

# **Prescription Use Among a Commercially Insured Senior Population, 1998**

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## **I. EXECUTIVE SUMMARY**

This study reports on prescription drug use among a commercially insured population 65 years of age and older. The report profiles:

- The proportion of members using the benefit ('users')
- The per-member-per-year (PMPY) number of prescriptions and total expenditures
- The top therapeutic categories utilized, overall and by age group and gender
- The type of cost-share method used by plans and the resulting impact on member out-of-pocket costs

It is hoped that this information will prove useful to private employers currently providing prescription coverage to their workers and retirees over the age of 65 years, to health policy researchers, and to state and federal policymakers.

### **A. Key Findings**

- In 1998, commercially insured individuals 65 years of age and older consumed, on average, 29 (median = 20) 30-day equivalent prescriptions at an annual expense of \$1,185 (median = \$662).
- Overall, 76% of the sample population used the prescription benefit at least once during the year. This rate of use drops dramatically among members 85 years of age and older, however; only 57% of this group used their benefit at least once during the year.
- Of the top 10 therapy categories ranked by use, five are used to treat cardiovascular disease: antihypertensive agents, antihyperlipidemics, diuretics, calcium channel blockers and beta blockers. These five therapy categories represent 35% of all prescription claims.
- The mean average wholesale price (AWP) per 30-day-equivalent prescription exceeds \$40 for five of the top 10 therapy categories (ulcer therapy = \$92, antihyperlipidemics = \$76, calcium channel blockers = \$49, antiasthmatics = \$48 and antidiabetic agents = \$43). Assuming full compliance, the average annual cost of treatment for one product in each of these therapy categories would have exceeded \$500.
- Men's use (as measured by the PMPY number of prescriptions) of certain cardiovascular therapies — antihypertensives, antianginals, cardiotonics and

antihyperlipidemics — was 33%, 37%, 31% and 14% greater, respectively, than women's use.

- Women's use (as measured by the PMPY number of prescriptions) of antidepressants and antianxiety agents was 64% and 62% greater, respectively, than men's use.
- Significant differences in use across geographic regions were found, with users in the Midwest consuming an average of 18% more PMPY number of prescriptions than users living in the Western region.
- Approximately 80% of users had fixed-dollar copayments, averaging \$9 to \$10 for single source and multi-source brand medications and \$5 for generic medications. These members paid, on average, \$200 out of pocket, or 22% of the actual total drug cost. Eight percent of users had coinsurance rates as their method of cost-sharing. These individuals were faced with a median coinsurance rate of approximately 20%, paying an average \$280 out-of-pocket, or 27% of total costs.

## **B. Implications**

The results reported here underscore the high cost of providing prescription coverage for individuals 65 years of age and older — a concern of no small significance for sponsors of drug benefit plans covering this segment of the population. For employers, the cost can be three to four times greater than the PMPY expenditures for employees under the age of 65 years.

The reason for the greater expenditure among older populations relates to a greater proportion of older members using the benefit as well as greater intensity among those using the benefit. By some estimates, 50% or fewer members in plans with a predominately younger workforce will use the benefit in any one year. In comparison, over 70% of members in a plan with a population over 65 years are expected to use the benefit over the same time period. Individuals over 65 years of age also utilize more therapies used to treat chronic conditions contributing to a greater intensity of use of those products that they consume. In contrast, younger populations often consume medications used to treat acute or episodic conditions. Express Scripts internal analysis shows that the most utilized therapy categories among younger populations are antibiotics, dermatologicals, products used to treat cough and cold symptoms, and analgesics. The intensity of use for products in these categories is much less, with patients consuming an average of 1 to 3 prescriptions per year.

If providing prescription and medical benefits for the elderly is to be affordable, the drivers of cost — high usage of therapies for chronic conditions and multiple coexisting conditions — must be understood, and measures must be implemented to encourage appropriate, cost-effective use of medications. In

addition, plan sponsors need to recognize and mitigate the unique health risks that medications may pose for the elderly.

This study did not attempt to determine whether prescription drug use by this sample of members was appropriate or whether opportunities to improve quality of care and reduce payer costs may have existed. The findings presented here, however, leave no doubt that employers must seek ways to better manage the pharmacy benefit if they are to continue providing prescription coverage to a sizeable proportion of America's seniors. Doing so will require sponsors to evaluate appropriateness of use within their own populations to identify opportunities for enhanced quality of care and cost savings.

