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**DATE:** January 20, 2022

**TO:** Senator Sanborn, Representative Tepler and Members of the Joint Standing Committee on Health Coverage, Insurance and Financial Services

**CC:** Senator Vitelli, Senate Majority Leader  
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Bethany Beausang, Senior Policy Advisor, Office of Governor Janet T. Mills  
Joel Allumbaugh, Chair MHDO Board of Directors  
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**FROM:** Karynlee Harrington, Executive Director, Maine Health Data Organization

**RE:** Prescription Drug Transparency Report

Public Law 2019, Chapter 470, *An Act to Further Expand Drug Price Transparency*, requires the Maine Health Data Organization to submit an annual report on prescription drug pricing to the Joint Standing Committee on Health Coverage, Insurance and Financial Services.

Attached are the findings of our second annual report.

Please don't hesitate to contact me directly with any questions.

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## Executive Summary

Public Law 2019, Chapter 470, *An Act to Further Expand Drug Price Transparency* (“Public Law 2019, Chapter 470”) requires the Maine Health Data Organization (MHDO) to submit an annual report on prescription drug pricing to the Joint Standing Committee on Health Coverage, Insurance and Financial Services. The findings of this report were developed using drug pricing component data MHDO received from pharmaceutical manufacturers, wholesale drug distributors and pharmacy benefits managers (PBMs) for calendar year 2020, pharmacy claims data submitted by payers to the Maine All Payer Claims Database (APCD), and drug pricing data procured from Wolters Kluwer.

The report continues previous analysis of data elements collected for drugs that meet requirements for reporting under Public Law 2019, Chapter 470 and expands further to explore the impact of both price increases and decreases on actual amounts paid by payers during the reporting period. Where practical, MHDO compares analytical findings from one year to the next to show changes for a given measure. These comparisons must be considered broadly given that the specific drugs analyzed differ from one year to the next. Additionally, the Covid-19 pandemic is a factor that impacted the way the public accessed medical care beginning in 2020 and may be an influencer of drug pricing behavior during the reporting period. MHDO assumes that many of the measures applied in this report (and future reports) will reflect Covid-19 market impacts.

Data in MHDO’s first annual report was presented in aggregate to satisfy requirements in the law that prohibited the disclosure of information attributable to a specific reporting entity’s data. Public Law 2021, Chapter 305, *An Act to Increase Prescription Drug Pricing Transparency* changed the level of confidentiality required in MHDO’s public reporting such that manufacturers and individual drugs may be disclosed. Pricing details related to drug products with price increases of significance as well as overall price change statistics by therapeutic class are provided at the end of this report as Appendices B and C.

## Key Findings

- During the previous five years, the percentage of drugs that incur wholesale acquisition cost (WAC) increases has decreased on a year over year basis from 16.18% in 2016 to 8.65% in 2020.
- The average percent of increase of 14.76% across brand and generic drugs that had WAC increases in 2020 remains above the consumer price index (CPI-U) for 2020 of 1.4%.
- Less than 1% of all drugs in the market (57 drugs total) had WAC increases in 2020 that hit triggers requiring manufacturer notification of price increase as described in Public Law 2019, Chapter 470<sup>1</sup>.
- Non-claims-based reporting of rebates received by payers from PBMs or manufacturers to the APCD would enable more robust analysis of payer net paid amounts.
- Pricing and rebate practices vary greatly between brand and generic drugs before and after generic drugs enter the marketplace. As a result, changes in wholesale acquisition cost (WAC) by manufacturers are more directly correlated to amounts paid by payers for brand drugs than for generic drugs.

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<sup>1</sup> MHDO intends to expand the scope of drug products for which it requests pricing component data from reporting entities for its year three report based on final adoption of changes to Rule Chapter 570 made by the MHDO Board of Directors on November 4, 2021, after the Legislature passed and Governor signed LD 41, Resolve, Regarding Legislative Review of Portions of Chapter 570: Uniform Reporting System for Prescription Drug Price Data Sets, a Major Substantive Rule of the Maine Health Data Organization, which was enacted on October 18, 2021.

- The amount that a retail pharmacy is reimbursed by a payer can vary greatly from one product to another depending on the amount that the Average Wholesale Price (AWP) – the typical negotiated price basis – is marked up from WAC.
- AWP for brand drugs is generally a markup of 20% above WAC and changes as WAC is changed over time.
- AWP for generic drugs often reflects a discount from the WAC or AWP value of the equivalent brand drug at the time the first generic product is introduced to market and does not change as the value of generic WAC changes over time. While WAC prices differ between generic manufacturers, AWP prices show very little variation and are often the same value.
- Pharmacies are incentivized to reduce costs by acquiring generic products from manufacturers with the lowest WAC. However, payers do not receive a corollary benefit from lower WAC prices when AWP, the basis for pharmacy reimbursement, remains static across generic manufacturers. Instead, WAC reductions result in a higher margin to the pharmacy – in some instances a pharmacy receives greater income for a product than the product’s manufacturer.
- For drugs for which pricing component data was available:
  - Generic drug prices rose at a lower rate of increase than brand drugs and often reflect a price decrease. This is a shift in pricing behavior from what was observed in MDHO’s first annual report which demonstrated higher percent price increases for generic drugs than was found for brand drugs in the sample.
  - The average amount paid by commercial payers (including member cost share) after rebates represented 82.71% of WAC for brand drugs and 143.47% of WAC for generic drugs. This remains consistent with findings for 2019 brand drugs (81.73%); however, the average amount paid by commercial payers as a percentage of WAC for generic drugs rose approximately 60% from 2019 (83.28%), largely driven by 2020 generic WAC decreases without concurrent decreases to AWP.
  - PBMs received rebates from manufacturers representing 10.26% of the average WAC amount for brand NDCs and 0.08% for generic NDCs. Of the overall value of rebates received in 2020 approximately 90.96% was passed through to commercial payers, representing an increase of 11.97% over the 78.99% percent reported passed through in 2019.
  - PBMs, on average, retained payments from payers in the form of spread<sup>2</sup> and/or administrative fees at a rate of approximately 2.14% over what PBMs reimbursed to pharmacies, a decrease from the rate of 11.06% reported for 2019.
  - The consumer share of total payment after the application of rebates was approximately 16% for commercial claims, a reduction of over 6% from drugs reviewed for 2019.

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<sup>2</sup> Spread occurs when a PBM charges a payer a contracted price for prescription drugs that is higher than the amount the PBM pays the pharmacy.

Below is a key to commonly used abbreviations and terms used in the report:

## Abbreviations

**APCD** – All Payer Claims Database

**AWP** – Average Wholesale Price

**FDA** – The federal Food and Drug Administration

**NDC** – National Drug Code

**PBM** – Pharmacy Benefits Manager

**WAC** – Wholesale Acquisition Cost

## Definitions

**Average Wholesale Price** – a prescription drug term originally intended to convey the average price for medications offered at the wholesale level. Manufacturers may provide publishers of AWP with a suggested AWP value or specify a markup value to be applied to WAC. Where manufacturers do not provide AWP guidance, the value is typically set as a 20% markup over WAC<sup>3</sup>.

**Brand Drug** – a prescription drug, having a unique NDC, marketed under a proprietary name or registered trademark name, including a biological product, and approved under a New Drug Application or Biologics License Application.

**Drug Product Family** – a group of one or more prescription drugs that share a unique generic drug description (non-trade name) and drug form.

**Generic Drug** – a prescription drug, having a unique NDC, whether identified by its chemical, proprietary or nonproprietary name, that is not a brand drug, is therapeutically equivalent to a brand drug in dosage, strength, method of consumption, performance and intended use, and approved under an Abbreviated New Drug Application. Generic Drug includes a biosimilar product.

**Market Price** – the price set by a wholesaler for sale of a drug product to a pharmacy. This price may vary from one pharmacy to another and change independent of manufacturer price changes.

**Multisource Drug** – a brand drug or generic drug that is available from more than one manufacturer.

**Negotiated Price** – the price established between payers and pharmacies to be paid to pharmacies for drug products as they are dispensed.

**National Drug Code** – a code maintained by the federal Food and Drug Administration that is uniquely assigned by manufacturer, product, and packaging.

**Rebate** – a discount, chargeback, or other price concession that affects the price of a prescription drug product.

**Single Source Drug** – a brand drug or generic drug that is only available from one manufacturer.

**Therapeutic Class** – a group of drugs used for the treatment, remediation, or cure of a specific disorder or disease.

**Wholesale Acquisition Cost** – a manufacturer's published list price for sale of a prescription drug product with a unique NDC to a wholesale drug distributor or other entity that purchases a prescription drug directly from the manufacturer, not including any price concessions.

