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# DataWatch

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## Patients Evaluate Their Hospital Care: A National Survey

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by Paul D. Cleary, Susan Edgman-Levitan, Marc Roberts,  
Thomas W. Moloney, William McMullen, Janice D. Walker,  
and Thomas L. Delbanco

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Respect for patients' needs and wishes is central to a humane health care system. To better meet patients' needs, providers have expressed increased interest in using patients' evaluations and reports to complement other methods of quality assessment and assurance. Many hospitals routinely survey patients, but relatively little analysis of patients' evaluations of hospital care has been published.<sup>1</sup> Most of the literature on such evaluations is based on studies of outpatients. There have been some excellent descriptions of both the theoretical and practical issues involved in measuring patients' assessments of inpatient care, but much more work in this area remains to be done.<sup>2</sup>

**Project goals.** The primary goals of the research on which this Data-Watch is based were to determine which specific aspects of inpatient care are most important to patients and to document patients' perceptions of those aspects of care in hospitals nationwide. Another goal was to assess the extent to which variations in reported quality of care might be related to characteristics of patients. In particular, we wanted to investigate whether patients with fewer resources, older patients, or patients in poorer health were more likely to report problems with their care.

Here we report the results of a national telephone survey about selected aspects of care. We interviewed 6,455 adult patients recently discharged from the medical and surgical services of sixty-two hospitals selected to represent different hospital types and all regions of the United States. The interview focused on events that indicate the quality of care in several clinically important areas of which patients are the best judges: patient education and communication with providers, respect for pa-

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tients' needs and preferences, the provision of emotional and physical comfort, family involvement, and discharge preparation.

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## Data And Methods

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To develop our survey questions, we followed a multistep process that involved patients, their families and friends, and health care providers (including physicians, administrators, and nonphysician staff).<sup>3</sup> The survey questions were designed to focus on specific actions taken by hospital staff. For example, rather than asking patients to rate general aspects of their care such as “the courtesy and helpfulness of your doctor,” we asked such questions as, “Were you told about the purpose of your medications in a way that you could understand?” We framed the questions to be as specific as possible, to minimize the influence of confounding factors such as patients' expectations, personal relationships, gratitude, or response tendencies related to gender, class, or ethnicity. Most response options were dichotomous (yes/no), with some follow-up questions to elicit more information about problems reported.

The interview also included questions about sociodemographic characteristics (age, gender, race, education, income) and insurance coverage. In addition, we asked patients whether their admission was an emergency, their length-of-stay, and whether they were treated by their regular physician in the hospital. At the end of the interview, patients were asked to rate their health as excellent, good, fair, or poor; whether their health was better than, worse than, or about what they expected; whether they felt back to “normal;” and how many days' illness or injury had kept them in bed all or part of the day in the two weeks before the interview.

**Hospital selection.** Using the 1988 American Hospital Association (AHA) Hospital Survey database, we first selected a stratified probability sample of public and private nonprofit hospitals in the continental United States that had a general medical and surgical service. We excluded hospitals with fewer than 100 beds, as well as for-profit, federal, and osteopathic hospitals and all long term hospitals (defined as those with thirty or more days' length-of-stay for more than half of the patients). We excluded small hospitals because they were unlikely to have a sufficient number of recent discharges. We excluded for-profit hospitals because we thought they might be more reluctant to participate in such a study and because one focus of the project was on supporting programmatic change in nonprofit institutions. We excluded specialty and long term-care facilities because the patient mix and process of care in such facilities is usually different from those in general hospitals. All eligible hospitals were stratified by ownership, region, and teaching status. We

selected a disproportionate random sample from each stratum using sampling probabilities that would yield a similar number of hospitals in each stratum. Thus, we oversampled certain types of hospitals, such as academic health centers.

Of the 141 hospitals contacted, 62 participated in the survey. Reasons for not participating included inadequate administrative staff or resources to compile a list of eligible patients in the hospital; lack of interest in patient reports; difficulty selecting a sample of patients because of limited or changing computer systems; concern that the identity of the hospital would be revealed; logistical problems due to moving or closing; potential confusion with internal marketing surveys; unwillingness to comply with the protocol; and medical board refusal.

