

# Dyspepsia in Primary Care: Perceived Causes, Reasons for Improvement, and Satisfaction with Care

John H. Kurata, PhD, MPH; Aki N. Nogawa, MS; Yang K. Chen, MD;  
and Charles E. Parker, MD  
San Bernardino, Loma Linda, and Sylmar, California

**BACKGROUND.** While dyspepsia is a common problem in primary care populations, very little is known about patient perceptions of medical care for this disease. The present study of patients with dyspepsia treated by primary care physicians looks at causes, procedures, and reasons for improvement from the patient's viewpoint and relates these factors to patient satisfaction with family physicians' medical care.

**METHODS.** Medical chart and billing data were collected for 545 adult patients who visited five family health centers for digestive complaints during a 6-month period in 1993. A questionnaire was completed by 288 patients 6 to 8 weeks after patient's index visit. Baseline findings are reported.

**RESULTS.** The two most common causes of gastrointestinal problems were attributed to stress or anxiety (58%) and diet (46%). Between the time of the index visit and the baseline survey, 48% reported that they had recovered or improved. Of those who recovered or improved, most (75%) credited "taking GI medicine" followed by change in diet (44%). Patients who reported recovery or improvement of their gastrointestinal complaints ( $P < .001$ ) and older patients ( $P = .032$ ) were the most satisfied with overall medical care. Satisfaction with medical care was not associated with insurance coverage, procedures done, race, antiulcer medication treatment, diagnosis, general health status, or sex.

**CONCLUSIONS.** Specific health status, ie, improvement of gastrointestinal (GI) problems, predicted patient satisfaction for 70% of cases in this study. Most patients who improved credited GI medicines for their improvement, and those who improved were more satisfied with their medical care.

**KEY WORDS.** Dyspepsia; primary health care; patient satisfaction; physicians, family. (*J Fam Pract* 1997; 44:281-288)

General practice and family physicians manage approximately 35% of all outpatient visits for symptoms referable to the digestive system and 36% of visits for stomach pain. In addition, 31% of gastrointestinal (GI) medications provided at an office visit have been prescribed by general or family physicians.<sup>1</sup> Yet most research on dyspepsia has been conducted by gastroenterologists who treat patients referred for evaluation of severe or com-

plex GI problems. The term *dyspepsia* represents a vague grouping of upper abdominal symptoms that is characterized by upper abdominal pain or discomfort accompanied by fullness, burning, belching, bloating, nausea, vomiting, fatty food intolerance, or difficulty completing a meal.<sup>2,4</sup>

Primary care researchers have published a few studies on dyspepsia in the ambulatory care setting.<sup>5,6</sup> These studies, however, have been based on either self-reports or medical chart reviews; no previously published studies have collected data simultaneously on patients from both sources. In addition, although patient satisfaction is important in assessing quality of care, few studies of dyspepsia have collected data on patient satisfaction with their care.<sup>7,9</sup>

To provide a more balanced view of dyspepsia management in clinical practice and to circumvent the limitations of prior studies, data in this study were collected from patients and their records at

Submitted, revised, December 17, 1996.

From Research and Policy Analysis, San Bernardino County Medical Center, San Bernardino (J.H.K. and A.N.N.), and the Division of Family Medicine, UCLA School of Medicine, Los Angeles (J.H.K.); the Department of Family Medicine, University of California, Irvine (A.N.N.); the Gastroenterology Department, Loma Linda University School of Medicine, Loma Linda (Y.K.C.), and the Family Medicine Department, Oliveview-UCLA Medical Center, Sylmar, California (C.E.P.). Requests for reprints should be addressed to John H. Kurata, PhD, MPH, Research and Policy Analysis, 755 E Gilbert, San Bernardino, CA 92404.

five family health centers in southern California. Associations among treatment, patient satisfaction with medical care, and health status were examined. Findings reported here are baseline data.

## METHODS

### STUDY DESIGN

Adult primary care patients (aged 18 years or older) with dyspepsia comprised the population for this study of medical care. The first objective was to describe the characteristics of patients with dyspepsia treated by primary care physicians: demographics, presenting GI symptoms, primary diagnoses, and general health status. The second objective was to examine, prospectively, various outcome information for enrolled patients.

