Diagnosing Medicaid Drug Overspend in the Commonwealth Part I

An Analysis of Virginia Medicaid Prescription Drug Spending 2017-2023

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Introduction

In the Commonwealth of Virginia, the Department of Medical Assistance Services (DMAS) contracts with Managed Care Organizations (MCOs) to manage the healthcare benefits of Medicaid enrollees. These MCOs then contract with Pharmacy Benefit Managers (PBMs) for the administration of medication related benefits by negotiating manufacturer rebates, enforcing the state formulary, and processing drug claims. Many MCOs and PBMs are vertically integrated, meaning they are part of a larger company that own health plans, pharmacies, and health systems.

With the increasing cost of medication for the Virginia Medicaid program and the growing number of pharmacy deserts in Virginia, it is imperative to find solutions that address medication cost and pharmacy access immediately. To identify these solutions, an in-depth analysis was performed using drug payment and pricing data reported to the Centers for Medicare and Medicaid Services (CMS).

To seek solutions to this problem, an analysis was conducted using the Medicaid and CHIP Payment and Access Commission (MACPAC) Databooks, National Drug Acquisition Cost (NADAC), and the CMS State Drug Utilization Data (SDUD) submitted by Medicaid programs each quarter. These sources are critical not only for the accuracy and accountability they provide, but also because these reports come from datasets that are used to inform policy, calculate drug reimbursement, set managed care capitation rates, and determine manufacturer drug rebates.

Medicaid Total Spending

To begin looking into Medicaid drug spending in the Commonwealth of Virginia, Medicaid and CHIP Payment and Access Commission (MACPAC) Databooks were used as the foundation of the analysis. The timeframe of 2017-2023 was chosen because it has the most complete set of data. MACPAC Data books are released every December by CMS with data from the previous calendar year, so the 2018-2024 Databooks were used.

Using the Databook Excel sets that cover this timeframe, total Medicaid spending for each State and the District of Columbia per reported enrollee was calculated for comparison between all Medicaid programs. Potential savings were calculated by taking the difference in Virginia spending per enrollee vs. the national average and multiplying that difference by the Virginia Medicaid enrollees for each year.

In 2023, Virginia spent $10,756.01 per Medicaid enrollee vs the national average of $9,655.27. This $1,100.74 difference shows $2.21B in inflated spending (Figure 1, Table 1).
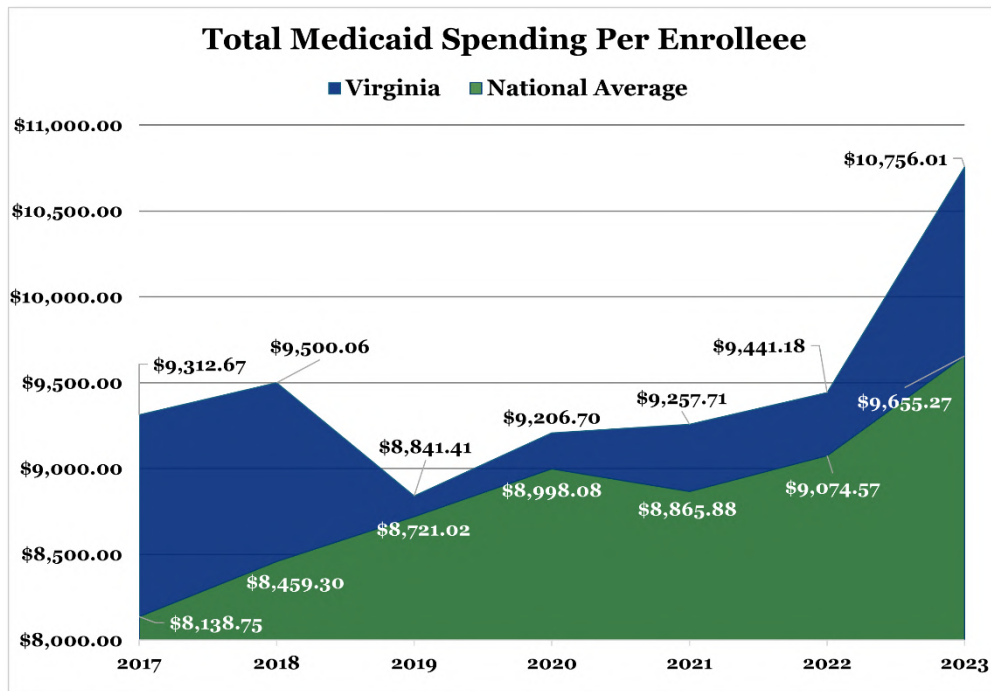

Figure 1 Source: MACPAC Databook 2018-2024. n=10679669

Medicaid Spending Per Enrollee

	National			Virginia			
Year	Enrollees	Total Medicaid Spend	Per Enrollee	Enrollees	Total Medicaid Spend	Per Enrollee	Savings at National Average
2017	73403299	$597,410,874,730.00	$8,138.75	1015609	$9,458,031,224.00	$9,312.67	$1,192,246,588.44
2018	72501774	$613,314,491,005.00	$8,459.30	1046260	$9,939,537,863.00	$9,500.06	$1,088,907,265.20
2019	71544194	$623,938,643,459.00	$8,721.02	1336892	$11,820,014,525.00	$8,841.41	$160,947,110.93
2020	75521263	$679,546,360,086.00	$8,998.08	1519888	$13,993,158,824.00	$9,206.70	$317,085,131.50
2021	83972641	$744,491,570,257.00	$8,865.88	1750410	$16,204,796,020.00	$9,257.71	$685,866,592.81
2022	90203221	$818,555,382,672.00	$9,074.57	1934368	$18,262,708,315.00	$9,441.18	$709,151,791.02
2023	92147828	$889,712,471,528.31	$9,655.27	2008101	$21,599,145,038.00	$10,756.01	$2,210,380,890.59
						Total Savings	$6,364,585,370.50

Table 1 Source: MACPAC Databook 2018-2024

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Summary Assessment

Virginia is spending more per Medicaid enrollee than the national average. With recent federal cuts to Medicaid, it is critical that this overspend is addressed.