We compared participating and nonparticipating hospitals with respect to ownership, teaching status, region of the country, bed size, number of yearly admissions, average daily census, and average occupancy rate. Participation rates were somewhat higher among academic health centers and larger hospitals and somewhat higher in the Midwest and South, but these differences were not statistically significant ( $p > 0.05$ ).

**Patient selection.** We attempted to interview a sample of approximately 100 eligible patients at each hospital. The survey of patients from different hospitals was staggered so that we could interview patients as close to three months after discharge as possible. We contacted a total of 8,728 patients or someone in their household. Of these, 239 were not eligible for the study because they had been readmitted to a hospital or nursing home. Of the 8,489 eligible patients, 6,455 (76 percent) completed an interview by telephone. Of these, 56 percent had had surgery; the remainder were medical patients. The characteristics of study participants are presented in Exhibit 1. The majority of patients who did not complete an interview (1,128) said they were too sick to do so; only 10.7 percent (906) refused to be interviewed.

**Index of quality of care.** For every patient interviewed, we created a score in each of the areas of care in question by calculating the percentage of all questions in that area that had responses indicating a problem. Thus, the scores range from 0 percent (no problems in that area) to 100 percent (responses to all questions in that area indicated a problem). Because the number of questions in each area differed, we created a summary score by averaging the scores for each area. This procedure has the effect of making the contribution of responses in each area to the total score more comparable, although the impact of the averaging is minor. For these types of scales, most weighting schemes yield a total score that is highly correlated with the unweighted score.<sup>4</sup>

**Statistical methods.** To assess the statistical significance of the asso-

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**Exhibit 1**  
**Sociodemographic Characteristics Of Patients In National Hospital Care Survey**


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Age	
18–44	29%
45–64	36
65 and older	35
Gender	
Female	55
Male	45
Education	
Less than high school	26
High school graduate	37
Some college	19
College graduate	18
Marital status	
Married	66
Widowed	14
Divorced	9
Never married	11
Income	
Less than \$7,500	19
\$7,501–\$15,000	18
\$15,001–\$25,000	20
\$25,001–\$35,000	16
\$35,001–\$50,000	15
More than \$50,000	13
Race/ethnicity	
White, non-Hispanic	85
Black, non-Hispanic	10
Hispanic	3
Asian	1
Other	1

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Source: Picker-Commonwealth Survey of Patient-Centered Care.

Note: N = 6,455.

ciations of patient characteristics with the problem score, we calculated analyses of variance, treating problem score as the dependent variable and patient characteristic as a factor. To assess the net impact of different patient characteristics, controlling for potentially confounding factors, we used multiple linear regression.

Using data from the 1987 National Hospital Discharge Survey, we adjusted for the various potential effects of hospital and patient nonparticipation by developing a set of poststratification weights that yielded a sample similar to a representative national sample of discharged patients with respect to gender, race, age, and region.<sup>5</sup> In this DataWatch, we present unweighted data and then evaluate the impact of weighting on the results. Because of the large sample size, comparisons are described as statistically significant only if  $p < 0.01$ .

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**Survey Results**


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**Reported rate of problems.** For twenty-six of the fifty-two questions we asked (Exhibit 2), fewer than 10 percent of patients gave a response

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**Exhibit 2**  
**Frequency Of Problems Reported By Patients**