Eligible patients were identified through the medical center billing system. Medical charts of eligible patients were audited for inclusion in the study. Detailed information about the index GI visit (eg, GI symptoms, treatment plans, assessments) and prior history of GI problems were abstracted from patients' charts.

A subset of the study patients were surveyed. Baseline surveys were mailed 4 to 8 weeks after the patient's index visit, followed by a reminder 1 week later. Nonrespondents to the mail survey were interviewed by telephone. Patients were asked about GI symptoms, duration of the problem, treatment (eg, drugs, procedures, physician visits), patient satisfaction with medical care, and health status (both in general and specifically related to the GI problem).

The study population was drawn from patients seen at five family health centers administered by the San Bernardino County Medical Center (SBCMC) Department of Family Medicine. The SBCMC Institutional Review Board approved the protocol as adequately protecting the rights and welfare of the patients involved.

### PATIENT SELECTION

Adult patients were eligible for inclusion in the study if they had a digestive disease diagnosis of ICD-9-CM code 530-537, 564, 787, or 789.0 at an outpatient visit to a family physician between January and June 1993. These ICD codes were selected because they capture patients with dyspepsia of potentially acid-peptic origin.

A patient was enrolled in the study if the visit was

for (1) a digestive tract complaint such as pain, discomfort, or nausea; (2) upper abdominal or retrosternal pain, discomfort, heartburn, nausea, vomiting, or other symptoms considered to be referable to the proximal alimentary tract, unrelated to exercise or an acute condition such as food poisoning or infection; and (3) signs and symptoms that resulted in a prescription for an antiulcer medication. Five hundred forty-five patients were enrolled in the study following medical record review of 693 charts for patients representing 932 eligible GI visits.

English-speaking patients with no underlying psychosocial impairment who were included in the baseline chart abstract study were eligible for the survey component. From an assessment of language skills or impairment based on medical chart information, 117 patients were excluded; 428 patients were mailed surveys. The response rate was 72%, with 307 patients responding to either a mail survey or telephone interview. Nineteen respondents were subsequently excluded because of comprehension problems or other response problems with their surveys. Hence, 288 patients completed the questionnaire.

### DIAGNOSIS AND SYMPTOM DEFINITION

The index visit diagnosis was used to classify patients into six diagnostic categories. *Peptic ulcer* included patients with primary diagnoses of duodenal ulcer, gastric ulcer, site-unspecified peptic ulcer, and duodenal lesion. Primary diagnoses of hiatal hernia, reflux, esophagitis, esophageal ulcer, esophageal spasms, chest pain, heartburn, and regurgitation made up the *gastroesophageal reflux disease* (GERD) category. *Abdominal pain* consisted of abdominal pain, epigastric pain, flank pain, dyspepsia, lower quadrant pain, or right upper quadrant pain. *Irritable bowel syndrome* (IBS) and *constipation* were grouped into one category, while the *other* category included nausea, vomiting, diarrhea, dysphagia, gas, and flatus. *Gastritis* was the sole primary diagnosis for patients in this category.

Self-reported symptoms for the index visit were used to define 11 symptom categories. Only one symptom defined the following categories: *abdominal pain*, *dyspepsia*, *nausea*, *acid taste*, and *bloody stool*. *Heartburn* included chest pain, *gas* included belching and bloating, *vomit*, vomiting and regurgitation, and *other*; *anorexia* and *satiety*. Both *diarrhea* and *constipation* were grouped as *altered bowel*

habits. None means no symptoms were reported.

### SURVEY CONSTRUCTION

Patient satisfaction items were developed by modifying existing scales to fit the needs of the current study.<sup>10-15</sup> Satisfaction with specific aspects of the medical encounter (eg, "How satisfied were you with the doctor's explanation of your stomach or digestive problem?") and more general items (eg, "How satisfied were you with the overall medical care you received for your stomach or digestive problem?") were measured. A 5-point Likert-type scale ranging from very satisfied to very dissatisfied was used. Satisfaction variables were recoded as follows for the bivariate and multivariate analyses of patient satisfaction: very satisfied/satisfied, neutral, and very dissatisfied/dissatisfied. The general health status item was taken from the health indicator section of the National Health Interview Survey.<sup>16</sup>

### STATISTICAL METHODS

Data were analyzed using BMDP statistical software.<sup>17</sup> The level of significance selected was .05 for all statistical tests. Chi-square tests and Cramer's V were used to examine relationships between categorical variables. Pearson's correlation coefficient was used for bivariate analyses

of interval-level data. Stepwise discriminant analyses were performed to analyze the relationship between overall satisfaction with medical care as the dependent variable and the statistically significant variables from the bivariate analyses as independent variables.

