
How was your hospital stay? Patients' reports about their care in Canadian hospitals

Cathy Charles,*† PhD; Mary Gault,* BA; Larry Chambers,*§ PhD; Bernie O'Brien,*|| PhD;
R. Brian Haynes,*‡ MD, PhD; Roberta Labelle,*† MA

Objective: To survey adult medical and surgical patients about their concerns and satisfaction with their care in Canadian hospitals.

Design: Cross-sectional telephone survey undertaken from June 1991 to May 1992 with a standardized questionnaire.

Setting: Stratified random sample of public acute care hospitals in six provinces; 57 (79%) of the 72 hospitals approached agreed to participate.

Patients: Each participating hospital provided the study team with the names of 150 adult medical and surgical patients discharged home in consecutive order. A total of 4599 patients agreed to be interviewed (69% of eligible patients and 89% of patients contacted).

Main outcome measures: Satisfaction with (a) provider-patient communication (including information given), (b) provider's respect for patient's preferences, (c) attentiveness to patient's physical care needs, (d) education of patient regarding medication and tests, (e) quality of relationship between patient and physician in charge, (f) education of and communication with patient's family regarding care, (g) pain management and (h) hospital discharge planning.

Results: Most (61%) of the patients surveyed reported problems with 5 or fewer of the 39 specific care processes asked about in the study. Forty-one percent of the patients reported that they had not been told about the daily hospital routines. About 20% of the patients receiving medications reported that they had not been told about important side effects in a way they could understand; 20% of the patients who underwent tests reported similar problems with communication of the test results. Thirty-six percent of those having tests had not been told how much pain to expect. In discharge planning, the patients complained that they had not been told what danger signals to watch for at home (reported by 39%), when they could resume normal activities (by 32%) and what activities they could or could not do at home (by 29%). Over 90% of the patients reported that they had had a relationship of confidence and trust with their physician and that they had been involved in decision making as much as they wanted to be. Fifteen percent of the patients whose admissions had been scheduled felt that they should have been admitted sooner.

Conclusion: The self-reported patient data from this survey suggest that hospital routines, medications, tests, pain management and discharge planning are areas of communication to target in future quality-improvement efforts in Canadian hospitals.

From *the Department of Clinical Epidemiology and Biostatistics, †the Centre for Health Economics and Policy Analysis and ‡the Department of Medicine, Faculty of Health Sciences, McMaster University, Hamilton, Ont., §the Hamilton-Wentworth Department of Public Health Services (a teaching health unit affiliated with McMaster University) and ||Centre for Evaluation of Medicines, St. Joseph's Hospital, Hamilton, Ont.

Dr. Haynes is supported by a National Health Scientist Award from the National Health Research and Development Program, Health Canada.

Ms. Labelle is deceased.

Reprint requests to: Dr. Cathy Charles, Assistant professor, Department of Clinical Epidemiology and Biostatistics, Rm. 3H5, McMaster University Health Sciences Centre, 1200 Main St. W, Hamilton, ON L8N 3Z5

Objectif : Effectuer auprès de patients adultes des services de médecine et de chirurgie un sondage sur leurs préoccupations et leur satisfaction à l'égard des soins reçus dans les hôpitaux du Canada.

Conception : Sondage téléphonique transversal réalisé entre juin 1991 et mai 1992 à l'aide d'un questionnaire normalisé.

Contexte : Échantillon aléatoire stratifié d'hôpitaux publics de soins actifs de six provinces; 57 (79 %) des 72 hôpitaux sollicités ont consenti à participer au sondage.

Patients : Chaque hôpital participant a fourni à l'équipe d'étude le nom de 150 adultes hospitalisés dans les services de médecine et de chirurgie et libérés par la suite, dans l'ordre. Au total, 4 599 patients ont consenti à être interviewés (69 % des patients admissibles et 89 % de ceux avec lesquels on a communiqué).

Principales mesures de résultats : Satisfaction à l'égard des aspects suivants : (a) communication soignant-patient (y compris information fournie), (b) respect des préférences du patient par les soignants, (c) attention aux besoins de soins physiques du patient, (d) éducation du patient sur les médicaments et les examens, (e) qualité de la relation entre le patient et le médecin traitant, (f) information des membres de la famille du patient et communication avec ceux-ci au sujet des soins, (g) gestion de la douleur et (h) planification de la libération.

Résultats : La plupart (61 %) des patients interrogés ont signalé avoir eu des problèmes avec au plus 5 des 39 processus de soins précis visés par l'étude. Quarante et un pour cent des patients ont déclaré ne pas avoir été informés des routines quotidiennes de l'hôpital. Environ 20 % des patients qui prenaient des médicaments ont signalé ne pas avoir été informés de façon compréhensible d'effets secondaires importants; 20 % des patients qui ont subi des examens ont fait état de problèmes semblables de communication au sujet des résultats d'examen. Trente-six pour cent de ceux qui ont subi des examens ne savaient pas à quel genre de douleur s'attendre. Quant à la planification de la libération, des patients se sont plaints qu'on ne leur ait pas précisé quels signaux de danger surveiller à la maison (39 %), quand ils pourraient reprendre leurs activités normales (32 %) ni à quelles activités ils pouvaient se livrer ou non à la maison (29 %). Plus de 90 % des patients ont déclaré avoir une relation de confiance avec leur médecin et ont signalé avoir participé à la prise de décisions autant qu'ils le voulaient. Quinze pour cent des patients dont l'admission avait été prévue étaient d'avis qu'ils auraient dû être admis plus rapidement.