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Description of problem event	Percent of patients reporting problem
<b>Communication</b>	
Not told about daily routine	44.9%
Not told whom to ask for help, if needed	31.8
No doctor in charge of care or doctor in charge not available to answer questions	22.6
Doctor or nurse did not explain, before a test, how much pain or discomfort to expect	21.1
Not told before or shortly after admission things patient should have been told	10.3
Did not get understandable answers from nurses in response to important questions	7.2
Did not get understandable answers from doctors in response to important questions	6.4
Not given enough privacy while receiving important information about condition	4.5
Information about condition given in a way that upset patient	3.9
<b>Financial information</b>	
Not knowing how much would have to be paid worried patient	16.9
Needed help figuring out how to pay hospital bills and did not get it	11.4
<b>Patients' needs and preferences</b>	
Hospital staff did not go out of their way to meet patient's needs	19.9
Something was not done that patient thought should have been done	11.4
Not involved in decisions about care as much as patient wanted	10.2
Did not have enough say about medical treatment	10.0
Thought hospital staff put own needs first	9.9
Something done to patient in hospital that he or she thought should not have been done	9.7
Doctors sometimes talked in front of patient as if he or she weren't there	9.3
Patient upset because examined or treated by someone who didn't explain what he or she was going to do	8.6
Nurses sometimes talked in front of patient as if he or she weren't there	7.0
Religious practices or preferences not respected	2.7
Not given enough privacy while being examined	2.4
<b>Emotional support</b>	
Did not have relationship of trust with any hospital staff other than doctor in charge of care	38.7
No one at hospital went out of way to make patient feel better	17.7
Difficult to find someone on staff to talk to about personal concerns	8.1
Did not have relationship of confidence or trust with doctor in charge of treatment at hospital	7.9

**Exhibit 2**  
**Frequency Of Problems Reported By Patients (cont.)**

Description of problem event	Percent of patients reporting problem
<b>Physical comfort</b>	
Nurses were overworked and too busy to take care of patient	28.4%
Awakened for no reason by hospital staff	
Needed, but did not get, help going to bathroom in time	6.6
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Needed, but did not get, help bathing	6.4
On average, waited more than 15 minutes for help after pushing call button	4.9
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<b>Pain management</b>	
Had moderate or severe pain that could have been eliminated by prompt attention by hospital staff	11.0
Pain experienced in hospital greater than patient told to expect	10.5
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Waited, on average, more than 15 minutes for pain medicine	7.8
Received too little pain medicine	4.2
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<b>Education</b>	
Important side effects of medicines not explained in a way patient could understand	23.6
Test results not explained in a way patient could understand	10.6
<hr/>	
Why important tests were being done not explained in a way patient could understand	8.1
Purposes of medicines patient was getting in hospital not explained in a way patient could understand	8.0
<hr/>	
<b>Family participation</b>	
Family or care partner not given all information needed to help patient recover at home	13.5
Family given too little information about care	8.8
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<b>Discharge preparation/continuity of care</b>	
Not told which foods patient should or should not eat	34.5
Not told about important side effects of medicines	30.2
Not told what danger signals to watch for at home	26.5
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Not told when patient could resume normal activities	24.2
Not told what activities patient should or should not do	18.6
Not told what to do to help recovery	16.7
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Not told when patient could go back to work	16.2
No hospital staff tried to help patient with worries about returning home	8.6
Hospital did not assist patient prior to discharge in finding help needed after leaving the hospital	5.5
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Purposes of discharge medicines not explained in a way patient could understand	4.6
Not told when and how to take medicines at home	2.9

Source: Picker-Commonwealth Survey of Patient-Centered Care.

indicating a problem. For a number of the questions, however, a substantial proportion of patients reported a negative experience.

Several of the reported problems related to clinicians. Thirty-nine



percent of those interviewed said they did not have a relationship of trust with any hospital staff other than the physician in charge of their care. Relatively few patients reported problems with physical care, but almost 20 percent said that the hospital staff did not go out of their way to meet the patient's needs. More than a quarter reported there were times when the nurses seemed overworked and too busy to take care of them.

The most common complaint was that patients were not told about the daily routine in the hospital (45 percent). More than one-fifth of patients also reported either that no doctor was in charge of their care or that the doctor in charge was not available to answer questions, they were not told accurately how much pain to expect, or they were not told whom to ask for help. Almost 17 percent of the patients said they worried because they were not told how much they would have to pay.

About 90 percent of patients said that medications, tests, and test results were explained in a way they could understand, but more than a fifth said that important side effects were not explained thus. Eleven percent of patients reported that they had moderate or severe pain that they thought could have been eliminated by prompt attention.

