

The Effect of Opioid Policies

Zoe Zhu (Yi)

Shangwen Yan

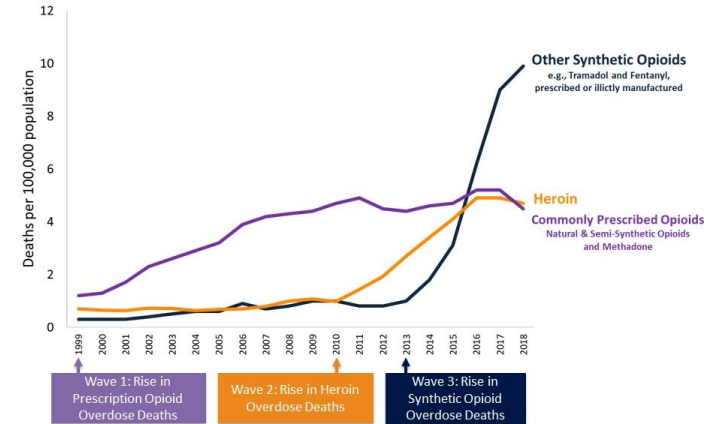
 Betty Wu (Jiaman)

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.

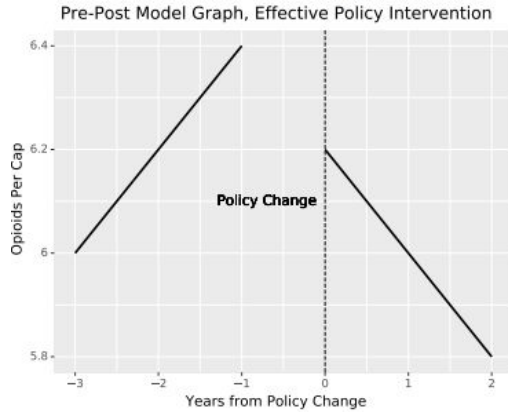
Florida: In 2010, Florida enacted several measures to address prescribing that was inconsistent with best practices. The Florida legislature required that pain clinics treating pain with controlled substances register with the state.

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

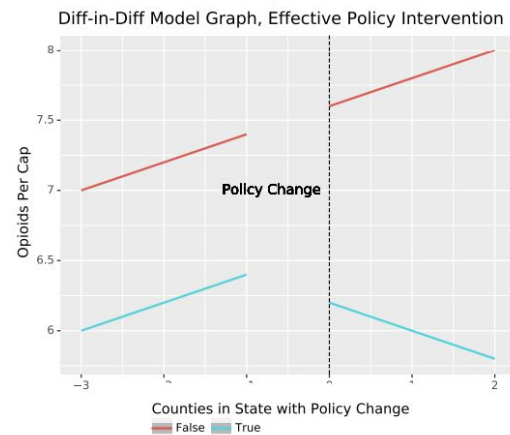


Research Design

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.



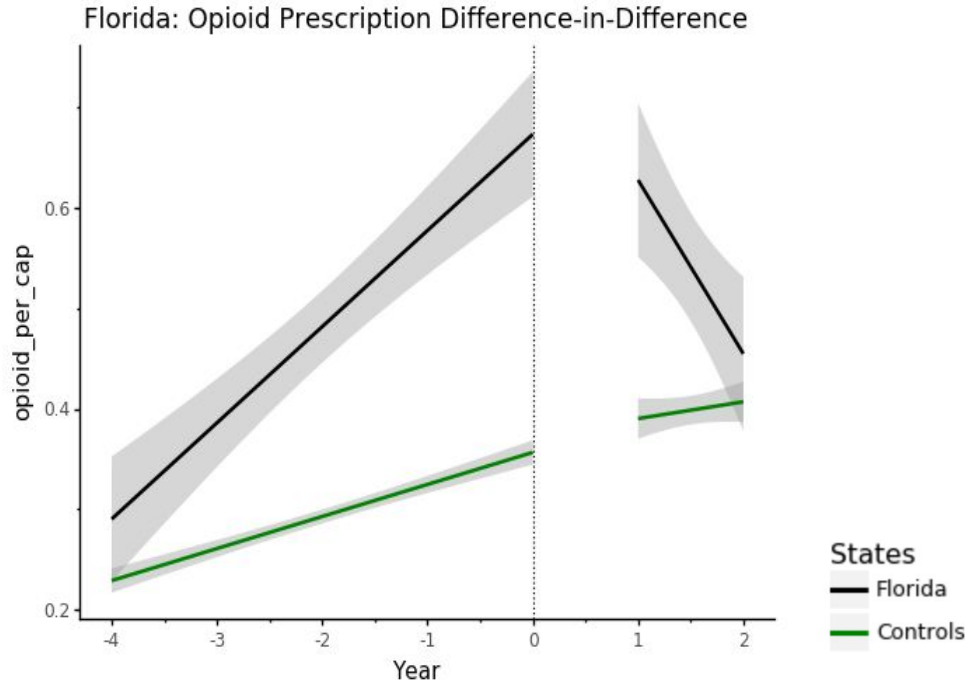
- Difference in Difference analysis
 - Compare Texas, Florida, and Washington with other states that did not implement any opioids regulations