Conclusion : Les données signalées par les patients à la suite de ce sondage laissent entendre que les efforts à venir d'amélioration de la qualité des hôpitaux canadiens devraient porter sur les routines d'hôpital, les médicaments, les examens, la gestion de la douleur et la planification de la libération.

Patient satisfaction with health care is seen as a dimension of quality of care.¹⁻⁵ Pascoe² defined patient satisfaction as "a health care recipient's reaction to salient aspects of the context, process, and result of their service experience." According to this view, satisfaction consists of both a cognitive evaluation and an emotional reaction by the patient. Measures of patient satisfaction focus on patient reports or ratings of care, reflect the patient's perspective and target dimensions of care that patients are able to judge (i.e., the patient-centred components of care).

From the hospital's perspective, clinical staff and managers ought to be interested in patients' views of care because (a) diagnosis and treatment depend on clear communication with and information for patients as well as patient participation in the treatment process,^{3,4} (b) patient satisfaction with care is predictive of future behaviour (e.g., compliance with treatment and intent to return for care),^{3,4,6} (c) patient preferences can be used by providers to help make choices about ways of organizing and providing care (e.g., scheduling visits and planning discharge),^{3,4} (d) patient satisfaction may be a direct or indirect measure of outcome (e.g., how well a patient is functioning)^{3,5} and (e) as Donabedian⁵ noted, "achieving

and producing health and satisfaction, as defined for its individual members by a particular society or subculture, is the ultimate validator of the quality of care."

Our two objectives were to present Canadian survey data on patients' reports about and satisfaction with their hospital care and to explore the extent to which variation in reported satisfaction is related to characteristics of the patients, their hospital stay or the hospital. We surveyed patients about a specific episode of hospital care because such focus gives the respondent a frame of reference when responding to questions and because knowledge of the relevant hospitalization period and hospital characteristics allows for collection of data on factors related to patient satisfaction. To our knowledge this is the first Canada-wide survey of patients recently cared for in hospital. The survey parallels and complements a recent US survey and uses a modified version of the US questionnaire.¹

Methods

Survey design

A cross-sectional telephone survey was conducted

from June 1991 to May 1992 of medical and surgical patients discharged home from Canadian acute care hospitals. Data collected included patients' reports about the amount and type of care they received, patients' ratings of satisfaction with this care, characteristics of patients and characteristics of their experience in hospital.

Hospital selection

We included public acute care hospitals in six provinces: British Columbia (representing the west coast), Alberta and Saskatchewan (the prairies), Ontario (central Canada), Quebec (francophone Canada) and Nova Scotia (Atlantic Canada). Public hospitals are owned or operated by provincial governments, municipal governments or communities.

We excluded federal hospitals (e.g., hospitals for Treaty Indians) and specialty hospitals. We also excluded privately owned and operated hospitals because they represent less than 1% of all acute care hospital beds in Canada.⁷ Public hospitals with 100 or more beds in which at least 30% of the beds were used for surgical and medical patients were included. This provided a large enough group of patients from each hospital to interview within 3 months after discharge and ensured inclusion of a large number of medical and surgical patients.

The hospitals were stratified by teaching status: academic health centres (medical-school-affiliated hospitals that housed the offices of the largest number of academic clinical department chairpersons), teaching hospitals (hospitals that provided medical education programs for clinical instruction in at least internal medicine and general surgery to undergraduate medical students in their final 2 years) and nonteaching hospitals. All of the academic health centres, one randomly selected teaching hospital and two randomly selected nonteaching hospitals in each province were approached to participate in the study. Any hospital refusing to participate was replaced by one of similar teaching status in that province.

Ten additional teaching hospitals and 18 additional nonteaching hospitals from the six provinces combined were randomly selected to participate. Again, any hospital refusing at this stage to participate was replaced by one with a similar teaching status from the national pool.

Patient selection

Each participating hospital was asked for a list of 150 medical or surgical adult patients discharged home, in consecutive order, starting from a specific time. The aim was to get at least 80 patients from each list to participate in a telephone interview.

Questionnaire

The survey questionnaire was modified from that

used in a national US survey of patient-centred care^{1,8} and was developed through multiple steps. First, focus groups were held with patients and their families and friends, and health care providers (including physicians, administrators and nonphysician staff). Themes identified in these focus groups were used to generate questions. Versions of the questionnaire were then pilot-tested with groups of patients from a variety of US hospitals. The final US version was modified for use in Canada and pilot-tested with 37 patients in three hospitals. In modifying it, first we excluded questions not applicable in Canada (e.g., those concerning the type of medical care insurance coverage) and problematic or ambiguous questions. Second, for 28 questions we increased the dichotomous Yes or No responses to a Likert-type scale in order to increase response variability.

