

# Prescribing Synthetic Opioids May Decrease Death Rate

Compared to Natural Opioids

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Thinkful Capstone 1

August, 2020

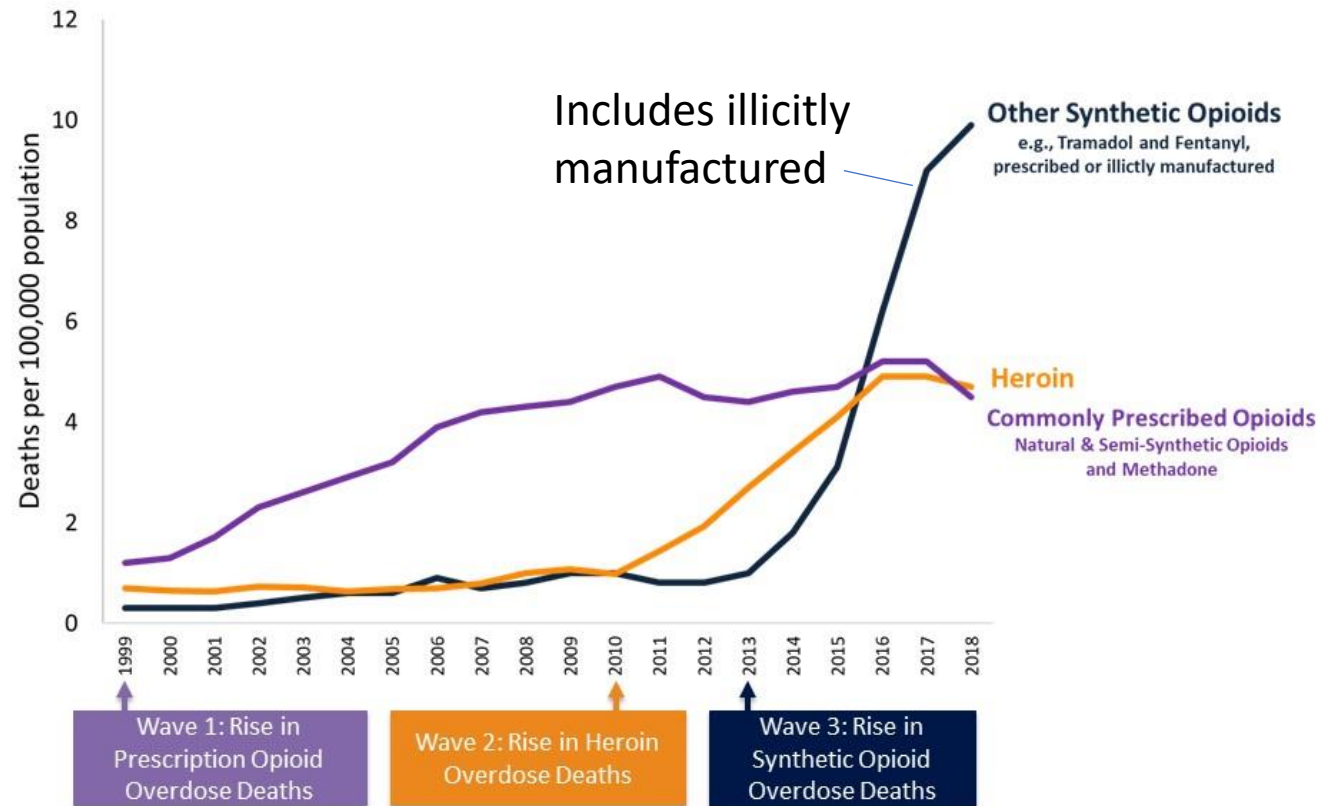
# Findings

- There is a significant difference between all US regions except between the North East and the Midwest
- The Midwest's death rate is much lower than the North East
- Will increasing synthetic prescriptions decrease overdose deaths?

# The Opioid Epidemic

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

## 3 Waves of the Rise in Opioid Overdose Deaths



SOURCE: National Vital Statistics System Mortality File.

