b>Total</b>	<b>104 (40.6)</b>	<b>76 (29.7)</b>	<b>69 (27.0)</b>	<b>7 (2.7)</b>	<b>256 (100)</b>

(Table 6). In patients who reported an expectation for a referral and only mentioned symptoms during their encounter, 63.2% received an alternative.

For expectations that were fulfilled (either directly or through an alternative), patients were more likely to receive an alternative if they had mentioned symptoms vs directly requested or physician initiated or if they had wanted a referral vs medications or tests ( $P < .001$  for both) (data not shown).

#### PATIENT POSTVISIT SURVEY

In the postvisit survey patients were asked whether they were prescribed medications, had tests ordered, or received referrals to a specialist. A comparison between patients' self-reports and rater-assessed outcomes showed 90.9% agreement on met expectations (**Table 7**). Pa-

tients reported that 67.9% of alternative outcomes and 90.0% of postponed outcomes were not received. Four expectations assessed by coders listening to the audiotape recordings to be unmet were reported by patients as received.

#### UNMET EXPECTATIONS BY PATIENT SELF-REPORT

Sixty-four patients reported 73 unmet expectations. Within 2 weeks of the visit, we contacted 47 (73.4%) of the 64 patients to conduct follow-up interviews regarding their 52 unmet expectations. Twenty (38.5%) of these unmet expectations were for referrals, 16 (30.8%) for tests, and 16 (30.8%) for medications. For 53.9% of these expectations, patients stated that they did not ask the physician for the services. Reasons given for not question-



**Table 6. Summary of 250 Physician Responses to Patient Expectations by Type of Communication and Type of Expectation\***

Variable	Physician Responses, No. (%)				Total
	Met	Alternative	Postponed	Unmet†	
Type of communication					
Patient directly requested	80 (77.7)	14 (13.6)	6 (5.8)	3 (2.9)	<b>103</b> (41.2)
Patient mentioned symptoms	37 (50.0)	29 (39.2)	5 (6.8)	3 (4.1)	<b>74</b> (29.6)
Physician initiated	50 (75.8)	11 (16.7)	1 (1.5)	4 (6.1)	<b>66</b> (26.4)
Not mentioned	0	0	0	7 (100)	<b>7</b> (2.8)
<b>Subtotal</b>	<b>167</b> (66.8)	<b>54</b> (21.6)	<b>12</b> (4.8)	<b>17</b> (6.8)	<b>250</b>
Type of expectation					
Medications	62 (75.6)	15 (18.3)	3 (3.7)	2 (2.4)	<b>82</b> (32.8)
Tests	85 (71.4)	18 (15.1)	6 (5.0)	10 (8.4)	<b>119</b> (47.6)
Referrals	20 (40.8)	21 (42.9)	3 (6.1)	5 (10.2)	<b>49</b> (19.6)
<b>Subtotal</b>	<b>167</b> (66.8)	<b>54</b> (21.6)	<b>12</b> (4.8)	<b>17</b> (6.8)	<b>250</b>

\*We did not ascertain the outcome for 6 stated expectations because the audiotape ran out. Of these 6 expectations, 3 were for medications, 2 were for tests, and 1 was for a referral.

†This category also includes expectations "discussed with no action" and "not discussed."

**Table 7. Summary of 232 Perceptions of Expectation Fulfillment, Self-report vs Rater Assessment\***

Audiotape Analysis	Patient Self-report, No. (%)	
	Received	Did Not Receive
Met	140 (90.9)	14 (9.1)
Alternative	17 (32.1)	36 (67.9)
Postponed	1 (10.0)	9 (90.0)
Unmet	4 (26.7)	11 (73.3)
<b>Total</b>	<b>162</b> (69.8)	<b>70</b> (30.2)

\*Not all previsit survey expectations are included in this table owing to missing audiotapes or postvisit survey results (n = 35) or the audiotape running out (n = 5).

ing the physician included "the doctor answered the question without my needing to ask" (64.3%), "forgot to ask" (14.3%), "changed my mind" (10.7%), and "wanted the doctor to make the decision" (3.6%). Of the unmet expectations, 10.7% were not voiced by patients because they believed that "the doctor wasn't open to questions," and 3.6% were not voiced because patients "ran out of time" for questions. Patients could select multiple reasons for not questioning the physician.

For 38 (73.1%) of these unmet expectations, patients stated that the physician gave them a reason for not meeting the expectation. The reason given was reported as satisfactory for 36 (94.7%) of the 38 explanations. Despite a satisfactory explanation, some patients still felt that they wanted their previsit expectations met (19 expectations, 36.5%). When asked what they thought was the underlying reason for not receiving an expectation, 35 (67.3%) reported that the physician believed it was "not medically necessary." Reasons such as "the doctor was trying to save money" (5.8%) or "rules and bureaucracy" (3.9%) came up much less frequently.

