

TRENDS IN MANUFACTURER PRICES OF BRAND NAME PRESCRIPTION DRUGS USED BY OLDER AMERICANS— 2004 YEAR-END UPDATE

INTRODUCTION

This Data Digest describes changes in the prices charged by prescription drug manufacturers in 2004 for the brand name prescription drugs most widely used by Americans age 50 and older. This report is part of an ongoing series of studies monitoring changes in drug manufacturer prices. A baseline study published in May 2004 by the AARP Public Policy Institute identified accelerating increases in the average manufacturer price from calendar year 2000 through calendar year 2003; two updates reported a continuation of this trend through the third quarter of 2004.ⁱ

These reports focus on changes in the prices that brand name drug manufacturers charge to wholesalers and other direct purchasers for their sales to retail pharmacies. The manufacturer's charge to wholesalers is the most substantial component of a brand name prescription drug's retail price. When manufacturers increase their price to wholesalers for a brand name drug, the added cost is generally passed on in the retail price to most prescription purchasers.ⁱⁱ Changes in drug manufacturers' prices are measured by changes in the wholesale acquisition cost (WAC) published in the Medi-Span Price-Chek PC database.ⁱⁱⁱ

This report presents three-month, annual, and five-year cumulative price changes through the end of 2004. The first set of findings focuses on *three-month* rates of change for the fourth quarter (i.e., changes from September 30 through December 31, 2004). The second set of findings shows *annual* rates of change in manufacturers' prices for widely used brand name drugs through the fourth quarter of 2004, using both rolling average and point-to-point measures (see methodological appendix). The rolling average measure is used to examine the distribution of price changes as well as price changes by manufacturer and therapeutic category. The third set of findings summarizes the cumulative impact of manufacturer drug price increases that have taken place during the five-year period from 2000 through 2004.

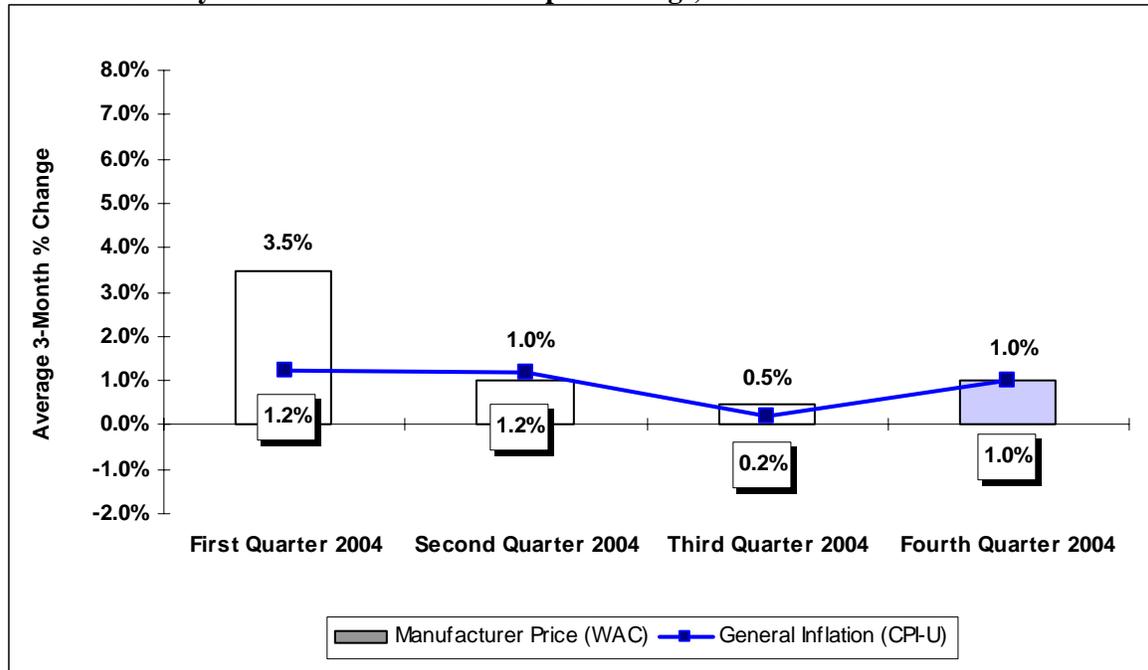
FINDINGS

I. Quarterly Trends in Manufacturer Price Changes for Most Widely Used Brand Name Prescription Drugs

In order to track changes in prices charged by manufacturers for brand name drugs after the December 2003 enactment of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), the three-month *point-to-point* percentage price changes for each quarter of 2004 (i.e., from December 31, 2003 through March 31, 2004; March 31 through June 30; June 30 through September 30; and September 30 through

December 31) were analyzed for the 197 most widely used brand name drugs in the sample (Figure 1).

Figure 1: Quarterly Average Point-to-Point Percentage Changes in Manufacturer Prices for Most Widely Used Brand Name Prescription Drugs, 2004



Average increase for fourth quarter 2004 excludes Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

- The average manufacturer price increase over the three months in the fourth quarter of 2004—1.0 percent—was comparable to the average price increase over the second quarter of 2004 and twice the average price increase for the third quarter, but far below the average increase in the first quarter.
- The cumulative average manufacturer price increase in 2004 was 6.0 percent, nearly twice the cumulative general inflation rate of 3.6 percent, when measured as a point-to-point percentage change.
- The fourth quarter 2004 price increase was identical to the rate of general inflation during the same three-month period (1.0 percent). In comparison, the second quarter 2004 price increase (1.0 percent) was slightly less than the rate of general inflation during the same period (1.2 percent), and the third-quarter increase (0.5 percent) was more than double the rate of general inflation (0.2 percent).
- The fourth quarter average change for 2004 was slightly below the 2002 and 2003 fourth quarter rates (1.2 percent each) and the same as the fourth quarter 2000 rate

(1.0 percent). It was substantially above the 2001 rate for the same quarter (0.5 percent).