## RESULTS

During 1993, there were 6200 SBCMC outpatient visits for GI disease diagnoses relevant to this study. More than 2000 of these GI visits were to family physicians, with 932 adult visits occurring during the 6-month baseline study enrollment period.

**TABLE 1**

**Patient Characteristics for the Medical Chart Abstract and Baseline Survey**

Characteristic	Chart Abstract, % (n = 545)	Survey, % (n = 288)	P Value*
Sex			.82
Male	30.3	29.5	
Age in years†			.886
18 - 24	5.3	5.6	
25 - 44	40.0	37.2	
45 - 64	47.0	49.3	
65 +	7.7	8.0	
Race/ethnicity			.023‡
White	43.9	53.8	
Black	13.9	14.2	
Hispanic	34.9	25.3	
Other	7.3	6.6	
Insurance coverage			.406
Private	7.0	8.0	
Medicare	10.5	10.1	
Self-pay	14.5	10.1	
Indigent program	63.9	68.4	
Other	4.2	3.5	
Primary diagnosis			.965
Abdominal pain	39.3	37.5	
GERD	19.6	21.9	
Peptic ulcer	18.9	17.7	
Gastritis	10.5	11.1	
IBS/constipation	7.2	7.6	
Other	4.6	4.2	

\*P values compare characteristics for the medical chart abstract and baseline survey populations.

†Age distributions exclude children since the study was limited to adult patients.

‡Significant difference due to the exclusion of non-English-speaking Hispanics from the survey.

IBS denotes irritable bowel syndrome; GERD, gastroesophageal reflux disease.

Demographic distributions for these 932 GI visits (693 patients, 71% female) were comparable to those for all adult visits to family physicians (51,000 in 1993) and to the chart abstract study population. Whites (43%) and Hispanics (36%) accounted for similar proportions of visits, and most visits (66%) were covered by programs for the medically indigent.

A comparison of demographic distributions for the baseline chart abstract population (n = 545) and the baseline survey population (n = 288) shows that whites were overrepresented in the baseline survey, while Hispanics were underrepresented because non-English-speaking Hispanics were

**TABLE 2**

**Opinion of Diagnostic Procedures, from the Baseline Survey**

Opinion*	Patients With Procedures (n = 112)	Patients Without Procedures (n = 138)
	% (N)	% (N)
Strongly agree	50.9 (57)	33.3 (46)
Mildly agree	18.8 (21)	15.9 (22)
Mildly disagree	1.8 (2)	10.1 (14)
Strongly disagree	4.5 (5)	13.0 (18)
Unsure	24.1 (27)	27.5 (38)

\*Patients were asked how much they agreed or disagreed with the statement: "I would feel better if I had had an upper GI x-ray or endoscopy to diagnose my problem."

excluded from the survey component (Table 1). The two populations were comparable for all other characteristics.

**FROM THE PATIENT'S VIEW**

**Patients Favor Diagnostic Procedures.**

Nearly one half (47%) of the surveyed patients reported having had upper GI radiography or endoscopy at their index visit. When asked how much they agreed or disagreed with the state-

ment, "I would feel better if I had had an upper GI x-ray (x-rays taken after drinking a white liquid) or endoscopy (the doctor looks in a tube put into the stomach) to diagnose my problem," 70% agreed (strongly or mildly) and 24% were unsure, while only 6% disagreed mildly or strongly (Table 2). Significantly more patients ( $P = .002$ ) who had a procedure agreed with the statement compared with patients who had not had a procedure.

**Reported Symptoms.** Abdominal pain (65%) and heartburn (51%) were the two most commonly reported symptoms by survey respondents. When symptoms were examined by diagnosis, abdominal pain was the most frequently reported symptom in patients with IBS/constipation (77%), abdominal pain (74%), peptic ulcer (69%), and gastritis (59%). In patients with GERD, heartburn (68%) was the most common symptom. Data on patients' recall of GI symptoms associated with their index visit are presented in Table 3.

