Medicare Prescription Drug Cards

Effectiveness for Patients With Glaucoma

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Objective: To assess the level of discounts on glaucoma medications provided by the Medicare prescription drug card program.

Methods: We compared the cost of a 1-month supply of 10 brand-name drugs and 1 commonly prescribed combination of drugs purchased at retail cash price, Medicare card–discounted price, and online price. Retail cash prices were collected through a telephone survey of 36 chain pharmacies in 4 states. Card-discounted prices were obtained from an online database updated weekly by Medicare for each drug, drug card, and state in our survey. Prices for drugs purchased online were collected from a leading online drugstore not affiliated with any retail stores that were included in the telephone survey.

Results: Card-discounted prices for each drug ranged between 13% and 25% lower on average than retail prices. However, drugs purchased online were cheaper on average than drugs purchased with cards for 7 of the 10 medications surveyed.

Conclusions: Drug cards provide significant discounts over retail prices. However, cards may be a secondary option to online purchasing, which may be cheaper and may offer seniors more flexibility to switch between glaucoma therapies. Ophthalmologists can take simple steps to guide seniors to the optimal purchasing option for a given drug in their region.

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In this article, we assess the level of discount achievable using a Medicare drug card to purchase glaucoma medications. In addition, we assess the effect of card choice on the level of discount achieved over retail prices.

### METHODS

#### DRUG SELECTION

We surveyed 8 medications, representing each major class of medical therapy (prostaglandin analogues, β-adrenergic blockers, α-adrenergic agonists, and topical carbonic anhydrase inhibitors) as well as 1 combination of medications (dorzolamide hydrochloride and timolol maleate [Cosopt; Merck and Co, Inc, Whitehouse Station, NJ]). The survey was limited to brand-name drugs owing to the unavailability of Medicare drug card–discounted price information on generic drugs. We chose the smallest bottle size sufficient for 1 month of normal use for both eyes. We estimated normal monthly use based on manufacturer-suggested drops per application and number of applications per day and on work by Fiscella et al that calculated the volume of each drop of medication.

#### STATE SELECTION

For the survey of retail and Medicare drug card prices, we chose states and ZIP codes on the basis of state size, urban or rural setting, and affluence. The 3 states with the largest Medicare populations (New York, Florida, and California) along with the state with the smallest Medicare population (Wyoming) were chosen. Two ZIP codes were chosen in the largest urban area in the state and another was chosen at random from ZIP codes at least 100 miles away from any metropolitan statistical area. One urban ZIP code was chosen at random from the top quartile of ZIP codes as ranked by median income, and the second was chosen from the bottom quartile (Table 1). Overall, 12 ZIP codes (2 urban and 1 rural from each of New York, California, Florida, and Wyoming) were chosen for the survey.

#### RETAIL TELEPHONE SURVEY

We surveyed 3 retail stores in each selected ZIP code for a total of 9 retail stores surveyed for each state. Our survey focused on major chain stores, defined as stores with more than 30 locations and with locations in at least 2 time zones (Pacific, Mountain, Central, and Eastern time zones). Another intended target of the survey was local nonchain stores. However, single-store owners were consistently reluctant to give exact pricing data on drugs; therefore, only major chain stores were included in the survey.

Chain stores were chosen based on geographic proximity to the ZIP codes used to survey Medicare drug card prices (as measured by Google Local [http://www.google.com/local]; Google, Inc, Mountain View, Calif). We selected the 3 chain stores within or closest to the ZIP code in question. If 2 outlets of the same chain were among the 3 closest stores in the ZIP code, we selected the next closest pharmacy not of that chain. In Wyoming, the relatively large distances between chain drugstores resulted in the 3 chain stores closest to the first and second urban ZIP codes being the same.

Two of us (A.A.M. and S.N.) phoned each store and asked for the retail price of each brand-name drug. All of the prices in the study were examined without the inclusion of sales tax. To verify the accuracy of data given by retail pharmacy representatives, researchers called 10 of the pharmacies selected for the survey on consecutive days and found no discrepancies in prices quoted.

