THREE AXIS ADVISORS

Drug Pricing & Supply Chain Overview

Benjamin Link

April 2025

About Me

Benjamin Link, PharmD
President – 46Brooklyn | Vice President – 3 Axis Advisors

- After years of work in retail pharmacy, got the opportunity to work for a traditional PBM.
- Consolidation within PBM space led me to work for a pharmacy benefit administrator (PBA) within Ohio's Medicaid system.
- Years of learning and digging led to the uncovering of hundreds of millions of dollars in hidden drug costs and a nationwide reckoning for drug pricing reform.
- Joined 46brooklyn Research in 2019 to publish and translate publicly-available drug pricing data for free.
- Joined 3 Axis Advisors in 2019 to help others solve drug pricing riddles using more extensive data research and analysis. Clients include Medicaid Fraud Control Units, provider groups, research firms, technology companies, law firms, investment analysts, employers, benefit consultants, and private foundations.

Disclosures

- I have performed with government agencies and watch dogs, public and commercial plan sponsors, drug supply chain members, non-profit and professional organizations, research groups and educational institutions, as well as healthcare benefit brokers and consultants

https://www.3axisadvisors.com/

Goals

- An overview of the drug supply chain and where prescription drug pricing benchmarks fit within the supply chain
- An overview of the use of drug pricing benchmarks in drug channel contracts
- Examples of drug pricing in use

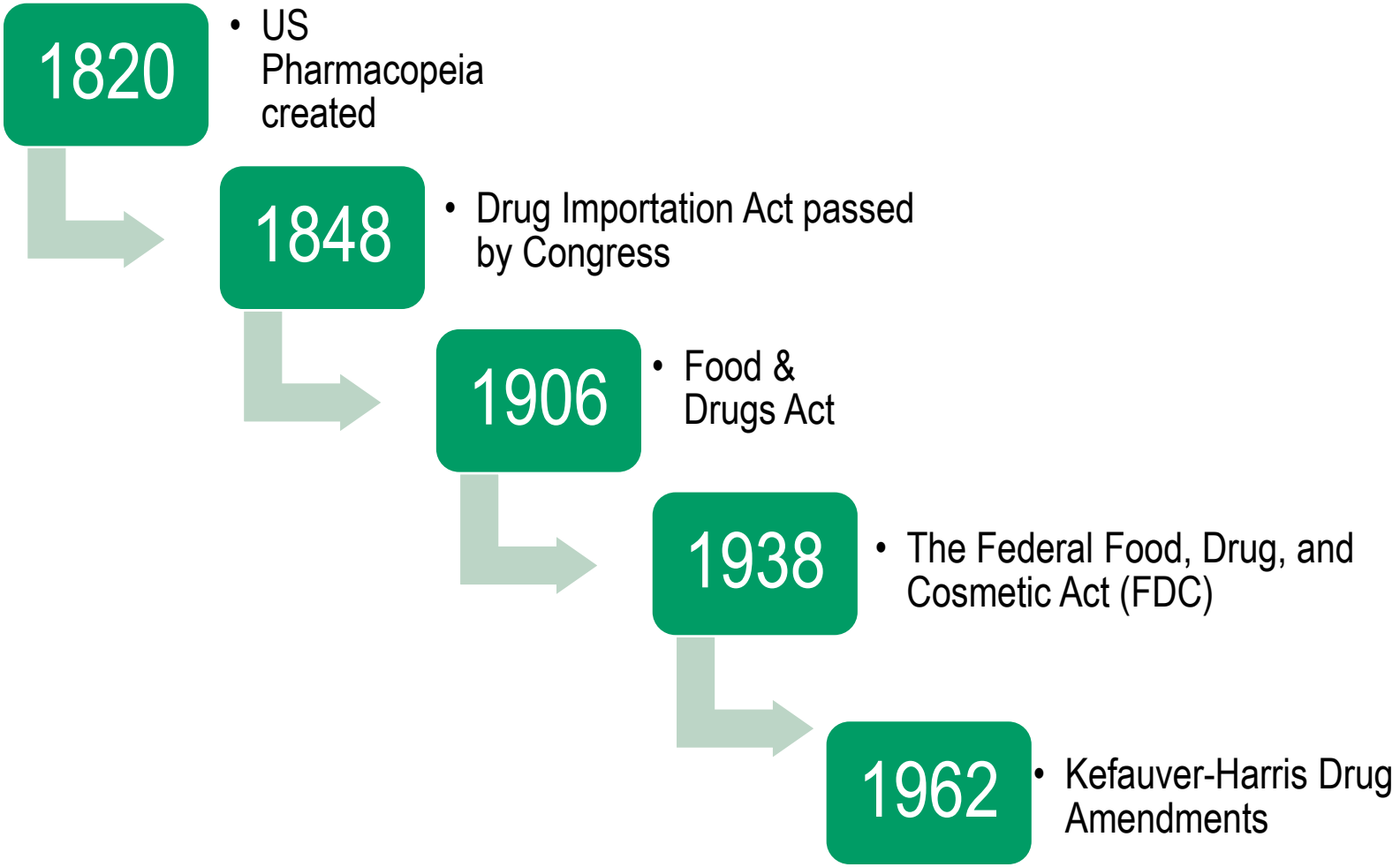

History

Pharmacy Incentives Historically

- Before we cared about safe and effective medications, there were still pharmacies selling medications
- The world's oldest known prescriptions were recorded on cuneiform document describes methods for making poultices, salves and washes. The ingredients, including mustard, fig, myrrh, bat droppings, turtle shell powder, river silt, snakeskins and "hair from the stomach of a cow," were dissolved into wine, beer or milk.
- The only "price" that mattered in the beginning, was the price between buyer and seller

Source: Kremers, Edward; Sonnedecker, Glenn (1986), Kremers and Urdang's History of Pharmacy (Fourth ed.), American Institute of the History of Pharmacy, ISBN 9780931292170

What changed?



Source: https://www.fda.gov/about-fda/fda-history/milestones-us-food-and-drug-law

The origins of prescription drug insurance

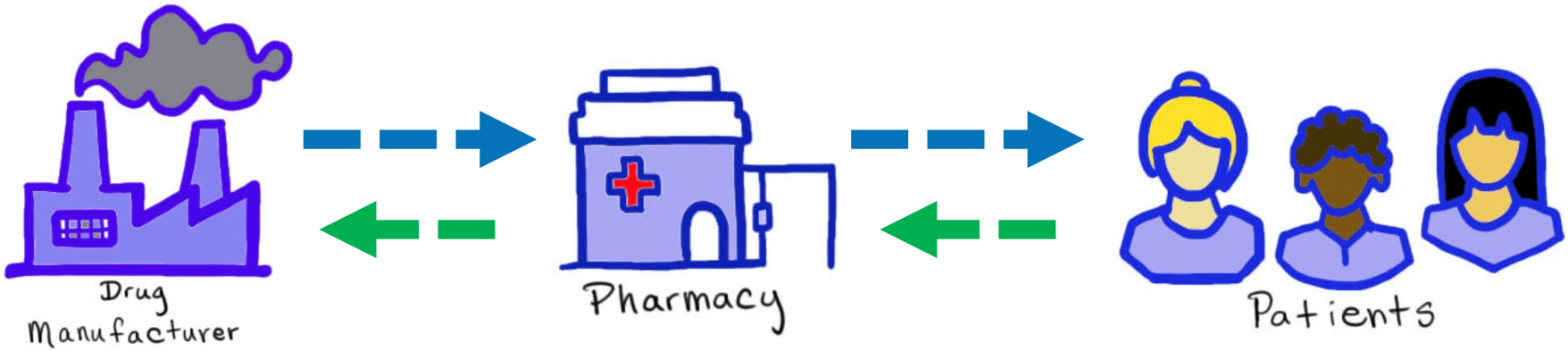
- During World War II and the Korean conflict, wages were frozen but benefits were not. As a result, the benefit moved from being a "fringe" to an active component of an employee's compensation
  - See 1942 Stabilization Act
- Historically, pharmacy benefits were lumped with vision and dental plans as complementary to medical benefits and treated as "riders" that could be added to the major medical package
- Before the 1970s, drug prices lagged behind the consumer price index (CPI) as well as the growth in healthcare costs. Pharmacy reimbursement with an insurer would require the submission of a paper claim (universal claim form) and on very cheap claim, patients often wouldn't complete the paper work (shoe box claims estimated at ~8-10% of the market)

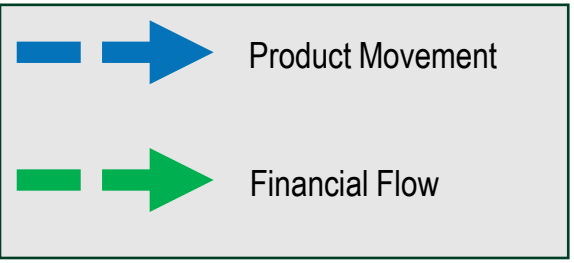
The origins of prescription drug insurance (continued)

- In the late 1960s (1968), the United Auto Workers collective bargaining led to the adoption of 'card plans' for prescription drugs
  - In card plans, the insurance company, an insurer or PBM contracts with pharmacies.
  - Under a master contract, pharmacies may choose to accept or reject their involvement and, depending on the size and breadth of the employer, the contracts may be regional or nationwide.
- Claims processing at this time was more like a credit card then the modern claims processing we think of (two-way communication)

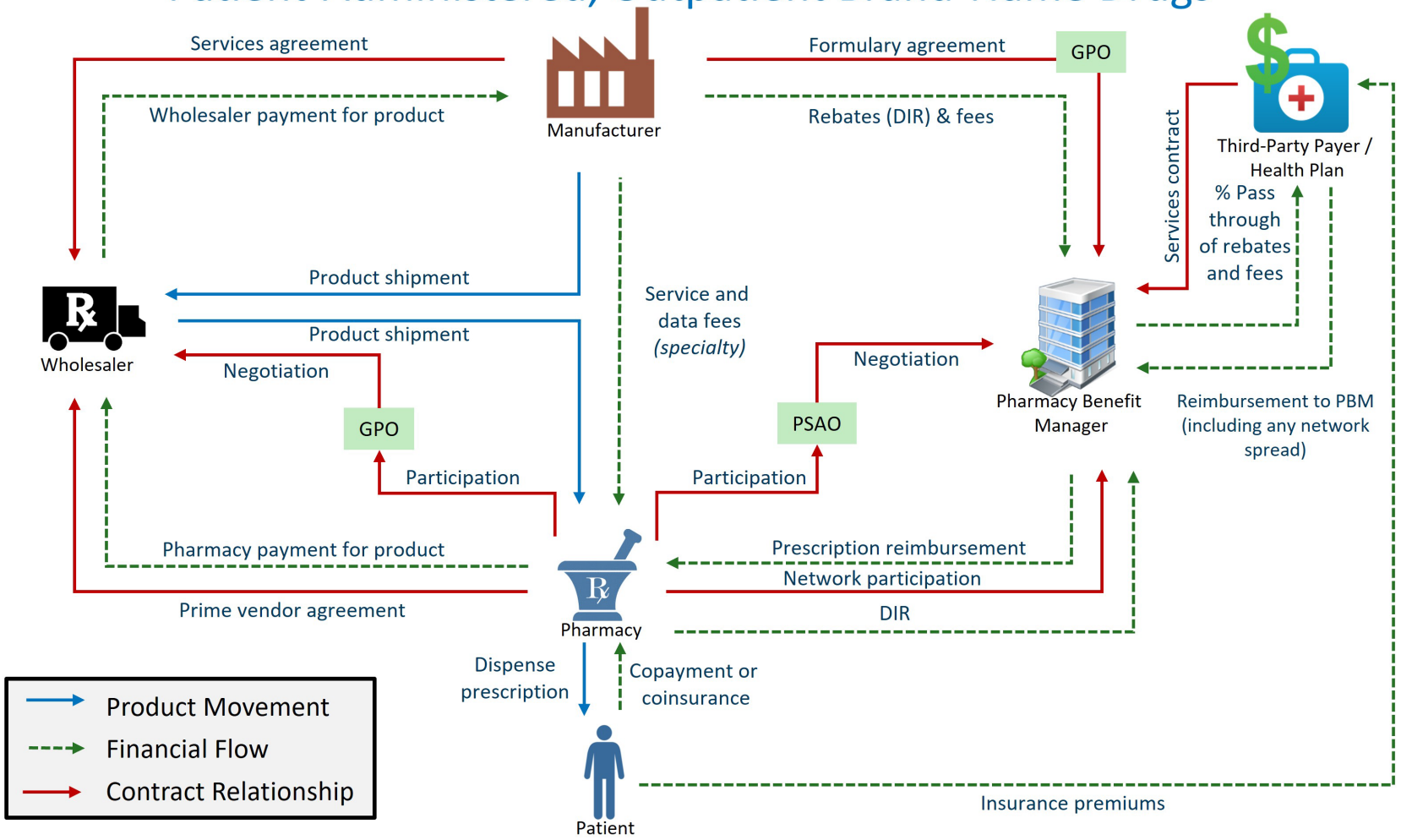
Source: Stern, Craig S. (1999), The History, Philosophy, and Principles of Pharmacy Benefits, J Managed Care Pharm: 525-531

Product/Financial Flow





The U.S. Pharmacy Distribution and Reimbursement System for Patient-Administered, Outpatient Brand-Name Drugs



GPO = group purchasing organization; PSAO = pharmacy services administrative organization; DIR = direct and indirect remuneration

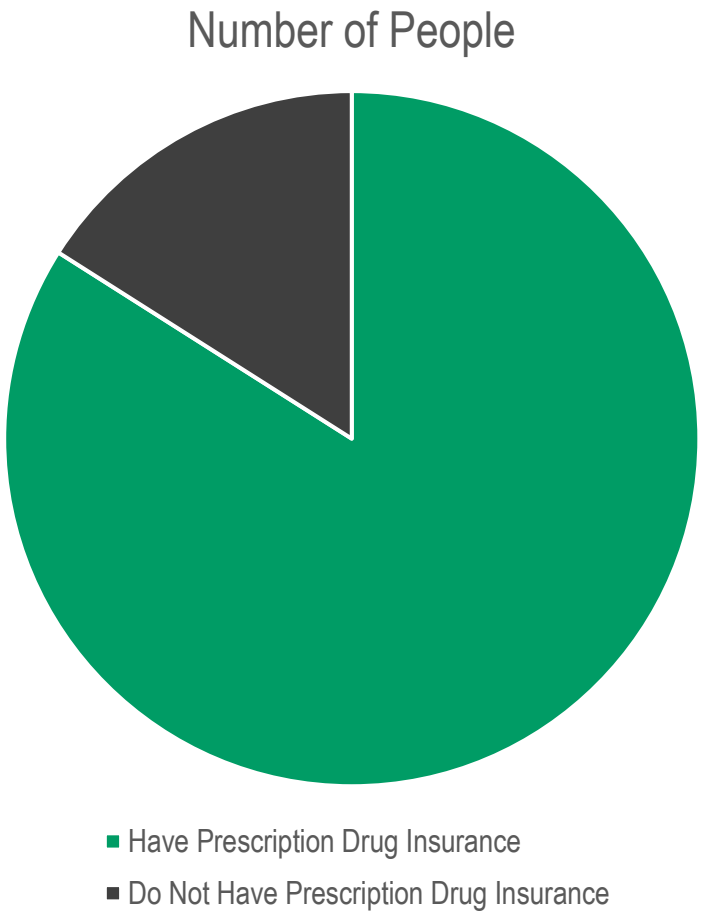
Source: *The 2024 Economic Report on U.S. Pharmacies and Pharmacy Benefit Managers*, Drug Channels Institute (https://drugch.nl/pharmacy). Chart illustrates flows for Patient-Administered, Outpatient Drugs. Please note that this chart is illustrative. It is not intended to be a complete representation of every type of product movement, financial flow, or contractual relationship in the marketplace.

DRUG CHANNELS INSTITUTE
An HMP Global Company

https://www.drugchannels.net/p/about-blog.html

Today's Pharmacy Customer

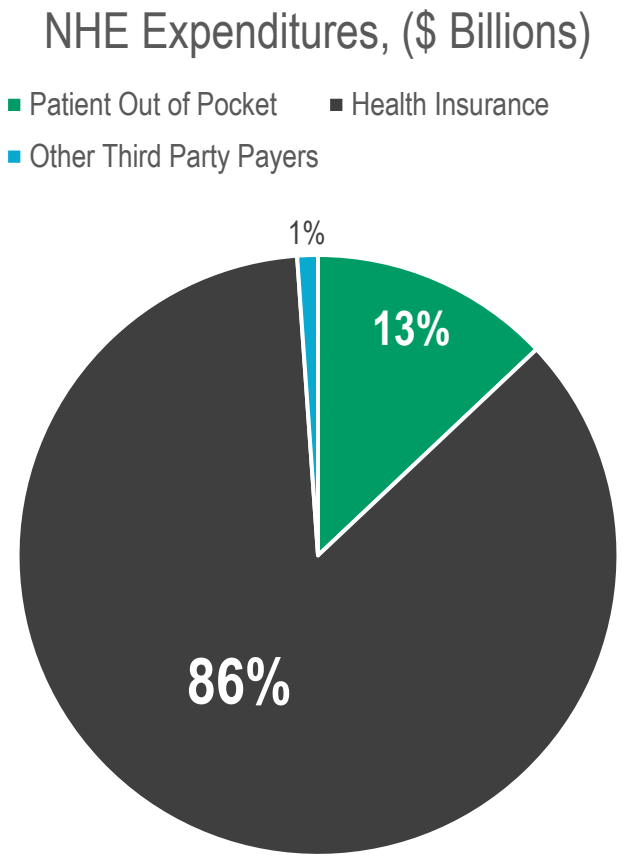
- Today, more than 8 out of 10 people have prescription drug insurance



Source: https://health.gov/healthypeople/objectives-and-data/browse-objectives/health-care-access-and-quality/increase-proportion-people-prescription-drug-insurance-ahs-03

Today's Pharmacy Customer

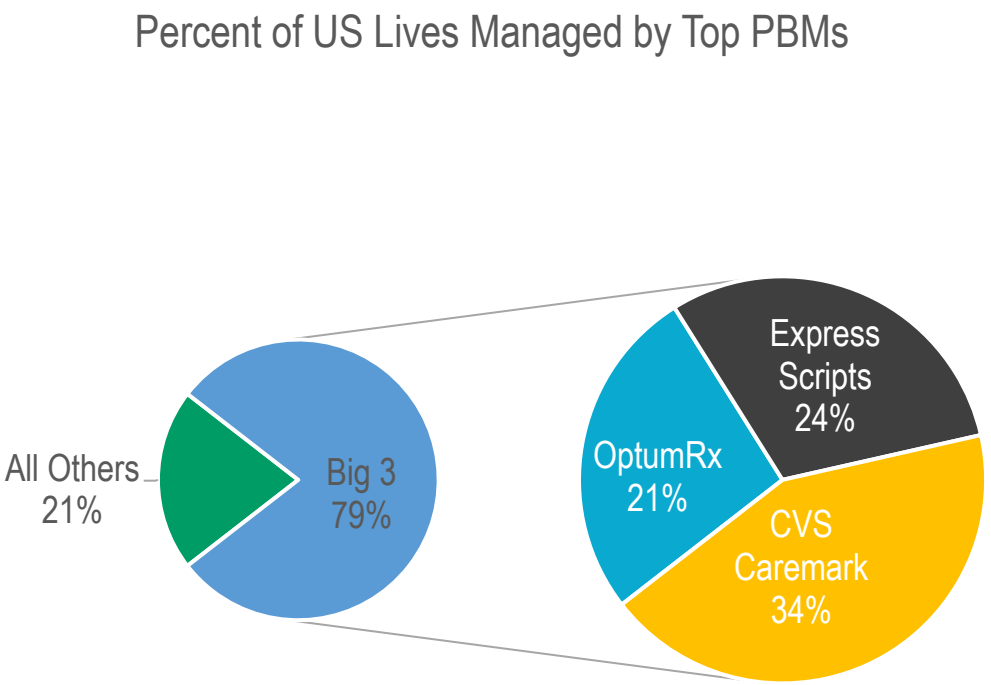
- In 2023, national retail prescription drug expenditures totaled $449.7 billion, with patient cost share being $58.3 billion (13%)
- Today, the largest pharmacy customer – in terms of dollars – is the person's insurance



Source: https://www.cms.gov/research-statistics-data-and-systems/statistics-trends-and-reports/nationalhealthexpenddata/nhe-fact-sheet

What market are we talking about?

- Payer -> PBM -> Pharmacy
- Most people have prescription drug insurance, and most prescription drug insurance is managed through PBMs




The Players

The Drug Manufacturer

- means the planting, cultivating, harvesting, processing, making, preparing, or otherwise engaging in any part of the production of a drug by propagating, compounding, converting, or processing, either directly or indirectly by extracting from substances of natural origin, or independently by means of chemical synthesis, or by a combination of extraction and chemical synthesis, and includes the following:
  - (i) Any packaging or repackaging of the drug or labeling or relabeling of its container, the promotion and marketing of the drug, and other activities incident to production;
  - (ii) The preparation and promotion of commercially available products from bulk compounds for resale by pharmacies, licensed health professionals authorized to prescribe drugs, or other persons.
  - (b) "Manufacture" does not include the preparation, compounding, packaging, or labeling of a drug by a pharmacist as an incident to either of the following:
  - (i) Dispensing a drug in the usual course of professional practice;
  - (ii) Providing a licensed health professional authorized to prescribe drugs with a drug for the purpose of administering to patients or for using the drug in treating patients in the professional's office.

(ORC 3715.01)

The Wholesaler

- "Distributor of dangerous drugs" or "drug distributor" means the following persons licensed in accordance with section 4729.52 of the Revised Code and division 4729:6 of the Administrative Code:
  - (1) Wholesale distributors of dangerous drugs, including virtual wholesalers.
  - (2) Manufacturers of dangerous drugs.
  - (3) Outsourcing facilities.

(OAC 4729)

- "Wholesale sale" and "sale at wholesale" mean any sale in which the purpose of the purchaser is to resell the article purchased or received by the purchaser.

(ORC 4729.01)

The Pharmacy

- means any area, room, rooms, place of business, department, or portion of any of the foregoing where the practice of pharmacy is conducted.
- "Practice of pharmacy" means providing pharmacist care requiring specialized knowledge, judgment, and skill derived from the principles of biological, chemical, behavioral, social, pharmaceutical, and clinical sciences

(ORC 4729.01)

The Pharmacy Benefit Manager (PBM)

- An entity that contracts with pharmacies on behalf of an employer, a multiple employer welfare arrangement, public employee benefit plan, state agency, insurer, managed care organization, or other third-party payer to provide pharmacy health benefit services or administration.

(ORC 3959.01)

The Health Plan

- "Plan" means any arrangement in written form for the payment of life, dental, health, or disability benefits to covered persons defined by the summary plan description and includes a drug benefit plan administered by a pharmacy benefit manager.
- "Plan sponsor" means the person who establishes the plan.

(ORC 3959.01)

The Patient

- "Patient" means either of the following:
- (a) An individual who received health care treatment from a health care provider;
- (b) A guardian [of the individual]

(ORC 3701.74)

Vertical Business Relationships Within the U.S. Drug Channel, 2025

PBM = pharmacy benefit manager; GPO = group purchasing organization; LTC = long-term care

1. Prime Therapeutics sources formulary rebates from—and has a minority ownership interest in—Ascent Health Solutions, which is part of Cigna's Evernorth segment.
2. Synergie is a buying group focused on medical benefit drugs. Its ownership includes the Blue Cross Blue Shield (BCBS) Association, Prime Therapeutics, Elevance Health, and other independent BCBS health plans.
3. Prime Therapeutics Pharmacy was previously known as Magellan Rx Pharmacy. Prime's clients have the option to use Express Scripts for mail/specialty pharmacy services.
4. In 2022, Cigna invested $2.7 billion for an estimated 14% ownership stake in VillageMD. In 2024, it wrote down the full value of this investment. Walgreens Boots Alliance owns a majority of VillageMD.
5. Centene began outsourcing its PBM operations to Express Scripts in 2024. In 2023, Centene rebranded its Envolve Pharmacy Solutions pharmacy benefit subsidiary as Centene Pharmacy Services.
6. CVS Caremark provides certain PBM services to CarelonRx business. CarelonRx also sources formulary rebates from—and has a minority interest in—Zinc Health Services, which is a subsidiary of CVS Health.

Source: *The 2025 Economic Report on U.S. Pharmacies and Pharmacy Benefit Managers*, Exhibit 261. Exhibit does not illustrate every subsidiary business operated by each company.

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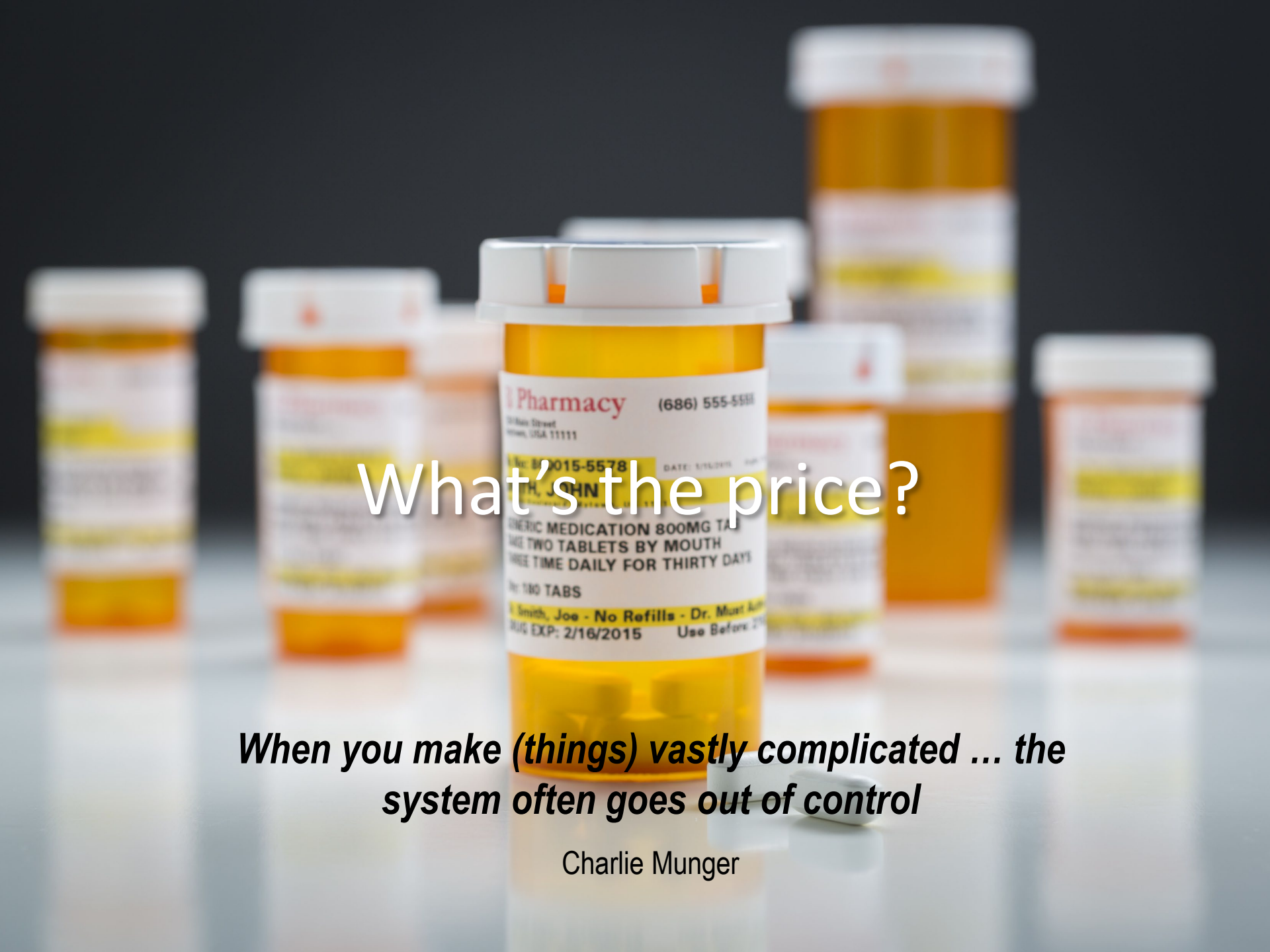
https://www.drugchannels.net/2025/04/mapping-vertical-integration-of.html



What's the price?

When you make (things) vastly complicated … the system often goes out of control

Charlie Munger

Efficient Marketplace Overview

- We must first start with the basics of any transaction that involves a buyer, a seller, and an intermediary whose role is to facilitate the transaction between the two parties.

