

# Synthetic Opioids Are Not Deadlier Than Natural Opioids

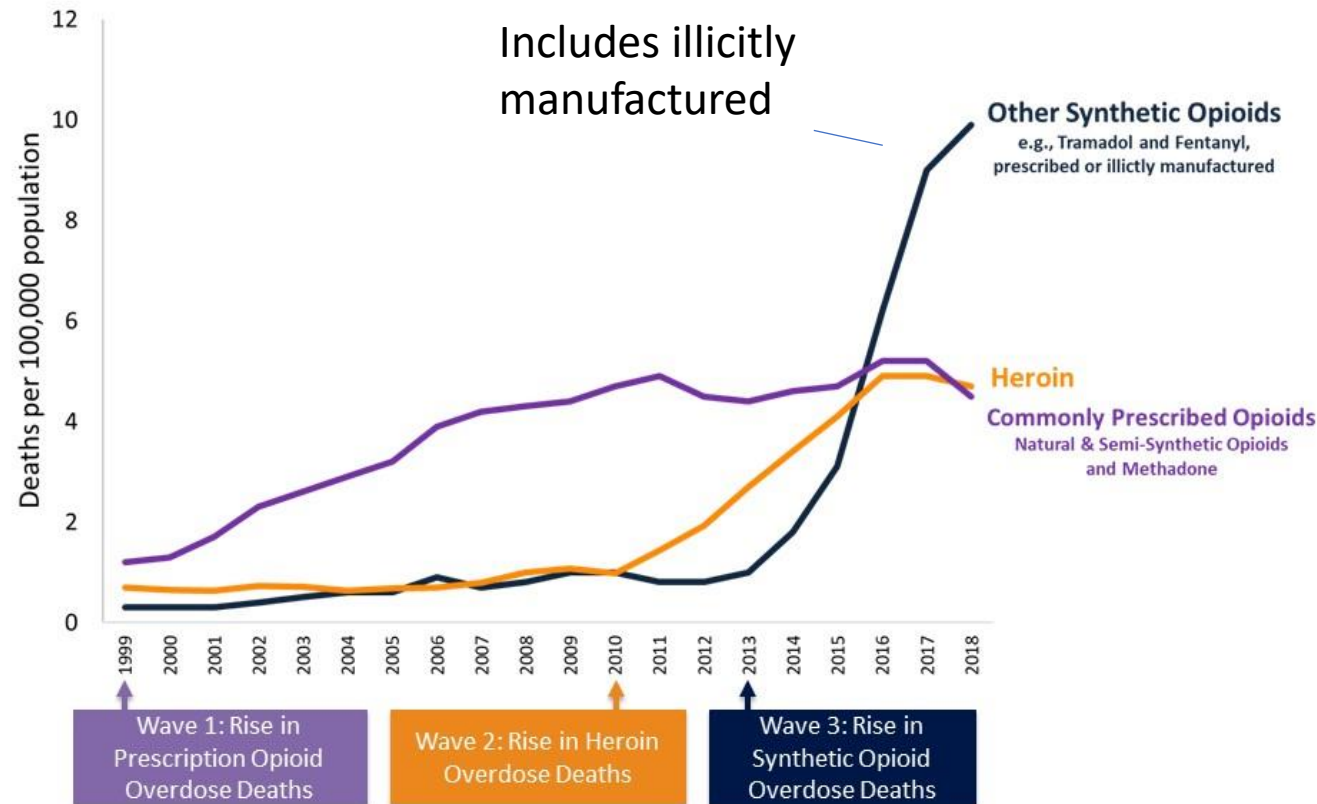
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Thinkful Capstone 1

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# Will decreasing synthetic prescriptions decrease overdose deaths?

## 3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

# “Synthetics are dangerous”

- Hydrocodone
- Oxycodone
- Codeine
- Morphine
- Fentanyl
- Tramadol



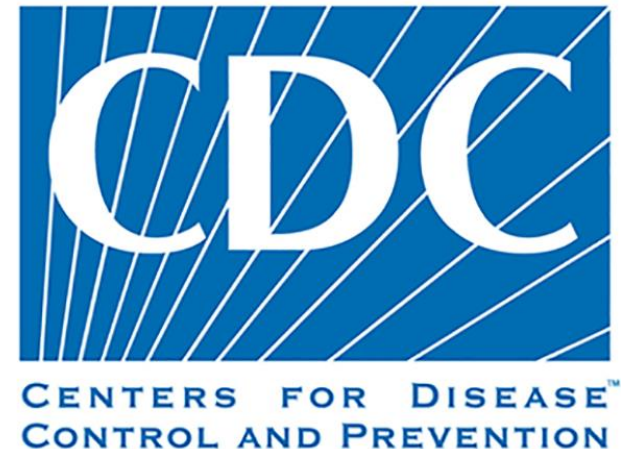
# Prescribing synthetics has a negative to no correlation to deaths

- There is a difference between synthetic use in all US regions except between the North East and the Midwest
- The Midwest's death rate is much lower than the North East;
  - South and West have similar deaths