### ***Implications for Plan Sponsors***

The goal of any prescription benefit should be to encourage safe and cost-effective use of medications. Myriad programs exist to do just that; however, benefit managers need to recognize that programs used to manage the prescription benefit effectively for their employees under age 65 years are not necessarily the same programs that are effective in a population over the age of 65 years.

The nature of drug use among the elderly is complex, typically involving multiple chronic medications, often taken concomitantly. Many prescription medications are contraindicated in the elderly and some therapies require lower dosing. Others may mimic the symptoms of dementia, further complicating the treatment and diagnosis of this condition.

Although the complexity of drug use in the elderly places seniors at greater risk for drug-related morbidity and mortality, implementation of appropriate programs can substantially reduce the risk of adverse events. For example:

- ***Online adjudication programs*** can flag contraindicated medications ; duplicate therapies; and drug-age, drug-disease and drug-drug interactions, alerting pharmacists of potential risks to the patient.
- ***Physician education programs*** can encourage appropriate prescribing for patients by informing physicians about issues of vital importance to seniors' safety, — issues such as polypharmacy (multiple medications), drugs that shouldn't be prescribed for seniors and drugs that should be prescribed in lower doses.
- ***Patient education and counseling programs*** are available to help seniors better understand the medications they take and the importance of taking them properly. Research has shown that out of the average 10–11 minutes a physician spends with a patient, only 1–2 minutes is spent discussing medications. Programs are also available for those members with particularly complex drug regimens who require closer monitoring of their drug therapy.

Together, these programs help fill the information void, avert medication errors, improve compliance and patient satisfaction, enhance outcomes and lower prescription costs.

- ***Disease-state management programs*** are also available to provide better management of diseases particularly prevalent among members over the age of 65 years, including congestive heart failure, stroke and hyperlipidemia. Programs such as those mentioned above are available through pharmacy benefit managers (PBMs). PBMs with special expertise in programs for seniors are equipped to assist plan sponsors in evaluating appropriateness of usage within their specific elderly populations, to assess opportunities for improvement, and to recommend the optimum mix of programs to address cost and safety issues.

### ***Implications for Health Policy Researchers and Policymakers***

The findings set forth in this report also hold important implications for those responsible for establishing public policy relative to healthcare for America's senior population.

First, some of the differences in use between men and women across various therapy categories highlighted in this study — some of which were expected and some not — raise questions about appropriateness of care.

Second, this report provides important information on a subset of members who would be eligible for coverage under a new Medicare outpatient prescription program: beneficiaries now covered by employer-sponsored plans. Given perceived budget constraints and differences in political agendas, it appears doubtful that a Medicare outpatient prescription benefit, if approved by Congress, will be as generous as that currently provided by employers. As a foreseeable result, beneficiaries who lose retiree coverage and elect to enroll in the new Medicare program are unlikely to be satisfied with its cost-sharing provisions.

In addition, if the burden of cost-sharing in a Medicare prescription benefit is perceived by beneficiaries as too great the consequence may be increased noncompliance with recommended therapies, subsequent adverse effects on beneficiaries' health, and resulting higher medical costs.

Those who bear responsibility for shaping the design of a Medicare prescription benefit and determining its parameters need to approach their task with full awareness of the utilization patterns of the elderly, whom the benefit is intended to serve.

## II. INTRODUCTION

Over the past 2 years, prescription coverage for seniors — or, more accurately, the lack thereof — has become a focus of attention in policy circles, corporate boardrooms and the households of older Americans across the country. In Washington, DC, the question has predominately shifted in the past 2 years from “Should Medicare add an outpatient prescription benefit?” to “Which Medicare prescription benefit proposal should we adopt?” While the ultimate resolution is still unknown, we can say with certainty that the media attention devoted to the issue has heightened awareness of prescription use and cost for both payers and beneficiaries.