# The Opioid Epidemic

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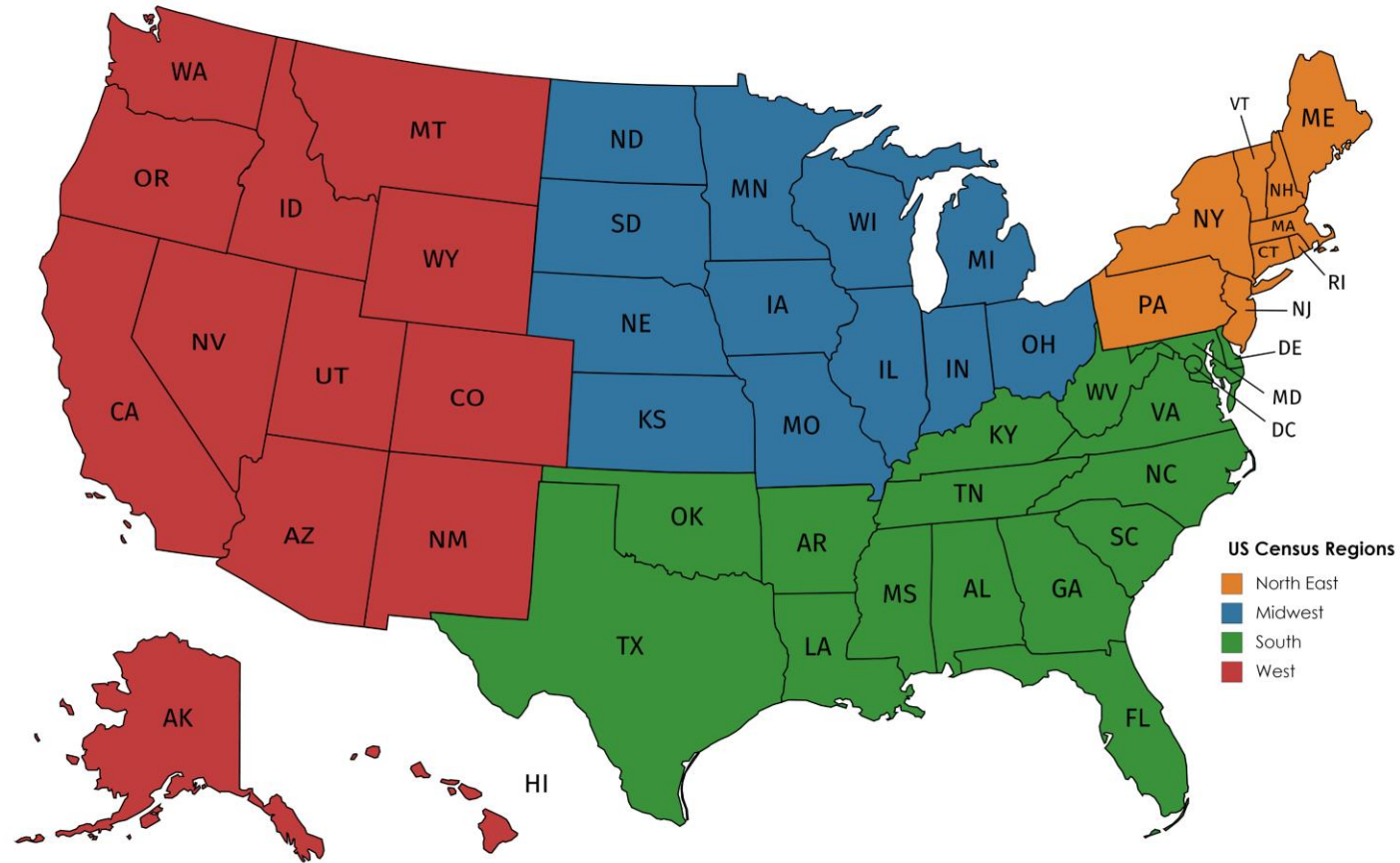
# About the Data

