Selected Characteristics of Senior Citizens’ Prescription Drug Payment and Procurement in 1998 and 2001

JON C. SCHOMMER, PhD; DAVID A. MOTT, PhD; RICHARD A. HANSEN, PhD; and RICHARD R. CLINE, PhD

ABSTRACT

BACKGROUND: People without prescription drug coverage face greater financial burdens and may sometimes be unable to follow the courses of treatment prescribed by their physicians. The U.S. legislature is considering Medicare coverage for prescription drugs and the use of managed care approaches for containing costs associated with senior citizens’ prescription drug therapy.

OBJECTIVE: The purpose of this study was to describe selected characteristics of senior citizens’ prescription drug payment and procurement.

METHODS: Data were obtained via mailed survey from national random samples of senior citizens in 1998 and in 2001. Descriptive statistics and regression analyses were used to describe relationships among study variables.

RESULTS: Of 2,434 deliverable surveys, 946 (39%) were returned. Of these, 700 (29%) respondents provided usable data for analysis. Results showed that in 2001, compared with 1998, the proportion of senior citizens without any prescription insurance coverage did not change significantly, 29% and 32%, respectively. However, the proportion of respondents with prescription drug coverage who had to share costs of prescriptions through copayments and coinsurance rose significantly, from 69% in 1998 to 89% in 2001. Between 1998 and 2001, the proportion of senior citizens using mail-order pharmacies rose significantly, from 17% to 27%, and the proportion who reported financial hardship also rose, from 19% in 1998 to 31% in 2001. Controlling for year, prescription drug use, and income, logistic regression analysis showed that respondents without any prescription insurance coverage were about 5 times more likely to report financial hardship compared with those having coverage.

CONCLUSIONS: The proportion of senior citizens without any prescription drug insurance coverage did not change significantly between 1998 and 2001, but cost sharing in terms of the proportion that had cost-sharing requirements and the amount of the cost sharing through copayments and coinsurance rose significantly. Self-reported financial hardship and the use of mail-order pharmacies among senior citizens increased between 1998 and 2001.

KEYWORDS: Senior Citizens, Medicare, Prescription drugs, Insurance, Financial hardship, Utilization

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There are many payment mechanisms (types of insurance coverage) for patients’ prescription drugs. The following questions relate to the type of mechanisms you have to pay for prescription drugs.

Which of the following best describes the type of prescription drug coverage you have?

____ I do not have prescription drug insurance.

____ Medical Assistance (for example: Medicaid, MediCal, MassHealth, TennCare)

____ I pay a set dollar amount, for example $5.00 or $10.00 (copayment) for a brand-name or generic prescription drug medication.

How much do you pay for brand-name drug products? $____

How much do you pay for generic drug products? $____

____ I pay a set dollar amount based on a percentage of the total cost, for example 20%, (coinsurance) for a brand-name or generic prescription drug medication.

What percentage do you pay for brand-name drug products? _____

What percentage do you pay for generic drug products? _____

____ I pay the full retail price for prescription medications, and I, or my pharmacist, submit the receipts to an insurance company for reimbursement.

____ Other __________________________ (please describe)

association of year (1998, 2001) and selected respondent demographics with cost-sharing components to their coverage and also with out-of-pocket copayment and coinsurance amounts for brand and generic prescriptions. Our goal was to use multivariate models to assess the association of year (1998, 2001), prescription drug insurance coverage (yes, no), and respondent demographics on use of mail-order pharmacy and on the proportion of respondents who reported financial hardship due to prescription expenditures. We also sought to apply multivariate analyses to study the use of mail-order pharmacies and the reporting of financial hardship for the subgroup of respondents who reported they had insurance coverage for prescription drugs.

Methods

Data Collection

Data were obtained via mailed survey methodology in 1998 and in 2001 from national random samples of senior citizens. In 1998, 1,570 individuals aged 65 years and older were selected in a systematic random fashion from the U.S. population. In 2001, 864 individuals aged 65 years and older were selected randomly in the same manner. The sampling frame and mailing addresses were obtained from KM Lists, Inc., a company that compiles a complete listing for the United States from publicly available sources, including telephone directories, drivers’ license databases, and other public records. The company continually updates its lists and tests them for validity.