Net Drug Spending

To assess what state Medicaid plans were paying for medications, net total drug spending for each state was calculated by subtracting the MACPAC reported drug rebates from the gross drug spending to determine a net drug spend per Medicaid enrollee and per prescription.

According to the 2024 MACPAC Databook, Virginia Medicaid currently pays more for prescription medication per enrollee than any other Medicaid program country. In 2023, the Commonwealth had $2,611.49 in net drug spending (gross drug spending minus manufacturer discounts) per Medicaid enrollee compared to a national average of $555.26 (Figure 2). These spending levels are consistent with the 2023 Centers for Medicare and Medicaid Services (CMS) drug utilization data reported by state Medicaid programs.

According to the reported numbers, if Virginia Medicaid net drug spending per enrollee were close to the national average, the Commonwealth would have saved $4.13B in 2023. The total savings from 2019 through 2023 would be $13.56B.

When calculating the 2023 reported spending per prescription, Virginia spent $213.14 per prescription vs the national average of $64.86 (Figure 3). If the Commonwealth were to match the national average based upon net drug spending per prescription, it would have likely saved $3.65B in 2023 and $10.86B from 2017 through 2023 (Figure 4, Appendix Table 2)
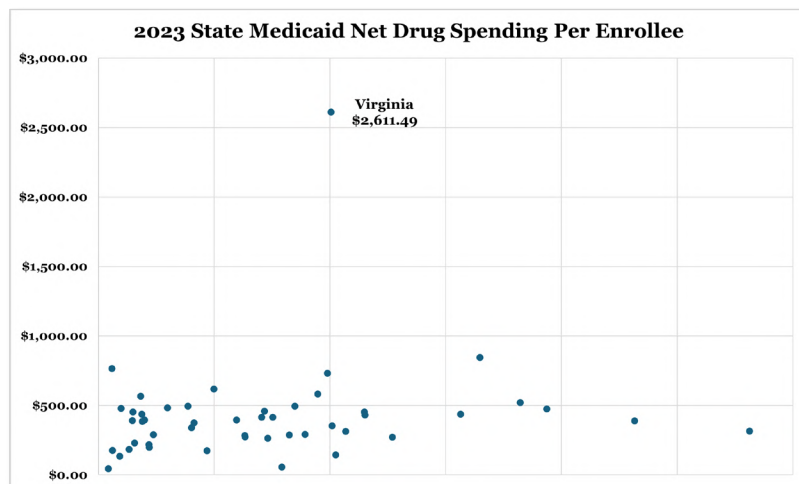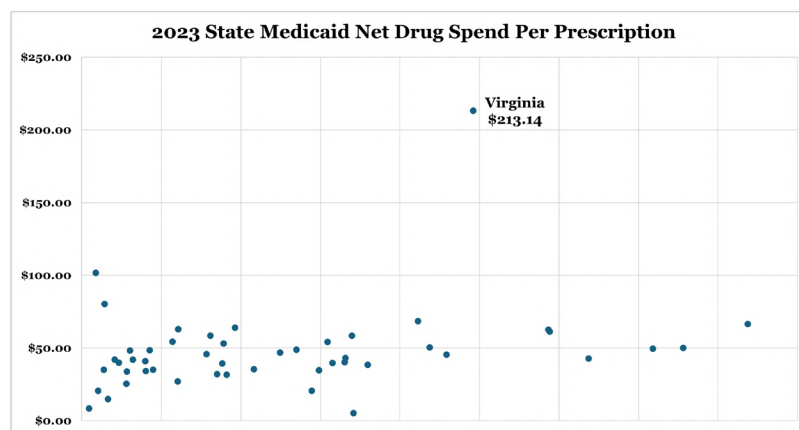

Figure 2 Source MACPAC Databook 2024 n=10679669

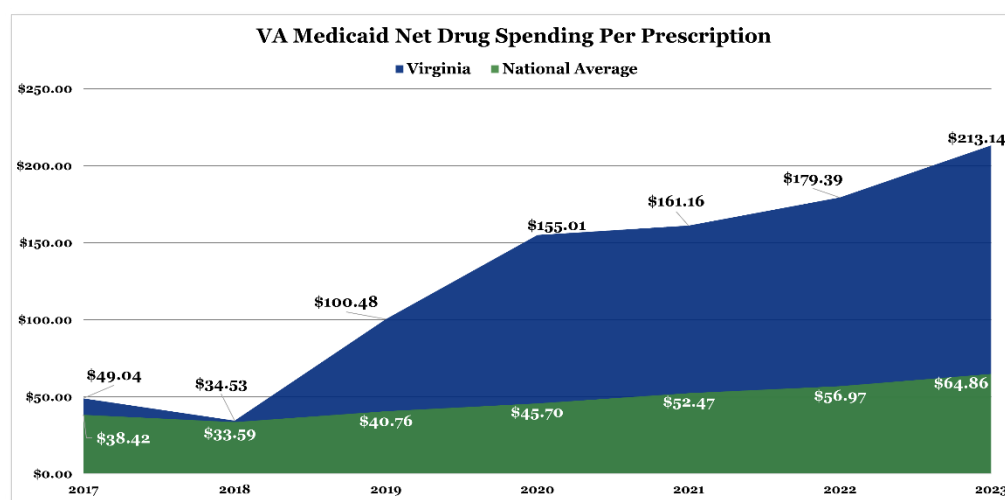*Figure 3 Source MACPAC Databook 2024. n= 24603798*

