Arbitrage in the drug supply chain: Spread pricing and beyond

Antonio Ciaccia

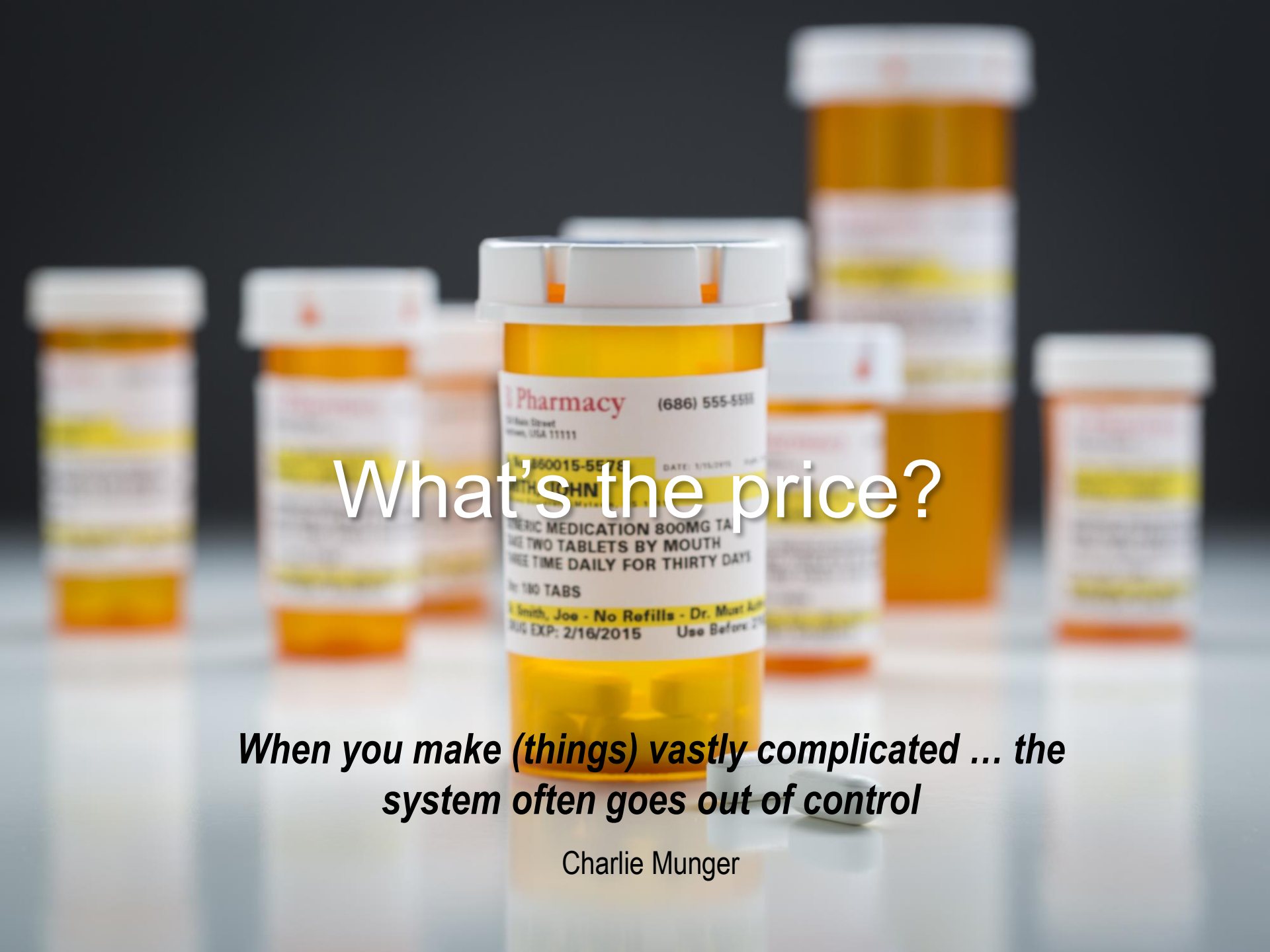
President and Co-founder, 3 Axis Advisors

Ohio Joint Medicaid Oversight Committee
October 2021

3ΔXIS Advisors

My road

- After years of government affairs work at the Ohio Pharmacists Association, a few anecdotal reimbursement complaints from pharmacies grew into a loud chorus that pushed me into the bowels of the prescription drug supply chain.
- Severe pharmacy margin pressure in Ohio Medicaid managed care during a period of massive state drug spending growth drove me to search for where the money was going.
- 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.
- Launched 46brooklyn Research in 2018 to publish and translate publicly-available drug pricing data for free.
- Launched 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, government agencies, provider groups, research firms, technology companies, law firms, investment analysts, employers, benefit consultants, and private foundations.



What's the price?

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

Charlie Munger

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

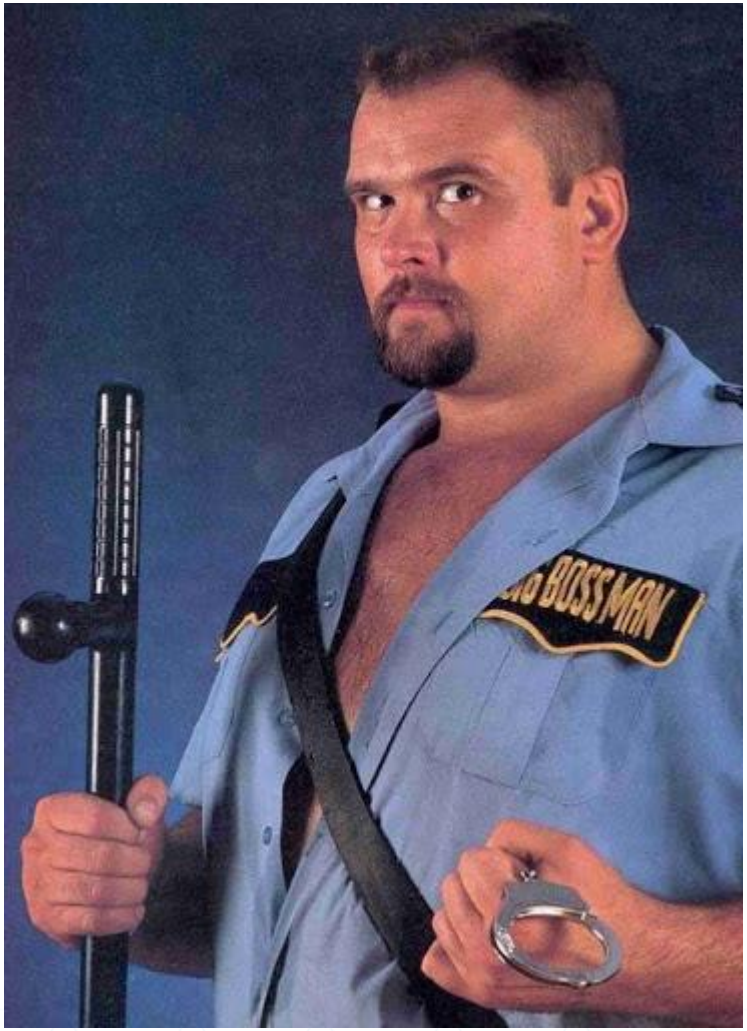
=

Prone to manipulation

Enter pharmacy benefit managers (PBMs)

Decades ago, as more medicines entered the market and prescription drug costs grew, plan sponsors sought ways to holding spending accountable.

PBMs were brought in to act as friction against drugmakers, wholesalers, pharmacies, and other members of the drug supply chain.



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The evolving role of PBMs

As PBMs worked to control one end of the drug supply chain, they began to develop business interests in the very marketplace that they were hired to control.

Today, PBMs advertise that they are the only entity working to control prescription drug costs, but data shows that **PBM profits generated off prescription drug transactions heavily distorts their incentives to control drug spending for their clients.**

What's been happening in Ohio?

3AXIS Advisors

Pharmacists cry foul

- Pharmacies and PBMs are Hatfields and McCoys
  - Pharmacies want to be paid more; PBMs want to pay less
- PBM consolidation creates greater leverage to pay pharmacies less
  - Big Three PBMs have 75%-85% combined industry market share
    - These percentages do not account for smaller PBMs utilizing Big Three tools/services
- PBM ownership of mail order, specialty, and retail pharmacies inserts conflicts of interest in PBMs' overall pharmacy reimbursement processes
- Pharmacy grievances grow to include:
  - Predatory audit practices, gag clauses, clawbacks, formulary exclusions, underwater claims, price discrimination, patient steering, mandatory mail order, processing fees, accreditation fees, DIR fees, ambiguous terms, etc.
- Summer 2016: PBM CVS/Caremark provides services for 4 of 5 Ohio Medicaid MCOs
  - Pharmacies report massive reductions in Medicaid MCO reimbursements
    - 60-80% reduction in margins on Medicaid MCO claims
- Ohio Department of Medicaid begins looking into the issue
- Despite massive pharmacy cuts, ODM paying more for prescription drugs than ever before
- As ODM investigates, pharmacies shutter across the state

Pharmacists cry foul

Blake's Manchester pharmacy closing

August 7, 2018 Peoples Defender News, Top Stories 0

Medicaid reimbursements, mail-order prescriptions, big box store competition hammers small town pharmacies, forcing closures across the state –

By Patricia Beech –

Blake's Pharmacy in Manchester has recently joined the ranks of small Ohio pharmacies being forced into premature closure by the state's Medicaid reimbursement policy.
Bob Blake, the founder of Blake's Pharmacy in West Union, Peebles, and Manchester, says Medicaid isn't paying small pharmacies enough to cover the cost of drugs used t… customer prescripti… 98%.
"They've just made i… to keep going when… are the main source…

Cincinnati.com | The…

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Pohlman's closing marks end of an era in Goshen

Cindy Schroeder cschroeder@enquirer.com
Published 12:25 p.m. ET Oct. 22, 2015

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GOSHEN TOWNSHIP – Pohlman Pharmacy, one of Goshe… businesses, closed its doors for the last time Oct. 21 after m… business.