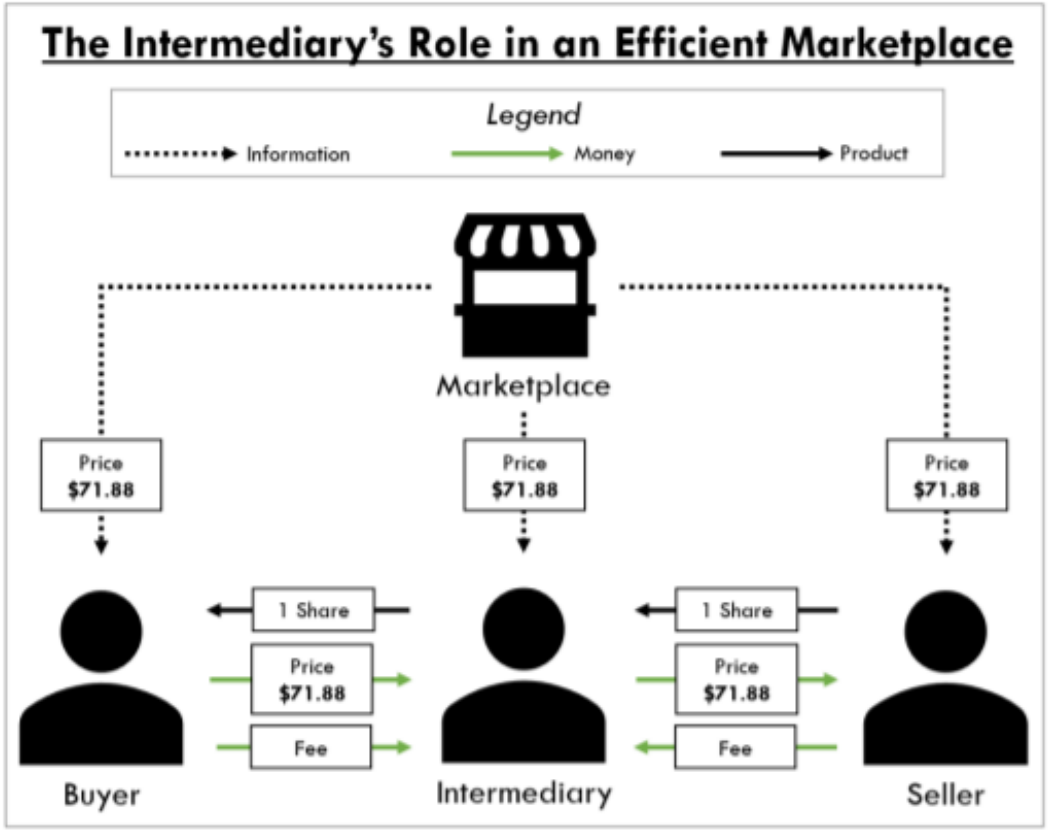
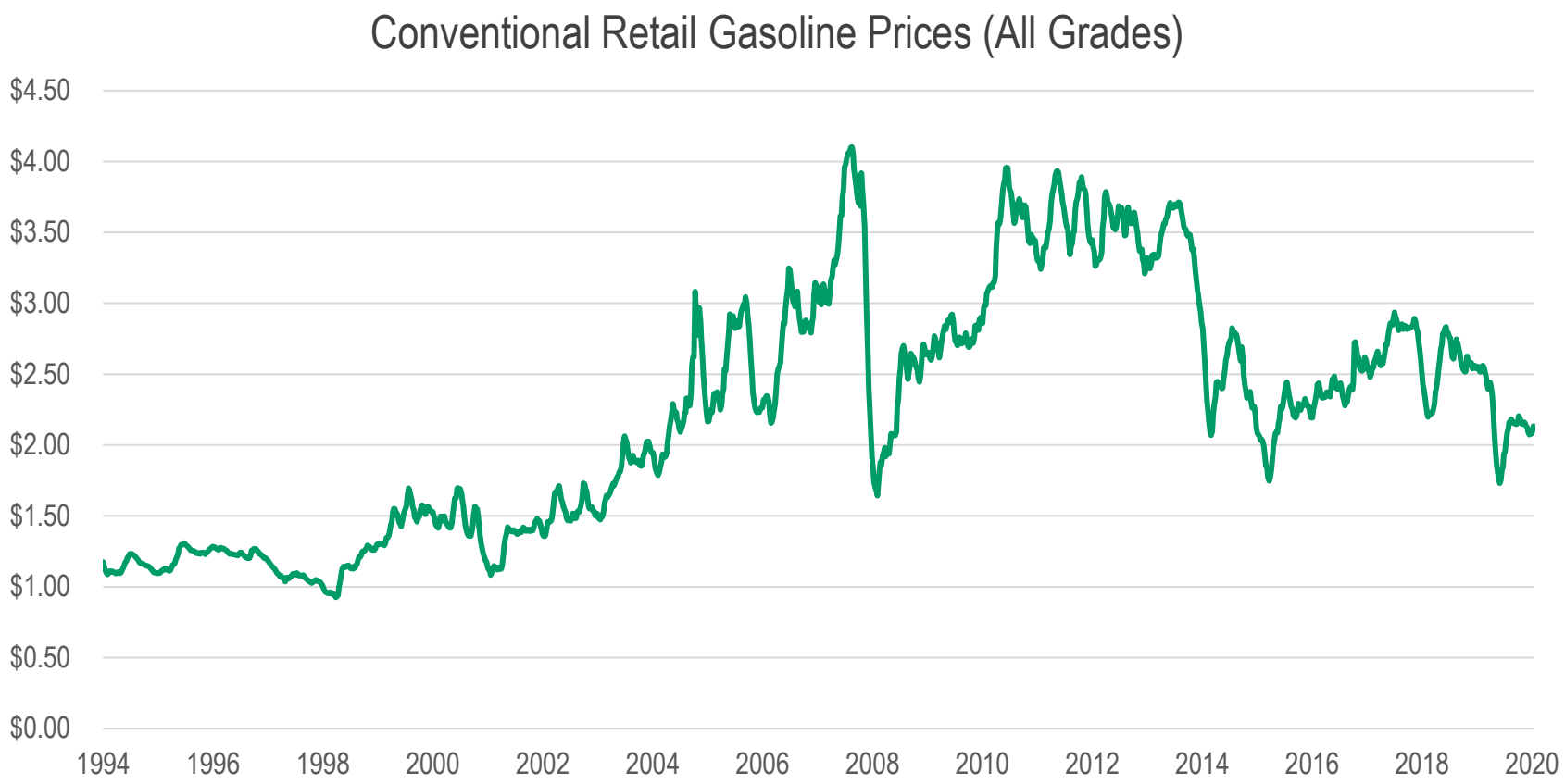


Figure 1: The Intermediary's Role in an Efficient Marketplace

Source: https://www.3axisadvisors.com/projects/2019/1/17/analysis-of-pbm-spread-pricing-in-new-york-medicaid-managed-care

Gasoline prices are established by a transparent, global marketplace



Source: eia.gov

Gasoline prices are…

Transparent

+

Set by the marketplace

=

Trustworthy

Which price are you talking about?

MANY PRICES AVAILABLE FOR DRUGS IN THE U.S.

Drug prices are…

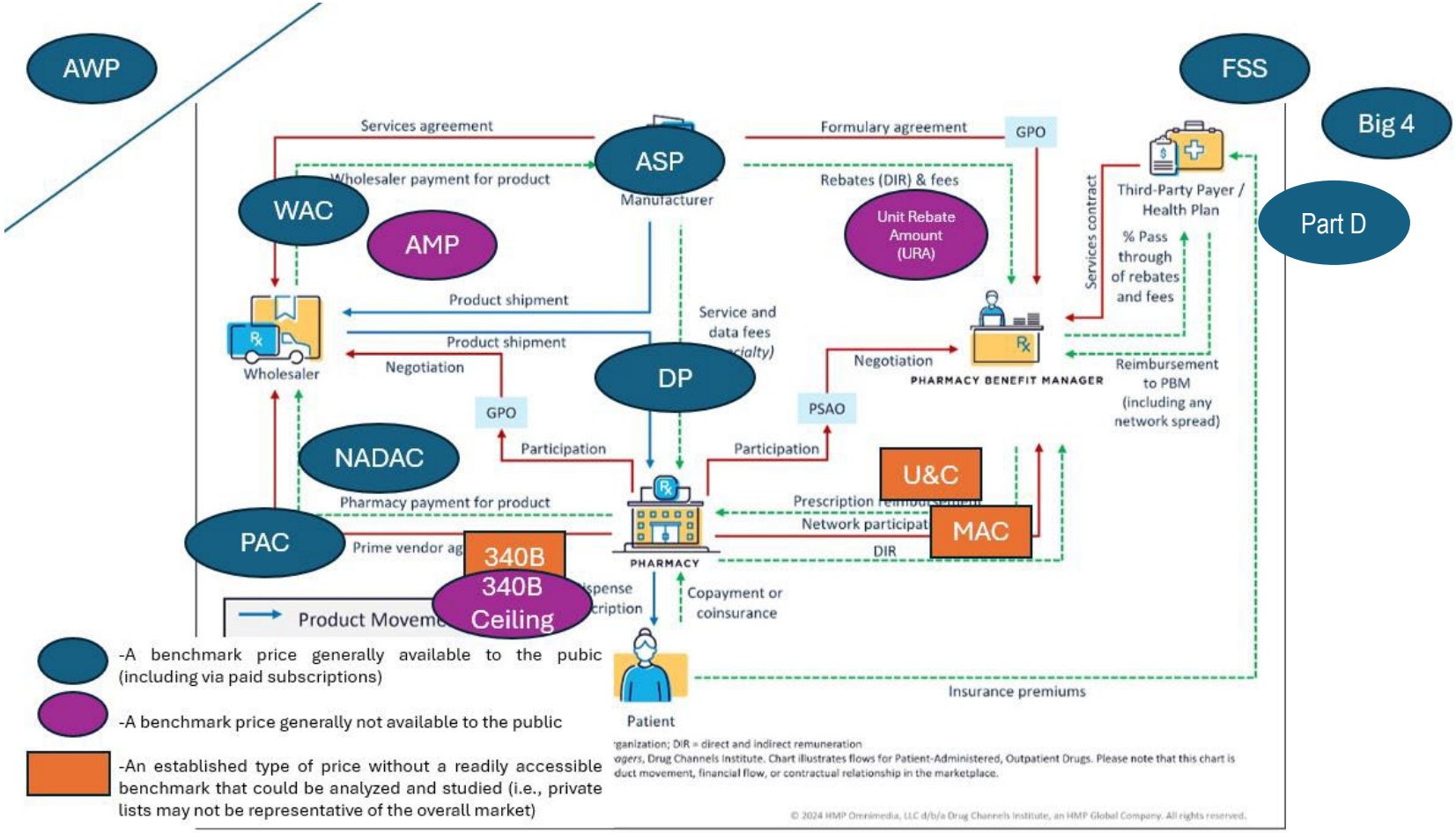
Hidden

Set by contracts – not efficient market

Prone to manipulation

Establishing a Drug Price

Drug Prices Attempt to Capture Certain Business Activities…



AWP

Publishers of Drug Pricing Data

- Centers for Medicare & Medicaid Services (CMS)
  - ASP
  - NADAC
  - Maximum Fair Price (MFP) Part D

- First Databank
- Mircomedex Red Book
- Medi-Span
- Gold Standard Drug Database

Non-Public Drug Prices

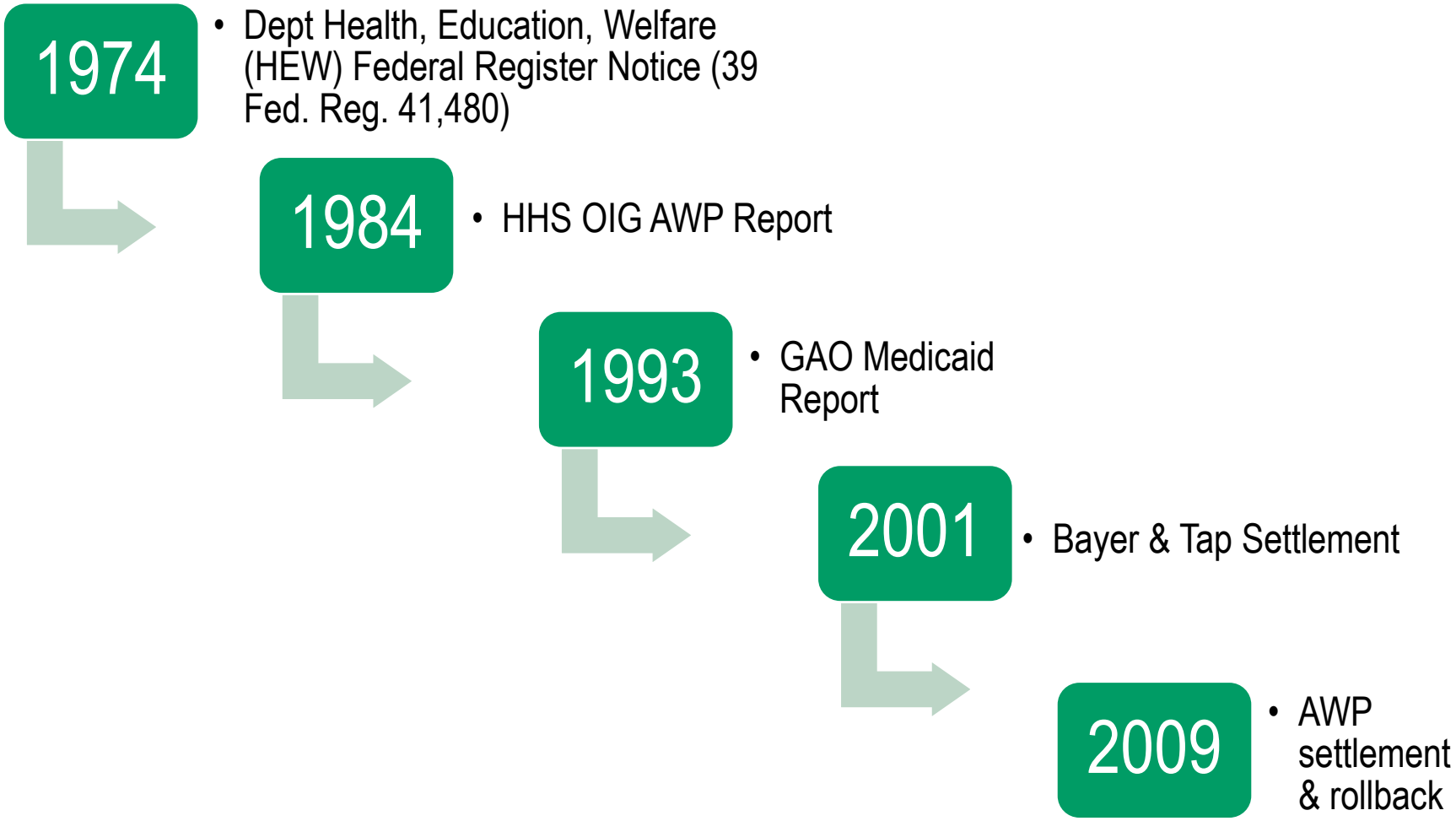
- Average Wholesale Price (AWP)
- Suggested Wholesale Price (SWP)
- Direct Price (DP)
- Wholesale Acquisition Price (WAC)

Average Wholesale Price (AWP)

The oldest of the modern pricing benchmarks

- AWP is **NOT** defined in Federal Statute
- AWP has been around since 1969, and was arguably the first effort to benchmark payment for drugs
  - Originally developed by asking pharmacist what their drugs costs
  - Over time, has been self-reported by manufacturers (i.e., a MSRP) or derived by drug compendia (as mark mark-up to other reported drug reference prices such as WAC)
- AWP is the predominant basis of drug payments in contracts between plan sponsors and third parties (e.g., PBMs) as well as PBMs and pharmacies

AWP History

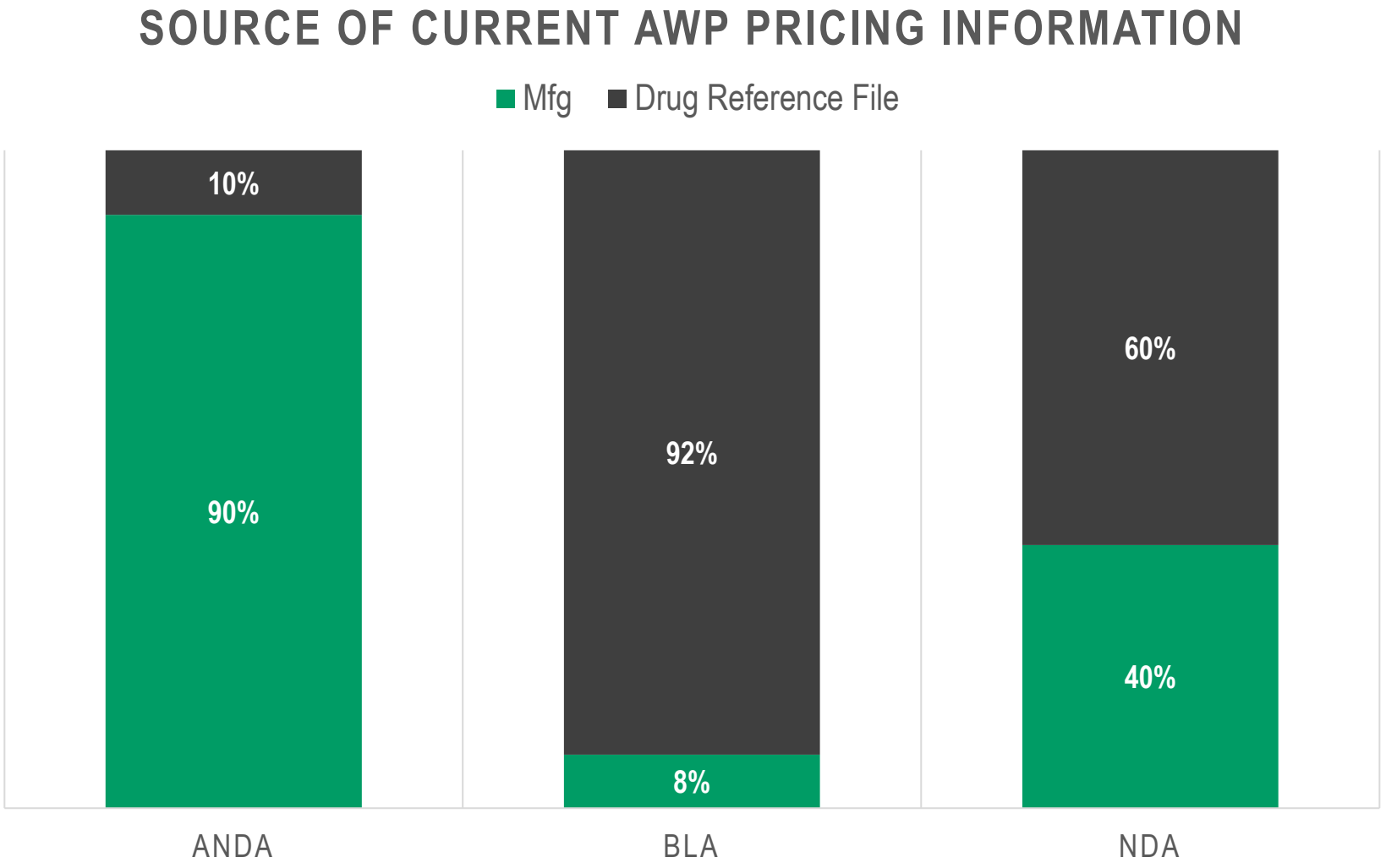


Source: https://www.ehcca.com/presentations/pharmacongress3/4_04.pdf

Lawsuits Related to AWP

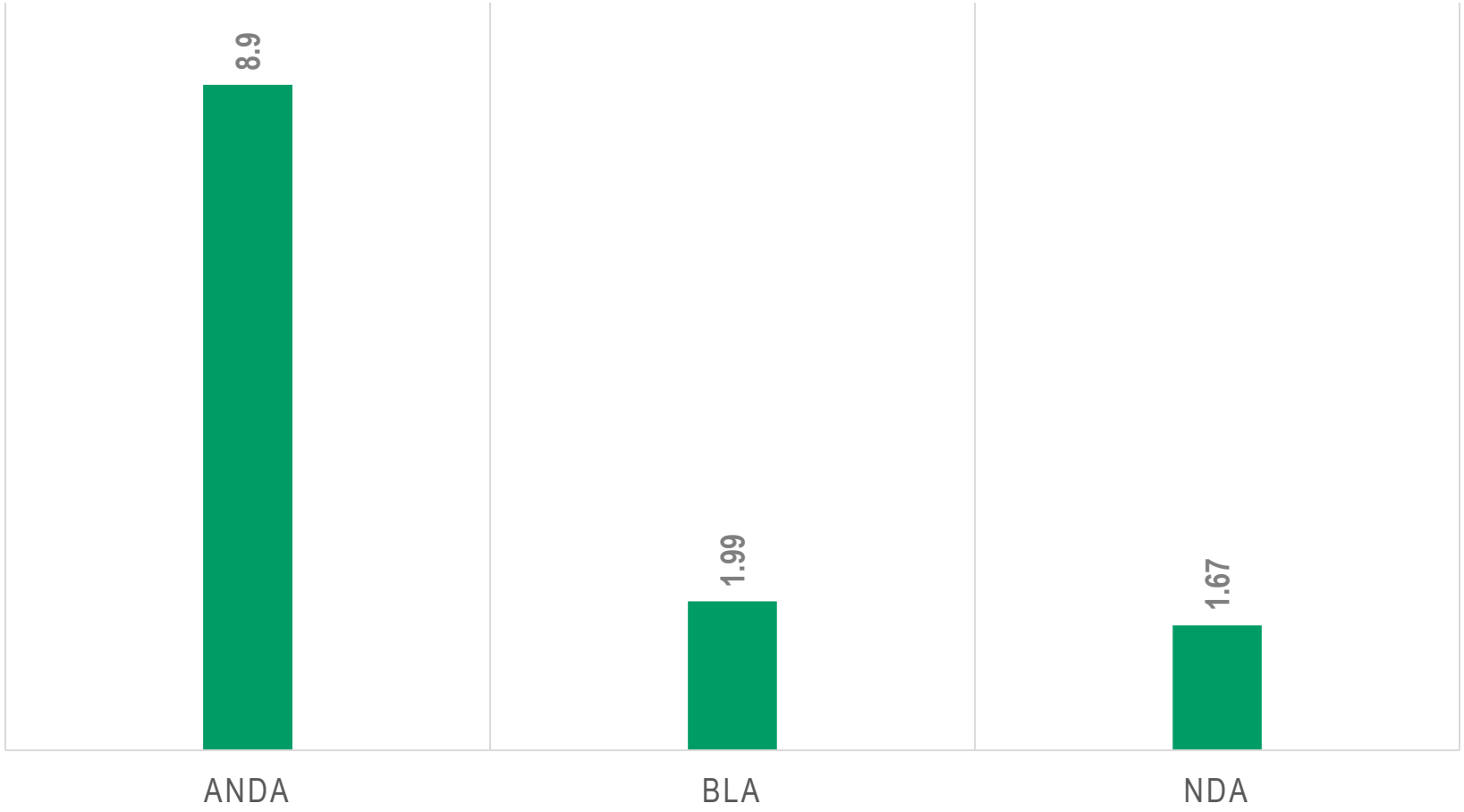
- Multiple Settlements between 2006 to 2012
- As a pricing benchmark, AWP is used by insurers and other third-party payers to reimburse pharmacies and doctors for medications
- Allegations arose that drug companies, drug compendia and other parties were conspiring to inflate AWP to profit from the difference between the actual drug price and the inflated AWP sticker price
- Ultimately, hundreds of millions of dollars in settlements were reached between prescription drug payers and the manufacturers and/or other parties
- As part of the settlement, FDB stopped publishing AWP (reports SWP today)

Who publishes AWP?



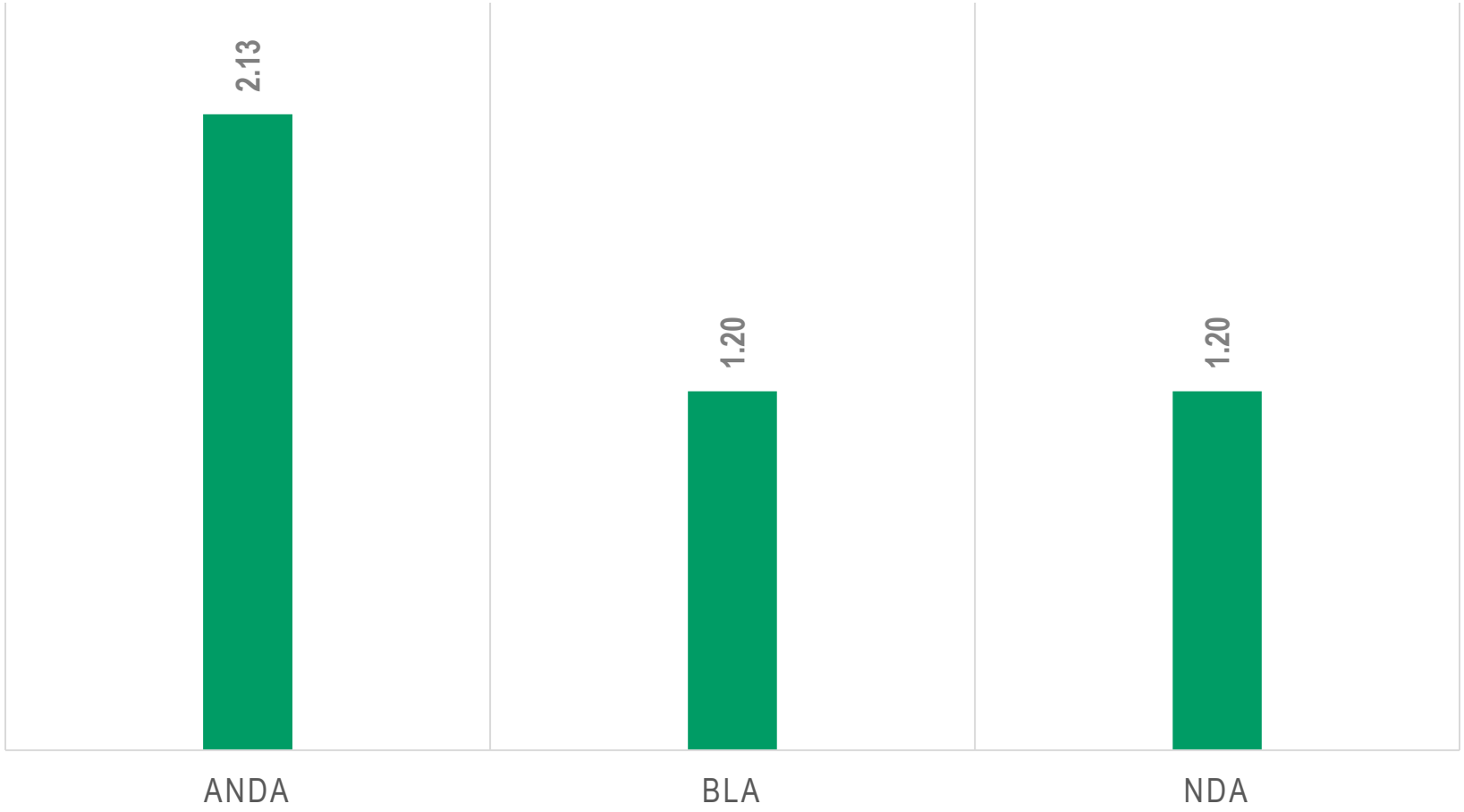
3 Axis Advisors analysis of Medi-Span data

What are the average AWP to WAC relationships?



3 Axis Advisors analysis of Medi-Span data

What are the median AWP to WAC relationships?

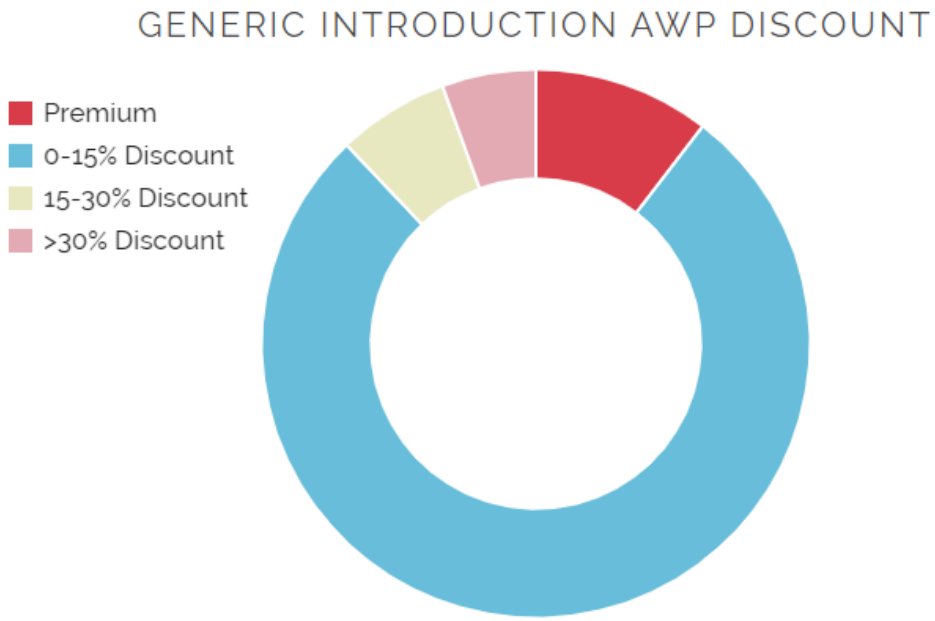


High-priced brands give birth to high-priced generics

1,247 different brand drugs lost patent exclusivity from 2005 to September 2019.

For each brand drug in the sample, we found the first generic version brought to market and compared the generic's launch AWP with the AWP of its equivalent brand the month prior to its launch.