The purpose of this report is to expand stakeholders’ understanding of prescription use among individuals 65 years of age and older, by adding to previously available information in several ways. The report:

- Profiles prescription use within a particular sector of Medicare beneficiaries — individuals 65 years of age and older who receive prescription coverage through employer retiree benefits or as a current employee
- Profiles use by therapeutic category, detailed by gender and across age groups
- Provides information on the percent of total costs paid by the member across different types of cost-sharing methods (i.e., per-prescription fixed dollar copayments, coinsurance, and other methods)
- Provides information on geographic variation in prescription use, profiled across US Bureau of the Census geographic regions

### ***Prescription Coverage and Medicare Beneficiaries***

Although prescriptions are not a covered benefit under Medicare, 73% of all community dwelling Medicare beneficiaries had some type of prescription coverage at some point during 1998.<sup>1</sup>

As **Table 1** shows, private-sector supplemental health insurance, either offered by employers or purchased by beneficiaries, is the main source of prescription coverage for most seniors. Approximately 33% of Medicare beneficiaries with prescription coverage receive coverage as employees or through employer retiree benefits. In general, such coverage, with low copayments and no caps or limits in benefits, is considered generous.

Seniors also may choose between two private sources of prescription coverage, Medigap and Medicare+Choice plans (also known as Medicare HMO). Neither is considered generous, however.

Three Medigap policies provide prescription coverage but cap benefits at \$1,250 or \$3,000 annually. These policies also include deductibles and high cost-sharing provisions. In addition, Medigap policies that provide prescription coverage may be cost-prohibitive for some seniors. The average annual premiums among policies that provide prescription coverage range from over \$1,900 to over \$3,200 per year for the extensive-coverage plans.<sup>2</sup>

In 1998, approximately 15% of beneficiaries with prescription coverage received coverage through Medicare HMO or Medicare+Choice plans. In 2000, however, 70% of Medicare HMOs capped prescription benefits at \$1,000 or less, and 32% capped benefits at \$500 or less.<sup>3</sup> It should also be noted that not all beneficiaries have access to Medicare HMO plans, particularly those living in rural areas.

The two public sources of prescription coverage, Medicaid and the Veteran’s Administration (VA), with nominal cost sharing and no limits or caps on benefits, are considered generous. While some states do limit the number of prescriptions per month, this limit may be waived for low-income elderly beneficiaries. It should be noted that these coverage options are available only to beneficiaries who meet the qualifications required by Medicaid (income) or the VA (military service).

**Table 1: Distribution of Medicare Beneficiaries by Type of Supplemental Insurance and Drug Coverage Status: 1998**

	Distribution of Beneficiaries A	Pct with Drug Coverage B	Distribution of Beneficiaries with Drug Coverage (A*B)
No Supplemental Coverage	7%	0%	0%
Supplemental Coverage			
Medicare Risk HMO	16%	92%	15%
Medicaid	13%	89%	12%
Employer-Sponsored	36%	90%	33%
Individually Purchased Only	24%	43%	10%
All Other	4%	89%	3%
Total	100%	73%	73%

Source: Adapted from Poisal JA and Murray L (Health Affairs, 2001)

### **III. METHODS**

#### **A. Description of the Study Sample**

The data for this study came from the 1998 Express Scripts Master Analytical Database (MAD98). MAD98 contains eligibility and claims data on 2.3 million members selected at random from more than 1,300 Express Scripts clients. The population from which the sample was drawn represents large employer groups, self-funded carriers and third-party administrators. Members selected were 65 years of age or older as of January 1, 1998 (N=102,640). Exactly 49,851 members were excluded for one of the following reasons: 1) the member was not continuously eligible for pharmacy benefits over the 1-year study period; 2) the member was enrolled in a group with an annual dollar cap of less than \$10,000 per member, in Medicaid, in a 100% copay group, or in a group with mail-order benefits only. Data for groups with contractual agreements prohibiting the inclusion of group data in research were also excluded, as were groups with atypical pharmaceutical utilization, or groups with essential data missing. The resulting sample size was 52,789.

#### **B. Data**

Data used in this study consisted of eligibility information for each of the 52,789 members, along with their prescription claims over the time period January 1, 1998 through December 31, 1998. To adjust for the greater supply of medication typically dispensed through mail-order pharmacy, prescription claims with large day-supply values were converted to 30-day equivalents (e.g., a prescription claim with a 90-day supply was converted to three prescription claims, each with a 30-day supply).