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

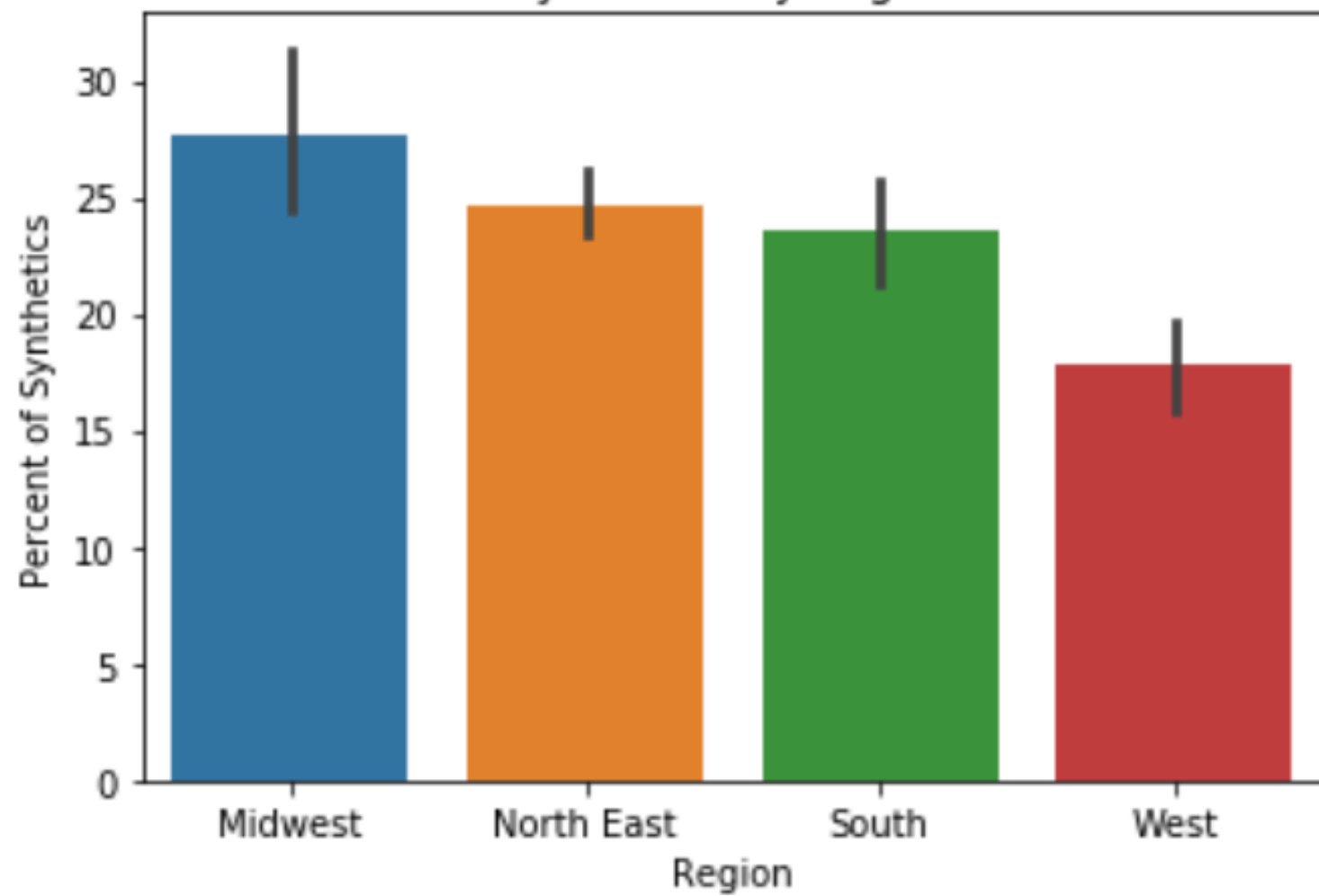
Alan “AJ” Pryor, Ph.D.

	Total Synthetic	Total Opioids	Percent Synthetic	Percent Deaths
Mean	33.36	146.78	19.1%	0.0153%
Std Dev	73.02	358.11	28.2%	0.0045%
Min	0.00	0.00	0.0%	0.0059%
Max	2182.00	15234.00	100.0%	0.0338%

