


# Changes in Patient Out-Of-Pocket (OOP) Costs and Medication Use Following West Virginia's Rebate Pass-Through Legislation


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## Key Takeaways


 Relative to KY, WV residents experienced a reduction in annual per-person pharmacy OOP costs, alongside higher average number of prescriptions filled and days of supply after the pass-through law was implemented

 Differences were larger among medium and high utilizers, consistent with greater exposure to OOP spending among patients with higher medication needs

 In the descriptive 2021–2023 comparisons across all states, OOP cost rose broadly, but WV recorded one of the smallest OOP increases, as well as the largest increase in days of supply nationally

 While we cannot conclude a causal relationship, the association between policy implementation and relative OOP cost changes over time can offer insight into a recent pass-through policy change. Further analysis may explore additional approaches for causal inference, such as synthetic controls, and continue evaluation of patient impact and implementation effectiveness

## Conclusions

 Findings from this study explored the potential short-term impact on patients, suggesting that the WV pass-through law was associated with relatively lower OOP costs and increased prescriptions and days of supply for WV residents, particularly among high utilizers who may face greater challenges with OOP spending

 States looking to curb OOP cost burdens and expand patient access may want to evaluate this type of legislation and continue to study its impact

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## Disclosures

HC, BD and UN are employees and hold shares in Johnson & Johnson



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## Background

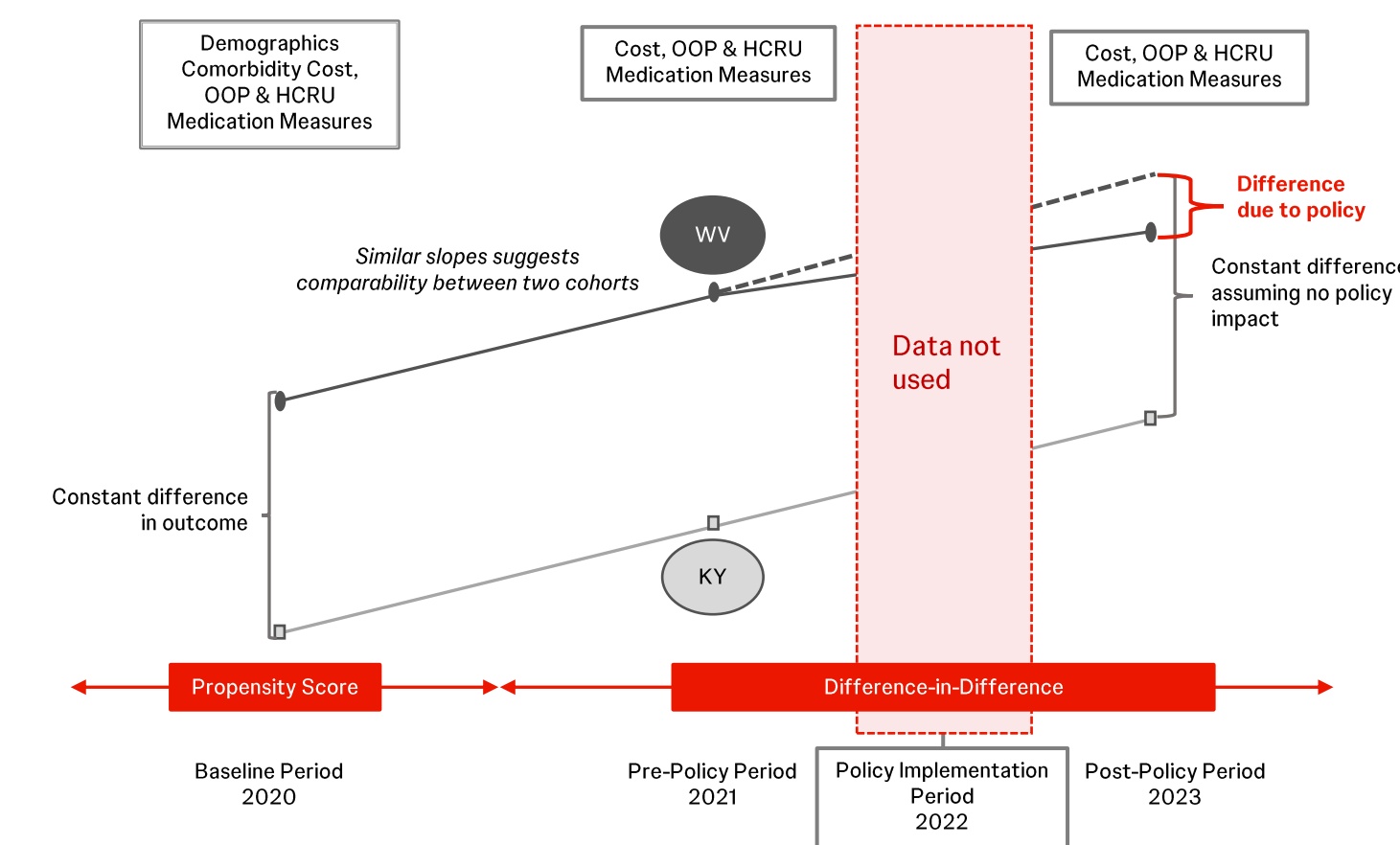
- In recent years, the cost of healthcare and the increase in out-of-pocket (OOP) costs for prescription medications for patients have become a topic of interest for state policymakers
- To address this issue, West Virginia (WV) House Bill 2263 was passed in 2021 that required Pharmacy Benefit Managers (PBMs) to pass through 100% of rebates and discounts received from manufacturers directly to patients at the pharmacy point-of-sale, rather than be retained by the PBMs<sup>1</sup>
- Earlier data suggested that WV's legislation reduced premium growth for state-regulated plans: As reported by WV's Office of the Insurance Commissioner, fully insured carriers attributed up to 14.0 percentage-point lower requested premium changes in 2024 and 2025 to the policy<sup>2</sup>