Each pharmacy claim contains over 50 fields of information, including the product's national drug code (NDC) and associated generic product identifier (GPI), date of fill, billed ingredient cost, dispensing fee, state tax, the per-prescription copay paid by the member, whether the claim was filled through a mail-order facility or network pharmacy, days' supply, whether the product is brand or generic, and the quantity dispensed. All data were checked for accuracy and completeness. Prescription claims were matched with eligibility records using the unique member identification number.

#### **C. Definition of Age and Age Categories**

Member age was calculated as of January 1, 1998, using the member's date of birth contained in the eligibility record. Five age categories were used to profile prescription use: 65 to 69 years, 70 to 74 years, 75 to 79 years, 80 to 84 years, and 85 years and older.

## **D. Designation of Member Residence**

To evaluate geographic variation in drug use, each member was assigned to a state of residence. Because member addresses were not available, the state of residence was determined as the state in which the member filled the greatest number of network claims in 1998.

Due to the fact that member residence could only be established through claim activity, geographic variation in prescription drug use and cost was only examined for members who filled at least one prescription during 1998 (N = 40,308). As a result of small sample sizes within many states, patterns of geographic variation in prescription use and costs were evaluated at the US Census region level. [Figure 1](#) presents the nine geographic Divisions and four regions as categorized by the US Bureau of the Census.

## **E. Measures of Pharmaceutical Use**

The purpose of this study was to describe prescription use among a commercially insured population 65 years of age or older. Various measures are used to profile prescription use including: 1) users, 2) intensity of use, and 3) expenditures.

### ***Users***

A 'user' is defined as a member who filled at least one prescription during 1998. Rates of use are presented, defined as the number of members with at least one prescription divided by the total sample.

### ***Intensity of use***

The measure used to describe the intensity of prescription use across the population is the number of prescriptions per member per year (Rxs PMPY), calculated as the average of all 30-day equivalent prescriptions filled for all continuously eligible members in 1998.

### ***Expenditure***

Several measures are used to describe expenditure, including average cost per member and per-user and member cost-share percentage. To ensure comparability across client members, all expenditures are calculated using the Average Wholesale Price (AWP) per unit, multiplied by the quantity. Thus discounts, rebates, member copayments and dispensing fees are not factored into expenditure calculations. Below are the expenditure variables measured and their definitions.

- **AWP per Member per Year (AWP PMPY):** Calculated as the average of the sum of AWP prescription costs for all continuously eligible members in 1998

- **Out-of-Pocket (OOP) Cost:** Sum of the copay amounts paid by a member during 1998
- **Percent Cost Share:** Calculated among users as the OOP cost in 1998, divided by the total cost, multiplied by 100; calculated across all users in 1998

Utilization is also evaluated at the therapy category level. Profiles of the most frequently used therapy categories are presented overall, by gender and by age groups. The most frequently used therapeutic categories are based on PMPY number of prescriptions for each therapy group. The first two digits of the generic product identifier (GPI), which represents the therapy group, were used to categorize claims into distinct therapy categories. (A total of 93 therapy groups were available in 1998. See **Appendix A** for distinct therapies within each therapy group.)

## IV. RESULTS

### A. Demographics

Of the 52,789 study members, 26,326 (49.9%), were women, and 26,463 (50.1%) were men. This proportion of females is approximately 7% age points less than that found in the 1998 Medicare population, of which 57% were female and 43% were male. ([Figure 2](#)).

The average age of the Express Scripts sample was 73 years, and, overall, the sample was somewhat younger than the Medicare population over age 65 years. ([Figure 3](#)). Within the Express Scripts sample, those 65 to 74 years represented 68%, compared to 52% in the Medicare population over age 65 years. Members 85 years of age and older represented 6% of our total sample, compared to 13% of the Medicare population over age 65 years.

### B. Utilization

**Table 2** presents the percent of users, together with the PMPY mean and median number of prescriptions and expenditures overall, by gender and age group. Because that prescription utilization data is skewed, the median values will be discussed. [Figure 4](#) graphically illustrates the right-skewed distribution of annual prescription expenditures. Although expenditures ranged from \$0 to more than \$30,000, slightly over one-third of all members had expenditures less than \$200 per year, and half of all members had expenditures of \$662 or less.

