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Elasticity of Pharmaceutical Drug Pricing and Medicare/Medicaid Beneficiary Count

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Research Questions

1. Does the average cost share impact the overall beneficiary count of Medicare/Medicaid?
2. How does Low Income Subsidy (LIS) affect the relationship between cost share and beneficiaries?
3. Is the relationship of the LIS group more adversely affected than the non LIS group?

Motivation

With the healthcare industry under the spotlight in America today, my mission was to highlight a relationship between two key issues of the twenty-first century: Pharmaceutical Drug Pricing, and Medicare/Medicaid.

- With the elderly population booming in our society, I found it important to look into Medicare as it requires beneficiaries to be older than 65 in order to receive full Medicare.
- The pharmaceutical industry has faced scrutiny over the price gouging that occurs on all types of medication. I wanted to see how the pricing would effect the Medicare/Medicaid patients.

Research Design

Using Drug Spending data from the Center for Medicare/Medicaid Services, I developed an equation to estimate the relationship between the overall average beneficiary cost-share and the beneficiary count. In addition to this, I addressed the subsections in the dataset, Low Income Subsidy and No Low Income Subsidy. Low Income Subsidy is an assistance program for low income patients who do not fall into other subsidy groups. The eligibility for this varies per state and is assessed based on income. I use these as dependent variables to determine their relationship with the relative cost share. In these equations I controlled for; Total Revenue to drug manufacturer (Unit count x average price per unit) as well as whether a generic or biosimilar version was available during any point between 2010 and 2015.

Results

The Average Beneficiary Cost-Share for the overall Beneficiary Count showed that for every dollar the cost share is raised, the beneficiary count decreases by 19.15 people. When assessing the subgroups, the LIS group had results that were statistically insignificant, likely due to the small population within the group itself. On the other hand, the No LIS group was significant showing for every dollar Cost-Share is raised, the beneficiary count decreases 18.53 people. This number closely resembles the overall relationship between cost-share and beneficiary count.

Variable Names	Beneficiary Count	Beneficiary Count LIS	Beneficiary Count NO LIS
Cost Share	19.15 (-2.28)	-25.77 (-0.45)	-18.53 (-2.32)
Total Revenue	0.0000554 (1.81)	0.0000145 (2.29)	0.0000395 (1.69)
Generic	-8721.206 (-0.40)	-5142.925 (-0.44)	2353.34 (0.17)

Note: t-stat is parenthesis

Conclusions

The purpose of this research is to estimate the relationship of cost-share and beneficiary count for Medicare/Medicaid patients. Further, the subgroups: Low Income Subsidy and No Low Income Subsidy were analyzed to see if the relationship differed based on assistance given by the Center for Medicare Services.

Overall, the results suggest a negative correlation between cost-share and beneficiary count in the overall average and No LIS subgroup. This study contributes to the field by using recent data released by the Center for Medicare Services. In addition, it provides useful information to the Center for Medicare Services that allows them to estimate their change in beneficiary count when adjusting the cost-share based on the results of this study.

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