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**OFFICE OF
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**VARIATION IN STATE MEDICAID
DRUG PRICES**



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A B S T R A C T

To assess the extent to which States' Medicaid pharmacy reimbursement varies for the same drugs, we analyzed fiscal year (FY) 2001 prescription drug reimbursement data for 28 national drug codes (28 drugs) from 42 States. The highest paying State's unit reimbursement price ranged from 12 to 4,073 percent more per drug than the lowest paying State for the 28 drugs. Medicaid could have saved \$86.7 million in FY 2001 if all States had reimbursed at the same price as the lowest paying State for each of the 28 drugs. Multiple factors contribute to the differences in drug prices across States. Even States with the same formula for estimating pharmacy acquisition costs demonstrated variation in their average annual reimbursement prices. We recommend that the Centers for Medicare & Medicaid Services share more accurate drug pricing information with States, conduct further research on the factors that affect States' drug prices, and annually review States' reimbursement data to target technical assistance to higher paying States.



OBJECTIVE

To assess the extent to which State Medicaid programs vary in pharmacy reimbursement for the same type of prescription.

BACKGROUND

Medicaid prescription drug coverage is one of the most expensive and fastest growing health care expenditures. In fiscal year (FY) 2001, Medicaid expenditures on prescription drugs totaled approximately \$20 billion, or 9 percent of the total Federal Medicaid budget. From 1997 to 2001, Federal Medicaid expenditures for prescription drugs grew at more than twice the rate of total Medicaid spending.

The Centers for Medicare & Medicaid Services (CMS) sets maximum drug reimbursement regulations and provides guidelines within the State Medicaid Manual to ensure that the Federal Government acts as a prudent buyer of drugs. Within these Federal parameters, each State determines its own pharmacy reimbursement formula(s).

To assess the variation in drug reimbursement prices across State Medicaid agencies, we requested reimbursement data from all States for FY 2001, based on national drug codes, the unique drug identifiers used by the Medicaid program. Our sample consists of 28 national drug codes (referred to as “28 drugs”). We also obtained contextual information about States’ pharmacy reimbursement methodology for FY 2001. Our analysis is based on the 42 States that responded to our data request.

FINDINGS

The highest paying State’s unit price ranged from 12 to 4,073 percent more per drug than the lowest paying State for the 28 drugs in our sample. For each of the 28 drugs, we used as a benchmark the State that paid the lowest average annual unit price. The difference between the highest and lowest paying States ranged by drug from 12 to 4,073 percent.

On average, the highest paying State paid 477 percent more per drug than the lowest paying State for each of the 28 drugs in our sample. States’ prices varied more for the 10 non-innovator

(generic) drugs in our sample than the 18 innovator (brand name) drugs.

For the 28 drugs sampled, on average, the highest paying State paid approximately \$200 more per prescription than the lowest paying State. The reimbursement price differences per prescription ranged from a low of \$6 for Combivent to a high of \$1,244 for Ranitidine. The median price difference was \$65. While a few States ranked consistently high or low on all drugs, for most States, reimbursement did not follow a consistent pattern.

Medicaid could have saved more than \$86 million in FY 2001 if all States paid the same price as the lowest paying State for each of the 28 drugs in our sample. These potential savings represent over 13 percent of the \$653 million in total Medicaid funds spent for these 28 drugs in the 42 States in FY 2001. The Federal share of the savings would be \$50 million, while States' share would be \$36 million. For the 28 drugs in our sample, potential Medicaid savings per drug ranged from \$141,000 for Zestril to \$16.3 million for Depakote.

For 9 of the 28 drugs, Medicaid's potential savings exceeded 50 percent of total expenditures. In other words, for these nine drugs Medicaid expenditures could have been cut in half if all States had paid the same price as the lowest paying State for each drug.

States' drug prices are a product of multiple factors and vary even among States with the same pharmacy reimbursement formula. All States reimburse pharmacies for drugs based on a general reimbursement formula established by CMS, but this formula allows significant State flexibility. One component of the CMS reimbursement formula is the State's estimated pharmacy acquisition cost. The estimated pharmacy acquisition cost is often used as a proxy to gauge State's prices. A widespread assumption is that States with the same estimated acquisition cost formula pay similar prices. However, in our sample of drugs, differences in States' estimated acquisition cost formulas only partially explain price differences. For instance, 15 States had the same estimated acquisition cost formula (average wholesale price minus 10 percent), but paid substantially different prices for the drugs in our sample.

In addition to estimated acquisition cost, State reimbursement differences in defining "usual and customary" charge and setting State maximum allowable costs also affect States' drug prices.

RECOMMENDATIONS

CMS rules limiting Medicaid payments for drugs are intended to ensure that the Federal Government acts as prudent buyer of drugs. Our analysis found that the Federal drug reimbursement limits do not ensure prudent reimbursement for drugs under Medicaid.

State price variation results from several factors, but fundamentally stems from States' lack of access to pharmacies' true acquisition costs. States rely on various proxies to estimate pharmacy acquisition cost, but these proxies are not necessarily related to pharmacies' actual costs.

To ensure that the Federal Government pays for drugs more prudently under the Medicaid program, CMS should:

1. Share average manufacturer price data with States to ensure more accurate estimates of pharmacy acquisition cost.
2. Conduct further research on the factors that affect States' drug prices to more effectively advise States on ways to set their reimbursement level.
3. Annually review the States' drug prices in order to share comparative State prices and methods to reduce costs; and target drug reimbursement technical assistance to higher paying States.

Agency Comments

CMS provided comments on the draft report in which they stated their non-concurrence with the report due to concerns about data problems. In general, CMS had concerns about the magnitude of the price variation and the fact that the prices paid by the highest-paying States for certain drugs are above the Federal upper payment limits. They requested that we validate the data with the States. The full text of CMS's comments is included in Appendix G.

We met with CMS staff to discuss and resolve their concerns. We emphasized that we reported what States paid rather than what States should have paid. We explained how we followed up with States with potentially aberrant prices to verify whether this was what the State actually paid.

CMS staff agreed with us that this report raises serious issues that warrant attention. CMS staff have indicated that they plan to

follow up with States, particularly States with prices above upper payment limits. We plan to send State-specific results of our analysis to each State so that they can review their own Medicaid drug payments. We also plan to conduct a future review of State Medicaid drug prices. We look forward to continued work with CMS to ensure the integrity of Medicaid drug payments.

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OBJECTIVE

To assess the extent to which State Medicaid programs vary in pharmacy reimbursement for the same type of prescription.

BACKGROUND

Medicaid Drug Expenditures

All State Medicaid programs have elected to include prescription drug coverage, one of the most expensive Medicaid benefits. In fiscal year (FY) 2001, Medicaid expenditures on prescription drugs totaled approximately \$20 billion, representing 9 percent of the annual Medicaid budget.¹ The Medicaid program is the largest payer for prescription drugs nationally, representing 14 percent of the drug market.² The Federal Government contributes a matching percentage of State Medicaid outlays, ranging from 50 to 83 percent, depending on the State's per capita income.

Prescription drugs are the fastest growing health care expenditure. Nationally, total spending for prescription drugs rose from \$48.2 billion in 1992 to \$141.8 billion in 2001.³ Similarly, Medicaid expenditures for prescription drugs grew at more than twice the rate of overall Medicaid spending from FYs 1997 to 2001.⁴ The Centers for Medicare & Medicaid Services (CMS) projects that Medicaid drug expenditures will continue to increase by an average of 12.7 percent per year through 2011.⁵

These expected increases are significant in light of State budget constraints. In FY 2002, 40 States faced budget shortfalls that totaled nearly \$40 billion. The gap between State revenue and total spending was expected to widen to \$58 billion during FY 2003.⁶ At the same time, total Medicaid expenditures have risen 13 percent. In a recent survey, 36 States identified prescription drug costs as the top Medicaid cost driver in FY 2001, and 12 additional States listed drugs as 1 of the top 3 expenditures.⁷

Medicaid Pharmacy Reimbursement

Drug Cost. Under section 1902(a)(30)(A) of the Social Security Act, CMS has the authority to set upper payment limits for services available under the Medicaid program. For Medicaid, CMS sets maximum drug reimbursement limits to ensure that the Federal Government acts as a prudent buyer of drugs.⁸ Within these

Federal parameters, each State determines its own pharmacy reimbursement formula(s).

In general, States reimburse pharmacies for drugs at the lower of: (1) estimated [pharmacy] acquisition cost; or (2) the pharmacy's usual and customary charge to the general public.⁹ The estimated acquisition cost is the State Medicaid agency's best estimate of the price generally and currently paid by providers for the drug.¹⁰ CMS does not prescribe a method for calculating estimated acquisition cost; instead, each State establishes and specifies its own estimated acquisition cost formula in its Medicaid State plan. States also have flexibility to define their interpretation of a pharmacy's usual and customary charge.

Estimating pharmacy acquisition cost can present a challenge for States. Most often, States rely on published prices, including average wholesale price (AWP) and wholesaler acquisition cost, because they may not have access to the actual prices at which pharmacies purchase drugs. States generally obtain these list prices from a national pricing compendium issued by First Databank, a private company. However, numerous studies and audits by the Office of Inspector General (OIG) and other experts have found that these list prices, particularly AWP, overstate the prices pharmacies pay. For this reason, CMS requires that States using AWP include a significant discount off this price for CMS to consider it an acceptable estimate of pharmacy acquisition cost.¹¹

For certain multiple source drugs with a sufficient number of equivalent products and at least three suppliers, CMS sets specific Federal upper limit amounts. Multiple source drugs include generic drugs and brand name drugs for which generic alternatives are available (*i.e.*, the drug's patent has expired). The Federal upper limit equals 150 percent of the lowest published price of the drug listed in national pricing compendia.¹² States may reimburse above the Federal upper limit price if the prescribing physician certifies that the brand name version of the drug is medically necessary.

Additionally, some States establish their own maximum allowable costs for multiple source drugs at a rate below an established Federal upper limit or for drugs for which CMS has not set a Federal upper limit. In a 2002 OIG survey, 24 States identified their maximum allowable cost program as a successful drug cost containment effort. Conceptually, State maximum allowable cost

programs resemble the Federal upper limit program in that they establish maximum reimbursement amounts for groups of equivalent drugs, *i.e.*, a brand name drug and its generic equivalents.