Figure 4 Source MACPAC Databook 2018-2024

Summary Assessment

This data indicates there is an elevated level of spending on medication in Virginia. To assess the cause of the elevated net drug spending, an analysis was conducted to determine if a lack of discounts (rebates) or inflated payments (reimbursement) were responsible.

Drug Rebates

Manufacturer drug rebates are meant to bring down the net cost of prescriptions through either negotiations directly with the state or with a contracted PBM.

Figure 5 was created by calculating the rebate percentage from the MACPAC reported rebate total and gross rebates. To isolate rebates from drug reimbursement, the average rebate being returned was calculated based on total prescriptions reported for 2023 (Figure 6).

Virginia Medicaid's prescription drug plans are returning 20.78% of gross drug spending back to Medicaid in the form of manufacturer rebates. Based on available data, this is the lowest amount in the country, in which the national average is approximately 68%.

Figure 5 Source MACPAC Databook 2025

Detailed analysis shows that there is an average of $55.91 in manufacturer rebates per prescription for Virginia Medicaid plans and while not the lowest, it is well under the national average of $68.04 (Figure 6).
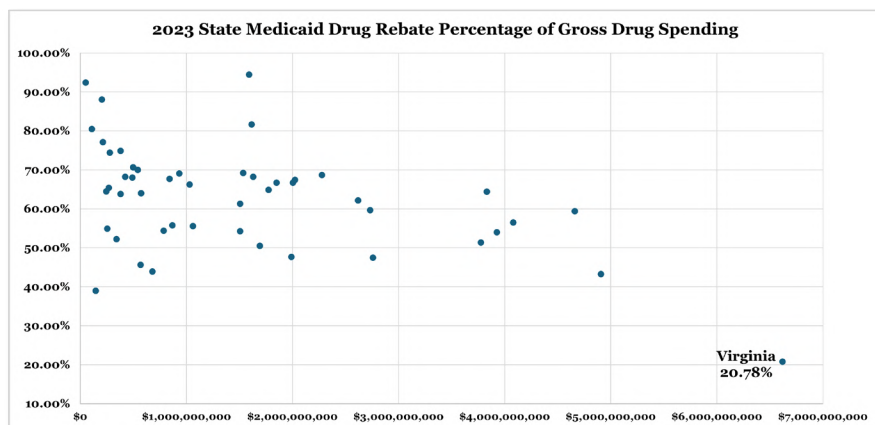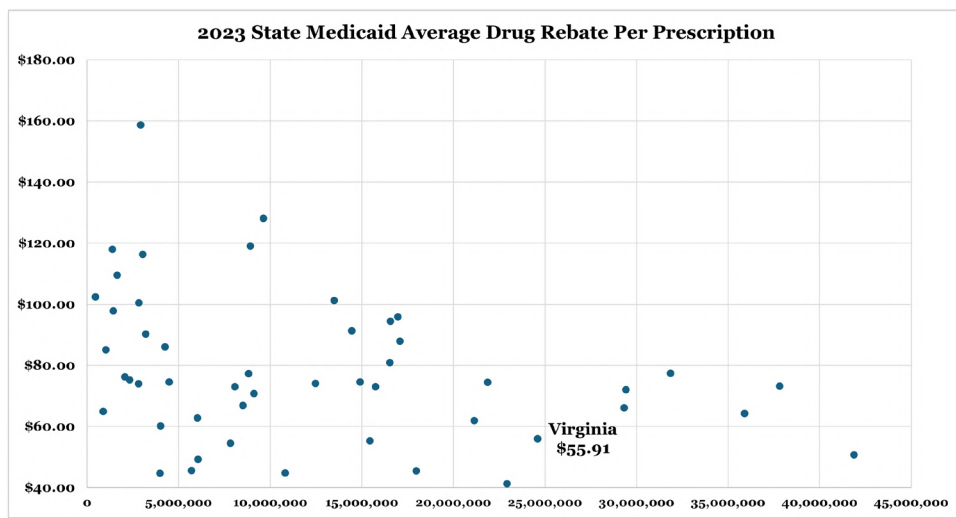

Figure 6 Source MACPAC Databook 2025

Summary Assessment

In 2023, rebate disparity accounts for $2.013B in overspend as a percentage of the gross drug spend. However, the total savings if the Virginia Medicaid rebate level matched the national rebate level per prescription shows only $298.3MM for 2023 (Appendix Table 3).

Savings calculated by rebates returned per prescription being much more in line with the national average than the rebate percentage of gross spend suggests that high drug spending is only partially a rebate issue. The elevated net spending on drugs is most likely coming from inflated reimbursement to pharmacies and outpatient facilities.