**TABLE 3**

**Percent of Symptoms Present by Primary GI Diagnosis, from the Baseline Survey**

Symptom*	Primary Diagnosis						Total % (N)
	IBS/ Constipation	Abdominal Pain	Peptic Ulcer	Gastritis	GERD	Other	
Abdominal pain	77.3	74.1	68.6	59.4	49.2	33.3	64.6 (186)
Heartburn	31.8	44.4	52.9	50.0	68.3	58.3	51.4 (148)
Gas	54.5	49.1	43.1	40.6	44.4	75.0	47.6 (137)
Other	45.5	40.7	52.9	34.4	49.2	66.7	45.5 (131)
Dyspepsia	40.9	31.5	37.3	43.7	42.9	50.0	37.8 (109)
Nausea	45.5	38.0	37.3	50.0	25.4	25.0	36.5 (105)
Acid taste	27.3	33.3	21.6	25.0	49.2	25.0	33.0 (95)
Vomit	13.6	25.0	25.5	40.6	34.9	16.7	27.8 (80)
Bloody stool	18.2	8.3	9.8	3.1	6.3	8.3	8.3 (24)
Bowel	22.7	9.3	2.0	3.1	4.8	0.0	6.9 (20)
None	0.0	2.8	7.8	0.0	0.0	0.0	2.4 (7)

\*Patients could report more than one symptom. Percents are percentage of patients with the symptom present for that diagnosis. See text for explanation of symptom categories.  
IBS denotes irritable bowel syndrome; GERD, gastroesophageal reflux disease.

**Duration of Problem.** The majority (52%) of respondents reported that their GI problems had begun more than 1 year before. Significantly more patients ( $P < .001$ ) with a history of peptic ulcer (66%) reported GI problems that began over a year ago compared with patients (44%) who did not have peptic ulcers. Only 7% reported that their problems began less than a week before the index visit; thus, most patients presented with chronic rather than acute symptoms.

Of the 105 survey subjects who reported a history of peptic ulcer, 87 also provided information on the year that their ulcer was diagnosed. Seventeen percent had their ulcers diagnosed during the year of the index visit. Approximately 39% had their ulcers diagnosed more than 10 years before the index visit.

**Attributed Causes.** Psychological stress or anxiety (58%) and diet (46%) were the most frequently identified causes of GI problems. Alcohol (8%) and nonsteroidal anti-inflammatory drugs (8%) were the next two most commonly cited causes.

Of the patients surveyed, 166 (58%) identified causes for their GI problems; 86 (30%) did not respond to this item, while 36 (13%) reported symptoms or diseases as causes. No differences were found for age, sex, or race/ethnicity between patients reporting a cause and those who did not.

**Improvement or Recovery Varied with General Health Status.** Of survey respondents, 48% reported that their GI problems had improved (104 patients) or that they had recovered (29 patients) since the index visit. No change was experienced by 43% (120 patients), while 8% worsened (23 patients).

General health status was significantly associated with status of the GI problem ( $P < .0001$ ). Eighty-two percent of those with excellent general health reported that they had

TABLE 4

#### Reasons for Improvement of the GI Problem for Surveyed Patients Who Recovered or Improved

Reason for Improvement	No. of Responses*	Percent
Taking GI medicine	100	75.2
Change in diet	58	43.6
Change in other habits	29	21.8
Medical care	21	15.8
Improved on its own	9	6.8
Stopped taking medicine	3	2.3
Total	220	

\*There were 220 reasons reported by the 29 patients who recovered and 104 who improved (133 patients total). Percents are the percentage of the 133 patients who recovered or improved. Sum of percents >100% because patients could cite more than one reason for improvement.

recovered or improved, compared with 57% of those who reported good or very good health and 35% of those with fair or poor general health.