#### MEDICARE DISCOUNT DATA

Card-discounted drug prices were obtained from the Medicare Web site (http://www.medicare.gov). The site contains a database that returns card-discounted prices by drug and ZIP code. Drug pricing data are updated on a weekly basis. Using the Medicare online database, we determined the drug price that could be obtained using each card available in a given ZIP code. Some prices were offered as a range since the card was accepted by multiple pharmacies, each offering a marginally different card-discounted price. We used the middle of the range where applicable for our subsequent calculations. For those cards that require an annual membership fee, net monthly drug price included the drug cost and the membership fee divided by 12.

#### ONLINE PRICE SURVEY

Online prices were obtained from drugstore.com, Inc (http://www.drugstore.com), a major online drugstore. This company was chosen since the site is not affiliated with a retail drugstore chain and since the site is dedicated to the online purchase of drugs intended for sale in the United States. To enhance the comparability of retail, card, and online prices, research on the online price of a specific drug took place no later than 10 days after the initial telephone and online survey.

#### COMPARISONS BETWEEN DRUG CARD DISCOUNTS AND RETAIL AND ONLINE PRICES

The discount offered by the drug card relative to the retail price was calculated as the percentage of difference between pharmacy prices at each store surveyed and the discounted price for a drug achieved for each card in each ZIP code. To obtain summary statistics, these discounts were averaged for each drug across all of the retail stores and Medicare discount cards by ZIP code, by state, and nationally. To calculate drug card discounts relative to online prices for each drug, we obtained the percentage of difference between the discounted price quoted for each card across all of the 12 ZIP codes and the online price. To obtain summary statistics, we used the raw percentage of

### Table 1. ZIP Codes Chosen for Survey

<table>
<thead>
<tr>
<th>Area</th>
<th>California</th>
<th>Florida</th>
<th>New York</th>
<th>Wyoming</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban, top income quartile</td>
<td>90813 (Los Angeles County)</td>
<td>33135 (Miami-Dade County)</td>
<td>10017 (Lower Manhattan)</td>
<td>82001 (Cheyenne)</td>
</tr>
<tr>
<td>Urban, bottom income quartile</td>
<td>90815 (Los Angeles County)</td>
<td>33180 (Miami-Dade County)</td>
<td>10454 (Bronx)</td>
<td>82009 (Cheyenne)</td>
</tr>
<tr>
<td>Rural</td>
<td>95596 (Zenia area, northern California)</td>
<td>32322 (Carabelle area, Florida panhandle)</td>
<td>12414 (Caldskill area, upstate New York)</td>
<td>82084 (Tie Siding area, southern Wyoming)</td>
</tr>
</tbody>
</table>

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difference between each card-discounted price and the online price to obtain average discounts for each drug by ZIP code, by state, and nationally.

### RESULTS

#### DRUG CARD PRICES RELATIVE TO RETAIL PRICES

Nationally, card discounts over retail prices ranged on average from 13% for timolol (Timoptic XE; Merck and Co, Inc) to 25% for dorzolamide (Trusopt; Merck and Co, Inc) (Table 2). Cards provided a 19% discount on average over retail price across all of the drugs. The large magnitude of the means relative to the SDs for the majority of drugs in the survey suggests that card-discounted prices are consistently lower than nondiscounted retail prices on a national level. In limited instances, drug cards provided higher prices for drugs than did the retail stores surveyed. However, such cases compose only 2.3% of observations in the study.

On the state level, cards used in California and New York offered a higher average discount than cards used in Wyoming and Florida (Table 3). Such regional differences are not reflective of differences in card-discounted price levels but rather considerable differences in retail prices across regions. In fact, the average card-discounted price of any drug in the survey did not vary more than 5% from ZIP code to ZIP code for a given pharmacy.

