

# The Effect of Opioid Policies

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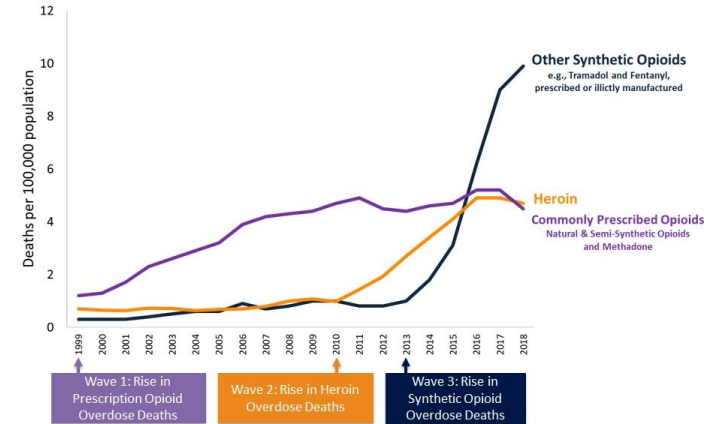
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# Motivation

## Opioid Abuse

- Policy interventions are not guaranteed to be effective.
- Overdose mortality rate will decrease?
- Addicted patients obtain substitution through illegal black market
- Consuming without medical guidance causes non-prescription opioids overdose deaths

3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.



# Introduction

Pioneers in regulating opioids abuse:

Texas: In 2007, the Texas Medical Board adopted regulations with regards to treating pain with controlled substances.

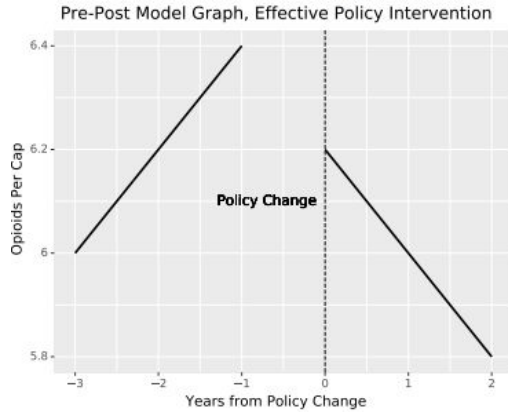
Florida: In 2010, Florida enacted several measures to address prescribing that was inconsistent with best practices. The Florida legislature required that pain clinics treating pain with controlled substances register with the state.

Washington: In 2012, the Washington Department of Health adopted a rule regulating the prescribing of opioids for pain treatment.

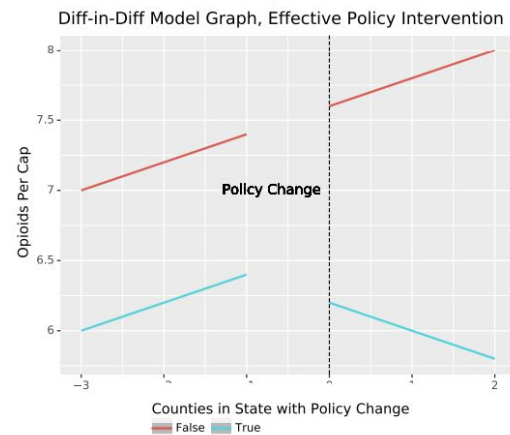


# Research Design

Published earlier than other states, did these policies effectively control the opioid abuse?



- Pre-post comparison
  - Intuitive, straightforward.
  - Compares before and after the policy went into effect.



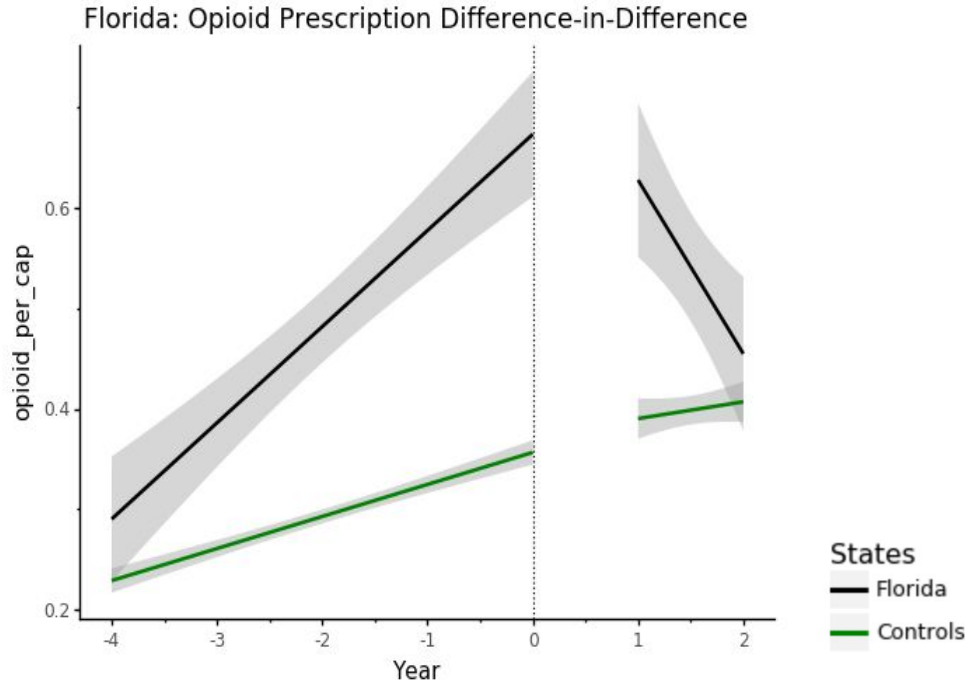
- Difference in Difference analysis
  - Compare Texas, Florida, and Washington with other states that did not implement any opioids regulations