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<sup>3</sup> Thomson Reuters MicroMedex. Website. AWP Policy. Accessed Nov. 7, 2021

at [https://www.micromedexsolutions.com/micromedex2/4.31.0/WebHelp/RED\\_BOOK/AWP\\_Policy/AWP\\_Policy.htm](https://www.micromedexsolutions.com/micromedex2/4.31.0/WebHelp/RED_BOOK/AWP_Policy/AWP_Policy.htm)

## Introduction

Public Law 2019, Chapter 470, was enacted to enable Maine to better understand the factors that influence the cost of prescription drugs in the State. The law requires reporting from drug manufacturers, wholesale drug distributors and pharmacy benefits managers (collectively, “reporting entities”) related to pricing information specific to prescription drugs identified by the MHDO as having a significant impact on Mainers. Data collected provides details regarding the costs to, and payments received by, reporting entities to make a prescription drug available to consumers and allows analysis of pharmaceutical pricing and rebates at milestones throughout the supply chain.

MHDO published its first annual report on prescription drug pricing in February 2020. The first annual report findings were based on information received for 221 drugs (95 brand drugs and 126 generic drugs) which hit one of the reporting triggers defined in Title 22, Chapter 1683, §8732 for the time period September 19, 2019 through December 31, 2019, or which appeared on at least two of the lists of the MHDO’s Top 25 Drug Reports for the same period. The initial report included significant focus on the relationships between entities in the pharmaceutical supply chain and the role that the contractual components between each play in affecting costs to consumers.

This second annual report incorporates data reported for the full calendar year 2020 and expands the first-year analysis by exploring the impacts of manufacturer price changes, and the introduction of new specialty drugs to market, on the costs realized by payers and consumers over time.

*Under contract with MHDO, Ten2Eleven Business Solutions provided MHDO technical support in the preparation of this report.*

### **Public Law 2019, Chapter 470 Statutory Requirement**

Public Law 2019, Chapter 470 requires the MHDO to produce and post on its publicly accessible website an annual Drug Price Transparency Report. The content of the report is to include information developed from the notifications and disclosures submitted to MHDO from the reporting entities described above (manufacturers, wholesale drug distributors and pharmacy benefits managers). Specifically, the report will provide (if data is available), information on trends in the cost of prescription drugs, analysis of manufacturer prices and price increases, the major components of prescription drug pricing along the supply chain, and the impacts on insurance premiums and cost sharing and any other information the MHDO determines is relevant to providing greater consumer awareness of the factors contributing to the cost of prescription drugs in the State. Public Law 2021, Chapter 305, An Act to Increase Prescription Drug Pricing Transparency, changed the level of confidentiality required in MHDO’s public reporting such that manufacturers and individual drugs may be disclosed as long as the individual prescription drug pricing contract terms are not released.

In addition to incorporating data submitted by reporting entities in this annual report, MHDO included pharmaceutical claims data submitted to MHDO for calendar years 2019 and 2020, and descriptive drug product and historical pricing information compiled from Wolters Kluwer’s Medi-Span MedFile v2 data file. These supplemental data sets enabled review of claim volume and costs before and during the 2020 reporting period.

### **MHDO Rule Chapter 570, Uniform Reporting System for Prescription Drug Price Data Sets**

MHDO Rule, Chapter 570, *Uniform Reporting System for Prescription Drug Price Data Sets* defines the requirements for the registration of reporting entities; conditions under which manufacturers must notify the

MHDO of price increases and or new drugs; conditions under which the MDHO requires pricing component data from a reporting entity; the data elements contained in the various reports; proper coding, formatting, and submission of data; and submission deadlines.

### **Notifications by Manufacturers of Drug Price Increases and New Drugs**

As related to drug price increases and new drug introduction that occurred during calendar year 2020, Rule Chapter 570 required manufacturers to notify MHDO when the manufacturer had:

1. Increased the WAC of a brand drug by more than 20% per pricing unit;
2. Increased the WAC of a generic drug that costs at least \$10 per pricing unit by more than 20% per pricing unit; or
3. Introduced a new prescription drug for distribution in this State when the WAC is greater than the amount that would cause the drug to be considered a specialty drug under the Medicare Part D program

### **Notifications by MHDO to Reporting Entities**

MHDO is responsible for identifying specific drug products of interest and notifying reporting entities that they must report detailed pricing component data to MHDO as defined in Rule Chapter 570 for those drug products. Each drug product is identified by its NDC. For the remainder of this report, NDC will be used to describe a manufacturer specific drug product.

### **Overview of Activity to Date**

#### **1. Reporting Entity Registration**

As of September 30, 2020, there were 442 manufacturers, 194 wholesale drug distributors and 33 pharmacy benefit managers registered with the MHDO.

#### **2. Manufacturer Notifications to MHDO**

For calendar year 2020, MHDO received notifications from 98 manufacturers for 385 NDCs reporting 28 brand name drug price increases, 97 generic drug price increases, and 260 newly introduced drugs. Of these, 121 notifications were provided for NDCs that did not hit triggers that required notification.

### **MHDO Notification to Reporting Entities requesting Pricing Component Data**

#### **Manufacturers**

MHDO requested pricing component data from 19 of the 98 manufacturers that notified MHDO that they had a drug that hit one of the triggers as defined above. Data was requested for 48 NDCs that met one of the triggers and was of significant interest to MHDO based on the costs and utilization of the drug in Maine. Of these 48 NDCs, 11 fell into the category for brand name drug price increases; 7 for generic drug price increases and 30 for newly introduced drugs.

There were 28,654 active prescription drugs for which Mainers filled prescriptions in 2020. Less than 1% of these drugs (57 drugs total) had WAC increases in 2020 that hit triggers requiring manufacturer notification of price increase under Rule Chapter 570.

MHDO intends to expand the scope of drug products for which it requests pricing component data from manufacturers for its year three report based on changes to Rule Chapter 570 that became effective in December 2021.

### **Wholesale Drug Distributors and Pharmacy Benefit Managers**

MHDO requested pricing component data for 354 NDCs from wholesale drug distributors (wholesalers) and PBMs. The NDCs included the 48 NDCs for which data was requested from manufacturers as well as:

- a. NDCs that appeared on at least two of the lists of the MHDO's top 25 Drug Reports as required in Title 22, Chapter 1683, §8712 (5) for the most costly, most utilized and/or having the highest year-over-year cost increases for Mainers during the July 1, 2019 to June 30, 2020 comparison period – 43 NDCs
- b. NDCs included in the same drug product family as the NDCs above – 263 NDCs

### **3. Data Consolidation and Analysis**

Pricing component data files were submitted by reporting entities to the MHDO Prescription Drug Price Data Portal. Data values not meeting expected data formats were isolated for analyst review. Pricing component data was next provisioned to a data mart for analysis and combined with descriptive drug product and historical pricing information compiled from Wolters Kluwer's Medi-Span MedFile v2 data file, and pharmaceutical claims data submitted to the MHDO APCD as required by 90-590 Rule Chapter 243, Uniform Reporting System for Health Care Claims Data Sets.

The subset of NDCs for which MHDO received pricing component data is used to highlight pricing, rebate, and brand to generic drug utilization statistics for drugs identified as having high impact to prescription drug costs in Maine. In addition to this focused analysis, portions of the report expand beyond the subset to show more general trends in the overall prescription drug marketplace.



## Trends in the Cost of Prescription Drugs

### Wholesale Acquisition Cost Change

MHDO analyzed the average change in WAC pricing during calendar year 2020 for NDCs for which pricing component data was requested. NDCs requiring manufacturer notification to MHDO or appearing on two top 25 prescription drug lists were compared to related NDCs within the same product family.

In 2020 the data shows that generic drug prices rose at a lesser rate in most categories (and often reflect an average decrease), while brand drug prices for existing drug products rose in all categories. This is a shift in pricing behavior from what was observed in MDHO's first annual report which demonstrated higher percent price increases for generic drugs than was found for brand drugs in the sample. See Table 1 below.