The key takeaway from this analysis is that **77% of newly-released generics were launched with an AWP that was a 0-15% discount to the brand-name medication it was designed to replace.**

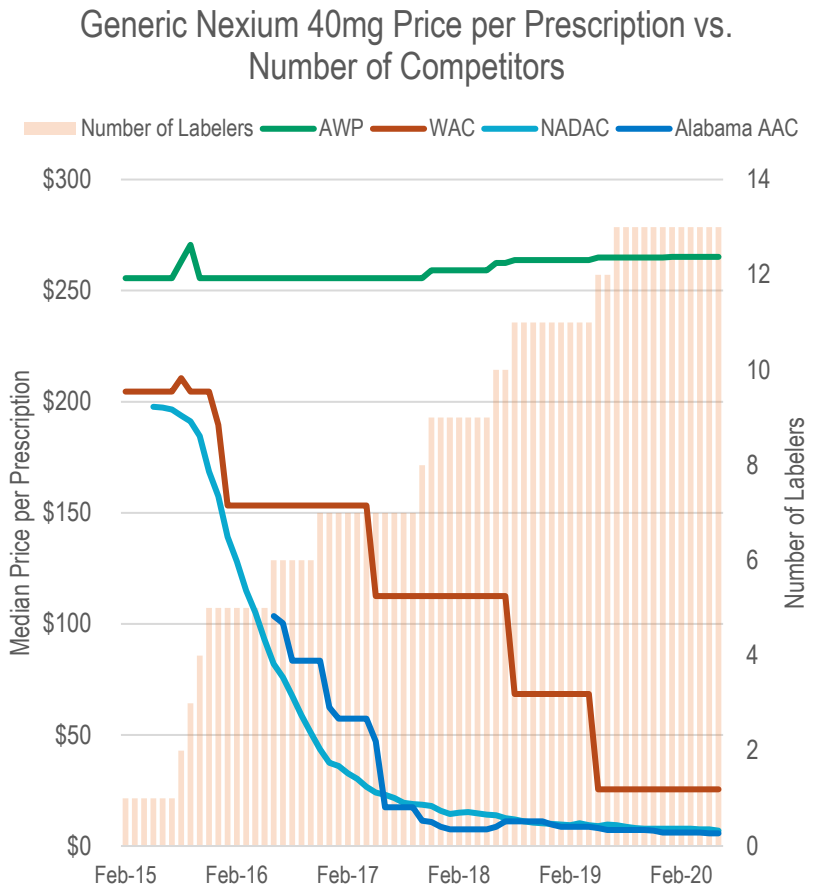


Source: 46brooklyn Research (derived from raw data from Elsevier Gold Standard) ; sample size = 1,247

https://www.46brooklyn.com/research/2019/10/11/three-two-one-launch-rfmyr

AWP is a thoroughly broken drug pricing benchmark for generic drugs

- This chart shows another problem with AWP
  - **Not only is it wildly inflated, it does not decline with increased free market competition**
- The **light orange bars** (right axis) show that the number of competitors producing this drug went from one in Feb 2015 to 13 in Feb 2020
- The **light blue line (NADAC)** and **dark blue line (AAC)** show that as more competitors came to market, the price drops precipitously
  - NADAC is down 96% from May 2015
- The **brown line** shows that **WAC** declines with increased competition, but not nearly as responsively as surveyed pharmacy invoice costs
  - Remember, WAC is set by the drugmaker, not the marketplace
- Lastly, the **green line** is **AWP**. This price benchmark is completely immune to the effects of competition, ***increasing*** since the drug's launch



Source: MediSpan Price Rx, Elsevier Gold Standard Drug Database, CMS, 3 Axis Advisors

The million-dollar truck

- Think of AWP as the drug's "MSRP"… if MSRPs were **TWENTY-ONE TIMES** higher than a vehicle's true cost!*
  - This is the median AWP to AAC relationship for generic drugs
- The Kelly Blue Book "Fair Purchase Price" for a 2024 Ford F-150 SuperCrew Cab Platinum is $71,383 and its MSRP is $75,940
- **If the AWP-to-AAC relationship for the median generic drug applied to this vehicle, it's MSRP would be $1,594,740**

* Based on a 3 Axis Advisors analysis of the prices of 20,205 generic drugs in 2020. The median AWP was $2.75 per unit while the median Alabama AAC was $0.13 per unit. Raw pricing data for this analysis was pulled from a combination of MediSpan Price Rx, Elsevier Gold Standard Drug Database, and CMS

Suggested Wholesale Price (SWP)

- Suggested Wholesale Price (SWP) as published by FDB represents the manufacturer's suggested price for a drug product from wholesalers to their customers (i.e., retailers, hospitals, physicians and other buying entities) as reported to FDB by the manufacturer. SWP is a suggested price and does not represent actual transaction prices. FDB relies on manufacturers to report or otherwise make available the values for the SWP data field.

https://www.fdbhealth.com/drug-pricing-policy

What the drug supply chain tells investors about drug pricing benchmarks

Walgreens 10-K 2024

- Future changes to the pricing benchmarks used to establish pharmaceutical pricing, including changes in the basis for calculating reimbursement by third-party payors, could adversely affect us.
- In general, in the U.S., generic versions of drugs generate lower sales dollars per prescription, but higher gross profit dollars as compared with patent-protected brand name drugs. The impact on retail pharmacy gross profit dollars can be significant in the first several months after a generic version of a drug is first allowed to compete with the branded version, which is generally referred to as a "generic conversion".

http://investor.walgreensbootsalliance.com/static-files/503eb8a7-cc54-446f-ba70-3460819aad71

Cardinal Health 10-K 2024

- Margin from our generic pharmaceutical program includes price discounts, rebates and service fees from manufacturers and may, in limited instances, include price appreciation. Our earnings on generic pharmaceuticals are generally highest during the period immediately following the initial launch of a product, because generic pharmaceutical selling prices are generally highest during that period and tend to decline over time. Margin from distribution services agreements with branded pharmaceutical manufacturers is derived from compensation we receive for providing a range of distribution and related services to manufacturers. Our compensation typically is a percentage of the wholesale acquisition cost that is set by manufacturers. In addition, under a limited number of agreements, branded pharmaceutical price appreciation, which is determined by the manufacturers, also serves as part of our compensation.

https://d18rn0p25nwr6d.cloudfront.net/CIK-0000721371/33880469-bbc3-4cf0-99c7-e5fb50d4bf4f.pdf

What the drug supply chain tells investors about drug pricing benchmarks

The Cigna Group 10-K 2024

Changes in drug pricing or industry pricing benchmarks could materially impact our financial performance.

- Contracts in the prescription drug industry, including our contracts with retail pharmacy networks and our pharmacy and specialty pharmacy clients, generally use pricing metrics published by third parties as benchmarks to establish pricing for prescription drugs. If these benchmarks are no longer published by third parties, we, or our contractual partners, adopt other pricing benchmarks for establishing prices within the industry, legislation or regulation requires the use of other pricing benchmarks, or future changes in drug prices substantially deviate from our expectations, the short- or long-term impacts may have a material adverse effect on our business and results of operations

https://d18rn0p25nwr6d.cloudfront.net/CIK-0001739940/64c4c39f-1b4e-4979-8b4a-bfc403377665.pdf

CVS Health 10-K 2024

- **Possible changes in industry pricing benchmarks and drug pricing generally can adversely affect our PBM and Pharmacy & Consumer Wellness businesses.**

…Future changes to the use of AWP, WAC or to other published pricing benchmarks used to establish drug pricing, including changes in the basis for calculating reimbursement by federal and state health care programs and/or other payors, could impact the reimbursement we receive from Medicare and Medicaid

programs, the reimbursement we receive from our PBM clients and other payors and/or our ability to negotiate rebates and/or discounts with drug manufacturers, wholesalers, PBMs and retail pharmacies. A failure or inability to fully offset any increased prices or costs or to modify our operations to mitigate the impact of such increases could have a material adverse effect on our operating results

https://d18rn0p25nwr6d.cloudfront.net/CIK-0000064803/69ae70d3-3fe0-44a0-b601-f21026f8a49a.pdf

Definition in contracts

City of Mesa, AZ Commercial & EGWP Pharmacy Services Contract

EXHIBIT A
DEFINED TERMS

1.1 Average Wholesale Price or AWP means the average wholesale price for a given pharmaceutical product as published by drug pricing services such as Medi-Span or other third-party pricing sources which MedImpact may select ("Pricing Source"). As of the Effective Date, MedImpact uses Medi-Span as its Pricing Source for AWP. AWP will be updated in MedImpact's online claims adjudication system on at least a weekly basis with data received from the Pricing Source, which if not received timely could result in delays. The applicable AWP for prescriptions dispensed shall be based on the actual NDC submitted by the pharmacy. AWP does not represent a true wholesale price, but rather is a fluctuating benchmark provided by third-party pricing sources.

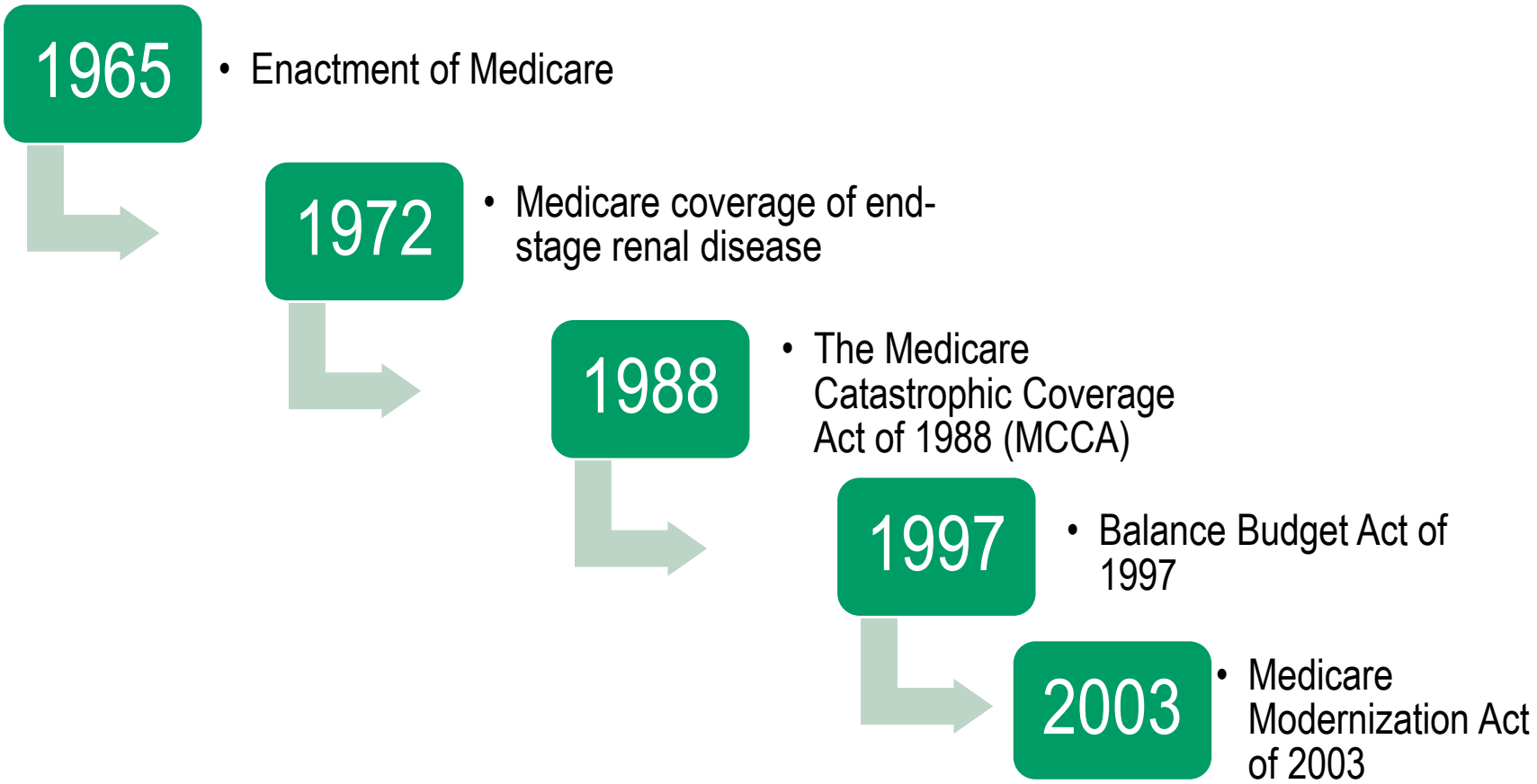
https://apps.mesaaz.gov/purchasingcontracts/Documents/%7B9A3FE6EC-45A2-498F-95A6-C7F025187EA8%7D_0.pdf

ASP

Average Sales Price (ASP)

- ASP is defined in Federal Statute (42 CFR § 414.904)
- Basis of payment for drugs in Medicare Part B since January 1, 2005
  - Published by CMS https://www.cms.gov/medicare/payment/part-b-drugs/asp-pricing-files
- Calculation of ASP price differs depending upon whether the drug is single source (i.e., brand) or multi-source (i.e., generic)
- Exemptions exist within the law regarding certain ASP calculations:
  - ASP is a market-based price that reflects the weighted average of all manufacturer sales prices and includes all rebates and discounts that are privately negotiated between manufacturers and purchasers (with the exception of Medicaid and certain federal discounts and rebates).

ASP History



Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC2690175/ https://oig.hhs.gov/documents/evaluation/2145/OEI-03-00-00310-Complete%20Report.pdf

ASP (Single Source; Brand)

- The average sales price is the volume-weighted average of the manufacturers' average sales prices for all National Drug Codes (NDCs) assigned to the drug or biological product.

- Calculation of the average sales price
  - For dates of service on or after April 1, 2008, the average sales price is determined by—
    - (A) Computing the sum of the products (for each National Drug Code assigned to such drug products) of the manufacturer's average sales price, determined by the Secretary without dividing such price by the total number of billing units for the National Drug Code for the billing and payment code and the total number of units sold; and
    - (B) Dividing the sum determined under clause (A) by the sum of the products (for each National Drug Code assigned to such drug products) of the total number of units sold and the total number of billing units for the National Drug Code for the billing and payment code.

ASP (Multisource; Generic)

- The average sales price for all drug products included within the same multiple source drug billing and payment code is the volume-weighted average of the manufacturers' average sales prices for those drug products.

- Calculation of the average sales price
  - (ii) For dates of service on or after April 1, 2008, the average sales price is determined by—
    - (A) Computing the sum of the products (for each National Drug Code assigned to such drug products) of the manufacturer's average sales price, determined by the Secretary without dividing such price by the total number of billing units for the National Drug Code for the billing and payment code and the total number of units sold; and
    - (B) Dividing the sum determined under clause (A) by the sum of the products (for each National Drug Code assigned to such drug products) of the total number of units sold and the total number of billing units for the National Drug Code for the billing and payment code.
  - (iii) For purposes of this subsection and subsection (c), the term billing unit means the identifiable quantity associated with a billing and payment code, as established by CMS.

ASP-based Reimbursement

- The Part B reimbursement methodology includes a six percent add-on payment (106% of ASP)
- In 2018, CMS reduced payments to 340B hospitals to ASP - 22.5%
  - This rate applied from CY 2018 through approximately the third quarter of CY 2022
- June 2022 Supreme Court decision in *American Hospital Association v. Becerra* reversed 340B payment reduction
  - To compensate for the previous payment reductions, CMS implemented a remedy involving one-time lump sum payments to affected 340B hospitals

Source: https://www.cms.gov/newsroom/fact-sheets/hospital-outpatient-prospective-payment-system-opps-remedy-340b-acquired-drug-payment-policy

WAC & DP

Wholesale Acquisition Cost (WAC)

- WAC is currently defined in Federal Statute (42 USC § 1395w-3a(c)(6))
- Was not always defined in statute
  - In 1994, “Wholesale Acquisition Cost (WAC): The wholesaler's net payment made to purchase a drug product from the manufacturer, net of purchasing allowances and discounts.”
- The term “wholesale acquisition cost” means, with respect to a drug or biological, the manufacturer’s list price for the drug or biological to wholesalers or direct purchasers in the United States, not including prompt pay or other discounts, rebates or reductions in price, for the most recent month for which the information is available, as reported in wholesale price guides or other publications of drug or biological pricing data.

Source: https://pmc.ncbi.nlm.nih.gov/articles/PMC4193454/

Oldest Source of Drug Pricing Data

- *RED BOOK* From Thomson Reuters
  - September 1969 publication of the 1970 annual edition “For the first time in the drug field the 1970 Drug Topics Red Book has procured and reports these Average Wholesale Prices for those drug products where the manufacturer has not suggested a price to be charged by wholesalers to indirect purchasing retailers. It has been independently obtained and calculated by the Red Book’s editorial staff from a representative group of wholesalers located in different areas throughout the country”
- Within months, a competitive price catalog publication, the American Druggist *BLUE BOOK* 1970, also began publishing AWP, referring to it as a “trade list price” through 1975.

Source: https://www.hks.harvard.edu/publications/pricing-and-reimbursement-us-pharmaceutical-markets

Definitions

- FDB: Wholesale Acquisition Cost (WAC) as published by FDB represents the manufacturer's (for purposes of this Drug Pricing Policy, the term "manufacturer" includes manufacturers, repackagers, private labelers and other suppliers) published catalog or list price for a drug product to wholesalers as reported to FDB by the manufacturer. WAC does not represent actual transaction prices and does not include prompt pay or other discounts, rebates or reductions in price. FDB does not perform any independent investigation or analysis of actual transaction prices for purposes of reporting WAC. FDB relies on manufacturers to report or otherwise make available the values for the WAC data field.

Source: https://www.fdbhealth.com/drug-pricing-policy

Definitions

- Medi-Span: WAC represents the price, as reported to Wolters Kluwer by a manufacturer, at which wholesalers may purchase drug products from that manufacturer. WAC does not necessarily represent the actual sales price in any single transaction, as any manufacturer may agree to sell its products to one or more wholesalers at a lower price with that wholesaler through the inclusion of any number of methods, such as discounts or rebates.

Congressional Budget Office (CBO) – Prescription Drug Pricing in the Private Sector, 2007

Brands

- The WAC does not represent actual transaction prices, and it is not, despite its name, what wholesalers pay for drugs. However, for single-source brand-name drugs, the WAC approximates what retail pharmacies pay wholesalers. Perhaps because the WAC is a publicly available price that closely approximates what retail pharmacies pay for drugs, negotiated rebates for brand-name drugs between PBMs and manufacturers are sometimes based on it

Generics

- For generic drugs, the WAC does not approximate what retail pharmacies pay wholesalers. Because third parties' payments to pharmacies for generic drugs are often based on list prices such as the WAC, a manufacturer has an incentive to set a high WAC and increase the spread between what pharmacies pay wholesalers and the payments that the pharmacies receive—thereby encouraging pharmacies to dispense its generic drugs. (While health plans are aware that the WAC greatly exceeds the pharmacies' acquisition costs for generic drugs, they have only limited information on the actual costs.) By contrast, because pharmacies do not choose which single-source drugs to dispense, a manufacturer has little incentive to attempt to increase the spread between what pharmacies pay wholesalers and the payment that pharmacies receive from health plans.

Source: https://www.dol.gov/sites/dolgov/files/ebsa/laws-and-regulations/rules-and-regulations/public-comments/1210-AB37/SupplementalMaterials3.pdf

Direct Price

- Direct Price (DP), as published by FDB, represents the manufacturer's published catalog or list price for a drug product to non-wholesalers as reported to FDB by the manufacturer. Direct Price does not represent actual transaction prices and does not include prompt pay or other discounts, rebates or reductions. FDB does not perform any independent investigation or analysis of actual transaction prices for purposes of reporting Direct Price. FDB relies on manufacturers to report or otherwise make available the values for the Direct Price data field.

https://www.fdbhealth.com/drug-pricing-policy

AMP

Average Manufacturer Price (AMP)

- AMP is defined in Federal Statute (42 U.S. Code § 1396r-8)
- AMP created as part of the Omnibus Budget Reconciliation Act of 1990 (OBRA '90) to help determine rebate amounts for Medicaid prescription drugs.
- In order for payment to be made under Medicaid or Medicare Part B, manufacturer must enter into a rebate agreement with the Secretary of Health & Human Services (HHS)
  - Agreement requires, among other things, the publication of AMP, ASP, WAC

OIG Strategies to Reduce Medicaid Drug Expenditures (1991)

RECOMMENDATIONS

The Health Care Financing Administration (HCFA) should reduce its financial participation in Medicaid prescription drug costs by $261 million per year. This can be achieved by proposing legislation that permits one or more of the following approaches:

1. Establish State specific cost reduction targets based on the comparison of individual State drug prices with national and international drug price data. This legislation should include an ability to reduce federal financial participation (FFP) for States who fail to achieve these targets.

2. Set specific drug price limits for brand name drugs similar to those in place for multi-source drugs.

3. Negotiate directly with drug manufacturers for prescription drug discounts and rebates.

The intention of our recommendation is to reduce Medicaid drug expenditures by $474 million, the amount which could be saved if Medicaid State agencies obtained brand name drugs at the Canadian prices. Of this amount, an estimated $261 million would be FFP savings and $213 million would be State savings.

It should be noted that OBRA '90 included provisions that involve the HCFA in gathering and monitoring drug price data and negotiating rebate agreements with drug manufacturers on behalf of the States. The Congressional Budget Office estimated total savings to be $3.3 billion over 5 years.

COMMENTS

Comments on the draft report were received from the HCFA and the Assistant Secretary for Planning and Education (ASPE). ASPE had several technical comments which we considered in preparing our final report. The HCFA generally agreed with the recommendations, the amount of savings, and noted that OBRA '90 contains provisions that partially support the OIG recommendations.

https://oig.hhs.gov/oei/reports/oei-12-90-00800.pdf

Definition

- The term “average manufacturer price” means, with respect to a covered outpatient drug of a manufacturer for a rebate period, the average price paid to the manufacturer for the drug in the United States by—
  - (i) wholesalers for drugs distributed to **retail** community pharmacies; and
  - (ii) **retail** community pharmacies that purchase drugs directly from the manufacturer.

- There are 8 listed exclusions of what doesn’t go into AMP calculation

AMP Exclusions – A lot

Sales, nominal price sales, and associated discounts, rebates, payments, or other financial transactions excluded from AMP. AMP excludes the following sales, nominal price sales, and associated discounts, rebates, payments, or other financial transactions:

(1) Any prices on or after October 1, 1992, to the Indian Health Service (IHS), the Department of Veterans Affairs (DVA), a State home receiving funds under 38 U.S.C. 1741, the Department of Defense (DoD), the Public Health Service (PHS), or a covered entity described in section 1927(a)(5)(B) of the Act (including inpatient prices charged to hospitals described in section 340B(a)(4)(L) of the PHSA).

(2) Any prices charged under the Federal Supply Schedule (FSS) of the General Services Administration (GSA).

(3) Any depot prices (including TRICARE) and single award contract prices, as defined by the Secretary, of any agency of the Federal government.

(4) Sales outside the United States.

(5) Sales to hospitals.

(6) Sales to health maintenance organizations (HMOs) (including managed care organizations (MCOs)), including HMO or MCO operated pharmacies.

(7) Sales to long-term care providers, including nursing facility pharmacies, nursing home pharmacies, long-term care facilities, contract pharmacies for the nursing facility where these sales can be identified with adequate documentation, and other entities where the drugs are dispensed through a nursing facility pharmacy, such as assisted living facilities.

(8) Sales to mail order pharmacies.

(9) Sales to clinics and outpatient facilities (for example, surgical centers, ambulatory care centers, dialysis centers, and mental health centers).

(10) Sales to government pharmacies (for example, a Federal, State, county, or municipal-owned pharmacy).

(11) Sales to charitable pharmacies.

(12) Sales to not-for-profit pharmacies.

(13) Sales, associated rebates, discounts, or other price concessions paid directly to insurers.

(14) Bona fide service fees, as defined in § 447.502, paid by manufacturers to wholesalers or retail community pharmacies.

(15) Customary prompt pay discounts extended to wholesalers.

(16) Reimbursement by the manufacturer for recalled, damaged, expired, or otherwise unsalable returned goods, including (but not limited to) reimbursement for the cost of the goods and any reimbursement of costs associated with return goods handling and processing, reverse logistics, and drug destruction, but only to the extent that such payment covers only those costs.

(17) Associated discounts, rebates, or other price concessions provided under the Medicare Coverage Gap Discount Program under section 1860D-14A of the Act.

(18) Payments received from and rebates and discounts provided to pharmacy benefit manufacturers (PBMs).

(19) Rebates under the national rebate agreement or a CMS-authorized State supplemental rebate agreement paid to State Medicaid Agencies under section 1927 of the Act.

(20) Sales to hospices (inpatient and outpatient).

(21) Sales to prisons.

(22) Sales to physicians.

(23) Direct sales to patients.

(24) Free goods, not contingent upon any purchase requirement.

(25) Manufacturer coupons to a consumer redeemed by the manufacturer, agent, pharmacy or another entity acting on behalf of the manufacturer, but only to the extent that the full value of the coupon is passed on to the consumer and the pharmacy, agent, or other AMP-eligible entity does not receive any price concession.

(26) Manufacturer-sponsored programs that provide free goods, including but not limited to vouchers and patient assistance programs, but only to the extent that: The voucher or benefit of such a program is not contingent on any other purchase requirement; the full value of the voucher or benefit of such a program is passed on to the consumer; and the pharmacy, agent, or other AMP eligible entity does not receive any price concession.

(27) Manufacturer-sponsored drug discount card programs, but only to the extent that the full value of the discount is passed on to the consumer and the pharmacy, agent, or other AMP eligible entity does not receive any price concession.

(28) Manufacturer-sponsored patient refund/rebate programs, to the extent that the manufacturer provides a full or partial refund or rebate to the patient for out-of-pocket costs and the pharmacy, agent, or other AMP eligible entity does not receive any price concessions.

(29) Manufacturer copayment assistance programs, to the extent that the program benefits are provided entirely to the patient and the pharmacy, agent, or other AMP eligible entity does not receive any price concession.

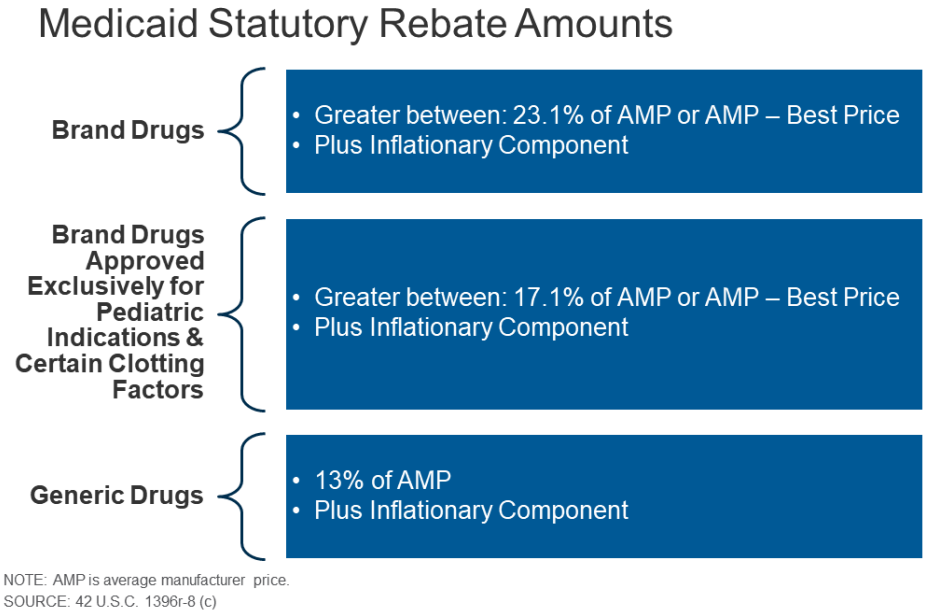
(30) Any rebates, discounts, or price concessions provided to a designated State Pharmacy Assistance Program (SPAP).

https://www.ecfr.gov/current/title-42/chapter-IV/subchapter-C/part-447/subpart-I

Medicaid Drug Rebate Program (MDRP)

The rebate program offsets Medicaid costs and reduces federal and state spending on drugs.

Rebate amounts are calculated based upon **URA**



https://www.kff.org/medicaid/issue-brief/understanding-the-medicaid-prescription-drug-rebate-program/

Defining AMP & Best Price

- Average Manufacturer Price (AMP)
  - average price paid to the manufacturer for the drug by (i) wholesalers for drugs distributed to retail community pharmacies, and (ii) retail community pharmacies that purchase drugs directly from the manufacturer
- Best Price
  - The lowest price available to any wholesaler, retailer, provider, HMO, non-profit entity (excluding select government programs such as the Department of Veterans Affairs)

Average Manufacturer Price (AMP)

Vertical Alignment Within U.S. Distribution Channels

	cencora	CardinalHealth™	McKESSON
Manufacturer	BluePoint Laboratories	MAJOR Rugby	NorthStar Rx
Wholesale distribution	AmerisourceBergen Besse Medical Oncology Supply	CardinalHealth™	McKESSON
Specialty pharmacy	—	—	Biologics By McKesson
Retail pharmacy	Good Neighbor Pharmacy	The Medicine Shoppe Pharmacy	Health Mart
PSAO	Elevate Provider Network Accelerate Specialty Network	LeaderNET	Health Mart Atlas
GPO	cencora Specialty GPOs	Specialty GPOs	Onmark Unity
Provider	OneOncology RETINA Consultants of America	Navista GI Alliance	The US Oncology Network
Patient access services	Patient access and adherence support	Sonexus	covermymeds

DRUG CHANNELS INSTITUTE
An HMP Global Company

PSAO = pharmacy services administrative organizations; GPO = group purchasing organization
Source: *The 2024-25 Economic Report on Pharmaceutical Wholesalers and Specialty Distributors*. Exhibit does not illustrate every subsidiary business operated by each company.

https://www.drugchannels.net/2025/04/vertical-integration-redux-how.html

5(i) Drugs

- 5i drugs are inhalation, infusion, instilled, implanted or injectable drugs that are not generally dispensed through retail community pharmacies
- Calculating AMP for these drugs differs from the standard calculation because it includes sales and associated transactions to entities other than retail community pharmacies such as:
  - PBMs (Pharmacy Benefit Managers)
  - Insurers (except for rebates under specific sections of the law)
  - Hospitals
  - Clinics and outpatient facilities
  - Mail order pharmacies
  - Long-term care facilities
- Manufacturers must determine that the 5i drug is “not generally dispensed through a retail community pharmacy,” which means that 70% or more of the sales of the drug were to entities other than retail community pharmacies or wholesalers for drugs distributed to these pharmacies.

https://www.americanconference.com/drug-pricing/wp-content/uploads/sites/2103/2023/10/10.30.2023-345pm_Medicaid-Pricing-and-Rebate-2.0.pdf

Authorized Generics

- Pharmaceutical manufacturers could lower their Medicaid rebate obligations by including the price of an authorized generic drug in the calculation of their brand-name drug's Average Manufacturer Price (AMP).
- This practice, which could be used to artificially lower the AMP, was identified as a loophole by the Medicaid and CHIP Payment Advisory Commission (MedPAC).
- Rules modified to exclude sales to secondary manufacturers (Health Extenders Act of 2019)

https://www.macpac.gov/wp-content/uploads/2018/06/Improving-Operations-of-the-Medicaid-Drug-Rebate-Program.pdf

AMP Smoothing

- Certain discounts and rebates may not be realized until after the sale of the drug. These are considered “lagged price concessions,” except that they do not include customary prompt-pay discounts.