In summary, State Medicaid programs reimburse pharmacies for drugs based upon the following upper limits:

For multiple source drugs, reimbursement is the lowest of: (1) the State's estimated acquisition cost calculation; (2) the pharmacy's usual and customary charge; (3) Federal upper limit, if one has been established; or (4) the State maximum allowable cost, if one has been established.

For single source drugs, reimbursement is the lower of: (1) the State's estimated acquisition cost calculation; or (2) the pharmacy's usual and customary charge.

Dispensing Fees. In addition to reimbursing pharmacies for the cost of the drug (also known as the ingredient cost), States are required to determine "reasonable" dispensing fees.¹³ This fee represents the charge for the professional services provided by a pharmacist when dispensing a prescription.

Medicaid Drug Rebate Program

In addition to setting reimbursement limits, the Medicaid program limits expenditures by obtaining rebates from drug manufacturers. Federal statute mandates that in order for their drugs to be reimbursed by Medicaid, drug manufacturers must generally enter into rebate agreements and pay quarterly rebates to the State Medicaid agencies.¹⁴ CMS calculates rebate amounts using a statutory formula based on average manufacturer price (AMP), defined as the average price paid by wholesalers for drugs distributed to the retail class of trade. For innovator (brand name) drugs, this formula also includes a calculation based on best price, defined as the lowest price available from the manufacturer to any wholesaler, retailer, provider, health maintenance organization, nonprofit entity, or government entity, excluding any prices charged to a list of specified entities and an additional calculation based on an inflation factor.¹⁵

Beneficiary Cost Sharing

Federal law 42 U.S.C. § 1396o(a)(3) allows States to require "nominal" co-payments from certain beneficiaries. By law, States

cannot impose cost sharing requirements on particular populations, including children and pregnant women.¹⁶ For those Medicaid beneficiaries subject to cost sharing requirements, co-payments may not exceed \$3 per prescription.¹⁷ Also, pharmacists may not withhold a drug from a beneficiary who cannot afford to pay the co-payment.¹⁸

Coordination of Third Party Coverage

Some Medicaid beneficiaries have an additional third party (*i.e.*, non-Medicaid) source of coverage for prescription drugs. In most cases, Medicaid is the payer of last resort. This means that, in general, the third party bears primary responsibility for paying that beneficiary's claims. If the Medicaid agency is aware of third party coverage, the agency must reject the claim.¹⁹ If the third party does not cover the full amount of the claim, then Medicaid may be responsible for part or all of the remaining balance.

States use two basic methods for processing Medicaid pharmacy claims when a third party is liable. A State Medicaid agency may require the pharmacy to bill the third party first, and then the State pays only the portion of the claim (if any) which is not covered by the third party, up to the Medicaid reimbursement limit. This is known as "cost avoidance." Or, a State Medicaid agency may pay the full amount that Medicaid reimburses for that claim, and then the State assumes the responsibility for recouping payment from the liable third party. This method is known as "pay and chase."

Related Work by the Office of Inspector General

OIG has issued a significant body of work related to Medicaid drug pricing. Numerous OIG reports have concluded that Medicaid pays more than several other Federal and private purchasers for a wide variety of drugs. Also, a 2002 OIG report "Medicaid Pharmacy - Additional Analyses of the Actual Acquisition Cost of Prescription Drug Products" (A-06-02-00041), found that the data upon which States base pharmacy reimbursement overstate pharmacy acquisition costs. More specifically, AWP overstated acquisition costs of single source drugs by 17.2 percent, multisource brand name drugs (without Federal upper limits) by 24.4 percent, multisource generic drugs (without Federal upper limits) by 54.2 percent, and all drugs with Federal upper limits by 72.1 percent. In these reports, OIG recommends that CMS review the current reimbursement methodology, work with States to find a method

that more accurately estimates pharmacy acquisition cost, and initiate a review of Federal Medicaid rebates.

SCOPE AND METHODOLOGY

This report is limited to Medicaid drug reimbursement prices for outpatient drugs purchased by the fee-for-service component of Medicaid. We excluded drug prices negotiated by Medicaid managed care organizations. This study is focused on the variation in the drug reimbursement States pay to outpatient pharmacies. Our drug cost calculations include only the reimbursement for the drug ingredient cost and exclude the dispensing fee. Therefore, our comparison demonstrates the variation in the cost of the drug itself, distinct from differences in States' reimbursement for pharmacy services.

We excluded consideration of the Federal rebate for purposes of this analysis.^a States have flexibility in setting their own pharmacy reimbursement methodology; however, the Federal unit rebate amount for each drug is established by CMS and is the same for all States. While we recognize that the Federal rebate program is important to cost containment for all States, it is beyond the scope of this study.

Sampling and Data Collection

In Medicaid, drugs are identified and tracked by 11-digit national drug codes (NDCs). NDCs identify unique formulations of each drug, including the manufacturer, strength, and package size.

We defined our sampling frames as the top 200 NDCs ranked by total FY 2001 Medicaid expenditures for each of the 3 categories of drugs. These three drug categories are: (1) single source drugs (brand name drugs with no generic equivalents), (2) innovator multiple source drugs (brand name drugs with generic equivalents), and (3) non-innovator multiple source drugs (generic drugs).

From the sampling frame for each drug category, we randomly selected 10 NDCs. We later excluded 2 of these NDCs (both were

^a Excluding Federal rebates does not affect the absolute price difference across States, but it makes our percent difference calculations more conservative. For example, suppose State X reimburses \$1.00 per unit for a drug, and State Y reimburses \$0.50 per unit, and the unit rebate is \$0.10. The absolute price difference between States X and Y is \$0.50 for both reimbursement (\$1.00 - \$0.50) and net price after rebate (\$0.90 - \$0.40). However, State X pays 100 percent more than State Y when comparing reimbursement price (\$1.00 vs. \$0.50), but 125 percent more than State Y when comparing net prices after rebate (\$0.90 vs. \$0.40).

innovator multiple source drugs) from our analysis because many States did not cover these 2 NDCs during FY 2001. We will use the term “28 drugs” to refer to the 28 NDCs included in our analysis. We analyzed the variation for these 28 selected drugs, but we cannot project the variation to the universe of Medicaid drugs. The selected drugs are detailed in Appendix A. Also, Appendix B lists the primary indication(s) for each drug.

We requested reimbursement information for our sample of drugs from all 50 States and the District of Columbia for FY 2001. We issued this request to both the Medicaid director and Medicaid pharmacy director in each State. For each drug, we requested States’ total drug ingredient cost reimbursement and total units for each quarter of FY 2001 (October 2000 through September 2001). Forty-two States responded.

We also surveyed each State’s Medicaid director and Medicaid pharmacy director to collect contextual information on States’ pharmacy reimbursement for FY 2001, including States’: (1) estimated acquisition cost formula(s); (2) sources of pricing data; (3) definition of usual and customary charge; (4) State maximum allowable costs; and (5) pharmacy dispensing fees.

Analysis

Though 42 States responded to our data request, some States could not provide data from all 4 quarters for all 28 drugs. If a State could not provide complete data for 4 quarters of FY 2001 for a particular drug in our sample, we excluded that State from our analysis for that drug. For 9 of the 28 drugs, we received complete data from all 42 responding States. For 9 additional drugs, our analysis relied on 41 of the 42 States. The drug for which the fewest States provided complete data was Zestril, for which we used data from 35 of the 42 States. Appendix A lists the number of States for which we received complete data for each of the 28 drugs.

We used the States’ average annual unit prices as the basis for measuring price variation and potential savings. For each State, we calculated the FY 2001 average annual unit price for each drug by adding together the total reimbursement for each of the 4 quarters and dividing this by the sum of the total units for the 4 quarters.

For each drug, we assessed variation in unit reimbursement prices across States in several ways. Primarily, we measured the percent difference in average annual unit price between the highest paying

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State and the lowest paying State for each drug. We used the lowest paying State for each drug as a benchmark. We also calculated the interquartile range, which is the difference between the prices paid by the States at the 25th and 75th percentile for each drug. Finally, we applied several graphical techniques, including scatterplots and stock market charts, to each drug to assess the distribution of State prices. We used similar analyses to measure variation across drug categories.

We measured the potential savings Medicaid could have achieved if all States reimbursed for each drug at the same price as the lowest paying State. For each drug, we determined the difference in annual price per unit between the State with the lowest unit price and each of the other States. We multiplied this unit price difference for each State by the total number of units that the State purchased in FY 2001. Our savings calculation is conservative because for each drug we only included savings for the States from which we received all 4 quarters of data for FY 2001. For some drugs, savings are based on fewer than 42 States.

Additionally, we assessed each State's success at obtaining lower prices, relative to other States. For each drug, the State which obtained the lowest unit price was ranked "one." We then evaluated States' patterns of prices, relative to other States, to determine whether States systematically obtain lower or higher relative prices.

Finally, we synthesized the descriptive information from our survey of States with the reimbursement data to explore how States' differences in reimbursement methodologies and other factors may affect differences in average annual drug prices.

Our review was conducted in accordance with the *Quality Standards for Inspections* issued by the President's Council on Integrity and Efficiency.

► FINDINGS

The highest paying State’s unit price ranged from 12 to 4,073 percent more per drug than the lowest paying State for the 28 drugs in our sample.

For each of the 28 drugs in our sample, we calculated the difference in annual unit price per drug between the lowest and

highest paying States. For each drug, we used as a benchmark the State that paid the lowest average annual unit price. The difference between the highest and lowest paying States ranged by drug from 12 to 4,073 percent. On average, the highest paying State paid 477 percent more per drug than the lowest paying State for the 28 drugs in our sample. Median difference was 49 percent.

The average difference between the highest and lowest paying States is considerably higher than the median difference because four drugs demonstrated a substantially higher level of variation than the rest of the sample. For these 4 drugs, the highest paying State paid over 2,000 percent more than the price paid by the lowest State. For 18 of the 28 drugs in our sample, the highest paying State paid between 12 and 71 percent more than the price paid by the lowest paying State. For the remaining 6 drugs, the highest paying State paid between 120 and 548 percent more than the price of the lowest paying State. Appendix C provides the percent price differences for each drug.