Data collection followed Dillman’s mailed survey method.20,21 The Dillman method is based on the development of survey procedures that create respondent trust and perceptions of increased rewards and reduced costs for being a respondent, take into account features of the survey situation, and have as their goal the overall reduction of survey error (sampling error, coverage error, measurement error, and nonresponse error).21 Each sampled person was mailed a survey packet containing a cover letter requesting participation, the survey form, a postage-paid return envelope, and a $1 bill as incentive to participate. A follow-up postcard was mailed 1 week after the first mailing to increase response rate.

Based on the relatively low response rate we achieved in 1998 (29%), we decided to add a tracking number to surveys in order to identify nonresponders in 2001. For those who had not yet responded, a follow-up mailing was sent 3 weeks after the initial mailing to increase the response rate. Thus, our 2001 survey utilized fewer initial sample members but a more thorough follow-up with nonresponders.

Another addition to the 2001 survey was a question on the cover of the survey instrument in which we asked the recipient of the survey to report the primary reason a person was not able to complete the survey if the sample member was not able to respond. The response categories to this question were: (1) person is physically or mentally no longer able to complete the survey, (2) person is now living in a nursing home or other assisted-living facility, (3) person is deceased, (4) person is no longer at this address for some other reason, or (5) other. This question allowed us to better understand reasons for nonresponse and the potential for nonresponse bias.

Study Variables

To measure variables related to prescription drug payment (existing prescription drug coverage, cost sharing, and out-of-pocket payment levels per prescription), each respondent was asked to report what type of prescription drug insurance (if any) he or she had and associated out-of-pocket costs per prescription using 6 scenarios (Survey Question). For prescription drug procurement variables, respondents were asked to report their primary source for obtaining prescription drugs. Responses were categorized as (1) large chain (traditional chain pharmacy, mass merchandiser pharmacy, grocery store pharmacy), (2) mail order (mail-order or Internet pharmacy), (3) independent (independent pharmacy), or (4) other (clinic pharmacy or other). Also, respondents were asked to answer yes or no to the following question: “Does obtaining prescription medications cause you any financial hardships?” This deliberately was a subjective question that allowed us to capture respondents’ perceptions about financial hardship they experienced in purchasing prescription medications.
For comparison purposes, respondents were asked a series of demographic-related questions. These questions related to the respondents’ age, gender, education, employment status, marital status, income, number of people living at home, race, health insurance coverage for physician visits, number of prescription drugs taken daily, number of over-the-counter (OTC) drugs taken daily, and whether or not they had high blood pressure, arthritis, or a heart condition. These demographic variables were included based on a review of the literature that suggested that these variables could influence the other variables in our study. It should be noted that no adjustments for inflation were made when comparing the 1998 and 2001 data.

For the 2001 survey, we added questions related to out-of-pocket costs for 30-day supplies of medications, deductibles, caps (annual benefit maximums), and tiered copayments that were associated with prescription drug insurance plans. Responses to these additional questions in the 2001 survey could, of course, not be compared with survey responses in 1998 but add information to help interpret our survey findings.

Data Analysis

Descriptive comparisons were made between respondents in 1998 and respondents in 2001 for demographic, drug payment, and drug procurement variables using the Independent Samples t test and chi-square test statistic. Then, to control for any differences in the demographic profile of respondents in 1998 and 2001, a multivariate approach was employed for analysis. Linear regression and logistic regression analyses were used to test the relationships between the independent variables (year and demographic variables) and dependent variables. Goodness of fit for competing linear regression models was assessed based on change in adjusted $R^2$. Goodness of fit for competing logistic regression models was assessed based on the change in $-2 \log$ likelihood and model improvement chi-square statistics. For each regression method, the best-fitting model was chosen based on goodness of fit and parsimony of interpretation. Based on the findings of the multivariate analyses, descriptive statistics were computed to help interpret the results.