Interest Category	NDCs Requiring Manufacturer Notification / Appearing on two Top 25 Drug Lists				NDCs In Related Drug Product Families			
	Total NDCs	Average WAC Percent Change			Total NDCs	Average WAC Percent Change		
		Brand	Generic	Brand & Generic Combined		Brand	Generic	Brand & Generic Combined
<b>WAC Increase Notification</b>								
WAC < \$250	1	32.35%	No NDCs	32.35%	11	0.00%	6.87%	6.10%
WAC \$250 - \$800	6	24.06%	35.63%	29.84%	19	4.99%	12.02%	10.91%
WAC > \$800	11	210.32%	48.69%	92.78%	14	4.99%	2.75%	3.39%
<b>All NDCs</b>	<b>18</b>	<b>105.07%</b>	<b>45.13%</b>	<b>68.44%</b>	<b>44</b>	<b>4.37%</b>	<b>8.08%</b>	<b>7.37%</b>
<b>New Drug Notification</b>								
WAC < \$250	0	No NDCs	No NDCs	No NDCs	28	0.00%	-9.07%	-8.72%
WAC \$250 - \$800	2	No NDCs	-30.68%	-30.68%	24	0.00%	-1.50%	-1.25%
WAC > \$800	28	0.00%	-5.96%	-4.26%	23	1.89%	-2.23%	-0.61%
<b>All NDCs</b>	<b>30</b>	<b>0.00%</b>	<b>-8.20%</b>	<b>-6.02%</b>	<b>75</b>	<b>1.22%</b>	<b>-4.88%</b>	<b>-3.71%</b>
<b>2020 Multiple Top 25 Drug Lists</b>								
WAC < \$250	13	0.75%	-9.45%	-6.31%	78	2.31%	0.20%	0.87%
WAC \$250 - \$800	17	2.92%	0.00%	2.23%	42	1.18%	-3.94%	-1.26%
WAC > \$800	13	6.01%	-17.5%	-3.03%	24	3.87%	0.00%	2.90%
<b>All NDCs</b>	<b>43</b>	<b>3.56%</b>	<b>-9.58%</b>	<b>-1.94%</b>	<b>144</b>	<b>2.36%</b>	<b>-0.89%</b>	<b>0.58%</b>
<b>All NDCs</b>								
WAC < \$250	14	7.07%	-9.45%	-3.55%	117	2.14%	-1.93%	-0.97%
WAC \$250 - \$800	25	6.89%	5.06%	6.23%	85	1.41%	1.49%	1.46%
WAC > \$800	52	35.74%	5.54%	16.58%	61	3.44%	-0.12%	1.69%
<b>All NDCs</b>	<b>91</b>	<b>20.61%</b>	<b>2.81%</b>	<b>10.64%</b>	<b>263</b>	<b>2.36%</b>	<b>-0.48%</b>	<b>0.47%</b>

Table 1 – WAC Percent Change by Interest Category

### Impact of WAC Changes on Pricing for Multisource Drug Products

MHDO evaluated the difference in price between brand and generic NDCs for products where brand and generic equivalents were available during the year (multisource drug products). Of 37 multisource drug products reviewed, all had generic NDCs priced lower than brand equivalent NDCs before and after application of WAC changes, with an average year end generic discount from brand WAC of 48.44%.

MHDO next applied average net costs per unit<sup>4</sup> for each drug product to evaluate the difference in amounts actually paid by payers for brand and generic drugs. When generic products were dispensed, the cost to payers was significantly lower than what was paid when equivalent brand name products were used, with an average net cost reduction of 47.64%.

### Brand to Generic Drug Utilization in Maine

MHDO reviewed the rate of utilization of generic drugs found in claims data submitted by payers to the APCD in CY 2020. The analysis determined that Mainers were provided brand drug products for 5.92% of claims, slightly lower than 2019, where generic drugs were alternatively available. Expenditures for brand drug claims made up 38.84% of total claim payment amounts from payers and consumers for multisource drug products<sup>5</sup>. Continued efforts to convert to generic drugs when available will provide additional cost savings to Mainers. A comparison of year-over-year brand to generic drug utilization statistics is provided in Table 2 below.

Description	MHDO Report Year	
	2019	2020
Brand Drug Utilization	6.11%	5.92%
Brand Cost Percentage	36.42%	38.84%
Percent Brand Claims Indicated Dispensed as Written	25.92%	26.77%

Table 2 – Year-Over-Year Brand to Generic Drug Utilization Statistics

### Manufacturer Price Trends Over Time

MHDO used publicly available pricing data to analyze WAC pricing trends over the previous five years for all drug product families with at least one incurred claim in the Maine APCD during 2020. The analysis shows that during the five-year period the percentage of drugs that incur price increases has decreased from 16.18% of active NDCs in 2016 to 8.65% in 2020. The average percent of increase for price increases has also decreased over time; however, the 2020 average percent of increase of 14.76% remains above the consumer price index (CPI-U) for 2020 of 1.4%.

Additionally, the percentage of drugs with WAC decreases has increased slightly over time, with the average percent of decrease growing from -42.88% to -50.10% in 2020. See Table 3 and Chart 1 below.

<sup>4</sup> Average net costs were determined by decreasing the total paid amount reported by payers by the average rebate amount reported by reporting entities for the same NDCs on a per unit basis.

<sup>5</sup> Claim payments do not reflect the effect of drug rebates. 26.77% of the brand claims represented were prescribed as Dispense As Written, indicating the medical provider determined that the branded NDC was more appropriate for the patient and should not be filled as a generic.

NDC Group / Year	Active NDCs <sup>6</sup>	All Changes			WAC Increases			WAC Decreases		
		WAC Change NDCs	Percent Active NDCs w/ WAC Change	Average WAC Percent Change	WAC Increase NDCs	Percent Active NDCs w/ WAC Increase	Average WAC Percent Increase	WAC Decrease NDCs	Percent Active NDCs w/ WAC Decrease	Average WAC Percent Decrease
2016	17,295	3,560	20.58%	14.09%	2,799	16.18%	29.58%	761	4.40%	-42.88%
2017	19,693	4,243	21.55%	-0.13%	2,896	14.71%	20.32%	1,347	6.84%	-44.12%
2018	22,238	4,005	18.01%	2.07%	2,898	13.03%	20.81%	1,107	4.98%	-47.00%
2019	25,350	3,808	15.02%	4.80%	2,709	10.69%	26.96%	1,099	4.34%	-49.81%
2020	28,654	4,195	14.64%	-11.77%	2,479	8.65%	14.76%	1,716	5.99%	-50.10%

Table 3 – Prescription Drug WAC Change Statistics by Year

### WAC Change Statistics by Year

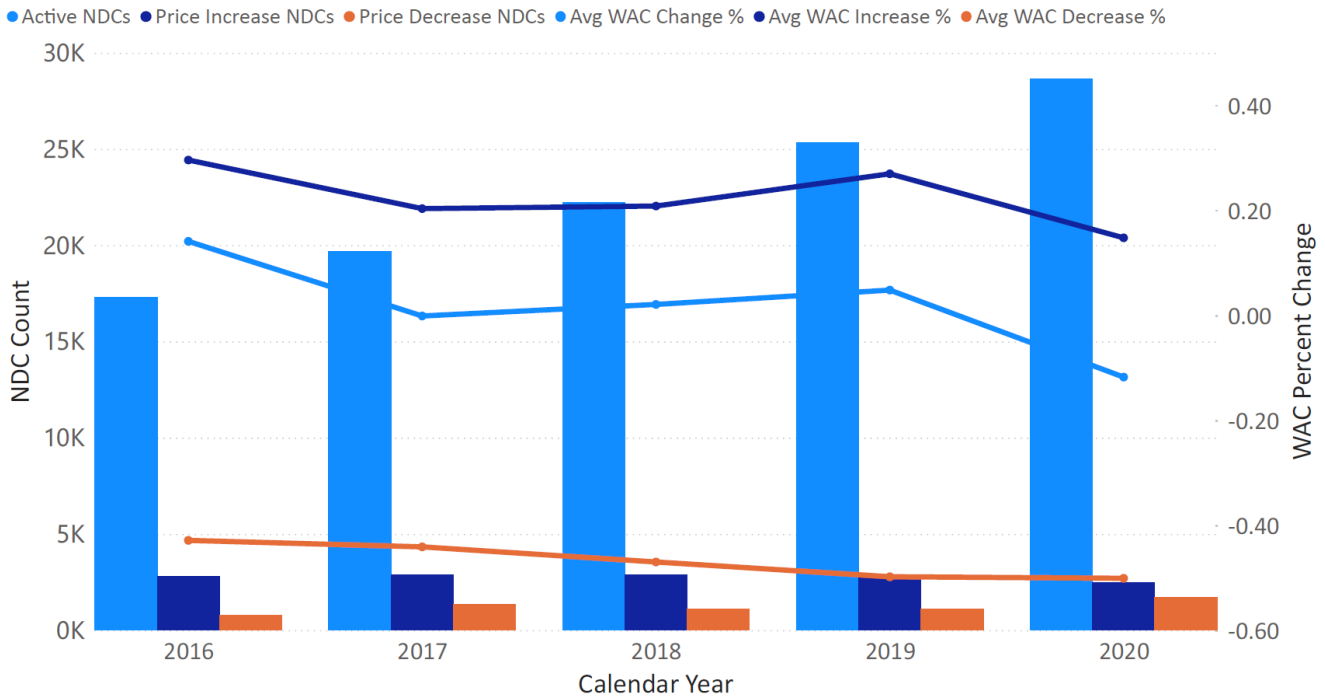


Chart 1 – WAC Change Statistics by Year

<sup>6</sup> Active NDCs are those NDCs that are currently available in the market.