# Data Summary

- **Opioid Shipment Dataset**
  - Unit of observation: per capita opioid prescribed in weight for all counties from 2006 to 2013.
  - Source: Washington Post
- **Opioid Overdose Deaths Dataset**
  - Unit of observation: opioid overdose deaths per 100k for all counties from 2003 to 2015.
  - Source: US Vital Statistics
- **Population Dataset**
  - Unit of observation: population for all counties in the U.S. from 2003 to 2015.
  - Source: U.S. Department of Energy Office of Scientific and Technical Information.

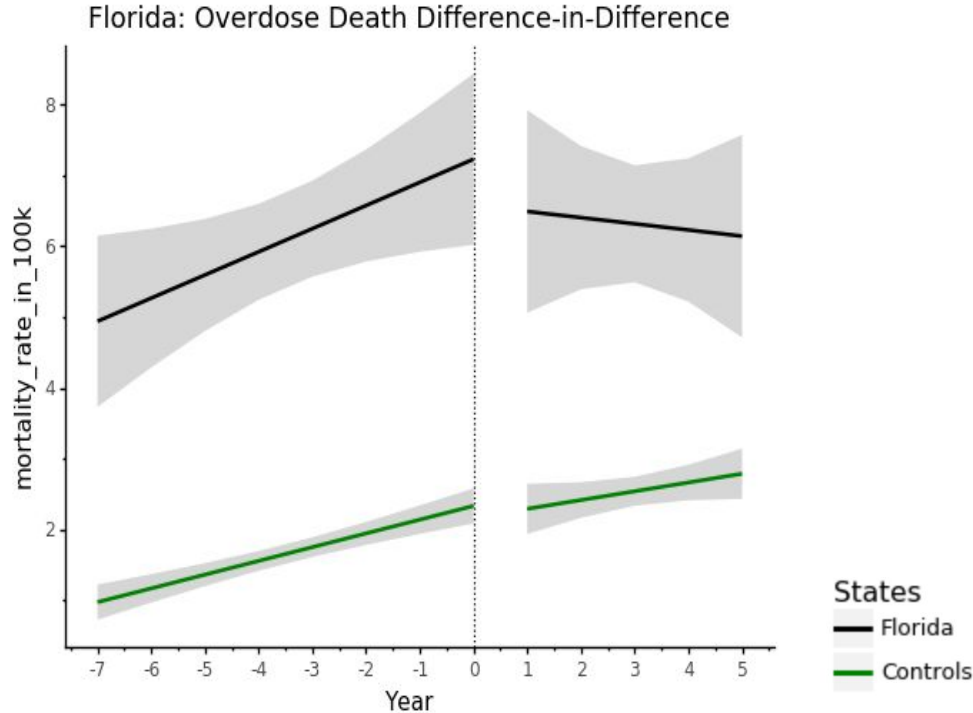
# Florida: Opioid Prescriptions



\*95% confidence intervals are plotted

- Increasing trend pre-policy for Florida and control states
- Opioid prescriptions decreased in Florida, while control states remained increasing
- The policy is effective in reducing opioid prescriptions
- The difference-in-difference estimation is -0.061