For generations of loyal customers, the closing of the little … reminiscent of the 1950s marked the end of an era. Throug… chains are rapidly replacing independent drugstores in sm… communities.

"Independent pharmacies are a dying breed," said Pohlma… Percy Guevremont of Goshen. "Here, customers are a nam…

With Pohlman's closure, pharmacist Joseph McAuliffe, wh… 33 years ago, says he's hoping to slow down a little from th… worked the past 18 to 20 years. At 71, McAuliffe, a widowe… pharmacist at Pohlman's for the past couple decades, plans… more time with his seven grandchildren.

Sections The Washington Post Democracy Dies in Darkness Get one year for $40 Sign in

The Health 202: Here's why rural independent pharmacies are closing their doors

By Paulina Firozi
Reporter

August 23, 2018

THE PROGNOSIS

with Colby Itkowitz

INSIDER Hello, Antonio!

What CVS is doing to mom-and-pop pharmacies in the US will make your blood boil

Linette Lopez Mar 30, 2018, 4:59 AM

Small pharmacies suffering due to low insurance reimbursements

BUSINESS, NEWS, TOP STORIES

By Danae King - info@limanews.com

Roy Klass, pharmacist and owner of Tucker's Pharmacy in Ottawa, fills a prescription for Dawn Hunt and son, Jordan, 1, of Ottawa.

OTTAWA — Though customers may not notice a difference, many pharmacies are forced to use a "flawed system" to cover the cost of the prescriptions they offer.

Since most customers pay through insurance, pharmacies don't determine what they pay for a prescription or what they can sell it for.

And insurance companies aren't listening to the rules when it comes to reimbursing pharmacies. Instead, many are circumventing the system or paying less than what the pharmacy paid for the

News Weather Sports

CVS buys six ProMedica pharmacy locations, plans to close five

SPECTRUM NEWS1 46°

COLUMBUS > | OCTOBER 26, 2021 LOG

Dayton Pharmacy Closes After Five Decades

BY CHUCK RINGWALT | COLUMBUS
PUBLISHED 10:30 AM ET DEC. 19, 2018

After serving the Vandalia community for close to 50 years, Ken's Pharmacy shut its doors Tuesday.

"It's still the American dream," Ken Farst said as he reminisced of when he bought the Dayton business in 1969. It was originally named Owl's Drugs before Farst changed it.

Enter JMOC

- After two years of significant erosion of pharmacy margins within the Ohio Medicaid managed care program and few answers from state officials, in January 2018, the Ohio Joint Medicaid Oversight Committee's actuarial firm, Optumas, reported that prescription drug spending had increased nearly 20% over a two-year stretch in the Ohio Medicaid managed care program.
- Because of what we knew about what was happening in pharmacy, and because we knew that generic drug prices were tanking (we started actually tracking market pricing trends using public CMS data), it didn't make sense that state costs could be increasing so much.
- Later, then-state Representative Mark Romanchuk demanded to see a breakdown of the spend, where we learned that **despite the lower payouts to pharmacies and the deflating generic market, Ohio's generic drug unit costs increased 1.8% in SFY 2017**.

Summary of Non-MyCare Pharmacy Experience

COA	Rx Split	Component	SFY 2015	SFY 2016	SFY 2017	SFY 2016/SFY 2015	SFY 2017/SFY 2016
Total - Non MyCare	Generic	PMPM	$25	$28	$29	9.7%	4.1%
Total - Non MyCare	Generic	Util./1,000	13,753	15,118	15,460	9.9%	2.3%
Total - Non MyCare	Generic	Unit Cost	$22	$22	$23	-0.2%	1.8%
Total - Non MyCare	Brand	PMPM	$34	$36	$38	6.7%	6.2%
Total - Non MyCare	Brand	Util./1,000	1,922	2,029	2,013	5.6%	-0.8%
Total - Non MyCare	Brand	Unit Cost	$210	$212	$227	1.1%	7.0%
Total - Non MyCare	Specialty	PMPM	$21	$28	$31	33.6%	12.4%
Total - Non MyCare	Specialty	Util./1,000	93	103	116	10.3%	13.2%
Total - Non MyCare	Specialty	Unit Cost	$2,701	$3,272	$3,249	21.1%	-0.7%
Total - Non MyCare	**All Rx**	**PMPM**	**$80**	**$92**	**$98**	**14.7%**	**7.4%**
Total - Non MyCare	**All Rx**	**Util./1,000**	**15,768**	**17,250**	**17,590**	**9.4%**	**2.0%**
Total - Non MyCare	**All Rx**	**Unit Cost**	**$61**	**$64**	**$67**	**4.8%**	**5.4%**

Enter the Columbus Dispatch

- After two years of waiting on better answers from state officials, and simultaneously studying drug pricing trends from CMS, decision was made to take the issue to the public
- First Columbus Dispatch “Side Effects” series piece released on March 12, 2018, highlighting pharmacy complaints and growing suspicions that Ohio Medicaid MCO PBMs were paying pharmacies low, billing the state different high rates, and pocketing the differences.
- PBMs refused to confess to the “spread pricing practice”
- Ohio legislative leaders and then-state auditor Dave Yost call for investigation and audit
- April 2018: ODM announces their own plans to audit on the heels of Yost announcement

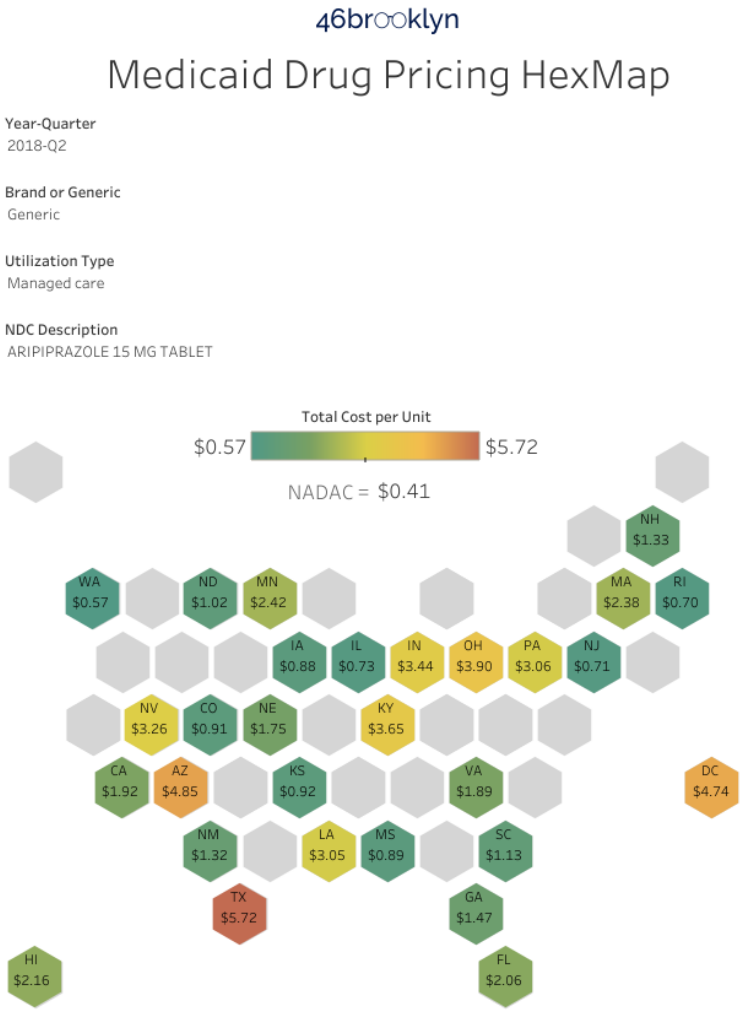
The Columbus Dispatch

CVS accused of using Medicaid rolls in Ohio to push out competition

Source: https://www.dispatch.com/news/20180312/cvs-accused-of-using-medicaid-rolls-in-ohio-to-push-out-competition