Brand vs Generic Spending

Rebate information is not given for each National Drug Code (NDC) but is instead reported in aggregate. This makes it impossible to be completely accurate estimating brand vs. generic net spending, but it can safely be assumed that brand medication rebates make up most of the rebates returned due to generics having drastically lower list costs and a lower percentage of federally mandated rebates as compared to brands. Because of this, negotiated rebates can be applied to gross brand spending to assign a net brand spend with the assumption that reported gross generic spending is close to generic net spend.

Using the reported number of brand and generic prescriptions being dispensed, how much the Commonwealth is spending can be calculated on each brand and generic prescription and matched against the national average.
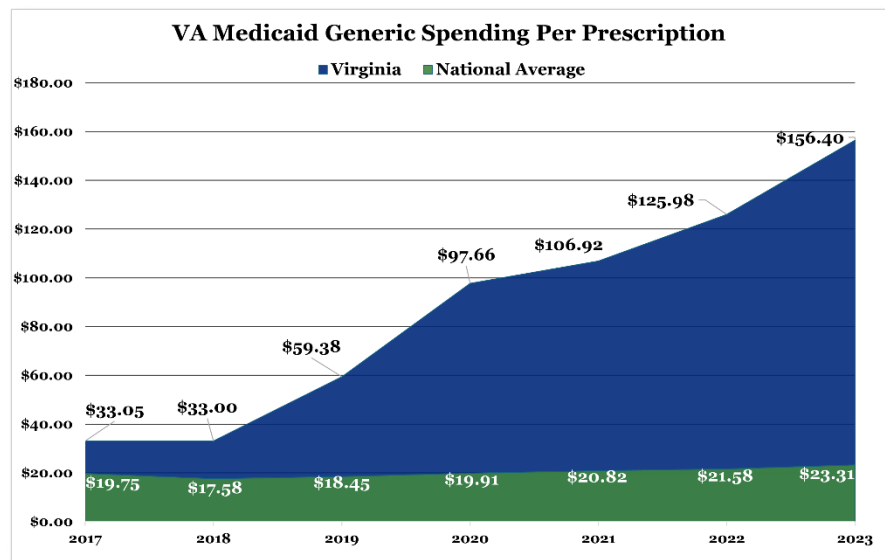

Figure 7 Source MACPAC Databook 2018-2024

For generic medication, Virginia Medicaid spent $133.09 more for each generic prescription in 2023. Matching the national average would have likely saved the Commonwealth $2.82B in 2023 and $8.23B since 2017 (Appendix Table 3, Figure 10).

For brand name medication, Virginia Medicaid spent $231.00 more for each prescription in 2023. Matching the national average would have likely saved the Commonwealth $748.2MM in 2023 and $3.03B since 2017 (Appendix Table 4, Figure 7).

This $748.2MM is the total of potential savings from rebate maximization and brand drug reimbursement. As detailed previously, by matching rebates to the national average, Virginia would have saved $298.3MM in 2023. If we subtract this from the total potential, we find $449.9MM in overspend on brand medication reimbursement (Appendix Table 4, Figure 8).
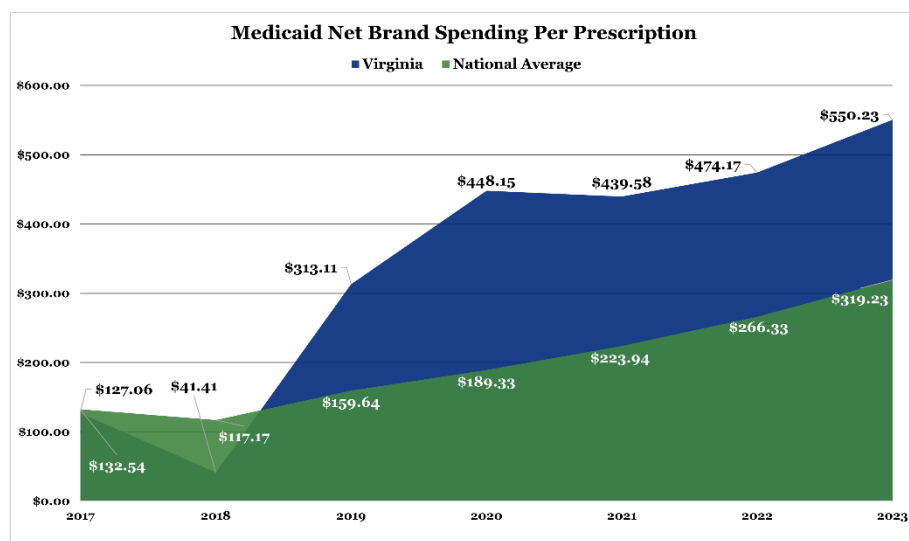

Figure 8 Source MACPAC Databook 2018-2024

Summary Assessment

The data suggests there are large overpayments for both brand and generic drugs, but with reports of growing pharmacy deserts (areas without a community pharmacy within a certain radius), a closer look at pharmacy payment data was needed. To investigate, we compared reported Medicaid payments against the National Drug Acquisition Price+ reimbursement model (NADAC+) and against other programs.

NADAC+ Spending Analysis

To analyze drug spending on an individual NDC level, the 2023 State Drug Utilization Data (SDUD) that Virginia Medicaid reports to CMS every year was used to determine how much Medicaid paid for each unit of drug by individual NDC. This number was then matched against the National Drug Acquisition Cost (NADAC) of each drug for every quarter enabling the calculation of the difference.