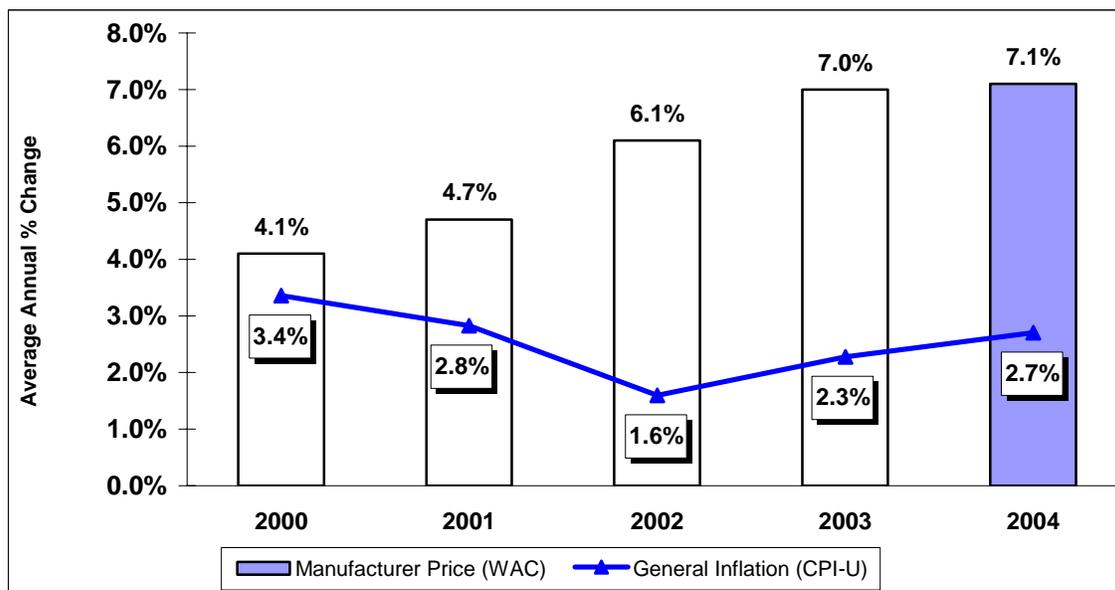
II. Annual Trends in Manufacturer Price Changes for Most Widely Used Brand Name Prescription Drugs

The annual rate of increase in manufacturers' prices in 2004 for the 195 brand name prescription drugs most widely used by older Americans^{iv} continued to exceed both the rate of inflation in 2004 (as measured by the Consumer Price Index-All Urban Consumers, or CPI-U)^v and the rates of price increase in each of the previous four years in 2004 (Figure 2).^{vi}

Annual percent change in manufacturer prices

- Manufacturer prices for brand name drugs rose 7.1 percent in 2004, when measured as a 12-month rolling average and weighted by actual 2003 sales to people age 50 and older.
- The average annual price increase for brand name prescription drugs most widely used by older Americans was more than 2.5 times the rate of general inflation in 2004.
- The average annual increase in 2004 is slightly higher than the 2003 level of 7.0 percent. By comparison, the average annual rate of general inflation rose from 2.3 percent in 2003 to 2.7 percent in 2004.

Figure 2: Average Annual Percentage Change in Manufacturer Prices for Most Widely Used Brand Name Prescription Drugs, 2000 through 2004

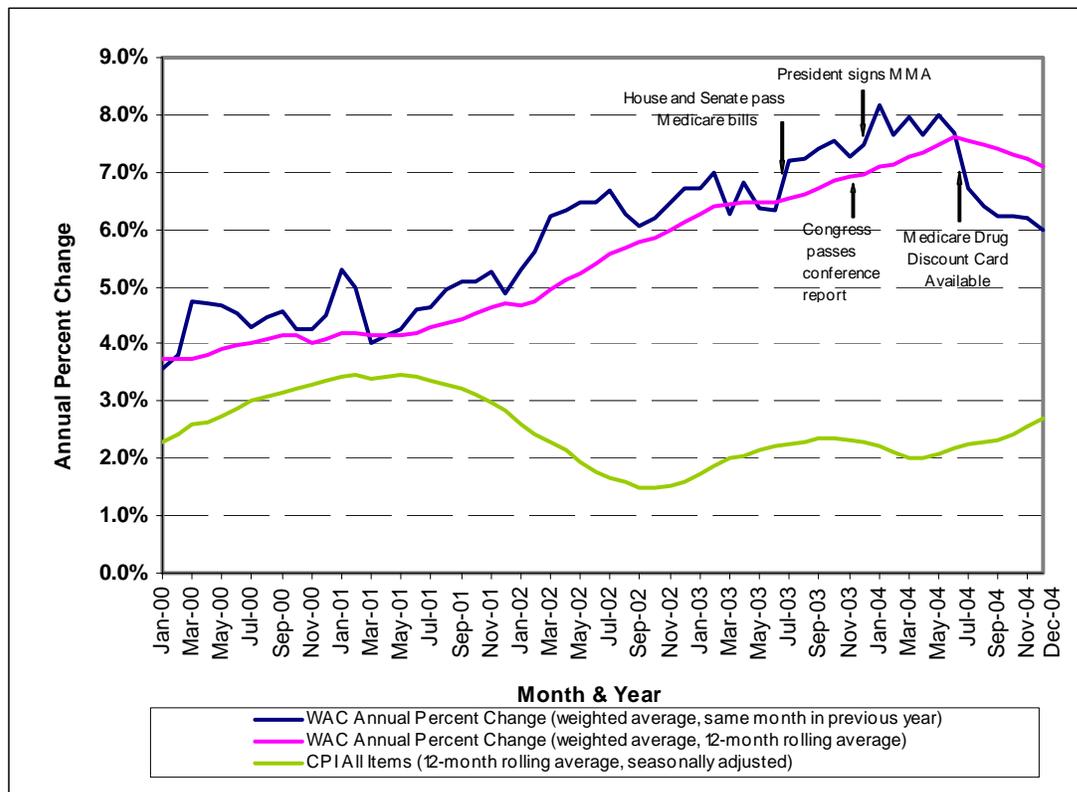


Average increase for 2004 excludes Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

The average annual price change reported in Figure 2 is a conservative measure that, by averaging annual point-to-point price changes for each month in a 12-month period (referred to as a *rolling average* change), smoothes over the entire year the annual amount of change in price that occurs for a single month (referred to as an annual *point-to-point* change). The percentage change in price compared with the same month in the previous year has been plotted along with the 12-month rolling average to allow more detailed examination of the rate and timing of price changes over the entire study period (Figure 3). Figure 3 shows that manufacturer prices continued to rise rapidly in 2004, but that the average annual point-to-point change in prices, which peaked in January 2004, increased more slowly in the months since the June 2004 introduction of Medicare prescription drug discount cards, even as the rate of general inflation was increasing.

