### The Effects of the Opioid Crisis on Employment: Evidence from Labor Market Flows

Anita Mukherjee, PhD Daniel W. Sacks, PhD Hoyoung Yoo





UNIVERSITY OF WISCONSIN-MADISON

#### Paper here:



### **Motivation**

- Opioid crisis is immense, higher in areas with employment declines
- Slow employment recovery from the Great Recession
- Previous studies have looked at effects of opioids on employment levels, but none has looked at the labor market flows – yet these monthly flows can affect the employment rate with delay

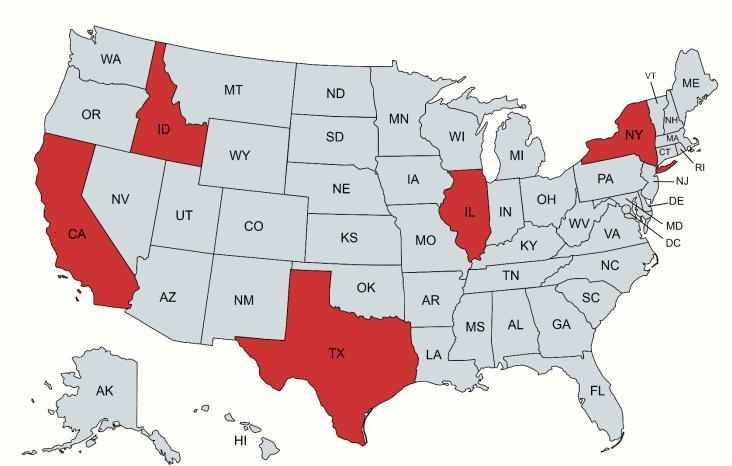
Research Q: what is the effect of the opioid crisis on employment?

Challenge: reverse causality, common causes

Solution: compare states with different levels of opioid crisis stemming from pre-crisis prescribing regulations

### **Background**

# Five states had triplicate prescribing regulations already in force by 1996, so provide a natural experiment to opioid availability

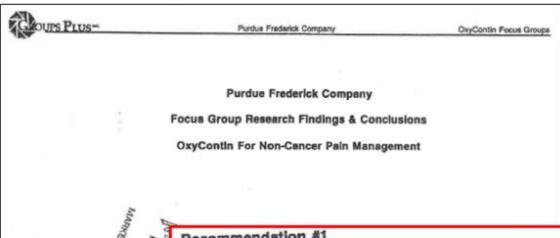


Triplicate regulations for controlled substances; copies with pharmacy; doctor; state

Purdue Pharma viewed them as obstacle to OxyContin uptake -- essentially no marketing of OxyContin to states with triplicate laws in 1996

The small number of states with such regulation requires special treatment in the statistical analysis, which we are careful to implement.

### Figure A1: Example of Purdue Pharma Focus Group Recommendations



#### Recommendation #1

We definitely feel it is appropriate for Purdue Frederick to pursue a marketing effort to position OxyContin as a treatment for non-cancer pain. Specifically, we recommend the following:

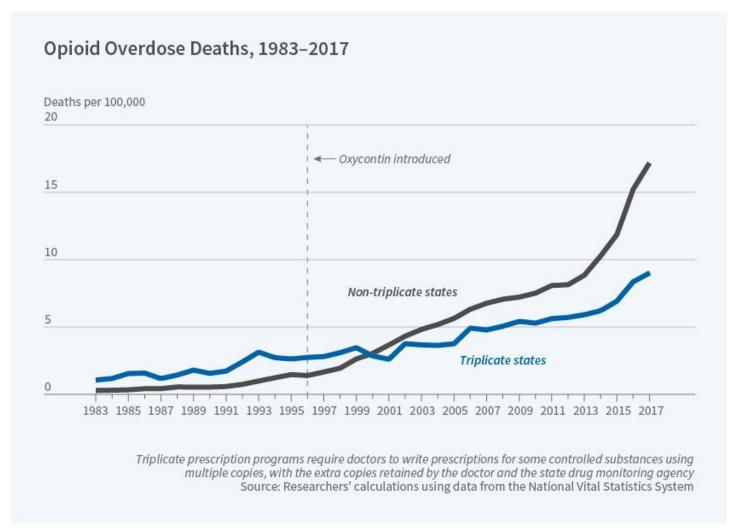
- The product be positioned for treatment of severe pain only, as none of the doctors would use a Class II narcotic for moderate pain that does not relate to cancer.
- The product should be positioned as an effective oploid that can offer twelve hours of continuous relief, so the patient can have a more comfortable lifestyle than with shorter acting opioids.
- The product should only be positioned to physicians in con-triplicate states, and within these areas, focusing on the meumatologists and PCP's as the initial targets.

#### Recommendation #2

Unless there is hard data to suggest otherwise, we do not feel that any further research of OxyContin for non-cancer pain would be appropriate in the triplicate states. In our judgment, the data from Texas seems to be very convincing relative to the attitudes of "triplicate" doctors toward Class II narcotics, and unless there is reason to believe this could be different in another market (i.e., California, New York) than the findings from the Houston groups should be considered valid for all markets.