Fewer than 5 percent of all patients interviewed reported that medicines being taken at discharge were not explained in an understandable way or that they were not told when and how to take their medicines at home. On the other hand, about a quarter of patients said that they were not told what danger signals to watch for at home or when they could resume normal activities. More than 30 percent of patients said that they were told neither what foods they could or could not eat nor important side effects of their medicines.

Because of the high percentage of patients who reported problems related to discharge, we examined responses to the question about how long physicians and nurses spent talking with patients about what to do when they went home. Twenty-two percent of the patients said their physicians spent less than five minutes with them discussing what to do at home, and 37 percent said nurses spent less than five minutes. As expected, patients who reported spending little time with their clinicians were more likely to report problems related to discharge.

**Patient characteristics.** We examined whether patients' reports of problems with their care were related to their age, health status, and socioeconomic status (Exhibit 3). The most dramatic result is that patients who reported their health as poor had average problem scores that were almost twice as high as those of patients who reported excellent health. The same pattern held when other indicators of health, such as days in bed during the preceding two weeks, were used instead of perceived health. Poor patients and patients of color also had high problem

**Exhibit 3**  
**Problem Scores For Patients With Different Characteristics**

Patient characteristic	Number of patients	Problem score
Age		
18-44	1,854	15.6%
45-64	2,334	13.4
65 and older	2,267	12.6
Gender		
Female	3,574	14.4
Male	2,881	12.9
Education		
Less than high school	1,671	14.5
High school graduate	2,388	13.1
Some college	1,205	14.1
College graduate	1,131	13.8
Income		
Less than \$7,500	1,074	16.1
\$7,501-\$15,000	1,049	13.5
\$15,001-\$25,000	1,156	13.7
\$25,001-\$35,000	917	12.7
\$35,001-\$50,000	836	12.7
More than \$50,000	722	13.6
Race/ethnicity		
White, non-Hispanic	5,440	13.3
Black, non-Hispanic	681	16.0
Other	334	17.2
Reported health status		
Excellent	1,386	10.5
Good	2,777	12.5
Fair	1,573	16.2
Poor	621	20.6

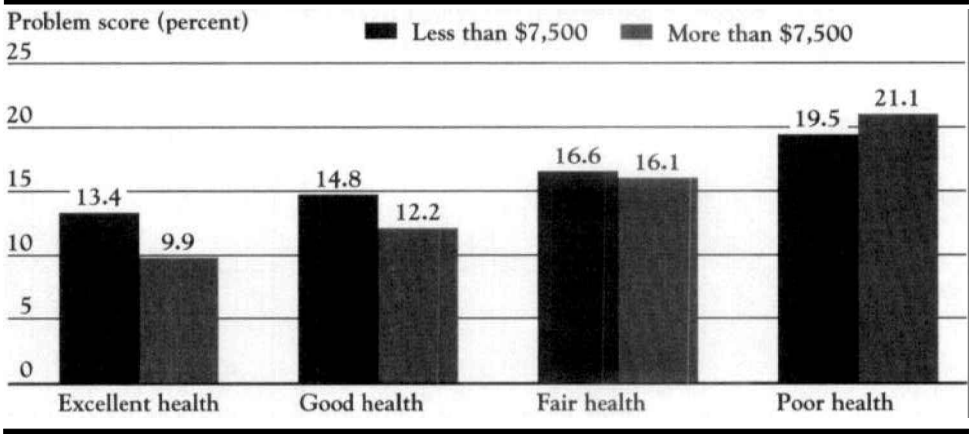
Source: Picker-Commonwealth Survey of Patient-Centered Care.

Note: All differences among patient groups statistically significant ( $p < 0.01$ ).

scores. Consistent with previous studies, older patients reported fewer problems: Women also tended to report more problems, but that difference was not as large as the effects of perceived health status and income.