Figure 3: Comparison of Rolling Average and Point-to-Point Changes in Manufacturer Prices for Most Widely Used Brand Name Prescription Drugs, 2000 through 2004



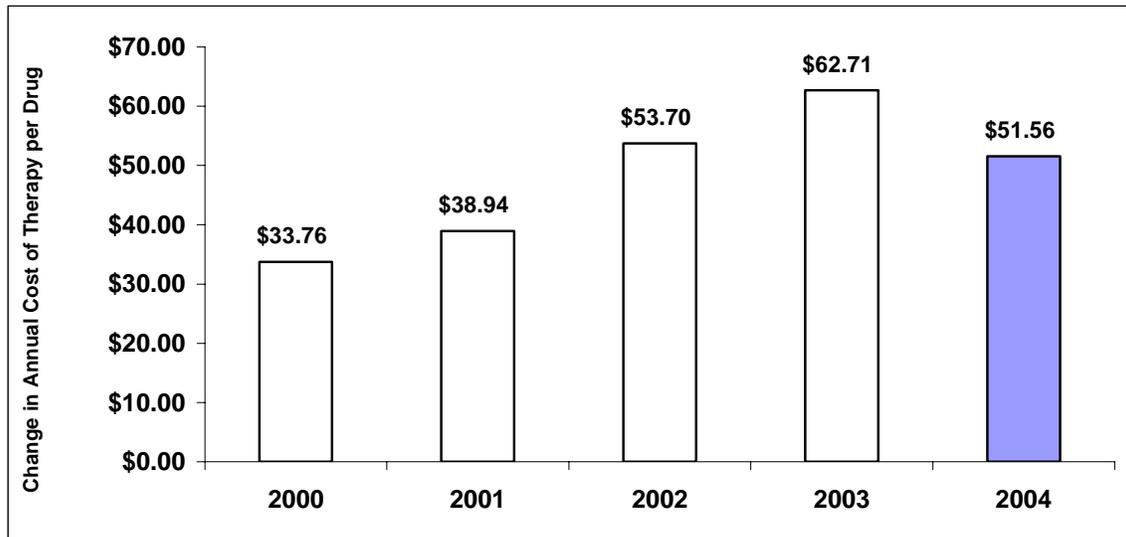
MMA refers to the Medicare Prescription Drug, Improvement, and Modernization Act of 2003. Average increase for months after September 2004 exclude Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004. Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

Change in annual cost of therapy

Manufacturer price increases for the 189 most widely used brand name drugs used to treat chronic conditions (out of the total sample of 195 drugs) translated into increases in the average annual cost of therapy (Figure 4).

- The average annual increase in the cost of therapy was \$51.56 per prescription for 2004, compared with a \$62.71 increase in 2003.
- A typical older American (who takes three prescription drugs) is likely to have experienced an average increase in the cost of therapy of \$154.68 in 2004, assuming that the drugs are brand name products and the full price increases were passed along to the consumer.

Figure 4: Average Change in Annual Cost of Therapy Due to Manufacturer Price Changes for Most Widely Used Brand Name Prescription Drugs in the Treatment of Chronic Conditions, 2000 through 2004



Does not include six drugs used primarily for treatment of acute conditions. Average increase for 2004 also excludes Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004. Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

III. Cumulative Impact of Manufacturer Price Changes for Widely Used Prescription Drugs, 2000-2004

As shown in Figure 2, the average increase in manufacturer prices of widely used brand name prescription drugs in 2004—7.1 percent—follows several years of increases in manufacturer prices that far exceeded the rate of inflation. Similarly, the \$51.56 increase in the average annual cost of therapy for drugs used on a chronic basis, reported in Figure 4, follows cost increases from 2000 through 2003 that ranged between \$33.76 and \$62.71 per year.

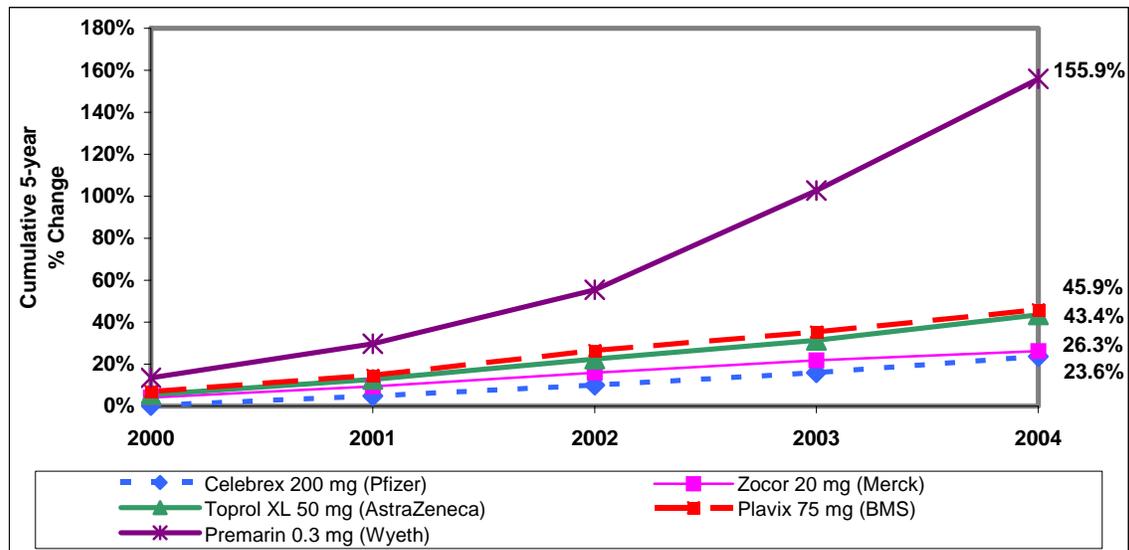
Cumulative percent change in manufacturer prices

- Of the 195 widely used drugs in the sample, 153 have been on the market for the five-year period from 2000 through 2004. Cumulatively, the average manufacturer price increase for these 153 brand name drugs was more than two-

and-one-half times the general inflation rate—35.1 percent compared with 13.5 percent (based on a 12-month rolling average).^{vii}

- Figure 5 illustrates the cumulative effect of manufacturer price changes over the five-year period between 2000 and 2004 for five specific drugs. Four of these drugs were chosen because they are among the 25 most widely used drug in the sample: Celebrex 200 mg capsules (Pfizer), used in the treatment of arthritis pain; Zocor 20 mg tablets (Merck), used to treat high cholesterol; Plavix 75 mg tablets (Bristol-Myers Squibb), a platelet aggregation inhibitor; and Toprol XL 50 mg tablets (AstraZeneca), a beta blocker. The fifth drug, Premarin 0.3 mg tablets (Wyeth), used in hormone replacement therapy, was chosen because it had the largest percentage price increase in 2004 among all of the drugs in the sample.