## Analysis of Manufacturer Pricing and Drug Costs to Payers

### WAC Relationship to Payer Paid Amounts

MHDO analyzed pharmaceutical claims data to evaluate the impact of both price increases and decreases on actual amounts paid by payers during the reporting period. Analysis was limited to 3,079 NDCs that incurred WAC changes during 2020 and for which claims were incurred both before and after the WAC changes. This sample includes the following drug products that were listed on MHDO's report of Top 25 Most Frequently Prescribed Drugs for 2020:

Therapeutic Class	Drug Name
ADHD/Anti-Narcolepsy/Anti-Obesity/Anorexiant	Lisdexamfetamine Dimesylate
Analgesics – Opioid	Buprenorphine HCl-Naloxone HCl Dihydrate
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc – Antiasthmatic And Bronchodilator Agents	Albuterol Sulfate
	Budesonide-Formoterol Fumarate Dihydrate
	Fluticasone Furoate-Vilanterol
	Fluticasone Propionate HFA
	Tiotropium Bromide Monohydrate
	Umeclidinium Bromide
Umeclidinium-Vilanterol	
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc – Nasal Agents – Systemic And Topical	Fluticasone Propionate (Nasal)
Cardiovascular Agents – Antihyperlipidemics	Atorvastatin Calcium
Endocrine and Metabolic Agents – Antidiabetics	Dulaglutide
Hematological Agents – Anticoagulants	Apixaban
Neuromuscular Agents – Anticonvulsants	Gabapentin
Vaccines	Zoster Vaccine Recombinant Adjuvanted

The WAC change analysis showed a relative correlation between average WAC increase amounts (12.11%) and increases to average amounts paid by payers after WAC increases took place (7.79%). However, where WAC prices decreased, the relative percent of decrease in amounts paid by payers was significantly lower, with WAC prices decreasing 48.90% and average amounts paid only decreasing 11.19%. See table 4 below.

2020 WAC Increases			2020 WAC Decreases		
NDC Count	Average WAC Percent Change	Average Payer Paid Percent Change	NDC Count	Average WAC Percent Change	Average Payer Paid Percent Change
1,817	12.11%	7.79%	1,262	-48.90%	-11.19%

Table 4 – WAC Change Impact on Payer Paid Amounts

## AWP Relationship to Payer Paid Amounts

Negotiated prices between pharmacies and payers are typically derived as a percentage-based discount from AWP plus a fixed price dispensing fee. Manufacturers may provide publishers of AWP with a suggested AWP value or specify a markup value to be applied to WAC. Where manufacturers do not provide AWP guidance, the value is typically set as a 20% markup over WAC.

MHDO organized the NDCs analyzed above into brand and generic items and categorized them by source type (single source vs. multisource) to evaluate differences in pricing behaviors and methods across categories. AWP values were also incorporated for comparison to WAC and claims paid values. Statistical outcomes of the analysis are provided in Appendix A.

### Key findings:

- Brand drugs
  - The majority of drug products with WAC increases in 2020 were brand drugs (85.86% of NDCs in the sample).
  - There was a close correlation between the percentage WAC increased and the resulting increase in amounts subsequently paid by payers.
  - AWP for brand drugs increased at nearly the same rate as WAC increased.
  - AWP for brand drugs (and single source generic drugs) had an average markup from WAC between 19.96% and 20.36% after price increases.
- Generic drugs
  - Multisource generic drugs made up 95.64% of all NDCs with WAC decreases and had an average percent decrease of 49.10%.
  - The average amount paid by payers for multisource generic drugs after WAC decreases fell by only 11.34%.
  - When represented as a percentage of WAC, payer paid amounts for multisource generic drugs with WAC decreases increased by 96.56% with average payer paid amounts reflecting 214.74% of WAC after WAC decreases.
  - AWP for multisource generic drugs with WAC decreases did not fall at the same rate as WAC and remained within 1.80% of pre-WAC change AWP.
  - **AWP for multisource generic drugs had an average markup from WAC of 1,629.01% after WAC decreases.**

MHDO reviewed AWP price history for the generic drugs reviewed and found that AWP values were often set by manufacturers as a discount from the WAC or AWP value of the equivalent brand drug as it existed at the time the first generic product was introduced to market. AWP often does not change as the value of WAC changes over time. As a result, while WAC prices differ between generic manufacturers, AWP prices show very little variation and are often the same across manufacturers.

Pharmacies are incentivized to reduce costs by acquiring generic products from manufacturers with the lowest WAC. However, payers do not receive a corollary benefit from lower WAC prices when AWP, the basis for pharmacy reimbursement, remains static across generic manufacturers. Instead, WAC reductions result in a higher margin to the pharmacy – in some instances a pharmacy receives greater income for a product than the product's manufacturer.

### Case Study – Zytiga (Abiraterone Acetate) 250 Mg 120 Count Tablets

MHDO reviewed brand and generic WAC and AWP pricing to amounts paid by payers during 2019 and 2020 for multisource drug product Zytiga (Abiraterone Acetate) 250 Mg 120 Count Tablets. Zytiga is used to treat men with prostate cancer that has spread to other parts of the body. The brand product was introduced to market in 2011 by Janssen Biotech and launched generically in November 2018. The first generic products launched with WAC prices for a 30-day course of therapy that ranged between \$3,499.40 and \$8,840.58. However, generic AWP values were specified at either \$11,050.73 or \$11,664.66, exactly 90% and 95% respectively of Janssen’s AWP value at the time, \$12,278.59. Additional generic manufactures have since joined the market with the same or similar AWP values. In all instances, the AWP values initially set by generic manufacturers did not change after product introduction to market. See Table 5 below.

	Manufacturer	NDC	Price Period		WAC	AWP	Average Payer Paid Amount
			Effective Date	End Date			
Brand	JANSSEN BIOTECH	57894015012	5/2/2011	12/27/2011	\$5,000.00	\$6,000.00	Not Reviewed
			12/28/2011	6/4/2012	\$5,495.00	\$6,594.00	
			6/5/2012	3/4/2013	\$5,819.21	\$6,983.05	
			3/5/2013	10/14/2013	\$6,395.31	\$7,674.37	
			10/15/2013	8/5/2014	\$6,836.59	\$8,203.91	
			8/6/2014	5/5/2015	\$7,376.68	\$8,852.02	
			5/6/2015	3/2/2016	\$7,996.32	\$9,595.58	
			3/3/2016	2/8/2017	\$8,628.03	\$10,353.64	
			2/9/2017	1/2/2018	\$9,395.88	\$11,275.06	
			1/3/2018	1/9/2019	\$10,232.16	\$12,278.59	\$9,145.35
			1/10/2019	12/31/2020	\$10,887.02	\$13,064.42	\$10,830.33
Generic	AMNEAL PHARMACEUTICALS	69238116507	1/8/2019	12/8/2019	\$3,499.40	\$11,664.66	\$5,833.16
			12/9/2019	7/16/2020	\$800.00	\$11,664.66	\$4,832.55
			7/17/2020	12/31/2020	\$475.00	\$11,664.66	\$6,312.64
	APOTEX	60505432701	11/23/2018	11/26/2019	\$4,972.77	\$11,050.61	\$6,413.09
			11/27/2019	2/11/2020	\$2,625.00	\$11,050.61	\$4,749.77
			2/12/2020	12/31/2020	\$2,000.00	\$11,050.61	\$4,489.38
	AVKARE	42291002412	12/7/2019	12/31/2020	\$431.30	\$11,664.66	\$6,550.79
	CELLTRION USA	72606056601	2/7/2020	12/31/2020	\$425.00	\$510.00	\$365.32
	DR.REDDY'S LABORATORIES, INC.	43598035804	6/11/2020	12/31/2020	\$425.00	\$11,664.70	\$5,092.33
	MYLAN	00378692078	11/21/2018	1/2/2020	\$4,665.86	\$11,664.66	\$6,795.06
			1/3/2020	12/31/2020	\$1,700.00	\$11,664.66	\$6,059.76
	NOVADOZ PHARMACEUTICALS	72205003092	8/7/2019	2/16/2020	\$1,505.00	\$11,649.00	\$3,621.09
			2/17/2020	6/9/2020	\$600.00	\$11,649.00	\$3,878.20
			6/10/2020	12/31/2020	\$225.00	\$11,649.00	\$3,782.69
	PATRIOT PHARMACEUTICALS LLC	57894015512	11/26/2018	12/31/2020	\$9,188.48	\$11,026.18	\$5,748.35
RISING PHARMACEUTICALS	64980041812	11/1/2019	12/31/2020	\$600.00	\$11,664.66	\$3,773.27	
WOCKHARDT USA	64679002101	4/9/2019	12/31/2020	\$1,500.00	\$11,664.66	\$5,164.00	

Table 5 – Zytiga (Abiraterone Acetate) 250 Mg 120 Count Tablet – WAC, AWP and Average Payer Paid Amount by Price Period

During the two-year period for which claims were reviewed, the average generic WAC price fell from \$5,165.18 to \$1,720.60. In contrast, average generic AWP prices fell only slightly from \$11,291.37 to \$10,443.53. The average amount paid by payers for the brand NDC before rebates was \$10,834.55 and was closely correlated to the brand WAC amount during the period. The average amount paid by payers for generic NDCs was \$5,314.32, an average markup from WAC of 173.02% during the period. See Chart 2 below.