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.

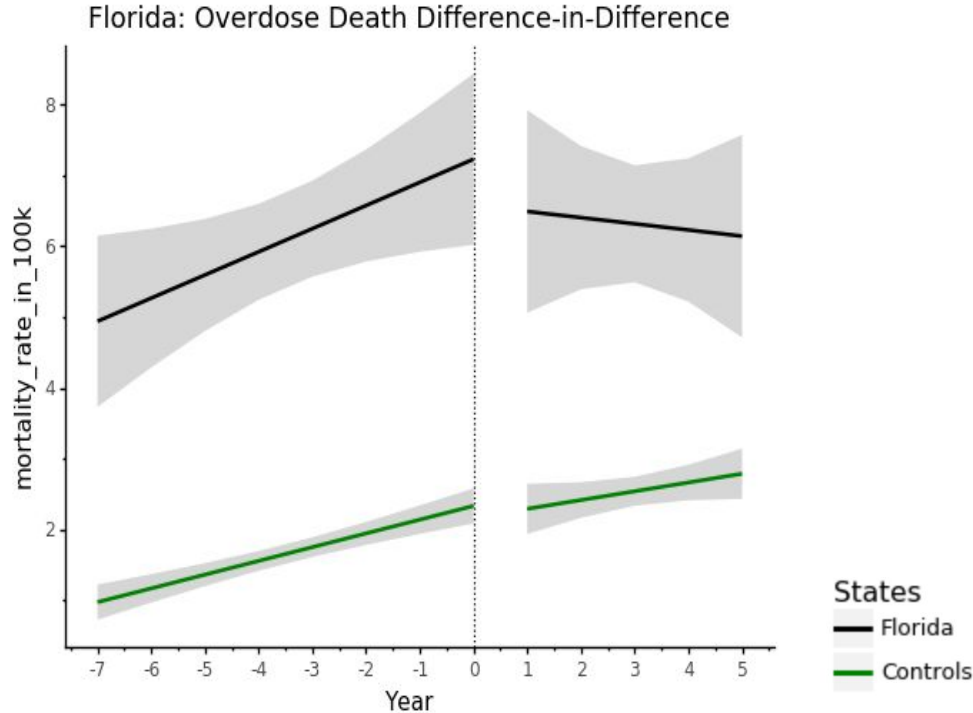
Florida: Opioid Prescriptions



*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

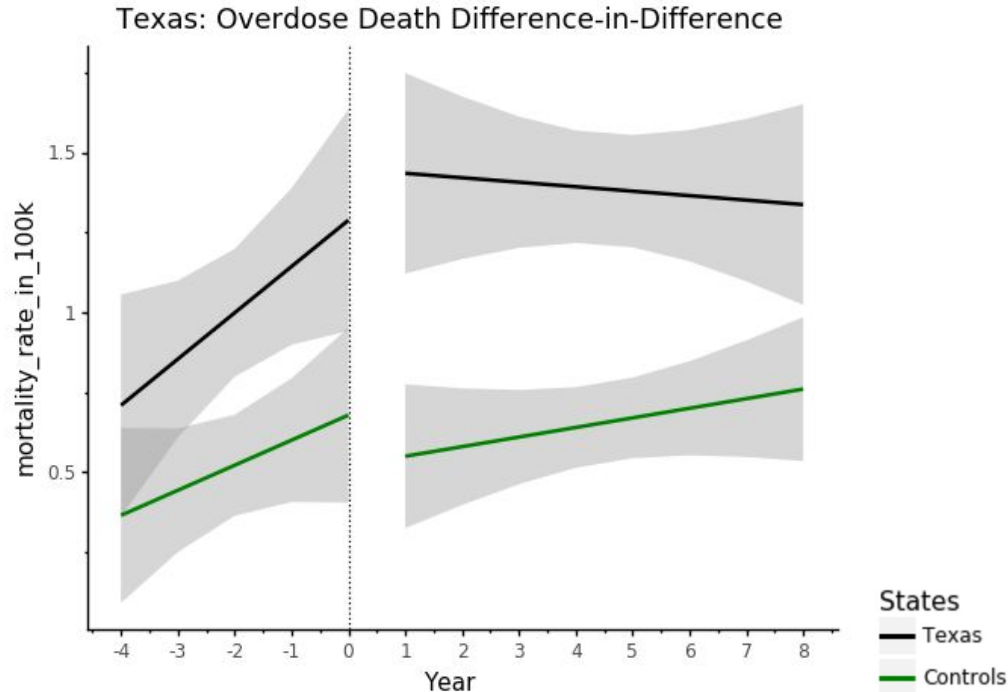
Florida: Opioid Mortality