Figure 5: Cumulative Percent Change in Manufacturer Price for Five Widely Used Brand Name Prescription Drugs, 2000-2004



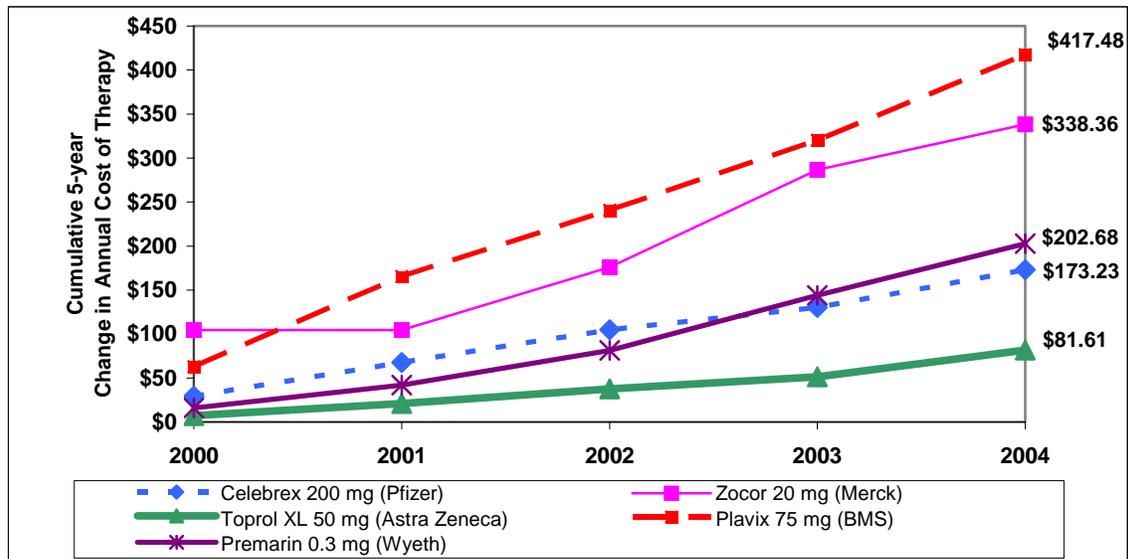
Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

- As shown in Figure 5:
 - The manufacturer price of Premarin 0.3 mg tablets increased between 13.5 percent and 30.4 percent every year since 2000, rising nearly 156 percent over the entire five-year period, when measured as a 12-month rolling average change.
 - The manufacturer prices of Plavix 75 mg tablets and Toprol XL 50 mg tablets increased about 45 percent over the five-year period.
 - The manufacturer prices of Zocor 20 mg tablets and Celebrex 200 mg capsules increased by about 25 percent over the same five-year period.

Cumulative change in annual cost of therapy

- By the end of 2004, the average annual cost of therapy for drugs used to treat chronic conditions was nearly \$241 higher than five years earlier, assuming that the increases in manufacturer prices were passed along to the consumer in the form of higher prices. For a typical consumer who takes three brand name medications, this translates into an average increase in the annual cost of therapy of \$722 between December 31, 1999 and December 31, 2004.
- As shown in Figure 6:
 - A consumer who started using Plavix 75 mg tablets in 1999 would pay over \$400 per year more for her treatment at the end of 2004 than she did at the end of 1999, assuming that the increases in manufacturer price for Plavix were passed along as higher retail prices.
 - A consumer using Zocor 20 mg tablets would pay nearly \$340 more per year than she did at the end of 1999.
 - A consumer using Premarin 0.3 mg tablets would pay over \$200 more per year for that product at the end of 2004 than she did five years earlier, and a consumer using Celebrex 200 mg capsules would pay nearly \$175 more per year.
 - A consumer using Toprol XL 50mg tablets would pay about \$81 more per year by the end of the five-year period.

Figure 6: Cumulative Change in Annual Cost of Therapy Due to Manufacturer Price Changes for Five Widely Used Brand Name Prescription Drugs, 2000-2004



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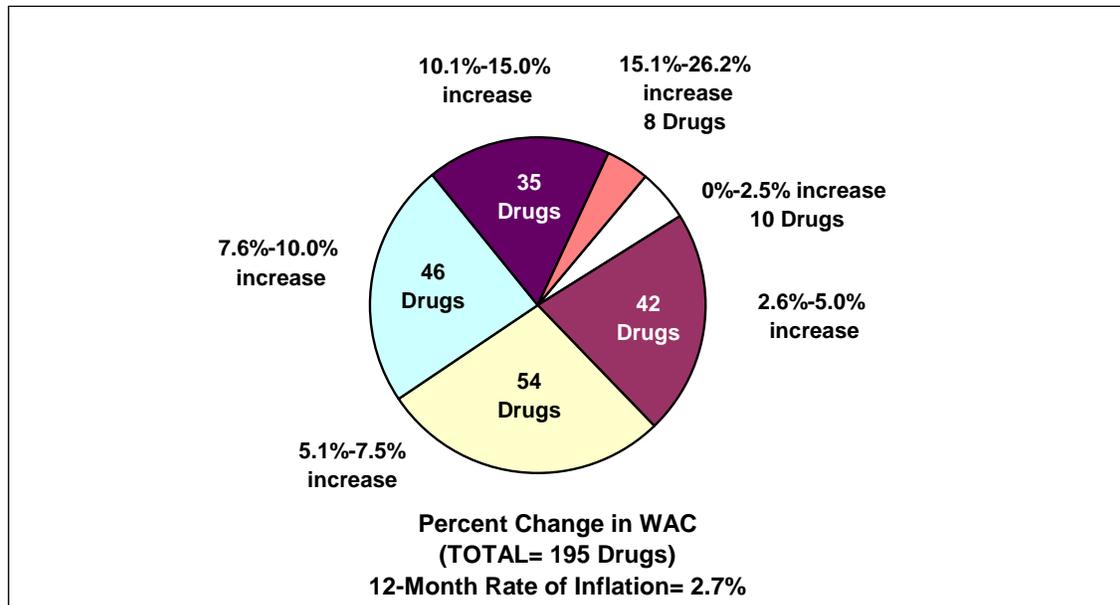
IV. Manufacturer Price Changes for Most Widely Used Brand Name Prescription Drugs in 2004

Distribution of manufacturer price changes

Of the 195 most widely used brand name prescription drug products that were in the sample for the entire year, 194 drugs had increases in manufacturer prices during 2004, when measured as a 12-month rolling average (Figure 7).