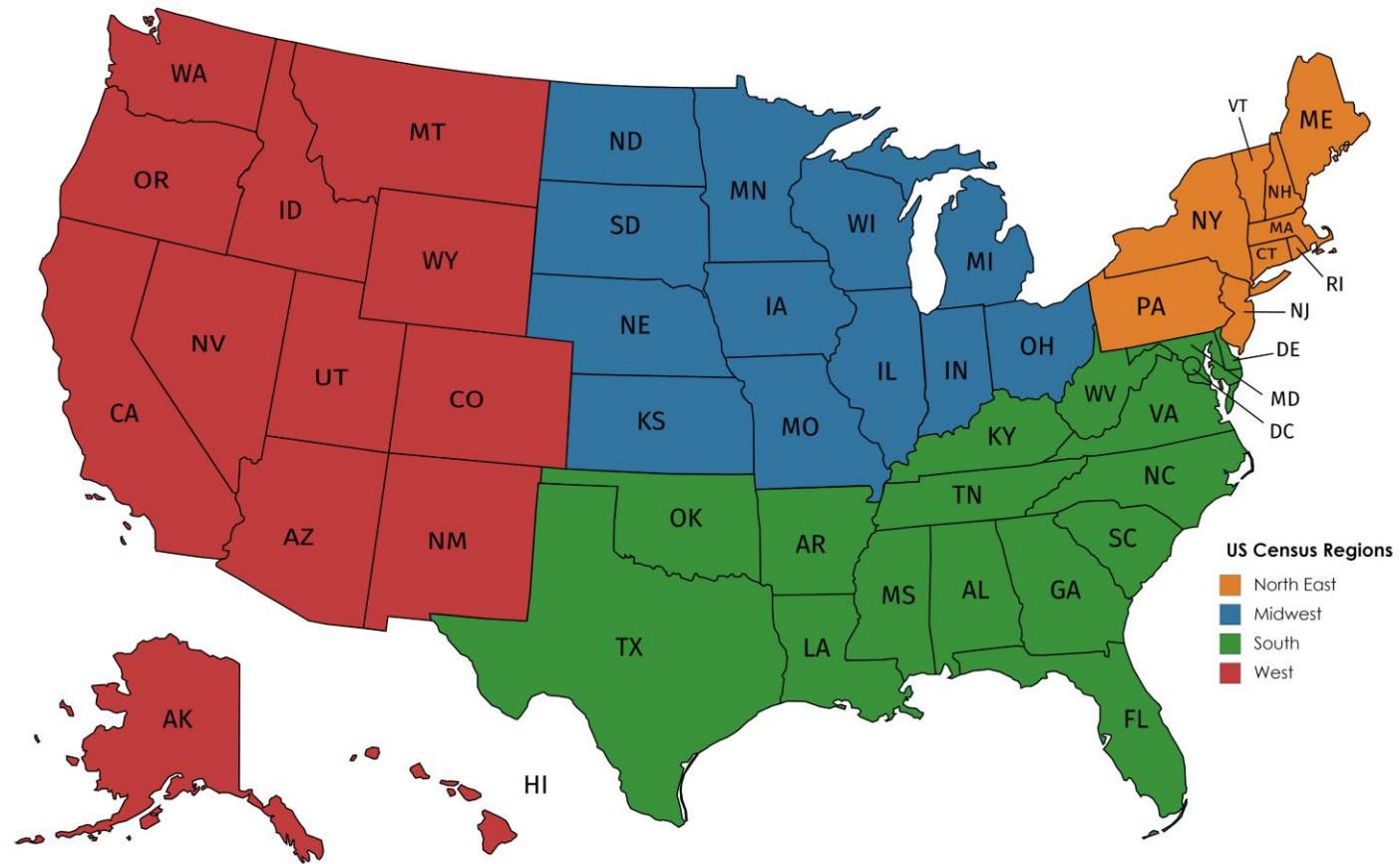
# The findings are limited to Medicare users

- For the year 2014
- From Medicare
- 14.5k unique opioid prescribers
- Compiled by Kaggle User

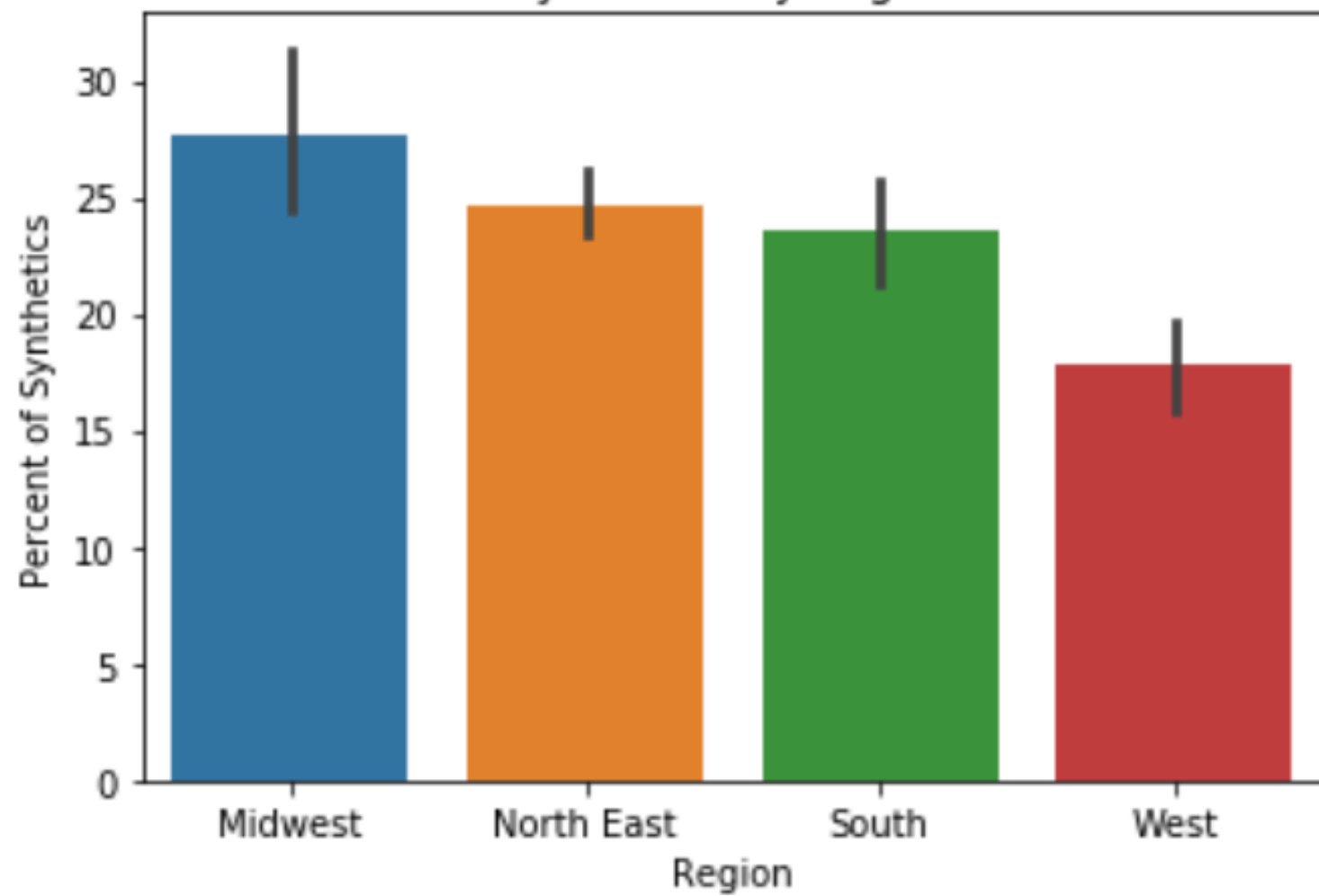
Alan “AJ” Pryor, Ph.D.