- Lagged price concessions serve to “smooth” subsequent adjustments. Otherwise, there could be wildly inconsistent AMPs from one reporting period to the next.

https://www.americanconference.com/drug-pricing/wp-content/uploads/sites/2103/2023/10/10.30.2023-345pm_Medicaid-Pricing-and-Rebate-2.0.pdf

National Average Drug Acquisition Cost (NADAC)

- NADAC is defined in Federal Statute (42 U.S. Code § 1396r-8(f))

- CMS states “The NADAC is designed to create a national benchmark that is reflective of the prices paid by retail community pharmacies to acquire prescription and over-the-counter covered outpatient drugs.”

https://www.medicaid.gov/medicaid-chip-program-information/by-topics/prescription-drugs/ful-nadac-downloads/nadacmethodology.pdf

NADAC History

1974
- Dept Health, Education, Welfare (HEW) Federal Register Notice (39 Fed. Reg. 41,480)

1984
- HHS OIG AWP Report

Mid 2000s
- AWP Lawsuits

2010
- National Association of State Medicaid Directors (NASM) Paper *Post AWP Pricing & Reimbursement*

2016
- CMS Covered Outpatient Drug Final Rule (CMS-2345-FC)

Source: https://www.ehcca.com/presentations/pharmacongress3/4_04.pdf

NADAC Process

NADAC

General Survey Overview

1. Monthly survey of retail community pharmacies (2,500/month, randomly selected)
2. Collect acquisition costs (voluntary participation, 450-600 responding pharmacies per month)
3. Import invoice data into acquisition cost database (electronic/fax:~80%, paper/data entry:~20%)
4. Scrub, review and analyze data (statistical and manual outlier removal - 200,000-300,000 final cost observations per month)
5. Calculate national average drug acquisition costs (brand and generic rates at drug group level).
6. Perform quality assurance procedures.
7. Publish reference file at National Drug Code level to Medicaid.gov
8. Operate NADAC Help Desk for pharmacies and states.

https://www.medicaid.gov/medicaid/prescription-drugs/downloads/retail-price-survey/nadac-overview-operations.pdf

NADAC Process

Description	Month 1	Month 2
Date of Drug Purchases for Acquisition Costs	June 1 – June 30	July 1 – July 31
Month of Survey Collection, Processing and NADAC Calculations	July	August
Month of NADAC Reference File Publication	August	September

https://www.medicaid.gov/medicaid/prescription-drugs/downloads/retail-price-survey/nadac-overview-operations.pdf

Medicaid Dispensing Fees

- Federal regulations require Medicaid programs to reimburse pharmacies based on the lesser of the (1) ingredient cost, as defined by federal guidelines, plus a professional dispensing fee
- The dispensing fee is intended to cover reasonable costs associated with providing the drug to a Medicaid beneficiary. This cost includes the pharmacist's services and the overhead associated with maintaining the facility and equipment necessary to operate the pharmacy. States establish dispensing fees for the pharmacies that fill prescriptions for Medicaid beneficiaries.
- In most states, these fees typically range between $9 and $12 for each prescription.

https://www.kff.org/medicaid/issue-brief/pricing-and-payment-for-medicaid-prescription-drugs/

NADAC Equivalency

Brand Legend Drugs

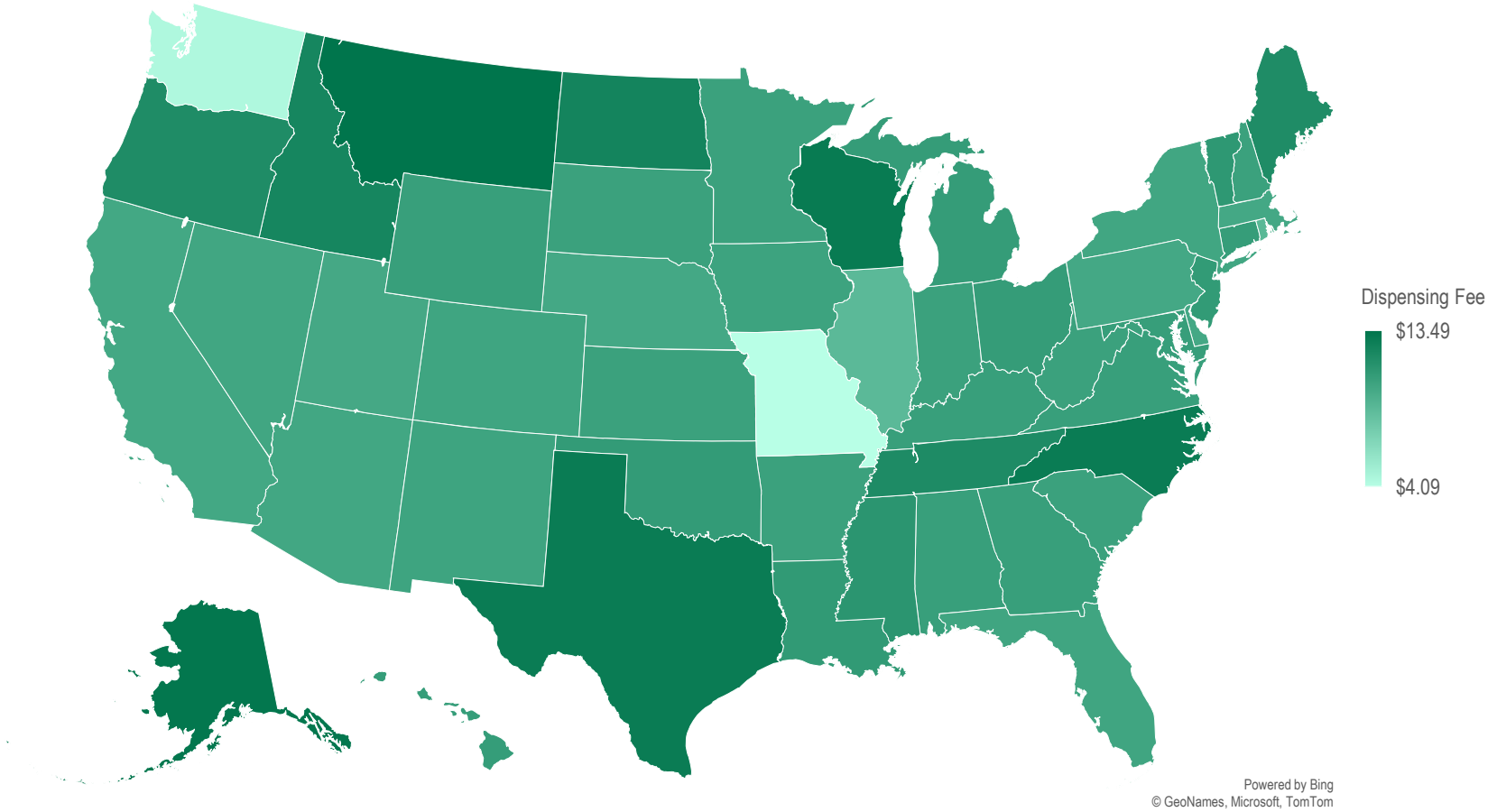
Quarter Ending	WAC Mean	WAC Median	AWP Mean	AWP Median
December 2023	-4.8%	-4.1%	-20.8%	-20.1%
March 2024	-4.6%	-4.1%	-20.6%	-20.1%
June 2024	-5.2%	-4.1%	-21.1%	-20.1%
September 2024	-5.1%	-4.0%	-21.0%	-20.0%
December 2024	-5.3%	-4.1%	-21.1%	-20.1%

Generic Legend Drugs

Quarter Ending	WAC Mean	WAC Median	AWP Mean	AWP Median
December 2023	-45.0%	-49.3%	-82.7%	-90.9%
March 2024	-44.2%	-48.8%	-82.5%	-90.5%
June 2024	-47.1%	-51.4%	-82.4%	-90.6%
September 2024	-44.6%	-49.1%	-81.8%	-90.1%
December 2024	-50.3%	-54.8%	-83.3%	-91.5%

https://www.medicaid.gov/medicaid/prescription-drugs/downloads/retail-price-survey/nadac-equiv-metrics.pdf

Medicaid Dispensing Fees



3 Axis Advisors Analysis of https://www.medicaid.gov/medicaid/prescription-drugs/state-prescription-drug-resources/medicaid-covered-outpatient-prescription-drug-reimbursement-information-state (Sept 2022)

State Actual Acquisition Cost (AAC)

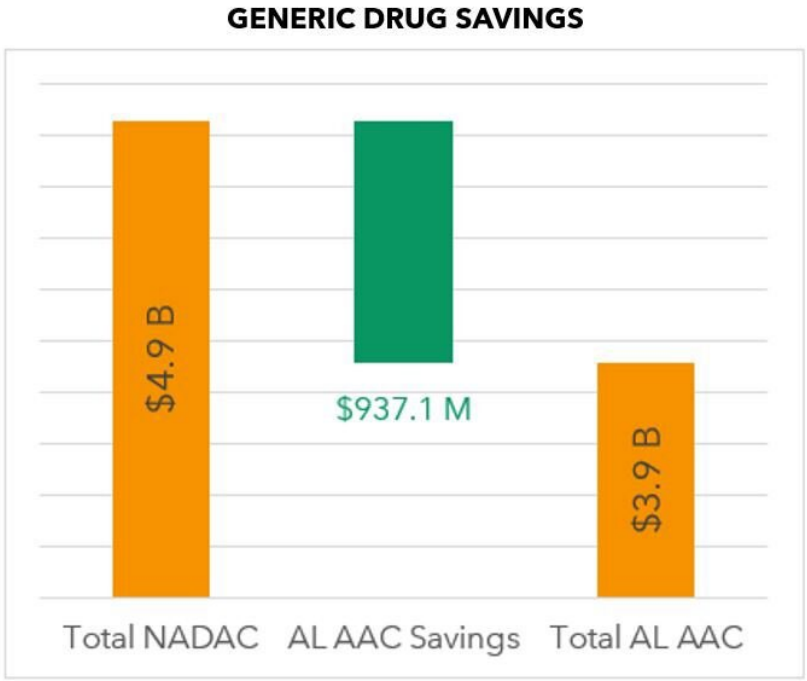
- State Actual Acquisition Cost (AAC) and the National Average Drug Acquisition Cost (NADAC) are both methods used to determine the cost to acquire prescription drugs.

- A state AAC is a state-specific cost calculation, while NADAC is a national average based on data collected from pharmacies.
  - States can make methodology changes that mean their AAC is calculated differently from how NADAC is handled.
  - For example, states can mandate pharmacy participation in survey (as opposed to NADAC's voluntary nature)

3 Axis Study of State AAC Savings Relative to NADAC

- Potential legislative changes could expand drug pricing reporting requirements of tens of thousand pharmacies across the U.S.

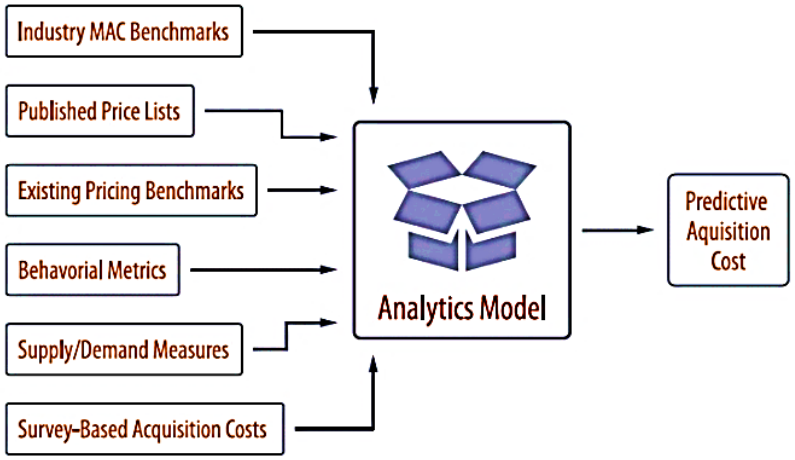
- Over a 10-year period, the potential savings generated from a mandatory NADAC response from all pharmacies could exceed $10 billion within Medicaid.



https://www.3axisadvisors.com/projects/2021/5/11/enhancements-to-nadac

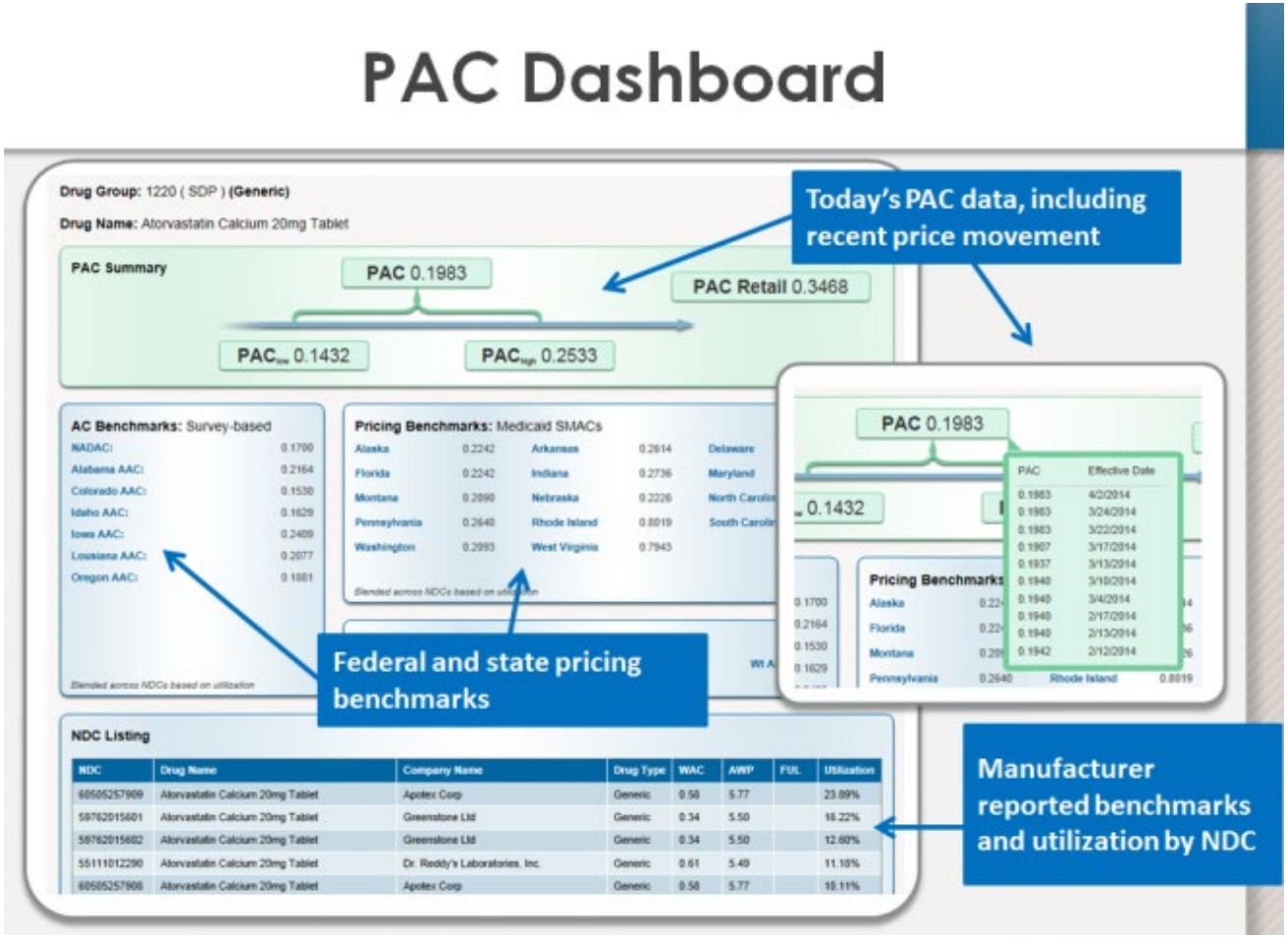
Predictive Acquisition Cost (PAC)

- PAC is not defined in Federal Statute
- PAC was created in 2012 and is privately published by Glass Box Analytics via GSDD
- Analytic model that uses a variety of inputs to predict acquisition costs



https://www.drugchannels.net/2014/05/drug-pricing-transparency-legislation.html

PAC Dashboard



https://www.drugchannels.net/2014/05/drug-pricing-transparency-legislation.html

Usual & Customary (U&C)

- Various definitions across state & federal programs

- Medicare (42 CFR § 423.100)
  - Usual and customary (U&C) price means the price that an out-of-network pharmacy or a physician's office charges a customer who does not have any form of prescription drug coverage for a covered Part D drug.

- Maryland (Md. Code Regs. 10.48.01.07)
  - Providers shall charge the Program their usual and customary charge to the general public for similar services.

Lower of Payment Logic

- Md. Code Regs. 10.48.01.07 - Payment Procedures

- F. For covered services, the Program shall pay the lower of:
  - (1) The provider's usual and customary charge to the general public for similar services; or
  - (2) The applicable rate described in §D or E of this regulation.

https://www.law.cornell.edu/regulations/maryland/COMAR-10-48-01-07

U&C Lawsuits

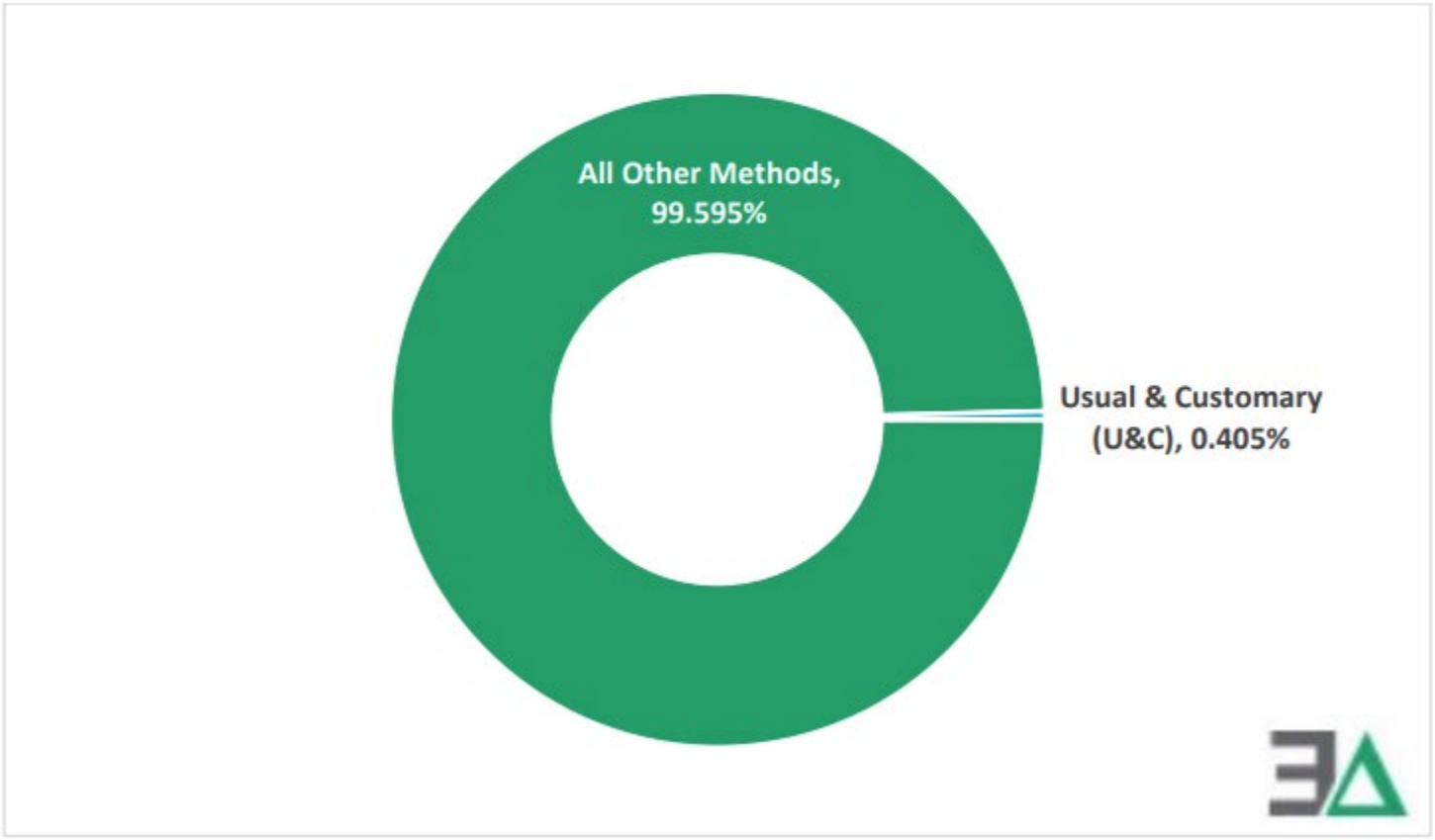
- *Russo et al v. Walgreen Co.*
  - Class action lawsuit alleging Walgreens overcharged customers with insurance by not including their Prescription Savings Club prices in their U&C ($100 million settlement)

- *Humana Health Plan, Inc. et al v. Rite Aid*
  - Arbitrator ordered Rite Aid to pay $123 million to Humana for an alleged scheme in which the retailer sought reimbursement at inflated prices

https://www.statnews.com/pharmalot/2022/04/26/riteaid-humana-pharmacies-pharmacy/#:~:text=Usual%20and%20customary?,million%20for%20inflating%20pharmacy%20claims&text=Rite%20Aid%20was%20ordered,Health%20and%20its%20pharmacy%20chain.&text=The%20legal%20battles%20reflect%20yet,controversial%20and%20intractable%20political%20problem.
https://www.reuters.com/legal/litigation/walgreens-agrees-pay-100-mln-resolve-lawsuit-over-generic-drug-pricing-2024-11-04/#:~:text=Sign%20up%20here.,:17%2Dcv%2D02246.

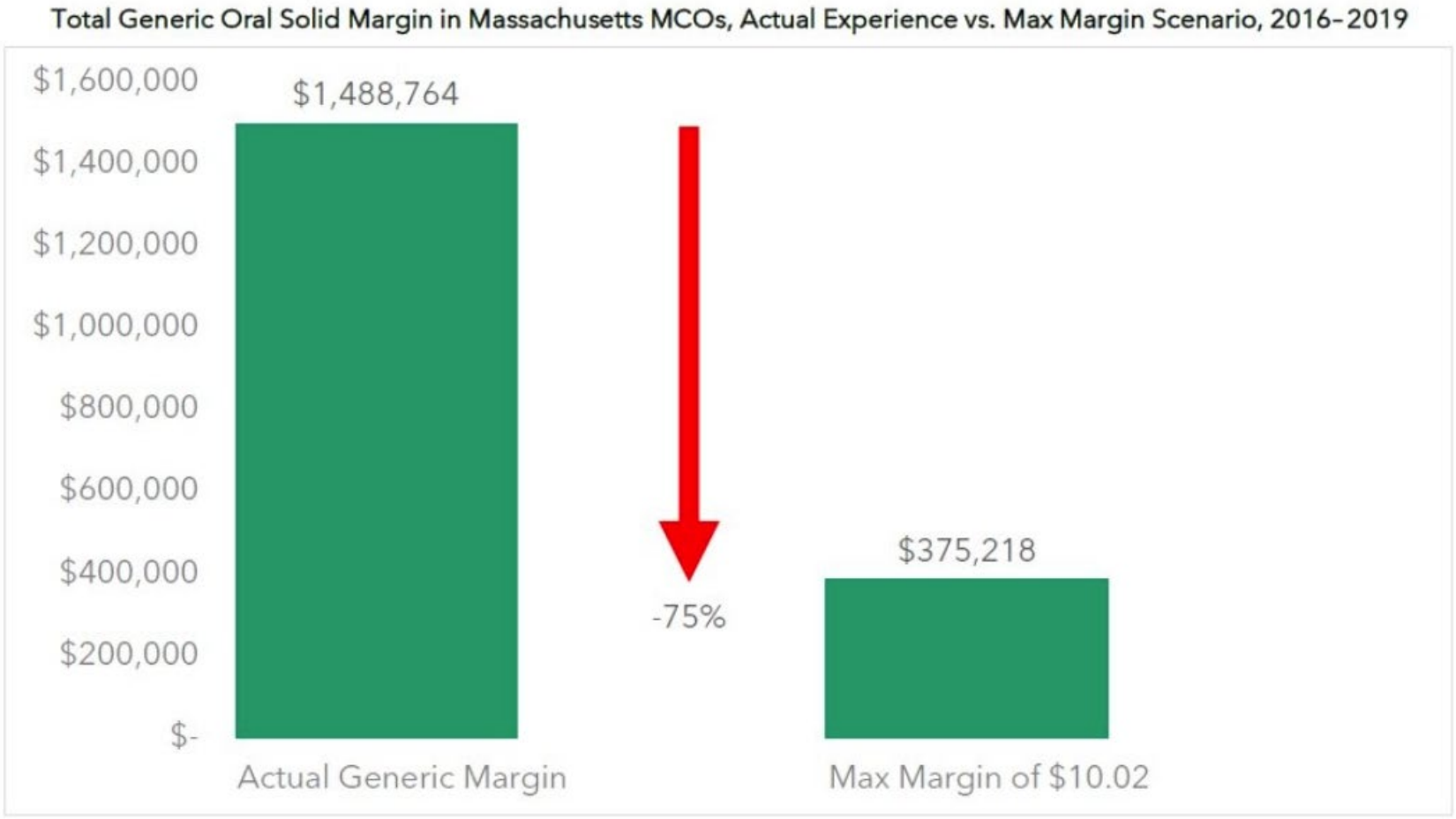
Claims Don’t Generally Pay at U&C

Figure 13: Percent of Claims Paid at Usual & Customary (U&C) Price within Studied Pharmacy Data (2020)



https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/650924780b6b9c590edfa2b4/1695097983750/Unravelling_the_Drug_Pricing_Blame_Game_3AA_APCI_0923.pdf

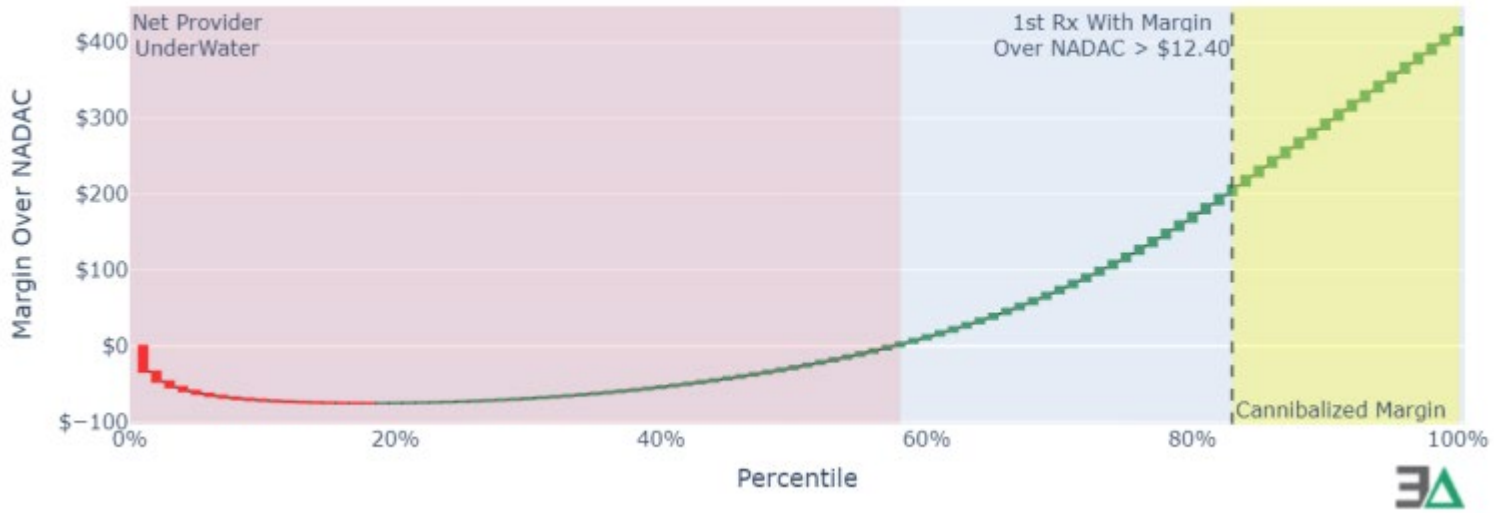
Submitting “Cost Plus” U&C on claims would damage business of pharmacy



https://www.3axisadvisors.com/projects/2021/4/22/pharmacy-reimbursement-trends-in-massachusetts

Risk to margin at “Cost Plus” U&C

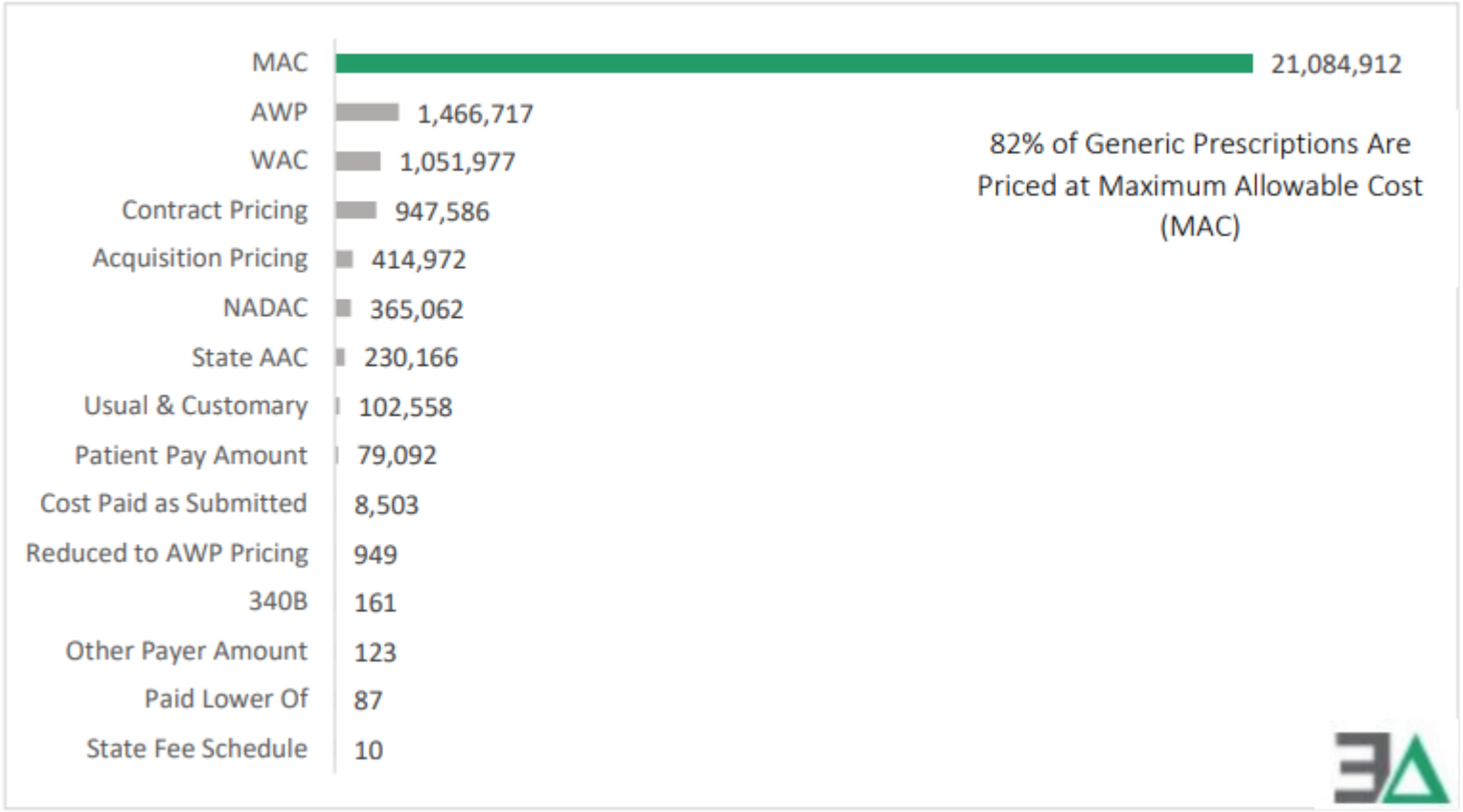
Figure 31: Estimated Margin over NADAC by Percentile, Payment No More than Assumed U&C (NADAC + $12.40) (2020)



https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/650924780b6b9c590edfa2b4/1695097983750/Unravelling_the_Drug_Pricing_Blame_Game_3AA_APCI_0923.pdf