- Among the 194 brand name drugs with price increases during 2004, all but nine price increases exceeded the rate of inflation (2.7 percent).
- 143 of the drugs most widely used by older Americans had manufacturer price increases of more than 5.0 percent during 2004, including 46 drugs with price increases between 7.6 percent and 10.0 percent, 35 drugs with increases between 10.0 and 15.0 percent, and 8 drugs with increases of more than 15.0 percent.

Figure 7: Distribution of Percentage Changes in Manufacturer Prices for Most Widely Used Brand Name Prescription Drugs, 2004



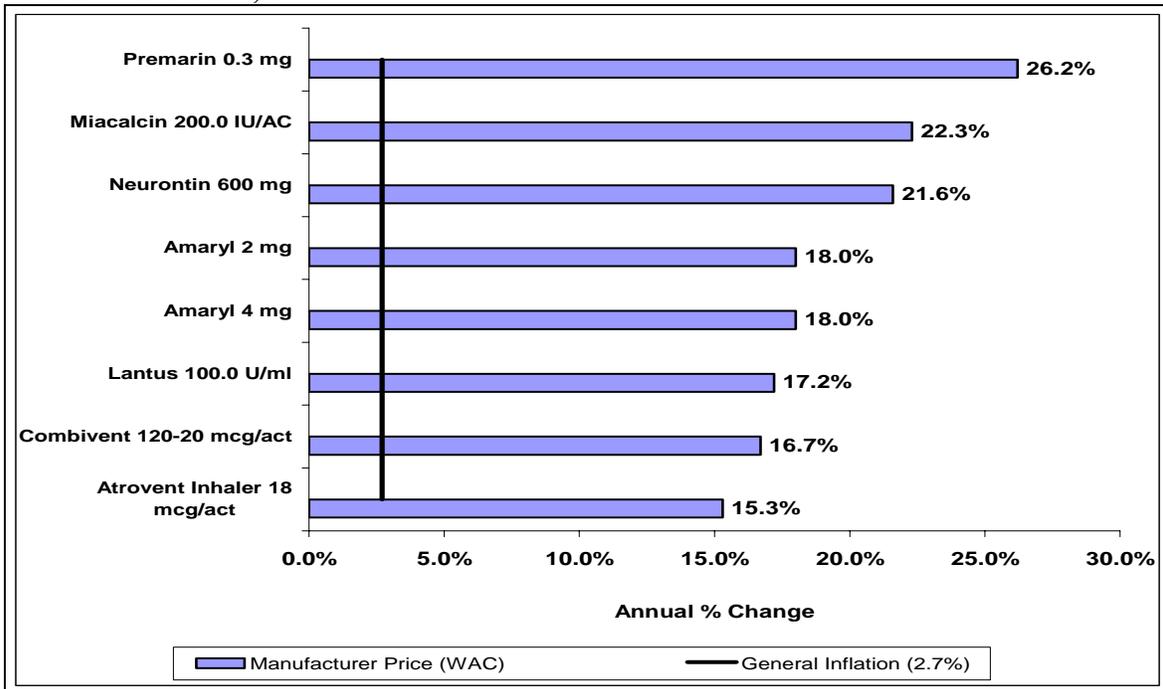
Does not include Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in 2004.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

- 32 of the 194 drug products with price changes in 2004 had more than one increase in the manufacturer price during the year, including 28 drug products experiencing two changes, 3 drug products experiencing three changes, and one drug product experienced four price changes during the year.
- Only one drug, Prilosec 20 mg, had no change in manufacturer price in 2004.^{viii}

The eight brand name drug products with the highest manufacturer price increases in 2004 among the 195 drug products most widely used by older Americans had price increases ranging from 15.3 percent to 26.2 percent (Figure 8). Of these eight drugs, seven were among the 32 that had more than one price increase in 2004, including the one drug—Premarin 0.3 mg—that had four price increases during the period.

Figure 8: Brand Name Prescription Drug Products with Highest Percentage Change in Manufacturer Price, 2004



General inflation is based on CPI-U.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

Of the 25 brand name drugs with the greatest sales in 2003, 24 were on the market during the entire year in 2004. Among these 24 drugs, all had price increases during 2004, and all but one of these annual increases exceeded the rate of general inflation during the same period (2.7 percent). Sixteen of these drugs had annual price increases that exceeded twice the rate of inflation (Table 1).

- The highest percentage change in manufacturer price during 2004 among the 25 brand name drugs with the greatest sales in 2003 was for Ambien 10 mg tablets (11.9 percent).
- The lowest percentage change in manufacturer price during this period was for Flomax 0.4 mg capsules, for which the price increased 1.5 percent during 2004.

Table 1: Annual Percentage Change in Manufacturer Prices for Top 25 Brand Name Prescription Drug Products, 2004

Rank by Sales among Study Sample*	Product Name, Strength, and Dosage Form	Package Size	Manufacturer	Therapeutic Class	% Change in WAC
1	Fosamax 70 mg tab	4	Merck	Calcium Regulators	6.7%
2	Lipitor 10 mg tab	90	Pfizer	HMG CoA Reductase Inhibitors	6.4%
3	Plavix 75 mg tab	90	Bristol-Myers Squibb	Platelet Aggregation Inhibitors	7.9%
4	Lipitor 20 mg tab	90	Pfizer	HMG CoA Reductase Inhibitors	2.9%
5	Prevacid 30 mg cap Dr	100	TAP	Proton Pump Inhibitors	3.3%
6	Celebrex 200 mg cap	100	Pfizer	NSAIDs	6.6%
7	Protonix 40 mg tab	90	Wyeth	Proton Pump Inhibitors	5.0%
8	Norvasc 5 mg tab	90	Pfizer	Amlodipine Besylate	7.1%
9	Plavix 75 mg tab	30	Bristol-Myers Squibb	Platelet Aggregation Inhibitors	7.9%
10	Norvasc 10 mg tab	90	Pfizer	Amlodipine Besylate	4.2%
11	Nexium 40 mg cap	30	AstraZeneca	Proton Pump Inhibitors	6.1%
12	Flomax 0.4 mg cap	100	Abbott	Prostatic Hypertrophy Agents	1.5%
13	Actonel 35 mg tab	4	Proctor & Gamble	Calcium Regulators	7.6%
14	Xalatan Sol 0.005%	2.5	Pfizer	Prostaglandins - Ophthalmic	5.8%
15	Aricept 10 mg tab	30	Eisai	Antidementia	4.5%
16	Vioxx 25 mg tab	100	Merck	NSAIDs	N/A**
17	Ambien 10 mg tab	100	Sanofi Pharm	Non-Barbiturate Hypnotics	11.9%
18	Pravachol 40 mg tab	90	Bristol-Myers Squibb	HMG CoA Reductase Inhibitors	7.0%
19	Pravachol 20 mg tab	90	Bristol-Myers Squibb	HMG CoA Reductase Inhibitors	7.0%
20	Evista 60 mg tab	30	Lilly	Hormone Receptor Modulators	7.8%
21	Lipitor 40 mg tab	90	Pfizer	HMG CoA Reductase Inhibitors	2.9%
22	Toprol XL 50 mg tab	100	AstraZeneca	Beta Blockers Cardio-Selective	9.1%
23	Levaquin 500 mg tab	50	McNeil	Anti-Infective Agents	6.2%
24	Zocor 20 mg tab	30	Merck	HMG CoA Reductase Inhibitors	3.6%
25	Neurontin 300 mg tab	100	Pfizer	Misc. Anticonvulsants	6.4%
General inflation rate (as measured by growth in CPI-U)					2.7%