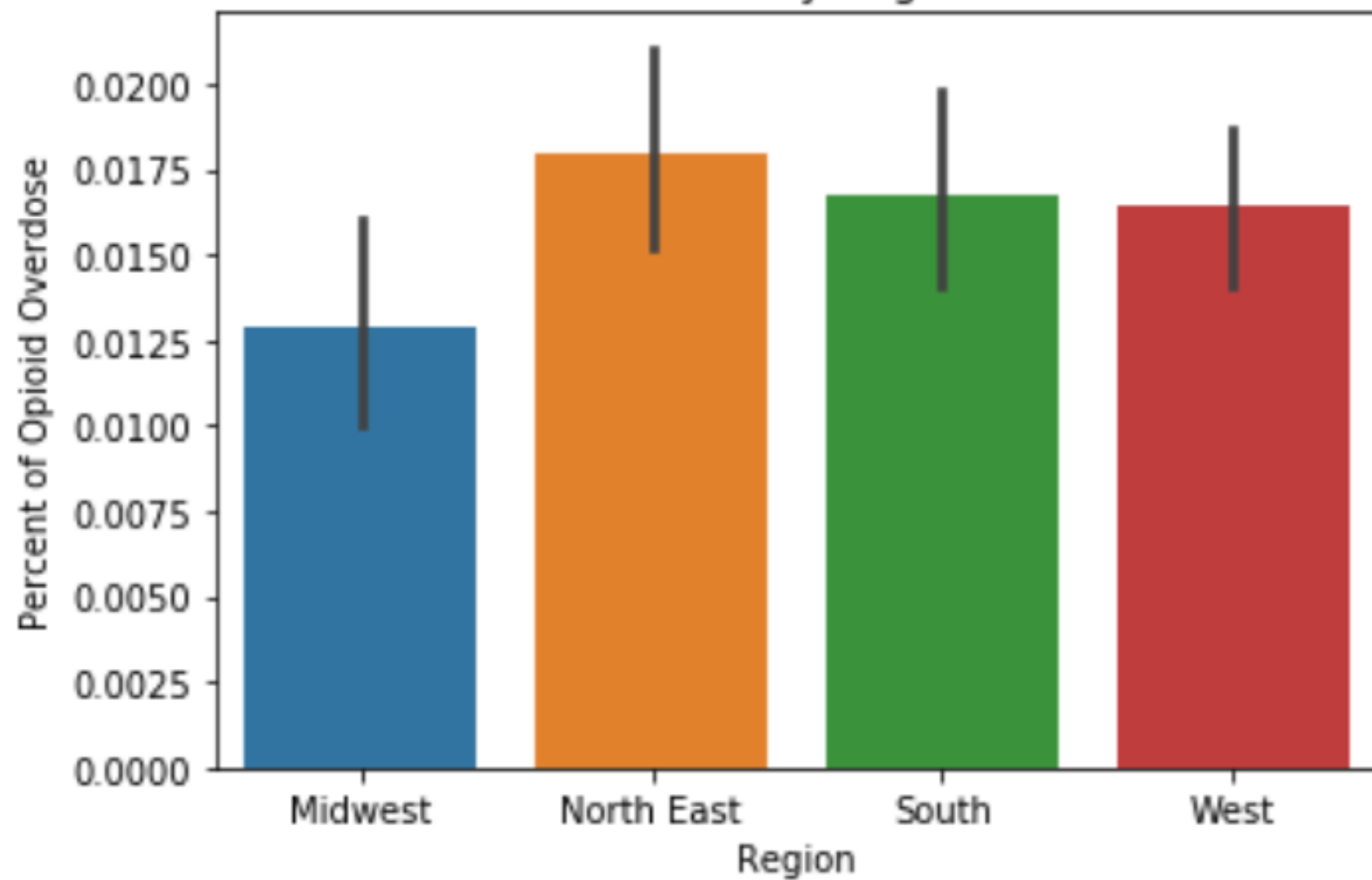
# Regional Differences



Synthetics By Region

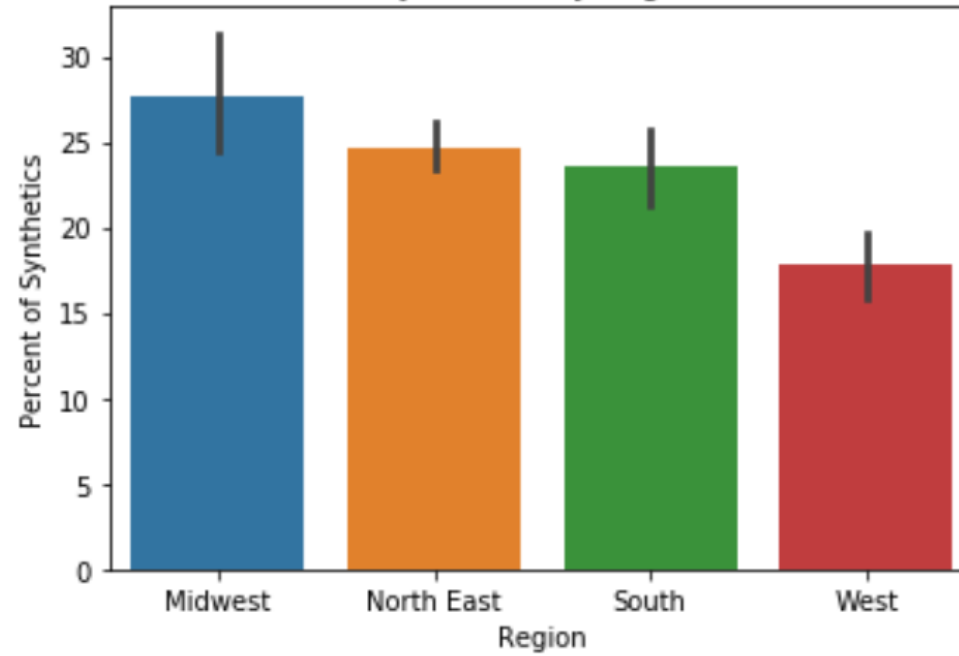


