

# Relationship Between HealthCare Payments & Costs

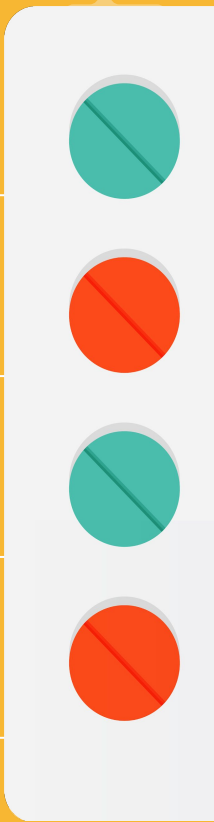
By: Danny Royer



Medical Provider

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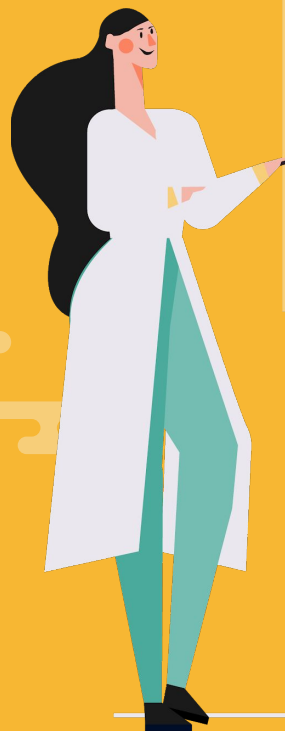
# Introduction



# What are Healthcare Payments?



# What are Healthcare Payments?



□  
**Open Payments (OP)**

**Payments to: Medical Providers  
By: Health Industry  
Example: Free lunch**

□  
**Medical Provider Physician and  
Other Supplier (MPOS)**

**In other words, how much  
providers charge patients**

# Research Question

Is there a relationship between **Open Payments (OP)** and **Medical Provider Physician and Other Supplier (MPOS)**?



# Methodology



# Data Used



**Open Payments (2016)**



**MPOS (2016)**



**NPI Public Registry  
(2020)**



**Gallup Poll on  
Conservative Ideology  
(2016)**



**State-Level Control  
Variables**



**Economic (Census)  
Health Care  
(McKinsey Health  
Index)  
Number of Medical  
Providers(KFF)**



# Big Problem

Open Payments is missing **Provider Identifier (NPI)**.  
By law.

Programmatically match **names and address**.