Results

Of 2,434 deliverable surveys, 946 (39%) were returned. In 1998, 463 (29%) out of 1,570 surveys were returned, and in 2001, 483 (35%) out of 1,376 were returned. It should be noted that the discrepancies in rate of return are likely due to our more thorough follow-up in 2001. Of the 946 responses overall, 365 contained usable responses in 1998 (98 had no usable responses) and 335 contained usable responses in 2001 (148 had no usable responses).

Due to the relatively large number of surveys we received with no usable responses in 1998, we added a question on the cover of the 2001 survey asking the recipient of the survey to report the primary reason why a person was not able to complete the survey if the sample member was not able to respond. A total of 132 out of the 148 individuals who were not able to provide usable data provided a reason. Twenty percent reported that the person to whom the survey was addressed was now deceased, 17% reported that the person was physically or mentally no longer able to complete the survey, 7% reported that the addressee no longer lived at the address, 5% reported that the addressee was now living in a nursing home or other assisted-living facility, and the remaining 51% checked “other.” Most of those who checked “other” reported that they were not interested in completing surveys or did not think that the survey applied very much to them because they did not take any medications or received their medications through the military.

Initial frequency counts for the data revealed that the income variable exhibited a relatively high number of missing cases: 87 (12%) out of the 700 surveys. To impute values for the missing cases, a logistic regression equation was developed based on the usable data. Then, the equation was used to predict whether a respondent with a missing income value should be coded as “less than $15,000” or “$15,000 or more.” The analysis presented in this article includes the imputed values.

Respondent Demographics

Table 1 presents comparisons between 1998 and 2001 for respondent demographics. The typical respondent in 2001 compared with 1998 had lower education, was less likely to be white, was less likely to have health insurance for physician visits, used more prescription and OTC medications on a daily

**Table 1** Comparisons of Respondent Demographics in 1998 and 2001

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1998 (n = 365)</th>
<th>2001 (n = 335)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>74.9</td>
<td>75.2</td>
<td>0.48*</td>
</tr>
<tr>
<td>Gender (female)</td>
<td>52%</td>
<td>45%</td>
<td>0.06*</td>
</tr>
<tr>
<td>Education (% with more than a high school education)</td>
<td>56%</td>
<td>45%</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Employment status (% working)</td>
<td>7%</td>
<td>10%</td>
<td>0.10*</td>
</tr>
<tr>
<td>Marital status (% married)</td>
<td>63%</td>
<td>59%</td>
<td>0.23*</td>
</tr>
<tr>
<td>Income (% &lt;$15,000 per year)</td>
<td>19%</td>
<td>25%</td>
<td>0.05*</td>
</tr>
<tr>
<td>People living at home</td>
<td>1.8</td>
<td>2.5</td>
<td>0.13*</td>
</tr>
<tr>
<td>Race (%White)</td>
<td>90%</td>
<td>83%</td>
<td>0.02*</td>
</tr>
<tr>
<td>Have health insurance for physician visits</td>
<td>90%</td>
<td>83%</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Number of prescription drugs taken daily</td>
<td>2.9</td>
<td>3.5</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Number of OTC+ drugs taken daily</td>
<td>1.0</td>
<td>1.7</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Proportion who have high blood pressure</td>
<td>46%</td>
<td>53%</td>
<td>0.05*</td>
</tr>
<tr>
<td>arthritis</td>
<td>39%</td>
<td>46%</td>
<td>0.06*</td>
</tr>
<tr>
<td>heart condition</td>
<td>25%</td>
<td>33%</td>
<td>0.02*</td>
</tr>
<tr>
<td>* Independent Samples t test.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>† Chi-square test.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>‡ OTC = over-the-counter</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Significant at the 0.05 level.
† Significant at the 0.01 level.
Selected Characteristics of Senior Citizens’ Prescription Drug Payment and Procurement in 1998 and 2001