From paper: Alpert, Abby, William N. Evans, Ethan MJ Lieber, and David Powell. "Origins of the opioid crisis and its enduring impacts." The Quarterly Journal of Economics 137. no. 2 (2022): 1139-1179.

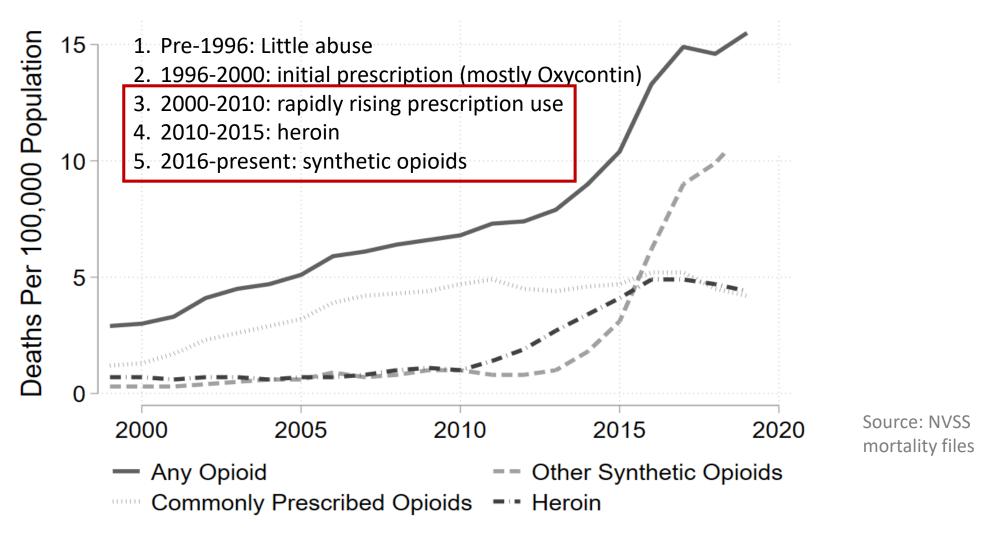
# Triplicate regulations had large protective effect over opioid prescribing



Triplicate states had 50% less opioid prescribing; 36% fewer opioid deaths

Plot from NBER Digest by Steve Maas on the paper: Alpert, Abby, William N. Evans, Ethan MJ Lieber, and David Powell. "Origins of the opioid crisis and its enduring impacts." *The Quarterly Journal of Economics* 137, no. 2 (2022): 1139-1179.

# Keep in mind, over the study timeframe, the nature of opioid abuse is substantially changing



Anita Mukherjee, University of Wisconsin-Madison

### **Hypothesis and model**

### The hypothesis

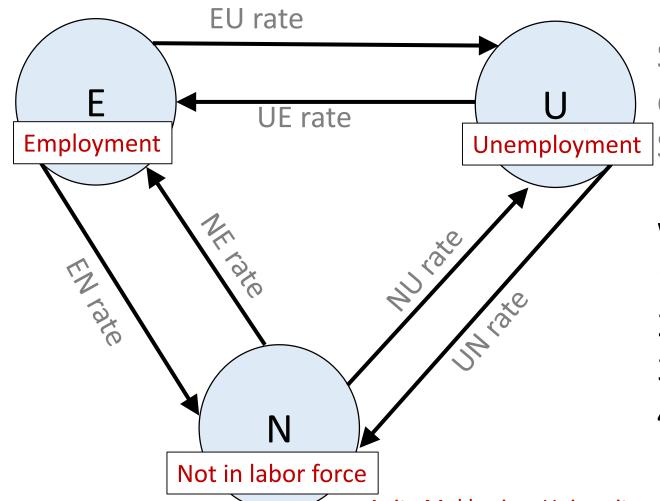
Opioid use and availability are more dangerous for those unemployed or non-employed, as there is greater danger of slipping into addiction

- 1. 'Deaths of despair:' long-run economic decline increases vulnerability
- 2. Unemployment-opioid use association
- 3. Pain-unemployment association
- 4. Rational addiction: costs of addiction lower when long-run prospects bleak

Opioids affect employment by slowing return of unemployed to employment

### **Labor market flows**

Flows into employment: NE, UE Flows out of employment: EU, EN



Steady state employment **level** determined by **flows**:

Unemployment SS:  $(E_t, U_t, N_t) = (E_{t+1}, U_{t+1}, N_{t+1})$ 

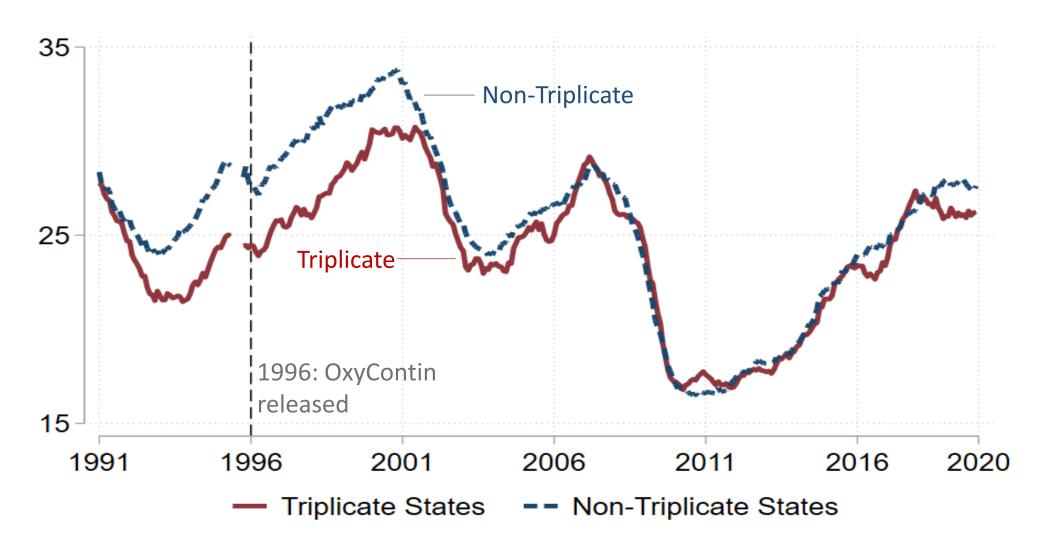
What would we expect opioids to do?

- 1. Reduce UE rate
- 2. Reduce NE rate
- 3. Increase NU rate
- 4. Increase EU rate

Anita Mukherjee, University of Wisconsin-Madison

### **Results**

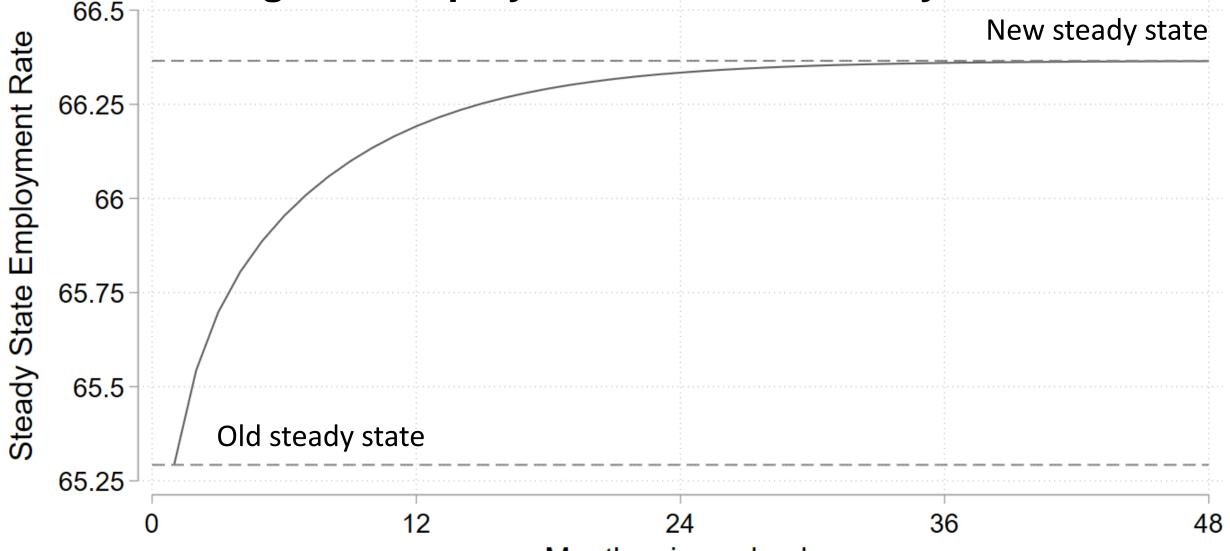
# Pre-OxyContin, triplicate status had lower outflow from unemployment – this reversed in the following years



### Implications for steady state employment

Period	Steady state	Effect of triplicate status on steady state		
	EPOP	EPOP	UPOP	NPOP
1996-2019	67.78	1.11	-0.58	-0.52
			<b>.</b>	
1996-2000	70.80	0.41	-0.10	-0.31
2001-2010	67.99	1.16	-0.73	-0.43
2011-2019	65.87	1.89	-0.76	-1.13

How long does it take for these affected labor transitions to change the employment level? About 2 years.



Months since shock

Anita Mukherjee, University of Wisconsin-Madison

#### **Conclusions**

After OxyContin's introduction, states with triplicate laws in 1996...

- Relative increase in job finding rate (UE)
- Relative decrease in job exit rate (EU)
- Especially in post-2000 when opioid abuse was most severe

Triplicate regulation increased employment rate by 1 percentage point

Important connection between opioid abuse on labor market outcomes

- Harder to transition out of unemployment
- Unemployment likely a trigger for opioid abuse

Gradual adjustment may make opioid effects difficult to detect