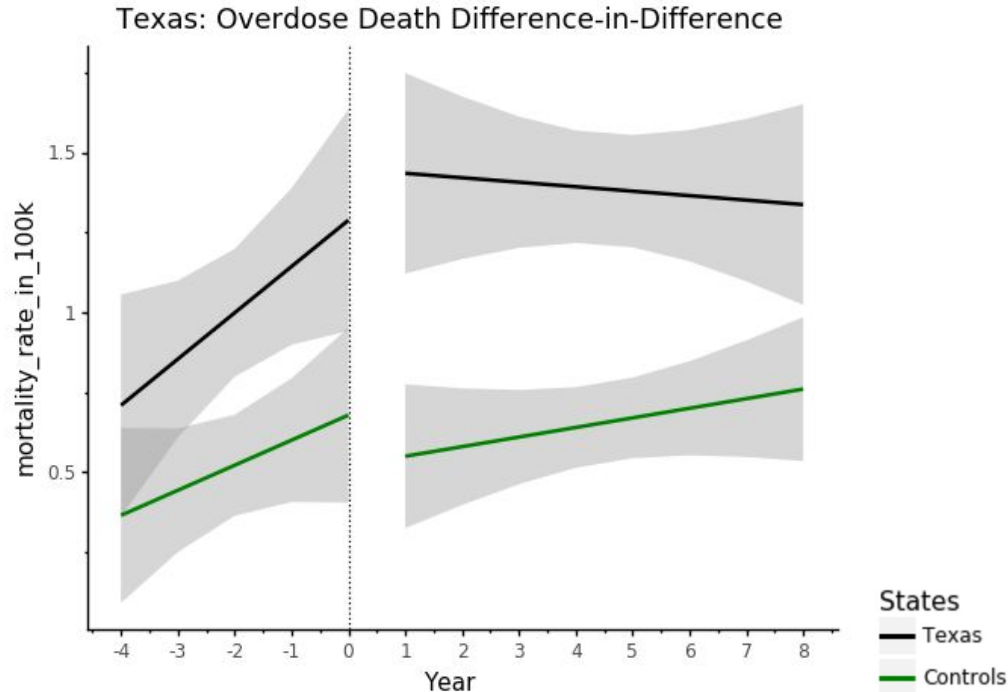
# Florida: Opioid Mortality



- Mortality rate decreased after the policy
- Control states remain an increasing trend
- The policy is effective in reducing the drug overdose deaths
- The difference-in-difference estimation is -0.654

\*95% confidence intervals are plotted

# Texas: Opioid Mortality

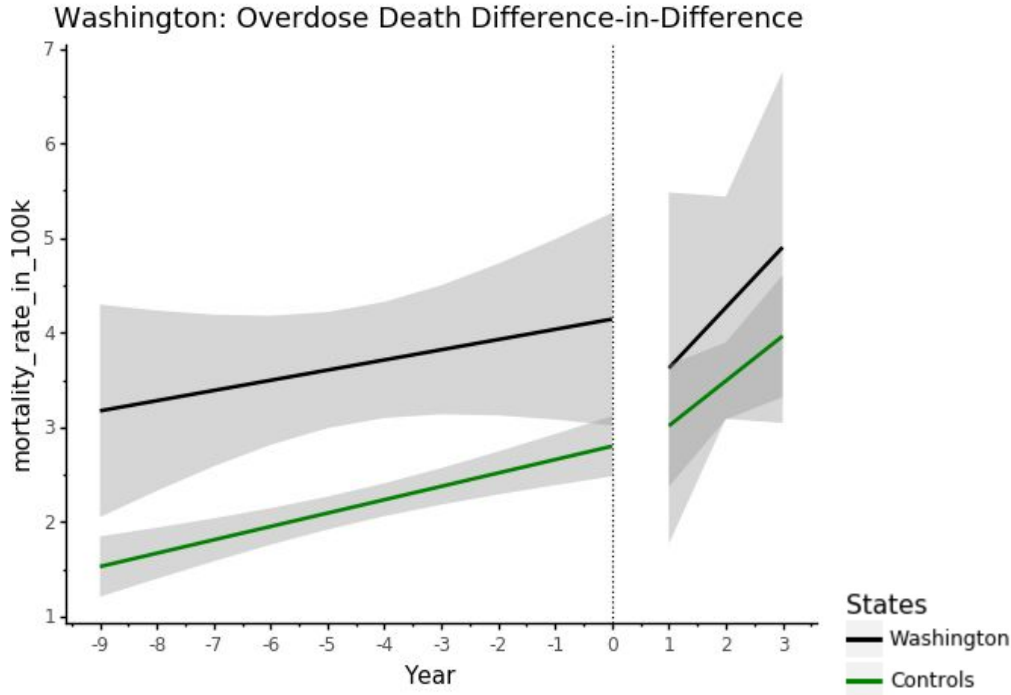


- Opioid prescriptions decreased after the policy
- Mortality rate showed a decreasing trend after the policy
- However, Texas experienced great **fluctuations**
- The effect is not conclusive without further analysis

\*95% confidence intervals are plotted



# Washington: Opioid Mortality



\*95% confidence intervals are plotted

- Opioid prescriptions decreased after the policy
- Mortality fluctuates in pre-policy period
- Increasing trend after the policy
- A short-term decrease in 2013 (one year after the policy)
- The effect of the policy on mortality is inconclusive due to fluctuations and lack of long-term data

# Summary

- Governmental intervention is effective in reducing opioid prescriptions
- Its effect on drug overdose deaths is less obvious
- Mortality tend to decrease in short-term and increase in long-term

# Policy Recommendation

Based on our analysis, policy interventions have been the most effective in Florida

## Why?

- Legislature
  - Require mandatory reporting
  - Expand to wholesale distributor
- Law enforcement
  - Conduct statewide raids
  - Create a task force on prescription drug abuse and newborns



# Policy Recommendation



Regulations on opioid  
prescriptions

Prescription Behavior  
Surveillance System



Opioid abuse in clinics

Illicitly manufactured  
fentanyl



Treatment for patients  
with addiction

Find better and safer  
treatment for chronic pain

**Thank you for watching!**

# Reference

<https://www.drugabuse.gov/publications/drugfacts/prescription-opioids>

<https://www.cdc.gov/mmwr/volumes/69/ss/ss6901a1.htm>

<https://www.drugabuse.gov/drug-topics/opioids/opioid-overdose-crisis>