*Ranking based on dollar value of prescriptions processed by the AARP Pharmacy Service during 2003.

**Vioxx 25 mg was withdrawn from the market in September 2004.

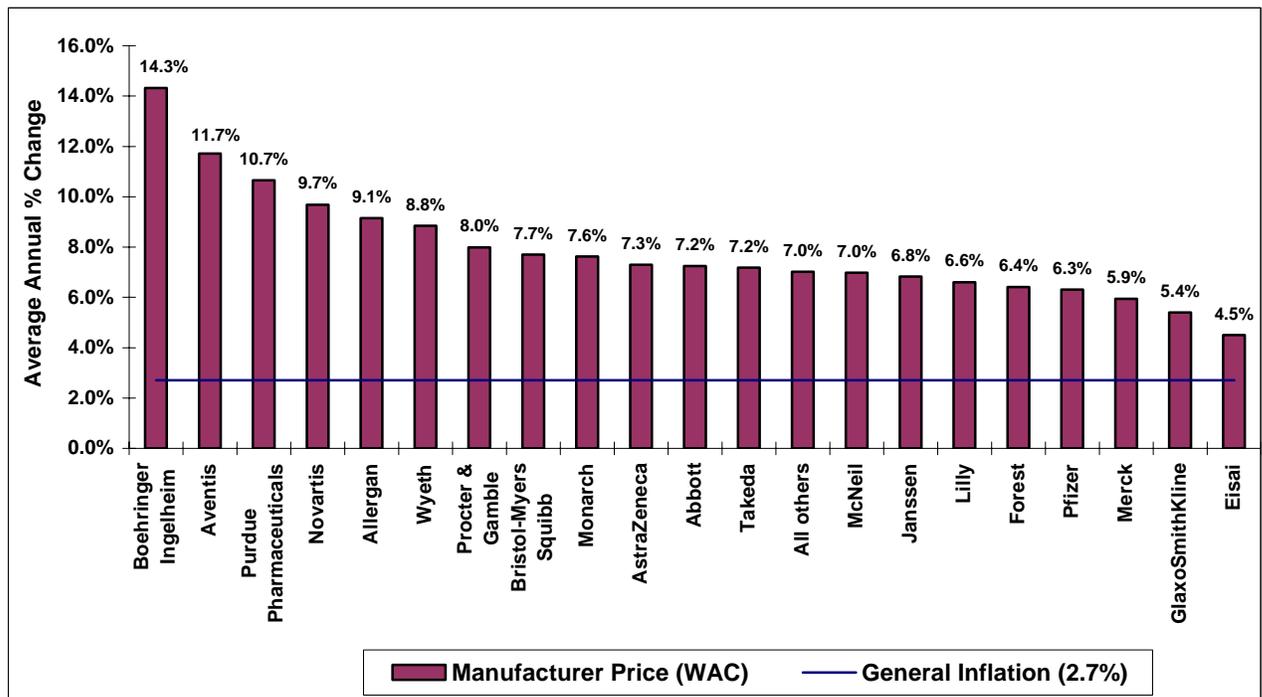
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V. Manufacturer Price Changes for Most Widely Used Brand Name Prescription Drugs, by Manufacturer and by Therapeutic Category

Of the 20 drug manufacturers with at least three drugs in the study of widely used brand name drugs, all had average annual manufacturer price increases that exceeded the rate of inflation during 2004 (Figure 9).

- Six manufacturers—Boehringer Ingelheim, Aventis, Purdue Pharmaceuticals, Novartis, Allergan, and Wyeth—had average annual price increases of more than three times the rate of general inflation (i.e., greater than 8.1 percent) during 2004. Two of these manufacturers had average price increases of more than four times the rate of general inflation (i.e., greater than 10.8 percent).
- Including the six manufacturers with the highest price increases, all but one of the 20 manufacturers had average annual price increases of at least twice the rate of general inflation during 2004 (i.e., equal to or greater than 5.4 percent).

Figure 9: Average Annual Percentage Change in Manufacturer Price for Brand Name Prescription Drugs, by Manufacturer, 2004



Manufacturers with fewer than three drugs in the 2003 sample of most widely used brand name prescription drugs are included in the “All Others” category. General inflation is based on CPI-U.

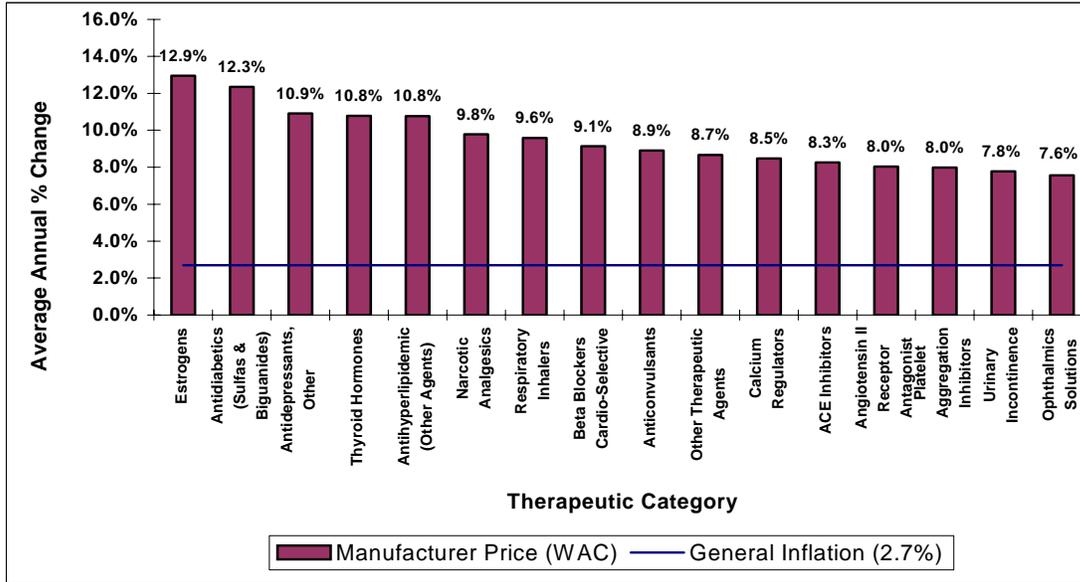
Average increase for Merck in 2004 excludes Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

All but one of the 30 therapeutic categories of brand name drugs had average annual manufacturer price increases that exceeded the rate of general inflation (2.7 percent) in 2004 (Figures 10a and 10b).