For 4 drugs, the highest paying State paid over 2000 percent more than the price of the lowest paying State

Price variation decreases when measured by interquartile differences because this measurement does not include the States with the highest and lowest reimbursement prices. However, a significant amount of variation remains, indicating that the States in the middle of the distribution also vary from each other. Table A provides the average, median, and range in percent differences between the highest and lowest paying States and between the States at the 25th percentile and at the 75th percentile.

Table A. Measures of Percent Variation in States’ Unit Prices per Drug

	Percent Difference between Highest and Lowest States	Percent Difference between Interquartile States
Average	477%	28%
Median	49%	6%
Range	12% to 4073%	3% to 266%

Source: OIG National Survey, 2002

F I N D I N G S

On average, the highest paying State paid approximately \$200 more per package than the lowest paying State for the 28 drugs.

To calculate the reimbursement price difference per package, we multiplied the unit price difference by the number of units per package. The highest paying State paid an average of \$197 more than the lowest paying State per package for the 28 drugs in our sample. The price differences per package range from \$6 for Combivent to \$1,244 for Ranitidine HCl 1000. The median price difference was \$65. Table B displays the top five drugs by absolute price differences per package between the lowest and highest paying States.

Table B. Drugs with the Greatest Absolute Price Difference per Package

Drug	Lowest State's Price per Package	Highest State's Price per Package	Price Difference per Package
Ranitidine HCl 1000	\$51	\$1,295	\$1,244
Atenolol	\$17	\$704	\$687
Prilosec	\$3,221	\$3,876	\$654
Ranitidine Tablets	\$25	\$648	\$623
Ranitidine HCl 500	\$27	\$648	\$621

Source: OIG National Survey, 2002

Absolute price difference per package is a product of both the level of variation across States and the cost of the drug. For example, Prilosec shows a difference of \$654 between the highest and lowest paying States and is ranked third in the absolute dollar difference between the highest and lowest States. Because Prilosec is relatively expensive, this represents only a 20 percent difference in price. Conversely, Albuterol Sulfate, which is relatively inexpensive, demonstrates a much lower absolute price difference per package (\$7), but this represents a 227 percent difference between the highest and lowest State prices.

States' prices vary most for non-innovator multiple source drugs.

Of the three drug categories, non-innovator multiple source drugs (generic drugs) demonstrated the widest percentage range of prices between the highest and lowest paying States. Price variation ranged from 20 to 4,073 percent for the 10 non-innovator multisource drugs in our sample. Innovator multisource drugs ranked second in percent differences between the highest and lowest States, and single source drugs demonstrated the least percent variation. The median variation among the 10 non-

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innovator multisource drugs was 374 percent, compared to 53 percent for the 8 innovator multisource drugs and 18 percent for the 10 single source drugs. Table C displays the range, average, and median percent differences in price for each of the three drug categories.

Table C. Percent Differences between High and Low States by Drug Category

Drug Category	Range of Percent Price Differences	Average Percent Price Difference	Median Percent Price Difference
Single Source	12-71%	23%	18%
Innovator Multisource	33-227%	102%	53%
Non-innovator Multisource	20-4073%	1230%	374%

Source: OIG National Survey, 2002

This wide variation in reimbursement price for non-innovator multisource drugs is not limited to the difference between the highest and lowest of the 42 State prices. If we exclude the States with the highest and lowest prices from our analysis, the non-innovator multisource drugs still demonstrate the most variation in our sample, followed by the innovator multisource drugs, and then the single source drugs. The average difference between the State at the 25th percentile and the State at the 75th percentile (*i.e.*, the interquartile range) was 63 percent for the 10 non-innovator multisource drugs. In contrast, the interquartile range for innovator multisource and single source drugs averaged 14 percent and 4 percent, respectively.

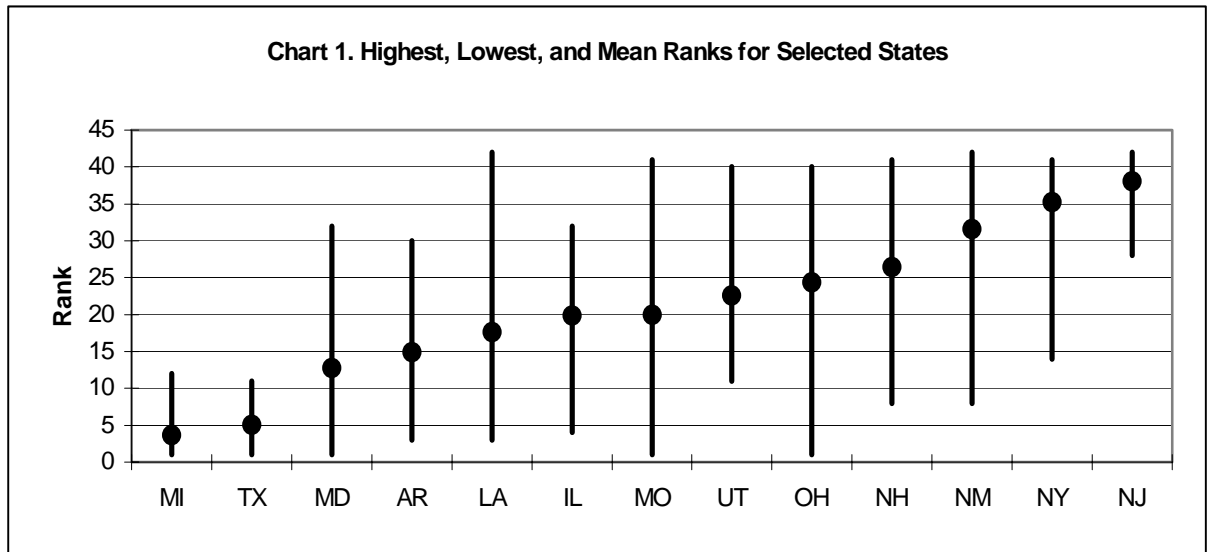
In addition to demonstrating greater percent variation, multiple source drugs (both non-innovator and innovator) display a different pattern of price variation than single source drugs. When the 42 States' prices are ordered from low to high for each drug, prices for the single source drugs in our sample tend to increase at a more consistent rate from the lowest State price to the highest State price. In comparison, prices for multiple source drugs in our sample tend to increase more sharply from one State to the next for several States at the low and/or high ends of the price range. Prices for the States in the middle of the price range, on the other hand, increase more gradually from State to State. To illustrate these different patterns, Appendix D displays the price distributions for a single source and a multiple source drug.

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Many States do not pay consistently low or high prices across the 28 drugs in our sample.

To examine State patterns in drug prices, we ranked all States by average annual unit price for each drug for which they provided complete data. A rank of "one" identifies the State that reimbursed at the lowest unit price. Thus, the lower the State's rank, the lower its drug reimbursement prices. We averaged each State's rank across all drugs for which they submitted data.

Chart 1 below displays the high, low, and mean rank across all 28 drugs for selected States and illustrates that several States reimbursed at high relative prices for some drugs and low prices for others. For each State, the top of the line indicates the highest rank that State received for any of the drugs, the bottom of the lines represent the lowest rank, and the dot indicates the mean rank for that State. The longer the line, the greater the difference between a State's highest and lowest rank. For example, across the 28 drugs, Louisiana's ranks ranged from 3 to 42. Missouri's prices ranged from being the lowest (a rank of one) for one drug to one of the highest for another drug.



F I N D I N G S

However, as Table D demonstrates, some States displayed consistent patterns in price ranks relative to other States, particularly when States' ranks are assessed by drug category. Michigan and Texas paid consistently low reimbursement prices relative to other States, while New Jersey and New York ranked consistently high. Other States, such as Ohio and Nebraska, tended to vary in price rank depending on the type of drug. Both of these States paid relatively high reimbursement prices for single source and multiple source brand name drugs but relatively low reimbursement prices for generic drugs compared to other States.

Table D. Rank (out of 42 States) by Drug Category for Selected States

State	All 28 drugs	Single Source Drugs	Innovator Multisource Drugs	Non-innovator Multisource Drugs
MI	1	1	1	3
TX	2	4	2	1
NY	41	39	40	40
NJ	42	42	42	42
OH	30	41	31	4
NE	29	36	34	10

Source: OIG National Survey, 2002

States' reimbursement prices for the 28 drugs were not related to their dispensing fees to pharmacies.

For the 28 drugs in our sample, States' dispensing fees were not related to their drug reimbursement prices, relative to other States. A State's total reimbursement to pharmacies for Medicaid prescriptions includes both the drug ingredient reimbursement to cover the cost of the drug itself, plus a dispensing fee to reimburse for the pharmacy's services.^b For each drug category, we ranked States from the lowest drug reimbursement prices to the highest and then tested whether States' ranks were related to their dispensing fees.^c We did not find that States with lower drug ingredient prices were compensating for their lower prices by paying higher dispensing fees. Appendix E provides details of this analysis.

^b When States reimburse at the usual and customary charge, the State does not pay a separate dispensing fee.

^c This analysis is based upon the 33 States with a flat dispensing fee. Nine States with variable fees were excluded.

Medicaid could have saved \$86.7 million in FY 2001, if all States paid the same price as the lowest paying State for each of the 28 drugs in our sample

For each drug, we determined the difference in annual unit reimbursement price between the State with the lowest unit price

and each of the other States.^d We multiplied this unit price difference for each State by the total number of units that the State paid for in FY 2001. We found that Medicaid could have saved \$86.7 million in FY 2001 for the 28 drugs in our sample. This potential savings represents over 13 percent of the \$653 million Medicaid spent for these 28 drugs in the 42 States. The Federal share of the savings would have been \$50 million, while States' share would have been over \$36 million.

Single source drugs could achieve the greatest potential savings of the three drug categories.

In our sample, potential savings associated with the single source drugs far exceed the potential savings of both types of multiple source drugs in terms of absolute dollar amount. Medicaid could have saved \$52.2 million (60 percent of the total savings) on the 10 single source drugs, followed by \$25.5 million (30 percent) on the 10 non-innovator multisource drugs, and \$8.9 million (10 percent) for the 8 innovator multisource drugs in our sample.

Decreasing the unit reimbursement prices of the single source drugs by even a small percentage would produce substantial savings because single source drugs are the most expensive and the most highly utilized drug category. In our sample, the 10 single source drugs account for 77 percent of the total expenditures on the 28 drugs. Table E provides drug expenditures and potential savings information for the three drug categories.