Therefore, seniors across the country pay a similar price for drugs with a Medicare card but the relative discounts they achieve depend on the retail price of the drug where they live.

Medication prices did vary considerably depending on the card chosen. We examined the range of prices offered by all of the drug cards in all of the regions. The card offering the deepest discount on a drug provided an 11% deeper discount on average than the card offering the smallest discount, amounting to an average difference in savings of more than $121 per year.

### Table 2. National Average Card Discount Over Retail Price by Drug

<table>
<thead>
<tr>
<th>Drug*</th>
<th>Bottle Size, mL</th>
<th>Observations, No.†</th>
<th>Discount, Mean (SD), %</th>
<th>Discount, Range, %‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphagan</td>
<td>10</td>
<td>1046</td>
<td>19.9 (7.1)</td>
<td>(−5.8 to 33.5)</td>
</tr>
<tr>
<td>Azopt</td>
<td>10</td>
<td>1084</td>
<td>21.9 (6.7)</td>
<td>(4.9 to 33.0)</td>
</tr>
<tr>
<td>Betoptic S</td>
<td>10</td>
<td>993</td>
<td>17.2 (7.3)</td>
<td>(−12.8 to 30.0)</td>
</tr>
<tr>
<td>Cosopt</td>
<td>5</td>
<td>1045</td>
<td>22.5 (5.8)</td>
<td>(0.3 to 36.0)</td>
</tr>
<tr>
<td>Lumigan</td>
<td>2.5</td>
<td>1080</td>
<td>21.2 (6.0)</td>
<td>(2.5 to 35.7)</td>
</tr>
<tr>
<td>Timoptic XE</td>
<td>5</td>
<td>1040</td>
<td>13.3 (15.6)</td>
<td>(−38.7 to 46.0)</td>
</tr>
<tr>
<td>Travatan</td>
<td>2.5</td>
<td>1062</td>
<td>18.1 (6.5)</td>
<td>(2.4 to 32.4)</td>
</tr>
<tr>
<td>Trusopt</td>
<td>10</td>
<td>948</td>
<td>24.9 (5.6)</td>
<td>(6.0 to 37.8)</td>
</tr>
<tr>
<td>Xalatan</td>
<td>2.5</td>
<td>1114</td>
<td>15.4 (6.2)</td>
<td>(−0.5 to 31.4)</td>
</tr>
<tr>
<td>Maximal therapy</td>
<td>NA</td>
<td>976</td>
<td>17.7 (5.2)</td>
<td>(1.2 to 30.2)</td>
</tr>
<tr>
<td>All drugs</td>
<td>NA</td>
<td>9412</td>
<td>19.3 (8.7)</td>
<td>(−38.7 to 46.0)</td>
</tr>
</tbody>
</table>

Abbreviation: NA, not applicable.

*Drug proprietary information is as follows: Alphagan, Allergan, Inc, Irvine, Calif; Azopt, Alcon, Inc, Fort Worth, Tex; Betoptic S, Alcon, Inc; Cosopt, Merck and Co, Inc, Whitehouse Station, NJ; Lumigan, Allergan, Inc; Timoptic XE, Merck and Co, Inc; Travatan, Alcon, Inc; Trusopt, Merck and Co, Inc; Xalatan, Pfizer, Inc, New York, NY.

†One observation refers to a specific card’s discount over the retail price at a given pharmacy.

‡A minus sign indicates that the drug card price was higher than the retail price.

#### DRUG CARD DISCOUNTS RELATIVE TO ONLINE PRICES

On average, online prices were lower than drug card prices for 7 of the 10 drugs studied (Table 4 and Figure 1). Card-discounted prices were lower on average than online prices only for Trusopt, Alphagan (Allergan, Inc, Irvine, Calif), and bimatoprost (Lumigan; Allergan, Inc). For all of the drugs, the magnitude of the price difference was small, suggesting that based on price alone, the two purchasing methods are comparable.

