Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

by Shane P. Desselle

OBJECTIVE: To assess member satisfaction with the prescription-drug component of prepaid health insurance plans and determine aspects of drug coverage about which these members had misconceptions or were uninformed.

DESIGN: Patrons of randomly sampled pharmacies throughout an urban county responded to interviews conducted by senior entry-level Pharm.D. students.

MAIN OUTCOME MEASURES: An interval-level scale was used to measure satisfaction, knowledge of issues of prescription drug coverage, and demographics. Member satisfaction was factor-analyzed into dimensions of service and network quality. The effects of demographic and plan characteristics and member knowledge on satisfaction were determined by t-tests and one-way analyses of variance (ANOVAs), and confirmed by general linear models procedures. Chi-squared analyses and logistic regression were used to determine the effect of demographics on patient knowledge.

RESULTS: Respondents were very satisfied with the service and network quality of their prescription drug plans. Member demographic characteristics had little influence on satisfaction; however, having a choice of plan and overestimating certain aspects of coverage significantly influenced satisfaction. Respondents overestimated the scope of their drug coverage and network of pharmacy providers; however, there were few disparities in knowledge among different groups of patients, including those with less formal education.

CONCLUSIONS: Employers and insurers must find a way to better inform plan members of their coverage limitations while maintaining member satisfaction and preventing disenrollment.

KEYWORDS: Patient satisfaction, interval-level scale, prescription drug coverage, patient knowledge, managed care organizations, pharmacy benefits manager

J Managed Care Pharm 2001; 34-42

Author

SHANE P. DESSELLE, Ph.D., is Assistant Professor, Social and Administrative Pharmaceutical Sciences, Duquesne University, Mylan School of Pharmacy, Pittsburgh, PA.

AUTHOR CORRESPONDENCE: Shane P. Desselle, Ph.D., Assistant Professor, Social and Administrative Pharmaceutical Sciences, Duquesne University, Mylan School of Pharmacy, Pittsburgh, PA 15282. Tel: 412-396-6363; Fax: 412-396-5130. E-mail: desselle@duq.edu.

ACKNOWLEDGMENT: The author would like to thank AstraZeneca for its full financial support of the study.

Copyright© 2001 Academy of Managed Care Pharmacy, Inc. All rights reserved.

As benefits managers grapple with an increasingly complex and costly health care delivery system, a principal area of concern is the cost of providing prescription drug benefits. Prescription drugs and pharmacy services now account for more than 9% of health care expenditures, having increased by 14% from 1996 to 1997, while physician and hospital costs rose only 4.4% and 2.9%, respectively, during the same period.¹ Notwithstanding advances demonstrating cost-effectiveness of pharmaceuticals over invasive procedures and new drugs targeting improvements in quality of life, payors of health care have become increasingly concerned with keeping pharmacy costs at bay.²

Stricter control of drug expenditures creates myriad challenges for both consumers and providers. Unlike other stakeholders in the health care arena, patients have not been educated on the need for cost containment.³ Previous research has demonstrated that many consumers are quite confused about their health care benefit choices and demonstrate considerable knowledge deficits about the structure and design of their health care plans, often overestimating or underestimating coverage for various services.⁴⁻⁶ Prescription drug coverage can be even more complicated for many health plan enrollees.

Because of the administrative burden of adjudicating prescription claims, many insurance carriers outsource this part of their business to a pharmacy benefits manager (PBM); the patient may have separate insurance cards and must abide by separate rules for obtaining medical care and prescription benefits. PBMs vary considerably in formulary management, drugs covered, disease-state management programs, and overall efforts to engender quality control in prescription drug use.⁷ Consequently, patients whose drug benefits are administered by PBMs, including those sponsored by government, face varying degrees of provider network limitations, cost-sharing responsibilities, and quality of information provided to them about the prescription drug benefit. Not surprisingly, patients can be very uncertain about the nature of their drug coverage.⁸ The uncertainty faced by seniors enrolled in Medicare managed care plans is further exacerbated because they are unaccustomed to strict utilization and network controls.