Deaths by Region





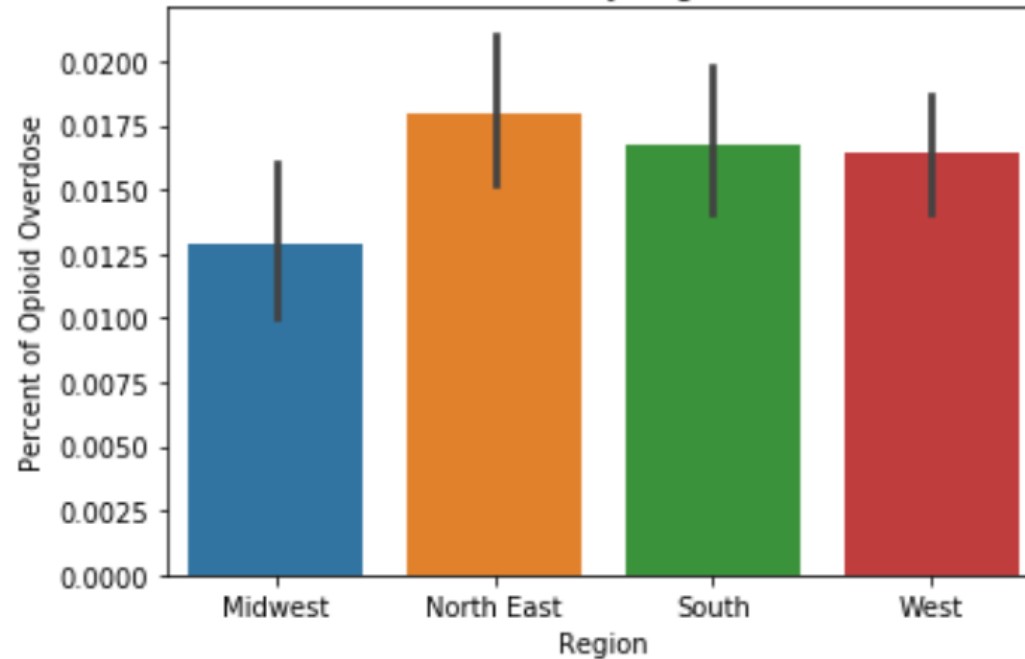
Synthetics By Region

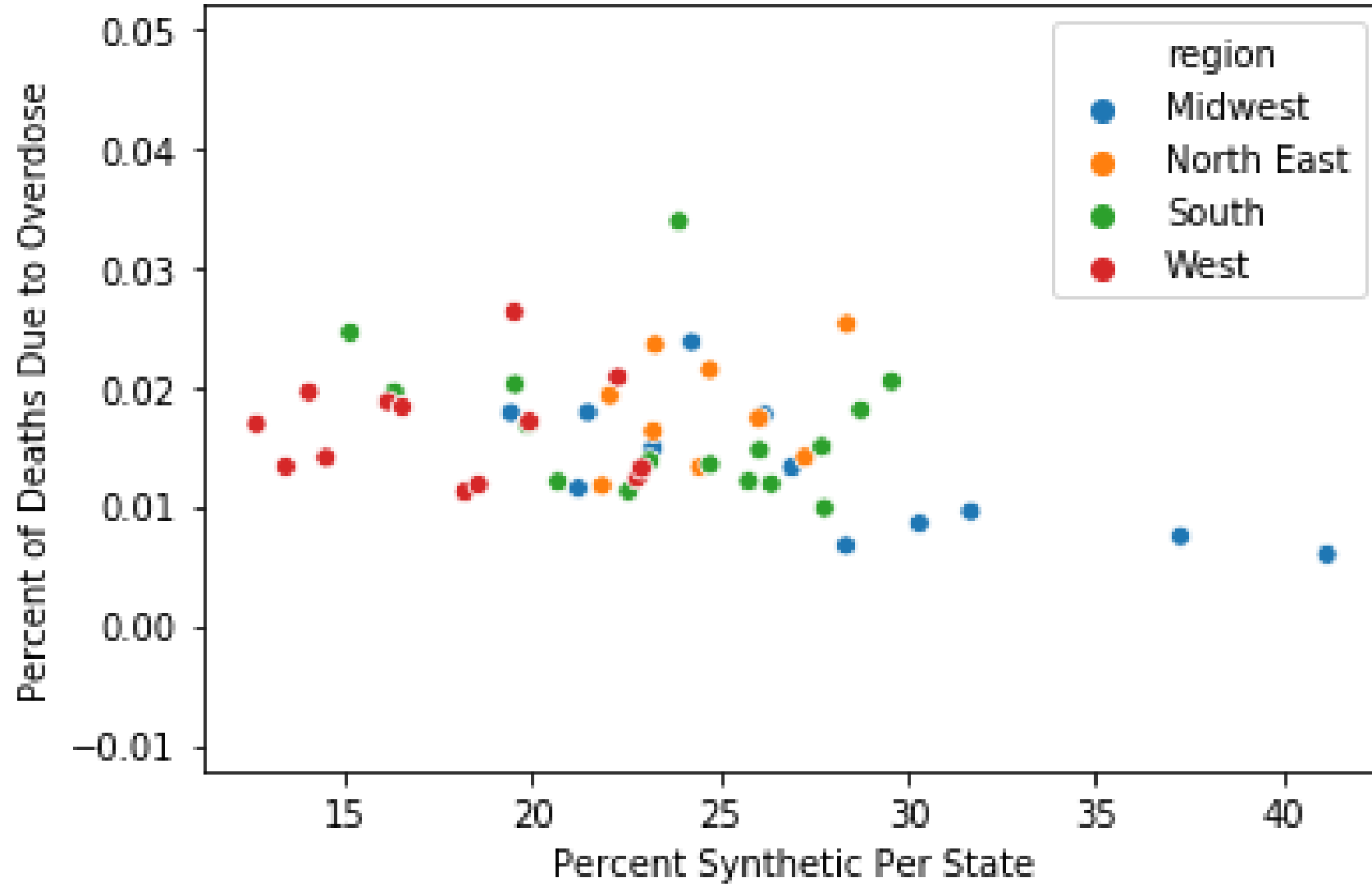