For Virginia Fee-For-Service (FFS) Medicaid, the plan in which Medicaid pays pharmacies directly without an MCO, pharmacy payment consists of ingredient cost plus the Medicaid cost to dispense (established via study every five years). This fee was multiplied by the reported number of prescriptions to find the dispensing fee total that would be associated with the NADAC+ model.
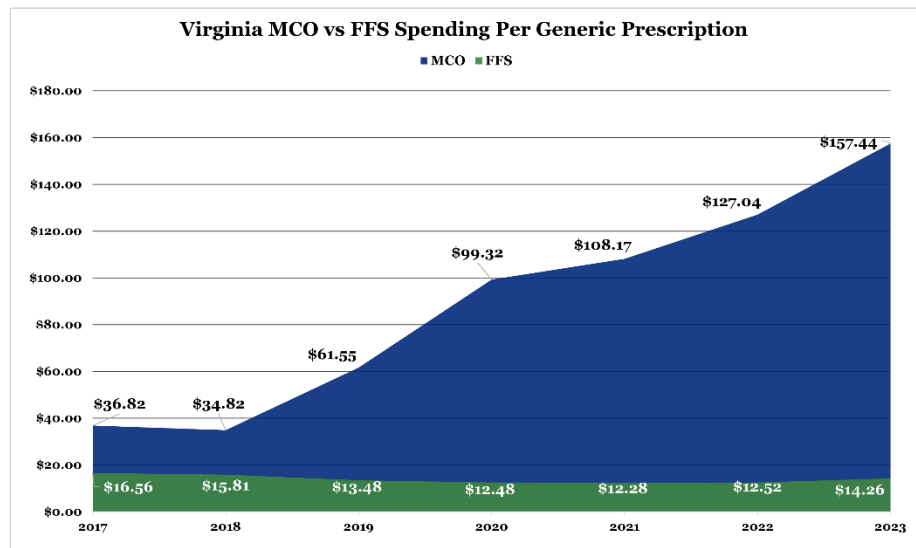

Figure 9 Source MACPAC Databook 2018-2024

NADAC+, a reimbursement method of the NADAC ingredient cost of the drug plus the state dispensing fee, is a popular reimbursement method gaining traction in other states. This reimbursement method was used to calculate potential savings from the reimbursement side of Virginia Medicaid.

According to the drug reimbursement data reported by Virginia Medicaid to CMS, moving to a NADAC+ reimbursement method would have saved the Commonwealth $880.7MM dollars in 2023 on $2.8B in spending on medications with a direct NADAC match that Virginia Medicaid reimbursed pharmacies and outpatient facilities (Figure 10). $867.8MM of these savings come from generic drugs as opposed to the $9.5MM that would be saved from brand medication.
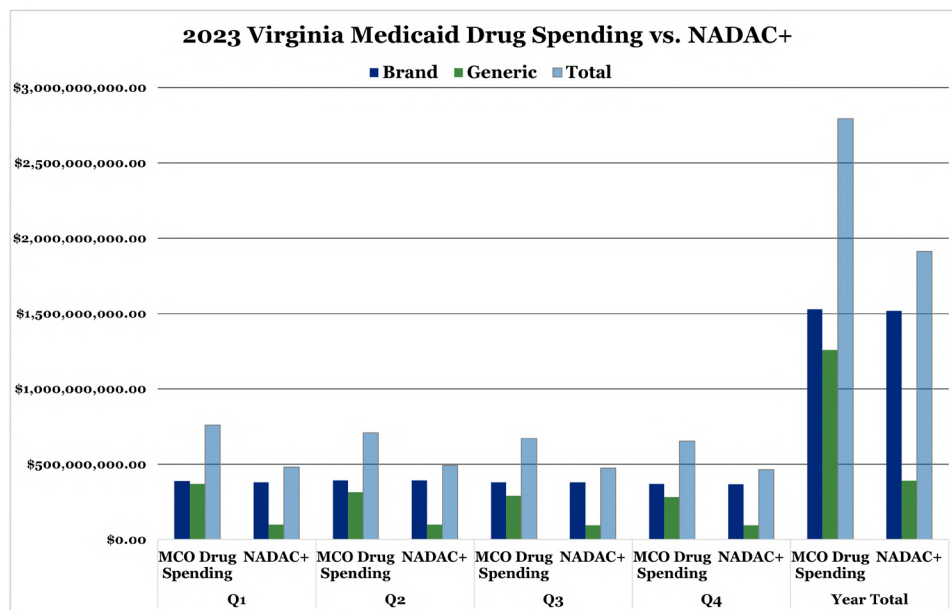
Figure 10 Sources 2023 CMS State Drug Utilization Report, 2023 CMS NADAC Drug Pricing Index

Summary Assessment

Yet again, generic medication proves to be the area in which the Commonwealth would save the most money. In fact, when analyzing how much MCOs paid for generic drugs versus the FFS program for generic medications, both with and without a NADAC match, there is a difference of $143 per prescription (Figure 9). This indicates there are further savings to be realized for generic drugs without a NADAC number.

Non-NADAC Drugs

Drugs with a NADAC number are typically medications that pharmacies can readily locate through their wholesalers. Drugs without a NADAC number are generally medications for inpatient and outpatient hospital services, "specialty" medications, and medications that have been repackaged and given a different NDC.