From the provider's perspective, patients' lack of knowledge about their plans can create communication problems. One survey revealed that many physicians think that managed care makes it more difficult to avoid conflicts with patients in their practice.⁹ The strain on the pharmacist-patient relationship can

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

be even worse because pharmacists must keep track of an even greater number of plans with varying formulary limitations.¹⁰ Pharmacists have indeed indicated that the time they spend on administrative and technical tasks associated with managed care policies has served as a primary barrier to providing pharmaceutical care services.¹¹

It has been postulated that patient satisfaction with care actually leads to better health outcomes.¹² Just two decades ago, patient satisfaction was viewed as merely a desirable feature. Now patient satisfaction is a principal criterion used to evaluate the quality of health insurance plans.¹³⁻¹⁵ Member satisfaction continues to gain a more prominent role in assessing the quality of managed health care plans through the National Committee for Quality Assurance's (NCQA's) accreditation process and its HEDIS (Health Plan Employer Data and Information Set) survey.^{16, 17} The importance of satisfaction is also apparent in the coverage given this topic in the literature, and in the many informal polls taken by professional associations and reported in newsletters and mass media.¹⁸⁻²²

The fact that prescription drugs are treated as a "carve-out" from the rest of the health insurance plan limits the information that can be derived from satisfaction studies on general health coverage. The literature is replete with reports on satisfaction with the actual services provided by pharmacists.²³ Very little research has been done, however, to determine satisfaction with the design of the pharmacy benefit (i.e., the number of pharmacies participating in the plan, the quality of information provided by the plan, cost sharing, etc.). The author is aware of only one study—by Johnson et al.—in which patients enrolled in both traditional and mail-order pharmacy benefit programs were queried on satisfaction with their copayments and drug coverage in general.²⁴ This paucity in the literature is somewhat surprising given the importance of the prescription benefit. A group of seniors ranked prescription drug coverage second only to hospital coverage as a desirable component of a health insurance plan.²⁵

Many satisfaction scales reported in the pharmacy and medical literature are constructed and scored on an ordinal basis. Satisfaction is an "attitude" comprising cognitive, affective, and behavioral components.^{26, 27} Ordinal measures do not account for the actual contribution of each scale item toward the attitude and thus may lack precision.²⁸ For example, a consumer may be satisfied with the price and the packaging of a new brand of ice cream, but dissatisfied with its flavor. Intuitively, we would expect flavor to mean more to that consumer than packaging. Therefore, when constructing an instrument to evaluate satisfaction, the components of satisfaction should be weighted, as is the procedure when developing an interval-level scale.

Study Purpose and Objectives

As benefits managers and plan administrators strive to design cost-effective prescription drug benefits for plan enrollees, members' satisfaction with and knowledge of the plan limita-

TABLE 1 Items and Corresponding Scale Weights with "One" (1) as Lowest Anchor Value

Item Number	Scale Value	Item
1	1.000	The effectiveness of a help desk/hot line to solve problems or answer questions that you may have about your prescription drug coverage
2	1.102	Providing updates and information on changes in coverage (copayment, drugs covered, etc.)
3	1.123	The number of pharmacies that accept your prescription insurance
4	1.246	The amount of freedom you have to choose your own pharmacy
5	1.401	Covering both brand-name and generic drugs equally
6	1.509	The location of the pharmacy that accepts your prescription insurance
7	1.531	The amount of medication (days supply) the plan allows you to have each time you go to the pharmacy
8	1.873	The out-of-pocket costs that you have to pay for prescriptions (copays, deductibles)
9	2.505	Covering any drug that you or your doctor feels that you need

tions must be among the first issues addressed. If patients are dissatisfied with their plans, they may disenroll. Additionally, health insurers have a responsibility to balance their support of quality care with their fiduciary responsibility. These goals are more difficult to accomplish when plan members are unaware of rules and restrictions inherent in the plan's benefit design.

This study measured satisfaction with and particular knowledge deficits regarding prescription drug coverage issues by enrollees of prepaid health plans. The specific objectives were to:

- assess plan members' satisfaction with their drug benefits;
- determine how much plan members know about particular aspects of their drug coverage; and
- determine the impact of patient demographic and plan characteristics on satisfaction and knowledge deficits.