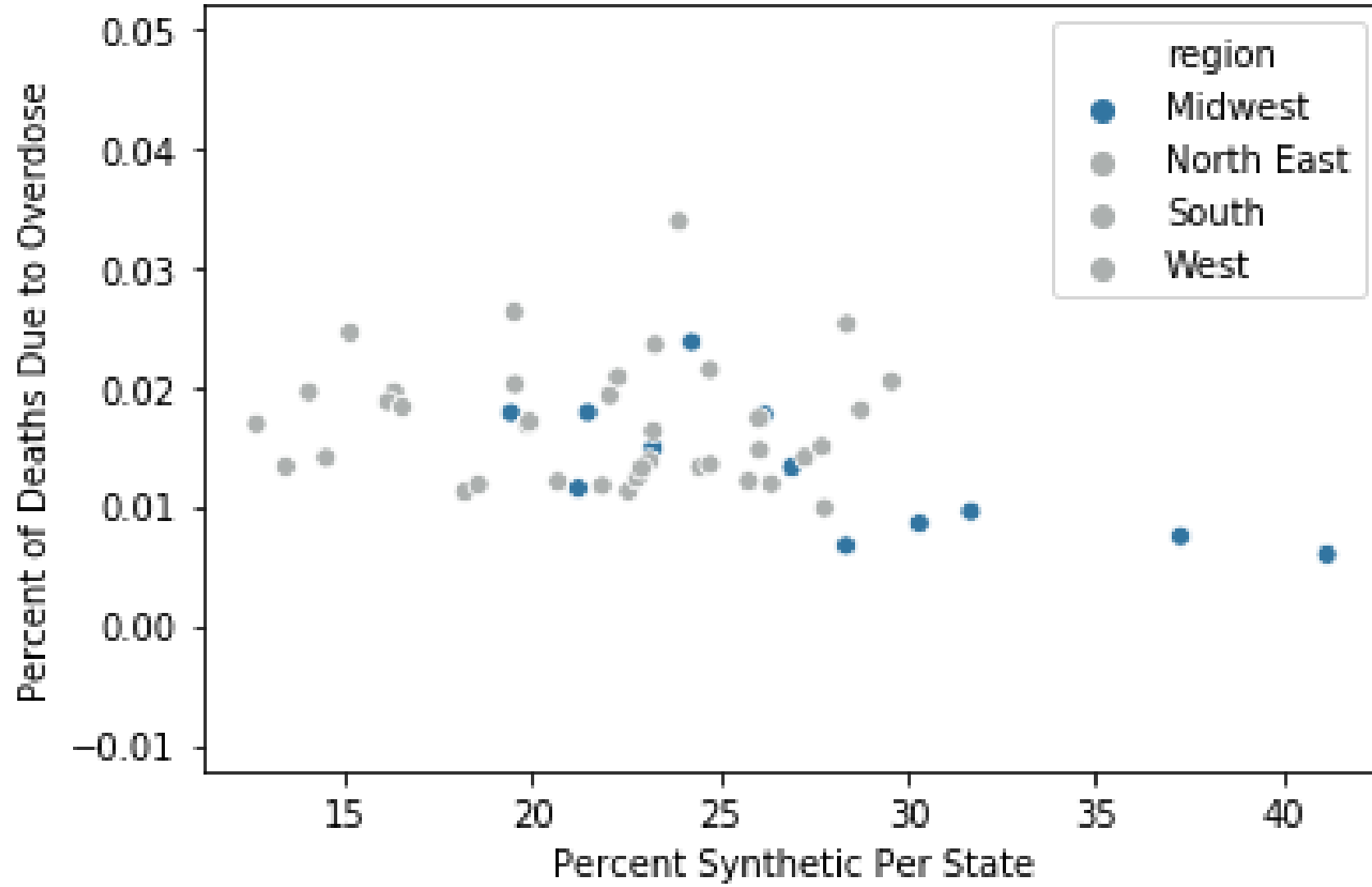
South and West have very different synthetic percentages, but similar deaths

