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Brand Medications and Medicare Part D

How Eye Care Providers' Prescribing Patterns Influence Costs

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Purpose: To quantify costs of eye care providers' Medicare Part D prescribing patterns for ophthalmic medications and to estimate the potential savings of generic or therapeutic drug substitutions and price negotiation.

Design: Retrospective cross-sectional study.

Participants: Eye care providers prescribing medications through Medicare Part D in 2013.

Methods: Medicare Part D 2013 prescriber public use file and summary file were used to calculate medication costs by physician specialty and drug. Savings from generic or therapeutic drug substitutions were estimated for brand drugs. The potential savings from price negotiation was estimated using drug prices negotiated by the United States Veterans Administration (USVA).

Main Outcome Measures: Total cost of brand and generic medications prescribed by eye care providers.

Results: Eye care providers accounted for $2.4 billion in total Medicare part D prescription drug costs and generated the highest percentage of brand name medication claims compared with all other providers. Brand medications accounted for a significantly higher proportion of monthly supplies by volume, and therefore, also by total cost for eye care providers compared with all other providers (38% vs. 23% by volume, $P < 0.001$; 79% vs. 56% by total cost, $P < 0.001$). The total cost attributable to eye care providers is driven by glaucoma medications, accounting for $1.2 billion (54% of total cost; 72% of total volume). The second costliest category, dry eye medications, was attributable mostly to a single medication, cyclosporine ophthalmic emulsion (Restasis, Allergan, Irvine, CA), which has no generic alternative, accounting for $371 million (17% of total cost; 4% of total volume). If generic medications were substituted for brand medications when available, $148 million would be saved (7% savings); if generic and therapeutic substitutions were made, $882 million would be saved (42% savings). If Medicare negotiated the prices for ophthalmic medications at USVA rates, $1.09 billion would be saved (53% savings).

Conclusions: Eye care providers prescribe more brand medications by volume than any other provider group. Efforts to reduce prescription expenditures by eye care providers should focus on increasing the use of generic medications, primarily through therapeutic substitutions. Policy changes enabling Medicare to negotiate prescription drug prices could decrease costs to Medicare. *Ophthalmology 2018;125:332-339 © 2017 by the American Academy of Ophthalmology*

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The United States has the highest health care spending per capita of the 34 high-income democratic countries included in the Organization for Economic Cooperation and Development, but ranks 27th in terms of life expectancy.[1] Prescription drugs are the fastest growing category of health care spending.[2] In 2013, United States citizens spent $265 billion (United States dollars) on retail prescriptions drugs, of which $103 billion was covered by Medicare Part D, the voluntary prescription drug benefit made available to all Medicare beneficiaries under the Medicare Modernization Act of 2003. Medicare Part D plans provide prescription drug coverage to 68% (36 million people) of all Medicare beneficiaries (52 million people) who are 65 years of age and older or those younger than 65 years with permanent disability.[3,4] Prescription drug costs generated by ophthalmologists ranked 12th among providers who prescribed to Medicare Part D beneficiaries, with total costs reaching nearly $2 billion.[5] However, little is known about the prescribing patterns of eye-care providers, which limits policy makers' ability to impact expenditures on ophthalmic drug costs. Using comprehensive payment data for Medicare Part D available from the Centers for Medicare and Medicaid Services,[6] we explored prescribing patterns for eye care

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providers in detail and estimated the potential cost savings to Medicare from generic and therapeutic drug substitutions or from negotiating drug prices.

Methods

We performed a retrospective, cross-sectional analysis of the 2013 Medicare Part D Prescriber public use file (PUF) and one summary file, both publicly available files, using previously described methods.[5,6] The 2013 data (released in 2015) was the only year available when this study was initiated. In brief, the PUF contains prescription drug event information for each prescriber using the National Provider Identifier and for each unique drug prescribed. After excluding records derived from providers with 10 or fewer claims to maintain beneficiary privacy, 86.8% of claims and 78.1% of total payments are available for analysis. Total costs generated from the detailed PUF therefore are underestimated because of this redacted data to protect patient privacy. The summary file contains information on 99.9% of total claims because it is aggregated by National Provider Identifier and contains no potentially identifying beneficiary-level information. For the purposes of this study, prescribers were considered eye-care providers if the specialty was designated as ophthalmology or optometry. Drugs were designated as generic if the generic name matched the name recorded for the drug name.

Two board-certified ophthalmologists (P.A.N.-C., M.A.W.) grouped individual medications into 8 disease-specific drug groups: glaucoma, dry eye, ocular inflammation, ocular infection, allergic conjunctivitis, mydriatics, other ophthalmic, and other nonophthalmic (Table S1, available at www.aaojournal.org). Ocular infection medications included topical antibiotic medications and the following oral medications: acyclovir, famciclovir, and valganciclovir as treatment for herpes simplex virus keratitis or herpes zoster virus[7]; moxifloxacin, levofloxacin, and ciprofloxacin as treatment for traumatic corneoscleral lacerations[8]; and oral valganciclovir and intravenous ganciclovir as treatment for cytomegalovirus retinitis.[9] Drugs that can be prescribed for multiple indications (e.g., doxycycline for dry eye or as an ophthalmic antibiotic) were assigned a disease-specific group agreed on by the authors. Drug volume prescribed was provided in the PUF as the sum of the days' supply over all claims for each unique drug and provider. The number of 30-day supplies was calculated because claims do not necessarily represent a standard number of days. The PUF and summary file were used to investigate total drug payments in United States dollars, number of prescribers, number of 30-day medication supplies per provider, proportion of generic claims, median drug payment per claim, and median drug payment per 30-day medication supply, and results were stratified by provider specialty, drug class, or generic drug name.