Buried drug pricing treasure found

- In the midst of all the chaos, CMS data showed massive disconnects in Medicaid drug prices vs actual drug costs and big differences in Medicaid drug prices from state to state
  - Aripiprazole 15 mg tablet in Q2 2018
    - Avg pharmacy acq cost: $0.41
    - Washington: $0.57
    - Illinois: $0.73
    - Pennsylvania: $3.06
    - Indiana: $3.44
    - Ohio: $3.90

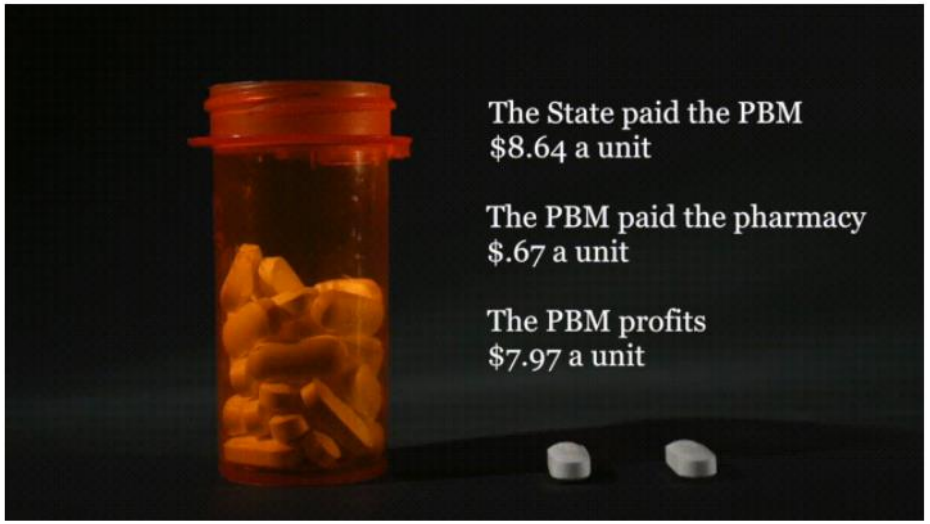


Source: https://www.46brooklyn.com/medicaid-drug-pricing-hexmap

Buried drug pricing treasure found

- Columbus Dispatch reporters traveled the state of Ohio picking up data files from pharmacies to see what they were actually being paid in Ohio's Medicaid managed care program. They compared that data to what the state was being charged (according to CMS), and released a first-of-its-kind blockbuster spread pricing analysis on June 17, 2018.
  - Dispatch analysis of data from 40 Ohio pharmacies shows about a 12% spread markup on Medicaid prescription drugs

The Columbus Dispatch



Photos by Joshua A. Bickel, Columbus Dispatch

'Cost-cutting' middlemen reap millions via drug pricing, data show

BY LUCAS SULLIVAN AND CATHERINE CANDISKY | THE COLUMBUS DISPATCH

A middleman company hired to keep the state's prescription-drug prices in check for Ohioans on Medicaid is receiving millions in taxpayer money meant to provide medications for the poor and disabled.

Records of transactions provided to The Dispatch from 40 pharmacies across Ohio show that CVS Caremark routinely billed the state for drugs at a far higher amount than it paid pharmacies to fill the prescriptions. The state-sanctioned practice, known as "spread pricing," allows the middlemen, called pharmacy benefit managers, to keep the difference on medications used to treat health concerns ranging from mental illness to osteoporosis.

Source: https://stories.usatodaynetwork.com/sideeffects/cost-cutting-middlemen-reap-millions-via-drug-pricing-data-show/site/dispatch.com/

Buried drug pricing treasure found

- The Dispatch's work to expose "spread pricing" set off a huge chain of events.
- Within just a week of the Dispatch's spread story, ODM released a summary of their spread pricing analysis (conducted by HealthPlan Data Solutions), which showed PBMs grabbing **$223.7 million** in hidden pricing spreads within the Medicaid managed care program from Q2 2017 to Q1 2018, accounting for 8.8% of overall (pre-rebate) spending on prescription drugs.
- Eventual release of a more comprehensive (yet still redacted report) revealed additional $20 million in spreads captured under Centene plan, bringing total program haul to approximately **$244 million.**
- ODM-commissioned report said **PBM spreads were 3-6 times the going rate** for similar PBM services

Table: Spread in the MCP Claims Data Matched to ODM Encounter Data*

Managed Care Plan	Rx Count	Total Price Paid to Pharmacy	Total Price Billed to MCP by PBM	Spread Between Total Price Billed to MCP by PBM and Total Price Paid to Pharmacy+	Percent Spread of Total Price Billed to MCP by PBM
Buckeye Community Health Plan	4,570,618	$268,014,861.22	$300,953,989.46	$32,939,128.24	10.94%
Caresource	22,277,984	$1,289,174,706.61	$1,403,459,575.04	$114,284,868.43	8.14%
Molina Healthcare of Ohio	4,889,609	$286,187,123.03	$313,460,929.73	$27,273,806.70	8.70%
Paramount Advantage	3,468,464	$227,008,099.53	$249,840,344.87	$22,832,245.34	9.14%
United Healthcare Community Plan	4,061,308	$253,972,561.75	$280,353,588.41	$26,381,026.66	9.41%
Totals	**39,267,983**	**$2,324,357,352.14**	**$2,548,068,427.51**	**$223,711,075.37**	**8.78%**
Totals: CVS Administered Plans	35,206,675	$2,070,384,790.39	$2,267,714,839.10	$197,330,048.71	8.70%
Totals: OptumRx Administered Plans	4,061,308	$253,972,561.75	$280,353,588.41	$26,381,026.66	9.41%

*Results based on 98.88% of MCP claims matched to ODM Encounter Data
+Calculated spread does not equal PBM profitability

Source: https://issuu.com/thecolumbusdispatch/docs/pbm_hds_final_report_executive_summ

Buried drug pricing treasure found

- August 2018: Auditor Yost releases results of his audit, validating many of the findings and revealing new nuances to PBM spreads and pricing practices
  - Wide disparities in spreads from county to county
  - Spreads mostly harvested on generic drugs
  - Of the total state spending on generic drugs, 31.4% went to PBMs via spread pricing

Average Spread by Quarter and by Drug Type from April 1, 2017 through March 31, 2018

	Average Spread			
Quarter	Brand	Generic	Specialty	Total Average Spread for All Claims
4/1/2017-6/30/2017	$2.11	$5.39	$30.12	$5.09
7/1/2017-9/30/2017	$2.03	$5.71	$31.91	$5.35
10/1/2017-12/31/2017	$1.57	$7.10	$31.24	$6.47
1/1/2018-3/31/2018	$1.62	$6.48	$46.04	$6.01
Yearly Total	**$1.85**	**$6.14**	**$33.49**	**$5.71**
	Brand	**Generic**	**Specialty**	**Totals**
Number of Prescriptions	**5,268,144**	**33,913,042**	**197,408**	**39,378,594**
Percentage of Claims	**13.4%**	**86.1%**	**0.50%**	**100%**
Amount Paid by Plans (millions)	**$1,246.1**	**$662.7**	**$617.6**	**$2,526.5**
Total Spread (millions)	**$9.8**	**$208.4**	**$6.6**	**$224.8**
Spread Relative to Total Paid Amount by Drug Type	**0.8%**	**31.4%**	**1.1%**	**8.9%**

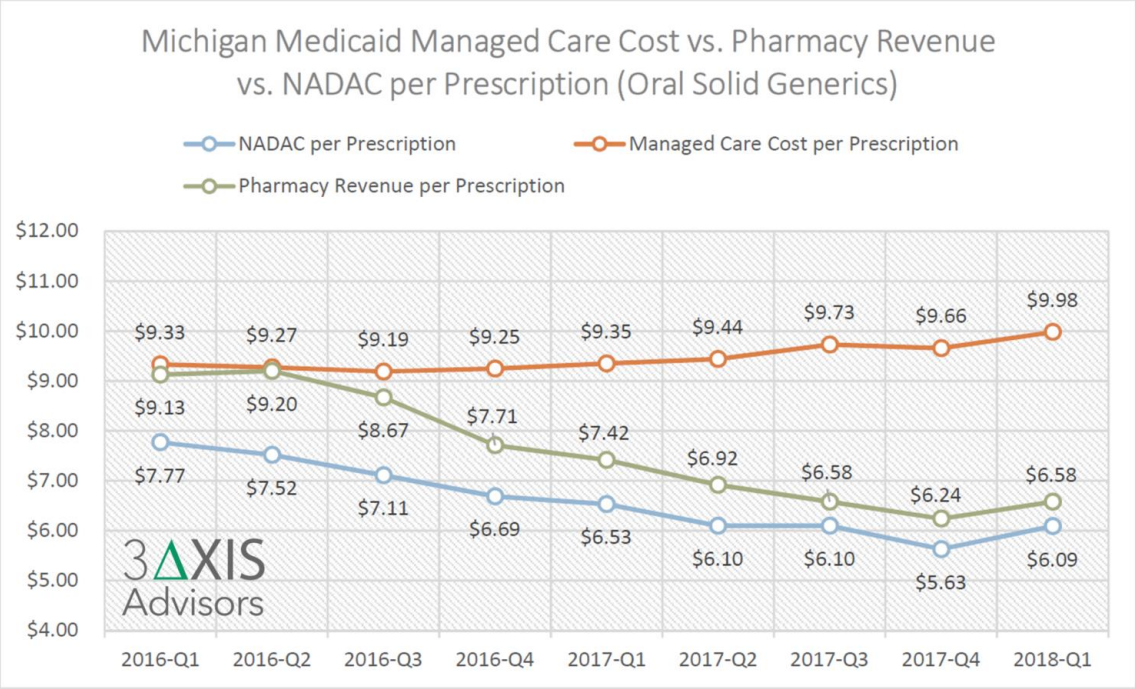
Source: https://ohioauditor.gov/auditsearch/Reports/2018/Medicaid_Pharmacy_Services_2018_Franklin.pdf