- The 12 therapeutic categories with the highest price increases had average annual manufacturer price increases of more than three times the rate of general inflation in 2004 (i.e., greater than 8.1 percent).
- Including the 12 therapeutic categories with the highest increases, 23 therapeutic categories (plus the “other therapeutic agents” category) had average annual manufacturer price increases of more than twice the rate of general inflation during 2004 (i.e., greater than 5.4 percent).
- Only one therapeutic category—cardiac glycosides—had an average change in manufacturer price below the rate of general inflation in 2004.

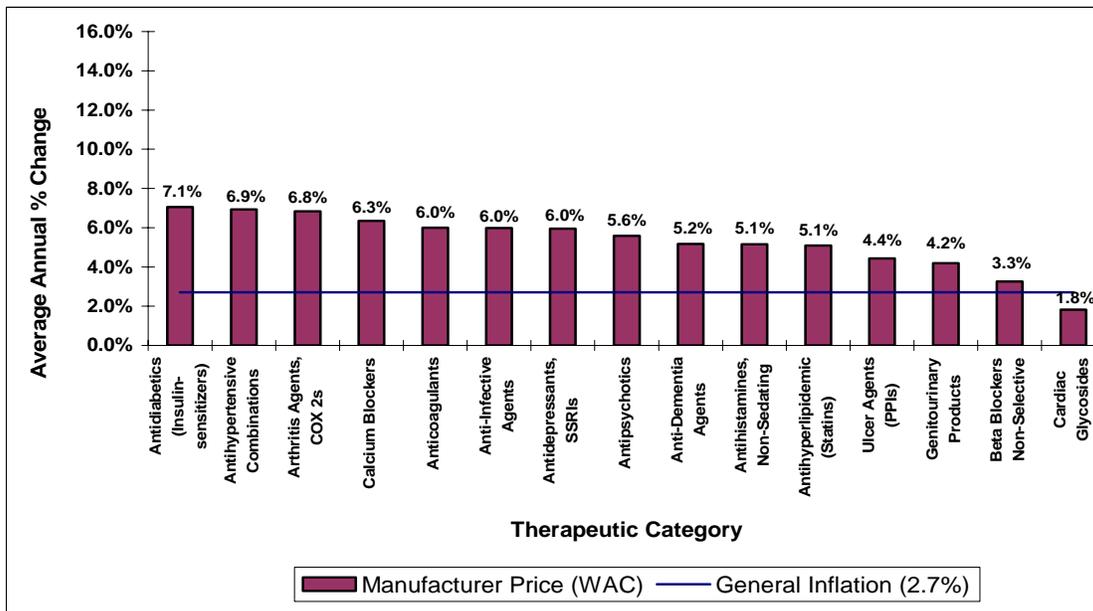
Figure 10a: Part 1—Average Annual Percentage Change in Manufacturer Price for Brand Name Prescription Drugs, by Therapeutic Category, 2004



Therapeutic categories with fewer than three drugs in the 2003 sample of most widely used brand name prescription drugs are included in the “Other Therapeutic Agents” category. General inflation is based on CPI-U.

Prepared by the AARP Public Policy Institute and the *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

Figure 10b: Part 2— Average Annual Percentage Change in Manufacturer Price for Brand Name Prescription Drugs, by Therapeutic Category, 2004



Therapeutic categories with fewer than three drugs in the 2003 sample of most widely used brand name prescription drugs are included in the “Other Therapeutic Agents” category. General inflation is based on CPI-U.

Average increase for “Arthritis Agents, COX 2s” in 2004 excludes Vioxx 12.5 mg and 25 mg tablets, which were withdrawn from the market in September 2004.

Prepared by *PRIME* Institute, University of Minnesota, based on data from Medi-Span Price-Chek PC (Indianapolis, IN: Wolters Kluwer Health Inc., February 2005).

CONCLUDING OBSERVATIONS

The average rate of increase in drug manufacturer prices, when measured on a point-to-point basis compared with the same month in the previous year, has been dropping since June 2004, when Medicare prescription drug discount cards were first introduced. By December 2004, this measure of average price increase slowed to growth rates not observed since late 2002.

Nevertheless, the average annual increase in manufacturer prices charged to wholesalers for the 195 widely used brand name prescription drugs continued to substantially exceed the rate of general inflation in 2004. The average annual increase for 2004 (7.1 percent when measured as a 12-month rolling average percent change) was higher than in any of the previous four years studied and was more than two-and-one-half times the annual rate of general inflation for 2004 (2.7 percent).

The cumulative effect of these price increases can be substantial. On average, manufacturer prices of the 153 widely used prescription drugs that have been on the market since the end of 1999 have increased by more than one-third (35.1 percent) during the subsequent five-year period, compared with a general inflation rate of 13.5 percent. For a typical consumer who takes three brand name prescription drugs, the average increase in the cost of therapy for drugs used to treat chronic conditions rose by more than \$700 during this five-year period.

All but one of the 195 brand name drugs that were on the market during the entire year had increases in manufacturer price during 2004. Nearly all (95 percent) of these increases exceeded the rate of general inflation during the year. Average annual price increases in 2004 exceeded the rate of general inflation for all of the manufacturers with at least three drugs in the sample and for 29 of 30 therapeutic categories.

ⁱ David J. Gross, Stephen W. Schondelmeyer, and Susan O. Raetzman, *Trends in Manufacturer Prices of Brand Name Prescription Drugs Used by Older Americans, 2000 Through 2003*, AARP Public Policy Institute Issue Paper #2004-06 (Washington, DC: AARP), May 2004 (revised June 2004); *Trends in Manufacturer Prices of Brand Name Prescription Drugs Used by Older Americans—First Quarter 2004 Update*, AARP Public Policy Institute Issue Brief #IB69 (Washington, DC: AARP), June 2004; *Trends in Manufacturer Prices of Brand Name Prescription Drugs Used by Older Americans—Second and Third Quarter 2004 Update*, AARP Public Policy Institute Data Digest #DD107 (Washington, DC: AARP), December 2004.