#### PHYSICIAN POSTVISIT SURVEY

In a self-administered postvisit survey, physicians were asked if the patient requested a medication, test, or re-

ferral and, if so, whether they fulfilled it. Physicians did not have knowledge of previsit survey expectations; therefore, these requests may not reflect the same expectations reported by the patients. All the physicians (n = 53) completed follow-up surveys for 204 (96.7%) of 211 eligible enrolled patients. Physicians reported not meeting 18.9% of patients' requests. The most common rationale was that the request was not medically indicated (61.1%), with the issue of cost being mentioned only once. Physicians reported that they would not have fulfilled 62 (44.9%) of 138 requests for medications, tests, or referrals had the patient not asked. Of these 62 expectations, physicians reported feeling "uncomfortable" about meeting 8 (12.9%).

#### PATIENT SATISFACTION, TRUST IN PHYSICIAN, AND PATIENT EMPOWERMENT

Patients were satisfied with their encounters, with a median PSQ score of 1.1 (quartile 1 (Q1) = 1.0 and Q3 = 1.5) and a median Visit-Specific Questionnaire score of 1.7 (Q1 = 1.3 and Q3 = 2.0) (performance in the index visit with a score of 1 being most highly satisfied). Of the patients, 89.5% rated physician performance as "excellent" or "very good," and 39.3% gave their physicians "excellent" scores on all 10 PSQ items. In the postvisit survey, 98.4% of patients said that their overall expectations were totally or mostly met.

Trust in physician ratings was generally high, with a median score of 1.7 (Q1 = 1.4 and Q3 = 2.1) on a scale from 1 to 5, with 1 representing the most trust. Patients predominantly felt involved in the decision-making process, with 92.2% reporting that their physician "definitely" or "probably" would ask the patient for help making a decision between choice of treatments, 81.3% "very often" or "often" were given some control over treatment, and 69.3% were asked to take some of the responsibility for treatment. No significant differences were detected in trust in physician scores (P = .53), PSQ scores (P = .24), or Ware satisfaction scores (P = .79) whether a patient's expectations were directly met, an alternative

was suggested, or expectations were postponed/unmet during the visit.

## COMMENT

To our knowledge, this study is the first to follow specific previsit expectations through the course of a clinic visit and document the nature of the negotiation between patients and physicians. Expectations were largely met, and unmet expectations were satisfactorily explained by physicians, with alternatives that were acceptable to the patients 94.7% of the time. In contrast with the hypothesis that the pressures of a resource-constrained environment would limit fulfillment of requests, in this cohort, physicians most often provided the services that patients desired. Furthermore, patients who directly voiced requests were the most likely to get what they wanted. Nearly half of the time, patients made direct requests to the physician (40.6%), and physicians mostly fulfilled those requests (77.7%). Likewise, if physicians initiated direct discussion related to the patient's explicit expectations, most of these expectations were met (75.8%). In contrast, when patients expressed their expectations through a nonspecific discussion of symptoms, the patients' expectations were met less frequently (50.0%); and those few expectations that were not mentioned by either party were uniformly not met. In postvisit surveys, physicians echoed the heavy impact of patient requests by reporting that they would not have fulfilled nearly half of requests had the patient not asked. The pressure to fulfill these expectations led physicians to meet these requests despite feeling "uncomfortable" 12.9% of the time.

Patients were more prone to directly ask for medications and tests than referrals to specialty physicians or clinics. Perhaps consequently, expectations for medications and tests were more frequently met compared with those for referrals (75.6% and 71.4% vs 40.8%). Furthermore, physicians made use of alternative suggestions infrequently for medications and tests while suggesting alternatives to referrals 42.9% of the time.

This study adds to the existing literature by documenting the negotiation and use of alternatives that might address the patient's concerns without directly fulfilling particular requests. Most patients to whom alternatives to their previsit expectations were suggested reported that those alternatives were not received (67.9%). Furthermore, for patients with unmet expectations, 73.1% stated that the physician gave them a reason for not meeting the expectation, and 94.7% reported that reason to be satisfactory. Unmet expectations did not seem to negatively impact patient satisfaction with or trust in the physician.

This study has several limitations. The results may not generalize to patients in non-managed care settings or different cultural environments. Furthermore, consenting subjects may not be representative, as willing physicians may be more skilled in communicating with their patients, and their patients may have better communication, trust, and satisfaction with their physicians. Par-

ticipant behavior may have changed as a result of the study and the presence of the recorder during the visit. Recording of the visit may have affected the degree to which the physician attempted to meet the patients' expectations or create reluctance to cite factors, such as resource limitations, as drivers for their behaviors. However, participants were blinded to study objectives, and multiple studies<sup>15,16</sup> have shown that recording does not alter communication.