## Objectives

- Research is needed to evaluate the extent of the law's implementation and its potential impact on patients
- This study aims to examine the short-term changes following the WV legislation with respect to patient OOP costs and medication use

## Methods

Figure 1. Study Design



Abbreviations: WV, West Virginia; KY, Kentucky; OOP, out-of-pocket; HCRU, healthcare resource utilization; DID, difference-in-difference

Table 1. Method Details

Study Design
Retrospective cohort, difference-in-difference (DID) design comparing WV to Kentucky (KY)*
Data Source
Merative™ MarketScan® Commercial Database (2020–2023)
Key Measures
<ul style="list-style-type: none"> <li><b>Demographics:</b> age, sex; Clinical: Elixhauser (ECSR), Quan-Charlson (QCCI)</li> <li><b>Economic:</b> all costs and OOP spending (copays, coinsurance, deductibles), inflation-adjusted to 2023 USD</li> <li><b>Utilization:</b> inpatient, outpatient, ER visits</li> <li><b>Medication outcomes (primary):</b> Pharmacy OOP spending, Prescriptions filled, Days of supply†‡</li> </ul>
Population Inclusion Criteria
<ul style="list-style-type: none"> <li>Known sex</li> <li>Age 18–62 (as of 1/1/2021)</li> <li>Continuous medical and pharmacy enrollment</li> <li>Continuous residence in WV or KY</li> <li>No end-stage renal disease (ESRD)</li> </ul>
Analytic Approach

- Propensity score weighting (ATT):** balanced baseline demographics, clinical conditions, costs, OOP, and utilization across WV and KY (standardized differences <10%)
- Difference-in-difference models:** estimated policy impact using an interaction of time × state
- Generalized estimating equations (GEE):** accounted for repeated measures
- Linear regression with ATT weighting:** used for all outcomes
- Sensitivity analyses:** alternative inflation indices (CPI medical care; CPI prescription drugs); added “non-users” (no 2020 prescriptions) as a fourth group
- Statistical analysis:** Analyses conducted in SAS 9.4; p<0.05 considered statistically significant