# NPI Matching Results

## Original

Original paper was able to match 374,766 NPIs in MPOS and OP

## Validation

Validation research matched 345,743 NPIs in MPOS and OP

Difference of ~29,000 providers

# Data Analysis Methodology

**1 Match Open Payments to NPIs**



**2 Join OP and MPOS**

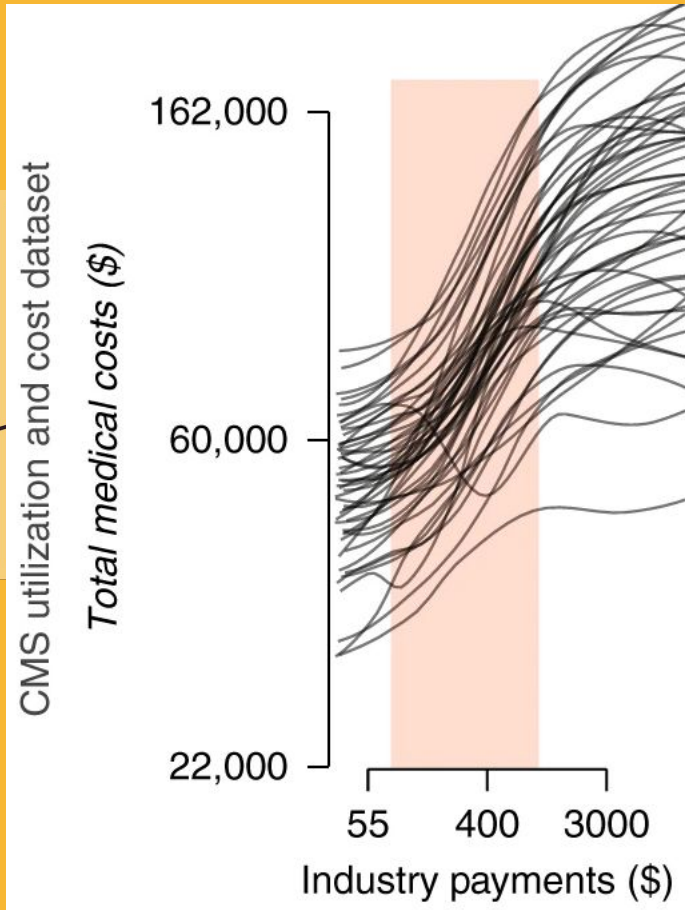


**3 Run Analysis**



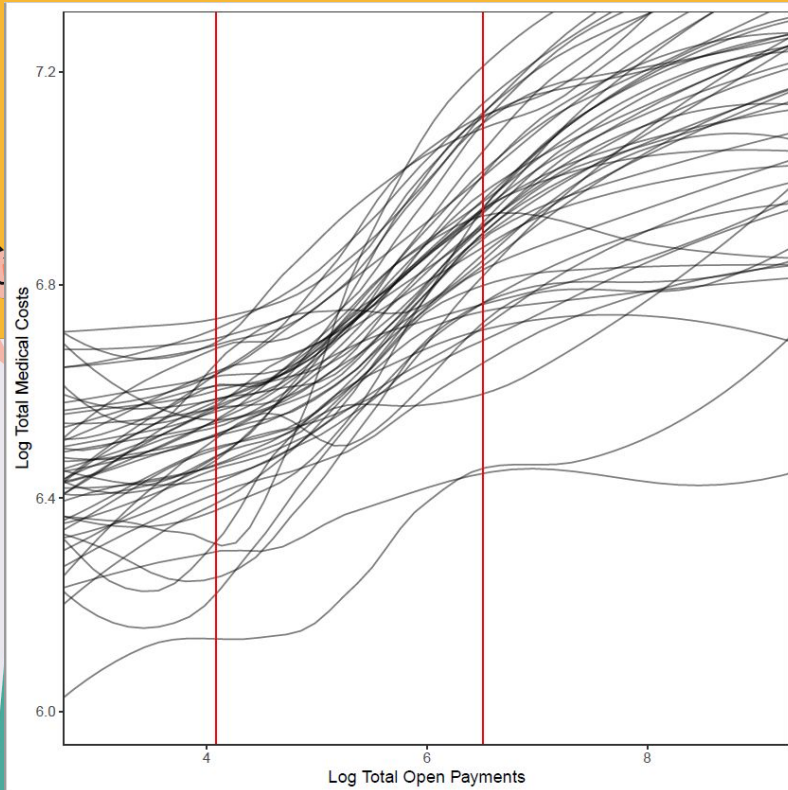
# Original vs Validation





**Graph Time!**

**Original research found a linear relationship between industry payments and medical costs.**



## Original v Validation

**Validation found linear relationship between industry payments and costs**

# Models to Test



**Total payments vs medical costs: control for state**



**Total payments vs medical costs: control for state and drug costs**



**Total payments vs medical costs contributing factors**

# Scoreboard

## Original

Model	Result
Payments by State	Linear
Payments by State & Drug Costs	Linear
Contributing Factor	Conservative (positive)