Ohio isn't alone

3AA analysis of Medicaid managed care pharmacy claims in Michigan showed:

- Drug costs going down
- Pharmacy margins going down
- PBM spreads going up
- State costs going up

Spread pricing allows pharmacy-affiliated PBMs to shift traditional pharmacy margins to the PBM side of their enterprise.



https://www.3axisadvisors.com/projects/2019/4/28/analysis-of-pbm-spread-pricing-in-michigan-medicaid-managed-care

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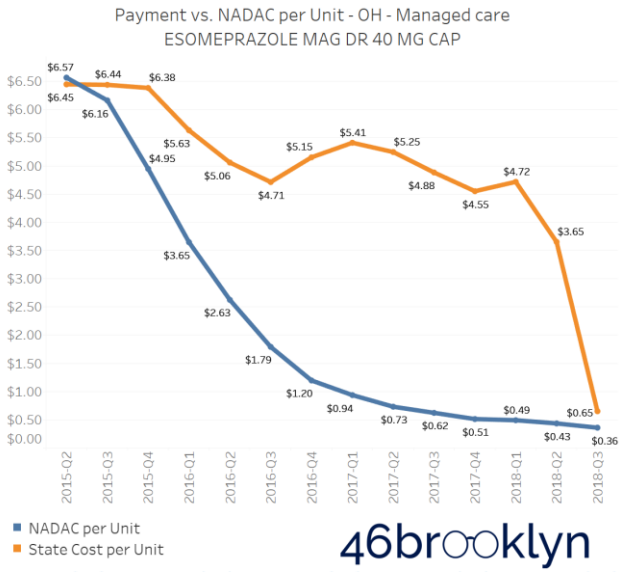
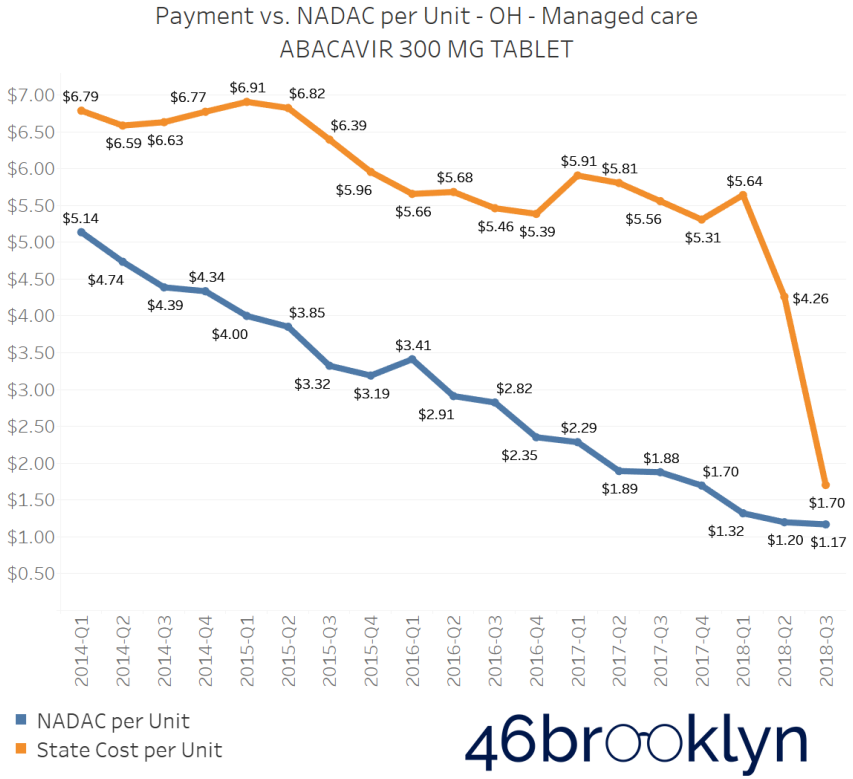
Pulling out the spread

- Beginning in Q3 2018, Ohio Medicaid officials required MCOs and PBMs to remove the spread from their pharmacy claims reporting and instead disclose exactly what the pharmacies were paid.
- CMS data comparing pharmacy acquisition costs to what MCOs reported back as the drug cost showed massive changes to state cost exposure





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Source: https://static1.squarespace.com/static/5b3671307e3c3affbef7980b/t/5cb7cd7b8165f542e5d95798/1555549566416/MCP+CEOs+ltr+4-4-18.pdf

Source: https://www.46brooklyn.com/research/2019/4/21/new-pricing-data-reveals-where-pbms-and-pharmacies-make-their-money

Pulling out the spread

- But not all drugs cratered in their price.
- Now that CMS data showed exactly what pharmacies were paid, it's worth noting which drugs continued to be "overcharged" to the state or looked at differently, overpaid to pharmacies

Drug Name, Strength, Dosage Form	Group/Class	2018 PA required*	2019 Specialty*	Markup per Unit	Markup per Script
IMATINIB MESYLATE 400 MG TAB	Oral Chemotherapy	Y	Y	$188.64	$5,290
CAPECITABINE 500 MG TABLET	Oral Chemotherapy	Y	Y	$14.14	$1,243
ATAZANAVIR SULFATE 300 MG CAP	Antiviral (HIV treatment)	N	N	$10.69	$320
VALGANCICLOVIR 450 MG TABLET	Antiviral (HIV treatment)	N	N	$8.65	$497
SILDENAFIL 20 MG TABLET	Cardiovascular Agent	Y	Y	$5.37	$471
TENOFOVIR DISOPROXIL FUMARATE 300 MG TABLET	Antiviral (HIV treatment)	N	N	$5.22	$153
OMEPRAZOLE DR 20 MG TABLET	Proton Pump Inhibitor (OTC)	N	N	$4.05	$167
BUPRENORPHINE-NALOXONE 8-2 MG SL TABLET	Opiod Treatment	N	N	$3.65	$47

* According to 2018 and 2019 CareSource Ohio Medicaid preferred drug lists

46brooklyn

- With many of the drugs that were being overpaid to Ohio pharmacies in Q3-Q4 2018, many were specialty medications that were traditionally restricted or steered to MCO or PBM owned pharmacies

Source: https://www.46brooklyn.com/research/2019/4/21/new-pricing-data-reveals-where-pbms-and-pharmacies-make-their-money

Rise of the effective rates

- New phenomenon emerges where PBMs "overpay" pharmacies relative to their contract terms, building up on excess that can be clawed back at a later date
- July 2019: Dispatch exposes these "effective rate clawbacks" as a new way that PBMs could arbitrage prescription drug claims. PBMs deny engaging in clawbacks; pharmacists warn each other that newly found margins are illusory

The Columbus Dispatch

Pharmacy benefit managers poised to grab money they've already paid to Ohio pharmacists

MARTY SCHLADEN AND CCANDISKY@DISPATCH.COM | THE COLUMBUS DISPATCH

July 14, 2019

Struggling Ohio pharmacists have been encouraged in recent months that one of two companies that determine their Medicaid reimbursements has been paying a little better for prescription drugs since the issue blew up last year.

But numerous pharmacists — and the drug-buying groups that represent them — fear that middlemen OptumRx and CVS Caremark will both take a big chunk of their money back in the coming months.

The issue of Medicaid reimbursements has been hot in Ohio, with community pharmacists saying pharmacy benefit managers such as OptumRx and CVS Caremark are paying so poorly that they're driving them out of business, and in some cases, threatening to deprive needy communities of health care. In fact, Ohio Board of Pharmacy license data show that 400 pharmacies have closed in the Buckeye State since 2013.

Meanwhile, OptumRx and CVS Caremark have been scooping up a big share of drug spending by Ohio's Medicaid program, a state-federal health insurance setup for the poor, blind and disabled. As part of its Side Effects investigation of pharmacy benefit managers, The Dispatch last year prompted a state-funded analysis showing that in a single year OptumRx and CVS charged taxpayers (through managed care organizations that run Medicaid) $244 million more for Medicaid drugs than they paid Ohio pharmacists.