\* Rationale for KY control state: similar demographic/health profiles and geographic location; both states have PBM laws, but HB2263 (point-of-sale OOP reduction) was unique to WV.  
 † Medication utilization groups were stratified as low, medium, high based on baseline prescription count (tertiles).  
 ‡ To illustrate that our results were meaningful beyond the chosen control state, we also described the changes in pharmacy OOP spendings, number of pharmacy claims, and total days of supply from 2021 (pre-policy) to 2023 (post-policy) across all U.S. states.

## Results



### Population Characteristics

- Final sample:** WV: 13,565 individuals; KY: 84,343 individuals
- WV:** 46.7% female; mean age 43.2; mean QCCI 0.24
- KY:** 55.4% female; mean age 42.8; mean QCCI 0.23



### Patient Outcomes (Table 2)

WV residents in this study experienced a statistically significant average per person reduction in annual pharmacy OOP spending as well as increases in number of prescriptions filled and average days of medication supply, relative to KY residents (all <0.05 p-value)

### Pharmacy OOP Spending

↓ \$33 per capita (95% CI: -\$60, -\$6; p=0.015)

### Prescriptions Filled

↑ 0.45 per person (95% CI: 0.21, 0.69; p=0.0003)

### Days of Supply

↑ 39 days (95% CI: 29, 49; p<0.0001)

No significant impact on healthcare resource use (inpatient, outpatient, emergency room visits) or pharmacy costs



### Medication Utilization (Table 2)

Possible dose-response effects as higher OOP reduction and days of supply increase were found in people with higher medication needs

### High Utilizers

↓ Pharmacy OOP Spending: \$95 per capita (p=0.034)

↑ Days of Supply: 85 days (p<0.0001)

### Medium Utilizers

↓ Pharmacy OOP Spending: \$34 per capita (p=0.021)

↑ Days of Supply: 26 days (p=0.0002)

### Low Utilizers: No statistically significant changes



### WV Compared with All Other States (Table 3)

When comparing 2021–2023 changes descriptively across all individual states, WV also had one of the lowest increases in OOP costs and the biggest increase in days of supply in the U.S.

Table 2. Changes in Medication Utilization, WV relative to KY

Baseline Medication Utilization	All	Low	Medium	High	
Pharmacy OOP Spending (US \$)	WV Pre-Policy Period	269	22	150	635
	Observed Changes-Unadjusted	-31	11	-28	-78
	Observed Changes-Adjusted#	-33* (-60, -6)	13 (-5, 31)	-34* (-62, -5)	-95* (-182, -7)
Number of Prescriptions	WV Pre-Policy Period	15.79	2.72	9.53	35.09
	Observed Changes-Unadjusted	0.46	0.15	0.39	0.79
	Observed Changes-Adjusted#	.45* (.21, .69)	.14 (-.09, .38)	.33* (.02, .64)	.85* (.23, 1.47)
Days of Supply	WV Pre-Policy Period	659	54	388	1530
	Observed Changes-Unadjusted	41	4	31	87
	Observed Changes-Adjusted#	39* (29, 49)	4 (-6, 14)	26* (12, 39)	85* (60, 111)

\*: p<0.05, #: ATT weighting-adjusted

Table 3. WV and KY Compared to 2021–2023 Changes Across All Individual U.S. States

	OOP Cost Increase	Prescriptions Filled	Days of Supply
WV	+\$12	+1.44	+128 days
KY	+\$44	+0.99	+87 days
National Average	+\$35	+0.87	+74 days
WV Rank (50 states + DC)	42nd	3rd	1st

## Limitations

- Concurrent market trends, plan design changes, and unmeasured spillovers from unrelated policies may influence outcomes and affect parallel trends when comparing states in real-world policy environments
- As strict causal-inference assumptions could not be fully satisfied, results should be interpreted as descriptive, not causal

## References

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