

Analysis of pharmacy reimbursements through Medicaid's fee-for-service and managed care payment models nationwide in 2019 using RStudio

TL;DR:

State Medicaid programs reimburse pharmacies for covered prescription drugs dispensed to Medicaid beneficiaries. Pharmacy reimbursement rates differ by the payment model used in each state: fee-for-service (FFS) or managed care plan (MCP). For this analysis, data from Medicaid and the Children's Health Insurance program website ([Data.Medicaid.gov](https://data.medicaid.gov)) was imported, cleaned, transformed, visualized, and analyzed using RStudio to determine whether pharmacy reimbursements under FFS were greater than pharmacy reimbursements under MCP in 2019 nationwide, and how these vary by state and region. Plotted data revealed the MCP payment model had greater total pharmacy reimbursements compared to the FFS payment model in 2019. When broken down by state and region, plotted data showed CA, NY, OH, VA, and TX as the top 5 states (in descending order) with the greatest pharmacy reimbursements distributed across each of the 5 US regions and utilized both payment models.

Background:

Medicaid is a state and federal program providing health coverage, including prescription drugs, for people with limited income and resources. State Medicaid programs do not buy prescription drugs from manufacturers directly, but rather reimburse pharmacies for covered prescription drugs dispensed to Medicaid beneficiaries. Pharmacy reimbursements are determined by each state within federal rules and depend on the payment model used: fee-for-service (FFS) or managed care plan (MCP). Under FFS, the state Medicaid agency pays the pharmacy for the cost of the drug, or the ingredient cost, and the cost associated with filling and transferring the prescription to the Medicaid beneficiary, also known as the dispensing fee. Similar to FFS, Medicaid pays managed care pharmacy providers for ingredient costs and dispensing fees, however the average reimbursement for ingredient costs and dispensing fees is lower for MCP compared to FFS. In general, pharmacies can

typically expect higher reimbursements rates through the FFS payment model. In fact, the national average dispensing fee that pharmacies receive by Medicaid FFS programs is more than double the dispensing fee of Medicaid managed care plans. Medicaid FFS is also more likely to dispense brand name drugs in place of lower cost generic drugs and a higher number of prescriptions per beneficiary as compared to Medicaid managed care plans. With higher costs associated with the FFS payment model, this analysis may reveal areas of cost savings for Medicaid programs.

Research questions:

- Does the data reflect that pharmacy reimbursements under FFS plans are greater compared to pharmacy reimbursements under managed care plans in 2019?
- How do pharmacy reimbursements vary by state and region based on the utilized payment model?

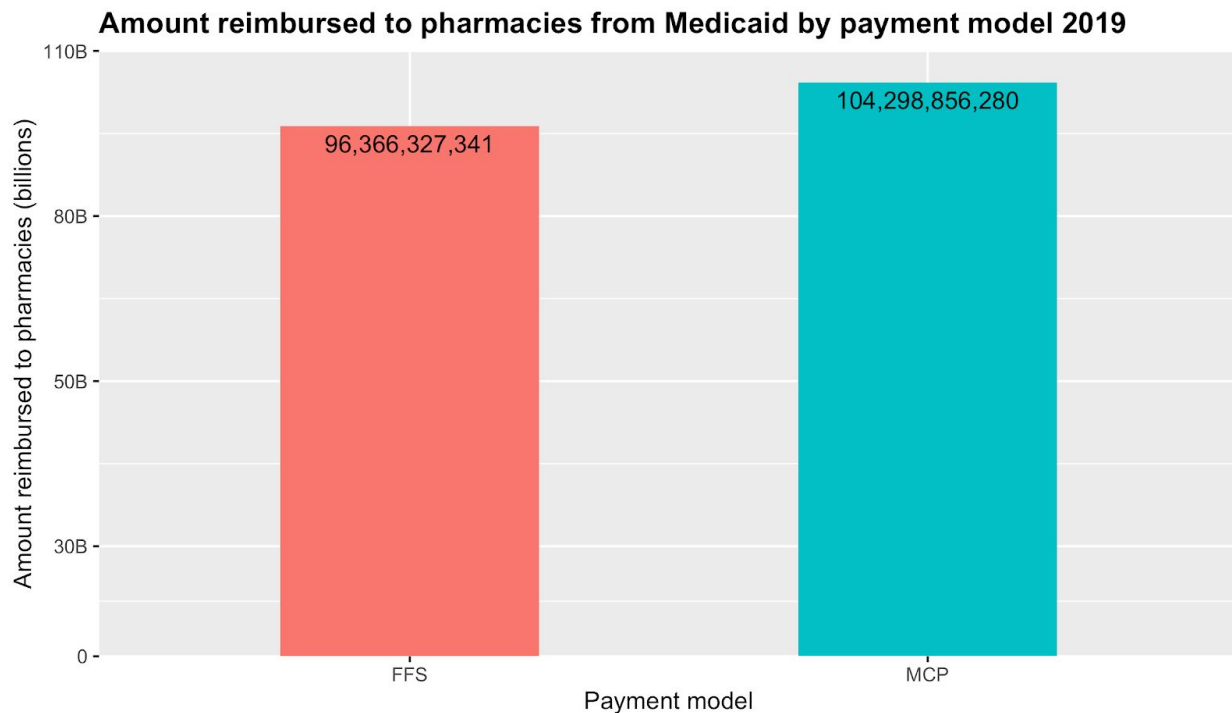
Methodology and Assumptions:

- Data from the Medicaid and Children's Health Insurance Program website (Data.Medicaid.gov) was imported, cleaned, and transformed, visualized, and analyzed in RStudio.
- Variables necessary for the analysis included a mix of quantitative and qualitative variables:
 - Payment model: values are "FFS" or "MCP" for Fee-For-Service and Managed Care Plan respectively
 - State: two letter abbreviation for US state
 - Medicaid Amount Reimbursed: The amount reimbursed to pharmacies by Medicaid only for covered drugs in 2019
- Before the analysis, the dataset was checked for missing values. Missing values were found within "Medicaid Amount Reimbursed" and were replaced with the column mean. Mean = 55,937.

Code: https://github.com/megelizrobinson/Medicaid_pharm_reimburse_2019.git

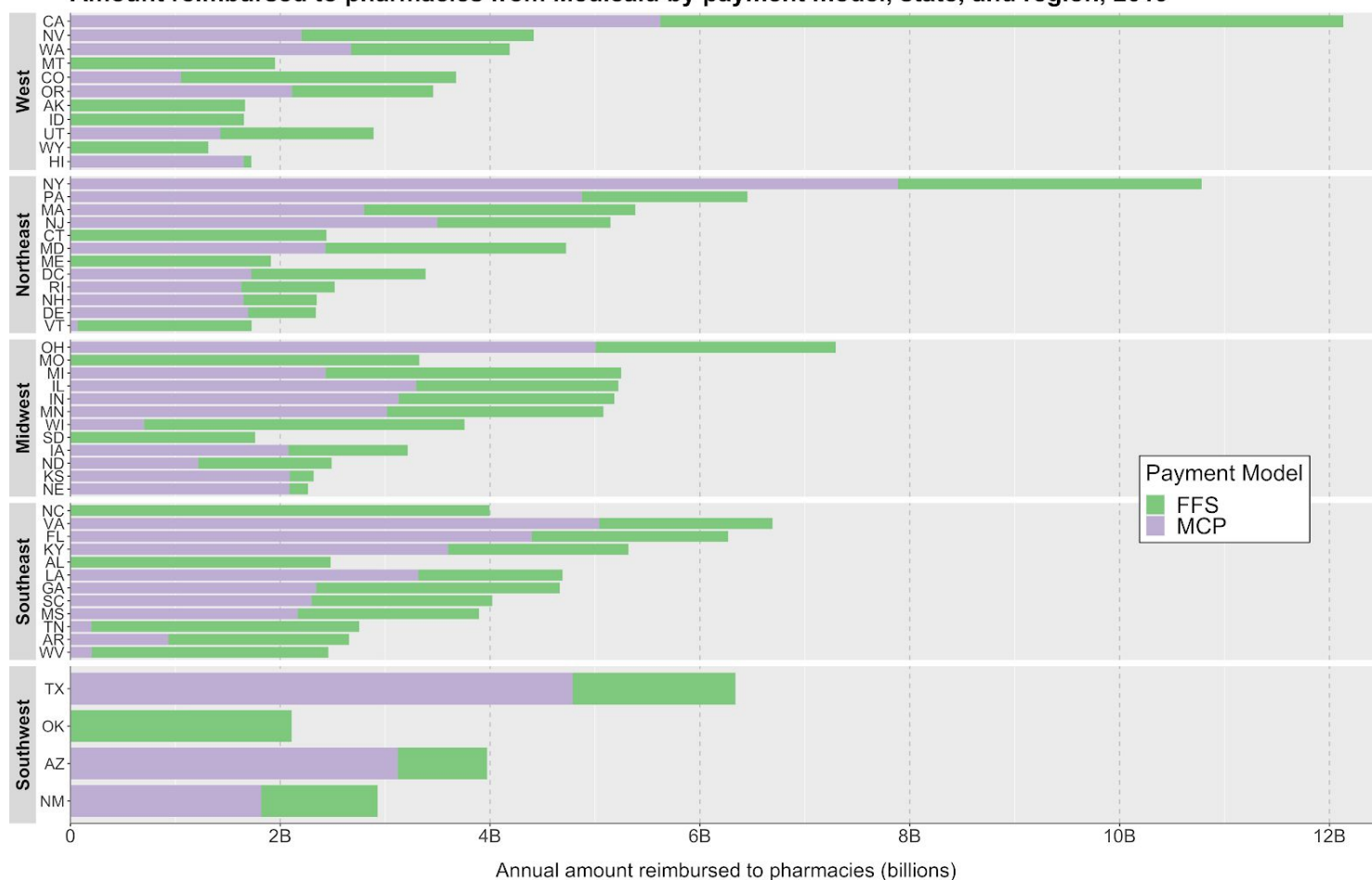
Results:

- All 50 states and DC are represented in the data.
- Combining the data for all states and DC, the MCP payment model has greater total pharmacy reimbursements compared to the FFS payment model.



- The top 5 states (in descending order) with the greatest reimbursements in USD to pharmacies from Medicaid were distributed across each of the 5 US regions and utilized both payment models: CA, NY, OH, VA, and TX.
- Of those states, the MCP payment model made up a larger proportion of the total reimbursement in USD for each state with the exception of CA, which has a slightly greater proportion under FFS than MCP.
- A few states in the dataset did not utilize the MCP payment model: MT, AK, ID, WY, CT, ME, MO, SD, AL, NC, and OK.

Amount reimbursed to pharmacies from Medicaid by payment model, state, and region, 2019



Source: Centers for Medicare and Medicaid Data.Medicaid.gov

Conclusion:

Although the FFS payment model typically has higher pharmacy reimbursement rates, this analysis reveals the opposite.

Possible reasons for this behavior:

- There were more recorded MCP observations (~50,000) in the dataset, which may help to explain why pharmacy reimbursements under MCP outweigh those of FFS.
 - The reason why MCP observations outweigh FFS observations is likely due to the fact that there is a higher proportion of beneficiaries across the country enrolled in managed care plans. For example, 69% of Medicaid

beneficiaries across the country were enrolled in managed care plans in 2018.

- Beneficiaries may have a health profile that is high-risk/high-cost including higher amount of prescriptions needed and higher need of expensive, brand name drugs, factors which contribute to the cost of pharmacy reimbursements.
- California's Medicaid program is the largest in the nation and has been working for decades to transition from the FFS model to the managed care model, which may help to explain why the FFS model made up a greater proportion of pharmacy reimbursements within this state.

Sources:

<https://www.kff.org/medicaid/issue-brief/10-things-to-know-about-medicaid-managed-care/>

https://www.pcmanet.org/wp-content/uploads/2016/08/pr-dated-12-06-10-medicaid_pharmacy_savings_report.pdf

https://www.dhcs.ca.gov/dataandstats/statistics/Pages/Medi-Cal_Fee-for-Service_Expenditures.aspx

<https://www.kff.org/report-section/medi-cal-managed-care-an-overview-and-key-issues-issue-brief/>

<https://www.macpac.gov/wp-content/uploads/2015/09/Medicaid-Payment-for-Outpatient-Prescription-Drugs.pdf>

<https://www.macpac.gov/medicaid-101/provider-payment-and-delivery-systems/>

https://www.nhpf.org/library/the-basics/Basics_MedicaidDrugRebate_04-13-09.pdf

<https://www.kff.org/medicaid/fact-sheet/medicaids-prescription-drug-benefit-key-facts/>