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

TABLE 2 Characteristics of the Study Subjects

Variables	%	n ^a
Demographics		
Gender		
Male = 1	153	40.5
Female = 0	225	59.5
Age		
Under 41 years	124	35.5
41–60 years	164	47.0
61 years or older	61	17.5
Ethnicity		
Caucasian = 1	329	89.2
African-American = 2	36	9.8
Other = 3	4	1.1
Educational degree completed		
Less than high school = 1	8	2.2
High school = 2	185	51.2
College = 3	145	40.2
Graduate degree = 4	23	6.4
Family income		
<\$25,000/year = 1	43	15.9
\$25,000–\$40,000/year = 2	57	21.1
\$40,001–\$55,000/year = 3	67	24.6
\$55,001–\$70,000/year = 4	49	18.1
\$70,001–\$85,000/year = 5	19	7.0
\$85,001–\$100,000/year = 6	17	6.3
>\$100,000/year = 7	18	6.7
Number of prescriptions during the past six months		
1–5 = 1	100	27.0
6–10 = 2	99	25.9
11–15 = 3	63	17.0
Greater than 15 = 4	108	28.3
Self-reported perception of overall health		
Poor = 1	6	1.6
Fair = 2	22	5.9
Good = 3	112	30.3
Very good = 4	147	39.7
Excellent = 5	83	22.4
Type of health plan		
Preferred provider organization (PPO) = 1	55	14.4
Health maintenance organization (HMO) = 2	181	47.4
Point-of-service (POS) plan = 3	34	8.9
Don't know	112	29.4
Employer provided a choice of health plans in which to enroll		
Yes	158	41.9
No	142	37.7
Don't know	35	9.3
N/A	42	11.1
Primary source of information about my prescription drug plan		
My pharmacist = 1	149	39.2
My insurance company = 2	113	29.7
My employer = 3	73	19.2
My family and friends = 4	21	5.5
I receive no information about my prescription drug plan = 5	22	5.8

^aAny response total less than 382 indicates missing data.

Note: N/A is not applicable.

Methods

Scale Development

The initial phase of the study involved the construction of an interval-level scale to measure members' satisfaction with their prescription drug plan. Scale items were generated using a multifaceted approach, including a literature review and patient and pharmacist interviews. The interviews were conducted by entry-level Pharm.D. undergraduate students. Interviewees were selected on the basis of convenience by the student interviewers; that is, the students selected pharmacist and patient subjects without regard to a specific sampling procedure and venue from which to conduct the interviews. This process led to the identification of 10 potential factors responsible for member satisfaction. A review of the factors for face validity by several faculty in the departments of pharmacy administration and pharmacy practice resulted in the elimination of one factor. The final nine-item instrument covered a wide range of issues, including the network of participating pharmacies, member cost-sharing responsibilities, days supply of medication, formulary restrictions, and the availability of information provided by the plan.

Next, numeric weights (scale values) were determined for each of the nine items, using the method of paired comparisons first developed by Thurstone.²⁹ This method, widely reported in the social sciences literature, employs respondent judges to randomly compare each item against every other item in the scale in terms of importance, one pair at a time. The results of these comparisons are tabulated into a frequency matrix, which is then reconfigured into a matrix of probabilities, from which a matrix of z scores is created. The z scores are used to create a matrix of columnar differences, which is used to calculate the weight of each item. These procedures resulted in the nine items and corresponding weights provided in Table 1, page 35. More detail on the construction of this scale, including methods to assure its validity and internal consistency, was provided in the May/June 2000 issue of *JMCP*.³⁰

Patient Interviews

The next phase of the project was to solicit patients' responses to the satisfaction scale and obtain information regarding their knowledge of pharmacy benefits issues. The target population for the study was members of prepaid health plans with a prescription drug benefit. This article reports on the results obtained from respondents with service-based (i.e., the benefits are not indemnified) prescription drug benefits not provided through a means-tested government subsidy. Therefore, responses from patients with indemnity benefits and patients on Medicaid are not presented here.

The questionnaire template for the interview consisted of several components. After reading a brief introduction and statements of purpose and confidentiality, subjects agreeing to

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

TABLE 3 Mean and Weighted — Mean Responses to Satisfaction-scale Items

Item	Mean $\pm$ S.D.	Wt $\pm$ S.D. ^a
The effectiveness of a help desk/ hot line to solve problems or answer questions that you may have about your prescription drug coverage	7.34 $\pm$ 2.62	7.34 $\pm$ 2.62
Providing updates and information or changes in coverage (copayment, drugs covered, etc.)	7.43 $\pm$ 2.65	8.19 $\pm$ 2.92
The number of pharmacies that accept your prescription insurance	8.29 $\pm$ 2.44	9.31 $\pm$ 2.74
The amount of freedom you have to choose your own pharmacy	8.31 $\pm$ 2.49	10.36 $\pm$ 3.11
Covering both brand-name and generic drugs, equally	7.41 $\pm$ 2.41	10.38 $\pm$ 3.38
The location of the pharmacy that accepts your prescription insurance	9.05 $\pm$ 1.68	13.65 $\pm$ 2.54
The amount of medication (days supply) the plan allows you to have each time you go to the pharmacy	7.43 $\pm$ 2.65	12.09 $\pm$ 3.75
The out-of-pocket costs that you have to pay for prescriptions (copays, deductibles)	7.68 $\pm$ 2.32	14.38 $\pm$ 4.34
Covering any drug that you or your doctor feels that you need	7.97 $\pm$ 2.40	19.96 $\pm$ 6.01
Total	71.38 $\pm$ 16.92	105.71 $\pm$ 20.09
^a Weighted mean plus/minus the standard deviation.		