Most common pricing benchmark used to set prices

Figure 18: Basis of Reimbursement Determination Given by PBMs on Generic Claims to Studied Pharmacy Data (2020)



https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/650924780b6b9c590edfa2b4/1695097983750/Unravelling_the_Drug_Pricing_Blame_Game_3AA_APCI_0923.pdf

Maximum Allowable Cost (MAC)

- MAC laws vary by state & federal programs
- MAC list requirements include:
  - Establishing requirements for placing drugs on a MAC list (e.g. therapeutically equivalent generics must be rated ‘A’, ‘B’, or ‘AB’ in the FDA’s green or orange book);
  - Requiring PBMs to provide to a pharmacy, at the beginning of each contract or upon renewal, the sources utilized to determine the MAC list used by the PBM;
  - MAC lists must be updated every 'X' days, noting changes from the previous list and PBMs must allow “reasonable” appeals processes for challenging changes to a MAC list.
- Primarily used for multisource drugs (i.e., generics)

MAC History

1959
- Senator Kefauver hearings on differential drug pricing

1969
- Federal Task Force on Prescription Drugs

1976
- MAC-EAC (Federal Register 1975)

1984
- Hatch-Waxman Act

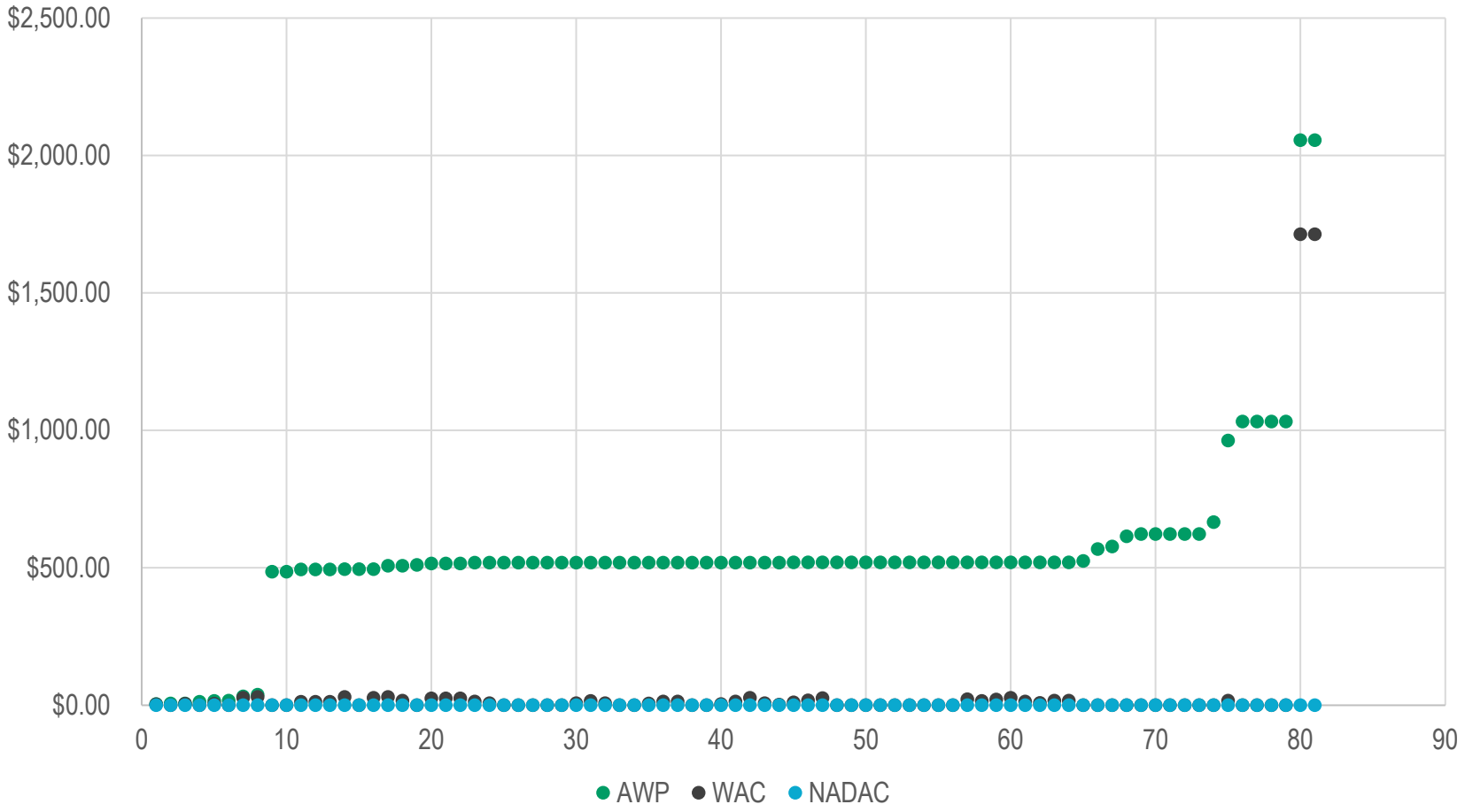
Source: https://www.ehcca.com/presentations/pharmacongress3/4_04.pdf

MAC-EAC

- The MAC-EAC regulations which became effective on August 26, 1976, have four major components:
  - (1) Maximum Allowable Cost reimbursement limits for selected multisource or generically available drugs;
  - (2) Estimated Acquisition Cost reimbursement limits for all drugs;
  - (3) “usual and customary” reimbursement limits for all drugs; and
  - (4) a directive that professional fee studies be performed by each State.

https://pmc.ncbi.nlm.nih.gov/articles/PMC4191307/

Atorvastatin 40 mg, 90 Tablets

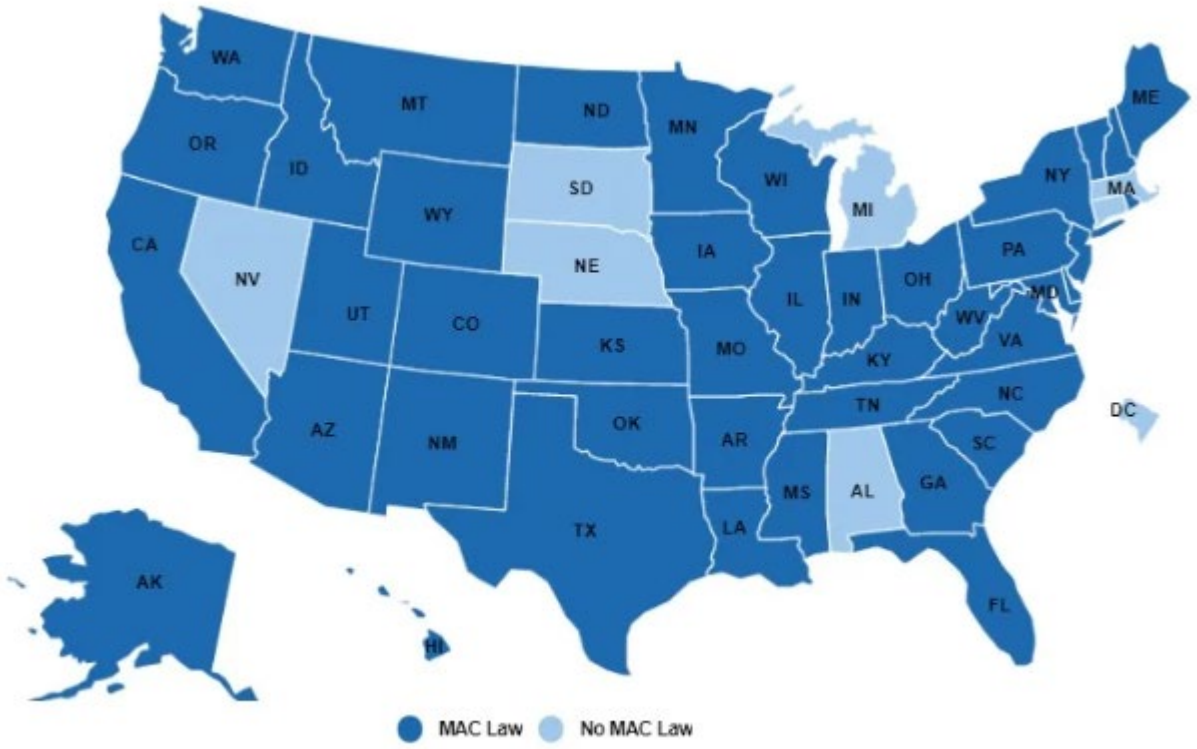


AMCP on MAC pricing

- Maximum Allowable Cost (MAC) pricing is a payment model contractually agreed to in the marketplace by all participants.
- The model ensures that those purchasing health insurance benefits, including consumers, do not overpay for generic drugs.
- MAC price reimbursement is an effective pricing tool because MAC prices are updated frequently to keep pace with market changes in the purchase prices of generic drugs available to pharmacies.
- AMCP supports the use of MAC pricing as a managed care tool to encourage the dispensing of cost-saving generic drugs and thereby benefiting the overall health care system.
- MAC pricing is designed to promote competitive pricing for pharmacies as an incentive for them to purchase less costly generic drugs available in the market

https://www.amcp.org/legislative-regulatory-position/maximum-allowable-cost-mac-pricing

MAC Laws by State, as of 2021

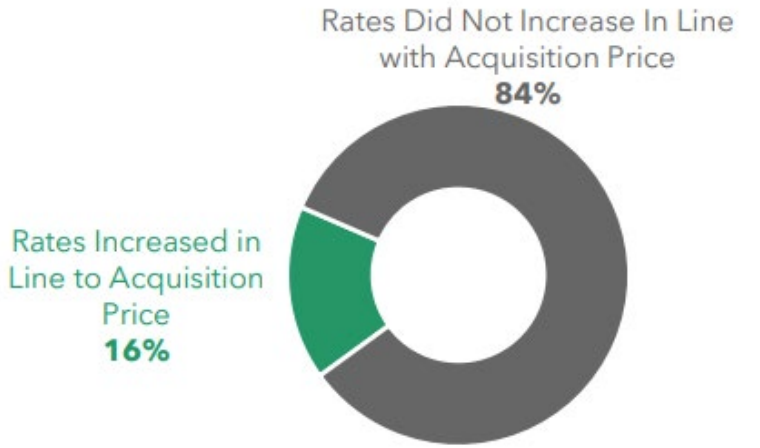


https://natlawreview.com/article/50-state-map-mac-laws-can-pbms-no-longer-rely-erisa-preemption-to-avoid-certain

MAC Responsiveness

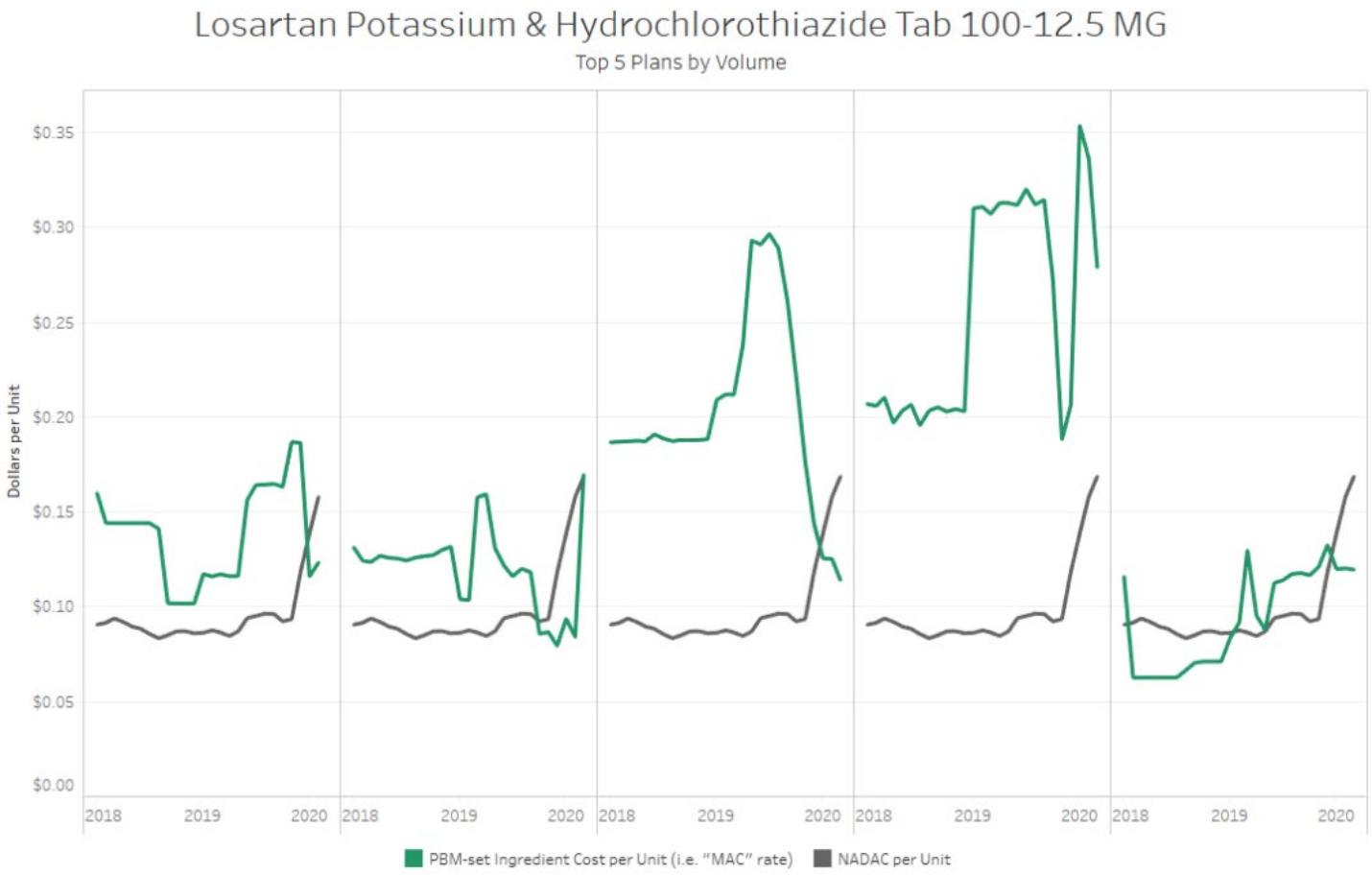
- 3 Axis Advisors obtained detailed prescription claims information from 1,392 pharmacies in 23 states on all claims dispensed between January 1, 2018 and March 26, 2020.
- An assessment was made to compare PBM reimbursement rates for drug ingredient costs based upon claims identified as paying under MAC-based rates to the underlying cost to acquire those same prescription drugs. Assessments were made across equally substitutable generic drug groups, year, and unique prescription drug plan.
- We found that only in 16% of instances did drug plans increase reimbursement for drugs that experienced extreme pricing increases.

PBM PAYMENT RATE INCREASES IN RELATION TO ACQUISITION COST INCREASES ON GENERIC DRUGS WITH EXTREME INCREASES IN ACQUSITION COST

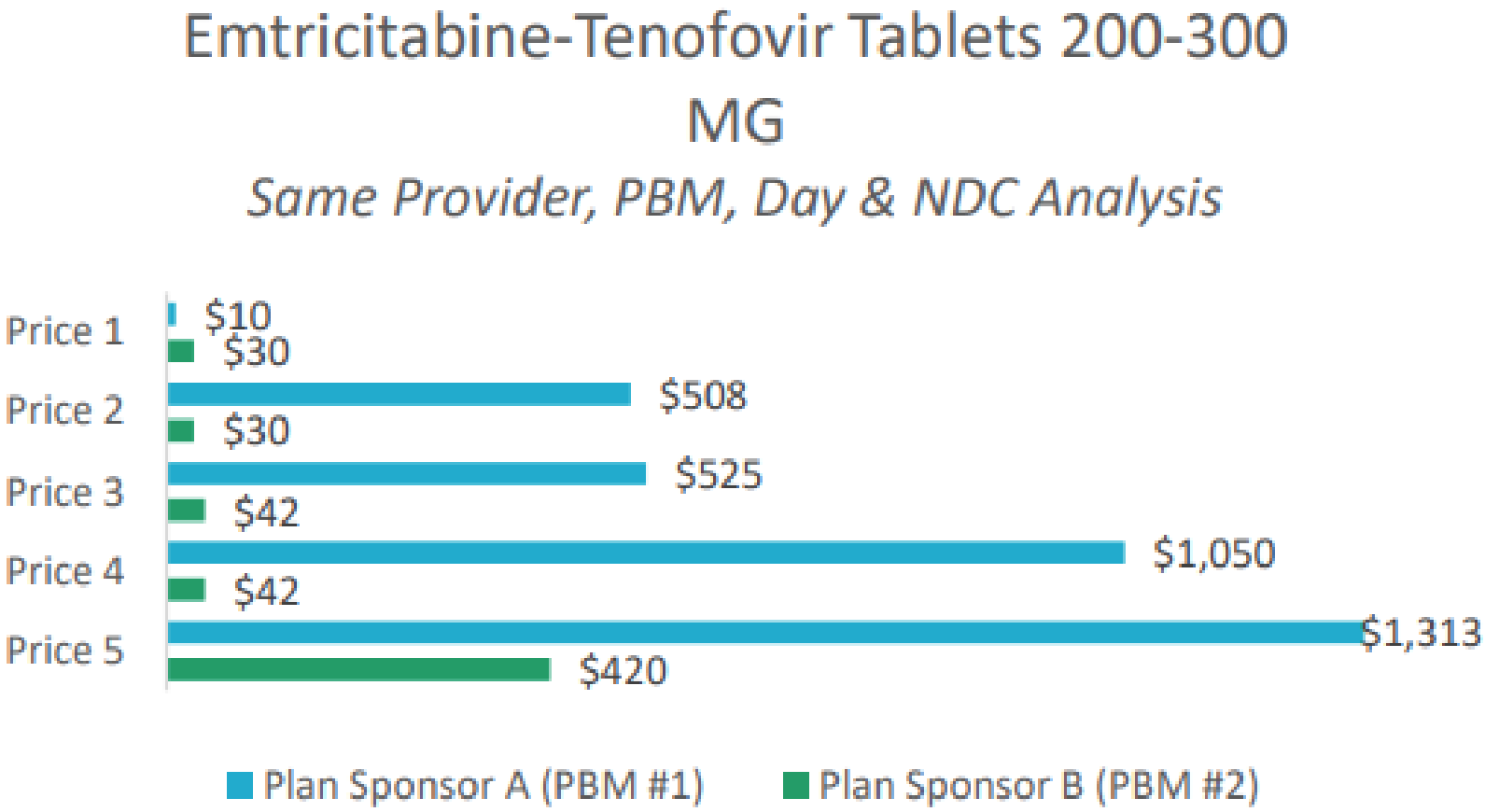


https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/5e95dd726f6f770b5fc85d04/1586879871828/2020_04+Research+Brief+FINAL.pdf

MAC Responsiveness



Same Drug, Same Day, Different Price



https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/667a03dc16a9fb18a1b13614/1719272422304/3AA_Washington_Report_20240620.pdf

Federal Supply Schedule (FSS)

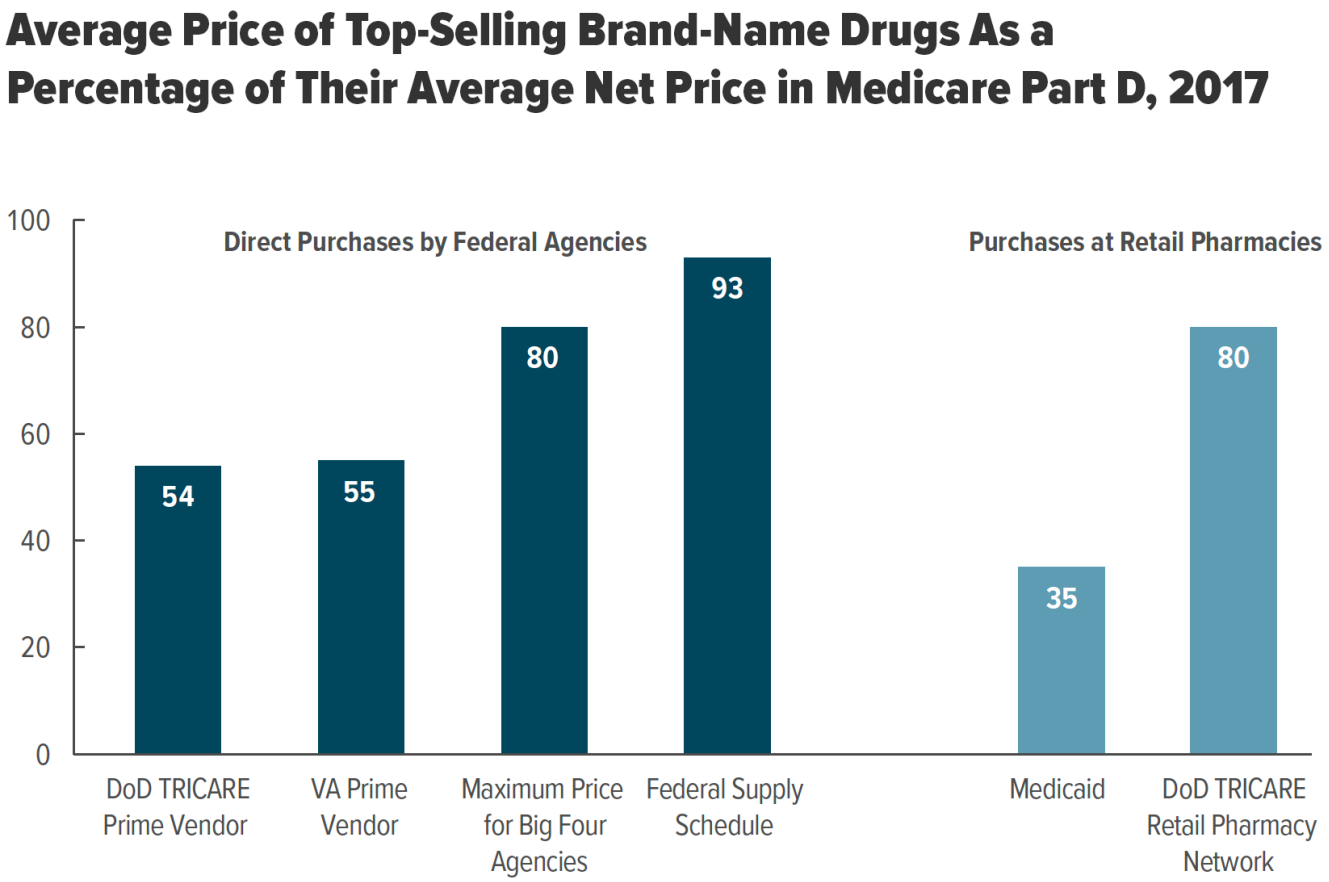
- The Federal Supply Schedule (FSS) is a catalogue of prices negotiated by the Department of Veterans Affairs for pharmaceuticals and other goods and services, and it's available for use by any eligible federal government agency.
- Awards are multi-year and negotiated based on how vendors do business with their commercial customers.
- The Pharmaceutical pricing data for all VA National Acquisition Center (NAC) programs, including FSS and National Contracts, is updated on or around the 2nd and 16th of each month.

Big 4 Price

- The "Big Four" refers to the four largest federal agencies that purchase pharmaceuticals:
  - the Department of Veterans Affairs (VA),
  - the Department of Defense (DoD),
  - the Public Health Service (PHS),
  - and the Coast Guard.

- They often have lower drug prices than those found in the Federal Supply Schedule (FSS) due to their purchasing power.

Comparison of Brand-Name Drug Prices Among Selected Federal Programs, 2017



https://www.cbo.gov/publication/57007

Medicare Drug Price Negotiation – Maximum Fair Prices (CMS MFP)

- Since its inception, Medicare had a “non-interference” clause in Medicare Part D which prohibited the government from interfering in drug price negotiations between drug manufacturers and insurance plans

- The Inflation Reduction Act (IRA) amended this clause to allow for HHS to negotiate prices for a select few brand-name drugs
  - 10 selected drugs for 2026
  - 15 more selected drugs for 2027
  - 15 more selected drugs for 2028
  - 20 more selected drugs for 2029

Medicare Price Negotiation, 2026

Drug Name	Total Medicare Reimbursement (2023)	Total Medicare Enrollees (2023)	List Price (2023)	Negotiated Price (2026)
Eliquis	$18,275,108,000	3,928,000	$521.00	$231.00
Enbrel	$2,951,778,000	48,000	$7,106.00	$2,355.00
Entresto	$3,430,753,000	664,000	$628.00	$295.00
Farxiga	$4,342,594,000	994,000	$556.00	$178.50
Fiasp/ Novolog	$2,612,719,000	785,000	$495.00	$119.00
Imbruvica	$2,371,858,000	17,000	$14,934.00	$9,319.00
Januvia	$4,091,399,000	843,000	$527.00	$113.00
Jardiance	$8,840,947,000	1,883,000	$573.00	$197.00
Stelara	$2,988,560,000	23,000	$13,836.00	$4,695.00
Xarelto	$6,309,766,000	1,324,000	$517.00	$197.00

https://www.cms.gov/newsroom/fact-sheets/medicare-drug-price-negotiation-program-negotiated-prices-initial-price-applicability-year-2026

Medicare Price Negotiation, 2027

Drug Name	Manufacturer	Total Gross Medicare Spending	Number of Medicare Users
Ozempic; Rybelsus; Wegovy	Novo Nordisk	$14.4B	2,287,000
Trelegy Ellipta	GlaxoSmithKline	$5.1B	1,252,000
Xtandi	Astellas Pharma Inc.	$3.2B	35,000
Pomalyst	Bristol Myers Squibb	$2.1B	14,000
Ibrance	Pfizer	$2B	16,000
Ofev	Boehringer Ingelheim	$2B	24,000
Linzess	Ironwood Pharmaceuticals and AbbVie	$1.9B	627,000
Calquence	AstraZeneca	$1.6B	15,000
Austedo; Austedo XR	Teva Pharmaceuticals	$1.5B	26,000
Breo Ellipta	GlaxoSmithKline and Theravance, Inc.	$1.4B	634,000
Tradjenta	Boehringer Ingelheim	$1.1B	278,000
Xifaxan	Salix Pharmaceuticals, Ltd.	$1.1B	104,000
Vraylar	AbbVie	$1.1B	116,000
Janumet; Janumet XR	Merck Sharp & Dohme Corp.	$1.1B	243,000
Otezla	Amgen Inc.	$994M	31,000

https://www.kff.org/medicare/issue-brief/faqs-about-the-inflation-reduction-acts-medicare-drug-price-negotiation-program/

Drug Pricing Benchmarks in Drug Channel Contracts

Drug Price Summary (Not All Inclusive)

ATTRIBUTE	AVERAGE WHOLESALE PRICE (AWP)	WHOLESALE ACQUISITION COST (WAC)	NATIONAL AVERAGE DRUG ACQUISITION COST (NADAC)	AVERAGE SALES PRICE (ASP)	AVERAGE MANUFACTURER PRICE (AMP)
List or Net Price	List	List	Hybrid	Net	Net
Confidential/ Public?	Public	Public	Public	Public	Confidential
Discounts/ Rebates	Excluded	Excluded	Off-Invoice/ Transfer Pricing Excluded	Included	Included
Applicable to	All NDCs	All NDCs	Sample of NDCs	Part B Drugs	All NDCs
Level of Reporting	11-digit NDC	11-digit NDC	Drug Group	J Code (NDCs Aggregated)	11-digit NDC
Source	Manufacturers; Publishers	Manufacturers; Publishers	CMS (voluntary data collection)	CMS (required reporting)	CMS (required reporting)
Timing	Daily	Daily	Weekly	Quarterly (2 Q Lag)	Quarterly (2 Q Lag)
Year Created	1969	1974	2012	2003	1990
Federal Statute	NA	42 USC 1395w-3a(c)(6)(B)	42 USC 1396r-8(f)	42 USC 1395w-3a(c)	42 USC 1396r-8k(1)

USC Schaeffer Leonard D. Schaeffer Center for Health Policy & Economics

B | Center for Health Policy at BROOKINGS

https://healthpolicy.usc.edu/wp-content/uploads/2017/06/20170613_genericdrugpricing-1.pdf

Example PBM to Plan Sponsor Contract

City of Mesa, AZ Commercial & EGWP Pharmacy Services Contract

2. Pharmacy Network Guarantees.

COMMERCIAL AND WRAP PROGRAMS

Retail (includes specialty at retail):

January 1, 2022 – December 31, 2022
Brand Effective Rate: AWP – 19.25% + $0.45 Dispensing Fee
Generic Effective Rate: AWP – 84.75% + $0.45 Dispensing Fee

January 1, 2023 – December 31, 2023
Brand Effective Rate: AWP – 19.25% + $0.45 Dispensing Fee
Generic Effective Rate: AWP – 85.00% + $0.45 Dispensing Fee

January 1, 2024 – December 31, 2024
Brand Effective Rate: AWP – 19.25% + $0.45 Dispensing Fee
Generic Effective Rate: AWP – 85.25% + $0.45 Dispensing Fee

January 1, 2025 – December 31, 2025
Brand Effective Rate: AWP – 19.25% + $0.45 Dispensing Fee
Generic Effective Rate: AWP – 85.50% + $0.45 Dispensing Fee

January 1, 2026 – December 31, 2026
Brand Effective Rate: AWP – 19.25% + $0.45 Dispensing Fee
Generic Effective Rate: AWP – 85.75% + $0.45 Dispensing Fee

†Choice90Rx (Retail 84+ days' supply):

January 1, 2022 – December 31, 2022
Brand Effective Rate: AWP – 24.50% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 89.50% + $0.00 Dispensing Fee

January 1, 2023 – December 31, 2023
Brand Effective Rate: AWP – 24.50% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 89.75% + $0.00 Dispensing Fee

January 1, 2024 – December 31, 2024
Brand Effective Rate: AWP – 24.50% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 90.00% + $0.00 Dispensing Fee

January 1, 2025 – December 31, 2025
Brand Effective Rate: AWP – 24.50% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 90.25% + $0.00 Dispensing Fee

January 1, 2026 – December 31, 2026
Brand Effective Rate: AWP – 24.50% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 90.50% + $0.00 Dispensing Fee

https://apps.mesaaz.gov/purchasingcontracts/Documents/%7B9A3FE6EC-45A2-498F-95A6-C7F025187EA8%7D_0.pdf

Example PBM to Plan Sponsor Contracts

City of Mesa, AZ Commercial & EGWP Pharmacy Services Contract

Mail Order (MID):
Mail order will be arranged and/or provided through the MedImpact Direct Mail Order Pharmacy Program. Mail pricing is based on a minimum average days' supply of eighty-four (84) or greater.