There were 39 questions intended to elicit patients' views about possible problems with their hospital care: provider's communication with the patient, including information given (8 questions), provider's respect for the patient's preferences (5), provider's attentiveness to the patient's physical care needs (4), provider's education of the patient regarding medication and tests (4), quality of the relationship between the patient and the physician in charge (1), provider's education of and communication with the family regarding the patient's care (2), provider's management of the patient's pain (4) and hospital discharge planning (11).

Patient consent

Patient consent was established in one of two ways: either (a) before hospital discharge, in which case a member of the hospital staff explained the purpose of the survey and requested permission to release the patient's name and telephone number to the study team, or (b) after discharge, in which case a letter was mailed to the patient's home explaining the hospital's participation in the survey and requesting permission to release the person's name and telephone number to the study team. Patient consent was again sought at the start of the telephone interview. Interviews were conducted in English and French by the Institute for Social Research at York University with the use of a computer-assisted telephone interviewing system.

Statistical analysis

The questionnaire was assessed for test-retest reliability with 91 English-speaking patients in four hospitals and 27 French-speaking patients in two hospitals.

Like Cleary and colleagues,¹ we used the number of problems with hospital care reported by patients to measure the extent to which patients were satisfied or dissatisfied with their care. A total problem score was calculated for each patient based on the number of problems she or he identified in response to the 39 questions re-

ferred to earlier. By focusing on problems, we could identify specific care processes that patients reported as being problematic and that could be targeted for quality improvement efforts. The construct validity of the problem-score measure was tested in a one-way analysis of variance (ANOVA), in which we explored the relation between the mean number of problems and other questions in the questionnaire intended to measure different attributes of patient satisfaction (e.g., intention to return to the same hospital).

Relations between the mean number of problems

and characteristics of the patient, the hospital stay and the hospital were analysed with the use of one-way ANOVA and Kruskal-Wallis one-way ANOVA (a non-parametric test that requires only limited distributional assumptions about the data). Two-way ANOVA was used to examine the combined effect of several factors. Significance was set at a *p* value of less than 0.001 because of multiple comparisons and the large sample. A forward stepwise regression was undertaken, in which the total number of problems for each patient was the dependent (continuous) variable and characteristics of

Table 1: Distribution of the mean number of reported problems by characteristics of patients, hospital stays and hospitals in the Canadian Patient-Centred Hospital Care Study

Characteristic	No. (and %) of patients	Mean no. of problems (and standard deviation)	<i>p</i> value
Patient			
Age, yr	(n = 4588)		
18-24	266 (6)	6.5 (4.8)	< 0.001
25-34	626 (14)	6.5 (5.1)	
35-44	822 (18)	5.9 (5.0)	
45-54	763 (17)	5.3 (4.1)	
55-64	780 (17)	4.9 (4.0)	
65-74	889 (19)	4.9 (3.6)	
≥ 75	442 (10)	5.2 (3.7)	
Sex	(n = 4599)		
Male	1967 (43)	4.8 (3.9)	< 0.001
Female	2632 (57)	6.0 (4.6)	
Education level	(n = 4578)		
Less than high school	1942 (42)	5.1 (4.0)	< 0.001
High school	1151 (25)	5.5 (4.4)	
Some college	496 (11)	6.1 (5.1)	
College	989 (22)	5.8 (4.5)	
Marital status	(n = 4585)		
Married	3193 (70)	5.3 (4.2)	< 0.001
Not married	1392 (30)	6.0 (4.6)	
Household income, \$	(n = 3860)		
< 10 000	412 (11)	6.1 (4.9)	0.016
10 000-19 999	923 (24)	5.3 (4.1)	
20 000-34 999	1011 (26)	5.3 (4.4)	
35 000-59 999	942 (24)	5.6 (4.7)	
≥ 60 000	572 (15)	5.5 (4.2)	
Language usually spoken at home	(n = 4598)		
English	3546 (77)	5.6 (4.5)	0.001
French	773 (17)	5.0 (4.0)	
Other	279 (6)	5.8 (4.3)	
Health in comparison with people in same age group	(n = 4546)		
Excellent	584 (13)	4.6 (3.7)	< 0.001
Very good	1272 (28)	4.8 (3.7)	
Good	1438 (32)	5.6 (4.4)	
Fair	901 (20)	6.1 (4.6)	
Poor	351 (8)	7.5 (5.8)	

**"Refuse to answer" and "Do not know" responses are counted as missing values and are not included in calculating the percentages. The question about income was the only one that more than 5% of the population did not answer.

†ICU = intensive care unit, CCU = cardiac care unit.

the patient, the hospital stay and the hospital were the independent variables.

Results

Validity and reliability of the questionnaire

The mean number of problems reported by patients for the 39 questions was associated with alternative measures of satisfaction in the survey, such as patients' overall level of satisfaction with care, patients' intentions to

return to the same hospital and their intentions to recommend the hospital to others. The test-retest reliability showed a kappa value of more than 60% for most of the 39 questions. There was no evidence of a systematic response bias in one direction or the other in the remaining questions.