^d Our savings calculation is conservative because for each drug we only included savings for the States from which we received all 4 quarters of data for FY 2001. For some drugs, savings are based on fewer than 42 States.

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Table E. FY 2001 Expenditures and Potential Savings by Drug Category

Drug Category	FY 2001 Expenditures	Percent of Total Expenditures	Potential Savings	% of Total Potential Savings
Single Source (10 drugs)	\$504 million	77%	\$52.2 million	60%
Innovator Multisource (8 drugs)	\$34 million	5%	\$8.9 million	10%
Non-innovator Multisource (10 drugs)	\$116 million	18%	\$25.5 million	30%
Totals (28 drugs)	\$654 million	100%	\$86.7 million	100%

Source: OIG National Survey, 2002

Almost half of Medicaid’s potential savings would come from 5 of the 28 drugs.

In our sample of 28 drugs, potential Medicaid savings per drug ranged from \$141,000 for Zestril to \$16.3 million for Depakote. Depakote accounted for 19 percent of the total savings for the 28 drugs. The median potential savings per drug are \$2 million. Appendix F provides potential savings associated with each drug.

Five of the 28 drugs produced almost half (49 percent) of the total potential savings. These drugs are Depakote, with \$16.3 million in potential savings; Prilosec (\$7.4 million); Lipitor (\$6.9 million); Avonex Kit (\$6.2 million); and Oxycontin (\$5.8 million). Potential savings from these 5 drugs total \$42.5 million for FY 2001.

Spending on these 5 drugs, which account for the highest expenditures in our sample, totaled \$376.2 million, representing more than half of the total Medicaid expenditures for the 28 drugs in the 42 States in FY 2001. Because these drugs are costly and highly utilized, any price reduction would have an important impact on Medicaid savings.

Medicaid could have saved more than 50 percent on 9 of the 28 drugs.

For 9 of the 28 drugs, Medicaid’s potential savings exceeded 50 percent of total expenditures. In other words, for these drugs Medicaid could have spent less than half of what was spent if all States had paid the same price as the lowest paying State.

For instance, Medicaid could have spent 92 percent less than its FY 2001 expenditures on Atenolol. In FY 2001, the 42 States could have reimbursed pharmacies for the 8 million units of Atenolol for less than \$135,000 instead of the \$1.8 million actually paid. Michigan and Maryland each paid less than \$20 per bottle for

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Atenolol, while the average State reimbursement price was \$274 per bottle. One State paid over \$700 per bottle for the exact same drug. Table F lists the top five drugs by savings as a percentage of expenditures.

Table F. Top 5 Drugs by Savings as a Percentage of Expenditures in FY 2001

Drug	Medicaid Paid	Medicaid Could Have Paid	Savings as Percent of Expenditures
Atenolol Tablets	\$1.8 million	\$135,000	92%
Ranitidine HCl 1000	\$4.4 million	\$506,000	89%
Ranitidine HCl 500	\$4.0 million	\$522,000	87%
Ranitidine Tablets	\$3.6 million	\$521,000	86%
Trimox Capsules	\$2.6 million	\$807,000	69%
Total for 5 drugs	\$16.4 million	\$2.5 million	85%

Source: OIG National Survey, 2002

Each State’s potential savings depends on the State’s unit prices and utilization.

Savings calculations for each State are a product of the State’s unit price, relative to the lowest paying State, and the State’s utilization. The higher the State’s unit reimbursement price compared to the lowest paying State, the larger the per unit difference. This difference per unit is then multiplied by the total units the State reimbursed. Therefore, the more units purchased, the greater potential savings that could be realized by reducing the State’s unit price.

The potential Medicaid savings by State ranges from \$8,100 for Arizona to \$13 million for New York. Potential savings from the median State is \$1.1 million. Table G displays the potential savings from the top five States. These 5 States account for almost 42 percent of the total savings for the 42 States. Appendix F provides the potential savings for every State.

Table G. States with the Greatest Potential Savings

State	Potential Savings	% of Total Potential Savings
New York	\$13.0 million	15%
Ohio	\$7.6 million	9%
New Jersey	\$5.6 million	7%
North Carolina	\$5.1 million	6%
Illinois	\$4.6 million	5%
Total for 5 States	\$35.9 million	42%

Source: OIG National Survey, 2002

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High utilization contributed to the high potential savings for the top two States. New York, the State with the highest potential savings, had the highest utilization of the 28 drugs in our sample. Ohio could have generated the next highest savings, \$7.6 million, and is ranked second in utilization of these drugs.

Comparing Michigan and New Jersey demonstrates how relative reimbursement price also affects savings. Michigan paid consistently low prices relative to other States, including paying the lowest price for 11 of the 28 drugs. New Jersey paid consistently high prices relative to other States, including paying the highest price for 5 of the 28 drugs. In FY 2001, New Jersey ranked 10th in utilization (almost 15 million units) for the drugs in our sample; Michigan ranked 12th (almost 14 million units). However, New Jersey could produce the third highest savings, \$5.6 million, while Michigan's potential savings are only \$547,000 (less than one-tenth of New Jersey's). Michigan's savings rank 31 out of the 42 States. This substantial disparity in potential savings is a result of unit price differences between the two States.

States' drug prices derive from multiple factors and vary even among States with the same pharmacy reimbursement formula

States' average unit drug prices are a product of multiple factors. These factors stem from States' lack of

access to pharmacies' actual acquisition costs, which compels States to rely on proxies to estimate acquisition cost. We present information on how each factor could affect States' drug prices, and where possible, demonstrate this effect within our sample of drugs. However, measurement of the relative impact of each factor on each State's average annual price is beyond the scope of our data and this report.

All States reimburse pharmacies for drugs based on the general upper payment limit formula established by CMS, but this formula allows significant State flexibility. In general, States reimburse at the lowest of: (1) estimated [pharmacy] acquisition cost; (2) the pharmacy's usual and customary charge to the general public; (3) the Federal upper limit amount, if applicable; or (4) the State maximum allowable cost, if applicable.

Additionally, there are factors beyond the drug reimbursement formula that can affect States' reimbursement to pharmacies. One is that States may impose nominal co-payments for prescription

drugs for certain Medicaid beneficiary populations. In this case, the State pays the pharmacy according to its drug reimbursement formula, less the amount of the beneficiary co-payment. Another factor is that States use different methods for processing claims when a third party is liable for payment. These differences can affect States' pharmacy reimbursement.

Differences in States' estimated acquisition cost formulas only partially explain price differences.

Within broadly set Federal regulations and the State Medical Manual guidelines, each State is responsible for determining its own method to estimate pharmacy acquisition cost, since they do not have access to actual acquisition costs. Typically, States base estimated acquisition cost on average wholesale price (AWP) minus a discount. Six of our 42 States base estimated acquisition cost on wholesaler acquisition cost plus an additional percentage or a combination of AWP and wholesaler acquisition cost. Most States apply one estimated acquisition cost formula to all drugs and all pharmacies. In FY 2001, 2 of our 42 States applied different estimated acquisition cost formulas to brand and generic drugs, and 1 State used a different estimated acquisition cost for chain versus independent pharmacies.

In FY 2001, the most common estimated acquisition cost formula, AWP minus 10 percent, was used by 15 of the 42 States in our sample. States' discount off AWP ranged from 5 percent to 16.5 percent. Six States used wholesaler acquisition cost plus a mark-up percentage ranging from 7 to 11 percent.

A State's estimated acquisition cost formula is often used as a proxy by which to gauge that State's reimbursement prices, and it is usually assumed that States with the same estimated acquisition cost formula pay similar prices. However, for the 28 drugs in our sample, States with the same estimated acquisition cost formula paid substantially different prices. Among the 15 States with an estimated acquisition cost formula of AWP minus 10 percent, the highest paying State paid between 6 percent and 1,664 percent more for the 28 drugs in our sample. For these 15 States, the highest paying State paid 187 percent more, on average, for the 28 drugs. The median percent difference was 26 percent.

Comparing these percent differences among the 15 States with the same estimated acquisition cost formula to the price differences among all 42 States indicates that differences in estimated

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acquisition cost formulas account for some of the variation in prices across States. These 15 States display less variation than the variation found among all 42 States. The 15 States averaged a price variation of 187 percent for the 28 drugs, while all 42 States averaged a price variation of 477 percent for the 28 drugs. Table H displays the comparison between variation among the 15 States with an estimated acquisition cost formula of AWP minus 10 percent to the variation among all 42 States for selected drugs.

Table H. Percent Price Variation for Selected Drugs among States with Same Estimated Acquisition Cost (EAC) Formula

Drug	Price Variation for 15 States with EAC=AWP-10%	Price Variation for All 42 States
Prilosec	13%	20%
Depakote	25%	71%
Clotrimazole	49%	194%
Albuterol Sulfate	103%	227%
Atenolol	1664%	4073%

Source: OIG National Survey, 2002

In particular, States' estimated acquisition cost formulas should explain most of the variation in State unit prices for single source drugs. Because single source drugs are not subject to Federal upper limits or State maximum allowable costs, the reimbursement price should reflect either the estimated acquisition cost or the usual and customary charge to the general public.

However, for the 10 single source drugs in our sample, the price variation among the 15 States with estimated acquisition cost formulas of AWP minus 10 percent does not support this expectation. Although there is less variation among the 15 States than among all 42 States, considerable variation remains. Table I provides average and median differences between the highest and lowest paying States for the 10 single source drugs in our sample.