participate answered questions regarding the nature of their health coverage, such as whether they were given a choice of plans by their employer (if applicable), the type of plan in which they were enrolled, and the name of their prescription drug insurer. They then responded to the nine-item satisfaction scale, indicating the degree of their agreement from 1 (Not satisfied at all) to 10 (As satisfied as I could be). Interviewees were asked whether their plan permitted them to use their prescription cards at any pharmacy, whether their plan covered any drug they or their doctor felt they needed, and who they thought was responsible for setting their copayment. They were then asked to differentiate between brand-name and generic drugs, and asked whether they understood the distinction between a "preferred" and a "nonpreferred" drug product or what a formulary is. They also indicated the importance to them of prescription drug coverage in selecting a health plan, and the primary source from which they receive information about their prescription drug plan. Finally, they provided demographic information.

The interviews were conducted by 12 fifth- and sixth-year pharmacy students enrolled in an urban school of pharmacy. Student interviewers were trained to follow guidelines detailed by Ware and colleagues for conducting interviews.³¹ For purposes of this study, students were also provided operational definitions of the terms *brand*, *generic*, and *formulary*. Interviews were conducted at 10 pharmacies throughout the county, selected by a stratified randomized procedure. From a list of 155 chain and 126 independent pharmacies supplied by the

county's pharmacy association, six chain stores and four independent pharmacies were randomly selected. Owners or managers of all 10 pharmacies selected agreed to participate, allowing the study to be conducted at their sites. The pharmacies were located in diverse geographic areas throughout the county. In order to control for some of the variation that might exist between interviewers, each student interviewer was randomly assigned two pharmacies. Interviewers were allowed to conduct the interviews at times that best fit their schedules; however they were encouraged to visit the pharmacies on various days and at different times during these days. The interviewers were instructed to request interviews only from patients who were having a prescription filled. Subsequent analysis of scores on the satisfaction scale by one-way ANOVA between responses obtained by different student interviewers revealed no significant differences.

Analysis

Data were analyzed using SPSS 10.0.³² Descriptive statistics were tabulated for each measure. The mean response to each item in the satisfaction scale was calculated, as was the multiplicative product of the mean response and the scale weights reported in Table 1, and the overall grand scale mean. Responses were factor-analyzed via principal components analysis with orthogonal rotation. Initially, independent sample t-tests and one-way analyses of variance (ANOVAs) were conducted to determine the effect of dichotomous and polychotomous variables, respectively, on overall patient satisfaction and on

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

TABLE 4 Subject Responses to Knowledge Questions

Question	n ^a	%
Can you take your prescription card and have it accepted at any pharmacy you go to?		
Yes	176	46.2
No	120	31.5
Don't know	85	22.3
Does your plan cover any and every drug available that you or your doctor would want you to have?		
Yes	174	45.7
No	105	27.6
Don't know	102	26.8
Who do you think is responsible for determining how much your copayment is?		
The pharmacist who fills your prescription that day	3	0.8
The pharmacy owner or chain-pharmacy headquarters	19	5.0
Your insurance company	250	65.8
Your employer	56	14.7
Don't know	52	3.7
Can you tell me the difference between a brand-name and a generic drug?		
Patient could differentiate	282	74.2
Patient could not differentiate	98	25.8
Can you tell me in your own words what a formulary is, or what is meant by a preferred versus a nonpreferred prescription drug?		
Patient could identify	87	22.9
Patient could not identify	293	77.1

^aAny response total less than 382 indicates missing data.

the summative scores on each of the two factors uncovered by principal components analysis. General linear model procedures were then performed to determine the contribution of independent variables toward explaining the variance in overall satisfaction and in responses to the items comprising each factor.

The effects of demographic and plan characteristics on patient knowledge for each of the four questions were assessed using chi-squared tests. Patient knowledge variables were operationalized into correct and incorrect answers. Knowledge of brand-name versus generics and of formularies were each coded as 0 if the subject could not differentiate and 1 if he or she could. The only acceptable correct answer to questions pertaining to the subject's ability to use his or her prescription card at any pharmacy, and to whether the drug plan covered any drug needed, was no. The subject could have answered yes, no, or I do not know. For analysis, a no response was coded as 1 and any other response was coded as 0.