To assess the remaining $3.73B in drug spending, Virginia MCO rates were compared against Virginia FFS rates and North Carolina Medicaid MCO rates. When considering the reimbursement for non-NADAC matched drugs as reported in the CMS Drug Utilization Report, and comparing the NDCs in which both FFS and MCO reported a reimbursement, there is $1.2B in MCO spending with a comparable match.

By calculating the rate in which Virginia FFS and MCO plans paid for each of these NDCs by unit and multiplying the difference by the number of units dispensed, Virginia would have paid $406.3MM for non-NADAC NDCs instead of $1.2B. This is an MCO overspend of $790.6MM dollars compared to FFS reimbursement rates (Figure 12) which mirrors elevated total spend for all drugs when comparing the two programs (Figure 11).

When comparing this $3.75B in Non-NADAC spending with North Carolina MCO rates, there is an NDC match on $2.57B of Virginia Medicaid spending. If paying at NC MCO rates for these claims, the Commonwealth would have likely saved $1.39B in 2023 (Figure 13) which equates to $931.98 per prescription.

Summary Assessment

When combining all three datasets, there exists a potential overspend of $1.45B by Virginia Medicaid MCOs compared to Virginia FFS Medicaid and NC Medicaid MCO Non-NADAC drug spends. This was done by taking the Virginia MCO NDCs that did not match with Virginia FFS and comparing them to NC MCO drug spending.

The data suggests that Virginia MCO plans are paying far higher for non-NADAC drugs than both the Virginia FFS plan and the NC MCO plans.
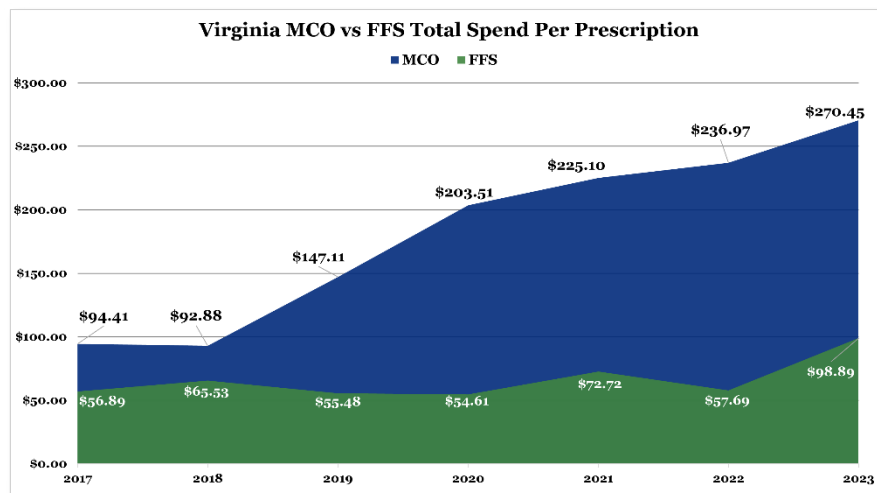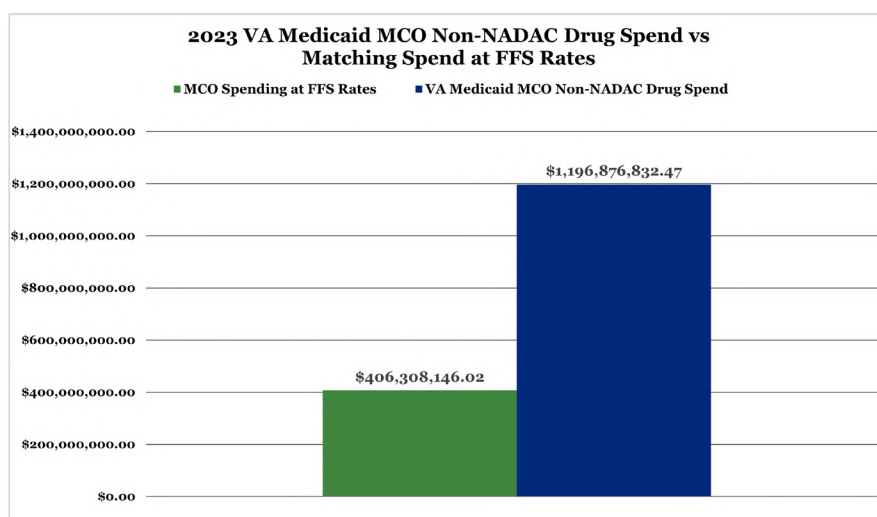

Figure 11 Source MACPAC Databook 2018-2024

Figure 12 Source 2023 CMS State Medicaid Drug Utilization Report
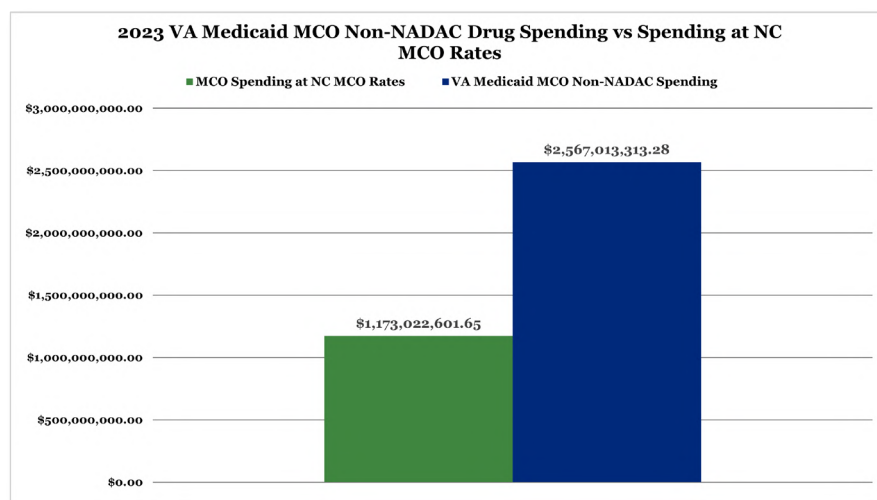