Nate Hux helps a customer with their prescription order at Pickerington Pharmacy in Pickerington for the PBM issue May 10, 2018.[Eric Albrecht/Dispatch]

Source: https://stories.usatodaynetwork.com/sideeffects/pharmacy-benefit-managers-poised-to-grab-money-theyve-already-paid-to-ohio-pharmacists/

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Rise of the effective rates

In Michigan, after spread pricing was eliminated in 2018, pharmacy reimbursements started rising (100%-125% increase under OptumRx and CVS/Caremark).

We later learned from pharmacies that much of the increased payments were clawed back.

In a pass-through pricing model, plan sponsors lose auditing visibility once reimbursement hits the pharmacy.

By overpaying at the point of sale, and clawing back excess payments later, PBMs have shifted spread to post-adjudication and out of sight from plan sponsors.

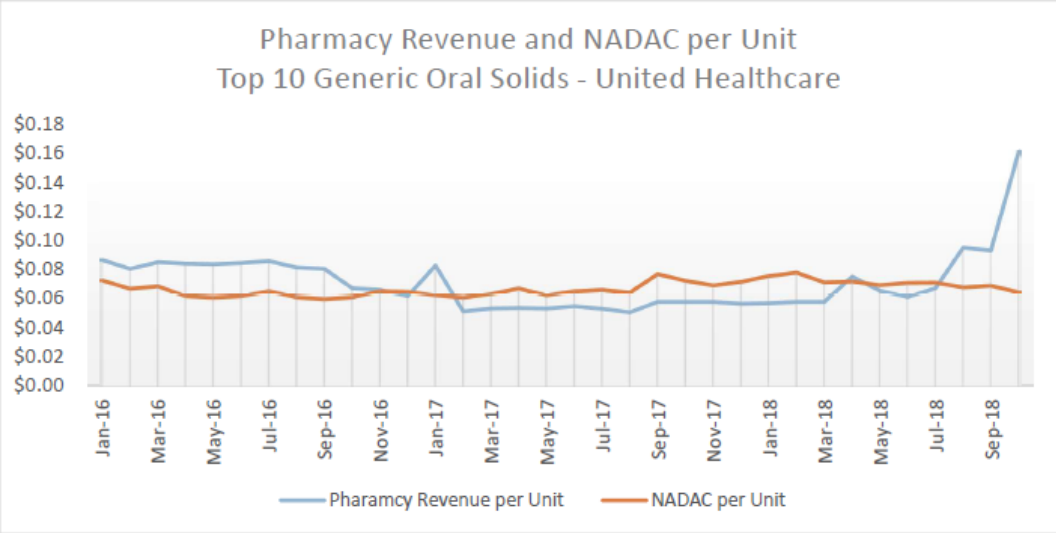

Table 8 - OptumRx and CVS/Caremark Rate Changes, July 2018 to October 2018

	OptumRx	CVS/Caremark
Total generic drugs in sample	1,096	989
Number of drugs that experienced a per unit increase in pharmacy revenue between July 2018 to October 2018	992 *(91% of total)*	785 *(79% of total)*
Average % change in per unit drug reimbursement	105%	125%

Reference: https://www.3axisadvisors.com/projects/2019/4/28/analysis-of-pbm-spread-pricing-in-michigan-medicaid-managed-care

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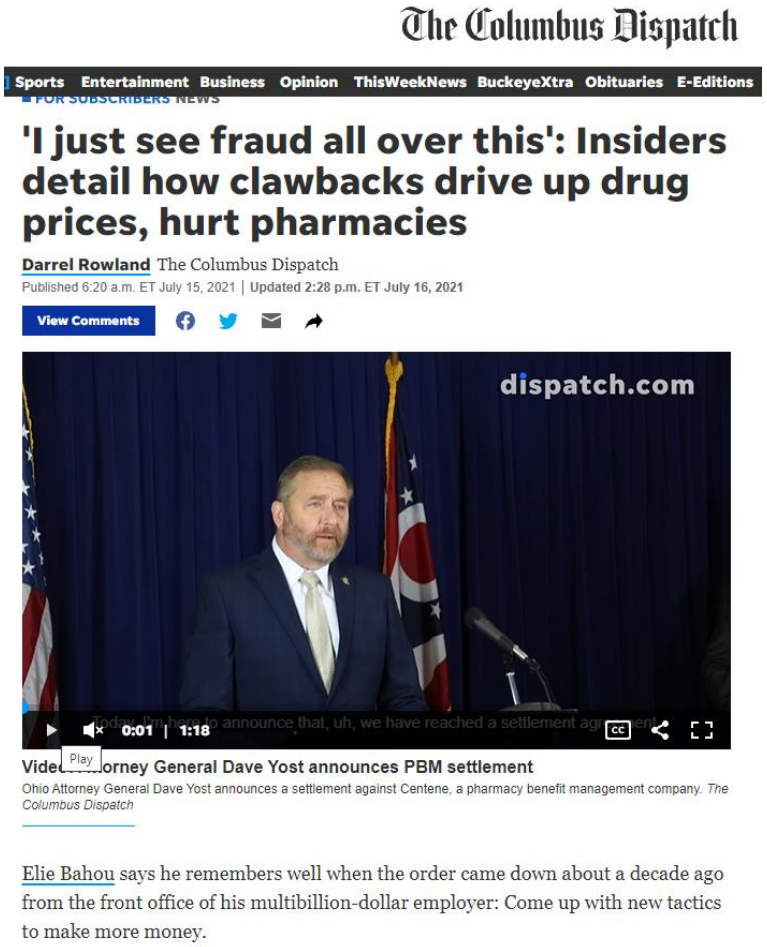
Rise of the effective rates



The Columbus Dispatch

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FOR SUBSCRIBERS NEWS

'I just see fraud all over this': Insiders detail how clawbacks drive up drug prices, hurt pharmacies

Darrel Rowland The Columbus Dispatch

Published 6:20 a.m. ET July 15, 2021 | Updated 2:28 p.m. ET July 16, 2021

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Video: Attorney General Dave Yost announces PBM settlement

Ohio Attorney General Dave Yost announces a settlement against Centene, a pharmacy benefit management company. *The Columbus Dispatch*

Elie Bahou says he remembers well when the order came down about a decade ago from the front office of his multibillion-dollar employer: Come up with new tactics to make more money.

"Elie Bahou says he remembers well when the order came down about a decade ago from the front office of his multibillion-dollar employer: Come up with new tactics to make more money.

'We were sitting around one day looking for ways to generate more revenue and the C suite kept pushing us for more and more,' Bahou recalled. **'That was my employer trying to squeeze more and more and more dollars.'**

Thus was born a concept most have never heard of: effective rate clawbacks.

Reference: https://www.dispatch.com/story/news/2021/07/15/prescription-drug-clawbacks-pharmacy-benefit-managers-ohio/7817914002/

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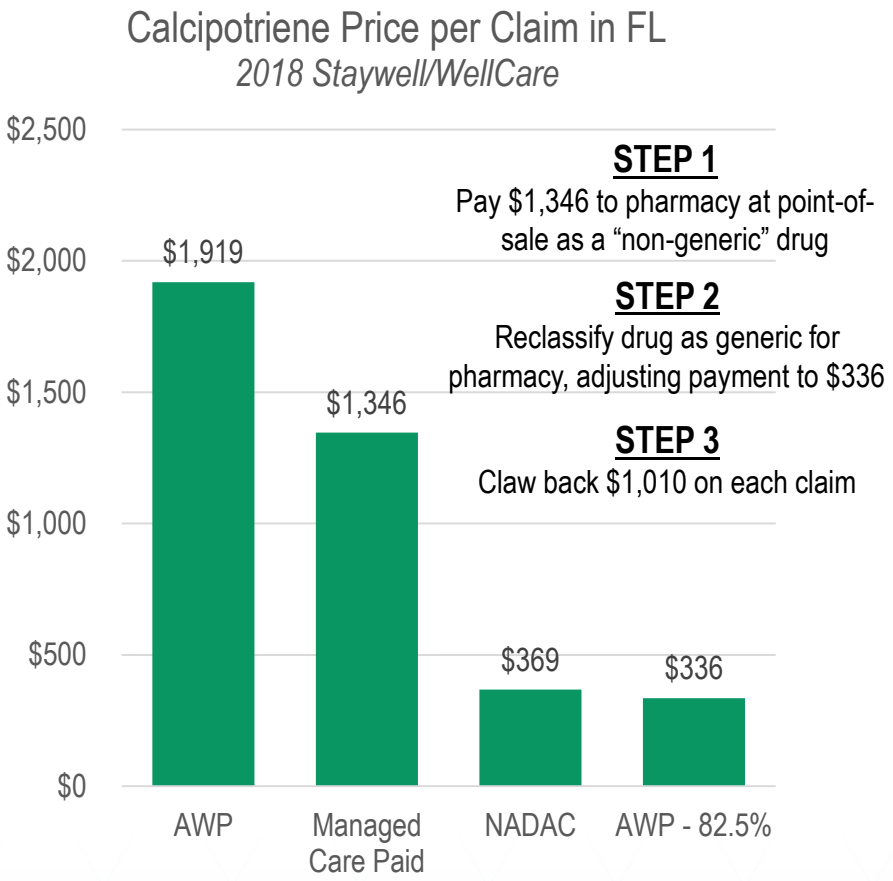
Case study: Calcipotriene Cream in Florida Medicaid