**TABLE 2 Comparisons of Prescription Drug Payment and Procurement in 1998 and 2001**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>1998 (n = 365)</th>
<th>2001 (n = 335)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have prescription drug insurance (%) yes</td>
<td>68% (n = 247)</td>
<td>71% (n = 239)</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Have cost-sharing component for Rx insurance coverage (%) yes</td>
<td>69% (n = 131)</td>
<td>89% (n = 148)</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Copay (brand) (for those with copay; n = 289)</td>
<td>$9.54 (n = 129)</td>
<td>$13.07 (n = 158)</td>
<td>&lt;0.01*</td>
</tr>
<tr>
<td>Copay (generic) (for those with copay; n = 277)</td>
<td>$6.76 (n = 129)</td>
<td>$7.04 (n = 148)</td>
<td>0.63*</td>
</tr>
<tr>
<td>Coinsurance (brand) (for those with coinsurance, n = 70)</td>
<td>33% (n = 25)</td>
<td>36% (n = 45)</td>
<td>0.63†</td>
</tr>
<tr>
<td>Coinsurance (generic) (for those with coinsurance, n = 65)</td>
<td>27% (n = 23)</td>
<td>36% (n = 42)</td>
<td>0.048†</td>
</tr>
<tr>
<td>Primary source for prescriptions</td>
<td>Large chain 53% Mail order 17% Independent 18% Other source 11% (n = 365)</td>
<td>Large chain 44% Mail order 27% Independent 16% Other source 12% (n = 335)</td>
<td>&lt;0.01†</td>
</tr>
<tr>
<td>Financial hardship due to Rx drug expenditures (%) yes</td>
<td>19% (n = 365)</td>
<td>31% (n = 335)</td>
<td>&lt;0.01†</td>
</tr>
</tbody>
</table>

* Independent Samples t test.
† Chi-square test.

Note: Usable data were obtained from 700 respondents. However, some findings reported in this table are based on subsets of this sample. Numbers of respondents are provided in the table and represent the number of respondents who provided usable data for each characteristic.

basis, and was more likely to report having a heart condition. Although the trend in using more prescription and OTC medications on a daily basis is consistent with reported research,1,6,9,10,15,19 the other differences are most likely due to sample error and non-response bias (e.g., different response rates were achieved in 1998 and 2001 due to more thorough follow-up in 2001). To help control for these differences in the 2 respondent groups (1998 and 2001), multivariate tools were employed for analysis.

**Prescription Drug Payment**

Descriptive comparisons (Table 2) showed that in 2001, compared with 1998, the proportion of senior citizens with prescription insurance coverage did not change significantly (71% versus 68%, respectively, chi-square P>0.05). Logistic regression results showed that, controlling for the other study variables, the best predictor for having prescription drug coverage was income level. Seventy-two percent of respondents with annual household incomes of $15,000 or more had prescription drug insurance coverage compared with 60 percent of respondents with annual incomes less than $15,000.

For respondents with some type of prescription drug coverage, the results showed that in 2001, compared with 1998, the proportion of senior citizens who had a cost-sharing component to their insurance coverage rose from 69% in 1998 to 89% in 2001 (Table 2). Among those with cost-sharing components, out-of-pocket amounts for respondents with copayments increased significantly for brand-name products between 1998 and 2001 ($9.54 and $15.07, P<0.01). The proportion of respondents with coinsurance percentages did not increase significantly for brand-name products (33% and 36%, respectively, P>0.05) but did increase for generic products (27% and 36%, respectively, P<0.05).

Multivariate results showed that, controlling for year (1998, 2001), procuring prescription drugs through mail-order pharmacies resulted in higher copayment amounts per prescription with respondents who used other procurement channels. Average copayments per brand-name prescription drug product were $15.62 for users of mail-order pharmacies, compared with $10.94 for respondents who used other prescription procurement channels. The generic drug copayments for mail-order pharmacies were also higher, averaging $7.97 compared with $6.06 for other channels.