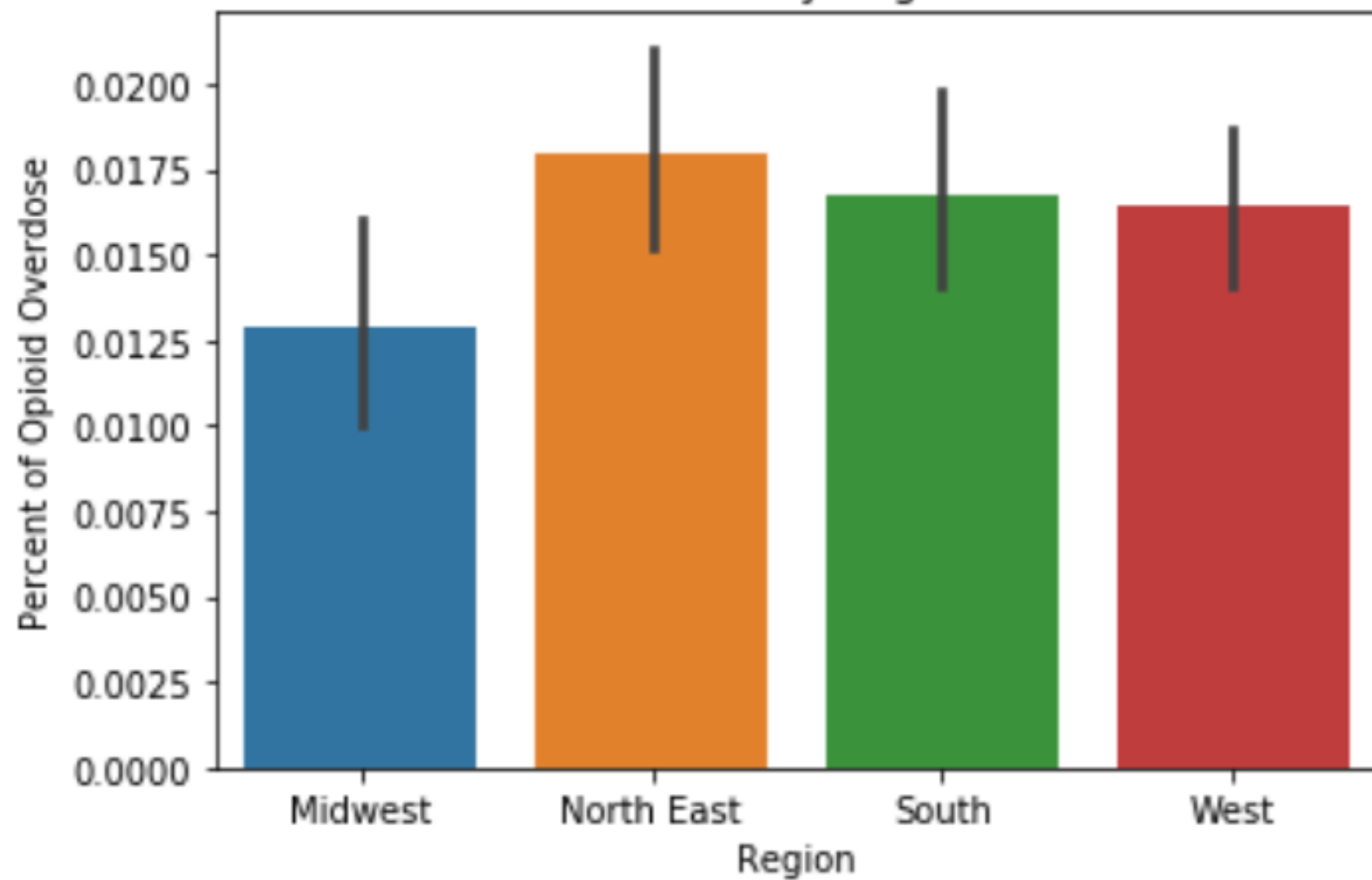
# Regional Differences



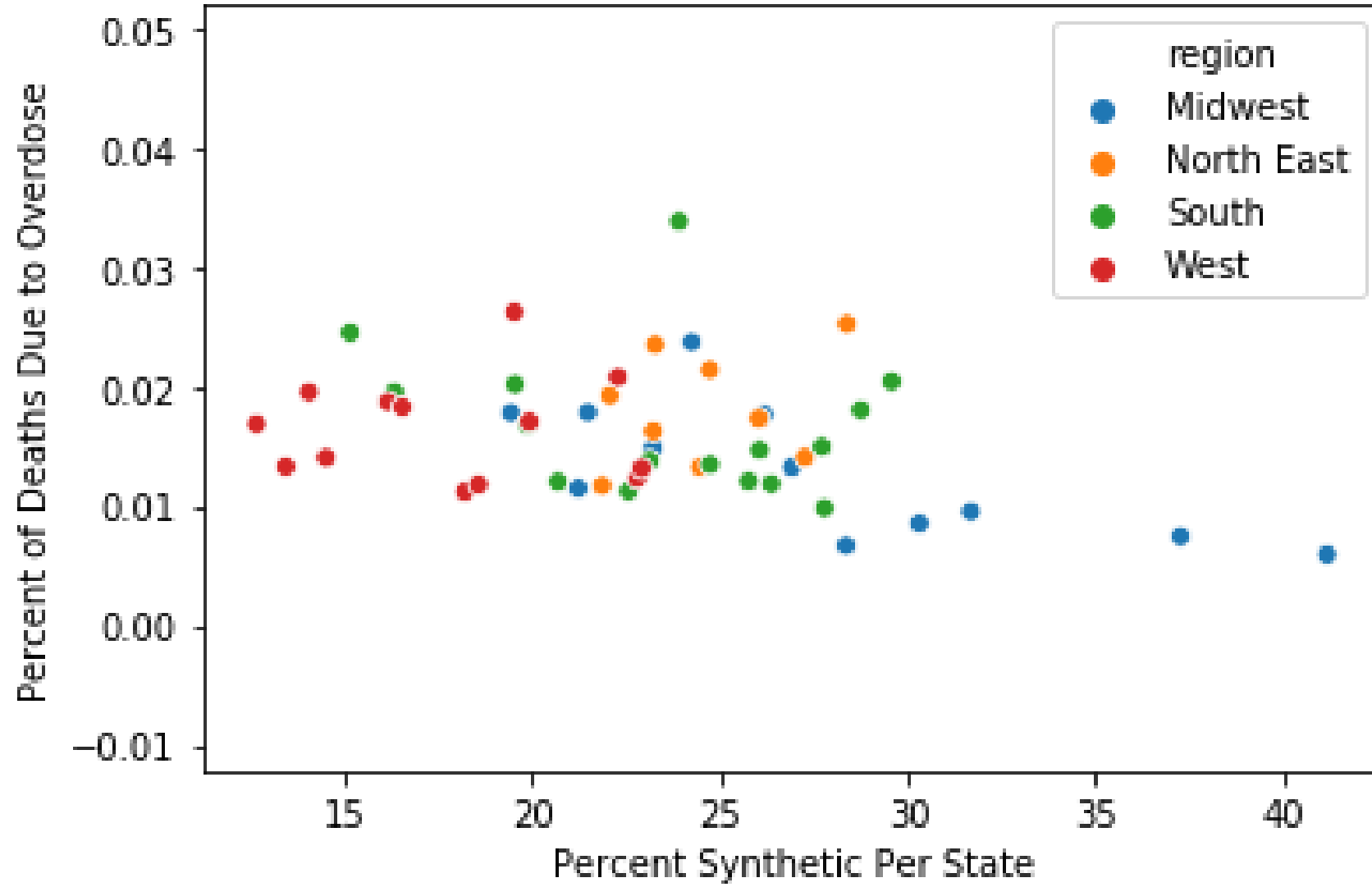