- Calcipotriene cream (generic Dovonex) is synthetic Vitamin D
- Nearly 60% of all calcipotriene spending came from one MCO.
- Analysis of claims data revealed that the MCO's PBM was paying pharmacies more than $1,300 per claim at the point of sale
  - **$977 profit per claim**
- Further investigation revealed that the PBM was then classifying the drug as generic for pharmacies, clawing back the overpayment
  - We estimate the PBM took back over $1,000 per claim on this drug
  - What on paper appeared the most profitable pharmacy claim was actually a key source of PBM profits

PBMs used Florida pharmacies to drive Medicaid volume on an expensive and largely useless drug, and then grabbed the profits from the pharmacies, needlessly increasing Florida's Medicaid costs

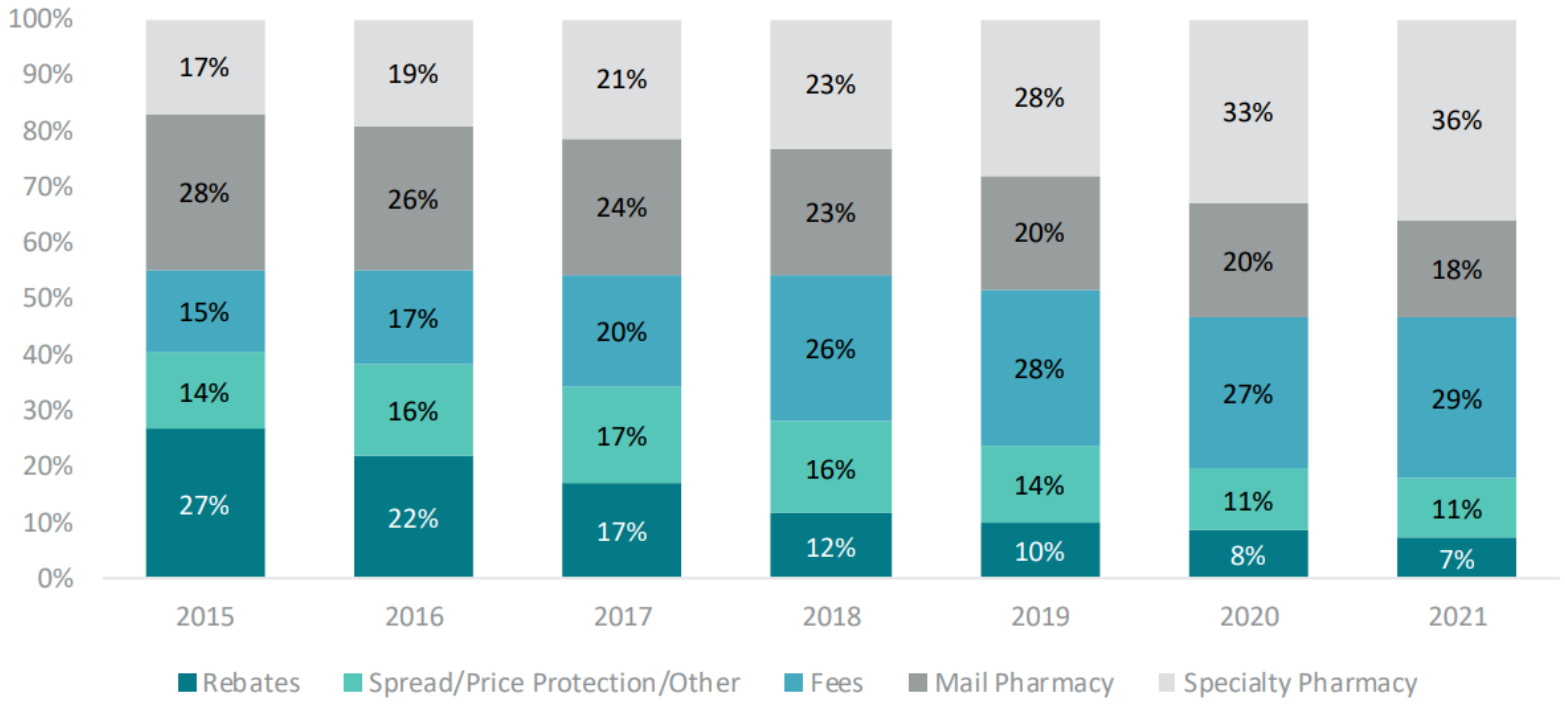


Source: 3 Axis Advisors analysis of Florida's Medicaid Claims Data, CMS data, and MediSpan Price Rx

* See 3 Axis' full Florida Medicaid analysis for more detail:
https://www.3axisadvisors.com/projects/2020/1/29/sunshine-in-the-black-box-of-pharmacy-benefits-management

As “spread” and “rebate” scrutiny grows, PBM focus turns to fees and specialty

Fig. 4: PBM Gross Profit by Profit Pool (CVS, CI/ESI, OptumRx): PBM Profits Have Shifted from Rebates & Spread to Fees & Fullfillment



Source: Nephron Research

Strategies for reining in prescription drug overcharges

- Eliminate conflicts of interest
- De-link supply chain compensation from list prices
- Full transparency – including post-adjudication “true-ups”
- Use objective pricing benchmarks reflective of actual costs rather than subjective, inflated indexes that can be manufactured by supply chain participants
- Create objective definitions for key terms in contracts
- Standard services should have standard payment terms
- Pay for services and value outside of the drug transaction itself
- Full pass-through of all drugmaker price concessions
- Understand full risks and opportunities of vertical integration

Thank you, Ohio.

3AXIS Advisors

46brooklyn

antonio@3axisadvisors.com

Twitter: @A_Ciaccia

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Appendix

3AXIS Advisors

The U.S. prescription drug supply chain is built on “fake prices”

- List prices for prescription drugs are wildly overinflated relative to their actual cost.
- PBMs use those list prices (AWP) as the basis for their pricing guarantees to pharmacies **and** plan sponsors.
- Brand name drugs have high AWPs that are offset by negotiated rebates and discounts that make those net prices much lower.
- Generic drugs have high AWPs (derived from brand drugs) that in no way reflect the actual prices pharmacies pay to acquire those drugs.
- **In both regards, the “actual” prices of both brand and generic drugs are hidden from the plan sponsor and patient.**

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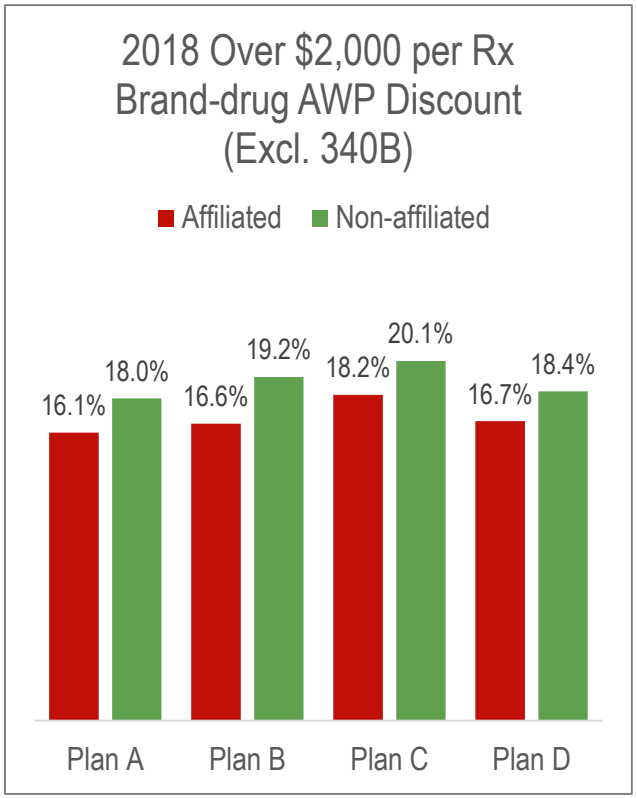
The fallout of fake prices: Brand specialty drug differential pricing

Percentage of Brand Drug Claims Filled by Affiliated Pharmacy
Florida Medicaid Managed Care Claims Data (excl. 340B)

2018-19	Under $2,000 per Rx	Over $2,000 per Rx
Plan A	0.6%	60.2%
Plan B	0.4%	53.0%
Plan C	0.3%	18.2%
Plan D	0.2%	44.9%



In Florida, specialty drugs are not only steered to affiliated pharmacies, but they are also more expensive at affiliated pharmacies!