Additionally, logistic regression analyses were performed by regressing demographic data onto patient knowledge of each of four areas: brand-name versus generics, formularies, drug coverage limitations, and network limitations. The purpose of the logistic regression was to minimize the likelihood of Type-II

alpha error (failing to reject a false-positive result), which could result from conducting a series of chi-squared tests.

Results

Personal characteristics and other descriptive data of the 382 subjects interviewed and the health plans in which they were enrolled are reported in Table 2, page 36. Mean age was 46.9 years. Approximately one-half of respondents who received health insurance through their employers reported being given a choice of health plans. Some respondents did not know if they or their spouse was offered a choice of health plans. Responses were designated "not applicable" when the subject purchased the plan individually and when the plan was not associated with employment, as with a Medicare HMO.

Table 3, page 37, provides the mean responses to items assessing satisfaction with prescription drug coverage. The sum of the scale weights in Table 1 is 13.29. The possible range of scores for the overall scale is 13.29 to 132.90. The grand scale mean response of 105.71 indicates that study subjects were generally satisfied with their prescription drug coverage. They were least satisfied with the effectiveness of a help desk to answer questions, coverage of brand name drugs compared

with generics, the information they receive on changes in the plan, and the days supply of medication they are allowed to obtain with each visit. They were most satisfied with pharmacy location and the choice of pharmacies that accept their plan.

Results of the principal components analysis revealed that each of the nine items successfully loaded onto one of two factors. The first factor accounted for 41.21% of the variation and the second factor accounted for an additional 16.91%. The first factor comprises items that concern problem solving, information, breadth of drug coverage, days supply, and out-of-pocket costs (items 1, 2, 5, 7, 8, and 9). A common theme among these issues is overall quality in the structure of the benefit as perceived by the enrollee, particularly as it relates to services provided by the insurer. Hence, factor one is referred to as "service quality." The second factor comprises items 3, 4, and 6, concerning the number of pharmacies, freedom-of-choice, and pharmacy location. Because these three items all pertain to the comprehensiveness of the network of pharmacy providers in the prescription drug benefit, factor two is referred to as "network quality." The factor analysis thus provided for the creation of two additional variables (subscales) to be used as dependent variables in t-tests and ANOVA procedures: service quality and network quality, with each subscale being operationalized as the summed responses to items that make up that factor. With respect to service quality, the overall mean response was 73.58 on a scale from 9.412 to 94.12; on a scale ranging from 3.878 to 38.78, the overall mean response to the network quality scale was 34.07.

Subject responses to the knowledge questions are provided in Table 4, page 38. Only 31.5% of respondents knew that the number of pharmacies in their network is limited, and only 27.6% knew that limits existed on the types of drugs covered by their plan. Nearly half of the respondents answered "yes" to both knowledge questions, while approximately one-quarter of them indicated that they did not know the answers. Surprisingly, relatively few respondents associated their amount of copayment with the pharmacist or pharmacy chain that fills their prescriptions, which is contrary to anecdotal complaints by many pharmacists. Most respondents identified the insurance company as responsible for determining copayment rates. Very few cited the employer as being largely responsible for determining these out-of-pocket expenses. Nearly three-quarters of respondents correctly differentiated between brand-name and generic drugs; however, less than one-quarter of them were able to identify what a formulary or a preferred product was.

Analysis of variance and t-tests revealed relatively little influence by respondent demographic characteristics on satisfaction with prescription drug coverage, with only a few exceptions. Only the patient-age cohort yielded significant results, as respondents 60 years and over were significantly more satisfied overall than were respondents 41–59 years of age. Interestingly,

patient knowledge about various aspects of their drug coverage was much more influential in determining satisfaction. Patients less knowledgeable about their drug-coverage limitations were more satisfied with the pharmacy benefit. Patients with the misconception that their plans were accepted at any pharmacy were more satisfied with both service and network quality. Patients who believed that their plans covered any drug were more satisfied with service quality, but there was no difference in their perceptions of network quality. Additionally, respondents who did know what a formulary was had a more favorable perception of service quality.

Respondents who were not offered a choice of health plans were less satisfied than were those in other groups. Those enrolled in point-of-service plans were somewhat more satisfied with network quality, although the difference was not significant. Also, subjects who indicated that they receive no information at all about their plans were significantly less satisfied than those who received information about their plans from the pharmacist, employer, insurance company, or family and friends.