We also compared the prices available through online purchasing with the prices available through the card that provided the deepest discount for each drug in the survey. In this analysis, 8 of 10 medications were cheaper with the drug card offering the deepest discount; for bevacizumab (Betoptic S; Alcon, Inc, Fort Worth, Tex) and latanoprost (Xalatan; Pfizer, Inc, New York, NY), online purchase was cheaper than purchase with any drug card evaluated (Figure 2). However, our analysis does not include the sales tax added to retail purchases with the drug card. Purchases made at the reference Web site were all of sufficient magnitude to merit free shipping and were made in states where sales tax for online purchases is not applicable (tax is only applicable in the state of Wash-
Therefore, our analysis likely underestimates the discount provided by online purchasing relative to drug cards. For example, assuming a sales tax of 7%, a card would provide a discount over online prices only for Toptrast and Lumigan, even if the card providing the deepest discount was chosen for each drug.

Our finding that Medicare drug cards provide discounts in the range of 10% to 20% over retail prices is consistent with previous research on the efficacy of drug cards and with Centers for Medicare and Medicaid Services predictions of program discounts. A 2003 study by the US General Accounting Office of card programs prior to their endorsement by Medicare found that cardholders could obtain discounts of 9% to 15% on the retail purchase of selected brand-name drugs, with discounts varying by card type, pharmacy, and location. A 2004 study by Cuban- 

### Table 4. Average Percentage of Reduction in Drug Price for Card-based Purchasing Compared With Online Purchasing

<table>
<thead>
<tr>
<th>Drug*</th>
<th>Bottle Size, mL</th>
<th>Observations, No.†</th>
<th>Card Discount, Mean (SD), %‡</th>
<th>Discount, Range, %‡</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alphagan</td>
<td>10</td>
<td>393</td>
<td>3 (4)</td>
<td>(-9.9 to 8.6)</td>
</tr>
<tr>
<td>Azopt</td>
<td>10</td>
<td>393</td>
<td>-4 (3)</td>
<td>(-14.4 to 2.4)</td>
</tr>
<tr>
<td>Betoptic S</td>
<td>10</td>
<td>393</td>
<td>-8 (3)</td>
<td>(-19.2 to -0.2)</td>
</tr>
<tr>
<td>Cosopt</td>
<td>5</td>
<td>393</td>
<td>-6 (4)</td>
<td>(-23.7 to 3.0)</td>
</tr>
<tr>
<td>Lumigan</td>
<td>2.5</td>
<td>393</td>
<td>5 (4)</td>
<td>(-8.9 to 11.2)</td>
</tr>
<tr>
<td>Timoptic XE</td>
<td>5</td>
<td>391</td>
<td>-8 (7)</td>
<td>(-24.1 to 3.9)</td>
</tr>
<tr>
<td>Travatan</td>
<td>2.5</td>
<td>393</td>
<td>-2 (3)</td>
<td>(-10.7 to 5.2)</td>
</tr>
<tr>
<td>Trusopt</td>
<td>10</td>
<td>393</td>
<td>10 (4)</td>
<td>(-7.9 to 15.8)</td>
</tr>
<tr>
<td>Xalatan</td>
<td>2.5</td>
<td>393</td>
<td>-6 (3)</td>
<td>(-16.8 to -0.8)</td>
</tr>
<tr>
<td>Maximal therapy</td>
<td>NA</td>
<td>393</td>
<td>-4 (3)</td>
<td>(-17.9 to 0.3)</td>
</tr>
<tr>
<td>All drugs</td>
<td>NA</td>
<td>3535</td>
<td>-2 (7)</td>
<td>(-24.1 to 15.8)</td>
</tr>
</tbody>
</table>

Abbreviation: NA, not applicable.