https://www.3axisadvisors.com/projects/2020/1/29/sunshine-in-the-black-box-of-pharmacy-benefits-management

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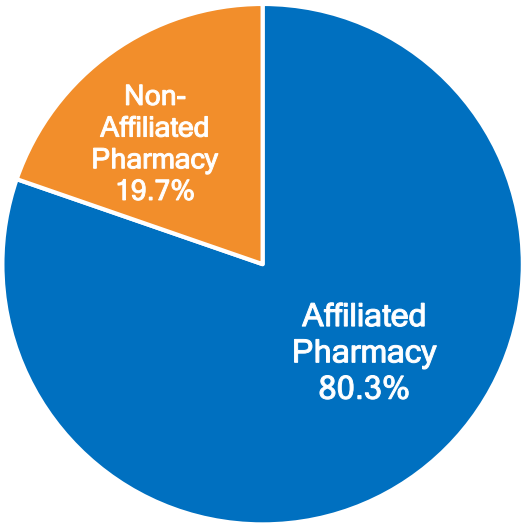
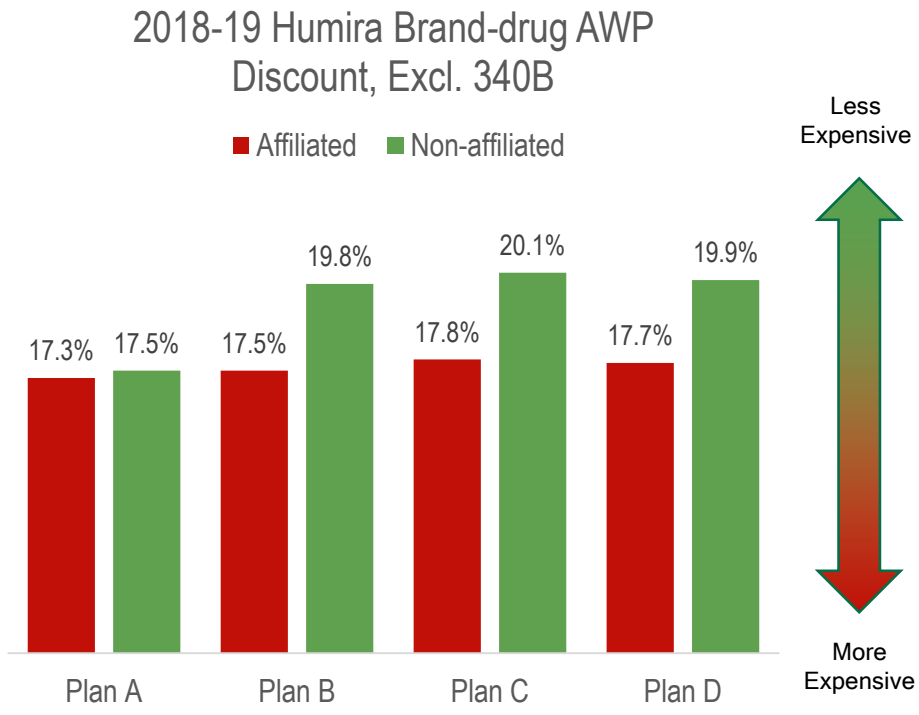
The fallout of fake prices: Humira differential pricing





If Florida Medicaid would have recognized the non-affiliated pharmacy cost on the claims within the affiliated pharmacies, over $1.5 million in savings would have been realized on Humira alone.

https://www.3axisadvisors.com/projects/2020/1/29/sunshine-in-the-black-box-of-pharmacy-benefits-management

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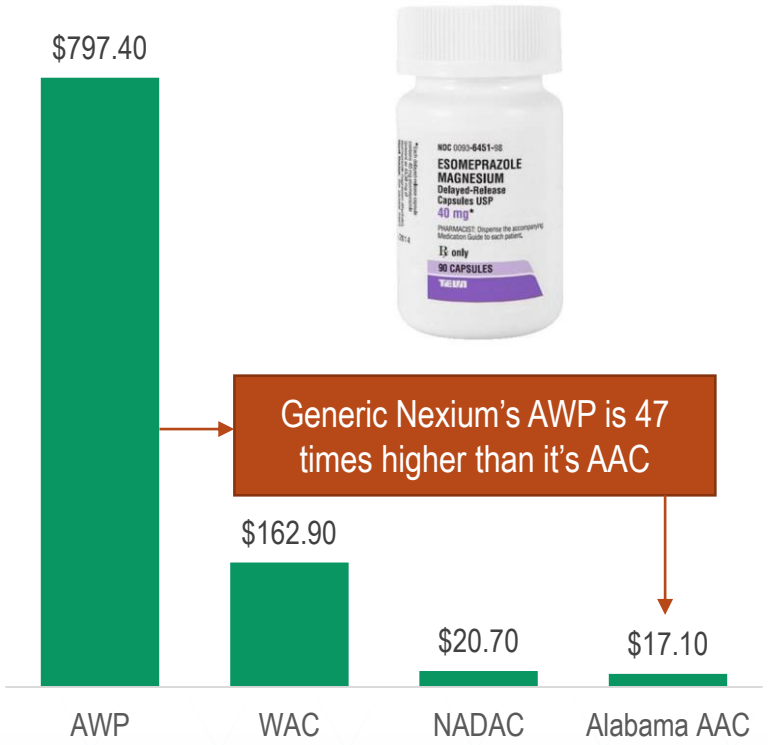
The fallout of fake prices: Generic drugs

- In the U.S., every drug has multiple, different prices
- **Average Wholesale Price** (“AWP”) and **Wholesale Acquisition Cost** (“WAC”) are both unilaterally set by the manufacturer
  - Not dictated by competitive market forces
- National Average Drug Acquisition Cost (“NADAC”) is based on a voluntary national survey of pharmacy invoice costs
  - Is dictated by competitive market forces
- Alabama Actual Acquisition Cost (“AAC”) is based on a mandatory survey of pharmacy invoice costs
  - Is dictated by competitive market forces
  - Ohio Medicaid pursuing their own AAC survey under PBM redesign

Generic Nexium (Esomeprazole 40mg)

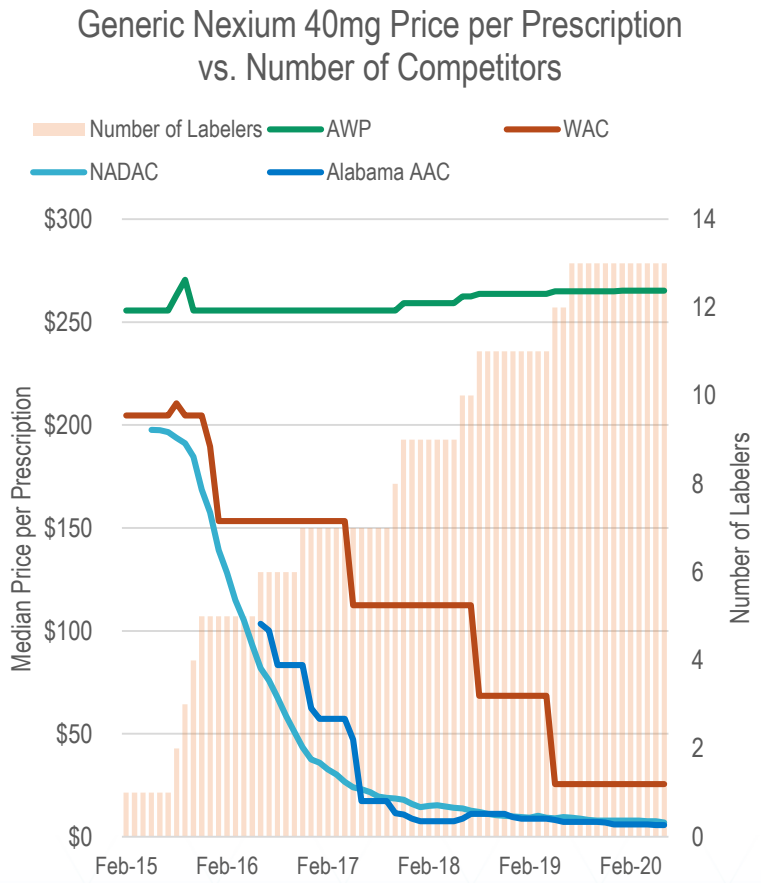
Median price for a 90 count bottle in June 2020



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

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 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 today
- 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

Actions speak louder than words

PBMs PIN THEIR **CLIENTS**' DRUG COSTS TO BOGUS AWP PRICES

Contract Pricing from PBM A

RETAIL	Traditional
NETWORK	National Network
BRAND	AWP -17.75%
GENERIC	Generic Effective Rate 01/01/2019 - 12/31/2019: AWP -81.75% 01/01/2020 - 12/31/2020: AWP -82.25% 01/01/2021 - 12/31/2021: AWP -82.75% (MAC & Non-MAC Combined)
NON-MAC GENERICS	AWP -25.00%
DISPENSING FEE	Brand & Generic $0.50 per Claim