Synthetics By Region

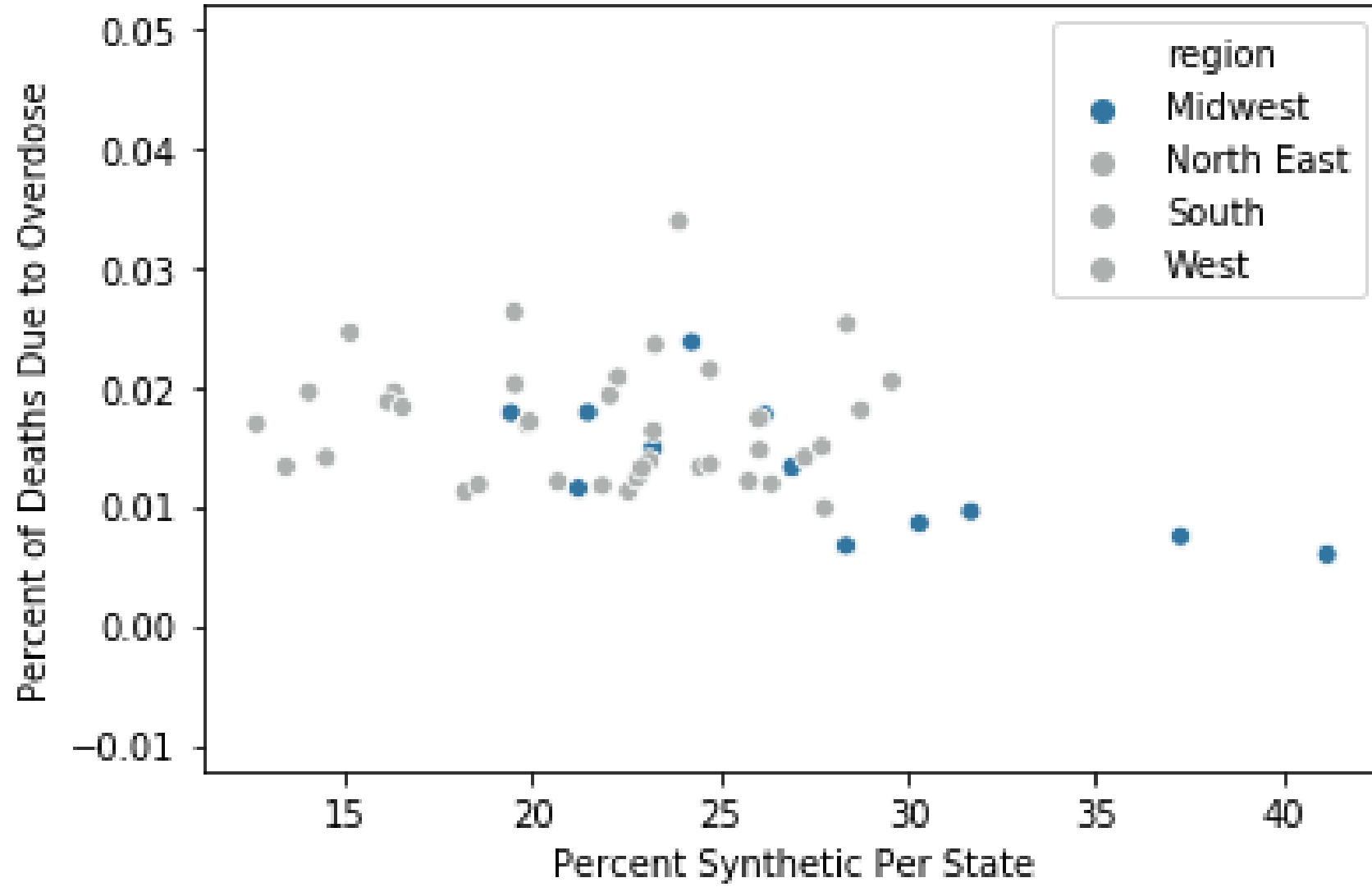


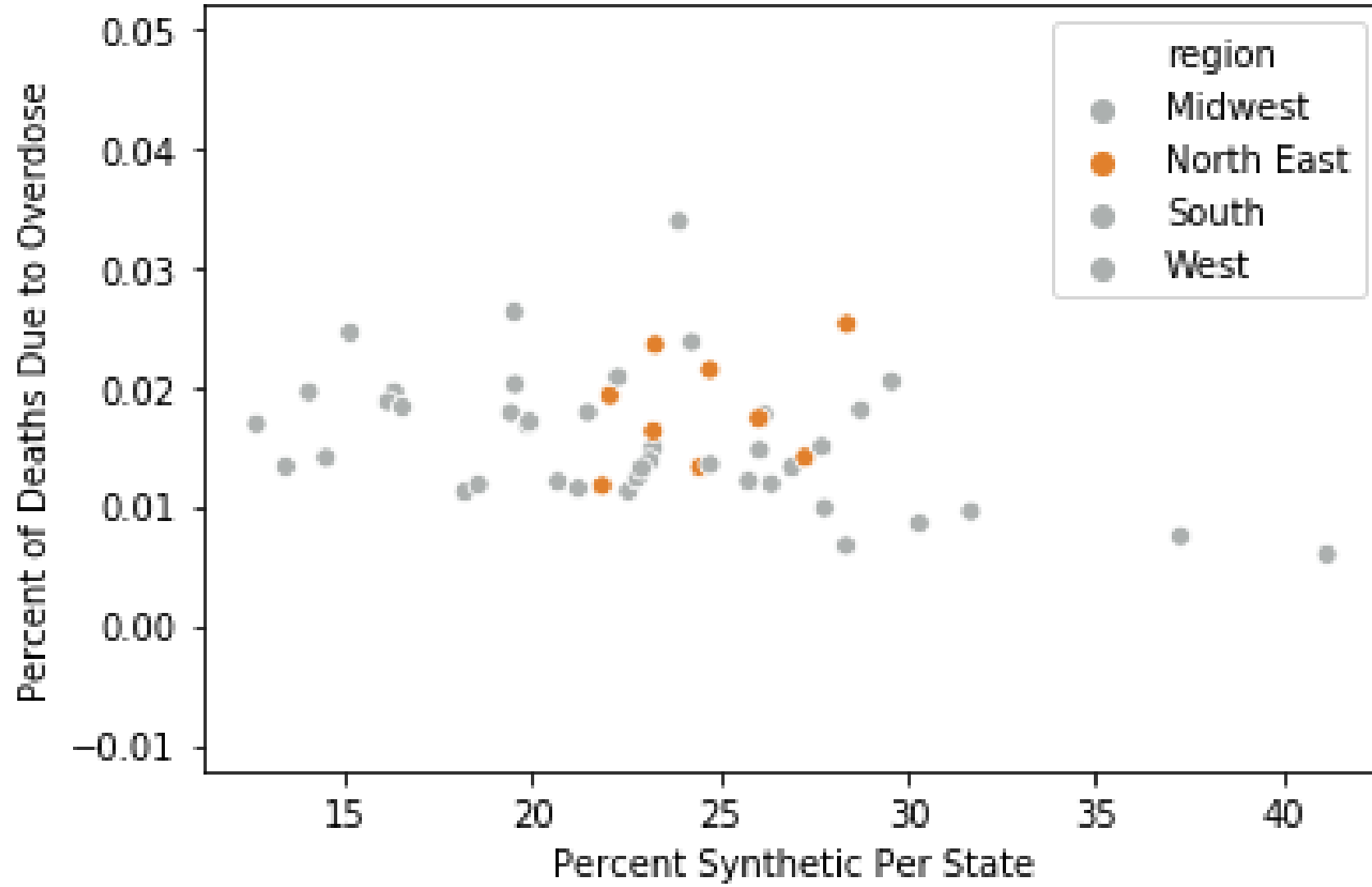