## Validation

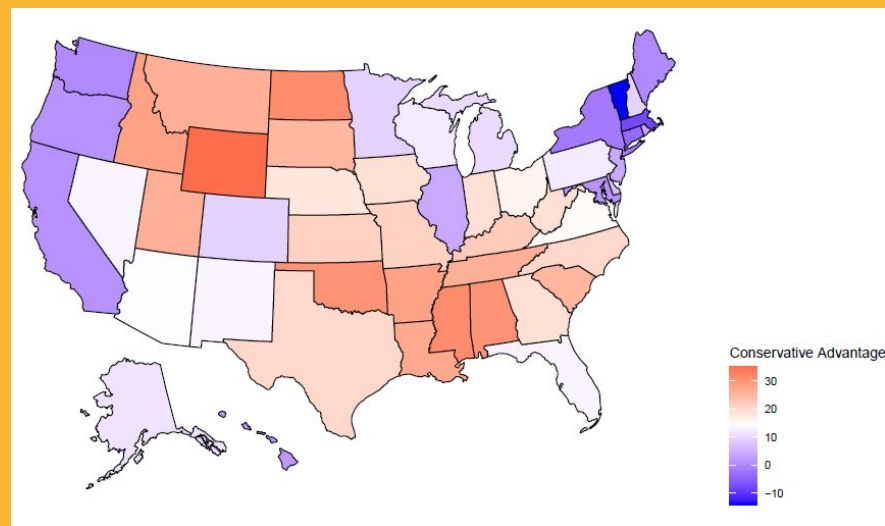
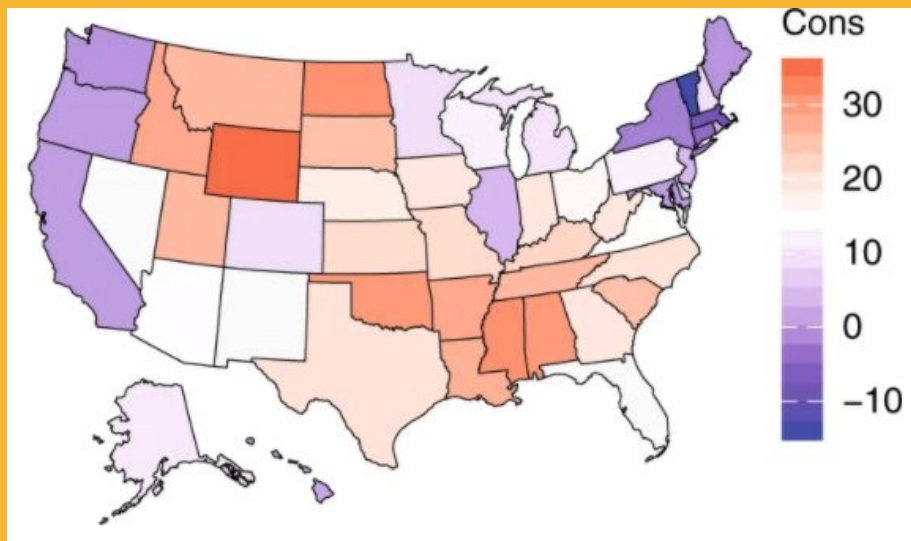
Model	Result
Payments by State	Linear
Payments by State & Drug Costs	None
Contributing Factor	Conservative (negative)



# Scoreboard

Original

Validation



# Summary



# CONCLUSIONS



**Validation research confirmed a linear relationship exists between industry payments and medical costs.**

**Validation did not confirm a correlation between medical costs and drug prices.**

**Validation confirmed strongest contributing factor in a state is conservative ideology but in opposite directions**

- Mejia, J., Mejia, A. & Pestilli, F. Open data on industry payments to healthcare providers reveal potential hidden costs to the public. Nat Commun 10, 4314 (2019). <https://doi.org/10.1038/s41467-019-12317-z>
- <https://www.cms.gov/OpenPayments/Explore-the-Data/Dataset-Downloads>
- <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/Medicare-Provider-Charge-Data/Physician-and-Other-Supplier>
- <https://npiregistry.cms.hhs.gov/>
- 

## RESEARCH RESOURCES

# CREDITS

This is where you give credit to the ones who are part of this project.

- ◀ Presentation template by [Slidesgo](#)
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# THANK YOU

Questions?

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