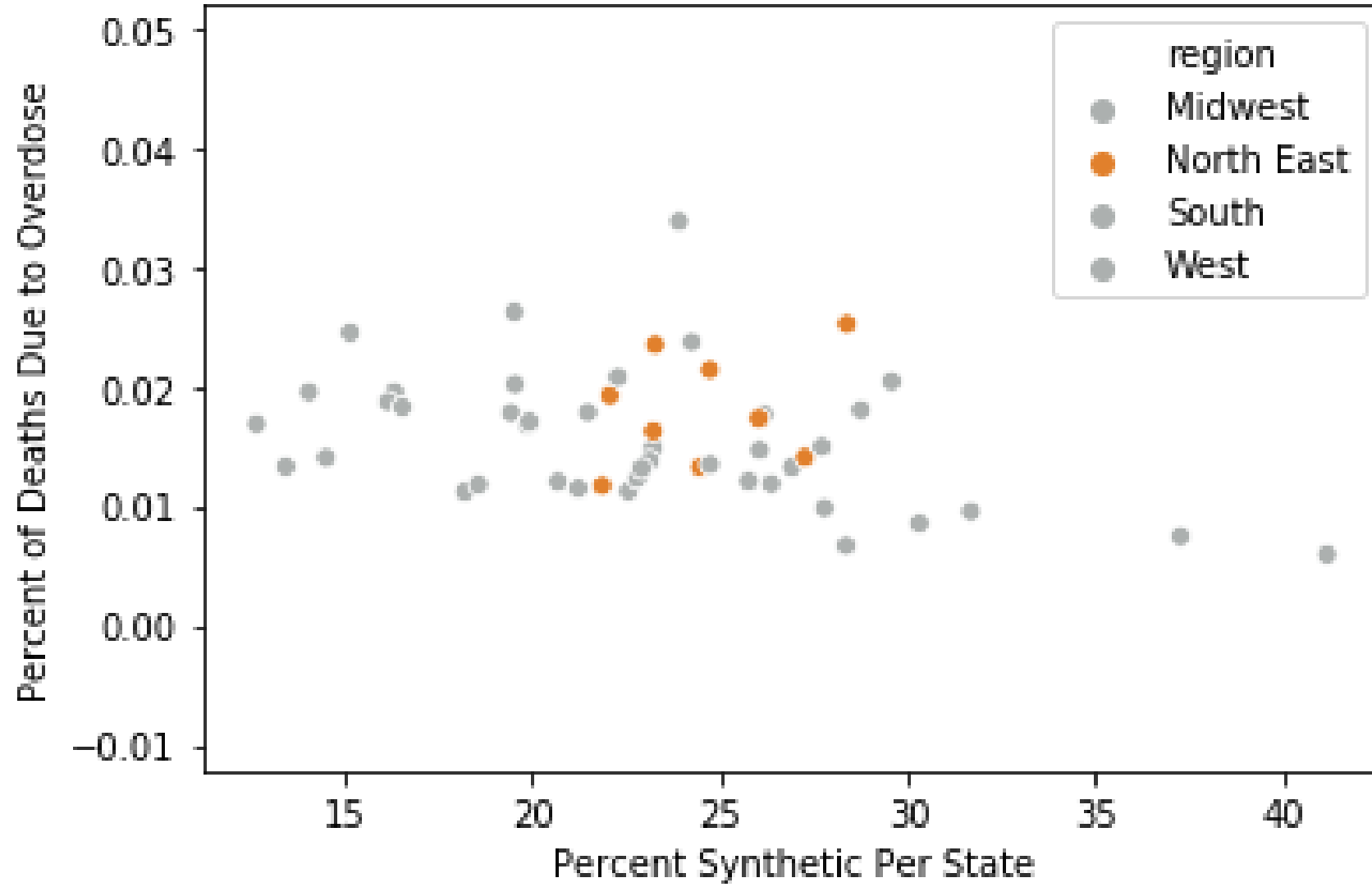
Midwest has highest synthetics, but lowest deaths