Table I. Percent Variation in Single Source Drug Prices for States with Same EAC

Average Variation for 42 States	Average Variation for 15 States	Median Variation for 42 States	Median Variation for 15 States
23%	12%	18%	12%

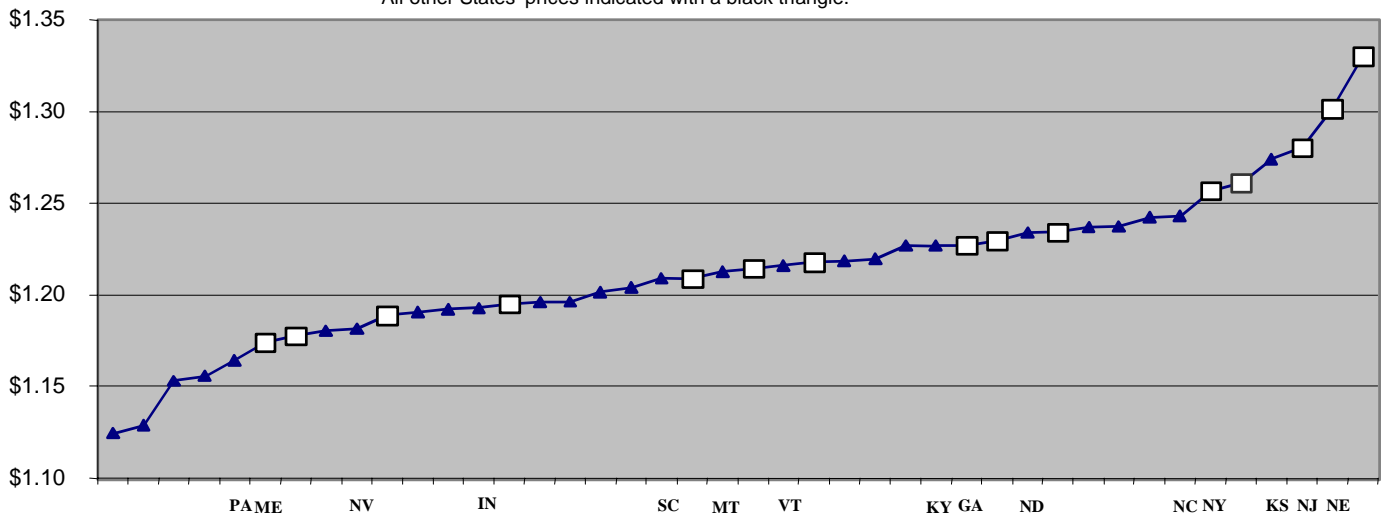
Source: OIG National Survey, 2002

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Chart 2 below illustrates the extent to which the reimbursement prices of the 15 States with the same estimated acquisition cost formula are dispersed throughout the price distribution of all 42 States. Each of the 42 States' unit prices for Detrol (a single source drug) are arrayed from the lowest paying State to the highest. The unit prices of the States with an estimated acquisition cost of AWP minus 10 are indicated by a white square, and all other States' prices are indicated with a dark triangle. As shown, Pennsylvania has an estimated acquisition cost of AWP minus 10 percent and paid the sixth lowest unit price, while Nebraska has the same estimated acquisition cost, yet paid the highest price of the 42 States for this drug.^e

Chart 2. States' Unit Prices for Detrol

Prices for States with EAC=AWP-10% are labeled & indicated with a white square.
All other States' prices indicated with a black triangle.



States' differences in usual and customary charge also affect States' average reimbursement prices.

CMS rules require States to reimburse pharmacies for drugs at the pharmacy's usual and customary charge to the public if this price is lower than the estimated acquisition cost, Federal upper limit, and State maximum allowable cost. However, as part of their effort to more closely approximate actual acquisition costs, States define the usual and customary charge differently. Definitions include the pharmacy's charge to the cash-paying customer or the pharmacy's charge to the patient group accounting for the largest number of non-Medicaid prescriptions. Many States exclude prices paid by

^e No States had a maximum allowable cost for this drug in FY 2001.

third-party payers from usual and customary charges, while a few require pharmacies to include prices they accept from third-party payers as usual and customary charges. Because usual and customary charges are based on the prices the individual pharmacy charges, these amounts can vary among pharmacies within the same State. Further, the extent to which States monitor and enforce pharmacies' billing of usual and customary charges is uncertain.

While it is difficult to measure the effect of differences in usual and customary charge definitions on States' average prices, their impact may be significant. One expert estimated that, nationally, roughly 25 percent of all Medicaid drug claims are paid at the usual and customary charge.²⁰ Additional evidence suggests that the frequency with which drugs are purchased at the usual and customary charge varies across States. Massachusetts analyzed its Medicaid drug claims for the month of July 2002 and found it paid 34 percent of all claims at the usual and customary charge.²¹ In contrast, Vermont paid only 10 percent of its FY 2002 drug claims at the usual and customary charge.²² Finally, Texas calculated its rate of claims paid at usual and customary charge to be 22 percent.²³

States' maximum allowable costs contribute to the price variation for multiple source drugs.

States' maximum allowable costs offer another reason why States' reimbursement prices for multiple source drugs vary more than prices for single source drugs. States determine for which multiple source drugs, if any, to set maximum allowable costs. States that set maximum allowable costs may pay lower prices for these drugs than States that base reimbursement exclusively on estimated acquisition cost formulas and usual and customary charge. Twenty of the 42 States reported a maximum allowable cost for at least 1 drug in our sample. On average, the 20 States reported maximum allowable costs for 10 of the 18 multiple source drugs in our sample. For 8 of the 18 multiple source drugs in our sample, the lowest paying States set maximum allowable costs. The highest paying States had not set maximum allowable costs for any of the multiple source drugs.

States vary considerably in the maximum allowable cost prices they set for the same drug. For eight multiple source drugs, the highest reported maximum allowable cost was more than twice as expensive

as the lowest maximum allowable cost. For example, in FY 2001, Oklahoma’s maximum allowable cost for Ranitidine was almost \$0.38 per pill, a price 371 percent higher than Washington’s maximum allowable cost of \$0.08 per pill for the same drug.^f

Finally, while a State’s maximum allowable cost generally acts as a ceiling price, States sometimes reimburse at prices above their maximum allowable cost for a particular pharmacy claim. A maximum allowable cost applies to a group of equivalent drugs (*i.e.*, a brand name drug and its generic versions), and the maximum allowable cost amount is commonly based on the least expensive drug in the group. If a physician certifies that a specific drug within a maximum allowable cost group is medically necessary, then a State may reimburse a greater amount for that drug based on its estimated acquisition cost formula or usual and customary charge.

Cost sharing requirements and coordination of third party coverage can also affect States’ pharmacy reimbursement.

Beyond drug reimbursement methodologies, differences in States’ cost sharing requirements can affect the variation in States’ pharmacy reimbursement. States may require “nominal” co-payments from beneficiaries that do not exceed \$3 per prescription. For prescriptions with a cost sharing requirement, the State subtracts the amount of the beneficiary co-payment from its reimbursement to the pharmacy.

The potential impact of co-payments on States’ average annual price per unit varies by drug. The maximum co-payment is \$3 per prescription, so the effect on the unit price depends on the number of units per prescription. In our sample, units per prescription ranged from 4 units, for which a \$3 co-payment reduces a State’s unit price by \$0.75/unit, up to 1,000 units, for which a \$3 co-payment reduces a State’s unit price by less than one penny (\$0.003). These potential reductions in unit price can also be expressed as a percentage of the average unit price for each drug. Table J lists the absolute and percent reductions in unit price resulting from a \$3 co-payment for a selection of drugs.

^f Our sample includes three national drug codes for Ranitidine. These maximum allowable cost amounts are the same for all three.

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Table J. Potential Reduction in Unit Price based on \$3 Co-payment

Drug	Units per Prescription	Potential Reduction in Unit Price	Average Unit Price	Potential Percent Reduction in Average Unit Price
Prilosec	1000	\$0.003	\$3.62	0.1%
Sandimmune	50	\$0.060	\$5.69	1.1%
Depakote	100	\$0.030	\$0.80	3.7%
Albuterol Sulfate	20	\$0.150	\$0.33	46.1%

Source: OIG National Survey, 2002

However, we cannot measure the extent to which co-payments contribute to the variation in average annual drug prices in our sample, because States do not deduct the co-payment amount when reimbursing claims for exempted beneficiaries. For each of the 28 drugs, we have data on total units purchased by each State but do not have data on what percentage of these units went to beneficiaries who are subject to cost sharing requirements.

Additionally, differences in States’ processing of claims in which a third party is liable can impact pharmacy reimbursement. Because States that use a cost avoidance method may only reimburse pharmacies for Medicaid’s liable portion of claim, their reimbursement data reflect only the amount for which Medicaid is responsible. In contrast, States that use a pay and chase method reimburse the pharmacy the full amount Medicaid reimburses for that claim, which is reflected in their reimbursement data. Even if these States recoup payment from a third party, they do not necessarily update each specific drug claim to reflect the recoupment. Further, a 2001 OIG report, “Medicaid Recovery of Pharmacy Payments from Liable Third Parties” (OEI-03-00-00030) found that in 1999, 32 States were at risk of losing over 80 percent of the pharmacy payments they tried to recover from third parties through the pay and chase method.

We cannot measure the extent to which these different methods of pharmacy claims processing contribute to the variation in drug reimbursement for our sample of drugs. We do not have data on what percentage of claims involved third party liability for each State for the 28 drugs in our sample. Using cost avoidance when a third party is liable could lower a State’s average reimbursement for a drug. Michigan primarily used the cost avoidance method and ranked first overall in obtaining the lowest prices for the drugs in our sample. However, New York also used cost avoidance and ranked 41 out of the 42 States for the 28

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drugs sampled. Texas used the pay and chase method and achieved the second lowest prices overall for our sample of drugs.



R E C O M M E N D A T I O N S

In the State Medicaid Manual, CMS states that “HHS rules [limiting Medicaid payments for drugs] are intended to ensure that the Federal Government acts as a prudent buyer of drugs” under the Medicaid program.²⁴ Our analysis suggests that the Federal drug reimbursement limits do not ensure prudent buying of drugs by State Medicaid agencies. These limits may not achieve the goal of prudent expenditures for drugs, given the tremendous variability in the amounts States paid for the same set of drugs.

If all States had reimbursed at the same price as the lowest State for each drug in our sample, the Medicaid program could have saved more than \$86 million in FY 2001. Again, these potential savings derive from only 28 drugs for the 42 States that provided data. Overall, Medicaid covers almost 60,000 National Drug Codes, using the same reimbursement methods that produced the vast price discrepancies for the 28 drugs in our sample. A clear example of concern is one State’s payment of \$700 for a specific Medicaid prescription, while two other State Medicaid programs purchase the same prescription for less than \$20.

In addition to highlighting the variation in States’ drug reimbursement prices and the effect of this variation on Medicaid drug costs, this report provides a starting point for examining why States’ drug prices vary greatly. Most examinations of Medicaid drug prices focus on States’ estimates of pharmacy acquisition cost. However, our analysis demonstrates that differences in States’ estimated acquisition cost formulas only partially explain drug price differences and that several other factors affect States’ drug prices.