ⁱⁱ Rebates paid by brand name drug manufacturers, if any, have not been taken into account in this analysis because they generally do not benefit retail pharmacies or their “cash pay” customers—that is, people who pay up front for their prescriptions—because these customers have no drug coverage or have indemnity insurance.

ⁱⁱⁱ Medi-Span is a private organization that collects price data directly from drug manufacturers and wholesalers.

^{iv} Although the original sample contained 197 brand name prescription drugs, two of these drugs—Vioxx 12.5 mg tablets and Vioxx 25 mg tablets—were withdrawn from the market in September 2004. As a result, only 195 drugs are analyzed for any time period that includes months after September 2004.

^v Specifically, the general inflation rate reported is based on the average annual rate of change in the Consumer Price Index-All Urban Consumers for All Items (seasonally adjusted), Bureau of Labor Statistics series CUSR0000SA0.

^{vi} A brief description of the methodology used to produce these findings is provided in the methodological appendix. For a more detailed description of the methodology for the baseline study, including the rolling average approach, see Gross et al., *Trends in Manufacturer Prices of Brand Name Prescription Drugs Used*

by Older Americans, 2000 Through 2003, AARP Public Policy Institute Issue Paper #2004-06
(Washington, DC: AARP), May 2004 (revised June 2004).

^{vii} The average cumulative growth rate for all 195 drugs in the sample was 32.5 percent. This number was calculated by compounding the average annual growth rate (as shown in Figure 2) for each year from 2000 to 2004.

^{viii} A generic version of Prilosec, omeprazole, has been available since December 2002. Prilosec also is available over-the-counter.

METHODOLOGICAL APPENDIX

This analysis is based on a sample of 197 brand name drugs that are among the 200 most widely dispensed drugs (including both generic and brand name drugs) or the 200 drugs with the highest sales levels among retail and mail-order prescriptions adjudicated by the AARP Pharmacy Service for 2003. Each product represents a unique combination of active chemical ingredient, strength, dosage form, package size, and manufacturer (for example, Prevacid 30 mg capsule, package of 100, TAP Pharmaceuticals). Products are identified by a unique 11-digit National Drug Code (NDC) identifier. In this analysis, when a manufacturer discontinues a NDC code for a particular product but assigns a new NDC to a product with the same chemical ingredient, strength, dosage form, and similar or identical package size as the product with the discontinued NDC, the products are considered the same for the purposes of tracking price per unit (i.e., tablet, capsules, etc.). Products are included in the analysis only for the time period that they were on the market.

Although the drugs studied were identified using AARP Pharmacy Service data, changes in prices charged by drug manufacturers to wholesalers were measured using changes in the wholesale acquisition cost (WAC) as published in the Medi-Span Price-Chek PC database.^a WACs are the prices typically reported on invoices between the manufacturer and the drug wholesaler.

WACs do not routinely capture the absolute level of prices paid (for example, they do not capture rebates that manufacturers pay to some third-party payers). Changes in the WAC, however, are the most consistent estimate available for change in both prices paid to manufacturers for brand name drugs and the ingredient cost component of prices paid for those drugs by retail pharmacies. This is because manufacturers typically reference WAC or average wholesale price (AWP) as the basis for charging wholesalers and pharmacies that buy directly from drug manufacturers. In addition, nearly all third-party contracts (including both private programs and public programs such as Medicaid and Medicare) specifically reference WAC or AWP as the basis for determining prescription payment amounts. Furthermore, because Americans who must pay out-of-pocket for their own prescriptions (that is, “cash pay” consumers) typically do not have access to such rebates or discounts, the consideration of rebates is not relevant to an assessment of changes in drug prices for sales to the retail market segment. Finally, even if drug manufacturer rebates to third-party payers were to be considered, they typically provided only a modest decrease in drug price—about 2.0 to 5.0 percent of total drug spending by a drug benefit plan.^b

This report calculates average drug price changes in the following ways:

- The 12-month *rolling average* percentage price change is calculated by first comparing each month’s price with the price in the same month of the previous year (e.g., January 2003 vs. January 2002, February 2003 vs. February 2002, etc.), and then taking the average of these point-to-point changes over the preceding 12 months. Thus, for example, the average

annual price changes for 2004 refer to the average of the price changes for each of the 12 months from January 2004 through December 2004 compared with the same months in the previous year.

- The *annual point-to-point* percentage price change is calculated as the percentage change in price for a given month compared with the same month in the previous year.
- The *three-month* percentage price change (*point-to-point*) is calculated as the percentage change in price from the last day of the previous quarter (e.g., June 30 for the third quarter price change) to the last day of the quarter (e.g., September 30).

When aggregate estimates of price or change in drug prices were calculated for this study, each drug product's value was weighted by the 2003 sales for that drug in the AARP Pharmacy Service. The AARP Pharmacy Service weights were used as a proxy for average drug use for all older Americans.

To assess the impact of price changes on dollars spent, an annual cost of therapy was calculated for each drug product. This analysis excludes the six products in the sample that are used primarily for treatment of acute conditions and typically taken for a limited period of time. The amount of a drug that an average adult person would take on a daily basis was determined using the "usual daily dose" reported in the Medi-Span Price-Chek PC database or, when this information was not available from Medi-Span, using dosing information in the U.S. Food and Drug Administration (FDA)-approved labeling for the drug product.

Analyses of manufacturer price changes are presented by drug manufacturer and by therapeutic category as well. The analysis of drug manufacturers reported separately on the 20 manufacturers with at least three drug products, accounting for 183 of the drug products among the 197 most widely used brand name drugs. The analysis by therapeutic category reported separately on groupings of three or more drugs with a similar use or mechanism of action in treating patients. There were 30 therapeutic categories covering 183 of the drug products in the overall study sample.

^a Medi-Span is a private organization that collects price data directly from drug manufacturers and wholesalers.

^bSee PriceWaterhouseCoopers, *Study of Pharmaceutical Benefit Management*, HCFA Contract No. 500-97-0399/0097, June 2001, p. 131; Patrick Holjo and Matthew Kamm, *Pharmacy Benefit Managers: Keeping a Lid on Drug Costs*, Banc of America Securities, February 20, 2002, p. 29.

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