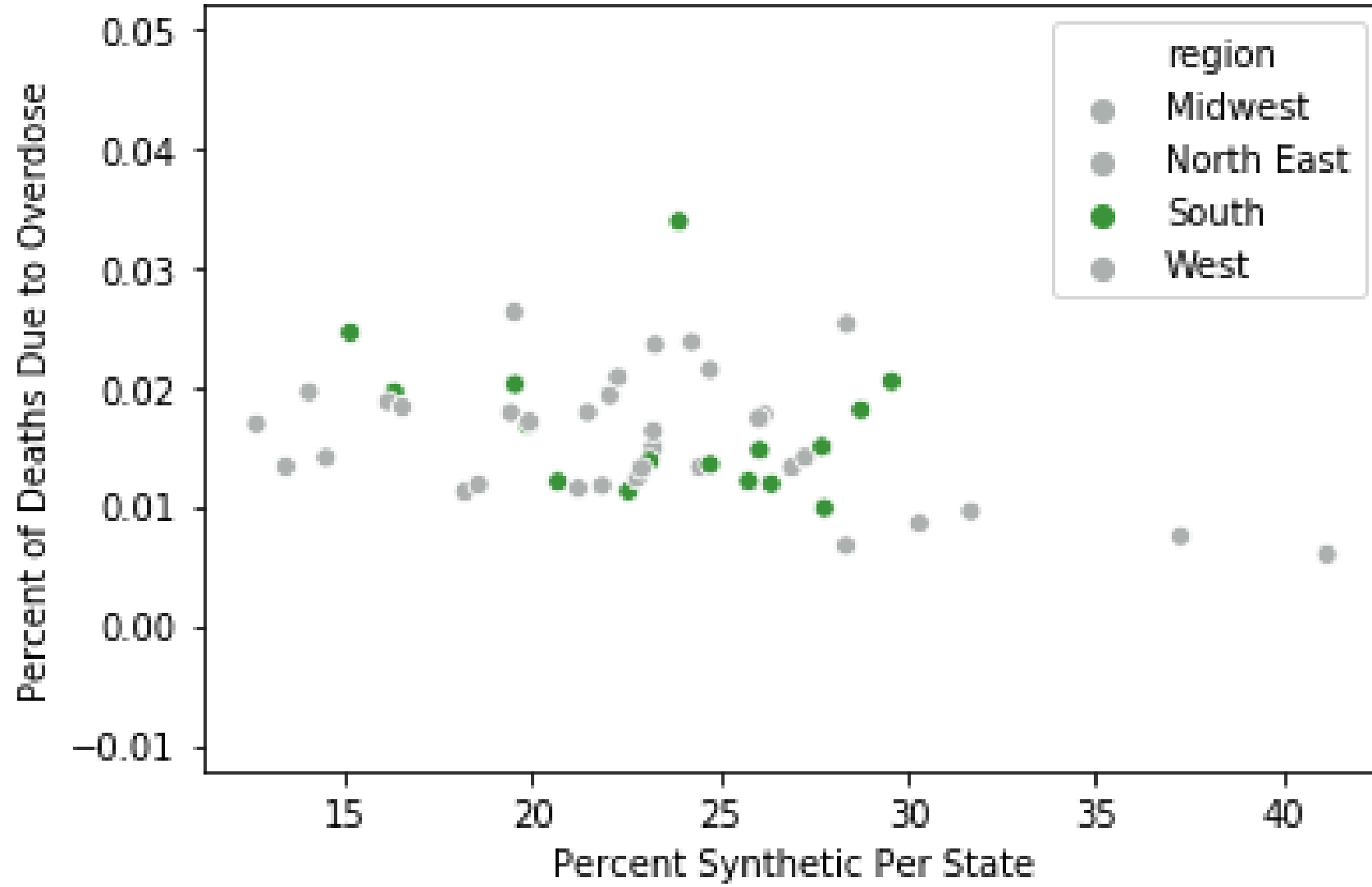
Deaths by Region

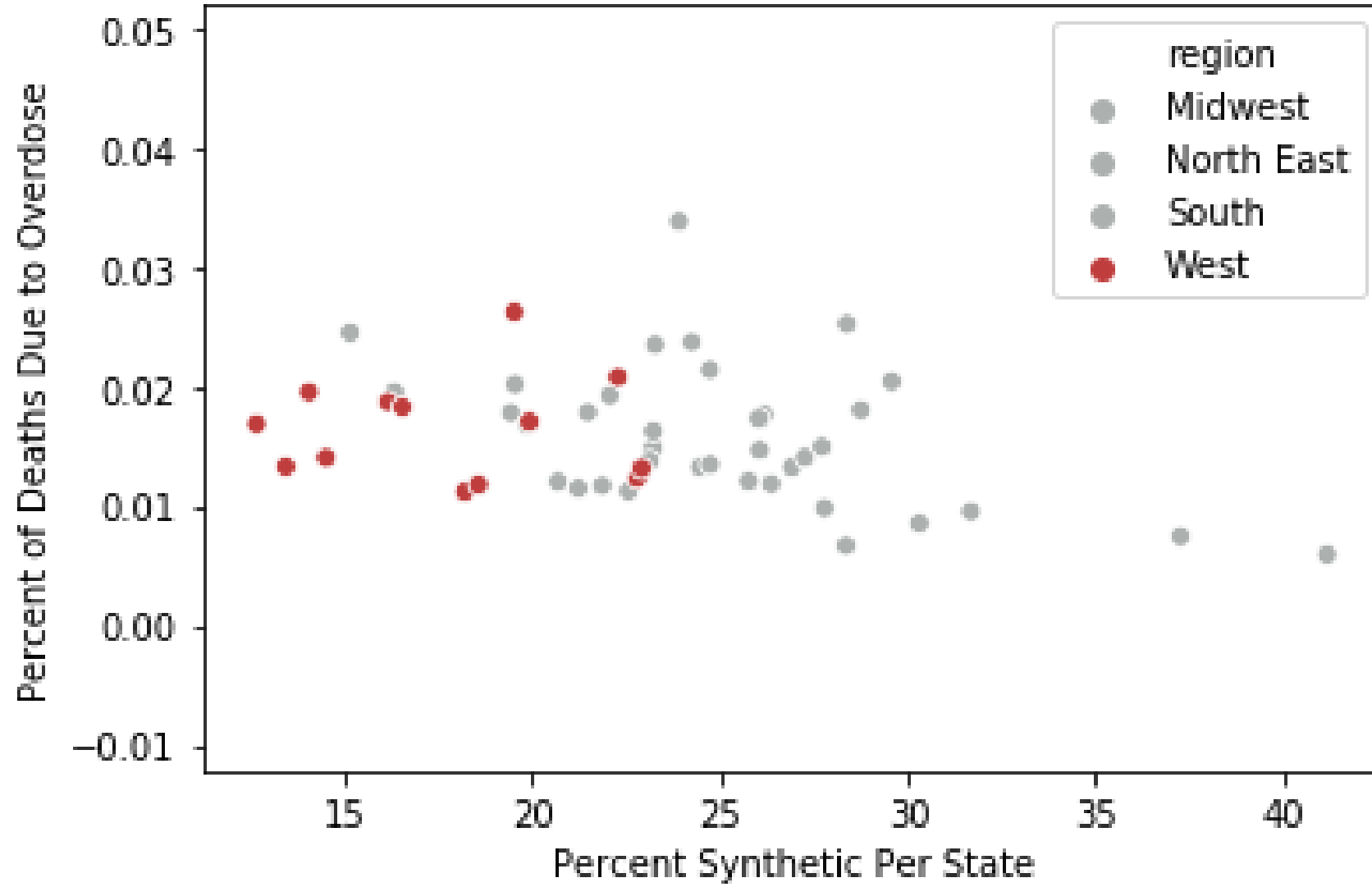






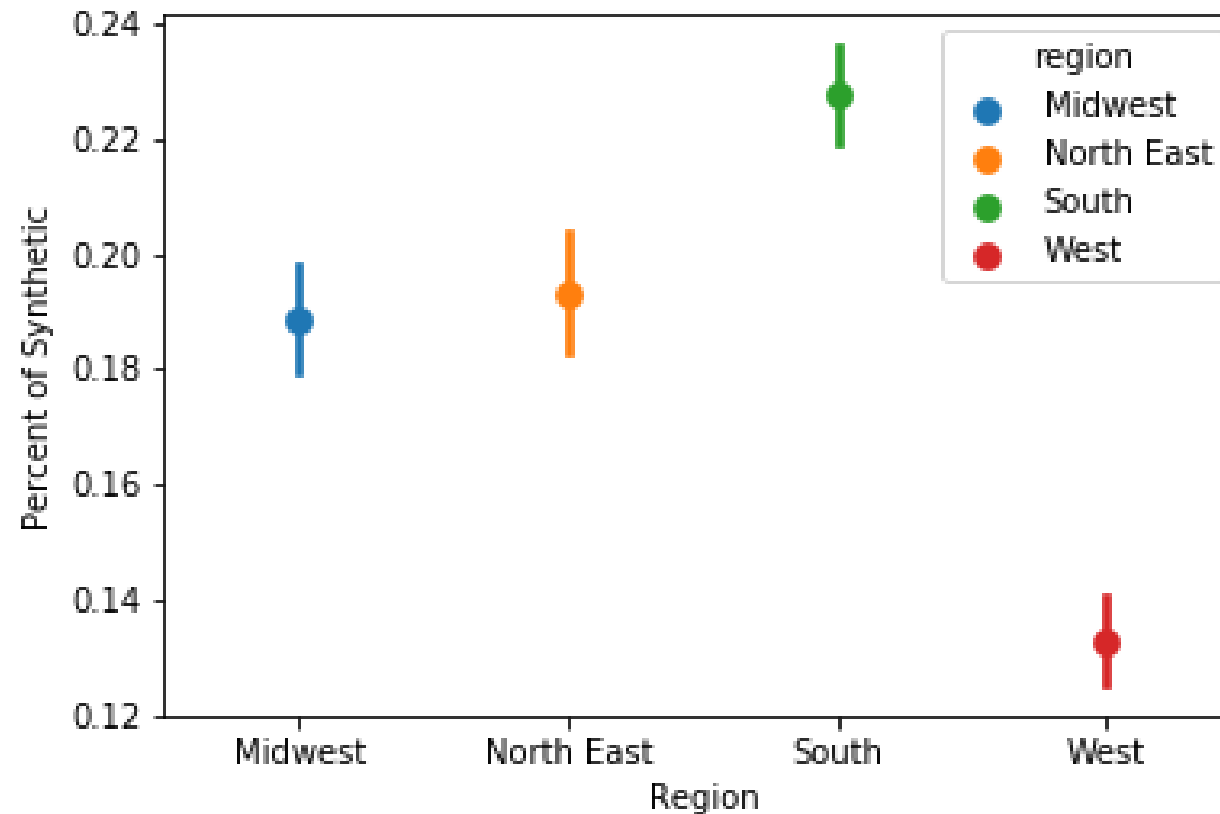






# Is there a regional difference in synthetic percentages?

- Kruskal-Wallis Test



Small differences between each group

# Other regional factors may be at play

- Naloxone (Narcan) access
- Dependence programs
- Income

## Variation in **State Naloxone and Good Samaritan Laws** As of October 24, 2017



### **Prescription by Standing Order Authorized**

43 states have a standing order to authorize non-medical personnel to issue naloxone (as of 7/2017)

### **Prescribers Immune from Liability**

34 States have laws to protect naloxone prescribers from civil and criminal liability (as of 7/2017)



### **Good Samaritan Law Protects Against Arrest**

10 states have Good Samaritan Laws that prevents a person who calls 911 from arrest for drug possession, drug paraphernalia possession, and probation/parole violation (as of 12/2016)





# Further research is needed

- Different insurance providers
- Deaths on a per-doctor basis
- Regional effects