Response rates

Of the 72 hospitals approached, 57 (79%) agreed to participate. The participation rates were 94% for the

Characteristic	No. (and %) of patients	Mean no. of problems (and standard deviation)	p value
Hospital stay			
Type of admission	(n = 4570)		
Emergency	2095 (46)	5.9 (4.6)	< 0.001
Scheduled	2475 (54)	5.1 (4.1)	
Service	(n = 4599)		
Medical	1785 (39)	5.9 (4.6)	< 0.001
Surgical	2814 (61)	5.2 (4.2)	
Special care*	(n = 4519)		
Stay in ICU or CCU	970 (21)	4.9 (4.3)	< 0.001
No stay ICU or CCU	3549 (79)	5.6 (4.4)	
Length of hospital stay, d	(n = 4568)		
1-2	562 (12)	5.2 (3.9)	0.088
3-6	1949 (43)	5.4 (4.2)	
7-13	1296 (28)	5.6 (4.7)	
14-21	464 (10)	5.9 (4.8)	
22-31	142 (3)	5.5 (4.5)	
> 31	155 (3)	5.0 (4.3)	
No. of admissions in the past year that led to a stay of at least 1 night	(n = 4549)		
0	2802 (62)	5.4 (4.2)	0.114
1	830 (18)	5.5 (4.5)	
2-3	621 (14)	5.7 (4.6)	
≥ 4	296 (7)	5.9 (5.3)	
Hospital†			
Location	(n = 4599)		
British Columbia	423 (9)	5.5 (4.3)	< 0.001
Alberta	524 (11)	5.8 (4.5)	
Saskatchewan	524 (11)	5.2 (4.4)	
Ontario	2122 (46)	5.8 (4.5)	
Quebec	693 (15)	4.9 (4.0)	
Nova Scotia	313 (7)	4.6 (4.0)	
Type	(n = 4599)		
Academic health centre	1045 (23)	5.4 (4.2)	0.154
Teaching	1220 (27)	5.7 (4.5)	
Nonteaching	2334 (51)	5.4 (4.4)	
Size, no. of beds	(n = 4599)		
100-199	1181 (26)	5.2 (4.3)	0.021
200-299	553 (12)	5.6 (4.4)	
300-499	1453 (32)	5.5 (4.3)	
≥ 500	1412 (31)	5.7 (4.4)	

teaching hospitals, 86% for the academic health centres and 71% for the nonteaching hospitals. The most common reason given for nonparticipation was lack of staff resources to assemble the patient sample. Up to 10 calls per patient were made to arrange for a telephone interview. Interviews were completed with 4599 patients (representing nearly 70% of the eligible patients and 89% of the patients contacted). The patient response rates did not differ significantly by the method of obtaining patient consent.

Characteristics of patients, hospital stay and hospitals (Table 1)

The mean age of the patients was 52 (range 18 to 91) years. Slightly more women than men were included, and most of the respondents were married. The household income was below \$20 000 for 35% of the sample. In all, 28% of the patients rated their health at the time of the interview as "fair" or "poor." (The proportions of people who reported fair or poor health in three surveys of the general population — the Quebec Health Survey,⁹ the Canada Health Promotion Survey¹⁰ and the Ontario Health Survey¹¹ — were 11%, 11% and 10% respectively.)

Emergency and scheduled admissions were relatively equal in number. Most (61%) of the patients were admitted for a surgical procedure. The hospital stay was less than 2 weeks for 83% of the patients, and nearly 40% had been admitted to a hospital (not necessarily the same one) during the previous year. Patients from teaching and nonteaching hospitals were evenly represented; about 60% were from hospitals with 300 or more beds.

Of the patients who had scheduled admissions, 33% reported waiting less than 2 weeks from the time they found out they would be admitted until the time they were, 67% were admitted within 1 month, whereas 82% were admitted within 2 months. In all, 15% of the patients who had a scheduled admission thought that they should have been admitted sooner, and 13% reported that their scheduled admission had been cancelled and rescheduled.

Reported problems with care

The mean number of problems reported per patient was 5.5; the median number was 4. Five percent of the patients reported having no problems with hospital care, and 61% reported 5 or fewer of the possible 39 care processes surveyed (Fig. 1). Only 2% identified 19 or more problems. The highest number of problems (29) was reported by two of the patients.

For nearly half of the 39 items fewer than 10% of the patients gave a response indicating a problem (Table 2). For some aspects of care, however, substantial minorities of patients reported problems. For example, in

areas of discharge planning, 39% reported that they had not been told what danger signals about their illness to watch for at home, 32% had not been told when they could resume normal activities, 29% had not been advised about what activities they should or should not do at home, and 24% had not been told what they could do to help with their own recovery. Twenty-six percent of the patients reported that their family or care partner had not been given all the information needed to help them recover at home. For several other questions about discharge planning (e.g., concerns about returning home) the proportion of patients reporting a problem was not high but became higher when only patients at risk were included. The patients who stated that the doctors and nurses had not spent enough time with them discussing what to do after discharge reported significantly more problems than the patients who stated that they had.

Forty-one percent of the patients reported that before or soon after admission they had not been told what their daily hospital routine would be. Once in hospital, 29% felt that there had been times when the nurses were overworked and too busy to take care of them.

With regard to communication about side effects of drugs, 16% said that this had not been explained in a way that they could understand; 15% had the same comment regarding communication about test results. In addition, 26% reported that the doctor or nurse had not explained before a test how much pain or discomfort to expect. These figures were even higher when only patients at risk were included (20%, 21% and 36% respectively) (Table 2).