Because low income and poor health status had the most pronounced associations with patients' problem scores, we examined the data for possible interactions between these two characteristics. We analyzed income before race and ethnicity because the patients of color in this study were a very heterogeneous group. Exhibit 4 shows the average problem scores for patients with different levels of reported health status, presented separately for patients who reported earning more and less than \$7,500. For both income groups, those in worse health reported the most problems with their care. However, the apparent ameliorating effect of

**Exhibit 4**  
**Average Problem Scores For Patients, By Health Status And Income**



Source: Picker-Commonwealth Survey of Patient-Centered Care.

good health status was strongest for patients with higher incomes; poor patients in excellent health reported more problems than comparable nonpoor patients. When this pattern was analyzed using two-way analysis of variance, the interaction is statistically significant ( $F=4.51$ ;  $p<0.01$ ).

There are numerous possible explanations for this. Among the most plausible confounding factors are race and characteristics of the hospitalization. If sicker patients tended to be minorities and minorities received worse care, then such differences might explain the association of problem score with health status. Since sicker patients are more likely to be admitted under emergency conditions, it might be that there were fewer opportunities for communication, education, and involvement in their care. Alternatively, it could be that since sicker patients have longer lengths-of-stay, there were more opportunities for problems to occur. Another hypothesis is that poorer patients are less likely to have a personal physician and thus are less likely to establish a relationship that facilitates communication, education, and involvement.

To test these hypotheses, we estimated a regression equation in which the total problem score was the dependent variable and patient characteristics and characteristics of the hospitalization were independent variables. Because of the interaction of health status and income (Exhibit 4), we also included an interaction term indicating whether patients were both poor and in poor health.

The regression results show that health status is by far the strongest predictor of the likelihood of problems occurring, even when potentially confounding factors such as race, insurance status, emergency status,

length-of-stay, whether the patient had a regular physician, and whether the admission was for medical or surgical treatment are statistically controlled. Being poor and the interaction of being poor and in poor health also were strong, significant predictors of the likelihood of problems occurring. When these factors were controlled, race, gender, insurance status, and education had small effects on the total problem score. Older patients, however, were still less likely to have a high problem score. Length-of-stay and emergency admission were not significant predictors of the number of problems-reported. Patients treated by their own doctor and surgical patients reported fewer problems. When these analyses were repeated with weighted data, the results were substantively similar.

Although several of the variables are strongly related to the rate of reported problems, the regression model accounted for only 9 percent of the variance in the problem score. This suggests that other factors, such as institutional characteristics, may be important determinants of the rate of problems experienced.

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## Discussion

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To our knowledge, this is the first national survey that has asked recently hospitalized patients about these specific aspects of hospital care. It is now widely accepted that it is desirable to monitor and assess the structure, process, and outcomes of medical care when evaluating quality. In the past, process of care has been evaluated almost exclusively on the basis of information available in medical records; patients' observations are not usually included in quality assurance activities. Studies that elicit reports from patients increasingly are viewed as an important method of assessing hospital care. Such reports can be extremely useful for quality assessment and improvement efforts because satisfying patients' expectations is an important component of high-quality care and because patients can provide information that is not available from other sources.

To solicit data that are useful for developing quality improvement initiatives, questions must be as specific as possible. Reports from patients give an indication of what they think was wrong with their care and can suggest actions to improve care. For example, one hospital learned from the survey that many of their patients thought their pain was inadequately controlled. Discussions with representatives from other hospitals who had experience with patient-controlled analgesia (PCA) prompted the hospital to institute a PCA program. Subsequent patient surveys showed that the PCA program was successful.

A limitation of this survey is that we had to rely on patients' assessments of their own health. Although such reports have been shown to be good

indicators of illness and predictors of mortality, it would be useful to have an independent assessment of health status in future investigations of these issues.<sup>7</sup>

We have no objective measure of the impact of the events reported, but there is good evidence that the issues we asked patients about are clinically significant. First, and probably most importantly, good communication with patients gives providers the information they need for accurate diagnosis and effective treatment. Patients' involvement in the care process also is likely to lead to improved compliance, return for follow-up care, and better outcomes.<sup>8</sup> It also is likely that emotional support in the hospital and family participation in the patient's care will benefit the patient.<sup>9</sup> Finally, since individual preferences often are not concordant with those of their providers, patients need to be involved in decisions about their care if their needs and expectations are to be met.<sup>10</sup> Increasing patients' perceived control over their health may affect their health status positively.<sup>11</sup>