General linear model (GLM) procedures resulted in considerable explanation of the variation of responses for overall satisfaction, service quality, and network quality, with adjusted coefficients of variation of 0.28, 0.17, and 0.39, respectively. Differences in perception of service quality were explained by lack of knowledge of both network and coverage limitations, while differences in network quality were explained by lack of knowledge of network limitations and by type of plan enrolled.

Chi-squared analyses revealed several relationships between demographic and plan characteristic data with patient knowledge. There were significant differences in knowledge of drug coverage limitations across varying age and income groups. Subjects in the 40–59 year age group and those in higher income brackets were more likely to be aware of drug-coverage limitations, as were females and those subjects not offered a choice of health plans. Knowledge of pharmacy network limitations was also influenced by age and whether a choice of health plans was offered. Age was also a factor in predicting a respondent's knowledge of formularies. Those in the oldest group were less likely to understand what formularies are. Finally, education and income were correlated with ability to differentiate between brand-name and generic drugs.

The step-wise logistic regression procedure did not confirm all of the chi-squared test results. Preliminary diagnostics indicated multicollinearity between education and income and between age and being offered a choice in plans. Having better predictive power, income and age were retained for analysis while education and choice in plan selection were excluded. Regression on knowledge of drug coverage limitations revealed significant contributions by age group, income, and sex (females). Knowledge of network limitations was predicted only by age group, with significantly fewer persons in the elder

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

group being aware of such limitations. Similarly, age group was also the only variable able to predict knowledge of formularies. Knowledge of brand-name versus generic drugs was influenced by sex (males) and by higher incomes.

It is very important to note that even though the logistic regression analyses yielded some significant relationships, the overall power of the predictors in the equation was very weak, as the amount of variation accounted for ranged from only 2% (formularies) to 10% (drug-coverage limitations). It can be inferred that respondent demographic characteristics did little to predict whether members were satisfied with their prescription drug plans.

Limitations

The results of this study should be interpreted with some caution. The data were obtained from only one county with enrollees of a limited number of plans who filled prescriptions at pharmacies. Hence, the satisfaction data should not be extrapolated to enrollees of other plans. The present study also excluded persons obtaining prescriptions via mail order or through the Internet. Additionally, this study relied on the self-report of plan enrollees. The study also revealed ambiguity among the studied population regarding a variety of coverage issues. Respondents could have supplied information without complete knowledge of what they were being asked, even though interviewers discouraged this practice by providing "do not know" as a response choice. Finally, the responses to some of the interview questions were subject to interpretation by the interviewer.

Discussion

In designing the structure of the prescription drug benefit, careful consideration should be given not only to member satisfaction as a principal outcome, but to the precision of the instrumentation used to measure it. A poorly designed satisfaction survey can be worse than not measuring patient satisfaction at all.³³ This study employed an interval-level scale whose item weights reflect the importance of each domain of satisfaction. Several important findings were obtained from the study results.

Respondents to the interview were overwhelmingly satisfied with their prescription drug coverage. This supports recent findings that although many persons are dissatisfied with the health care system in general, they are quite satisfied with their own health plans.³⁴ Respondent satisfaction was characterized by dimensions of service and network quality. Respondents were most satisfied with the network-quality component of their coverage. This is logical given the vast number of pharmacies throughout the United States. Moreover, pharmacy networks have traditionally been less restrictive than physician networks, and until recently, chain pharmacies rarely refused to participate in network plans. The environment is changing,

however, as reimbursement policies offered by PBMs continue to decrease pharmacies' operating margins. More pharmacies are beginning to refuse provider contracts.^{35, 36} Additionally, cost-conscious employers are beginning to bypass PBMs and initiate exclusive contracts with a single chain pharmacy or mail-order operation. These economics will detract from the convenience and freedom of choice many members currently enjoy.

Demographic and plan characteristics had little influence on satisfaction. Older respondents were somewhat more satisfied than younger ones. It may be that many respondents who belong to a Medicare HMO with prescription drug coverage value this plan feature highly, knowing that traditional Medicare does not cover outpatient prescription drugs. This supports previous findings of satisfaction by Medicare HMO enrollees with their health coverage in general.²¹

Having a choice of plans in which to enroll was a significant factor in determining a respondent's satisfaction with prescription drug coverage. This echoes research by Ullman et al. which demonstrated that choice at the time of enrollment was considerably more important to HMO enrollees than choice at the point of service.³⁷ The rationale for the importance of choice cannot be ascertained directly and entirely from this study. Intuitively, however, it can be expected that if consumers are presented with a choice, they are more likely to search for benefits that best meet their needs. Additionally, having a choice may mitigate a health care consumer's feelings of powerlessness. Future studies should determine whether a lack of choice promotes disenrollment or failure of a firm's employees to enroll in an insurance plan, which could result in poorer health outcomes.