Most importantly, the factors that drive variability in drug prices across States stem from States’ lack of access to pharmacies’ true acquisition costs. Because they lack information about such costs, States rely on estimated acquisition costs, usual and customary charges, and maximum allowable costs as proxies for pharmacies’ acquisition cost. These proxies are deficient because they are not necessarily linked to the prices at which pharmacies purchase drugs. The wide variation in State Medicaid prices results from the deficiencies in these proxies for estimating pharmacies’ acquisition costs.

CMS should share average manufacturer price data with States to ensure more accurate estimates of pharmacy acquisition cost.

Currently, average manufacturer price data may represent the most accurate drug pricing data available to CMS. While pharmacies are not compelled to share their actual acquisition costs with CMS or the States, drug manufacturers are required to submit average manufacturer price data to CMS each quarter as part of the Medicaid rebate program. Average manufacturer price is statutorily-defined and is calculated from actual sales transactions between drug manufacturers and wholesalers.

R E C O M M E N D A T I O N S

Previously, OIG has recommended that CMS share average manufacturer price with the States to help improve their estimates of pharmacy acquisition cost.²⁵ In response, CMS disagreed with the recommendation citing issues associated with average manufacturer price confidentiality.

Further research is needed on the factors that affect States' drug prices.

If States continue to lack accurate price information, CMS should strengthen its work to improve States' ability to optimally reimburse for drugs within the current Medicaid pharmacy reimbursement framework.

To maximize their capacity to assist States, CMS should further examine the determinants of States' drug prices, including (1) States' estimated acquisition cost formulas, (2) usual and customary charges, and (3) maximum allowable cost limits. We recognize that CMS has initiated efforts to further understand the impact of State maximum allowable costs and the Federal upper limit program. We support this effort and encourage CMS to apply the findings from this project and to expand its research on drug pricing and Medicaid reimbursement to include estimated acquisition cost and usual and customary charges. By understanding how each of these factors affects States' drug reimbursement, CMS can more effectively advise States on ways to set their reimbursement levels that help to ensure that the Federal Government pays for drugs more prudently under the Medicaid program.

CMS should annually review the States' drug prices and target technical assistance to States paying the highest reimbursements.

To assess States' relative success in drug reimbursement, CMS should conduct annual analyses of States' prices for a specific sample of drugs using methods similar to those used in this report. States already submit the necessary reimbursement data to CMS. Performing such analysis would allow CMS to target their technical assistance by prioritizing States that pay the highest drug reimbursement prices. Technical assistance would include providing guidance to States on how to improve reimbursement methodologies, based on CMS's enhanced research, as detailed above; ensuring States are aware of how their reimbursement prices compare to other State Medicaid programs; and sharing successful reimbursement strategies from other States.

Annual reviews of States' drug reimbursement also enable CMS to monitor States' improvement over time. Further, State Medicaid reimbursement methods and the larger pharmaceutical marketplace are complex and dynamic. Therefore, ongoing monitoring is essential for CMS to continually target and maximize its resources for improving States' drug reimbursement under Medicaid.



A G E N C Y C O M M E N T S

CMS provided comments on the draft report in which they stated that they do not concur with the report because of concerns about problems with the data. CMS provided two specific examples that they considered to be problems in our report. In addition, CMS recommended that we validate the data with the States. The text of CMS's comments is included in Appendix G.

We do not believe that our report contains numerous errors and that either of the two examples CMS cited demonstrate errors or problems in our report. Therefore, we met with CMS staff to discuss these specific examples and any other concerns.

The first example cited in CMS's comments was related to the price of a different package size of Prilosec than the one included in our review. We have included additional language in the finding to clarify our calculation of prescription prices per package for each of the 28 NDCs in our review.

The second example reflected more general concerns. These concerns centered on the magnitude of the price variation that we reported and the prices paid by the highest-paying States for certain drugs. As described in the report, reimbursement for drugs is subject to upper payment limits in which States must pay the lowest of: (1) estimated [pharmacy] acquisition cost; (2) the pharmacy's usual and customary charge to the general public; (3) the Federal upper limit amount, if applicable; or (4) the State maximum allowable cost, if applicable. For some drugs, the prices we report for the highest-paying States are higher than this upper limit formula would dictate. This led CMS staff to question the accuracy of the data that States provided us. This was the central issue in the second example that CMS cited in their comments, *i.e.*, some States reimbursed at prices above the Federal upper limit.

We agreed with CMS staff that some State prices are above the upper payment limit for certain drugs and that this is problematic. We emphasized, however, that we are reporting what States paid rather than what States should have paid. We described our process of reviewing all of the State-reported data, including the fact that we followed up with States whose prices appeared aberrantly high or low to verify whether this was what the State actually paid.

Additionally, at the meeting CMS staff raised some technical considerations, including States' methodology for excluding dispensing fees from ingredient reimbursement cost and States' systems for ensuring that

A G E N C Y C O M M E N T S

pharmacies bill for drugs correctly. We also discussed State differences in “usual and customary” charges, State maximum allowable costs, and third party liability, which are addressed in the report.

We agree that all of these factors can affect the magnitude of State drug price variation. In this inspection, we focused on measuring State drug price variation, and while we discussed potential causes of variation, measurement of cause was beyond our scope. We plan to send each State data comparing its Medicaid reimbursement prices to the other States’ prices for each of the 28 drugs. We will suggest that each State review its Medicaid drug payments and the factors that affect its prices.

In conclusion, this report raises serious issues concerning Medicaid prescription drug reimbursement that warrant attention and action. We encourage CMS to implement all of our recommendations. We also discussed with CMS staff our plans to conduct another review of State Medicaid drug prices in the future to determine whether the price variation we found for these 28 drugs in FY 2001 is an anomaly or if it is representative of an underlying problem. We will work with CMS to address a variety of their outstanding concerns in that inspection. We look forward to continued work with CMS toward our common goal of ensuring the integrity of prescription drug payments under the Medicaid program.

A P P E N D I X A

SAMPLE OF 28 DRUGS

Single Source Drugs (10)

NDC	TRADE NAME	STRENGTH	UNITS	States with Complete Data
00009454402	Detrol Tablets	2MG	60	42
50458032050	Risperdal Tablets	2MG	500	41
00002411660	Zyprexa Tablets	7.5MG	60	42
00597001314	Combivent Aerosol Inhalation	103:18MCG;MCG	14.7	41
59627000103	Avonex Kit Administration Pack	30MCG/VIL	4 (kits)	41
00074621413	Depakote Tablets	250MG	100	42
00006007468	Vioxx Tablet	12.5 MG	100	40
00186074282	Prilosec Capsules Delayed Release	20 MG	1000	41
00071015623	Lipitor Tablets	20 MG	90	42
00087606010	Glucophage Tablets	500 MG	500	42

Innovator Multiple Source Sample Drugs (8)*

NDC	TRADE NAME	STRENGTH	UNITS	States with Complete Data
52544023528	Nor-QD	.35 MG	6 X 28	40
00078011022	Sandimmune Oral Solution	100 MG/ML	50 ML	36
59930157003	Clotrimazole Cream	1%	45G	39
00310013034	Zestril Tablets	5MG	1000	35
00032421001	Luvox	100 MG	100	41
00310014510	Zestoretic Tablets	25:20 MG; MG	100	42
59930163601	Normodyne	200 MG	100	39
59930151504	Albuterol Sulfate	0.50%	20 ML	41

Non-Innovator Multiple Source Sample Drugs (10)

NDC	TRADE NAME	STRENGTH	UNITS	States with Complete Data
55953054470	Ranitidine HCl	150 MG	500	41
00228257809	Diltiazem CD Capsules	240 MG	90	41
00003010960	Trimox Capsules	500 MG	500	42
55953054480	Ranitidine HCl	150 MG	1000	39
59011010510	Oxycontin Tablets Controlled Release	40 MG	100	42
00378023110	Atenolol Tablets	50 MG	1000	42
00555090201	Naltrexone Hydrochloride Tablets	50 MG	50	39
00781188305	Ranitidine Tablets	150 MG	500	41
00228271111	Isosorbide Mononitrate Tablets	60 MG	100	40
00364047901	Methylphenidate Hydrochloride	10 MG	100	40

* Two innovator multiple source drugs that were selected in our sampling were excluded from our analysis because many States did not purchase these drugs during FY 2001. They are Nicoderm CQ (NDC 00766145020) and Actiq Lozenge (NDC 00074246524).



A P P E N D I X B

PRIMARY INDICATIONS FOR SAMPLE DRUGS

The following table lists the primary indications, *i.e.*, the primary conditions that the drugs are intended to treat, for each of the 28 drugs in our sample.

DRUG	PRIMARY INDICATION(S)
Albuterol Sulfate	bronchospasm
Atenolol	hypertension and coronary heart disease
Avonex	multiple sclerosis
Clotrimazole	vaginal yeast infection
Combivent	chronic obstructive pulmonary disease
Depakote	bipolar disorder
Detrol	overactive bladder
Diltiazem CD	hypertension
Glucophage	diabetes
Isosorbide Mononitrate	angina
Lipitor	high cholesterol
Luvox	depression and obsessive compulsive disorder
Methylphenidate Hydrochloride	attention deficit disorder and narcolepsy
Naltrexone Hydrochloride	alcohol dependency
Normodyne	hypertension
Nor-QD	prevention of pregnancy
Oxycontin	pain management
Prilosec	duodenal ulcer, gastric ulcer, gastroesophageal reflux disease (GERD), erosive esophagitis, pathological hypersecretory conditions
Ranitidine HCl	duodenal ulcer, gastric ulcer, gastroesophageal reflux disease (GERD), erosive esophagitis, pathological hypersecretory conditions
Risperdal	schizophrenia and dementia
Sandimmune	prevention of organ rejection following transplants
Trimox	bacterial infection
Vioxx	osteoarthritis, rheumatoid arthritis, acute pain, primary dysmenorrhea
Zestoretic	hypertension
Zestril	hypertension, heart failure, acute myocardial infarction
Zyprexa	schizophrenia and bipolar disorder