#### ***Percent of Members Filling at Least One Prescription During 1998***

Overall, 76.4% of members 65 years of age and older used prescription drugs during 1998. This figure is lower than that reported in other studies in which the proportion of members 65 years of age and older with at least one prescription

ranged from 82% to 89%.<sup>4,5</sup> In our sample, the proportion of men and women users was similar, 75.8% and 76.9%, respectively. This differs from other estimates, reported elsewhere in the literature, which report females are approximately 9% more likely than males to consume at least one prescription.<sup>4</sup>

The rate of users among members 85 years of age and older was 26% less than the rate of users overall. While the finding of a lower percentage of users among those age 85 years and older is supported in the literature, the percentage of users in this age group was much lower in our sample.<sup>4</sup>

### ***Number of Prescriptions per Member per Year***

The median number of 30-day equivalent prescriptions filled by members in 1998 was 20. Based on the median PMPY number of prescriptions, women's consumption was 22% greater than men's consumption. The median number of prescriptions PMPY increased from age 65 years, reaching a peak of 24 for members aged 75 to 79 years, and then decreasing for members in their 80s. A dramatic drop in prescription use was found for members age 85 years, where the median PMPY number of prescriptions was seven.

### ***Total (AWP) Cost per Member per Year***

The median total AWP cost per member for 1998 was \$662. The median expenditure for men was approximately \$39 less than the median expenditure for women.

Members 85 years of age or older had by far the lowest median AWP PMPY expenditure at \$151, which is 80% lower than that of the age group with the highest median PMPY expenditure — members 70 to 74 years of age with a median expenditure of \$769. Overall, members in the age range of 70 to 79 years had the highest PMPY expenditure compared with all other age groups.

Why does utilization drop markedly among those older than 85 years? One possible explanation is that these members represent a subgroup of those over the age of 85 years, who are ambulatory and who either enjoyed reasonably good health throughout their senior years and did not succumb to diseases or illnesses afflicting many in their 70s or were not so impaired that they required institutionalization.

**Table 2. Utilization and Costs of Prescription Medications in 1998 for All Sample Members**

	N	%	% > 1 drug		Rxs PMPY		AWP PMPY	
			N	%	Mean	Median	Mean	Median
All members	52,789	100.0%	40,308	76.4	28.9	20	\$1,185	\$662
Gender								
Females	26,326	49.9%	20,236	76.9	30.1	22.0	\$1,168	\$682
Males	26,463	50.1%	20,072	75.8	27.6	18.0	\$1,201	\$644
Age Group								
65-69 years	21,331	40.4%	16,518	77.4	27.3	18.0	\$1,158	\$615
70-74 years	14,642	27.7%	11,572	79.0	30.4	22.0	\$1,272	\$769
75-79 years	9,025	17.1%	6,969	77.2	31.4	24.0	\$1,267	\$761
80-84 years	4,604	8.7%	3,443	74.8	30.8	23.0	\$1,147	\$700
85 years and older	3,187	6.0%	1,806	56.7	22.1	7.0	\$783	\$151

**C. Geographic Variation**

**Table 3** presents the PMPY mean and median number of prescriptions and expenditures across US Bureau of the Census geographic regions. Among users, 1,463 members filled all of their prescriptions through mail order only or filled the greatest number of network prescriptions in the US Virgin Islands or Puerto Rico. These members were excluded from the geographic totals.

The distribution of members was roughly evenly divided between the Midwest, Northeast and Southern regions, with approximately 5% of members living in the Western region of the country.

**Table 3: 1998 Prescription Utilization and Expenditure Among Those With at Least One Network Claim by Geographic Region (N = 38,845)**

	N	%	Rxs PMPY		AWP PMPY	
			Mean	Median	Mean	Median
Midwest	11,839	30.5%	40.3	33.0	\$1,631	\$1,158
Northeast	12,950	33.3%	35.2	29.0	\$1,480	\$1,081
South	12,041	31.0%	39.2	31.0	\$1,594	\$1,113
West	2,015	5.2%	36.5	28.0	\$1,516	\$1,008

### ***Use of Medications***

Pharmaceutical users filled a median of 30 prescriptions per member in 1998. Based on the median PMPY number of prescriptions, users living in the Midwestern region filled the greatest number of prescriptions, approximately 18% more than users living in the Western region of the country, the region in which users filled the fewest number of prescriptions.

### ***Expenditures for Medications***

The median AWP PMPY expenditure for prescription drugs among all users was \$1,100. The pattern of cost difference follows that of utilization, with the highest expenditure found among users living in the Midwestern region (median = \$1,158). This level of expenditure was approximately 15% higher than the lowest level of spending, which was among users in the Western region of the country (median = \$1,008).