The responses to the interview questions represent the patients' perceptions, not necessarily what actually happened. Nevertheless, indicators of this type may be much better measures for quality assurance purposes than some routine measure of whether certain procedures were followed. Regardless of what a patient was told, if he or she does not remember being given certain information, communication failed. Thus, we do not interpret negative responses as necessarily indicating failure to offer information, education, or opportunities to ask questions. Rather, they may reflect a need to improve communication.

A national investigation of this magnitude inevitably has potential methodological problems. It is virtually impossible to gain cooperation from all hospitals selected for such a study, especially since we required hospitals to contribute personnel and resources to select eligible patients. This study included more hospitals than any other similar investigation of which we are aware. Nevertheless, which institutions participate and which patients respond may bias the results. There were no statistically significant differences in the known characteristics between hospitals that agreed to participate and those that did not, but it is possible that patients at nonparticipating hospitals received better or worse care than those treated at participating hospitals. If anything, the latter may be more likely than the former, biasing our results in a positive direction.

Several points are relevant with regard to patients' participation. We interviewed only patients with telephones, thus undersampling certain populations who are less likely to have a telephone.<sup>12</sup> Among those with telephones, persons who are older, have less education, and live in rural areas are more likely to refuse to participate in a telephone survey.<sup>13</sup> Thus,

the types of patients most likely to report problems with care (sick and poor patients) are less likely to participate in a telephone interview. Also, our study could not include patients who died in the hospital or shortly after discharge, and we did not attempt to interview patients who were discharged to nursing homes or other institutions or who had been readmitted.

Compared with the patients discharged from short-stay hospitals in the United States in 1987, the survey somewhat underrepresented both older and younger patients, as well as nonwhite patients and those with lower incomes.<sup>14</sup> Given the multiple potential reasons for nonresponse, it is not possible to predict precisely the other ways in which participants might differ from nonparticipants. If there is bias in our results due to differential participation, we think it is in the direction of our underestimating the extent of problems assessed.

Several aspects of the analyses give us confidence in the validity of our results, however. Perhaps most importantly, there is no reason to believe there would be an interaction between the number of problems experienced and the characteristics of nonparticipants. That is, certain types of patients are probably less likely to participate, regardless of their experience in the hospital. Thus, such factors should not bias comparisons across patient types. Furthermore, weighting the sample to be representative of all discharged patients did not change any of the central results.

**Implications for policy.** When scales such as those presented here are refined and improved, there will be opportunities for comparisons of performance among clinical units within a given hospital, among hospitals within given types, among types of hospitals, and even among systems of care. Policymakers and analysts are increasingly interested in national and international comparisons of health delivery systems and their quality of care. Although patient characteristics were strong predictors of the number of problems experienced, they explained only 9 percent of the variation in problem scores. This implies that other important organizational and system characteristics may influence the likelihood of problems occurring. Comparisons across national systems of care undoubtedly will elucidate important differences in the way care is viewed and experienced in different countries. Colleagues at McMaster University in Hamilton, Ontario, currently are conducting a survey of patients in Canada using a similar interview. A logical extension of the work currently being conducted in the United States and Canada will be to learn more about the validity of such methods for comparisons across institutions and national borders. It will be important to learn more about the factors affecting the reliability and validity of such reports and the

importance of patients' expectations in different settings.

We are encouraged by the response to our efforts to promote the use of patient-generated data and to focus attention on those aspects of care patients say are important. Many hospitals have told us about their innovative programs promoting high-quality care, and hundreds of others have contacted us wanting to know more about these programs and use of the survey. If a hospital were to collect regularly the type of information described here, it would provide clinicians, management, and trustees with focused, usable information about areas in which care could be improved and in which care excelled. Such information could serve as a useful tool for motivating, shaping, and evaluating important new efforts to improve quality.

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