January 1, 2022 – December 31, 2022
Brand Effective Rate: AWP – 25.00% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 88.00% + $0.00 Dispensing Fee

January 1, 2023 – December 31, 2023
Brand Effective Rate: AWP – 25.00% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 88.25% + $0.00 Dispensing Fee

January 1, 2024 – December 31, 2024
Brand Effective Rate: AWP – 25.00% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 88.50% + $0.00 Dispensing Fee

January 1, 2025 – December 31, 2025
Brand Effective Rate: AWP – 25.00% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 88.75% + $0.00 Dispensing Fee

January 1, 2026 – December 31, 2026
Brand Effective Rate: AWP – 25.00% + $0.00 Dispensing Fee
Generic Effective Rate: AWP – 89.00% + $0.00 Dispensing Fee

Specialty Pharmacy (MID)*:
Specialty will be arranged and/or provided through the MedImpact Direct Specialty Pharmacy Program. MedImpact will maintain a price list of specialty rates for Specialty Pharmacies. MedImpact will update such price lists on at least a monthly basis, including the addition of any newly introduced specialty products to the market or any national drug code ("NDC") additions for existing specialty products. Such price list shall be made available to Client upon request.

January 1, 2022 – December 31, 2026
Overall Effective Rate: AWP – 21.50% + $0.00 Dispensing Fee

*Specialty Pharmacy guarantees are not applicable if Client utilizes a specialty ancillary funding company.

https://apps.mesaaz.gov/purchasingcontracts/Documents/%7B9A3FE6EC-45A2-498F-95A6-C7F025187EA8%7D_0.pdf

Example PBM to Plan Sponsor Contracts

City of Mesa, AZ Commercial & EGWP Pharmacy Services Contract

Exclusions. The following Claims are excluded from network performance measurements:

1. over the counter (OTC) drug Claims
2. compound Claims
3. vaccine Claims
4. paper Claims (DMR)
5. pharmacy submitted paper Claims
6. discount card programs Claims
7. usual and customary (U&C) Claims
8. new to market authorized generic Claims
9. Subrogation Claims
10. Claims from entities eligible for federal supply schedule prices
11. 340B Claims
12. Client-Contracted Participating Pharmacy Claims
13. Claims from Client required pharmacy participants outside of MedImpact's network control.

https://apps.mesaaz.gov/purchasingcontracts/Documents/%7B9A3FE6EC-45A2-498F-95A6-C7F025187EA8%7D_0.pdf

Example PBM to Plan Sponsor Contract

San Juan County PBM Reprice Comparison 2023

Carve-Out Pharmacy Benefit Pricing Proposals

Vendor	Current - Regence	Regence Renewal	EMI - Express Scripts	Meritain - CVS	PEHP	ProCareRx	SelectHealth - Scriptus	SmithRx	UMR - OptumRx
PBM Model	Traditional	Traditional	Pass-Through	Traditional	Traditional	Pass-Through	Pass-Through	Pass-Through	Traditional
Network Access	65,000	65,000	70,000	66,000	65,000	Restricted (Excludes CVS, Walgreens, Rite Aid, & Walmart)	65,000	66,000	67,000
Formulary	Standard Formulary	Standard Formulary	National Preferred	Standard Control	NPF	Performance Formulary	RxSelect	Essential Formulary	Premium PDL
Pharmacy Administration Fee	$0	$0	$0.74 per Claim	$0	$0	$3.35 per Claim	$2.27 per Claim	$6.00 per Claim	$0.00
Retail Pricing:									
Brand Discounts	AWP - 17.20%	AWP - 18.10%	AWP - 19.25%	AWP - 19.35%	AWP - 19.20%	AWP - 18%	AWP - 20%	AWP - 19.07%	AWP - 19.50%
Brand Dispensing Fee	$0.95	$0.60	$0.40	$0.60	$0.50	$0.65	$0.95	$0.75	$0.50
Generic Discounts	AWP - 77.90%	AWP - 81.20%	AWP - 85.90%	AWP - 84.50%	AWP - 83%	AWP - 86%	AWP - 85%	AWP - 85.95%	AWP - 85.50%
Generic Dispensing Fee	$0.95	$0.60	$0.40	$0.60	$0.50	$0.65	$0.95	$0.75	$0.50
Estimated Rebate/Claim	$108 per Brand Claim	$119 per Brand Claim	Greater of 100% or $165 per Brand Claim	$235.56 per Brand Claim	$250 per Brand Claim	$265.55 per Brand Claim	$70.30 PEPM w/o PAP $22.14 PEPM w/ PAP	$275.21 per Brand Claim	$295 per Brand Claim
Retail 90 Day Pricing:									
Brand Discounts	AWP - 20.60%	AWP - 21.70%	AWP - 22.50%	AWP - 25%	AWP - 22.60%	AWP - 20.25%	AWP - 22.50%	AWP - 22.75%	AWP - 23%
Brand Dispensing Fee	$0.00	$0.00	$0.00	$0.00	$0.10	$0.00	$0.00	$0.00	$0.00
Generic Discounts	AWP - 81.20%	AWP - 84.50%	AWP - 85.90%	AWP - 88%	AWP - 85%	AWP - 87%	AWP - 88%	AWP - 90.97%	AWP - 86.50%
Generic Dispensing Fee	$0.00	$0.00	$0.00	$0.00	$0.10	$0.00	$0.95	$0.00	$0.00
Estimated Rebate/Claim	$260 per Brand Claim	$297 per Brand Claim	Greater of 100% or $815 per Brand Claim	$731.14 per Brand Claim	$505 per Brand Claim	$411.12 per Brand Claim	$70.30 PEPM w/o PAP $22.14 PEPM w/ PAP	$929.61 per Brand Claim	$875 per Brand Claim
Mail Pricing:									

Source: https://www.utah.gov/pmn/files/901597.pdf

PBM to Drug Manufacturer Contract

- PBMs (+/- PBM GPOs) and drug manufacturers create contracts for rebates and other price concessions and services

- The federal Anti-Kickback Statute (AKS) makes it a crime to offer or receive any remuneration to induce referrals or purchases of items payable by federal health care programs (42 U.S.C. § 1320a-7b(b)).

- Congress created a statutory exception for "discounts," and HHS promulgated a corresponding regulatory safe harbor for discounts (including rebates) at 42 C.F.R. § 1001.952
  - However, the safe harbor's protection is not automatic or unconditional. If a rebate arrangement deviates from a genuine price reduction – for instance, if it is conditioned on something other than volume or purchase (such as exclusivity or formulary position) – it may fall outside the safe harbor.

Rebates as a percentage of WAC

Table 2 "Minimum Rebate Percentage"

In the event during a calendar year, the effective percentage produced from dividing the FPAIC pricing (package/unit) found in Table 1 into the then current WAC (package/unit) results in effective percentages below those contained in the table below, the percentages found below will be used to calculate a new adjusted FPAIC for invoicing. The effective Rebates received by PBM through the above calculation shall not be lower than the percentages set forth below.

Product	NDC#*	1/1/17-12/31/17	1/1/18-12/31/18
		Preferred Brand Tier	Preferred Brand Tier
OxyContin Oral Tablet ER	All NDCs, Strengths & Package Sizes	48.40%	48.40%
Butrans Transdermal Patch	All NDCs, Strengths & Package Sizes	42.90%	42.90%
Hysingla ER Oral Tablet	All NDCs, Strengths & Package Sizes	52.00%	52.00%

https://www.industrydocuments.ucsf.edu/opioids/docs/#id=pfbk0256

Rebates & Administrative Fees as a percentage of WAC

Exhibit A
Products, Rebates & Administrative Fees
(Percentage Rebates)
(Effective January 1, 2015)

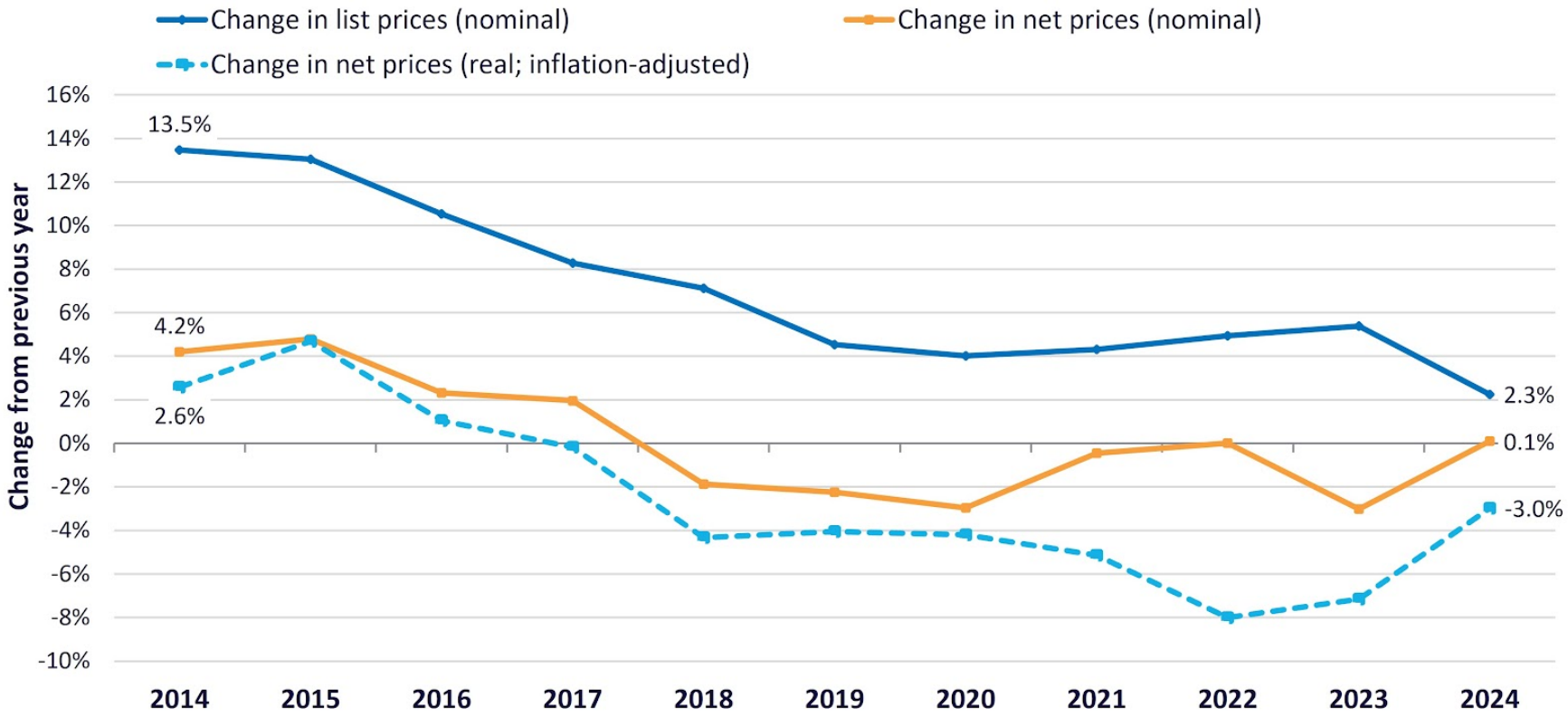
Part D Plans including EGWPs
The following Rebates and Administrative Fees shall be payable on Product dispensed to Members of Part D Plans, including EGWPs, by Participating Pharmacies:

Product Name	NDC#	Strength	Package Size	Rebate Based on Formulary Status				Administrative Fee
				Listed	1 of 2 Product	1 of 2 Product Enhanced	Exclusive	
Novolin®	00169-1833-11 00169-1834-11 00169-1837-11	All Strengths	All Package Sizes	15%[1]	18%[3]	N/A	69.5%	3%
NovoLog®	All NDCs	All Strengths	All Package Sizes	15%[1]	18%[3]	N/A	69.5%	3%
NovoLog® Mix 70/30	All NDCs	All Strengths	All Package Sizes	15%[1]	18%[3]	N/A	69.5%	3%
[redacted]								
Levemir®	All NDCs	All Strengths	All Package Sizes	15%[1]	22%[3]	37%	N/A	3%

Documents Produced by Novo Nordisk for Senate Finance Insulin Investigation

Gross-to-Net Bubble

Brand-Name Prescription Drugs, Change in Average List and Net Prices, 2014 to 2024



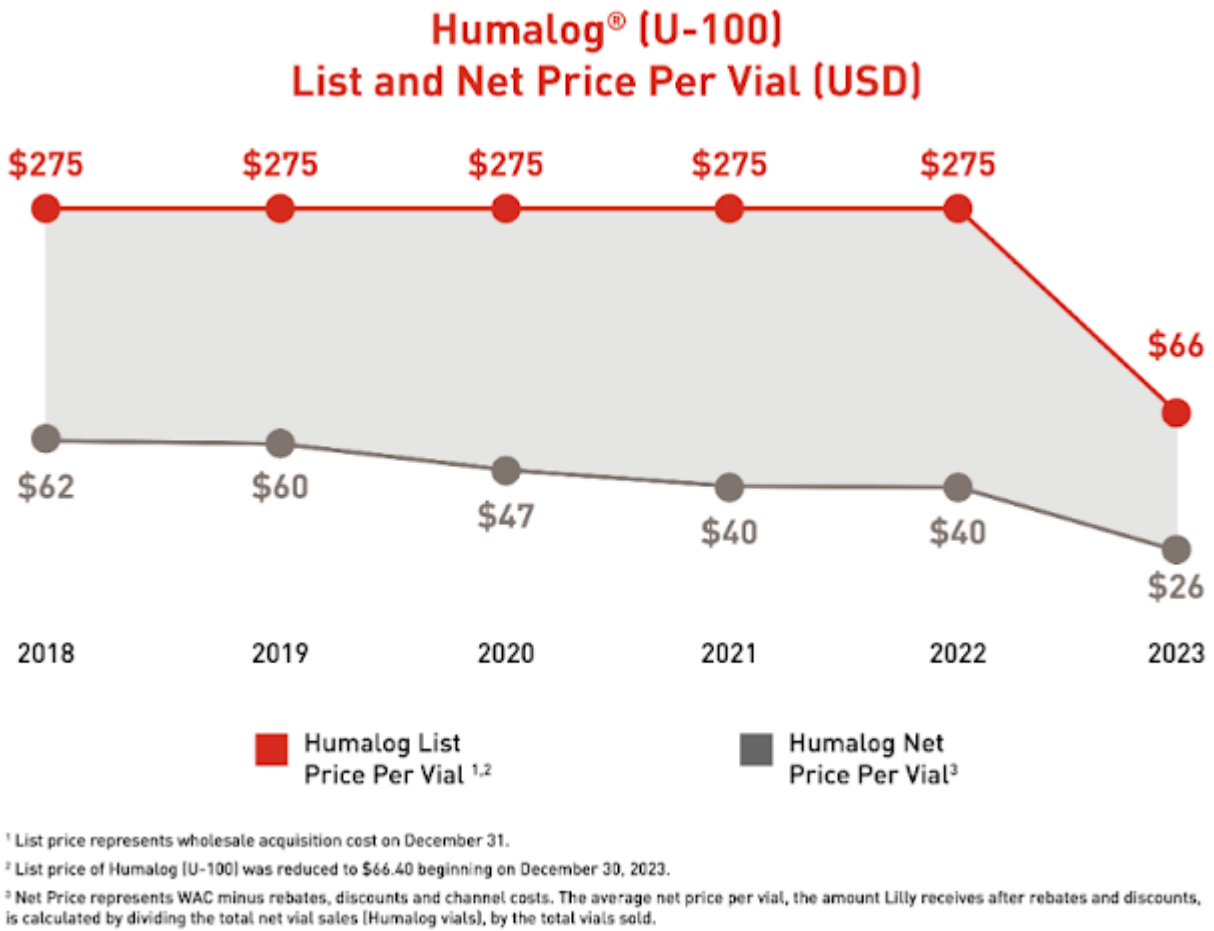
Source: Drug Channels Institute analysis of SSR Health data. List and estimated net pricing figures are based on data for approximately 1,000 brand-name drugs with disclosed U.S. product-level sales from approximately 100 currently or previously publicly traded firms. The products and companies account for more than 90% of U.S. branded prescription net sales. Net prices equal list price minus off-invoice rebates and such other reductions as distribution fees, product returns, chargeback discounts to hospitals, price reductions from the 340B Drug Pricing Program, and other purchase discounts. Price data for 2024 reflect the first three calendar quarters. Net prices were converted from nominal to real, inflation-adjusted value using the Consumer Price Index for All Urban Consumers (CPI-U). Figures may differ from previous reports due to the inclusion of net price information for products that had not been previously included.

Published on Drug Channels (www.DrugChannels.net) on January 7, 2025.

DRUG CHANNELS INSTITUTE
An HMP Global Company

https://www.drugchannels.net/2025/01/inflation-adjusted-us-brand-name-drug.html

Humalog Gross-to-Net



[1] List price represents wholesale acquisition cost on December 31.

[2] List price of Humalog (U-100) was reduced to $66.40 beginning on December 30, 2023.

[3] Net Price represents WAC minus rebates, discounts and channel costs. The average net price per vial, the amount Lilly receives after rebates and discounts, is calculated by dividing the total net vial sales (Humalog vials), by the total vials sold.

https://www.drugchannels.net/2024/07/gross-to-net-bubble-update-2023-pricing.html

Gross-to-Net Bubble (Medicaid)

MACStats **Section 3**

EXHIBIT 28. Medicaid Gross Spending and Rebates for Drugs by Delivery System, FY 2023 (millions)

State	Gross spending			Rebates		
	Total	Fee for service	Managed care	Total	Fee for service	Managed care
Total[1]	**$104,859.3**	**$42,768.4**	**$62,090.8**	**-$53,684.5**	**-$26,272.7**	**-$27,411.7**
Alabama	**1,061.3**	1,061.3	–	**-589.4**	-589.4	–
Alaska	**211.4**	211.4	–	**-163.0**	-163.0	–
Arizona	**2,003.1**	45.5	1,957.6	**-1,336.6**	-45.5	-1,291.1
Arkansas[2]	**540.1**	434.6	105.5	**-377.9**	-343.7	-34.3
California	**13,689.1**	13,089.3	599.8	**-6,365.5**	-6,195.3	-170.3
Colorado	**1,533.6**	1,473.2	60.4	**-1,061.0**	-1,023.6	-37.4
Connecticut	**1,848.8**	1,848.8	–	**-1,233.0**	-1,233.0	–
Delaware	**278.5**	1.4	277.1	**-207.2**	-34.5	-172.7
District of Columbia	**253.7**	150.8	103.0	**-139.4**	-72.8	-66.6
Florida	**3,924.6**	258.3	3,666.4	**-2,119.8**	-104.1	-2,015.7
Georgia	**1,506.8**	872.6	634.1	**-817.0**	-543.1	-273.9
Hawaii	**244.7**	0.2	244.4	**-157.7**	-0.6	-157.1
Idaho	**572.8**	572.8	–	**-366.6**	-366.6	–
Illinois	**3,777.0**	137.3	3,639.6	**-1,939.6**	-117.0	-1,822.6
Indiana	**2,757.6**	503.1	2,254.4	**-1,308.9**	-269.0	-1,040.0
Maryland	**1,691.4**	564.6	1,126.8	**-854.1**	-340.8	-513.3

https://www.macpac.gov/publication/medicaid-gross-spending-and-rebates-for-drugs-by-delivery-system/

What Drug Manufacturers Tell Us About Rebates

Pfizer Form 10-K

- We also seek to gain access for our products on formularies, which are lists of approved medicines available to members of healthcare programs or PBMs in the U.S. Insurers and PBMs who design and negotiate formularies on their behalf use various benefit designs, such as tiered co-pays for formulary products, to drive utilization of products in preferred formulary positions, typically in exchange for a discount off the price of the medicine in the form of a rebate agreement.
- Payors often require significant discounts, or rebates, from our prices in exchange for more favorable formulary placement.
- We must offer discounts or rebates on purchases of pharmaceutical products under various government programs including Medicare, Medicaid, the Veterans Administration and the 340B Program

https://d18rn0p25nwr6d.cloudfront.net/CIK-0000078003/58225110-35f3-46df-a207-d87bb30eaedd.pdf

Abbvie Form 10-K

- U.S. federal laws require pharmaceutical manufacturers to pay certain statutorily-prescribed rebates to state Medicaid programs on prescription drugs reimbursed under state Medicaid plans, and the efforts by states to seek additional rebates may affect AbbVie's business. Similarly, the Veterans Health Care Act of 1992, as a prerequisite to participation in Medicaid and other federal health care programs, requires that manufacturers extend additional discounts on pharmaceutical products to various federal agencies, including the United States Department of Veterans Affairs, Department of Defense and Public Health Service entities and institutions. In addition, recent legislative changes would require similarly discounted prices to be offered to TRICARE program beneficiaries. The Veterans Health Care Act of 1992 also established the 340B drug discount program, which requires pharmaceutical manufacturers to provide products at reduced prices to various designated health care entities and facilities.
- Rebate amounts are typically based upon the volume of purchases using contractual or statutory prices, which may vary by product and by payer.

https://investors.abbvie.com/static-files/1fa0e171-f95d-48d1-b3c7-7f452ae479c4

What Drug Manufacturers Tell Us About Rebates

Eli Lilly Form 10-K

- Pharmaceutical companies face increased pressure in negotiations, and compete fiercely for formulary placement, not only on the basis of product attributes such as efficacy, safety profile, or patient ease of use, but also by providing rebates or other concessions. As payers and pharmaceutical companies continue to negotiate formulary placement and rebates, value-based agreements, where rebates may be based on achievement (or not) of specified outcomes, are another increasingly prevalent tool. Rebates and net cost are increasingly important factors in formulary decisions, particularly in treatment areas in which the payer has taken the position that multiple branded products are therapeutically comparable

Bristol-Myers Squibb Form 10-K

- Most new products that we introduce compete with other products already on the market or products that are later developed by competitors. Where possible, companies compete for inclusion based upon unique features of their products, such as greater efficacy, better patient ease of use or fewer side effects. A lower overall cost of therapy, usually provided as a rebate to the PBM, is also an important factor. Products that demonstrate fewer therapeutic advantages must compete for inclusion based primarily on price. We have been generally, although not universally, successful in having our major products included on MCO and PBM formularies.

The reconciliation of gross product sales to net product sales by each significant category of GTN adjustments was as follows:

Dollars in millions	Year Ended December 31, 2024	2023
Gross product sales	$ 83,671	$ 73,679
GTN Adjustments		
Charge-backs and cash discounts	(11,510)	(9,144)
Medicaid and Medicare rebates	(16,551)	(13,411)
Other rebates, returns, discounts and adjustments	(8,832)	(7,346)
Total GTN Adjustments	(36,893)	(29,901)
Net product sales	$ 46,778	$ 43,778
GTN adjustments percentage	44 %	40 %
U.S.	49 %	46 %
Non-U.S.	20 %	19 %

https://investor.lilly.com/sec-filings/sec-filing/10-k/0000059478-25-000067

https://www.bms.com/assets/bms-ar/documents/2024/bms-2024-10-K.pdf

Examples of Drug Pricing in Pratice

Money From Sick People

Money from Sick People Model					
	Deductible Phase			Coinsurance Phase	
Months	Patient Cost	Health Plan Cost (POS)	Rebate	Net Health Plan Cost	Overall Net Drug Cost
January	$ 408.00	$ -	$ 339.00	$ (339.00)	$ 69.00
February	$ 408.00	$ -	$ 339.00	$ (339.00)	$ 69.00
March	$ 408.00	$ -	$ 339.00	$ (339.00)	$ 69.00
April	$ 408.00	$ -	$ 339.00	$ (339.00)	$ 69.00
May	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
June	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
July	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
August	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
September	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
October	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
November	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
December	$ 34.34	$ 373.66	$ 339.00	$ 34.66	$ 69.00
Total	**$ 1,906.72**	**$ 2,989.28**	**$ 4,068.00**	**$ (1,078.72)**	**$ 828.00**

https://www.46brooklyn.com/news/111121-money-from-sick-people

GoodRx

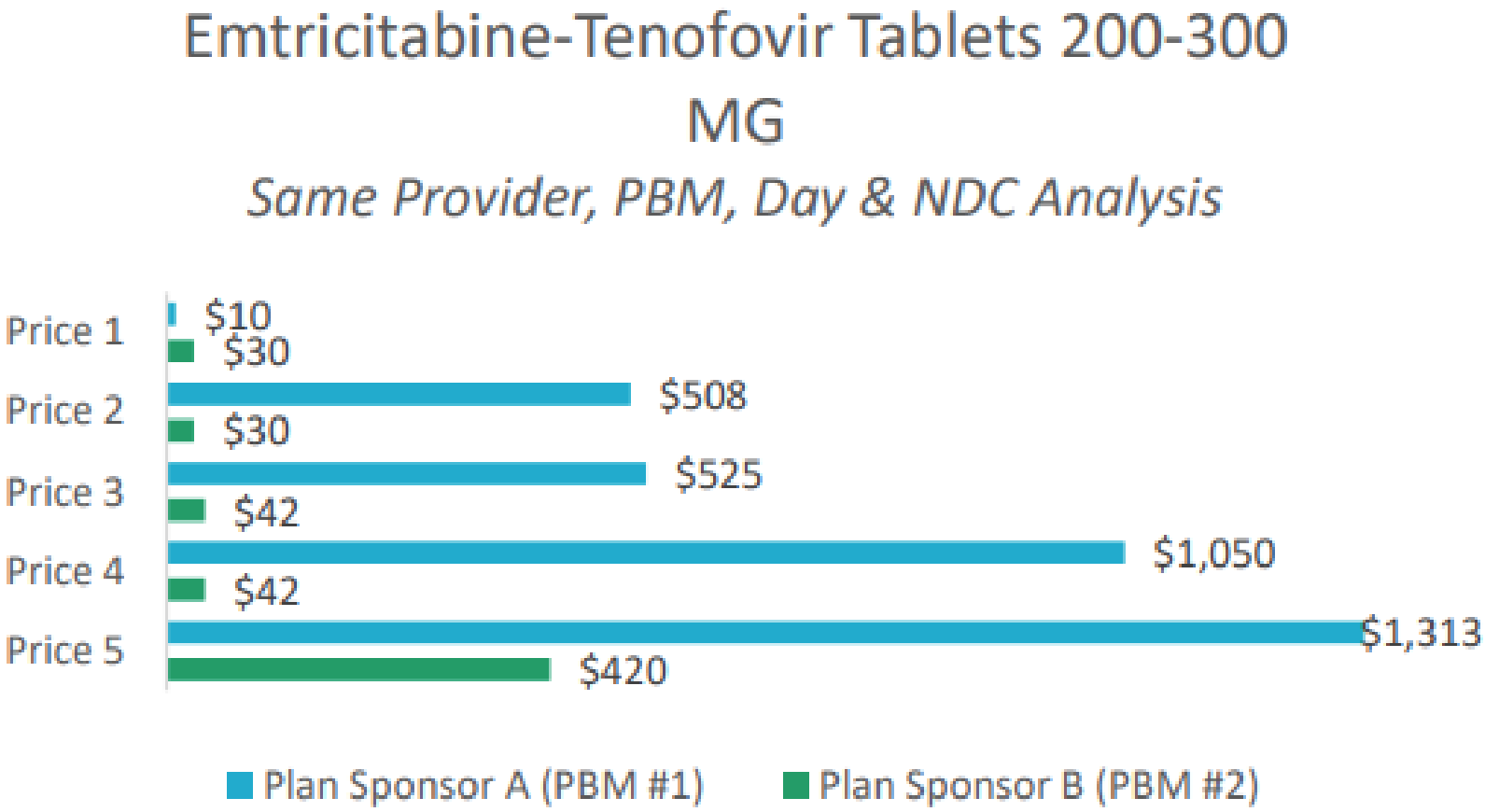
- The GoodRx business model depends on pharmacies charging an inflated usual and customary (U&C) retail list price—the prescription price that a pharmacy charges to a cash-paying consumer.

- GoodRx partners with multiple PBMs, including Express Scripts, OptumRx, MedImpact, and Navitus. Uninsured patients therefore avoid paying a retail pharmacy's inflated U&C retail price for their prescriptions.

- The prescriptions available via GoodRx are not considered cash-pay, because the claims are adjudicated by a PBM. The PBM collects a per-prescription fee from the pharmacy whenever a consumer uses a discount program at a pharmacy. The PBM shares a portion of this fee with GoodRx, which directed the patient to the pharmacy.
  - GoodRx earns either a percentage of the pharmacy's fee or a fixed fee per prescription.