A P P E N D I X C

SELECTED CHARACTERISTICS OF SAMPLE DRUGS

Single Source Drugs

Drug	Percent Difference: High and Low States	Percent Difference: Interquartile States	FY 2001 Expenditures (42 States)	Percent of Total Expenditures for 28 Drugs	Potential Savings	Percent of Total Potential Savings for 28 Drugs
Depakote	70.8%	4.2%	\$66,876,204	10.2%	\$16,284,584	18.8%
Glucophage	21.0%	4.4%	\$20,337,219	3.1%	\$1,956,958	2.3%
Avonex	20.4%	5.2%	\$53,387,706	8.2%	\$6,184,122	7.1%
Prilosec	20.3%	4.8%	\$62,221,082	9.5%	\$7,367,148	8.5%
Detrol	18.3%	3.1%	\$38,415,841	5.9%	\$2,800,316	3.2%
Combivent	17.8%	4.7%	\$47,000,368	7.2%	\$3,544,345	4.1%
Vioxx	16.8%	3.9%	\$33,130,383	5.1%	\$2,877,104	3.3%
Risperdal	13.5%	2.6%	\$23,967,520	3.7%	\$1,645,946	1.9%
Zyprexa	13.4%	2.6%	\$48,570,362	7.4%	\$2,712,454	3.1%
Lipitor	12.1%	3.5%	\$109,940,879	16.8%	\$6,873,801	7.9%
TOTAL	-	-	\$503,847,564	77.1%	\$52,246,778	60.2%

Innovator Multiple Source Drugs

Drug	Percent Difference: High and Low States	Percent Difference: Interquartile States	FY 2001 Expenditures (42 States)	Percent of Total Expenditures for 28 Drugs	Potential Savings	Percent of Total Potential Savings for 28 Drugs
Albuterol Sulfate	227.0%	52.5%	\$3,696,609	0.6%	\$1,869,895	2.2%
Clotrimazole	194.4%	10.5%	\$1,525,100	0.2%	\$848,609	1.0%
Normodyne	164.7%	20.9%	\$2,222,774	0.3%	\$1,172,316	1.4%
Zestoretic	56.8%	5.9%	\$5,379,487	0.8%	\$1,415,040	1.6%
Sandimmune	49.5%	5.9%	\$2,069,395	0.32%	\$544,578	0.6%
Luvox	48.7%	4.1%	\$15,608,090	2.4%	\$2,581,956	3.0%
Nor QD	42.6%	7.2%	\$1,672,834	0.3%	\$309,259	0.4%
Zestril	33.3%	3.3%	\$1,756,577	0.23%	\$141,339	0.2%
TOTAL	-	-	\$33,930,866	5.2%	\$8,882,992	10.4%

SELECTED CHARACTERISTICS OF SAMPLE DRUGS, CONTINUED

Non-innovator Multiple Source Drugs

Drug	Percent Difference: High and Low States	Percent Difference: Interquartile States	FY 2001 Expenditures (42 States)	Percent of Total Expenditures for 28 Drugs	Potential Savings	Percent of Total Potential Savings for 28 Drugs
Atenolol	4072.7%	266.3%	\$1,780,532	0.3%	\$1,645,525	1.9%
Ranitidine Tablets	2495.5%	63.6%	\$3,637,638	0.6%	\$3,116,688	3.6%
Ranitidine (500)	2459.9%	81.3%	\$3,961,708	0.6%	\$3,438,326	4.0%
Ranitidine (1000)	2274.6%	111.9%	\$4,382,270	0.7%	\$3,876,220	4.5%
Trimox	547.5%	32.5%	\$2,615,314	0.4%	\$1,807,883	2.1%
Isosorbide Mononitrate	200.0%	39.7%	\$3,693,750	0.6%	\$2,045,719	2.4%
Methylphenidate	120.1%	12.0%	\$2,913,568	0.5%	\$1,275,016	1.5%
Diltiazem	67.6%	10.1%	\$5,533,307	0.9%	\$1,761,686	2.0%
Naltrexone	43.6%	7.9%	\$3,349,813	0.5%	\$815,141	0.9%
Oxycontin	20.5%	2.5%	\$83,758,577	12.8%	\$5,758,943	6.6%
TOTAL	-	-	\$115,626,477	17.9%	\$25,541,147	29.5%

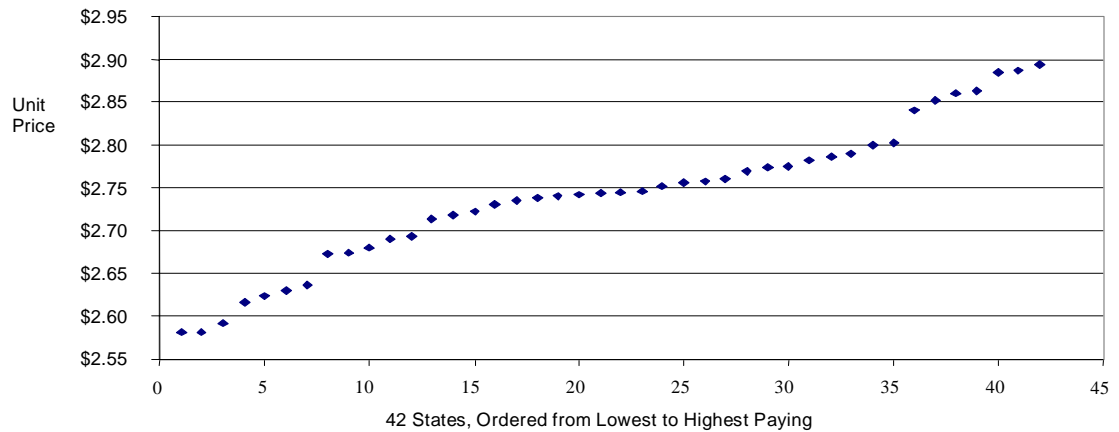


A P P E N D I X D

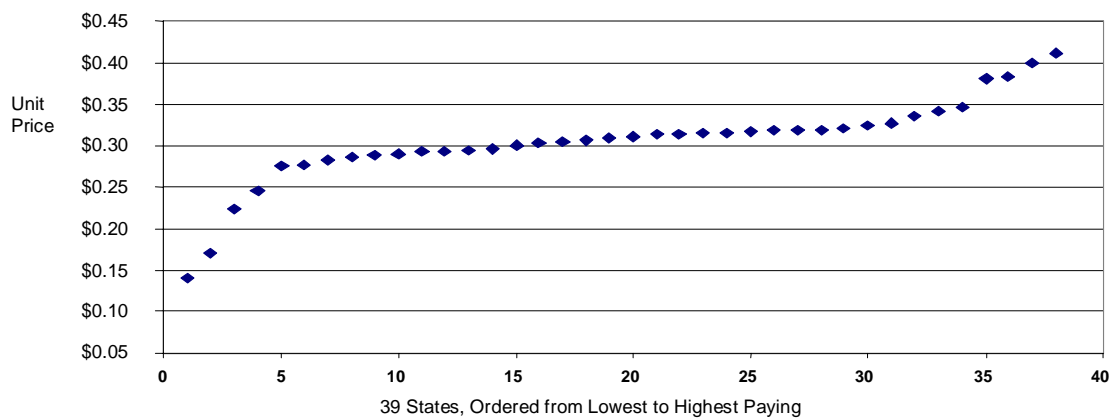
DISTRIBUTION OF STATES' PRICES FOR LIPITOR AND CLOTRIMAZOLE

Multiple source drugs (both non-innovator and innovator) tended to display a different pattern of price variation than single source drugs. When the States' prices are ordered from low to high, prices for the single source drugs generally increased from the lowest to highest State price at a more consistent rate than multiple source drugs. Multiple source drugs tended to increase more sharply from one State to the next at the low and/or high ends of the price range, while prices of States in the middle of the range increased more gradually from State to State. Comparing the States' prices for Lipitor, a single source drug, to Clotrimazole, an innovator multiple source drug, illustrates this pattern.

Distribution of States' Prices for Lipitor



Distribution of States' Prices for Clotrimazole





A P P E N D I X E

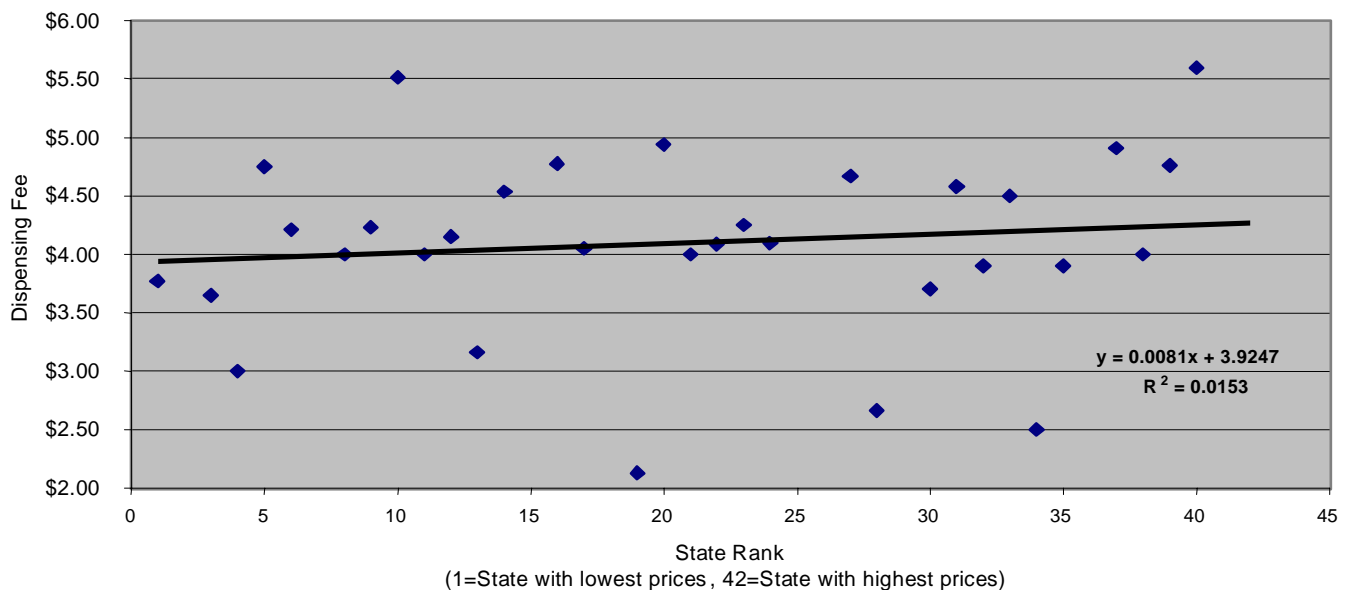
COMPARISON OF DISPENSING FEES TO STATES' PRICES

Though this study focuses on States' reimbursement for the cost of the drug itself, we did collect information on the dispensing fees States paid to pharmacies during FY 2001. Of the 42 States, 33 paid flat dispensing fees (e.g., Indiana paid \$4.00 per prescription), and 9 paid variable dispensing fees. For some of these States, variable dispensing fees vary with the price of the drug, such as Texas, which paid a flat fee plus an "inventory management factor" of 2 percent of the drug cost. Other States' fees varied by pharmacy. For example, Utah paid a higher fee to rural pharmacies than urban pharmacies, and Oregon's fee varied by the volume of prescriptions that the pharmacy filled annually. We excluded the nine States with variable fees from our dispensing fee comparison.