Patients who had *not* seen a physician for their GI complaint during the prior year were statistically significantly ( $P=.008$ ) more likely to report recovery or improvement (60%) than were patients for whom GI complaints were a recurring problem (40% recovered or improved). Associations between GI problem status and treatment with antiulcer drugs or having had pro-

TABLE 5

#### Selected Attributed Causes and Reasons for Improvement of the GI Problem for Surveyed Patients Who Recovered or Improved

Reason for Improvement	Attributed Cause*		
	Stress/Anxiety (n = 50) % (N)	Diet (n = 51) % (N)	All Other (n = 47) % (N)
Taking GI medicine	78.0 (39)	76.5 (39)	76.6 (36)
Change in diet	40.0 (20)	62.7 (32)	34.0 (16)
Change in other habits	42.0 (21)	17.6 (9)	6.4 (3)
Medical care	22.0 (11)	7.8 (4)	19.1 (9)
Improved on its own	4.0 (2)	3.9 (2)	10.6 (5)
Stopped taking medicine	4.0 (2)	2.0 (1)	0 (0)

\*Percents are the percentage of patients citing the attributed cause. Sum of percents >100% because patients could cite more than one attributed cause and more than one reason for improvement.

TABLE 6

## Patient Satisfaction with Medical Care, from the Baseline Survey Data

Measure of Satisfaction	Level of Satisfaction, %				
	Very Satisfied	Satisfied	Neutral	Dissatisfied	Very Dissatisfied
Overall medical care (n = 280)	28.6	37.5	16.8	10.7	6.4
Provider's explanation of GI problem (n = 279)	22.6	32.6	21.9	12.5	10.4
Provider's explanation of GI drugs (n = 194)	27.4	38.7	19.1	7.8	7.0
Efficacy of GI drugs (n = 231)	27.7	31.6	16.5	15.2	9.1

cedures done (upper GI radiography or endoscopy) were not statistically significant.

**Reason for Improvement.** While antiulcer drug treatment was not significantly associated with reported recovery or improvement, taking GI medicine was the reason for improvement most frequently cited (75%) by the 133 subjects who reported that they had recovered or improved (Table 4). Almost all patients who gave this reason (95%) had used antiulcer medications within the prior 3 months. The second most common reason for improvement was a change in diet (44%). Only 7% reported that their problem improved on its own.

**Attributed Cause Related to Reported Reason for Improvement.** The relationships between attributed causes for the GI problem and reasons for improvement were also examined for subjects who improved or recovered (Table 5). Taking GI medicine was the most frequently cited reason regardless of reported cause. For patients who attributed their GI problems to diet, dietary change was second. For patients who attributed their GI problems to stress or anxiety, change in nondietary personal habits (42%) was the second most frequently cited reason for improvement, followed by dietary change (40%) and medical care (22%).

### WHAT CONTRIBUTED TO PATIENT SATISFACTION?

The majority of subjects (66%) were satisfied or very satisfied with the overall medical care received

(Table 6). The two areas of greatest dissatisfaction were the provider's explanation of the GI problem (23%) and efficacy of GI drugs (24%).

**First Visits Yield More Satisfied Patients.** The 123 patients who were seeing a physician for their GI condition for the first time more often reported satisfaction with overall medical care (77% satisfied) than the 153 patients who had

seen a physician for their GI condition during the year before their index visit (58% satisfied,  $P = .002$ ). Table 7 details the associations among four patient satisfaction variables and patient characteristics, health status, and medical treatment for the subgroup of patients who had not previously seen a physician for their condition.

**Satisfaction Linked to Specific Health Status and Age.** All satisfaction variables were statistically significantly correlated with the GI problem status variable. In addition to its strong correlation with GI problem status, satisfaction with overall medical care was also significantly associated with age. Older patients (Pearson's correlation =  $-.193$ ;  $P = .032$ ) and patients who had recovered or whose GI problem had improved (Pearson's correlation =  $.431$ ;  $P < .001$ ) were more likely to be satisfied with their overall medical care. No associations were found between satisfaction with overall medical care and insurance coverage, procedures done, race, antiulcer drug use, diagnosis, general health status, or sex.