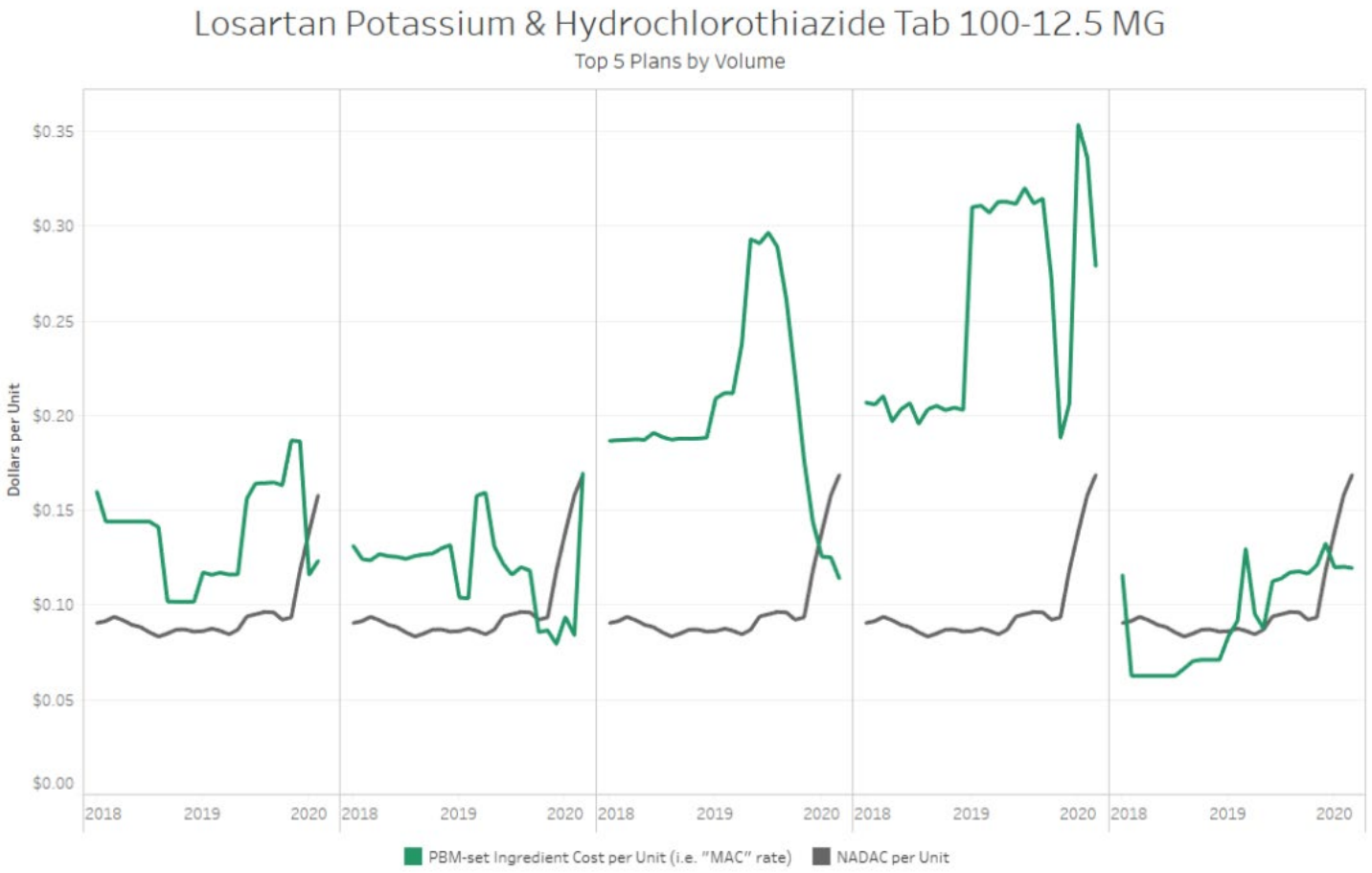
https://www.drugchannels.net/2020/08/how-goodrx-profits-from-our-broken.html

Same Drug, Same Day, Different Price



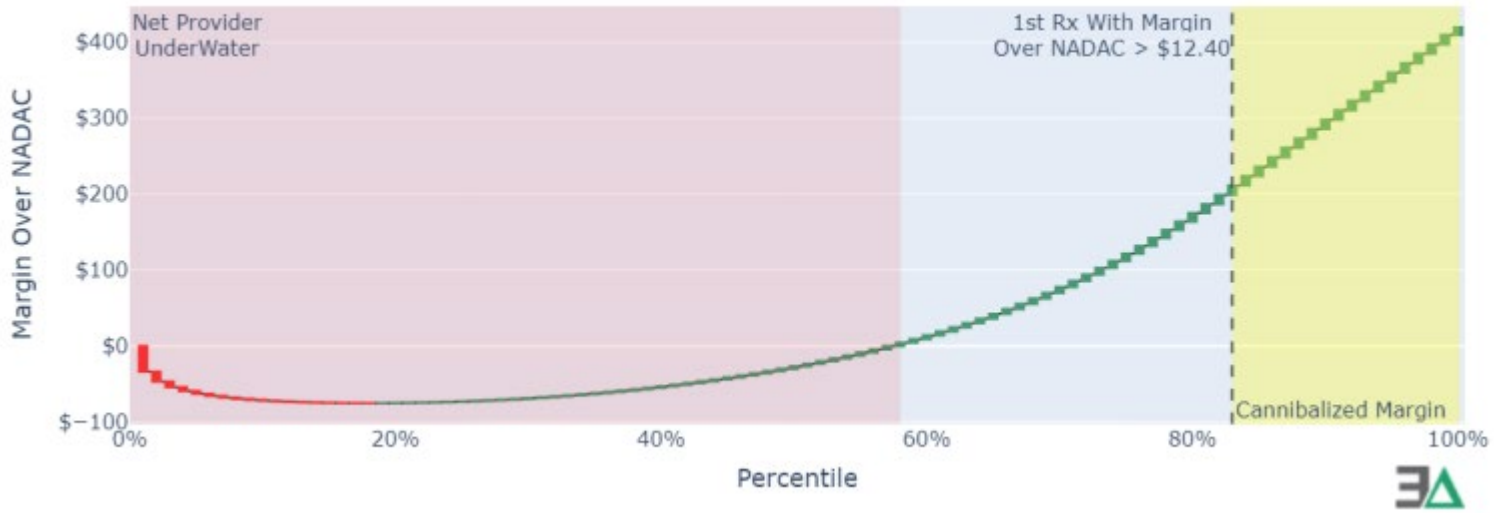
https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/667a03dc16a9fb18a1b13614/1719272422304/3AA_Washington_Report_20240620.pdf

MAC Rates Alternative Perspective



Risk to margin

Figure 31: Estimated Margin over NADAC by Percentile, Payment No More than Assumed U&C (NADAC + $12.40) (2020)



https://static1.squarespace.com/static/5c326d5596e76f58ee234632/t/650924780b6b9c590edfa2b4/1695097983750/Unravelling_the_Drug_Pricing_Blame_Game_3AA_APCI_0923.pdf

GoodRx Evolving Reimbursement Approaches

- GoodRx now operates four different types of contracting models with retail pharmacies:
  - Traditional PBM network: With the legacy GoodRx business model, the company contracts with multiple PBMs to deliver price points at more than 70,000 pharmacies nationwide.
  - Hybrid model: GoodRx contracts directly with a single pharmacy on a subset of drugs, then utilizes the multi-PBM network for the remainder of the drugs.
  - Full direct contracting model: The pricing relationship is entirely between GoodRx and the pharmacy for the entire book of drugs, with no PBM involvement.
  - Single source PBM opportunity: GoodRx contracts with one PBM network on behalf of one pharmacy.

https://www.drugchannels.net/2024/04/how-goodrx-is-evolving-its.html

GoodRx Form 10-K

Pharmacy Benefit Managers

- PBMs aggregate consumer demand to negotiate prescription medication prices with pharmacies and manufacturers. PBMs aggregate most of their demand through relationships with insurance companies and employers. However, nearly all PBMs also have consumer direct or cash network pricing that they negotiate with pharmacies for consumers who choose to purchase prescriptions outside of insurance. We provide a platform through which PBMs can drive incremental volume to these networks by offering their discounted prices to our consumers. We expand the market for PBMs by increasing their cash network transaction volumes and by adding new consumers to the overall prescriptions market, many of whom, both insured and uninsured, would otherwise not fill their prescriptions because of high deductibles or prices. We believe that, for many of our PBM partners, we are their only significant direct-to-consumer channel. To date, no PBM has terminated a relationship with GoodRx, Inc., which highlights the strength of our relationships alongside the value we deliver.

https://investors.goodrx.com/static-files/2105e4ec-2ef0-4b17-af87-9143484859c7

GoodRx Form 10-K

Pharmacy Benefit Managers

- A limited number of PBMs generate a significant percentage of the discounted prices that we present through our platform and, as a result, we generate a significant portion of our revenue from contracts with a limited number of PBMs

- Our three largest PBM customers accounted for 27% of our revenue in 2024, 32% of our revenue in 2023 and 31% of our revenue in 2022

- In the last year, many pharmacy chains announced plans to close thousands of retail pharmacy locations in the near term. We derive a significant portion of our revenue from transactions processed at pharmacy chains. If our consumers are unable to access retail pharmacies, they may seek other options to fill their prescriptions, such as through mail delivery services, or choose not to fill or refill existing prescriptions, which may adversely impact our revenues.

https://investors.goodrx.com/static-files/2105e4ec-2ef0-4b17-af87-9143484859c7

GoodRx Form 10-K

Pharma Manufacturer Solutions

- Brand medications tend to be expensive, and insurance coverage is complicated and may be restrictive. As a result, many consumers are not able to access or afford their medications. Pharma manufacturers provide affordability solutions such as co-pay cards, patient assistance programs, care portals and other savings options so that consumers can access their medications. We partner with pharma manufacturers to advertise and integrate these affordability solutions into our platform. For example, our point-of-sale discount programs help lower the cash price of certain branded medications for consumers at the pharmacy counter with little friction, and are increasingly being used by pharma manufacturers to reach more patients.

https://investors.goodrx.com/static-files/2105e4ec-2ef0-4b17-af87-9143484859c7

GoodRx Form 10-K

(dollars in thousands)	Year Ended December 31, 2024	% of Total Revenue	Year Ended December 31, 2023	% of Total Revenue	Change ($)	Change (%)
Revenue:						
Prescription transactions revenue	$ 577,549	73%	$ 550,738	73%	$26,811	5%
Subscription revenue	86,536	11%	94,410	13%	(7,874)	(8%)
Pharma manufacturer solutions revenue	107,237	14%	85,065	11%	22,172	26%
Other revenue	21,002	3%	20,052	3%	950	5%
Total revenue	792,324		750,265			
Costs and operating expenses:						
Cost of revenue, exclusive of depreciation and amortization presented separately below	48,215	6%	66,925	9%	(18,710)	(28%)
Product development and technology	123,749	16%	135,836	18%	(12,087)	(9%)
Sales and marketing	367,114	46%	341,328	45%	25,786	8%
General and administrative	117,862	15%	125,515	17%	(7,653)	(6%)
Depreciation and amortization	69,538	9%	107,668	14%	(38,130)	(35%)
Total costs and operating expenses	726,478		777,272			
Operating income (loss)	65,846		(27,007)			
Other expense, net:						
Other expense	(2,660)	—%	(4,008)	1%	1,348	(34%)
Loss on extinguishment of debt	(2,077)	—%	—	0%	(2,077)	n/m
Interest income	23,273	3%	32,171	4%	(8,898)	(28%)
Interest expense	(52,922)	7%	(56,728)	8%	3,806	(7%)
Total other expense, net	(34,386)		(28,565)			
Income (loss) before income taxes	31,460		(55,572)			
Income tax (expense) benefit	(15,070)	2%	46,704	6%	(61,774)	(132%)
Net income (loss)	$ 16,390		$ (8,868)			

https://investors.goodrx.com/static-files/2105e4ec-2ef0-4b17-af87-9143484859c7

GoodRx Fee (Alleged)

- "Processing Fee" of between $7 and $10
- For direct-pay customers using the GoodRx discount card, the Leveraged PBM collects a per-prescription processing fee from the pharmacy each time a customer buys a drug using the card. Per its agreement with GoodRx, that PBM then shares a cut of those fees with GoodRx, either as a fixed fee or a percentage of the fee paid by the pharmacy to the PBM
- As such, the more volume that goes through the GoodRx platform, the more revenue GoodRx generates. GoodRx claims to obtain, on average, a "15-16%" cut of the overall drug price.

https://ncpa.org/sites/default/files/2025-01/1.22.2025-NCPA.GoodRx.Class_.Action.Complaint.pdf

GoodRx integration with pharmacy benefits

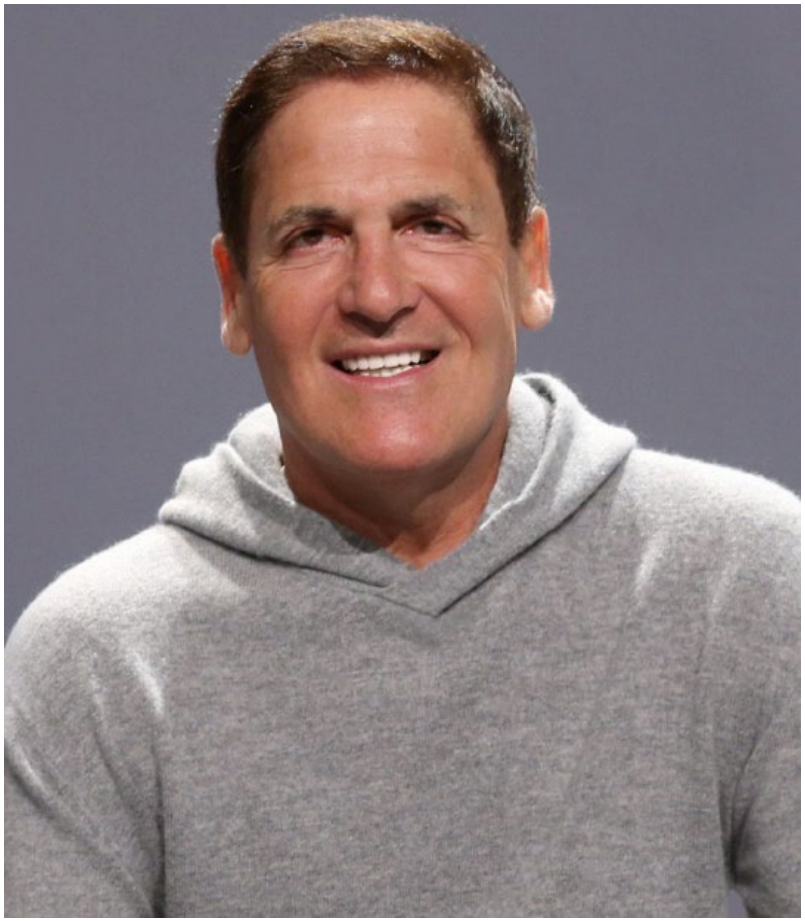
- In 2023/2024, GoodRx and the 4 PBMs launched an “Integrated Savings Program” where GoodRx integrated its software and real-time pricing data from competing PBMs into the PBMs' own systems.
  - CVS Caremark
  - Express Scripts
  - MedImpact Healthcare Systems
  - Navitus Health Solutions

- Recently, lawsuits have been filed alleging the companies conspired to fix prices that PBMs pay for prescription drug claims, therefore reducing reimbursements and increasing fees for independent pharmacies.

https://www.ajmc.com/view/goodrx-pbms-hit-by-price-fixing-lawsuits

Mark Cuban Cost Plus Drug Company

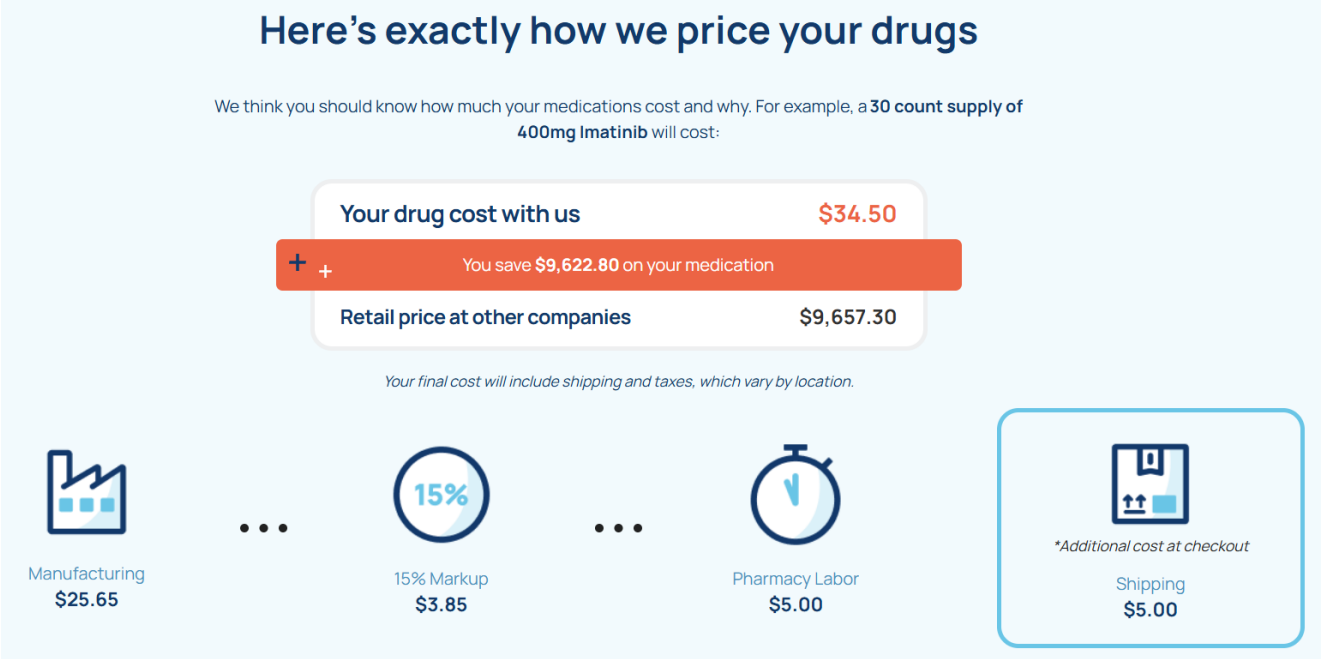
- The Mark Cuban Cost Plus Drug Company, also known as Cost Plus Drugs, is an American public benefit corporation (PBC) that aims to lower drug prices by removing intermediaries and using a transparent cost-plus pricing model.
- The company operates an online pharmacy and manages a retail network that sells a wide range of generic and specialty medications directly to consumers and through employer-sponsored programs.



https://www.costplusdrugs.com/mission/

How are prices determined at Cost Plus Drugs?

- Prices reflect the price to purchase from the manufacturer (variety of manufacturers used).
- Per Cost Plus Drugs, they cut out “the pharmacy middlemen” and negotiate directly with manufacturers to get the best possible price.



https://www.costplusdrugs.com/faq/

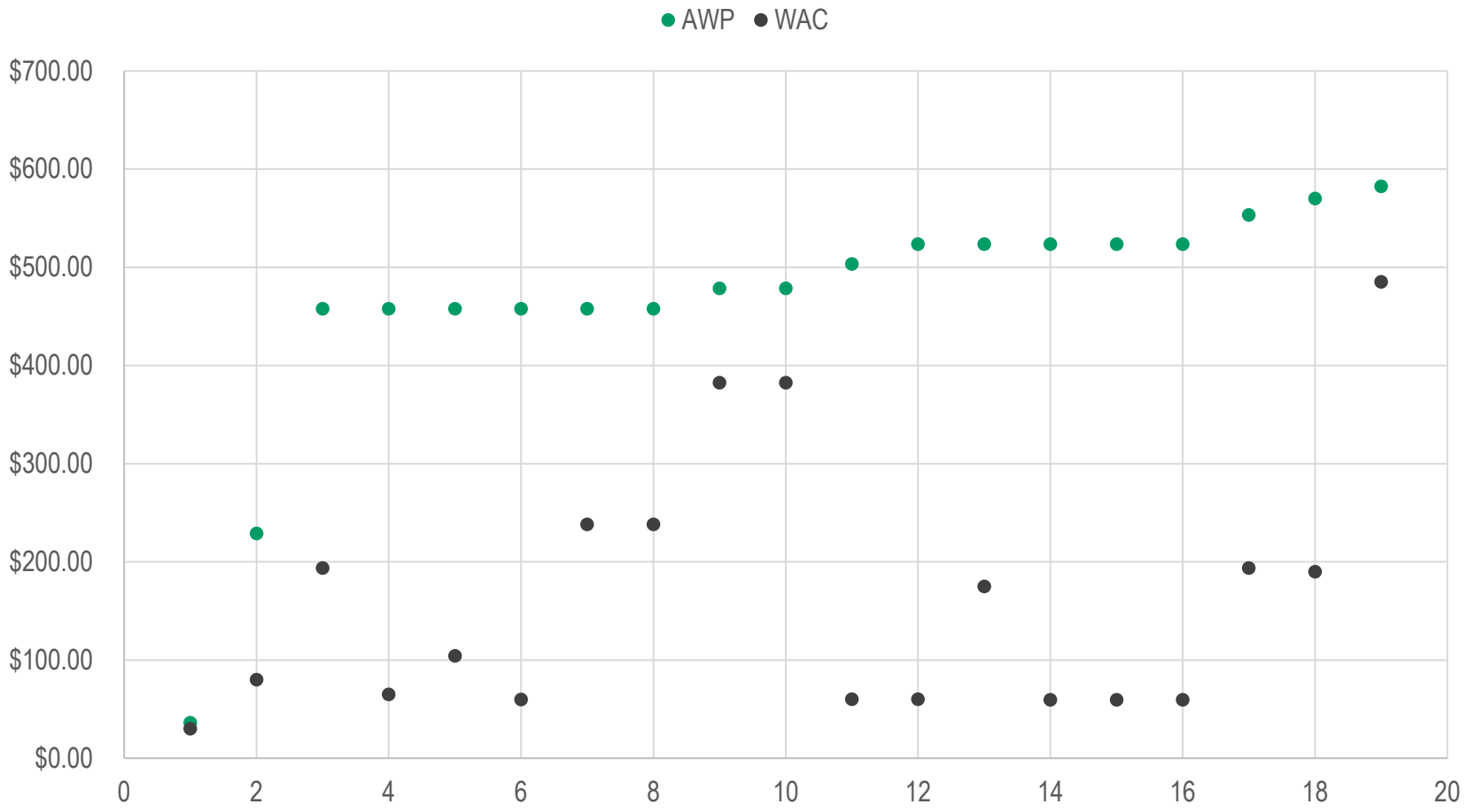
Cost Plus & Insurance

Currently Only Accept the Following Insurance Plans

- AffirmedRx
- Archimedes
- Capital Blue Cross
- Drexi
- FairosRx
- Liviniti
- MedOne
- Network Health Plan
- Oread Rx
- PCA Rx
- PharmPix
- Rightway
- RxPreferred
- Scripius
- SelectHealth
- SGRX
- SmithRx
- TransparentRx
- True Rx Health Strategists
- TrueScripts
- VIVIO
- WellDyne

https://www.costplusdrugs.com/faq/

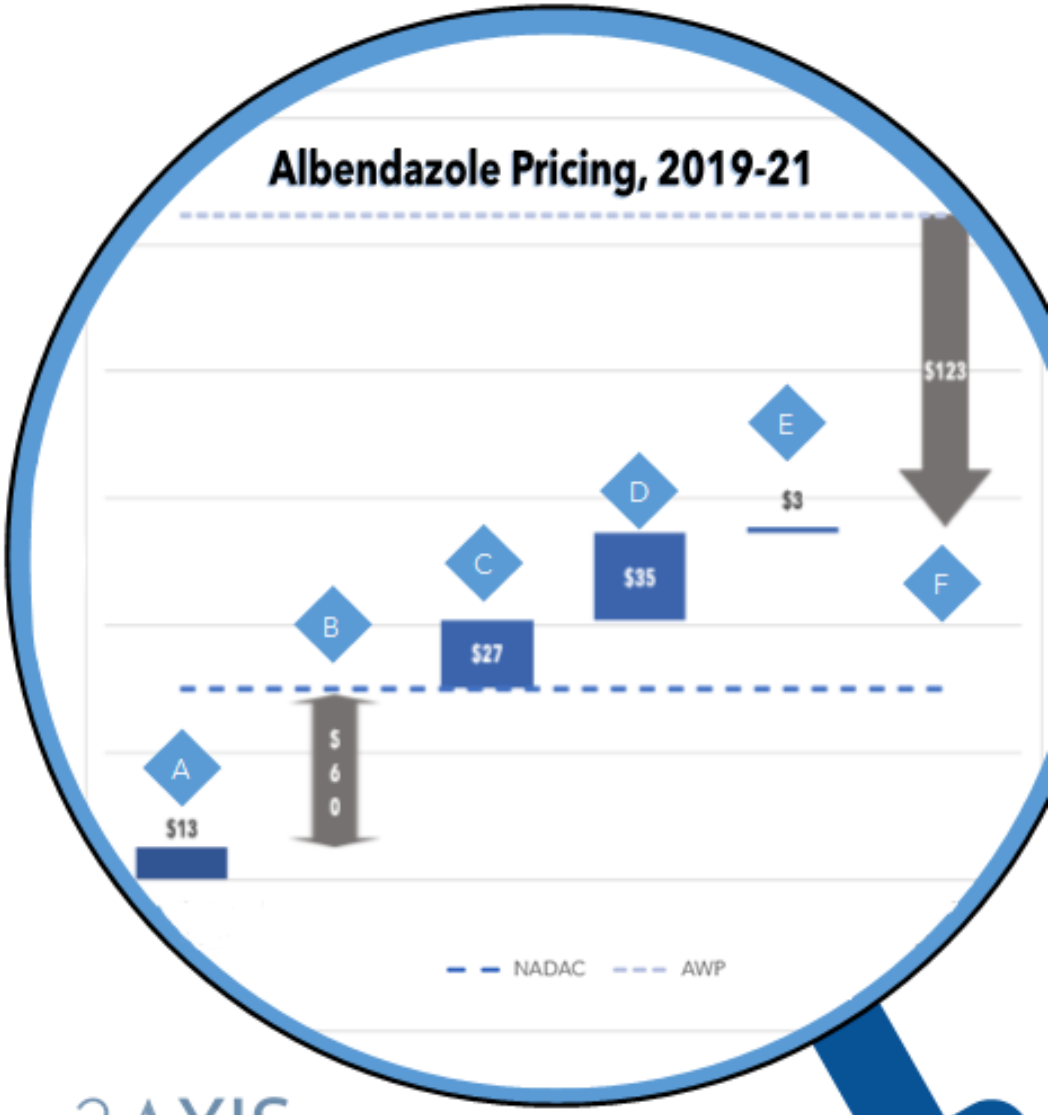
Alendazole Pricing 200mg, 2 Tablets



What can the MARK CUBAN COST PLUS DRUG COMPANY teach us about US Drug Pricing Distortions?

On January 14, 2021, the Mark Cuban Cost Plus Drug Company (MCCPDC) launched with a product called albendazole. With their unique business model, which lets everyone know what it costs to manufacturer, alongside the knowledge that they apply a flat 15% margin to get their wholesale prices, we collectively gained invaluable insight into the many distortions that exist within the US drug supply chain. To demonstrate just how profound these insights are, we prepared the following infographic:

- A **The Cost to Produce** – or how much money it takes to combine active and inactive ingredients and put the finished product into a package
- B **The Wholesaler Mark-Up** – or how much money drug wholesalers make relative to the cost they pay to acquire drugs
- C **The Pharmacy's Margin**- the difference between what the cost a pharmacy incurred to purchase a drug from a wholesaler and the payment they receive when that drug is dispensed under a person's insurance
- D **The PBM's Margin** – the difference between what a PBM paid a pharmacy for the drug dispensed and what the PBM charged a health plan
- E **The Benefit Broker / PBM consultant Fee** – what the PBM pays the healthcare benefit broker as part of the benefit broker assisting the health plan with purchasing PBM services
- F **The Health Plan's Perceived Savings** – the health plan's guaranteed prescription drug discount (i.e. AWP discount) for the drug and the price charged by the PBM



3AXIS Advisors

Mark Cuban Cost Plus Savings

- SmithRx and Mark Cuban's Cost Plus Drug Company have partnered to offer significant savings on prescription drugs, particularly for autoimmune conditions and Multiple Sclerosis. In six months, they've achieved over $9.5 million in client savings within the autoimmune category.