Deaths by Region

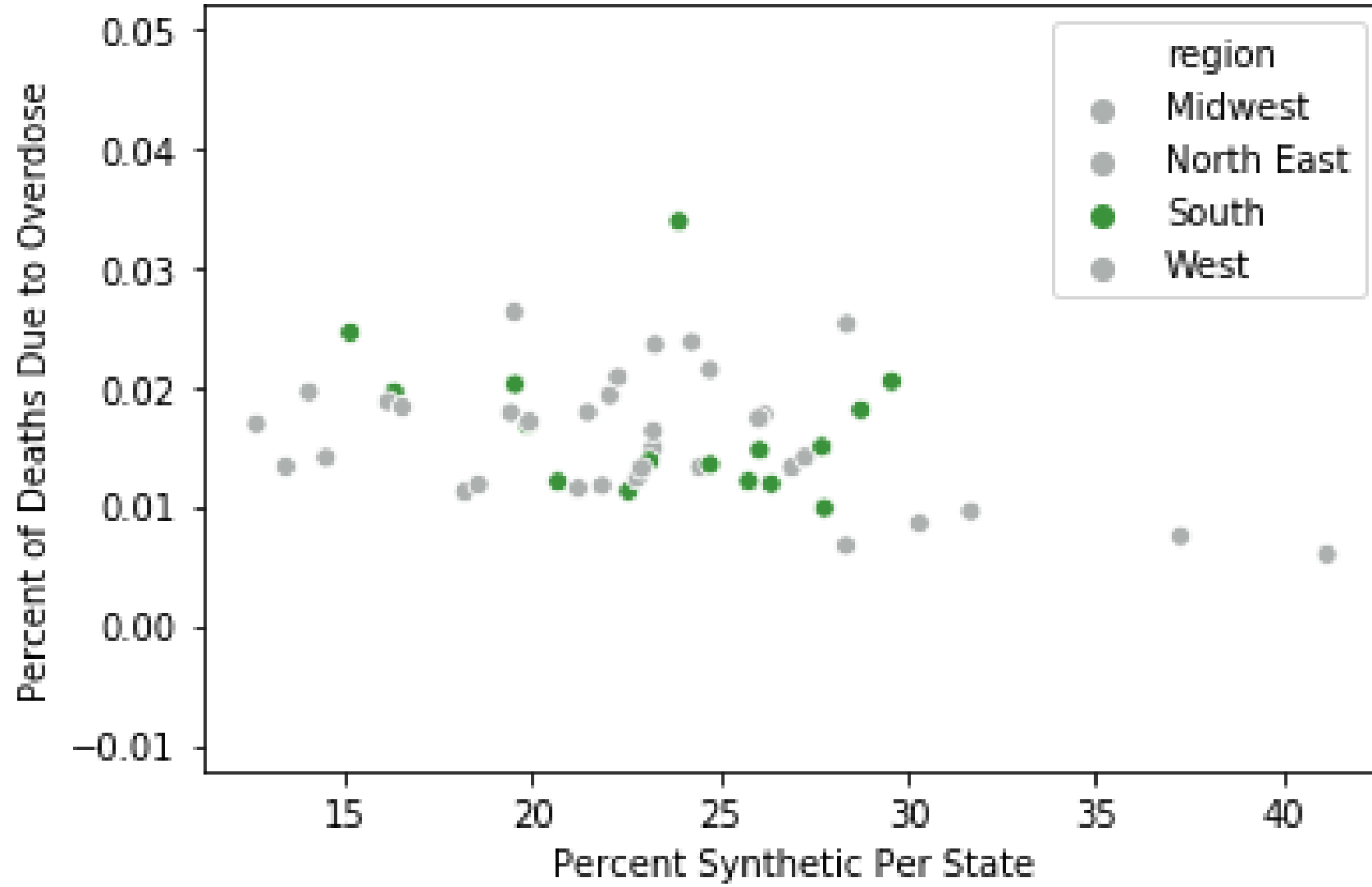


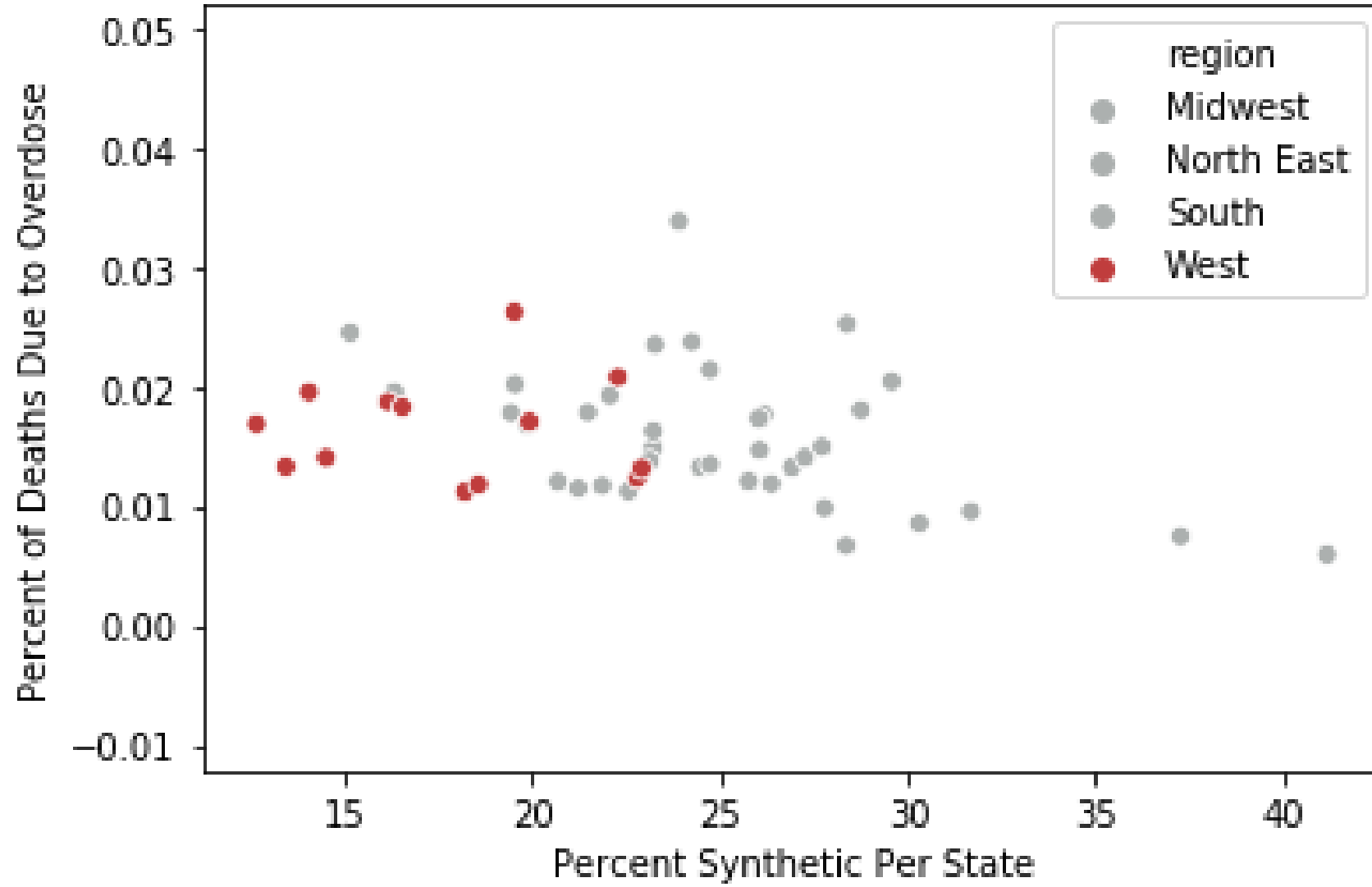