## Zytiga 250 Mg 120 Count Tablet - WAC & AWP Correlation to Payer Paid Amounts

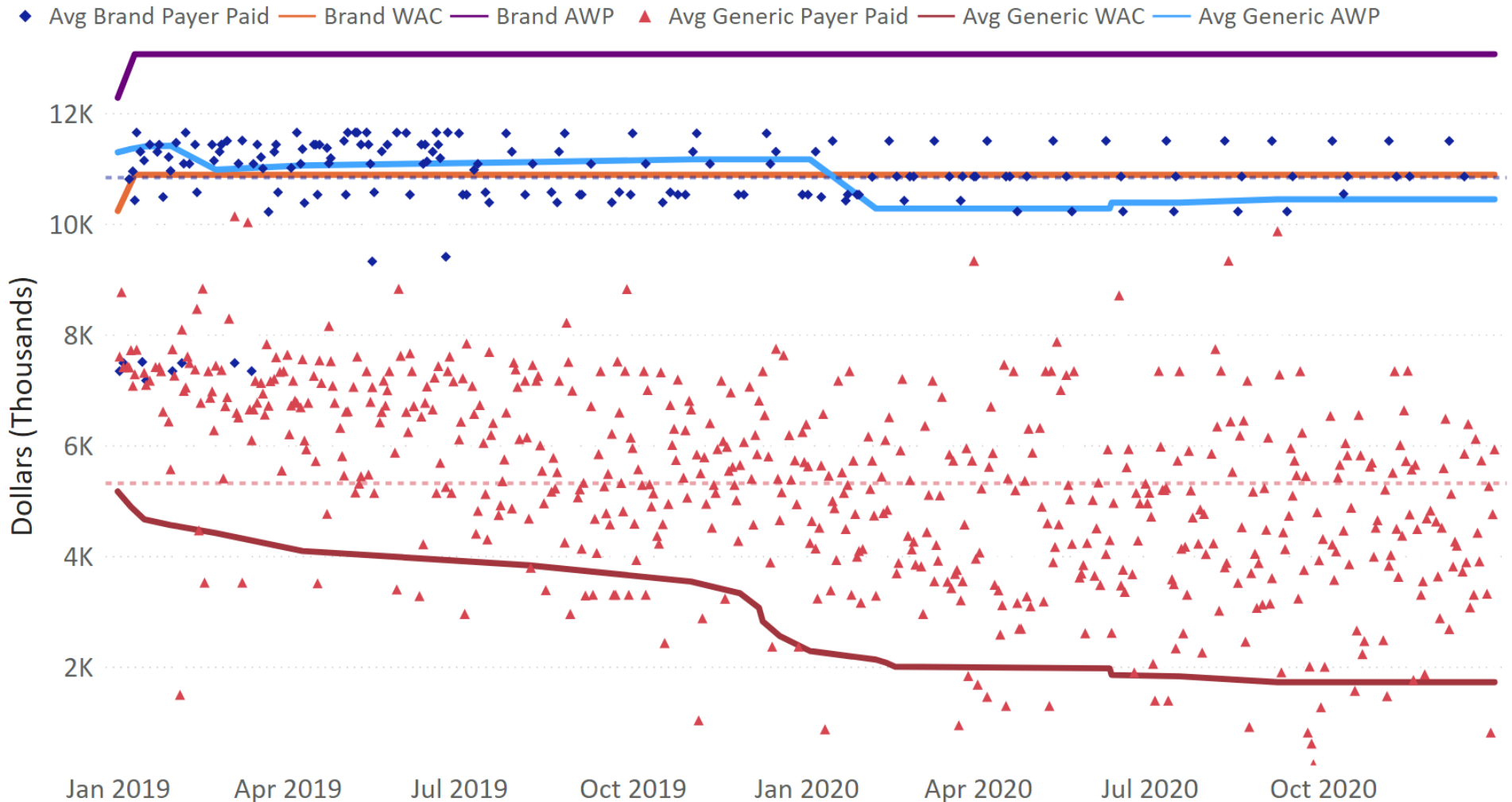


Chart 2 – Zytiga (Abiraterone Acetate) 250 Mg 120 Count Tablet – WAC & AWP Correlation to Payer Paid Amounts

## Major Components of Prescription Drug Pricing along the Supply Chain

MHDO used pricing component data collected from reporting entities combined with pharmaceutical claims data submitted to the MHDO APCD by commercial payers for the same period to analyze key factors contributing to the cost of prescription drugs along the supply chain<sup>7</sup>. Medicaid and Medicare claims were excluded from this analysis because rebate amounts for government programs are not available.

### Pharmaceutical Supply Chain

Primary entities in the pharmaceutical supply chain include:

- Manufacturers – entities that produce and/or repackage drug products for which they set the WAC value.
- Wholesale Drug Distributors – entities that distribute products, of which they are not the manufacturer, to non-consumer entities. Wholesalers acquire the products they distribute from manufacturers and later sell the products to pharmacies at market prices.
- Pharmacies – entities that fill patient prescriptions using drug products acquired from wholesalers<sup>8</sup>.
- Pharmacy Benefit Managers (PBM) – third party administrators of prescription drug programs for payers with major duties including development and management of payer drug formularies, negotiation of contract pricing between payers and pharmacies, and negotiation of rebates from manufacturers for products administered on behalf of payers.
- Commercial Payers – Providers of health plans and insurance coverage for enrolled members. Payers establish contracted rates with pharmacies and cost sharing terms for the plans they administer.

The pharmaceutical supply chain is complex with steps that include physical product acquisition as well as transactional elements triggered by contractual arrangements. While manufacturers set the WAC prices of the drugs they sell, manufacturer rebates play a major role in lowering the acquisition costs realized by wholesalers and pharmacies, and the final amounts paid by payers.

Rebates accrue as drug products are exchanged between supply chain entities over time and may represent a fixed amount per unit or a percentage of an agreed upon price point such as WAC. A summary of average manufacturer rebates reported by reporting entities during 2020 is provided in Table 6 below. Rebate values are calculated at an NDC level for each reporting entity as the total rebate receivable amount divided by the average WAC amount<sup>9</sup> for the NDC.

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<sup>7</sup> MHDO reviewed 192 unique NDCs for which pricing component data was submitted from reporting entities and APCD commercial claims were paid during 2020.

<sup>8</sup> Pharmacies may also contract directly with manufacturers to procure drug products. In these cases, MHDO assumes pharmacy acquisition costs are more favorable than what is otherwise available from wholesalers, increasing pharmacy profitability. All other supply chain components remain the same.

<sup>9</sup> Average WAC is calculated by summing the mathematical product(s) of the number of days during the year a drug product is priced at a unique WAC value multiplied by the unique WAC value, and dividing the sum of all mathematical products by the number of days in the year.  $((\$a \times 31 \text{ days}) + (\$b \times 150 \text{ days}) + (\$c \times 184 \text{ days})) / 365 \text{ days}$



Source Group	Brand / Generic	NDC Count in sample	Average Manufacturer Rebates (Percent of Average WAC)		
			Wholesale Rebate	PBM Rebate	Total Rebate
Single Source	Brand	40	20.46%	9.27%	28.58%
	Generic	3	12.70%	3.39%	13.83%
Multisource	Brand	56	20.87%	10.84%	30.75%
	Generic	117	40.62%	0.04%	40.31%

Table 6 – Average Manufacturer Rebates by Source Group and Drug Type

### Wholesaler / Pharmacy Acquisition of Drug Products

Cost erosion between a wholesaler’s acquisition costs to purchase a drug product from a manufacturer, and a pharmacy’s acquisition costs to purchase that drug product from the wholesaler, develops through several factors:

- Rebates received by wholesalers from manufacturers are largely passed through to pharmacies as price reductions to the wholesaler’s original acquisition cost.
- Wholesalers purchase large quantities of products that remain in inventory long enough that they gain value through subsequent WAC increases by manufacturers and can be sold at a market price that is above what was initially paid to acquire the product but below a then increased WAC price.

#### An example of these market dynamics is illustrated in the hypothetical example below:

A wholesaler acquires 10,000 units of a multisource generic drug product for a WAC price of \$100.00 per unit for which the manufacturer agrees to provide \$40.62 in rebates for each unit the wholesaler sells to a pharmacy. After the wholesaler acquires the drug product but before it is sold to a pharmacy, the WAC price of the drug is increased by the manufacturer to \$110.00 – the value of the product in inventory realizes a gain in value of \$10.00 per unit.

The wholesaler uses most of the value of the manufacturer rebate they negotiated to reduce the market price it offers to pharmacies, setting the pharmacy market price at \$70.00 (a \$40.00 discount from the updated WAC price of \$110.00). As inventory is purchased, the wholesaler notifies the manufacturer of rebates accrued and is reimbursed at the contracted amount of \$40.62 per unit.