- In six months, Mark Cuban Cost Plus Drug Company saved MultiCare Health System $1 million on generic drug costs

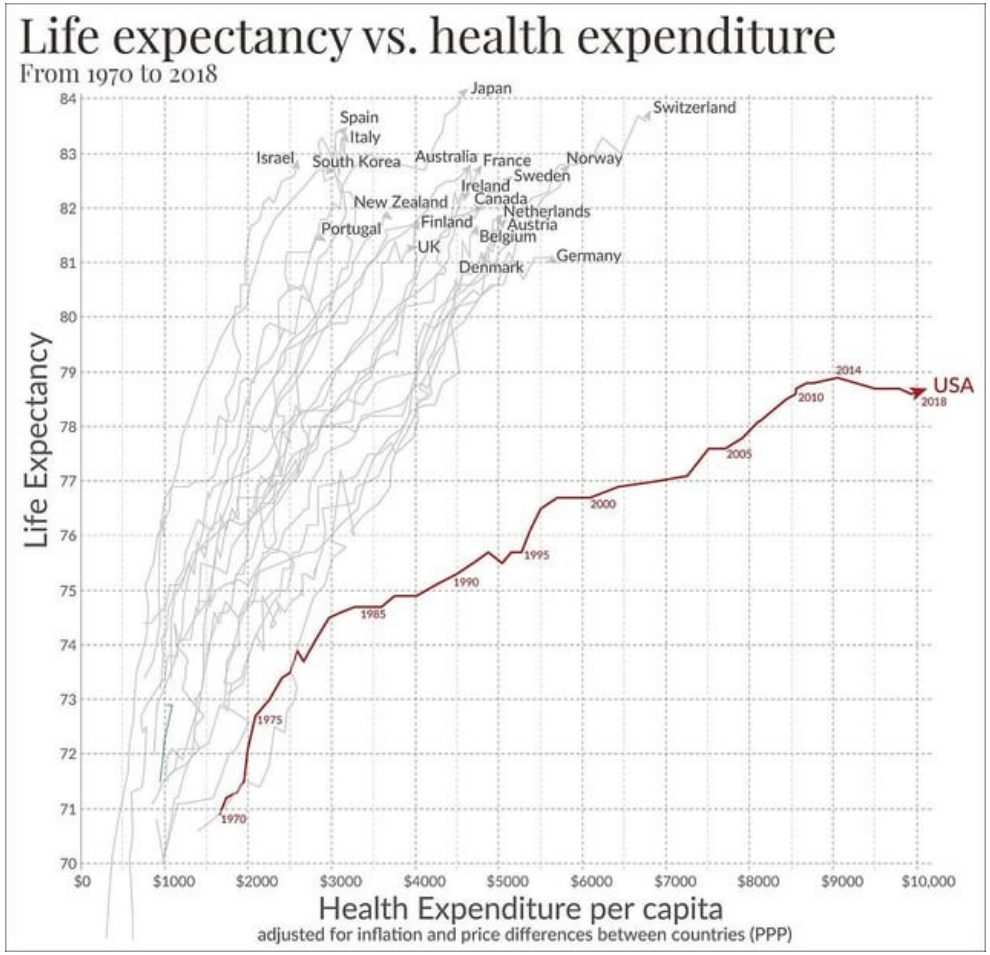
https://www.businesswire.com/news/home/20240304392163/en/SmithRx-and-Mark-Cuban-Cost-Plus-Drug-Company-Announce-%249.5-Million-in-Client-Savings-Through-Innovative-Autoimmune-Drug-Sourcing#:~:text=SmithRx%20and%20Mark%20Cuban%20Cost,Through%20Innovative%20Autoimmune%20Drug%20Sourcing

https://www.beckershospitalreview.com/pharmacy/mark-cubans-drug-company-saves-multicare-1m-in-six-months/

Conclusion

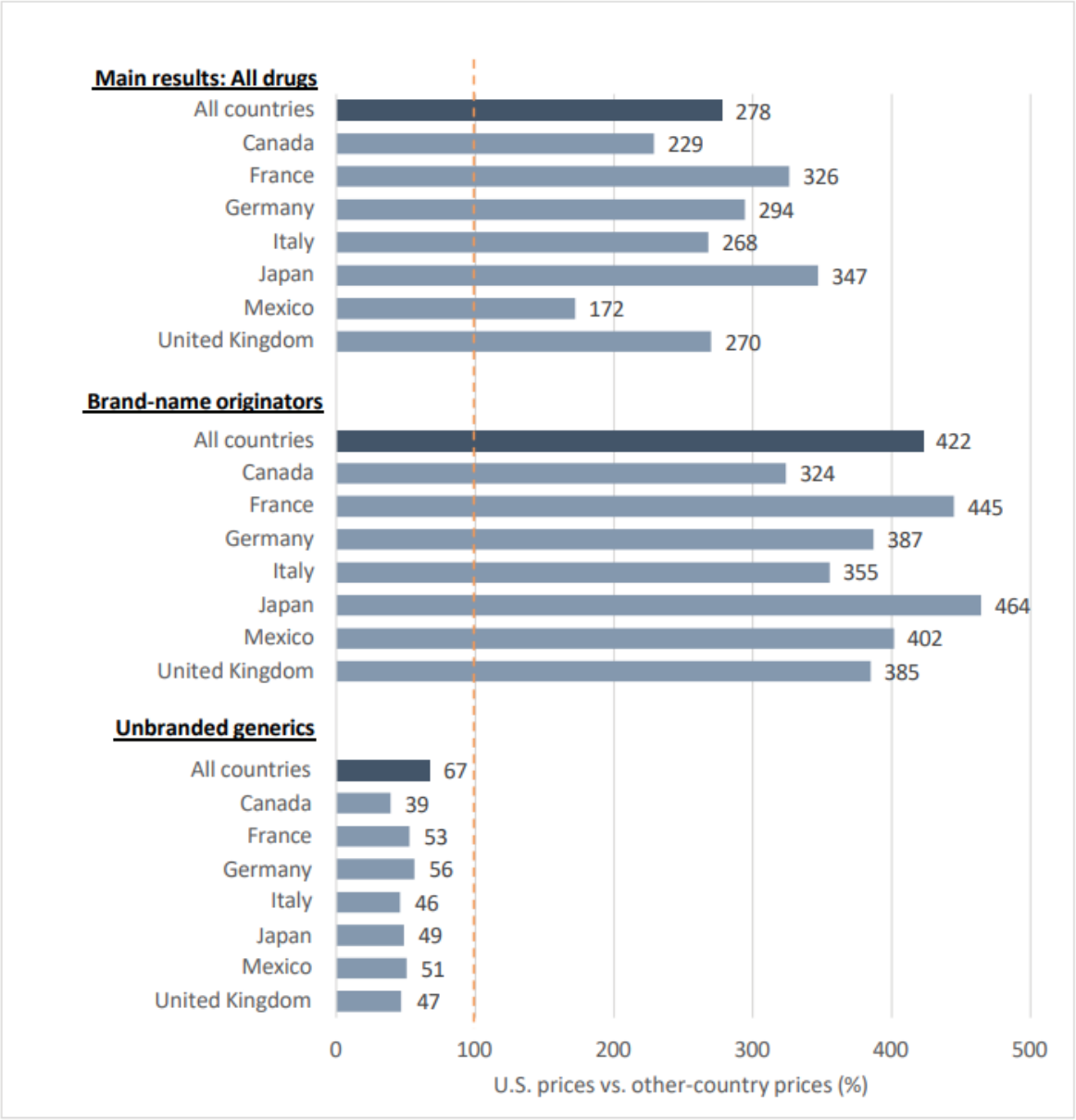
What Should Drug Pricing Accomplish?

Life Expectancy vs. Health Expenditures



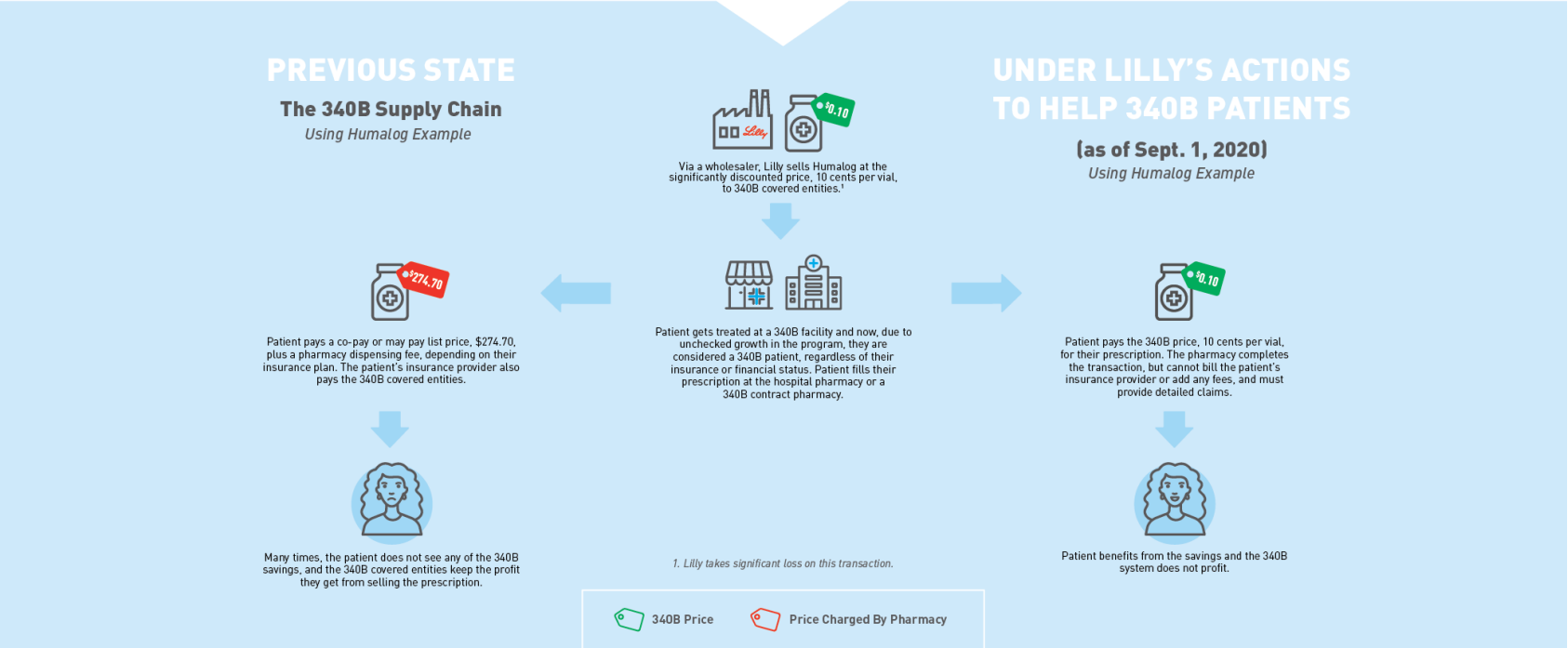
https://www.forbes.com/sites/joshuacohen/2020/11/01/dismal-us-life-expectancy-trend-reflects-disconnect-between-dollars-spent-on-healthcare-and-value-produced/

US Drug Prices vs. Rest of World



https://aspe.hhs.gov/sites/default/files/documents/8e057b0a094e6f9b9d01171fce6698f4/international-price-comparisons.pdf

Eli Lilly 340B Insulin, 2020



https://www.lilly.com/news/stories/lilly-helps-discounts-reach-people-with-diabetes-in-340B

The Problem:

There are known tools to address the problem, but conflicted healthcare payers leverage these tools to increase profits <u>not lower costs or deliver outcomes</u>

Unit Costs	Utilization
Drug Mix	Specialty Pharmacy

THREE AXIS

ben@3axisadvisors.com

340B

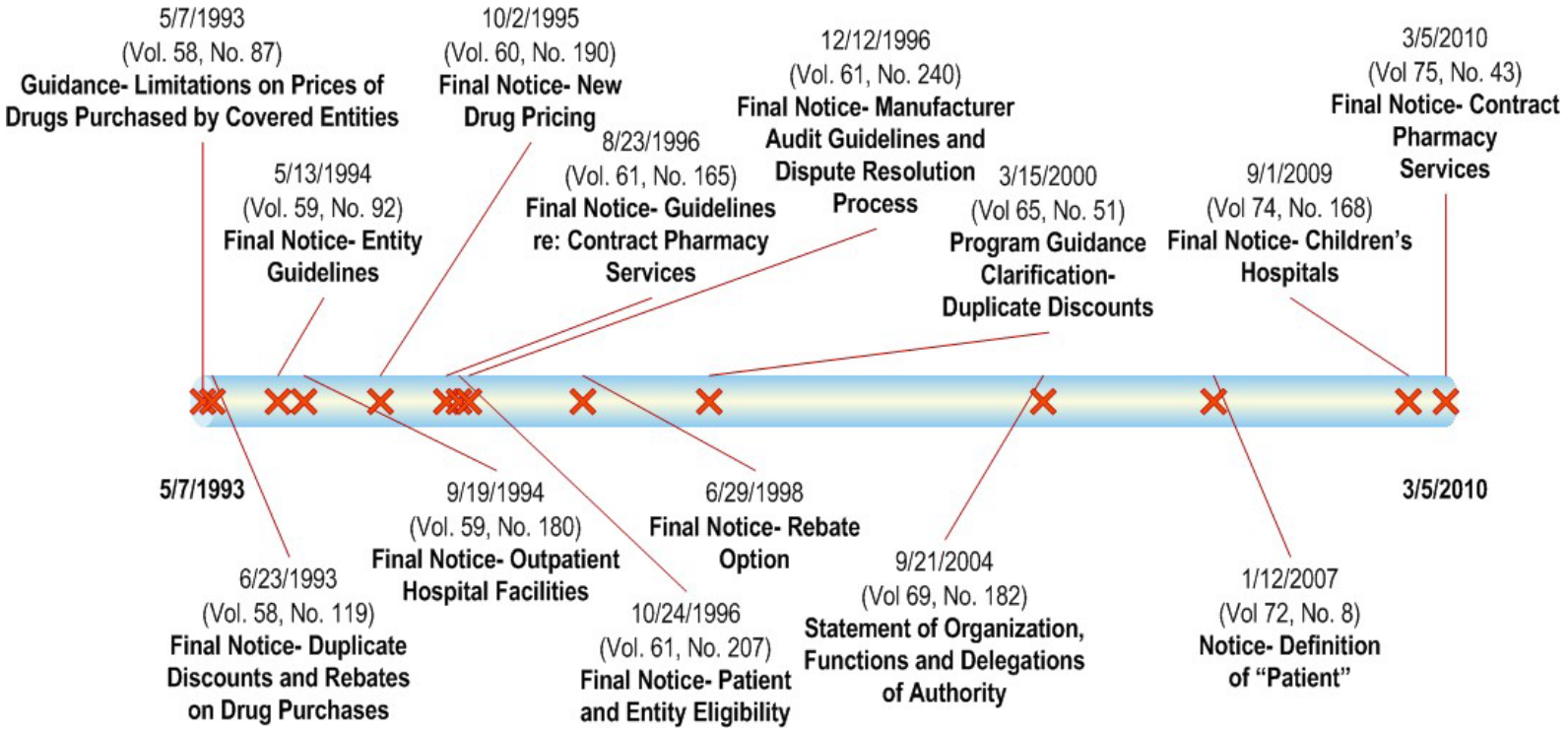
What is the 340B Price?

- The *340B ceiling* price is the maximum statutory price a manufacturer can charge a covered entity for the purchase of a covered outpatient drug and is equal to the average manufacturer price (AMP) from the preceding calendar quarter for the smallest unit of measure minus the unit rebate amount (URA).

- To give a sense of scale, there is a special regulation in 340B known as "penny pricing" [60 FR, 51488 (October 2, 1995)]
  - Occurs when the 340B ceiling price calculation results in an amount less than $0.01, the 340B ceiling price will be $0.01.

Regulatory Progression of 340B

- Over the years, the government has released numerous notices, updates, and guidelines related to the 340B program
- These include, but are not limited to, the following:

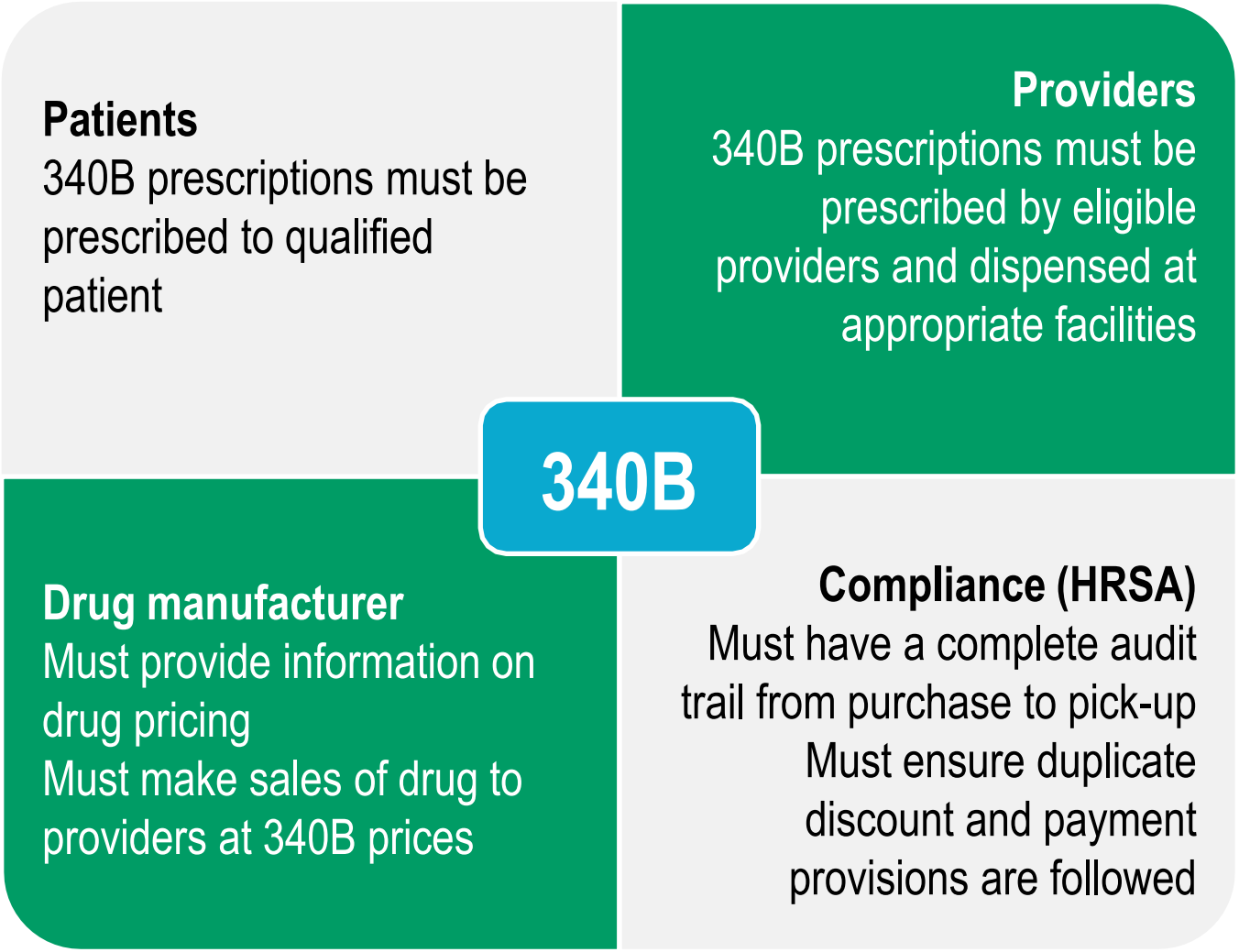


Source: 2011 AHIA Annual Conference www.ahia.org

The most significant changes to the program came with ACA

- The Patient Protection and Affordable Care Act impacted all 340B stakeholders because:
  - Increased the number of entities eligible to participate as 340B Covered Entities
  - Excluded use of “orphan drugs” under 340B by newly-eligible entities
  - Required all new 340B hospitals to be publicly owned or private nonprofit contracting with state or local government to provide indigent care
  - Increased Medicaid rebate percentages
  - Excluded 340B to inpatient stays (i.e., limited it to just outpatient drugs)
  - Added new program integrity provisions
  - **AND MORE**

340B Program Stakeholders



340B Eligible Patients

- It is illegal for covered entities to sell medications purchased under the 340B Program to persons who are not considered “patients” of the covered entity.
- Definition of “patient”:
  - **HRSA Final Notice (61 FR 207, October 24, 1996)**
  - An individual is a “patient” of a covered entity only if three specific criteria are met:
    1. Patient relationship (“eligible patient”)
    2. Provider relationship (“eligible provider”)
    3. Qualified health care service/range of services

340B Eligible Patients

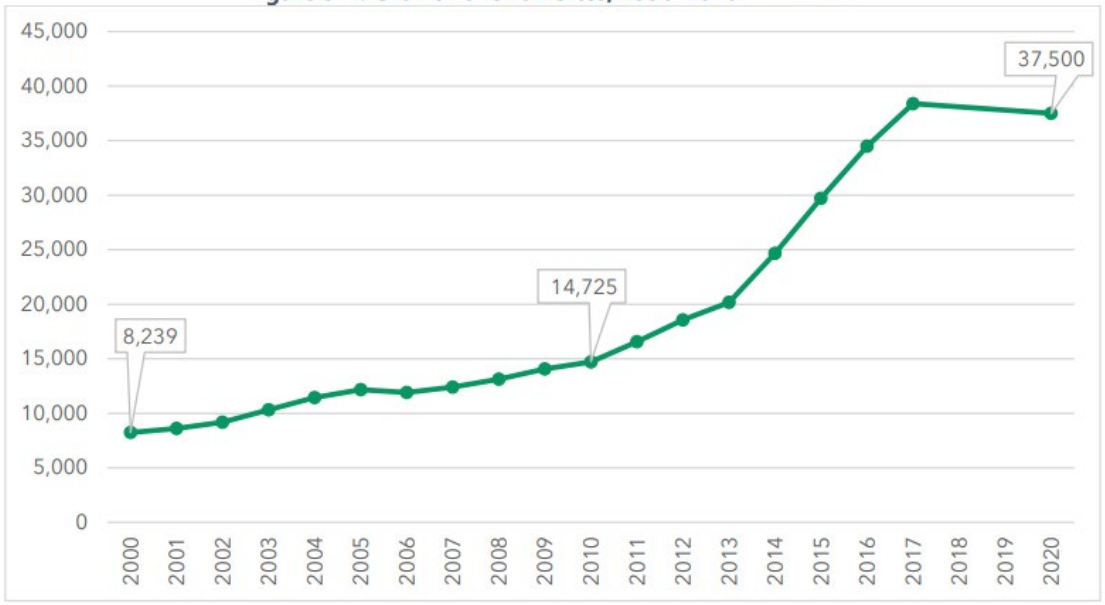
- The covered entity must document in the individual's health care records the health care service provided and the drugs prescribed or used. The covered entity must maintain "**control, ownership, maintenance, and possession**" of the patient's health care record.
- Health care must be provided by the covered entity through providers **who have an employment or contractual relationship** with the covered entity.
- Health care services need to be **beyond simply getting prescriptions**

What does a 340B Patient Look Like?

Eligible Providers

Since the passage of the 340B program, the number of providers eligible to acquire drugs at 340B prices (i.e., Covered Entities) has increased.

Figure 5-1: Growth of 340B Sites, 1998-2020 [18] [19] [20] [21] [22]



Source: 3 Axis Advisors, The 340B Rebate Model

Eligible Providers (continued)

- The following types of healthcare providers may qualify as Covered Entities (n= 16):

Hospitals

- Children's Hospitals
- Critical Access Hospitals
- Disproportionate Share Hospitals
- Free Standing Cancer Hospitals
- Rural Referral Centers
- Sole Community Hospitals

Health Centers

- Federally Qualified Health Centers
- Federally Qualified Health Center Look-Alikes
- Native Hawaiian Health Centers
- Tribal / Urban Indian Health Centers

Specialized Clinics

- Black Lung Clinics
- Comprehensive Hemophilia Diagnostic Treatment Centers
- Title X Family Planning Clinics
- Sexually Transmitted Disease Clinics
- Tuberculosis Clinics

Ryan White HIV/AIDS Program Grantees

- Ryan White HIV/AIDS Program Grantees

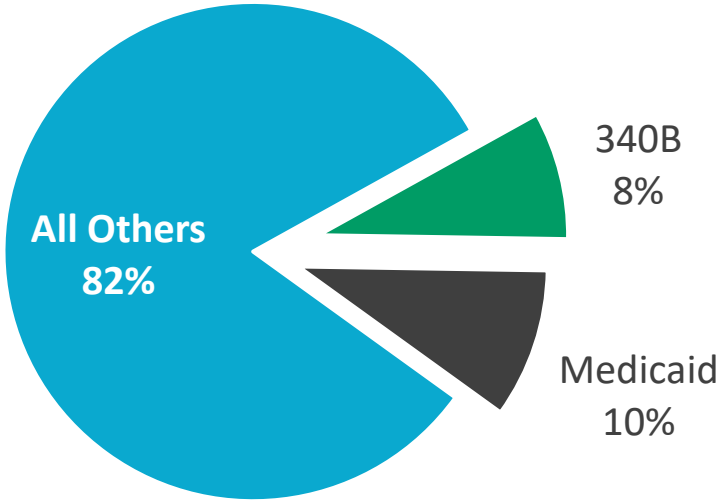
Eligible Providers (continued)

- Benefits to the covered entity include:
  - Savings on outpatient drug purchases
    - Estimates by government agency responsible for 340B oversight states that participation in the program results in savings of approximately 20% to 50%
  - Provider vulnerable patients improved access to healthcare

What is the approximate size of the 340B program?

- At least 45% of all Medicare acute care hospitals qualify for the 340B program (as of 2014)
- The overall size is comparable to that of Medicaid (even though less than ½ of all providers are 340B eligible

Estimated Total Net U.S. Drug Sales, 2019



Source: Drug Channels, New HRSA Data: 340B Program Reached $29.9 Billion in 2019; Now Over 8% of Drug Sales

Contract Pharmacy Arrangements

- Most 340B covered entities purchase and dispense 340B drugs through their own in-house outpatient pharmacies. However, many contract pharmacy(ies) to expand the reach of their program.
- In 1996, HRSA issued guidelines allowing covered entities to contract with a pharmacy to provide services to the covered entity's patients (61 FR 165, August 23, 1996).
- In 2007, HRSA issued a contract pharmacy services Notice outlining proposed guidelines regarding utilization of contract pharmacy arrangements (72 FR 8, January 12, 2007).
- In 2010, HRSA published a Final Notice of guidelines related to the utilization of contract pharmacy services (75 FR 43, March 5, 2010). The Final Notice sets forth the government's permission for covered entities to use multiple pharmacy arrangements.

How the 340B Contract Pharmacy Arrangement Works

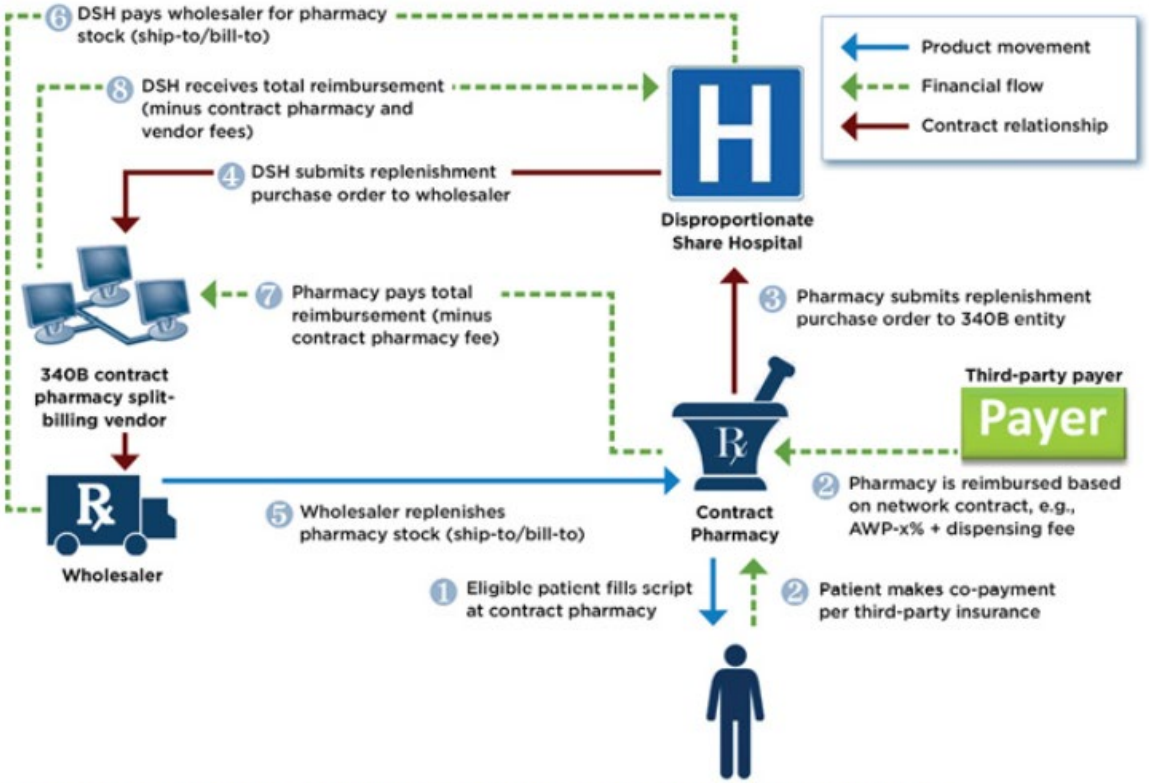


Figure. Flow of funds and product for 340B contract pharmacy network

AWP, average wholesale price; **DSH**, disproportionate share hospital

Source: Fein AJ. *2012-13 Economic Report on Retail, Mail and Specialty Pharmacies*. Drug Channels Institute; January 2013.

Drug Manufacturers

- Drug manufacturers voluntarily participate in the 340B program
  - Participation in the 340B program is required for their products to be eligible for coverage under the Medicaid program (“Voluntold”)

- Because the Medicaid rebate amount is the same as the 340B price, drug manufacturers are protected from duplicate discounts
  - If a claim is purchased by a provider at 340B, they do not also pay a Medicaid drug rebate on the claim
  - Obligation to avoid double-dipping on the discount rest with both **the state Medicaid program and the covered entity**

- Supply necessary data to support the Medicaid Drug Rebate Program and 340B

Health Resources and Services Administration (HRSA) – Office of Pharmacy Affairs (OPA)

- Federal agency responsible for oversight of the 340B program
- They oversee compliance to program rules and control Covered Entity enrollment (i.e., access)
- Publish the Medicaid Exclusion Files (MEF) – a list of Covered Entities and their contract pharmacies to help state Medicaid programs avoid duplicate discounts

Money From Sick People Part II: 340B

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Humalog Money From Sick People (340B Experience)								
Deductible Phase					Coverage Phase			
	[A]	[B]	[C]	[D]	[E]	[F]	[G]	[H]
Month	ACQUISITION COST	PATIENT COST	HEALTH PLAN COST	Covered Entity Revenue ([B]+[C])	Covered Entity Margin ([D] - [A])	Rebate	Net Health Plan Cost ([C]-[F])	Overall Net Drug Costs ([A]-[F])
JAN	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
FEB	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
MAR	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
APR	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
MAY	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
JUN	$0.10	$274.70	$0.00	$274.70	$274.60	$0.00	$0.00	$0.10
JUL	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
AUG	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
SEP	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
OCT	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
NOV	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
DEC	$0.10	$25.72	$248.98	$274.70	$274.60	$0.00	$248.98	$0.10
Total	**$1.20**	**$1,802.52**	**$1,493.88**	**$3,296.40**	**$3,295.20**	**$0.00**	**$1,493.88**	**$1.20**

https://www.46brooklyn.com/news/030624-money-from-sick-people-part-ii-the-340b-bounty-hunt-fmve