## **D. Profile by Therapeutic Category**

Presented in [Figure 5](#) are the top 10 therapy categories ranked by PMPY number of prescriptions (bar graph), together with the average AWP per prescription for that therapy category (line graph). These top 10 therapy categories represent 55% of all prescription claims.

Overall, the top 10 therapy categories are used to treat conditions primarily chronic in nature, including therapies used to treat cardiovascular disease, diabetes, respiratory conditions and thyroid disease. Five of the top 10 therapy categories — antihypertensive agents, diuretics, calcium channel blockers, lipid-lowering agents and beta blockers — are used to treat cardiovascular disease. These five therapy classes represent 35% of all prescription claims. By far, the therapy category most used within our sample was antihypertensive agents, which alone represented 10% of all prescriptions.

Significant variation in the average AWP per 30-day equivalent prescription cost of the top 10 therapy categories was observed. Costs ranged from a low of \$7 for thyroid therapy to more than \$90 for a 30-day equivalent prescription for therapies used to treat gastrointestinal disorders. At an average cost of \$76 per prescription, lipid-lowering agents are one of the highest-cost therapies among the top five therapy categories. The relative scarcity of generics accounts, in part, for the higher cost in this therapy category.

### ***Utilization Among Men and Women***

[Figure 6](#) and [Figure 7](#) present the top 10 therapy categories ranked by PMPY utilization among men and women, respectively. Similarities exist in the types of medications consumed by men and women; however, differences exist in intensity of use.

For both men and women, the most-utilized therapy category is antihypertensives. However, the PMPY number of prescriptions for men is 33% greater than that for women. Other similarities exist in prescription use among men and women in the use of calcium channel blockers and beta blockers. In these categories, the PMPY difference is less than 10%.

Men's use exceeds women's use in several cardiovascular therapy categories, including antihypertensive agents (33% greater), antihyperlipidemic agents (14% greater), antianginal agents (37% greater) and cardiotonics (31% greater). On the other hand, women's use of antidepressants and antianxiety agents, at 64% and 62% greater respectively, far exceeds that of men where neither category was among the top ten.

### ***Utilization Across Age Groups***

[Figure 8](#), [Figure 9](#), [Figure 10](#), [Figure 11](#), and [Figure 12](#) present the top 10 therapy categories ranked by the PMPY number of prescriptions for each of the five age groups. In the first two age groups (65 to 69 years and 70 to 74 years), the ranking of the first four therapy categories is identical (i.e., antihypertensives, antihyperlipidemics, calcium blockers, and diuretics). After the age of 74 years, not only does the ranking of therapy categories begin to change, but the intensity of use drops dramatically, particularly among those 85 years of age and older.

[Figure 13](#) highlights the changes in PMPY utilization of select therapy categories across age groups. The most dramatic decrease across the age groups was found for antihyperlipidemics. The PMPY number of prescriptions was above 2.0 in the age groups 65 to 69 years and 70 to 74 years, decreasing by over 80% to less than 0.5 prescriptions PMPY among those 85 years of age and older.

The use of several therapy categories increases noticeably across the age groups with slight dips in PMPY utilization among those 85 years of age and older. The growth in use is noted for antianginal agents, cardiotonics, diuretics, and ophthalmic products.

### ***Profile by Age and Gender***

[Figure 14](#) presents the percent of users across age and gender. The percent with any use decreases as age increases with females more likely to use at least one prescription in all age categories except among those 80 to 84 years of age. [Figure 15](#) and [Figure 16](#) present the median number of prescriptions and AWP expenditure by age group and gender. The median number of prescriptions across age groups and gender increases through age 79 years, then decreases slightly among those 80 to 84 years of age, at which point both median PMPY expenditure and number of prescriptions drop dramatically. Women utilize more prescriptions than men in all age groups; however, women's expenditure is greater than men's in only three of the five age categories: 65 to 69 years, 75 to 79 years, and 85 years and older.

In the age group 70 to 74 years, women's overall PMPY use is greater than men's; however, their expenditure is slightly lower, even though the proportion of men and women using at least one medication is the same. This difference is in part due to greater use of more costly medications among men, such as antihyperlipidemics. In this category, men's use is 13% greater than that of women. (see Figures 15 and 16). In addition, women's use of lower-cost drugs such as diuretics and thyroid medications is greater than men's use.