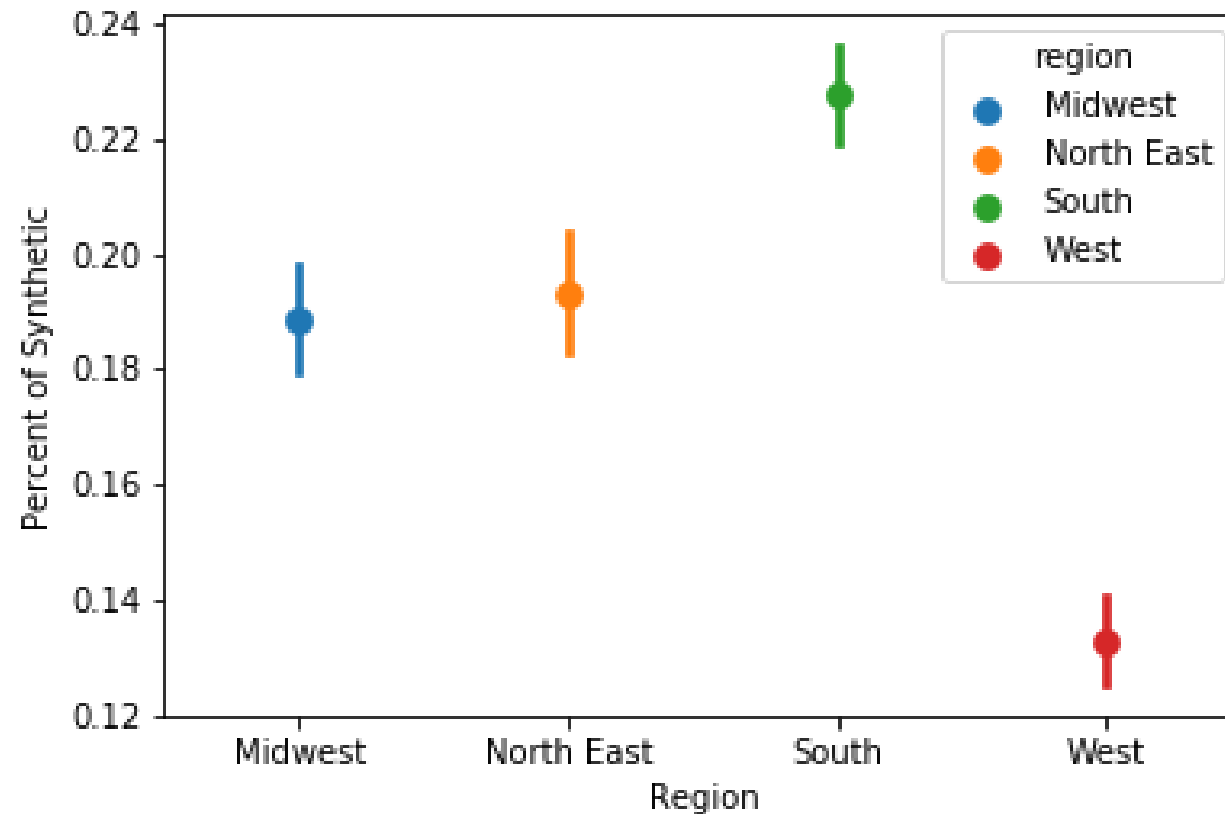






# Is there a regional difference in synthetic percentages?

- Kruskal-Wallis Test



# Further Research

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