**Prescription Drug Procurement**

The results in Table 2 show that between 1998 and 2001, the proportion of senior citizens using mail-order pharmacies rose significantly from 17% to 27% (P<0.01). Logistic regression results (Table 3) showed that the best predictors of using mail-order pharmacy were year, number of prescriptions currently used, prescription drug coverage, and race. Controlling for year, number of prescriptions used, and race, respondents with prescription drug coverage were almost 5 times more likely to use mail-order pharmacies than those without prescription drug coverage (Table 3). For the subset of respondents with prescription drug insurance coverage, 21% used mail-order pharmacies in 1998 compared with 35% who used mail-order in 2001 (P<0.01). For this subset of respondents, 18% of nonwhite and 30% of white respondents used mail-order pharmacies. For these respondents with prescription drug coverage, mail-order pharmacy patrons used an average of 3.8 prescriptions daily with patrons of other pharmacies using 3.1 prescriptions daily (P<0.01).

Table 2 shows that the proportion of respondents who reported financial hardship rose from 19% in 1998 to 31% in 2001 (P<0.01). Table 4 presents the logistic regression results for the likelihood of reporting financial hardship due to prescription drug expenditures. Controlling for year, prescription drug use, and income, logistic regression analysis showed that respondents without any prescription insurance coverage were about 5 times more likely to report financial hardship compared with those with coverage. Also, controlling for prescription drug use, income, and prescription drug coverage, respondents in 2001 were almost twice (1.9) as likely to report financial hardship compared with the 1998 respondents.
TABLE 3 Logistic Regression Results: Mail-Order Drug Procurement

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wald Statistic</th>
<th>P value</th>
<th>Odds ratio Exp (B)</th>
<th>95% confidence interval for odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race</td>
<td>7.7</td>
<td>&lt;0.01</td>
<td>1.8</td>
<td>1.2 – 2.6</td>
</tr>
<tr>
<td>Currx</td>
<td>7.8</td>
<td>&lt;0.01</td>
<td>1.1</td>
<td>1.03 – 1.2</td>
</tr>
<tr>
<td>Coverage</td>
<td>28.3</td>
<td>&lt;0.01</td>
<td>4.9</td>
<td>2.7 – 8.9</td>
</tr>
<tr>
<td>Race</td>
<td>4.5</td>
<td>0.03</td>
<td>2.1</td>
<td>1.1 – 4.0</td>
</tr>
</tbody>
</table>

Logistic Regression Results for Likelihood of Using Mail Order as Primary Source for Procuring Prescription Drugs (n = 628)*

TABLE 4 Logistic Regression Results: Financial Hardship Reports

<table>
<thead>
<tr>
<th>Variable</th>
<th>Wald Statistic</th>
<th>P value</th>
<th>Odds ratio Exp (B)</th>
<th>95% confidence interval for odds ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year</td>
<td>9.6</td>
<td>&lt;0.01</td>
<td>1.9</td>
<td>1.3 – 2.8</td>
</tr>
<tr>
<td>Currx</td>
<td>31.3</td>
<td>&lt;0.01</td>
<td>1.2</td>
<td>1.2 – 1.3</td>
</tr>
<tr>
<td>Income</td>
<td>18.4</td>
<td>&lt;0.01</td>
<td>2.6</td>
<td>1.7 – 4.0</td>
</tr>
<tr>
<td>Nocov</td>
<td>57.7</td>
<td>&lt;0.01</td>
<td>5.0</td>
<td>3.3 – 7.6</td>
</tr>
</tbody>
</table>

Logistic Regression Results for Likelihood of Reporting Financial Hardship Due to Prescription Drug Expenditures (n=655)*

Discussion

For the subset of respondents with prescription drug insurance coverage, year, number of prescriptions used daily, and income were associated with financial hardship (Table 4). For this subset of respondents, 12% reported financial hardship in 1998 compared with 22% in 2001. Also, 13 percent of these respondents with household incomes of $15,000 or more reported financial hardship compared with 33% of respondents with household incomes less than $15,000 per year. For these respondents with prescription drug coverage, those who reported financial hardship used an average of 4.5 prescriptions daily compared with respondents who did not report financial hardship who used 3.1 prescriptions daily (P<0.01).