- 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

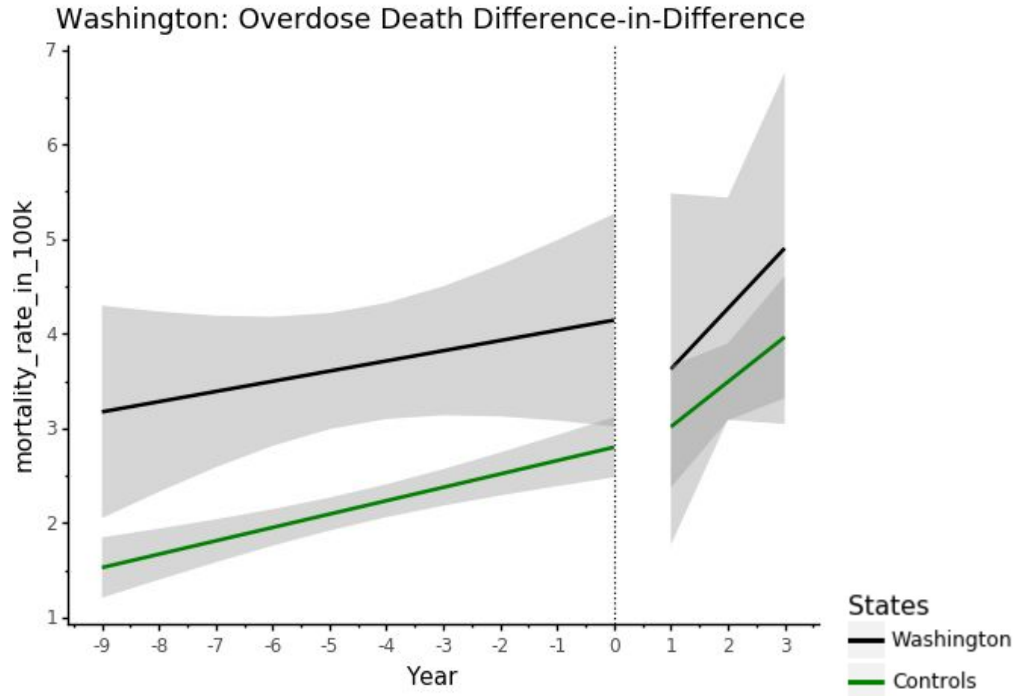
Texas: Opioid Mortality



- 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>

Focus word

Word2vec converts words to vectors for computers to process

Context words

Context words