For the 33 States with flat fees, we explored whether the States that paid lower relative prices for the drugs in our sample compensated by paying higher dispensing fees. We compared States' dispensing fees to their ranks relative to other States. The State with the lowest prices was ranked "one." We graphed these data points with State rank along the x-axis (independent variable) and State dispensing fee along the y-axis (dependent variable).

If States that paid lower prices compensated pharmacies with higher dispensing fees, then we would expect the graph to show a negative slope, i.e., as the States' ranks (and therefore prices) increased, the dispensing fee would decrease. In fact, as Chart X below displays, these comparisons demonstrated very little relationship at all. The best fit line is almost flat, which would indicate no relationship, and the slight slope is in a positive direction (slope = 0.0081). Further, the very small R^2 (0.0153) indicates that any relationship between dispensing fee and relative drug prices for these 33 States is very weak.

Relationship between States' Relative Drug Prices and Dispensing Fees





A P P E N D I X F

POTENTIAL SAVINGS BY STATE

State	Potential Savings	Savings as Percent of State's Expenditures on Sample Drugs	State's Savings as Percent of Total Potential Savings
AK	\$64,264	15.3%	0.1%
AR	\$854,018	12.2%	1.0%
AZ	\$8,096	16.7%	0.01%
CO	\$894,285	13.1%	1.0%
CT	\$1,368,736	12.2%	1.6%
FL	\$4,513,343	11.7%	5.2%
GA	\$3,355,312	14.8%	3.9%
HI	\$327,148	11.6%	0.4%
ID	\$531,284	13.7%	0.6%
IL	\$4,615,653	15.6%	5.3%
IN	\$2,037,517	12.7%	2.4%
KS	\$1,106,127	15.5%	1.3%
KY	\$2,986,066	17.2%	3.5%
LA	\$1,887,159	12.9%	2.2%
MA	\$2,278,094	7.6%	2.6%
MD	\$900,427	12.0%	1.0%
ME	\$844,402	9.9%	1.0%
MI	\$547,273	2.6%	0.6%
MN	\$924,362	8.6%	1.1%
MO	\$3,645,740	13.9%	4.2%
MS	\$2,484,232	16.7%	2.9%
MT	\$386,057	12.9%	0.5%
NC	\$5,090,788	15.6%	5.9%
ND	\$239,602	16.0%	0.3%
NE	\$880,540	15.9%	1.0%
NH	\$430,943	13.6%	0.5%
NJ	\$5,632,460	18.1%	6.5%
NM	\$326,577	16.6%	0.4%
NV	\$418,466	17.4%	0.5%
NY	\$13,017,331	16.7%	15.0%
OH	\$7,573,440	15.0%	8.7%
OK	\$1,098,092	16.2%	1.3%
OR	\$1,099,746	13.4%	1.3%
PA	\$3,091,889	12.4%	3.6%
SC	\$1,556,766	11.8%	1.8%
SD	\$221,419	12.9%	0.3%
TX	\$2,536,669	7.3%	2.9%
UT	\$549,730	14.0%	0.6%
VT	\$560,638	12.1%	0.7%
WA	\$4,288,644	11.3%	5.0%
WV	\$1,323,208	14.8%	1.5%
WY	\$174,374	14.5%	0.2%
TOTAL	\$86,670,918	-	100.4%*

* Exceeds 100% due to rounding.

▶ A P P E N D I X G



DEPARTMENT OF HEALTH & HUMAN SERVICES

Centers for Medicare & Medicaid Services

Administrator
Washington, DC 20201

DATE: FEB 12 2004

TO: Dara Corrigan
Acting Principal Deputy Inspector General
Office of Inspector General

FROM: Dennis G. Smith *Dennis G. Smith*
Acting Administrator
Centers for Medicare & Medicaid Services

SUBJECT: Office of Inspector General Draft Report: "Variation in State Medicaid Drug Prices," (OEI-05-02-00681)

RECEIVED
2004 FEB 13 PM 3:20
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GENERAL

Thank you for the opportunity to review and comment on the Office of Inspector General's (OIG) draft report entitled, "Variation in State Medicaid Drug Prices." We have the following comments.

Medicaid regulations at 42 CFR 447.331 provide that States pay for prescriptions not subject to Federal upper payment limits at the lower of the estimated acquisition cost or the provider's usual and customary charges to the general public. As a means of determining "estimated acquisition cost" States use pricing data published by national drug pricing compendia (Red Book, First Data Bank and Medi-Span). Most States set their rates at a percentage discount off average wholesale price, but some apply a mark up to wholesale acquisition cost. The OIG study reviewed State payments for certain drugs and reported wide variation in these prices. To narrow this variation and improve the relationship of prices to costs the OIG report recommends that the Centers for Medicare & Medicaid Services (CMS) should:

- share average manufacturer price data with states to ensure more accurate estimates of pharmacy acquisition costs;
- conduct research on the factors that affect states drug prices; and
- review the states drug reimbursements for the highest paying states.

We do not concur with the report at this time because we have identified numerous errors in the data. Before using such data, we believe that the OIG should share the data with the States and ask them to explain how it could be accurate or correct the errors. The following are examples of the problems we found.

1. The average cost of a prescription for Prilosec cited in the report exceeds \$3000. In contrast, the average wholesale price (AWP) for this drug is in the range of \$125 - \$150 per prescription.

2. The prescription cost of ranitidine (generic Zantac) cited in the report ranges from \$51 to \$1295. Yet, the upper payment on this drug is \$.34 per tablet. In addition, the strengths used are not available in the market.

Based on these and other clear errors in the data, we suggest that the OIG correct the data on which the report is based before release.



A C K N O W L E D G M E N T S

This report was prepared under the direction of William C. Moran, Regional Inspector General for Evaluation and Inspections in the Chicago Regional Office, and Natalie Coen, Deputy Regional Inspector General. Other principal Office of Evaluation and Inspections staff who contributed include:

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Technical Assistance

Barbara Tedesco, Mathematical Statistician



E N D N O T E S

- ¹ This figure is based on data from Centers for Medicare & Medicaid Services, Center for Medicaid and State Operations, Financial Management Reports, Fiscal Year 2001. Available at <http://www.cms.gov/medicaid/mbes/ofs-64.asp>
- ² Bruen, Brian. “States Strive to Limit Medicaid Expenditures for Prescribed Drugs.” Prepared for the Kaiser Commission on Medicaid and the Uninsured. Washington, DC; February 2002
- ³ Kreling, David H., David A. Mott, Joseph B. Wiederholt, Janet Lundy, Larry Levitt. “Prescription Drug Trends: A Chartbook Update.” Kaiser Family Foundation. Washington, DC; November 2001
- ⁴ This figure is based on data from Centers for Medicare & Medicaid Services, Center for Medicaid and State Operations, Financial Management Reports, Fiscal Year (FY) 2001 and FY 1997. Total Medicaid expenditures (minus drug expenditures) increased 31 percent from FYs 1997 to 2001; total Medicaid drug expenditures increased 94 percent during the same time period. Data available at <http://www.cms.gov/medicaid/mbes/ofs-64.asp>
- ⁵ Centers for Medicare & Medicaid Services, “National Health Expenditure Projections 2001-2011.” March 2002. Available at <http://cms.hhs.gov/statistics/nhe/default.asp>
- ⁶ Associated Press. “In Budget Crises, State Leaders Call for U.S. Aid.” New York Times, Final, Section A, Page 15, Column 1; July 25, 2002
- ⁷ National Association of State Budget Officers. Available at <http://www.nasbo.org>
- ⁸ State Medicaid Manual, Chapter 6, Section 6305. Available at http://www.cms.gov/manuals/pub45/pub_45.asp
- ⁹ 42 CFR § 447.331
- ¹⁰ 42 CFR § 447.301
- ¹¹ State Medicaid Manual, Chapter 6, Section 6305. Available at http://www.cms.gov/manuals/pub45/pub_45.asp
- ¹² 42 CFR § 447.332
- ¹³ State Medicaid Manual, Chapter 6, Section 6305. Available at http://www.cms.gov/manuals/pub45/pub_45.asp

¹⁴ 42 U.S.C. § 1396r-8(a)

¹⁵ 42 U.S.C. § 1396r-8

¹⁶ 42 U.S.C. § 1396o(a)(2)

¹⁷ 42 CFR § 447.54

¹⁸ 42 U.S.C. § 1396o(e)

¹⁹ 42 CFR § 433.139

²⁰ Conversation with Dr. Stephen Schondelmeyer, Director of the PRIME Institute at the University of Minnesota, August 6, 2002

²¹ “Reimbursement for Prescribed Drugs.” Report to the General Court. Commonwealth of Massachusetts, Executive Office of Health and Human Services, Division of Health Care Finance and Policy. October 3, 2002

²² “Maximum Allowable Cost Savings Report.” State of Vermont, Agency of Human Services. December 2, 2002

²³ Lawson K.A., Hong S.H., Johnsrud M.T., Skrepnek G. “An assessment of cost saving options for the Medicaid Vendor Drug Program.” The University of Texas College of Pharmacy, Austin, Texas. May 1995

²⁴ State Medicaid Manual, Chapter 6, Section 6305. Available at http://www.cms.gov/manuals/pub45/pub_45.asp

²⁵ Office of Inspector General report “Cost Containment of Medicaid HIV/AIDS Drug Expenditures,” OEI-05-99-00611. July 2001