More than 90% of the patients reported that they had had a relationship of confidence or trust with the doctor in charge, that the doctor had been available when needed, that both doctors and nurses had provided understandable answers to important questions and that they had been given enough privacy while receiving im-

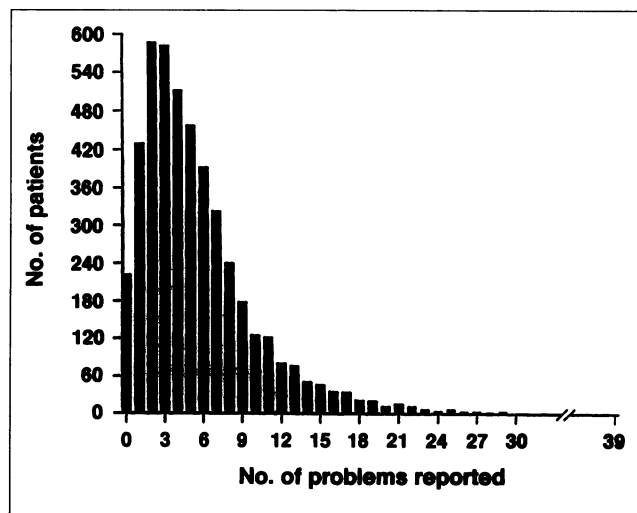


Fig. 1: Number of problems with hospital care (of a possible 39) reported by 4599 patients who participated in the Canadian Patient-Centred Hospital Care Study.

portant information about their condition. About 90% of the patients felt that they had been involved in decisions about their care as much as they had wanted to be. Also,

most of the questions relating to the provider's attentiveness to the patient's physical care needs elicited few problems.

Table 2: Proportion of patients who reported any of the 39 problems with hospital care surveyed

Problem	% of all patients (and % at risk)*	Problem	% of all patients (and % at risk)*
Communication		Education about medications and tests	
Not told what daily routine would be in hospital	41	Purpose of new medicine given to patient in hospital not explained in an understandable way	7 (9)
Not told before or shortly after admission things she or he should have been told	11	Important side effects of medications received in hospital not explained in an understandable way	16 (20)
No doctor in charge of care or doctors not available when needed	4	No one explained in an understandable way why important tests were being done	8 (11)
Did not get understandable answers from doctors in response to questions asked	8	Doctor or nurse did not explain test results in an understandable way	15 (21)
Did not get understandable answers from nurses in response to questions asked	5	Pain management	
Not satisfied with the way information about condition was given	8	Had pain that could have been eliminated by prompt attention by hospital staff	16 (23)
Privacy was not respected during hospital stay	4	Experienced more pain in hospital than told to expect	8 (11)
Doctor or nurse did not explain before a test how much pain or discomfort to expect	26 (36)	Waited 15 or more minutes on average for pain medication	6 (10)
Relationship with physician in charge		Received too little pain medication	4 (5)
In terms of confidence or trust, had a poor or fair relationship with doctor in charge of treatment	6	Family communication and education	
Patient preferences		Family given too little information about hospital care	10
Upset because examined or treated by someone who did not explain what she or he was going to do	4 (76)	Family or care partner not given all the information needed to help patient recover at home	26
Not involved in decisions about care as much as she or he wanted	10	Discharge planning	
Doctors often or sometimes talked in front of patient as if she or he was not there	12	No hospital staff tried to help with concerns about returning home	10 (37)
Nurses often or sometimes talked in front of patient as if she or he was not there	8	Purposes of medications to take at home not explained in an understandable way	3 (4)
Hospital staff did not go out of their way to meet patient needs	17	Not told when and how to take medications at home	3 (4)
Physical care		Not told about important side effects of medications to watch for	18 (26)
Not given enough help bathing	3 (9)	Not told what foods to eat or not to eat at home	57†
Not given enough help going to the bathroom in time	3 (7)	Not told what activities to do or not to do at home	29
Waited 15 minutes or more on average for help after pushing call button	3 (4)	Not told when she or he could resume normal activities	32
There were times when the nurses were overworked and too busy to take care of patient	29	Not told when she or he could return to work	18 (29)
		Not told what danger signals about illness to watch for at home	39
		Not told what to do to help recovery	24
		Received no assistance from hospital before discharge in finding help needed after discharge	9 (47)

*"Refuse to answer" and "Do not know" responses are excluded in calculating percentages. Patients at risk include only those exposed to the event: 3361 patients had tests, 227 were examined by someone who did not explain what they were going to do, 1785 needed help bathing, 1793 needed help going to the bathroom, 3380 used the call button, 3800 received new medicine in hospital, 3296 had pain, 2827 requested pain medication, 3457 received pain medication, 1258 had concerns about returning home, 3297 were given medicine to take at home, 2801 were returning to work, and 891 needed help after discharge.

†This may be an overestimate, because no question was asked to determine the relevant population at risk for this item; for example, patients could have been asked whether they felt they should have been told what foods to eat or not eat at home.