A concern with higher drug costs paid out-of-pocket is the financial hardship that it places on seniors. Our results suggest that the proportion of seniors who report financial hardship related to prescription drugs has increased over time (19% in 1998 and 31% in 2001). Lower-income seniors and higher users of prescription drugs were more likely than their counterparts to report hardship associated with drug costs. Our results also show change significantly from 1996 to 2001.

However, the characteristics of that coverage have changed over time. For example, the proportion of respondents who had to share costs of prescriptions through copayments and coinsurance rose significantly between 1998 and 2001. For those with copayments, out-of-pocket amounts increased significantly for brand-name products between 1998 and 2001 as did coinsurance percentages for generic products. Increasing patient cost sharing for prescription drugs is consistent with recent trends showing that employers have and are planning to increase cost sharing in prescription drug coverage offered to retirees. A fundamental change involves the use of 3-tier copayment benefit structures, mainly increasing copayments for brand-name drugs. As health care costs and, specifically, drug costs continue to increase, it is likely that cost sharing will increase for seniors with drug coverage.

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that insured persons are feeling the hardship of drug costs as well, especially high users of prescription drugs. One explanation for the hardship among insured persons is the increase in the likelihood and amount of cost sharing reported by insured persons between 1998 and 2001. Regardless of insurance status, drug costs are a financial hardship for many seniors, especially for high users of prescription drugs.

Our findings related to prescription drug procurement showed that between 1998 and 2001 the proportion of senior citizens using mail-order pharmacies rose significantly from 17% to 27%. The increase in the use of mail order as a primary source for obtaining prescription drugs also likely is a response to increasing insurance costs. For example, more than 90% of employers who offer prescription drug coverage offered a mail-order option in 2002. Employers, directly or through pharmacy benefit managers, can obtain somewhat lower prescription prices through mail-order pharmacies in an attempt to lower costs and premiums, and thus offer mail order as an option for obtaining prescription drugs. Employers and other drug plan sponsors often provide financial incentives to patients to use mail order by allowing them to obtain a larger quantity (days supply) of a drug per copayment dollar.

To verify this trend in our sample, we added a question to the 2001 survey that asked respondents to provide the out-of-pocket cost for a 30-days supply of each drug product they reported taking. In 2001, out-of-pocket copayment amounts per 30-days supply of prescription drugs averaged $10.33 for mail-order patrons compared with $11.95 for patrons of other pharmacies (not significantly different at a significance level of 0.05). We are limited in our analysis because we did not collect this information in 1998. However, we did verify that differences in cost-sharing amounts between mail order and other channels of procurement largely were due to differences in the days supply of the purchases.

Our assessment of changes in cost sharing between 1998 and 2001 did not include other forms of cost sharing found in drug coverage for seniors. For example, deductibles and annual benefit maximums (“caps”) are common components of Medigap plans that cover prescription drugs. Our survey in 2001 included questions about the presence of deductibles and annual benefit caps associated with drug coverage for seniors. We found that 16% of the 335 respondents in 2001 had a deductible and 8% of the 335 respondents had an annual benefit cap. Deductible amounts ranged from $50 to $1,680 (median = $200). Cap amounts ranged from $500 to $5,000 (median = $1,500). A concern with asking respondents about deductibles and benefit caps is whether they know what these components are and the amounts of the deductibles and caps. Future studies assessing out-of-pocket costs for prescription drugs for seniors could begin to examine methods to reliably obtain this information about deductibles and caps since they are important components of some forms of drug coverage and impact out-of-pocket cost and possibly drug access and use.

Income level was associated with having drug coverage: lower-income seniors were less likely to have drug coverage. Income likely is a factor in obtaining coverage since lower-income seniors may be less able to afford insurance premiums for Medigap coverage. Past studies have shown that income level is positively associated with purchasing any Medigap supplement to Medicare. Commonly, income is a method used to establish eligibility for these programs. As these programs are implemented, it is likely that income will become less of a factor associated with not having drug coverage.