Assuming the entire 10,000 units is sold to pharmacies at the same market price, the wholesaler has a net income of \$20.62 per unit calculated as:

Initial Acquisition Cost		(\$100.00)
WAC Increase Value	+	\$10.00
Market Price to Pharmacies	+	\$70.00
Manufacturer Rebate	+	\$40.62
Total	=	\$20.62

### ***Consumer Payment***

When a prescription is submitted to a pharmacy by a consumer with health insurance coverage, the pharmacy submits a claim for reimbursement to the PBM contracted with the consumers commercial payer. The PBM then adjudicates the claim to determine the amount of reimbursement to which the pharmacy is entitled based on its negotiated price with the payer. In addition, the PBM notifies the pharmacy of the share of reimbursement that should be collected from the consumer at the time the prescription is filled. Analysis of MHDO's CY 2020 commercial claims data for the 192 NDCs reviewed shows that on average, consumers paid 12.84% of consumer / plan payments before rebates for brand NDCs (average consumer share of \$532.96 on \$4,151.81 claim paid amount) and 18.23% for generic NDCs (average consumer share of \$282.42 on \$1,549.40 claim paid amount).

### ***Payer Payment***

Commercial payers engage PBMs to negotiate payment rates with pharmacies for the drugs the pharmacies dispense. As prescriptions are filled, PBMs charge payers their negotiated price less the consumer payment amount and facilitate payment to the pharmacy. Analysis of pricing component data provided by PBMs shows that negotiated prices paid by payers and consumers to pharmacies were higher than market prices paid by pharmacies to wholesalers by an average margin of 14.87% for brand NDCs and 107.99% for generic NDCs.

### ***Manufacturer Rebate Payment to PBMs***

In addition to negotiating pharmacy reimbursement rates, PBMs develop and maintain product formularies used by payers to determine the level of cost sharing between a payer and its members. Drug products on a formulary are divided into tiers with different member cost sharing requirements. Products on less preferable tiers result in higher out of pocket costs for members. To achieve placement on preferred formulary tiers, manufacturers negotiate rebates that become payable to PBMs as drug products are dispensed. PBMs then pass through some or all of the rebates to payers, reducing the net amount paid by the payer for the specific drug product.

For the sample of pricing component data reported to MHDO by PBMs on average, PBMs received rebates from manufacturers representing 10.26% of the average WAC amount for brand NDCs and 0.08% for generic NDCs. Of the overall value of rebates received in 2020 approximately 90.96% was passed through to commercial payers.

## Impacts on Insurance Premiums and Cost Sharing

After manufacturer rebates to PBMs are passed through to commercial payers (referred to as payers), the amount that was initially paid to pharmacies by payers was offset by 11.49% for brand NDCs with no reduction for generic NDCs. If rebate amounts were distributed between payers and consumers at the point of sale (when the consumer is at the pharmacy), consumers would have realized out-of-pocket cost savings of approximately 10.01% for brand name NDCs.

A comparison of out-of-pocket amounts paid per person between 2019 and 2020 as reported to MHDO for all NDCs per the requirements in 90-590 Rule Chapter 243, Uniform Reporting System for Health Care Claims Data Sets, is provided in table 7 below.

Claim Incurred Year	Total Patient Population	Patient Total Out-of-Pocket Amount									
		\$0		\$0.01 - \$250.00		\$250.01 - \$500.00		\$500.01 - \$1,000.00		Over \$1,000.00	
		Patient Count	Patient Percent	Patient Count	Patient Percent	Patient Count	Patient Percent	Patient Count	Patient Percent	Patient Count	Patient Percent
2019	788,944	113,702	14.41%	515,627	65.36%	76,714	9.72%	48,928	6.20%	33,974	4.31%
2020	774,277	147,156	19.01%	475,977	61.47%	72,129	9.32%	45,625	5.89%	33,390	4.31%

Table 7 – Year over year comparison of out-of-pocket paid amounts per person

Overall, for the subset of 192 NDCs reviewed by MHDO (see footnote 7), the average amount paid by payers (including member cost share) after rebates for a given NDC was 82.71% of the average WAC amount for brand NDCs and 143.47% for generic NDCs.

### Public Law 2019, Chapter 469, Section 4350-A

Public Law 2019, Chapter 469, *An Act to Protect Consumers from Unfair Practices Related to Pharmacy Benefits Management*, Section 4350-A requires beginning January 1, 2020, any compensation received by PBMs from manufacturers must be “remitted directly to the covered person at the point of sale to reduce the out-of-pocket cost to the covered person associated with a particular prescription drug; or remitted to, and retained by, the carrier. Compensation remitted to the carrier must be applied by the carrier in its plan design and in future plan years to offset the premium for covered persons.”

The sample of pricing component data (192 NDCs in the sample) reported to MHDO by PBMs shows that of the overall value of rebates received in 2020 approximately 90.96% was passed through to commercial payers, representing an increase of 11.97% over the 78.99% percent reported passed through in 2019. To validate the requirements in PL 2019, Chapter 469, in a comprehensive way, MHDO would need access to rebate data for all NDCs.

### Public Law 2019, Chapter 469, Section 4350-D

Public Law Chapter 469, Section 4350-D specifies that for purposes of calculating a carrier’s anticipated loss ratio, any PBM compensation from a carrier “[c]onstitutes an administrative cost incurred by the carrier in connection with a health plan; and [m]ay not constitute a benefit provided under a health plan.” Specifically, “[a] carrier may claim only the amounts paid by the PBM to a pharmacy or pharmacist as an incurred claim.”

As requested, MHDO analyzed APCD paid amounts reported by payers against the sample of pricing component data provided by PBMs to evaluate compliance with Section 4350-D. The analysis found that there was a 97.86% correlation between what payers reported as a benefit under the health plan to what PBMs reported as having reimbursed to pharmacies. During 2019, this measure showed only an 88.94% correlation.

## **Other Factors Contributing to the Cost of Prescription Drugs**

Manufacturers provided cost change factors for the 2020 reporting period that included the rationale below. Multiple factors were provided for some NDCs.

- Administrative Expenses (2 NDCs)
- Changes in Manufacturing (1 NDC) – the manufacturer further noted that “cost of goods increased by 400%” for the product
- Financial Assistance (1 NDC)
- Rebates to PBMs and Wholesalers (1 NDC)
- Sales Costs (4 NDCs)
- Scheduled Price Increase (7 NDCs)
- State and Federal Taxes (4 NDCs)

## Conclusion

In this second annual report, MHDO has moved beyond a baseline understanding of pharmaceutical pricing along the supply chain and looked deeper at the impacts of manufacturer price changes on the costs paid by payers and consumers. What has not changed in this report is the fact that drug pricing along the pharmaceutical supply chain is highly complex; and that the sample of data received by MHDO for the second year continues to show that there is variability in pricing and rebate practices across reporting entities and drug products. Some of the measures applied between years show a large variation from one year to the next. This variability may be a result of operational and financial decisions influenced by several factors including the Covid-19 pandemic.

The complex drug pricing and rebate practices illustrated in this report highlight that there is no one entity in the pharmaceutical supply chain that is responsible for the increases in prescription drug costs in Maine. Instead, the relationship between prices set by manufacturers to contractual markups and rebate incentives throughout the supply chain benefit each entity in different ways depending on whether a drug is a brand drug or a generic drug, and the number of manufacturers from which a given drug product is available.

The volume and rate of WAC increases appear to show signs of improvement over the previous five years; however, WAC increases continue to occur at rates that exceed the annual consumer price index and with greater frequency for brand drugs than observed for generic drugs in 2020. While generic drugs showed a general decrease in WAC during the year, AWP values remained largely static resulting in only marginal decreases in amounts paid by payers and consumers for generic products when compared to the reduction in cost realized by pharmacies.

Public Law 2021, Chapter 305 enables MHDO to request pricing component data from manufacturers for a broader range of NDCs for calendar year 2021. For MHDO's year three report, we plan to request information from reporting entities related to those drug products that show the highest costs to payers and consumers and highest utilization based on analysis of 2021 pharmacy claims data. MHDO is also evaluating the feasibility of developing interactive analytical reports to enable public access to prescription drug cost factors on a per drug basis and over variable time periods.

MHDO is pleased to present this analysis towards increasing consumer awareness of the factors contributing to the cost of prescription drugs. As state and federal agencies continue to introduce and expand laws and regulations that aim to inform the public about the drivers and rationale for increasing costs in medications in the United States, MHDO advocates the additional publication and sharing of industry data, trends, and insights across organizations.