The results of this study suggest that patient and physician communication choices affect the management of expectations. Understanding how modes of communication affect physician behavior may assist in empowering patients to be effective partners in their own health care. For physicians, learning how to effectively negotiate and respond to patient requests might assist in developing effective paradigms for cost-effective practice that do not negatively affect patient satisfaction. Specific interventions might include strategies to teach physicians how to discuss expectations, how to suggest alternatives when appropriate, and how to explain the reasons behind their choice to not directly meet a patient's expectation.

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**Author Contributions:** Dr Keitz had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. *Study concept and design:* Keitz, Grambow, and Tulskey. *Acquisition of data:* Keitz, Koropchak, and Tulskey. *Analysis and interpretation of data:* Keitz, Stechuchak, Grambow, Koropchak, and Tulskey. *Drafting of the manuscript:* Keitz, Stechuchak, Grambow, and Koropchak. *Critical revision of the manuscript for important intellectual content:* Keitz, Stechuchak, Grambow, and Tulskey. *Statistical analysis:* Stechuchak and Grambow. *Obtained funding:* Keitz and Tulskey. *Administrative, technical, and material support:* Stechuchak, Koropchak, and Tulskey. *Study supervision:* Keitz, Grambow, Koropchak, and Tulskey.

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### Correction

**Error in Table.** In the Original Investigation by Villareal et al titled "Bone Mineral Density Response to Caloric Restriction-Induced Weight Loss or Exercise-Induced Weight Loss: A Randomized Controlled Trial" published in the December 11/25, 2006, issue of the ARCHIVES (2006;166:2502-2510), a formatting error occurred in Table 3. The P values in the "Estradiol" row (.04 CR vs HL; .07 EX vs HL) should have been placed in the "Leptin" row, in the "1 y" subrow. The P value cell in the "Estradiol" row should have remained blank, signifying no significant findings. A corrected table appears below.

**Table 3. Bone Markers and Hormones\***

Time Point	CR Group (n = 18)	EX Group (n = 18)	HL Group (n = 9)	P Value Between Groups After 6 mo and 1 y
CTX, ng/mL†				
Baseline	0.551 ± 0.016	0.529 ± 0.019	0.562 ± 0.014	
6 mo	0.589 ± 0.018‡	0.556 ± 0.020‡	0.548 ± 0.015	
1 y	0.575 ± 0.017	0.554 ± 0.020§	0.550 ± 0.014	
BAP, U/L				
Baseline	21.6 ± 2.0	20.6 ± 1.4	29.7 ± 1.6	
6 mo	20.7 ± 2.0	22.6 ± 1.4	27.8 ± 1.7	.02, EX vs HL; .03, EX vs CR
1 y	22.3 ± 2.0	21.7 ± 1.4	27.3 ± 1.6	
Osteocalcin, ng/mL				
Baseline	9.2 ± 0.7	9.1 ± 0.8	13.1 ± 1.1	
6 mo	9.4 ± 0.7	9.9 ± 0.8	12.5 ± 1.1	
1 y	10.3 ± 0.7	10.1 ± 0.8	12.3 ± 1.1	
Leptin, U/L†				
Baseline	13.7 ± 1.5	15.4 ± 2.0	14.6 ± 3.1	
6 mo	7.6 ± 0.8‡	10.2 ± 1.3‡	13.6 ± 3.0	.003, CR vs HL; .05, EX vs HL
1 y	8.3 ± 0.9‡	9.6 ± 1.2‡	13.4 ± 2.9	.04, CR vs HL; .07, EX vs HL
Estradiol, pg/mL†				
Baseline	19.9 ± 2.2	18.3 ± 2.3	16.4 ± 1.0	
6 mo	16.2 ± 1.8	14.9 ± 2.0	14.5 ± 1.0	
1 y	16.9 ± 1.9	14.2 ± 1.8	15.6 ± 0.9	

Abbreviations: BAP, bone alkaline phosphatase; CR, caloric restriction; CTX, C-telopeptide of type 1 collagen; EX, exercise; HL, healthy-lifestyle. SI conversion factors: To convert CTX to nanomoles per liter, multiply by 7.750, osteocalcin to nanomoles per liter, multiply by 0.171; estradiol to picomoles per liter, multiply by 3.671.

\*Data are least square mean ± SE adjusted for age, sex, and current use of hormone therapy unless otherwise specified. Data were missing for 1 participant in the CR group owing to dropout prior to 6-month testing and were missing for 1 participant in each of the EX and HL groups owing to change in estrogen use prior to 6 months.

†Data were log transformed for data analysis and back-converted for reporting.

‡P ≤ .01 for change within group by mixed-model repeated-measures analysis of variance (ANOVA) contrasts for baseline to 6 months and baseline to 1 year.

§P ≤ .10 for change within group by mixed-model repeated-measures ANOVA contrasts for baseline to 6 months and baseline to 1 year.

||P value between groups after 6 months and 1 year reflects the equality of changes from baseline to 6 months and 1 year by mixed-model repeated-measures ANOVA contrasts and are reported when P ≤ .10 for the interaction between group and time.