Relation between problems and characteristics of patients, hospital stays and hospitals

A one-way ANOVA of the relation between the mean number of problems reported and selected patient characteristics revealed significant associations with age (younger patients reported more problems than older patients), sex (women reported more problems than men), education (patients with more years of formal education reported more problems than patients with fewer years), marital status (single patients reported more problems than married patients), language (patients with French as their first language reported fewer problems than patients with other languages) and health status (those in poor health reported more problems than those in good or excellent health) (Table 1). The largest association was between health status and the mean number of problems reported: patients who stated that their health was excellent at the time of the interview reported 4.6 problems on average, whereas those in poor health reported 7.5 (Table 1).

Of the covariates examined, only household income was not significantly associated with the mean number of problems at the 0.001 probability level. Like Cleary and colleagues,¹ we then tested for an income threshold effect, dichotomizing our study population into poor (income less than \$10 000) and nonpoor (income \$10 000 or more) according to Cleary and colleagues' cut points. The mean number of problems reported was higher in the poor group than in the nonpoor group (6.1 v. 5.4) and attained borderline statistical significance ($p = 0.002$). A two-way ANOVA revealed no interaction between income and health status: the mean number of problems was higher for poor people across all five levels of health status.

The hospital-stay characteristics that were significantly associated with the mean number of problems reported were as follows: patients with emergency admissions reported more problems than those with scheduled admissions, medical patients reported more problems than surgical patients (the types of problems did not differ significantly between the two groups), and patients not admitted to the intensive care unit reported more problems than those receiving such care. The length of stay and the number of previous admissions to hospital were not significantly associated with the number of problems reported.

The number of problems reported varied significantly by province: patients in Quebec and Nova Scotia reported the fewest problems, and those in Ontario and Alberta reported the most. The type and size of hospital were not statistically significant factors.

We repeated all of the above analyses using the Kruskal-Wallis one-way ANOVA, with similar results.

Multiple linear regression analysis

Higher mean numbers of problems were signifi-

cantly associated with patient characteristics of poorer health status, lower age, female sex, higher education and nonmarried status. The dichotomous income variable poor versus not poor was not a statistically significant predictor of problems reported when other variables were controlled for in this model. Higher mean numbers of problems were also associated with emergency admissions and larger hospital size. Patients from Quebec and Nova Scotia reported significantly fewer problems than patients in Ontario. Altogether, characteristics of the patients, the hospital stays and the hospitals accounted for only 9% of the variation in our satisfaction measure.

Discussion

Our finding that patient satisfaction varied with different aspects of care mirrors findings elsewhere.^{1,12} Specific care processes that patients found to be problematic in our survey related to provider-patient communication about discharge planning issues. Other areas of concern to substantial minorities of the patients included communication about daily hospital routines, the side effects of medications and test results as well as some aspects of pain control.

Despite news coverage to the contrary, most of the patients did not report problems with hospital waiting lists. Fifteen percent reported that they should have been admitted sooner. Although this global question may mask problems among specific types of patients who do have difficulty accessing hospital care, our findings fail to corroborate a sometimes alleged "crisis" in hospital waiting time from the patient's perspective. Also, patients reported few problems with their relationships with physicians, with the provider's respect for their preferences and with most aspects of physical care.

Like others^{1,13-18} we found that patients in better health at the time of the interview were more likely to report fewer problems with their hospital care than those in poorer health. Patients in the former group may have recalled fewer problems because they felt that their health had been improved by their hospital care,^{13,16} whereas the latter may not have felt that they had been helped and hence recalled more problems. Also, patients reporting themselves to be in poor health at the time of the interview were more likely to have had emergency admissions and may have had fewer opportunities for patient communication, education and patient involvement with their care.¹ Finally, the patients in poorer health may have required more assistance, had more discomfort and been more affected by omissions of care.^{6,19}

We found no consistent association between household income and number of problems reported by patients. This finding contrasts with that of Cleary and colleagues.¹ The influence of other sociodemographic variables on patient satisfaction with hospital care has been inconsistent across studies,^{3,6,17,20-23} although older patients in general have been found to express more sat-

isfaction than younger patients.^{1,3,6,22,24} Altogether, characteristics of the patients, hospital stays and hospitals in our study accounted for little variation in the satisfaction measure. This suggests that patients' reports about their care in this survey were influenced more by the care provided than by these other factors.

Our survey has several strengths. Its national scope enables hospital peer-group comparisons. The focus on various areas of hospital care recognizes that patient satisfaction is best conceptualized and measured as a multi-dimensional rather than a single global construct^{1,3,4,12,19-21,24-33} and that patients may be more satisfied with some aspects of care than with others.^{12,19,33-35} Inclusion of patient reports as well as ratings helps to standardize for differences in patient expectations and provides hospital staff with clues as to specific problems with care that may need improvement.^{1,36,37} The test-retest reliability results provide evidence of the stability of patient views over time.

As for the limitations of our survey, only medical and surgical patients were included; patients who died in hospital or were transferred to other health care facilities were excluded. We were unable to collect independent data on the diagnosis or severity of illness for the episode of care covered by the questionnaire. The latter may be an important factor associated with variation in patient satisfaction. Survey information was collected through telephone interviews, and about 14% of the sample could not be contacted. People without telephones are more likely to be young, male, single and less well educated than the general population¹⁰ — some of these characteristics have been associated with lower patient satisfaction with health care.