*Drug proprietary information is as follows: Alphagan, Allergan, Inc, Irvine, Calif; Azopt, Alcon, Inc, Fort Worth, Tex; Betoptic S, Alcon, Inc; Cosopt, Merck and Co, Inc, Whitehouse Station, NJ; Lumigan, Allergan, Inc; Timoptic XE, Merck and Co, Inc; Travatan, Alcon, Inc; Trusopt, Merck and Co, Inc; Xalatan, Pfizer, Inc, New York, NY.

†One observation refers to the percentage of difference between the discount over retail price offered by online purchasing vs card-discounted purchasing in a given region.

‡A minus sign indicates that the drug card price was higher than the online price.

Our work also suggests that online purchasing may be a comparable or better option than using a drug card for glaucoma medications. The addition of sales tax to the card-discounted price would increase online purchasing discounts relative to drug card discounts to an even greater degree.

In addition, online purchasing may be a preferable option for patients who switch glaucoma medications. Studies on glaucoma medication usage have docu-
mented that a significant proportion of patients change their glaucoma medications over time. The drug card program restricts seniors to only 1 card, creating the possibility that patients who switch medications during the program may move from a drug that was optimally priced for the drug card they chose to a less-discounted drug. Our analysis has documented that discounts offered by drug cards can vary across a significant range. The online purchaser has the flexibility to switch drugs and still achieve deep discounts.

However, the literature has also documented the limited proportion of seniors who are able to actively use the Internet. A recent national survey by the Kaiser Family Foundation,13 Menlo Park, Calif, showed that fewer than one third (31%) of individuals in the United States aged 65 years or older have ever used the Internet, including e-mail. Further, only 18% of those aged 75 years or older have used the Internet.14 The proportion of seniors using the Internet for health-specific information is even smaller. A 1999 survey of 1500 adults showed that 13% of those older than 60 years used the Internet or e-mail to get health information. For those seniors who are unable or unwilling to access the Internet, drug cards may represent a “second-best” alternative for achieving discounts.

One weakness of our study is the limited nature of our survey. The collection of enough data for an unbiased sample was outside the scope of our study; we collected a targeted sample of data that sought to account for potential sources of variation in discounts and represent the widest range of experience with drug cards. The scope of our survey also limited our ability to comment on the experience of Medicare patients with glaucoma receiving medications in other therapeutic classes, as those patients with additional chronic conditions may have a different experience with cards if they must purchase other types of medications.

Ophthalmologists have a clear role in guiding seniors to relevant purchasing options. With numerous cards available and with significant differences in the level of discount the cards provide, decisions on the choice of card and whether to enroll at all are complex. Adding further complexity is the possibility that an online purchaser may serve the patient better than any card available. Physicians and their staff, with a minimal time and resource commitment, can guide seniors to the best option for each drug in their region. In particular, for patients who would qualify for the $600 credit available to low-income beneficiaries through the card program, promoting enrollment in the program could significantly ease the financial burden of glaucoma therapy.

From a policy perspective, our analysis suggests that the program is an effective but not necessarily optimal purchasing option for patients with glaucoma who are currently paying out of pocket at retail pharmacies. The significant variation in individual experience with the card program related to the number of cards, type of drugs purchased, and region of purchase makes it difficult to construct a global comment on the net benefit of the card program. However, what is clear is that most Medicare beneficiaries must still pay a significant portion of their glaucoma therapy costs out of pocket even after discounts. More comprehensive prescription drug insurance available from January 1, 2006, is likely a welcome change for such patients. Beneficiaries pay a monthly premium for coverage that will pay a set percentage of drug costs depending on the type of plan chosen. Enrollment for drug insurance lasted from November 2005 to May 2006.16 However, even after the beginning of drug insurance, patients with glaucoma who are younger than 65 years still have to find ways to finance their therapy. As many card issuers offered card programs prior to their participation in Medicare and continue to offer card programs after the beginning of the insurance program, ophthalmologists have the opportunity to advise patients about the relative merits of drug cards through 2006 and beyond.

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REFERENCES