## Appendix A – Correlation between WAC Changes and AWP Pricing

### NDCs with Claims Incurred Before and After 2020 WAC Changes<sup>10</sup>

Change Type / Source Type	Brand / Generic	NDC Count	Average WAC Percent Change	Average AWP Percent Change	Average AWP Percent of WAC After Change	Average AWP Percent of WAC Percent Change	Average Paid Percent Change	Average Paid Percent of WAC After Change	Average Paid Percent of WAC Percent Change	Average Paid Percent of AWP After Change	Average Paid Percent of AWP Percent Change
<b>Price Increases</b>											
Single Source	Brand	918	5.69%	5.69%	119.99%	0.00%	4.44%	97.87%	-2.98%	81.56%	-2.49%
	Generic	51	17.01%	11.80%	120.36%	-4.38%	7.78%	93.09%	-4.39%	77.33%	-0.81%
Multi Source	Brand	642	6.01%	5.97%	119.96%	-0.04%	6.68%	96.14%	-2.39%	80.16%	-1.96%
	Generic	208	60.22%	18.02%	187.10%	-328.29%	26.08%	81.80%	-63.15%	58.97%	-2.56%
<b>Price Decreases</b>											
Single Source	Brand	No NDCs									
	Generic	9	-39.79%	0.00%	551.76%	259.86%	23.58%	140.22%	62.33%	33.47%	-0.44%
Multi Source	Brand	46	-45.41%	-20.20%	191.82%	57.23%	-14.10%	87.81%	21.45%	49.20%	-2.36%
	Generic	1,207	-49.10%	-1.80%	1629.01%	894.75%	-11.34%	214.74%	96.56%	28.78%	-3.02%

<sup>10</sup> Analysis of NDCs that incurred WAC changes during 2020 and for which claims were submitted to the MHDO APCD that were incurred both before and after the WAC changes.

## Appendix B – Price Increase Detail (WAC Increase Notification / Multiple Top 25 List NDCs)<sup>11</sup>

Manufacturer		NDC	Item Description			Therapeutic Class			NDC Group			Cost Change Factor											
WAC Before Change	WAC After Change	WAC Change Percent	AWP Before Change	AWP After Change	AWP Change Percent	AWP Percent		2019 APCD Units Dispensed	2019 Gross Revenue	2020 APCD Units Dispensed	2020 Gross Revenue	Manufacturer Reported Revenue Per Unit	Average Wholesale / PBM Rebate Percent	Average APCD Paid Per Unit Before Change	Average APCD Paid Per Unit After Change	Average Payer Rebate Received Per Unit	APCD Paid Per Unit Before Change	APCD Paid Per Unit After Change					
						of WAC Before Change	of WAC After Change																
ABBVIE	\$5,174.09	\$5,556.97	7.39%	\$6,208.91	\$6,668.36	7.39%	120.00%	119.99%	9,949	Analgesics - Anti-inflammatory			N/A	22.60%	\$4,997.89	\$5,275.49	5.55%	\$674.87	96.59%	94.93%			
AMNEAL SPECIALTY	\$485.65	\$586.57	20.78%	\$582.78	\$703.88	20.77%	120.00%	119.99%	35	Migraine Products			\$264.22	6.57%	\$495.39	\$545.62	\$0.00	\$0.00	102.00%	93.01%			
AMNEAL SPECIALTY	\$485.65	\$586.57	20.78%	\$582.78	\$703.88	20.77%	120.00%	119.99%	347	Migraine Products			\$286.24	26.86%	\$499.07	\$564.66	\$0.00	\$70.74	102.76%	96.26%			
ASTELLAS	\$11,548.60	\$11,918.16	3.20%	\$13,858.32	\$14,301.79	3.20%	120.00%	119.99%	806	Antineoplastics And Adjunctive Therapies			N/A	26.62%	\$11,446.72	\$11,900.14	\$260.38	\$0.00	99.11%	99.84%			
ASTRAZENECA LP	\$346.83	\$364.38	5.06%	\$416.20	\$437.26	5.06%	120.00%	120.00%	35,009	Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Antiasthmatic And Bronchodilator Agents			N/A	42.35%	\$350.45	\$361.95	\$25.26	\$0.00	101.04%	99.33%			
B-M SQUIBB U.S. (PRIMARY CARE)	\$444.17	\$470.82	5.99%	\$533.00	\$564.98	6.00%	119.99%	119.99%	22,347	Hematological Agents - Anticoagulants			N/A	31.93%	\$433.51	\$462.16	\$87.06	\$0.00	97.59%	98.16%			
B-M SQUIBB U.S. (PRIMARY CARE)	\$444.17	\$470.82	5.99%	\$533.00	\$564.98	6.00%	119.99%	119.99%	109,026	Hematological Agents - Anticoagulants			N/A	36.25%	\$423.65	\$453.11	\$90.93	\$0.00	95.38%	96.23%			
BOEHRINGER INGELHEIM	\$429.47	\$455.24	6.00%	\$515.36	\$546.29	6.00%	119.99%	120.00%	37,733	Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Antiasthmatic And Bronchodilator Agents			N/A	41.58%	\$427.39	\$454.70	\$41.76	\$0.00	99.51%	99.88%			
EPIC PHARMA	\$783.00	\$1,017.90	30.00%	\$995.00	\$1,293.50	30.00%	127.07%	127.07%	0	Analgesics - Opioid			N/A	9.59%	N/A	\$127.04	N/A	\$0.00	N/A	12.48%			
EPIC PHARMA	\$796.85	\$1,115.59	40.00%	\$996.07	\$1,394.50	40.00%	125.00%	125.00%	14	Cardiovascular Agents - Calcium Channel Blockers			N/A	22.23%	\$99.57	\$158.91	\$59.59	\$0.00	12.49%	14.24%			
EPIC PHARMA	\$1,141.26	\$1,597.76	39.99%	\$1,426.58	\$1,997.21	39.99%	125.00%	125.00%	18	Cardiovascular Agents - Calcium Channel Blockers			N/A	21.77%	\$178.17	\$73.58	\$0.00	\$0.00	15.61%	4.60%			
EYEVANCE PHARMACEUTICALS	\$89.96	\$119.07	32.35%	\$107.95	\$142.88	32.35%	119.99%	119.99%	0	Ophthalmic Agents			\$0	2	\$180	\$46.72	1.86%	\$92.07	N/A	102.33%	N/A		
GILEAD SCIENCES	\$3,089.99	\$3,238.31	4.80%	\$3,707.99	\$3,885.97	4.79%	120.00%	119.99%	3,129	Anti-infective Agents - Antivirals			N/A	9.58%	\$3,079.12	\$3,220.83	\$21.52	\$0.00	99.64%	99.46%			
INDIVIOR INC	\$256.66	\$269.40	4.96%	\$307.99	\$323.28	4.96%	119.99%	120.00%	79,516	Analgesics - Opioid			N/A	17.60%	\$263.94	\$274.65	\$7.51	\$0.00	102.83%	101.94%			
JANSSEN BIOTECH	\$22,004.61	\$23,082.84	4.90%	\$26,405.53	\$27,699.41	4.90%	119.99%	120.00%	1,635	Dermatologicals			N/A	35.63%	\$21,606.27	\$22,438.06	\$5,010.84	\$0.00	98.18%	97.20%			
KVK TECH	\$241.87	\$338.00	39.74%	\$302.34	\$422.50	39.74%	125.00%	125.00%	32	Analgesics - Opioid			\$5,438	3	\$2,929	\$485.22	20.57%	\$611.07	\$868.77	42.17%	\$0.00	88.54%	82.89%
KVK TECH	\$451.06	\$630.00	39.67%	\$563.83	\$787.50	39.66%	125.00%	125.00%	10	Analgesics - Opioid			\$4,186	8	\$4,021	\$316.26	21.96%	\$422.16	\$406.81	-3.64%	\$0.00	93.59%	64.57%
KVK TECH	\$690.10	\$1,048.00	51.86%	\$862.50	\$1,310.00	51.88%	124.98%	125.00%	8	Analgesics - Opioid			\$5,438	3	\$2,929	\$485.22	20.57%	\$611.07	\$868.77	42.17%	\$0.00	88.54%	82.89%
LILLY	\$759.40	\$797.30	4.99%	\$911.28	\$956.76	4.99%	120.00%	120.00%	14,389	Endocrine and Metabolic Agents - Antidiabetics			N/A	36.77%	\$718.77	\$755.84	\$195.04	\$0.00	94.64%	94.80%			
LILLY	\$759.40	\$797.30	4.99%	\$911.28	\$956.76	4.99%	120.00%	120.00%	23,844	Endocrine and Metabolic Agents - Antidiabetics			N/A	36.82%	\$717.99	\$753.38	\$191.74	\$0.00	94.54%	94.49%			
NAPO PHARMACEUTICALS	\$668.52	\$2,206.12	230.00%	\$802.22	\$2,647.34	230.00%	119.99%	119.99%	9	Gastrointestinal Agents - Antidiarrheal/Probiotic Agents			\$0	0	\$0	\$1,093.24	10.50%	\$677.15	N/A	\$0.00	101.29%	N/A	
NOVARTIS	\$5,178.91	\$5,541.43	6.99%	\$6,214.69	\$6,649.72	7.00%	119.99%	120.00%	2,030	Dermatologicals			N/A	36.22%	\$5,164.75	\$5,462.52	\$1,373.69	\$0.00	99.72%	98.57%			
OBA PHARMACEUTICALS	\$245.00	\$1,176.47	380.19%	\$306.00	\$1,384.08	352.31%	124.89%	117.64%	0	Dermatologicals			\$0	15	\$17,647	N/A	0.00%	N/A	\$1,050.98	N/A	N/A	89.33%	
PHARMACYCUCS	\$12,072.72	\$12,966.10	7.39%	\$14,487.26	\$15,559.32	7.40%	119.99%	120.00%	1,142	Antineoplastics And Adjunctive Therapies			N/A	14.11%	\$12,266.39	\$13,230.61	\$0.00	\$0.00	101.60%	102.04%			
PUMA BIOTECHNOLOGY	\$13,823.00	\$16,695.00	20.77%	\$16,587.60	\$20,034.00	20.77%	120.00%	120.00%	66	Antineoplastics And Adjunctive Therapies			\$840,821	39	\$597,834	\$14,178.49	10.43%	\$14,348.66	\$16,133.41	\$0.00	103.80%	96.63%	
SA3	\$438.33	\$1,075.00	145.24%	\$526.00	\$1,290.00	145.24%	120.00%	120.00%	0	Dermatologicals			\$0	0	\$0	N/A	0.00%	N/A	N/A	\$0.00	N/A	N/A	
SPROUT PHARMACEUTICALS	\$400.00	\$522.50	30.62%	\$480.00	\$627.00	30.62%	120.00%	120.00%	0	Psychotherapeutic and Neurological Agents - Miscellaneous - Misc			\$0	19	\$8,722	\$454.36	3.40%	\$447.68	\$510.88	14.11%	\$0.00	111.91%	97.77%