Respondents who indicated that they receive no information about their prescription drug plans were less satisfied than others. Together, the family, friends, and pharmacist providers of plan enrollees were identified by nearly half of the respondents as primary sources of information about their prescription drug coverage. It is not known whether the employer or the insurance company would serve in this capacity if these sources of information were inadequate for the patient, or whether the enrollee would remain uninformed and thus less satisfied with coverage. This certainly warrants further investigation.

One trend uncovered in this study that may be cause for some alarm is the apparent overestimation by many respondents of the extent of their coverage. This lack of knowledge significantly affected members' perceptions of their plans. As anticipated, respondents who were unaware or unsure of their coverage limitations were more satisfied with service quality; respondents who were unaware or unsure of network limitations were more satisfied with network quality. Lack of knowledge about formularies or preferred products was also responsible for more favorable impressions of a plan's service quality. This also reinforces the cohort effect of higher satisfaction by the oldest group of respondents, many of whom were less knowl-

edgeable about their coverage and network limitations.

Managed care organizations, PBMs, and employers are faced with a dilemma. The results of this study indicate that many members overestimate their pharmacy benefits. Moreover, subjects who were more knowledgeable about their pharmacy benefits were not as satisfied as those who overestimated or were less aware of issues concerning their benefits. It may appear counterproductive to insurers to endure the administrative cost and burden of fully educating members about the nature of generic drug substitution, therapeutic interchange, and formulary limitations.

This study did not examine specific experiences by respondents with regard to their drug coverage. As long as members have not had a prescription order changed or had their pharmacy of choice discontinue accepting their prescription insurance, it appears that they are satisfied with their pharmacy benefit. These events do occur, however; in these cases, the dispensing pharmacist has the burden of providing plan information and perhaps experiences the brunt of patient dissatisfaction regardless of information on changes circulated by the health plan. Recent trends suggest an ever-increasing reliance on prescription drugs as preferred modalities of treatment and a possible shortage of pharmacists in the near future.^{38,39} Because the amount of time pharmacists have to counsel patients may already be constrained, it is important that they not be relied upon to serve as patients' principal source of information on administrative issues about their coverage.

The effects of respondent demographics on knowledge deficits were mixed. Although respondents in higher education and income levels better understood the difference between brand-name and generic drugs, demographics fortunately played a very limited role in respondents' overall knowledge about the nature of their coverage. Despite the fact that chi-squared tests uncovered statistically significant differences among various groups, the logistic regression analyses show that the effect of patient demographics on knowledge deficits were largely confined to age groups and income levels. Race and education were not important factors. Therefore, it does not appear that insurers and employers need to target specific populations for educational campaigns.

Seniors' lack of understanding about many aspects of their drug coverage needs to be studied further. Responsible federal and state authorities should make every effort to encourage insurers providing prescription drug benefits to seniors to fully inform their members about the nature of their benefits. Insurers and employers need to develop mechanisms through which plan members can become better-informed consumers of prescription drugs and pharmacy services without inadvertently decreasing member satisfaction.