Also, in the age group 80 to 84 years, women's overall use is greater than that of men, but men's PMPY expenditure is greater than that of women. This is the result of a high proportion of users among men in this age group as well as greater use of certain high-cost therapies, such as antihypertensives. Also, women's greater use of lower-cost diuretics and agents used to treat thyroid disorders would also explain women's greater overall use but lower overall cost.

[Figure 17](#) and [Figure 18](#) present PMPY utilization across select therapy categories for each of the five age groups for men and women, respectively. These graphs illustrate how use changes among men and women for specific therapy categories across the 5-year age increments.

Among men, stairstep decreases and increases in use across the age groups were noted. Increases in use were observed in the therapy categories of antianginal, antiasthmatics, cardiotonics, diuretics, minerals and electrolytes, and ophthalmic products. These increases were seen in the 80- to 84-year age group, with slight drops among those 85 years of age and older. Decreases across the age groups were noted for therapies used to treat diabetes, hyperlipidemia, and hypertension. Dramatic decreases in the use of antihyperlipidemics were also found. In that therapy class, use dropped by 86% from its peak in the 70- to 74-year age group to the lowest use among those 85 years of age and older.

For women, as age increased, the use of estrogen therapies decreased significantly. Women 65 to 69 years of age had the highest PMPY utilization of estrogens, after which use decreased to a low of 0.31 PMPY among women 85 years of age and older, an 88% decrease from peak utilization. Similar to men, as age increased, women decreased use of antihyperlipidemics. Use dropped by 82% from its peak among women aged 70 to 74 years to 0.37 PMPY among women aged 85 years and older.

## **E. Patient Cost-Sharing**

Member cost-sharing is an important component in the design of pharmacy benefits. Multiple methods of cost-sharing may be employed, including: 1) fixed dollar per-prescription copayments, 2) coinsurance, 3) deductibles, and 4) monthly or annual limits, or caps, in coverage. **Table 4** presents the type of cost-sharing method faced by users, the mean out-of-pocket expense per year among

users, and percent cost share. The percent cost share is the percent of actual discounted total costs paid by the member.

Approximately 80% of users paid fixed-dollar copayments. For these individuals, average annual out-of-pocket costs were \$200, or 22% of total costs. Eight percent of users paid coinsurance (i.e., a percent copayment). As expected, among those paying percent copays, both average annual out-of-pocket costs and percent cost share were higher at \$280, or 27% of total costs. Thirteen percent of users had other forms of cost-sharing. These included multiple combinations of percent and flat-dollar copayments. On average, these users paid \$20 less out of pocket than did users with percent copays; however, they paid slightly more as a percent of total costs.

**Table 4: Average Out-of-Pocket (OOP) Cost and Percent Cost-Share**

	N	%	Mean OOP	% Cost Sharing
Dollar	31709	78.7%	\$200	22.4%
Percent	3276	8.1%	\$280	27.2%
Other	5323	13.2%	\$261	29.8%

Among members with fixed-dollar copayments or coinsurance, **Table 5** presents the mean and median copayments and coinsurance rates for single and multisource brand name drugs and generic medications as of January 1, 1998. Changes in copayment amounts and rates during the year were also evaluated. No change in the median fixed copayment occurred during the year, with copayments remaining at approximately \$10 for single and multisource brand. The median copay for generic medications remained at \$5. Increases of less than 1% were found in the mean brand and generic copay amounts. There were no changes from January 1, 1998, to December 31, 1998, in the mean or median coinsurance rates.

**Table 5: Mean and Median Cost-Share Values as of January 1, 1998**

	Dollar Method		Coinsurance Method	
	Mean	Median	Mean	Median
Single Source Brand	\$9.25	\$10.00	23.1%	20.0%
Multi Source Brand	\$9.42	\$10.00	23.1%	20.0%
Generic	\$5.50	\$5.00	21.4%	20.0%

## V. REFERENCES

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<sup>5</sup> Davis M, Poisal J, Chulis G, Zarabozo C, Cooper B. Prescription drug coverage, utilization, and spending among Medicare beneficiaries. *Health Affairs* 1999; 18:231-243.