**GI Problem Status Predicts Overall Satisfaction with Care.** A stepwise discriminant analysis was performed using overall satisfaction with medical care as the dependent variable and the two statistically significant variables from the bivariate analyses as independent variables (ie, GI problem status and age). Only GI problem status entered the discriminant function. Seventy percent of the 116 cases in the analysis

TABLE 7

Associations Between Patient Satisfaction and Patient Characteristics, Health Status, and Medical Treatment for Patients Seeing a Physician for a GI Problem for the First Time

Patient Characteristics	Patient Satisfaction Variables			
	Overall Medical Care	Provider's Explanation of GI Problem	Provider's Explanation of GI Drugs	Efficacy of GI Drugs
<i>GI problem status</i>				
Pearson's <i>r</i>	.431	.381	.288	.604
<i>P</i> value	<.001	<.001	.005	<.001
<i>Age</i>				
Pearson's <i>r</i>	-.193	-.177	-.084	-.093
<i>P</i> value	.032	NS	NS	NS
<i>Insurance coverage</i>				
Cramer's <i>V</i> *	.164	.163	.027	.028
<i>P</i> value	NS	NS	NS	NS
<i>Procedures done</i>				
Cramer's <i>V</i>	.155	.015	.274	.089
<i>P</i> value	NS	NS	.03	NS
<i>Race/ethnicity</i>				
Cramer's <i>V</i>	.15	.126	.089	.067
<i>P</i> value	NS	NS	NS	NS
<i>Antiulcer drug use</i>				
Cramer's <i>V</i>	.092	.059	.119	.095
<i>P</i> value	NS	NS	NS	NS
<i>Diagnosis</i>				
Cramer's <i>V</i>	.085	.15	.199	.204
<i>P</i> value	NS	NS	NS	NS
<i>General health status</i>				
Pearson's <i>r</i>	.054	.155	.018	.227
<i>P</i> value	NS	NS	NS	.03
<i>Sex</i>				
Cramer's <i>V</i>	.027	.045	.05	.028
<i>P</i> value	NS	NS	NS	NS

\*Cramer's *V* is a measure of association between two categorical data variables. It ranges between 0 (no association) and 1 (perfect association). NS denotes not significant.

were correctly classified. The distribution of correctly classified cases by satisfaction level was 75% for satisfied patients, 94% for the neutral patients, and none for the dissatisfied patients. The canonical correlation\* was .485 ( $F = 17.4$ ,  $P < .0005$ ; degrees of freedom = 2, 113). An inspection of group means indicated that the GI problem had improved for the more satisfied patients relative to the neutral and dissatisfied patients.

\* Stepwise discriminant analysis, a multivariate analytic technique analogous to stepwise multiple regression, is used with a categorical dependent variable. Independent variables may be either interval or categorical-level data. Canonical correlation is the measure of association between the dependent variable and the discriminant function in the discriminant analysis. It is analogous to multiple *R* in multiple regression analysis.

## DISCUSSION

An important finding from this study is the link between patient satisfaction and specific health status. Status of the GI problem for which patients were being seen was the most important predictor of overall patient satisfaction with medical care. Since the baseline survey took place 1 to 2 months after the index visit, patients had an opportunity to assess whether the problem had improved. Ninety-six percent of patients who had not seen a physician before the index visit and whose GI condition had improved by the time they were surveyed reported satisfaction with overall medical care.

Multivariate discriminant analyses also supported

this finding. Status of the GI problem was the only predictor of overall patient satisfaction for patients for whom the index visit was a return GI visit, patients for whom this was a first-time visit, or both groups combined: for all three groups, patients whose GI problem had improved or those who had recovered were more satisfied than other patients.

Stress or anxiety and diet surfaced as the main perceived causes of GI problems. Patients who cited stress or anxiety as a cause often reported a change in personal habits as a reason for improvement or recovery, while those who gave diet as a cause cited change in diet as a reason for improvement. Thus, patient perception of the cause of GI problems was related to patient perception of reason for improvement. These findings suggest careful listening skills on the part of family physicians. Determining patients' perceptions of the causes of their specific complaints and tailoring treatment regimens to address these perceptions may contribute to improvement of health complaints.

While reasons cited for improvement varied somewhat, the main reported reason for improvement or recovery regardless of attributed cause was taking GI medications. Dyspepsia is usually managed initially by treating symptoms with acid-reducing drugs, and this study supports continuing that clinical course.

Patients are usually referred for diagnostic procedures only if symptoms worsen or recur.<sup>5,18,19</sup> In this survey, a high proportion (70%) of patients who had upper GI radiography or endoscopy felt these procedures contributed to the diagnosis of their problem (Table 2). Thus, findings from this study support two other studies of dyspeptic patients' attitudes about upper GI radiography<sup>20,21</sup> in suggesting that many patients are strongly in favor of diagnostic tests to assist with disease management. This positive attitude toward procedures, however, does not necessarily translate into higher patient satisfaction with medical care. All analyses of our study data showed no association between having procedures done and overall satisfaction.