References

1. Health Care Financing Administration, Office of the Actuary, National

- Health Statistics (Washington, DC), www.hcfa.org.
2. Rubin RJ, Hawk A, Cascade E. PBMs: A purchaser's perspective. *J Pharm Market Manage* 1998; 12: 29-42.
3. Enthoven AC, Singer SJ. The managed care backlash and the task force in California. *Health Aff* 1998; 17: 95-110.
4. Morton LW. Medicaid enrollment choice into managed care health plans. *Med Care Res Rev* 1998; 55: 211-38.
5. Robertson LM, Middleman AB. Knowledge of health insurance coverage by adolescents and young adults attending a hospital-based clinic. *J Adolesc Health* 1998; 22: 439-45.
6. Garnick DW et al. How well do Americans understand their health coverage? *Health Aff* 1993; 12: 204-12.
7. Teagarden JR. The effect of pharmacy benefit manager clinical programs and services on access to prescription drug benefit coverage. *Drug Inf J* 1998; 32: 373-77.
8. Muirhead G. How consumers see managed care. *Drug Top*, May 23, 1994; 138: 40-42, 44, 46, 49-50, 54.
9. Feldman DS, Novack DH, Gracely E. Effects of managed care on physician-patient relationships, quality of care, and the ethical practice of medicine: a physician survey. *Arch Intern Med* 1998; 158: 1626-32.
10. Muirhead G. Riding the tide of managed care. *Drug Top*, April 11, 1994; 138: 41-42, 45, 47, 51-52, 54.
11. Miller MJ, Ortmeier BG. Factors influencing the delivery of pharmacy services. *Am Pharm* 1995; NS35: 39-45.
12. Kozma CM, Reeder CE, Shulz RM. Economic, clinical, and humanistic outcomes: a planning model for pharmacoeconomic research. *Clin Ther* 1993; 15(6): 1121-32.
13. Hiramatsu S. Member satisfaction in a staff-model health maintenance organization. *Am J Hosp Pharm* 1990; 47(11): 2270-73.
14. Motheral BR, Schafermeyer KW. Managed care. In McCarthy RL, ed. *Introduction to health care delivery: A primer for pharmacists*. Gaithersburg, MD: Aspen Publishers, 1998.
15. Collins H. Patient satisfaction surveys. *Hosp Pract* 1996; 31: 39-40, 45.
16. Thompson JW et al. The NCQA's quality compass: evaluating managed care in the United States. *Health Aff* 1998; 17: 152-58.
17. Wilson J. Satisfaction issues for Medicare risk HMO members. *Clin Ther* 1998; 20: 1263-76.
18. Meng YY et al. Satisfaction with access to and quality of health care among Medicare enrollees in a health maintenance organization. *West J Med* 1997; 166(4): 242-47.
19. Newcomer R, Preston S, Harrington C. Health plan satisfaction and risk of disenrollment among social/HMO and fee-for-service recipients. *Inquiry* 1996; 33(2): 144-54.
20. Rossiter LF et al. Patient satisfaction among elderly enrollees and disenrollees in Medicare health maintenance organizations. *JAMA* 1989; 262(1): 57-63.
21. Tudor CG, Riley G, Ingber M. Satisfaction with care: Do Medicare HMOs make a difference? *Health Aff* 1998; 17(2): 165-76.
22. Weiss BD, Senf JH. Patient satisfaction survey instrument for use in health maintenance organizations. *Med Care* 1990; 28(5): 434-40.
23. Schommer JC, Kucukarslan SN. Measuring patient satisfaction with pharmaceutical services. *Am J Health-Syst Pharm* 1997; 54: 2721-32, 41-43.
24. Johnson JA et al. A comparison of satisfaction with mail versus traditional pharmacy services. *J Managed Care Pharm* 1997; 3(3): 327-37.
25. Biddle AK et al. The health insurance puzzle: a new approach to assessing patient coverage preferences. *J Community Health* 1998; 23: 181-94.
26. Likert RA. A technique for the measurement of attitudes. *Arch Psychol* 1932; 140: 44-53.

Patient Satisfaction with and Knowledge of Their Prescription Drug Coverage

27. Brayfield AH, Rothe HE. An index of job satisfaction. *J Appl Psychol* 1951; 35: 307-11.
28. Nunnally JC. *Psychometric theory*. New York, NY: McGraw-Hill, 1967.
29. Thurstone LL. The method of paired comparisons for social values. *J Abnorm Soc Psychol* 1927; 21: 384-400.
30. Desselle SP. Development of an interval-level scale to assess consumer satisfaction with their prescription drug coverage. *J Managed Care Pharm* 2000; 6(3): 225-31.
31. Ware JE et al. *SF-36 health survey: manual and interpretation guide*. Boston: New England Medical Center, 1993.
32. *SPSS Base 10.0 User's guide*. Chicago: SPSS, Inc., 1999.
33. Lund CM. Benchmarking patient satisfaction. *Best Pract Benchmarking Healthc* 1996; 1(4): 203-06.
34. Blendon RJ et al. Understanding the managed care backlash. *Health Aff* 1998; 17: 80-94.
35. Anthony CJ. The effects of PBMs on the marketplace: a pharmacy perspective. *J Pharm Market Manage* 1998; 12: 177-80.
36. Ukens, C. Free at last. Independent pharmacy owners abandon third-party plans. *Drug Topics*, June 15, 1998: 40.
37. Ullman R et al. Satisfaction and choice: a view from the plans. *Health Aff* 1997; 16: 209-17.
38. Gebhart F. Annual prescription survey: new golden age. *Drug Top*, Mar. 16, 1998; 142: 71-72, 74, 76, 83.
39. Wells BG. Manpower demands in pharmacy. *Am J Pharm Educ* 1999; 63: 106.