Contract Pricing from PBM B

	Retail 30 Pharmacy Network
Retail Pricing	
Brand Drugs	Lower of U&C or AWP minus 17.0% plus $1.15 dispensing fee
Generic MAC Drugs	Lower of U&C, Contractor MAC plus $1.15 dispensing fee
Non-MAC Generic Drugs	Lower of U&C or AWP minus 17.0% plus $1.15 dispensing fee
Effective Overall Generic Guarantee (ingredient cost)	AWP minus 82.00%

Contract Pricing from PBM C

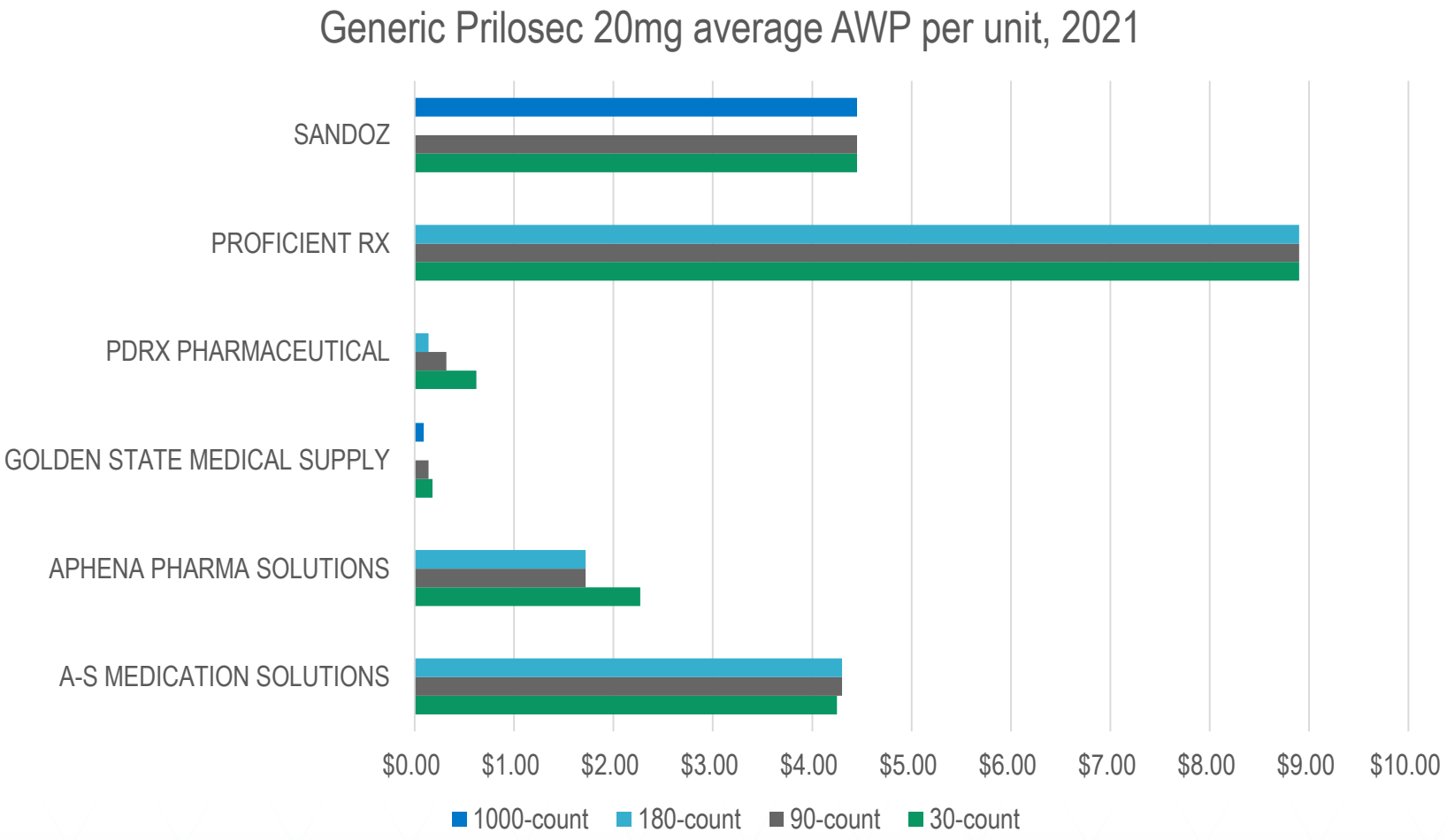
Type of Guarantee	Participating Pharmacy	Mail Service Pharmacy	Claims Excluded
Brand	AWP – 17.50%	AWP – 24.75%	OTC, compounds, Member Submitted Claims, Subrogation Claims, vaccines, Specialty Products, biosimilar products, long term care pharmacy claims and products filled through in-house or 340b pharmacies (if applicable)
Generic	AWP – 81.00%	AWP – 84.50%	OTC, compounds, Member Submitted Claims, Subrogation Claims, vaccines, Specialty Products, biosimilar products, long term care pharmacy claims and products filled through in-house or 340b pharmacies (if applicable)

Contract Pricing from PBM D

1 - 83 Day Supply Component	
Minimum Brand Effective Rate (AWP Discount) Guarantee:	AWP minus 15.25%
Minimum Generic Effective Rate (AWP Discount) Guarantee:	AWP minus 79.00%
Maximum Brand Claim Dispensing Fee Guarantee:	$1.35
Maximum Generic Claim Dispensing Fee Guarantee:	$1.35
84 - 90 Day Supply Component	
Minimum Brand Effective Rate (AWP Discount) Guarantee:	AWP minus 16.77%
Minimum Generic Effective Rate (AWP Discount) Guarantee:	AWP minus 79.00%
Maximum Brand Claim Dispensing Fee Guarantee:	pass-through
Maximum Generic Claim Dispensing Fee Guarantee:	pass-through

Which AWP is the AWP?

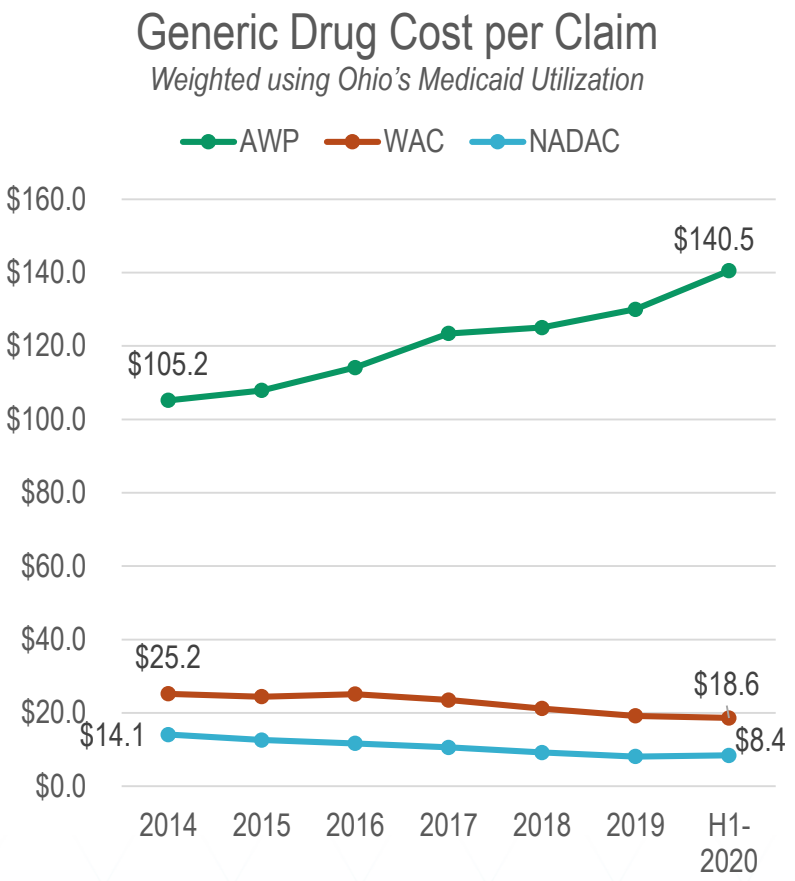
Depends upon who you ask



AWP is designed to increase over time for generic drugs

- We calculated pricing for ALL generic capsules and tablets dispensed in Ohio Medicaid
  - Total of $2.6 billion in drug spending between 2014 and H1 2020*
- The true cost of generic drugs (**NADAC, light blue line**) has declined by **40%** over 5.5 years, to $8.40 per claim
- Against that backdrop, the **AWP** of the exact same collection of generic drugs has increased **34%**, from $105 per claim to $141 per claim
  - The lack of market-based pricing, combined with more expensive drugs coming to market naturally pushes AWP up over time

PBMs cannot claim they are working to lower drug prices **and then use a benchmark designed to increase them**



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

* This is the total Medicaid spending between Q2 2016 and Q1 2020 on generic drugs with a published NADAC