Figure 13 Source 2023 CMS State Medicaid Drug Utilization Report

Conclusions

In no Medicaid program is overspending on medication more apparent than in Virginia Medicaid. Medicaid plans have over-spent by $10.86B on medication vs. the national average on a per prescription basis in the years 2017 through 2023. This overspend is almost entirely due to overpayment for generic medications in Medicaid MCO plans with 98% of the overspend happening after the start of 2019.

Notably, 2019 is the year that spread pricing, the act of PBMs retaining payments meant for pharmacies, was abandoned by 4 of the 6 MCOs in in the Commonwealth Medicaid program. 2019 and 2020 also saw large market consolidation and vertical integration in Virginia Medicaid MCO plans with net cost of medication per prescription having quadrupled in the two years since 2018. In 2023, the net cost had risen 617% from 2018 levels to $213.14. During the same timeframe, MCO spending on generic drugs increased 452% per prescription from $34.82 to $157.44.

In Part II of this report, we will explore the mechanisms allowing for this overspend, characteristics of the high margin medications responsible, and where this money is and is not going.

Recommendations

To bridge the gap between what Virginia Medicaid is spending per enrollee and the national average, prescription drug reimbursement must be addressed. The data indicates prescription drug spending under MCO plans accounts for the $2.21B in 2023 in total Medicaid overspend. Through rebate optimization, NADAC+ reimbursement, and rate matching on non-NADAC drugs, the Commonwealth has an opportunity to be better than the national average by creating savings of $2.63B.

- Rebates and non-NADAC drug spending can be addressed by the continuation of work on DMAS utilizing a single PBM. Contracting with a single transparent PBM will give Virginia Medicaid the ability to ensure savings are being maximized and resources are allocated appropriately.

- Immediate savings can be realized by an executive order for DMAS to give MCOs a 30-day notice to change reimbursement to a NADAC+ model for all NADAC drugs. The state would save an estimated $881MM per year and address the growing number of pharmacy deserts.

- The Commonwealth should also make claims information more transparent by allowing greater access to claims information. As it stands now, the law prevents everyone, lawmakers and government officials included, from accessing claims details.

2023 Virginia Medicaid Potential Savings	
Optimizing Rebates	$298,309,689.06
NADAC+ Reimbursement	$880,735,251.48
Non-NADAC Rate Matching	$1,446,638,700.89
Total Savings	$2,625,683,641.43
Table 6 Sources MACPAC Databook 2018-2024, 2023 CMS DUR Report	

APPENDIX

Table 2

Net Drug Spending Per Prescription

Year	National			Virginia			
	Total Drug Spend	Total Prescriptions	Drug Spend Per Rx	Total Drug Spend	Total Prescriptions	Drug Spend Per Rx	Savings at National Average
2017	$63,973,565,882.22	757356011	$84.47	$944,402,860.84	10814942	$87.32	$30,868,942.18
2018	$60,829,919,171.64	734154056	$82.86	$1,013,357,506.72	11246494	$90.10	$81,504,967.88
2019	$66,734,887,909.77	726087115	$91.91	$2,162,500,031.51	15135000	$142.88	$771,437,571.31
2020	$71,817,117,267.14	712858834	$100.75	$3,757,737,899.63	18729752	$200.63	$1,870,804,987.23
2021	$80,582,110,905.09	725312836	$111.10	$4,329,244,946.78	19410392	$223.04	$2,172,754,280.65
2022	$91,708,194,747.34	758503924	$120.91	$5,312,107,501.01	22580599	$235.25	$2,581,962,138.43
2023	$104,859,268,301.02	789021259	$132.90	$6,619,846,271.79	24603798	$269.06	$3,350,053,187.92
						Total Savings	**$10,859,386,075.60**

Table 2 Source: MACPAC Databook 2018-2024

Table 2 Source: MACPAC Databook 2018-2024

Table 3

Drug Manufacturer Rebates

Year	Rebate % Of Medication Spending			Rebate Per Prescription		
	National	Virginia	Savings At National Average	National	Virginia	Savings At National Average
2017	54.52%	43.84%	$100,883,591.00	$46.05	$38.28	$84,054,162.73
2018	59.46%	61.68%	-$22,443,526.30	$49.27	$55.57	-$70,907,999.13
2019	55.66%	29.68%	$561,824,568.16	$51.16	$42.40	$132,459,057.75
2020	54.64%	22.74%	$1,198,935,755.90	$55.05	$45.61	$176,697,597.77
2021	52.77%	27.75%	$1,083,555,998.84	$58.63	$61.88	-$63,092,333.76
2022	52.88%	23.75%	$1,547,583,812.62	$63.94	$55.86	$182,245,293.47
2023	51.20%	20.78%	$2,013,425,963.06	$68.04	$55.91	$298,309,689.06
Total Savings			**$6,483,766,163.28**			**$739,765,467.90**