Regardless of these limitations, our survey identified specific hospital care processes that could be improved. In particular, provider-patient communication about discharge planning, hospital routines, medication side effects and test results as well as some aspects of pain management are areas that should be targeted for quality-improvement efforts.

We thank members of the Picker/Commonwealth Program for Patient-Centered Care, Beth Israel Hospital and Harvard Medical School, Boston, for their advice, particularly Dr. Thomas L. Delbanco, director, Dr. Paul D. Cleary, research director, and Susan Edgman-Levitan, associate director and program manager. We also thank Annie Schmitt for typing various versions of this paper. The telephone interviews were conducted by the Institute for Social Research, York University, Toronto. Responsibility for the data analysis and interpretation of the results rests with the authors.

This research was funded by the Commonwealth Fund and the Pew Charitable Trusts.

References

1. Cleary PD, Edgman-Levitan S, Roberts M et al: Patients evaluate their hospital care: a national survey. *Health Aff* 1991; winter: 254-267
2. Pascoe GC: Patient satisfaction in primary health care: a literature review and analysis. *Eval Prog Plan* 1983; 6: 185-210
3. Cleary PD, McNeil BJ: Patient satisfaction as an indicator of quality care. *Inquiry* 1988; 25: 25-36
4. Fitzpatrick R: Measurement of patient satisfaction. In Hopkins A, Costain D (eds): *Measuring the Outcomes of Medical Care*, Royal College of Physicians of London and King's Fund Development for Health Services Development, London, England, 1990
5. Donabedian A: Evaluating the quality of medical care. *Milbank Mem Fund Q Health Soc* 1966; 44: 166
6. Rubin HR: Can patients evaluate the quality of hospital care? *Med Care Rev* 1990; 47: 267-326
7. *Canadian Hospital Directory, 1990/91*, vol 38, Canadian Hospital Association, Toronto, 1990
8. Cleary PD, Edgman-Levitan S, McMullen W et al: The relationship between reported problems and patient summary evaluations of hospital care. *Qual Rev Bull* 1992; 18 (2): 53-59
9. *Quebec Health Survey, 1987*, Quebec Ministry of Health, Montreal, 1988
10. Rootman I, Warren R, Stephens T et al (eds): *Canada's Health Promotion Survey: Technical Report*, Department of National Health and Welfare, Ottawa, 1988
11. Premier's Council on Health, Well-Being and Social Justice: *Ontario Health Survey, 1990: Highlights*, Ontario Ministry of Health, Toronto, 1992
12. Rubin HR: Patient judgments of hospital quality: report of a pilot study. 1. Patient evaluations of hospital care: a review of the literature. *Med Care* 1990; 28 (9 suppl): S3-S9
13. Fleming GV: Hospital structure and consumer satisfaction. *Health Serv Res* 1981; 16: 43-63
14. Linn LS, Greenfield S: Patient suffering and patient satisfaction among the chronically ill. *Med Care* 1982; 20: 425-431
15. Zastowny TR, Roghmann KJ, Hengst A: Satisfaction with medical care: replications and theoretical re-evaluation. *Med Care* 1983; 21: 294-322
16. Carmel S: Satisfaction with hospitalization: a comparative analysis of three types of services. *Soc Sci Med* 1985; 21: 1243-1249
17. Hsieh M, Kagle JD: Understanding patient satisfaction and dissatisfaction with health care. *Health Soc Work* 1991; 16: 281-290
18. Hall JA, Milburn MA, Epstein AM: A causal model of health status and satisfaction with medical care. *Med Care* 1993; 31: 84-94
19. Locker D, Dunt D: Theoretical and methodological issues in sociological studies of consumer satisfaction with medical care. *Soc Sci Med* 1978; 12: 283-292
20. Cleary PD, Keroy L, Karapanos G et al: Patient assessments of hospital care. *Qual Rev Bull* 1989; 15 (6): 172-179
21. Ware JE Jr, Berwick DM: Patient judgments of hospital quality: report of a pilot study. 8. Conclusions and recommendations. *Med Care* 1990; 28 (9 suppl): S39-S44
22. Fitzpatrick R: Surveys of patient satisfaction: II. Designing a questionnaire and conducting a survey. *BMJ* 1991; 302: 1129-1132
23. Hall JA, Dornan MC: Patient sociodemographic characteristics as predictors of satisfaction with medical care: a meta-analysis. *Soc Sci Med* 1990; 30: 811-818
24. Williams SJ, Calnan M: Convergence and divergence: assessing criteria of consumer satisfaction across general practice, dental and hospital care settings. *Soc Sci Med* 1991; 33: 707-716
25. Pascoe GC, Attkisson CC: The evaluation ranking scale: a new methodology for assessing satisfaction. *Eval Prog Plan* 1983; 6: 335-347
26. Oberst MT: Patients' perceptions of care: measurement of quality and satisfaction. *Cancer* 1984; 53: 2366-2373
27. Fitzpatrick R: Surveys of patient satisfaction: I. Important general considerations. *BMJ* 1991; 302: 887-889
28. Senf JH, Weiss BD: Patient satisfaction with health care: intentions and change in plan. *Eval Prog Plan* 1991; 14: 299-306
29. Health Services Research Group: A guide to direct measures of patient satisfaction in clinical practice. *Can Med Assoc J* 1992; 146: 1727-1731
30. Ware JE, Snyder MK, Wright WR et al: Defining and measuring patient satisfaction with medical care. *Eval Prog Plan* 1983; 6: 247-263