<sup>11</sup> WAC and AWP values sourced from Medi-Span Med-File V2 under license. APCD claims values provided in aggregate across sourcing pharmacies, administrators, and payers. Pricing component data values provided in aggregate across reporting entities.

## Appendix C – WAC and Payer Paid Change Percent by Therapeutic Class

### All Active Prescription Drugs

Therapeutic Class	Active NDCs	Annual Average WAC Change Percent	Annual Average Paid Change Percent
ADHD/Anti-Narcolepsy/Anti-Obesity/Anorexiant	796	-6.57%	-1.26%
Allergenic Extracts/Biologicals Misc	4	4.49%	-5.27%
Analgesics - Anti-Inflammatory	766	-1.23%	-0.11%
Analgesics - Nonnarcotic	80	-10.76%	-0.99%
Analgesics - Opioid	1,005	-1.68%	-0.20%
Anorectal And Related Products	71	-0.32%	2.48%
Anti-Infective Agents - Amebicides	1	0.00%	0.00%
Anti-Infective Agents - Aminoglycosides	56	-1.29%	0.85%
Anti-Infective Agents - Anthelmintics	15	-5.95%	-8.01%
Anti-Infective Agents - Antifungals	205	-5.33%	-0.70%
Anti-Infective Agents - Antimalarials	66	-6.19%	2.23%
Anti-Infective Agents - Antimycobacterial Agents	49	-0.70%	0.81%
Anti-Infective Agents - Antivirals	425	-5.69%	2.86%
Anti-Infective Agents - Cephalosporins	381	-1.51%	4.52%
Anti-Infective Agents - Fluoroquinolones	141	-0.41%	0.00%
Anti-Infective Agents - Macrolides	169	-4.52%	3.58%
Anti-Infective Agents - Misc	498	-4.46%	1.51%
Anti-Infective Agents - Penicillins	428	-0.17%	0.15%
Anti-Infective Agents - Sulfonamides	1	0.00%	0.00%
Anti-Infective Agents - Tetracyclines	271	-4.33%	-2.40%
Antidotes And Specific Antagonists	86	-7.10%	1.93%
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Antiasthmatic And Bronchodilator Agents	487	-2.49%	-0.43%
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Antihistamines	159	0.06%	-0.22%
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Cough/Cold/Allergy	130	0.82%	0.08%
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Misc	18	1.16%	1.58%
Antihistamines/Nasal Agents/Cough & Cold/Respiratory/Misc - Nasal Agents - Systemic And Topical	42	9.28%	-0.89%
Antineoplastics And Adjunctive Therapies	706	0.93%	1.18%
Cardiovascular Agents - Antianginal Agents	165	-1.23%	0.37%
Cardiovascular Agents - Antiarrhythmics	191	-2.55%	-0.22%
Cardiovascular Agents - Antihyperlipidemics	1,044	-1.16%	-0.73%
Cardiovascular Agents - Antihypertensives	1,841	1.25%	-0.36%
Cardiovascular Agents - Beta Blockers	706	-1.39%	0.07%
Cardiovascular Agents - Calcium Channel Blockers	577	-1.91%	0.10%
Cardiovascular Agents - Cardiotonics	42	-3.39%	0.44%
Cardiovascular Agents - Diuretics	493	-5.87%	-1.59%
Cardiovascular Agents - Misc	347	-4.87%	-2.57%
Cardiovascular Agents - Vasopressors	60	-2.24%	1.37%
Central Nervous System Agents - Antianxiety Agents	455	1.72%	-0.49%
Central Nervous System Agents - Antidepressants	1,539	-1.79%	-0.31%
Central Nervous System Agents - Antipsychotics/Antimanic Agents	1,271	-4.73%	-0.88%
Central Nervous System Agents - Hypnotics/Sedatives/Sleep Disorder Agents	357	0.11%	8.58%
Dermatologicals	2,009	-2.56%	-0.92%
Endocrine and Metabolic Agents - Androgens-Anabolic	109	-0.71%	-1.11%



Therapeutic Class	Active NDCs	Annual Average WAC Change Percent	Annual Average Paid Change Percent
Endocrine and Metabolic Agents - Antidiabetics	895	-0.46%	1.08%
Endocrine and Metabolic Agents - Contraceptives	458	-1.71%	-0.05%
Endocrine and Metabolic Agents - Corticosteroids	347	-0.90%	3.86%
Endocrine and Metabolic Agents - Estrogens	197	1.14%	1.46%
Endocrine and Metabolic Agents - Misc	415	-2.51%	0.77%
Endocrine and Metabolic Agents - Oxytocics	17	-7.04%	0.11%
Endocrine and Metabolic Agents - Progestins	60	-2.81%	-1.08%
Endocrine and Metabolic Agents - Thyroid Agents	431	-1.61%	-2.43%
Gastrointestinal Agents - Antidiarrheal/Probiotic Agents	38	27.19%	0.00%
Gastrointestinal Agents - Antiemetics	183	-3.13%	0.92%
Gastrointestinal Agents - Digestive Aids	30	6.72%	4.36%
Gastrointestinal Agents - Laxatives	54	0.22%	2.13%
Gastrointestinal Agents - Misc	237	-0.73%	0.50%
Gastrointestinal Agents - Ulcer Drugs/Antispasmodics/Anticholinergics	617	-1.43%	-0.34%
General Anesthetics	3	0.00%	0.00%
Genitourinary Agents - Miscellaneous	225	-3.59%	-0.43%
Gout Agents	133	-3.28%	-0.28%
Hematological Agents - Anticoagulants	521	5.15%	-0.48%
Hematological Agents - Hematopoietic Agents	196	-1.31%	0.99%
Hematological Agents - Hemostatics	54	-5.71%	-2.46%
Hematological Agents - Misc	133	2.35%	0.16%
Local Anesthetics-Parenteral	95	0.50%	0.18%
Medical Devices And Supplies	1	0.00%	0.00%
Migraine Products	275	0.50%	0.84%
Miscellaneous Therapeutic Classes	257	0.22%	0.98%
Mouth/Throat/Dental Agents	126	-0.60%	1.47%
Neuromuscular Agents - Anticonvulsants	1,358	-3.19%	-0.86%
Neuromuscular Agents - Antimyasthenic/Cholinergic Agents	20	0.10%	1.55%
Neuromuscular Agents - Antiparkinson And Related Therapy Agents	447	0.44%	0.24%
Neuromuscular Agents - Musculoskeletal Therapy Agents	352	-3.51%	-2.32%
Neuromuscular Agents - Neuromuscular Agents	16	-13.53%	-12.15%
Nutritional Products - Dietary Products/Dietary Management Products	69	1.60%	1.31%
Nutritional Products - Minerals & Electrolytes	357	-1.00%	2.36%
Nutritional Products - Multivitamins	94	0.76%	-0.17%
Nutritional Products - Nutrients	59	3.67%	5.01%
Nutritional Products - Vitamins	33	-0.77%	-1.13%
Ophthalmic Agents	413	0.59%	1.93%
Otic Agents	35	-1.57%	-1.43%
Passive Immunizing And Treatment Agents	89	3.57%	4.52%
Pharmaceutical Adjuvants	101	0.49%	0.00%
Psychotherapeutic and Neurological Agents - Miscellaneous - Misc	482	-3.55%	0.23%
Toxoids	20	2.84%	54.94%
Urinary Antispasmodics	274	-9.83%	-3.15%
Vaccines	99	3.18%	-12.59%