The implications of these trends are not fully known and more research is needed to not only track the trends but also to investigate how increased cost sharing and restrictions in sources for procuring prescription drugs might affect access to medications or patterns of using medications. For example, to what extent does the financial hardship of procuring prescription medications affect the use of drugs for treatable chronic conditions? How does financial hardship affect the treatment of acute conditions? Will increased financial hardship reduce adherence with drug regimens? What are the implications of senior citizens using mail-order procurement for their prescriptions? Can mail-order pharmacy increase the ease with which seniors obtain medications? Are seniors able to access the information they seek about their medications through the mail-order distribution channel?

We propose that continued monitoring of the trends we identified can be helpful for understanding how to make changes in prescription drug insurance plans for seniors in the future. Also, the findings can help us understand how to design managed care methods for improving access to and utilization of prescription medications. From the data we collected, it appears that relatively small changes in out-of-pocket expenditures or in the number of medications prescribed for seniors could have a relatively large impact on their financial hardship, especially for lower-income seniors.

Limitations

The results and our interpretation of them should be tempered with the limitations of the study. The results are based on respondents’ self-reports, raising obvious questions of reliability regarding the type and nature of insurance coverage as well as prescription drug use. We believe that the potential issues regarding reliability in self-reported data were addressed by describing drug insurance types explicitly and asking subjects for not only the number of current drugs used but also to list them by name, as a validity check. We plan to use the results to improve our future questions so that participant response burden is minimized. For example, questions that resulted in a relatively high number of unusable responses will be reviewed for readability and clarity.

Other limitations relate to sampling and selection bias. For example, nonresponders to health surveys may be older and in
poorer health or, in terms of drug use, may use more medications. Thus, our findings may underestimate drug use for the senior citizen population. Conversely, we found evidence in our study that individuals who did not use any medications decided not to participate because they thought that the survey did not apply to them. Also related to nonresponse bias, we used a more thorough follow-up for the 2001 survey compared with the 1998 survey. Thus, our samples in those 2 years might not be as comparable as desired due to the different levels of follow-up that we employed. For example, results in Table 1 suggest that the typical respondent in 1998 held a higher level of education than the typical respondent in 2001.

The sampling frame and mailing addresses for this study were obtained from a company that maintains a commercial mailing list. Their database is updated continually from public sources such as telephone directories and driver’s license databases. However, by the time we mailed our surveys, it is likely that some members of our sample were deceased, physically or mentally no longer able to complete the survey; were no longer at the address, or moved to a long-term care or assisted-living facility. We estimated that about half of nonresponders fit these categories based on the responses received from individuals who provided reasons why a sample member was not able to complete the whole survey (see Results). Based on feedback from sample members, it appears that the other half of the nonresponder group had other reasons for not completing the survey such as: (1) having no interest in completing surveys, (2) thinking that the survey did not apply to them because they did not take any medications, or (3) thinking that the survey did not apply to them because they received their medications through the military.

Conclusions

The proportion of senior citizens without any prescription insurance coverage did not change significantly between 1998 (32%) and 2001 (29%). However, the proportion that had to share costs of prescriptions through copayments and coinsurance rose significantly, from 69% to 89%. For those with copayments, out-of-pocket amounts increased significantly for brand-name products between 1998 and 2001 but not for generic products. However, the coinsurance percentages for generic drugs increased between 1998 and 2001. The proportion of senior citizens using mail-order pharmacies rose significantly, from 17% to 27% between 1998 and 2001. The proportion that reported financial hardship also rose from 19% in 1998 to 31% in 2001. Controlling for year, prescription drug use, and income, logistic regression analysis showed that respondents without any prescription insurance coverage were 5 times more likely to report financial hardship compared with those having drug coverage. The trends in payment and procurement for prescription drugs that we identified are consistent with trends in characteristics of coverage available to seniors. Also, the results mirror reports in the lay press about the increasing number of senior citizens who are searching for ways to decrease the financial hardship of obtaining prescription drugs.

DISCLOSURES

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