Table 3 Source: MACPAC Databook 2018-2024 n=122520977

Table 3 Source: MACPAC Databook 2018-2024 n=122520977

Table 4

Brand & Generic Spending Per Prescription

Year	Brand			Generic			Total
	National	Virginia	Savings At National Average	National	Virginia	Savings At National Average	Savings at National Average
2017	$132.54	$127.06	-$9,788,953.48	$19.75	$33.05	$119,413,726.66	$109,624,773.18
2018	$117.17	$41.41	-$130,787,976.77	$17.58	$33.00	$145,313,339.56	$14,525,362.78
2019	$159.64	$313.11	$364,302,877.42	$18.45	$59.38	$516,432,948.46	$880,735,825.88
2020	$189.33	$448.15	$758,887,522.78	$19.91	$97.66	$1,215,429,554.71	$1,974,317,077.48
2021	$223.94	$439.58	$638,753,504.49	$20.82	$106.92	$1,400,141,679.89	$2,038,895,184.38
2022	$266.33	$474.17	$657,892,418.50	$21.58	$125.98	$2,009,051,510.48	$2,666,943,928.97
2023	$319.23	$550.23	$748,188,256.93	$23.31	$156.40	$2,824,618,923.10	$3,572,807,180.03
Total Savings			**$3,027,447,649.86**			**$8,230,401,682.85**	**$11,257,849,332.71**

Table 4 Source: MACPAC Databook 2018-2024

Table 4 Source: MACPAC Databook 2018-2024

APPENDIX

Table 5

2023 Virginia Medicaid NADAC+ Savings				
Quarter	Drug Class	Total Reimbursement	NADAC+	Savings
Q1	Brand	$388,070,173.56	$380,035,485.16	$8,034,688.40
	Generic	$370,255,323.37	$100,200,824.36	$270,054,499.01
	Total	$759,949,393.20	$480,671,449.14	$279,277,944.06
Q2	Brand	$392,101,452.99	$392,609,435.62	-$507,982.63
	Generic	$315,051,230.66	$99,423,989.78	$215,627,240.88
	Total	$708,492,050.32	$492,477,713.26	$216,014,337.06
Q3	Brand	$379,525,715.28	$379,271,388.37	$254,326.91
	Generic	$290,729,204.63	$95,421,236.29	$195,307,968.34
	Total	$671,743,587.10	$475,225,874.15	$196,517,712.95
Q4	Brand	$369,517,463.08	$367,802,925.39	$1,714,537.69
	Generic	$282,163,569.43	$95,385,932.85	$186,777,636.58
	Total	$652,666,476.53	$463,741,219.11	$188,925,257.42
Year	Brand	$1,529,214,804.91	$1,519,719,234.55	$9,495,570.36
	Generic	$1,258,199,328.09	$390,431,983.27	$867,767,344.82
	Total	$2,792,851,507.15	$1,912,116,255.67	$880,735,251.48

Table 5 Sources 2023 CMS State Medicaid Drug Utilization Report, 2023 CMS NADAC Drug Pricing Index. n=54357

Table 5 Sources MACPAC Databook 2018-2024, 2023 CMS SDUD Report

SOURCES

MACPAC Excels

2017 – 2022: https://www.macpac.gov /publication macstats-archive/

2023: https://www.macpac.gov/publication/macstats-compiled/

CMS SDUD and NADAC Data

NADAC: https://data.medicaid.gov/dataset/4a00010a-132b-4e4d-a611-543c9521280f

Virginia SDUD: https://data.medicaid.gov/dataset/4a00010a-132b-4e4d-a611-543c9521280f

North Carolina SDUD: https: data.medicaid.gov dataset d890d3a9-6b00-43fd-8b31-fcba4c8e2909 data?conditions[0][re-source]=t&conditions[0][property]=state&conditions[0][value]=NC&conditions[0][operator]=%3D

Full 2023 SDUD: https://www.macpac.gov/publication/macstats-compiled/

ABOUT THE AUTHOR

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A second-generation pharmacist, Jeremy Counts grew up in the healthcare industry. His analytical work has contributed to legislative efforts in several states in the interest of improving access and efficiency for patients, plan sponsors and healthcare professionals. A Board Member of Pharmacists United for Truth and Transparency since 2020, Jeremy has been recognized as one of the Pharmacy Podcast Network's 50 Most Influential Pharmacy Leaders since 2024.

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Strategic Directions Rx is a leading healthcare consultant group specializing in pharmacy expertise, public policy, and strategic communications. For more than 30 years, Strategic Directions has partnered with state payers, pharmacy organizations, coalitions, and legislators to strengthen pharmacy access, improve reimbursement equity, and protect patient care. By blending deep industry knowledge with actionable strategies, Strategic Directions drives opportunities for systemic reforms that benefit the entire healthcare ecosystem. Learn more at www.strategicdirectionsrx.com.

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Pharmacists United for Truth and Transparency (PUTT) is a is a nonprofit advocacy organization founded by independent pharmacists and pharmacy owners dedicated to fighting for the rights of independent pharmacies and their patients by ending pharmacy benefit manager (PBM) anticompetitive practices. Through advocacy, education, and coalition building with stakeholders across the healthcare system, PUTT works to promote transparency in prescription drug benefits programs and contracts, ensuring independent pharmacies are made whole while maintaining access to affordable medications for patients. For more information visit TruthRx.org.