31. Nelson EC, Hays RD, Larson C et al: The patient judgement system: reliability and validity. *Qual Rev Bull* 1989; 15 (6): 185-191
32. Nelson EC: Patient satisfaction surveys: an opportunity for total quality improvement. *Hosp Health Serv Admin* 1990; 35: 409-427
33. Goupy F, Ruhlmann O, Paris O et al: Results of a comparative study of in-patient satisfaction in eight hospitals in the Paris region. *Qual Assur Health Care* 1991; 3: 309-315
34. Hall JA, Dornan MC: What patients like about their medical care and how often they are asked: a meta-analysis of the satisfaction literature. *Soc Sci Med* 1988; 27: 935-939
35. Meterko M, Rubin HR: Patient judgments of hospital quality: report of a pilot study. Patient judgments of hospital quality: a taxonomy. *Med Care* 1990; 28 (9 suppl): S12-S14
36. Ware JE, Davies-Avery A, Stewart AL: The measurement and meaning of patient satisfaction. *Health Med Care Serv Rev* 1978; 1 (1): 1-15
37. Vuori H: Patient satisfaction — Does it matter? *Qual Assur Health Care* 1991; 3: 183-189

Conferences continued from page 1796

June 23-25, 1994: 8th Annual Postpartum Support International Conference — Maternal Depression: Impact on the Family and Infant — Research, Diagnosis, Prevention and Innovative Models of Care

Toronto
Postpartum Adjustment Support Services—Canada, PO Box 7282, Oakville, ON L6J 6C6; tel (905) 844-9009

June 23-25, 1994: International Intraocular Implant Club Meeting (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
David Karcher, American Society of Cataract and Refractive Surgery, 3702 Pender Dr., Fairfax, VT 22030; tel (703) 591-2220, fax (703) 591-0614

June 23-25, 1994: International Medical Contact Lens Symposium (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Dr. Harold A. Stein, 40 Prince Arthur Ave., Toronto, ON M5R 1A9; tel (416) 966-3336, fax (416) 966-8917

June 23-25, 1994: International Society of Refractive Keratoplasty Meeting (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Jaci M. Lindstrom, executive director, ISRK, c/o Phillips Eye Institute, 2215 Park Ave., Minneapolis, MN 55404; tel (612) 336-7575, fax (612) 336-5606

June 23-25, 1994: Joint Meeting of the International Society for Genetic Eye Disease and the Retinoblastoma Society (satellite meeting of the 27th International Congress of Ophthalmology)

Niagara-on-the-Lake, Ont.
Dr. W.G. Pearce, 2-129 Clinical Science Building, University of Alberta, Edmonton, AB T6G 2G3; tel (403) 492-6642, fax (403) 492-0054

June 24, 1994: University of Toronto Department of Ophthalmology Research Day (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Drs. Graham Trope and David J. Rootman, Department of Ophthalmology, East Wing 6-511, Toronto Hospital — Western Division, 399 Bathurst St., Toronto, ON M5T 2S8; tel (416) 978-2635, fax (416) 978-1522

June 24-25, 1994: International Society on Orbital Disorders Meeting (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Dr. M. Mourits, secretary of the ISOD, Department of Ophthalmology E03-136, Academic Hospital Utrecht, PO Box 85500, Utrecht, 3508 CA, The Netherlands; tel 011-31-30-507880, fax 011-31-30-541855

June 24-25, 1994: Outpatient Ophthalmic Surgery Society 14th Annual Meeting (satellite meeting of the 27th International Congress of Ophthalmology)

City to be announced
Karen S. Morgan, PO Box 23220, San Diego, CA 92193; tel (619) 692-4426, fax (619) 541-1447

June 24-25, 1994: 6th World Congress of Ergophthalmology: a Joint Meeting of the Medical Eye Safety Association of America and the International Ergophthalmology Society (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
6th World Congress of Ergophthalmology, c/o Venue West Conference Services, 645-375 Water St., Vancouver, BC V6B 5C6; tel (604) 681-5226, fax (604) 681-2503

June 25, 1994: Canadian Society of Ophthalmic Plastic and Reconstructive Surgery (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Dr. J.J. Hurwitz, 408-600 University Ave., Toronto, ON M5G 1X5; tel (416) 586-8385, fax (416) 586-8789

June 25, 1994: 8th International Symposium on the Lacrimal System (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Dr. D. Spinelli, Bollate Memorial Hospital, V Piave, 20, 20021-Bollate, Milano, Italy; tel 011-39-2-5408849, fax 011-39-2-5453180

June 25, 1994: International Oncology Conference (satellite meeting of the 27th International Congress of Ophthalmology)

Toronto
Andrea Mackie, Ocular Oncology, Princess Margaret Hospital, 500 Sherbourne St., Toronto, ON M4X 1K9; tel (416) 924-0671, fax (416) 926-6590

continued on page 1831