Estimates of cost savings between prescribing generic and brand name medications were calculated as the difference between actual costs and the estimated costs generated when brand medications were substituted with a generic medication when available. Direct substitution meant that the generic and brand medications are made of the same compound (e.g., substituting latanoprost for Xalatan, Pfizer, New York City, NY). Estimates of cost savings for using therapeutic substitutions also were calculated. Therapeutic substitutions were used when a direct generic substitution was not available (e.g., Travatan Z, Alcon Laboratories, Fort Worth, TX). Therapeutic substitutions meant that a medication in the same therapeutic class was available, but the medication was a different chemical compound (e.g., substituting latanoprost for travoprost). Another type of therapeutic substitution was separating combination medications into their 2 component generic medications (e.g., substituting timolol and brimonidine for Combigan, Allergan, Irvine, CA). Table S2 (available at www.aaojournal.org) lists all therapeutic substitutions used in the analysis. Cost for all drugs prescribed by an eye care provider (brand, generic, or therapeutic) were estimated individually for a 30-day (monthly) supply by dividing the total cost prescribed (sum of all costs over all prescribers in the 2013 PUF) by the total number of 30-day medication supplies prescribed (sum of all 30-day supplies over all prescribers in the 2013 PUF). Prescription drug costs then were recalculated to estimate savings when using the price of the monthly direct generic substitution and using the price of the monthly direct and therapeutic generic substitutions.

To estimate the potential effect of price negotiation, we calculated the total cost for the drug groups (Table S1, available at www.aaojournal.org) if the individual medications in each group were priced at USVA prices, because the USVA is able to negotiate drug prices.[10] Because the volume of ophthalmic drug prescribed is listed in the PUF in terms of number of days' supply and because the USVA drugs are priced per bottle of eye drops (in milliliters), we estimated the quantity of ophthalmic medication that should be dispensed for a 30-day supply based on each 1 ml of ophthalmic medication having 20 drops.[11] Then, to estimate 30-day supplies, for topical β-blockers, carbonic anhydrase inhibitors, and α-agonists, we assumed twice-daily dosing in both eyes. For prostaglandin analogs, we assumed once-daily dosing in both eyes. For cyclosporine ophthalmic emulsion (Restasis, Allergan, Irvine, CA), we assumed twice-daily dosing in both eyes. For ocular infection and inflammation medications, we assumed dosing in only 1 eye. Because doses are not available in the PUF and multiple vendors may be available for the same drug at a specific dose on the USVA formulary, the lowest price was selected for each drug on the formulary according to previously established methods.[5] Thirteen medications were not available on the USVA formulary and therefore were not included in this analysis: Isopto Carpine (Alcon Laboratories, Fort Worth, TX), Latisse (Allergan, Irvine, CA), Neptazane (Perrigo, Minneapolis, MN), Pilopine HS (Alcon Laboratories), Rescula (Sucampo Pharma Americas, Bethesda, MD), Ocudox (Mutual Pharmaceutical Co, Philadelphia, PA), Bromday (Bausch & Lomb, Tampa, FL), Omnipred (Alcon Laboratories, Fort Worth, TX), Besivance (Bausch & Lomb, Bridgewater, NJ), neomycin–bacitracin–polymyxin, Polycin (Perrigo), sulfacetamide–prednisolone, and homatropine. Associations between type of medication (brand vs. generic) and type of provider (eye care provider vs. other provider) with respect to total medication costs and total 30-day medication volume were evaluated with chi-square tests. Descriptive statistics of the data and analyses were performed using SAS software version 9.4 (SAS Institute, Cary, NC).

Results

Of the total of 1 049 381 unique providers or facilities in the Medicare part D 2013 summary file, 19 616 (1.9%) were ophthalmologists and 25 654 (2.4%) were optometrists. There are approximately 1000 more ophthalmologists represented in this data set than in the 2014 Association of American Medical Colleges Physician Specialty Data Book (contains 2013 data) because the Medicare Part D summary file includes some organizations and group practices in addition to individual physicians. For optometrists, the summary file represents approximately 78% (25 654/33 000) of all the optometrists practicing in the United States in 2013 (Table 3).[12,13] Together, the total Medicare part D payment for drugs prescribed by ophthalmologists and optometrists totaled $2.4 billion ($1.97 billion for ophthalmologists and $449 million for optometrists), approximately 2.3% of all Medicare Part D