While this paper was a descriptive study of patient characteristics, primary GI diagnosis, symptoms, causes, treatment, and patient satisfaction with medical care for dyspepsia patients seen by family physicians, a forthcoming analysis of 1-year follow-up data for these patients will yield more detailed information on medical management (eg,

drugs prescribed, procedures ordered, and referrals) and outcomes of care.

#### ACKNOWLEDGMENT

This work was supported in part by grant No. R03 HS07257 from the Agency for Health Care Policy and Research (US Public Health Service, Department of Health Services, National Institutes of Health).

#### REFERENCES

- Schappert SM. National Ambulatory Medical Care Survey, 1991 summary. Hyattsville, Md: National Center for Health Statistics, Vital and Health Statistics, series 13, No. 116, 1994. DHHS publication No. (PHS) 94-1777.
- Heading RC. Definitions of dyspepsia. *Scand J Gastroenterol* 1991; 26(suppl 182):1-6.
- Talley NJ, Phillips SF. Non-ulcer dyspepsia: potential causes and pathophysiology. *Ann Intern Med* 1988; 108:865-79.
- Colin-Jones DG, Bloom B, Bodemar G, et al. Management of dyspepsia: report of a working party. *Lancet* 1988; 1:576-9.
- Jones R, Lydeard S. Prevalence of symptoms of dyspepsia in the community. *BMJ* 1989; 298:30-2.
- Adelman A. Abdominal pain in the primary care setting. *J Fam Pract* 1987; 25:27-32.
- Bytzer P, Hansen JM, de Muckadell OBS. Empirical H2-blocker therapy or prompt endoscopy in management of dyspepsia. *Lancet* 1994; 343:811-6.
- Mulley AG Jr. Improving the quality of decision making [editorial]. *J Clin Outcomes Manage* 1995; 2:9-10.
- Nelson EC, Greenfield S. Outcomes matter most [editorial]. *J Clin Outcomes Manage* 1994; 1:9-10.
- Aday LA, Andersen R, Fleming GV. Health care in the US. Equitable for whom? Beverly Hills, Calif: Sage Publications, 1980: 141-84.
- Kurata JH, Nogawa AN, Phillips DM, Hoffman S, Werblun MN. Patient and provider satisfaction with medical care. *J Fam Pract* 1992; 35:176-9.
- Osterweis M, Howell JR. Administering patient satisfaction questionnaires at diverse ambulatory care sites. *J Ambulatory Care Manage* 1979; 2:67-88.
- Ware JE, Snyder MK, Wright WR, Davies AR. Defining and measuring patient satisfaction with medical care. *Eval Program Plann* 1983; 6:247-63.
- Ware JE, Snyder MK. Dimensions of patient attitudes regarding doctors and medical care services. *Med Care* 1975; 13:669-82.
- Kurata JH, Watanabe Y, McBride C, Kawai K, Andersen R. A comparative study of patient satisfaction with health care in Japan and the United States. *Soc Sci Med* 1994; 39:1069-76.
- Adams PF, Benson V. Current estimates from the National Health Interview Survey, 1990. Hyattsville, Md: National Center for Health Statistics, Vital and Health Statistics, series 10, No. 181, 1991. DHHS publication No. (PHS) 92-1509.
- Dixon WJ, ed. BMDP statistical software manual (volume 1). Berkeley, Calif: University of California Press, 1988:133-42,251-63,337-56.
- Bytzer P. Diagnosing dyspepsia: any controversies left? [editorial]. *Gastroenterology* 1996; 110:302-6.
- Health and Public Policy Committee, American College of Physicians. Endoscopy in the evaluation of dyspepsia. *Ann Intern Med* 1985; 102:266-9.
- Goodson JD, Richter JM, Lane RS, Beckett TF, Pingree RG. Empiric antacids and reassurance for acute dyspepsia. *J Gen Intern Med* 1986; 1:90-3.
- Marton KI, Sox HC Jr, Alexander J, Duisenberg CE. Attitudes of patients toward diagnostic tests—the case of the upper gastrointestinal series roentgenogram. *Med Decis Making* 1982; 2:439-48.