

Effect of Synthetic Opioid Prescriptions on Death Rate

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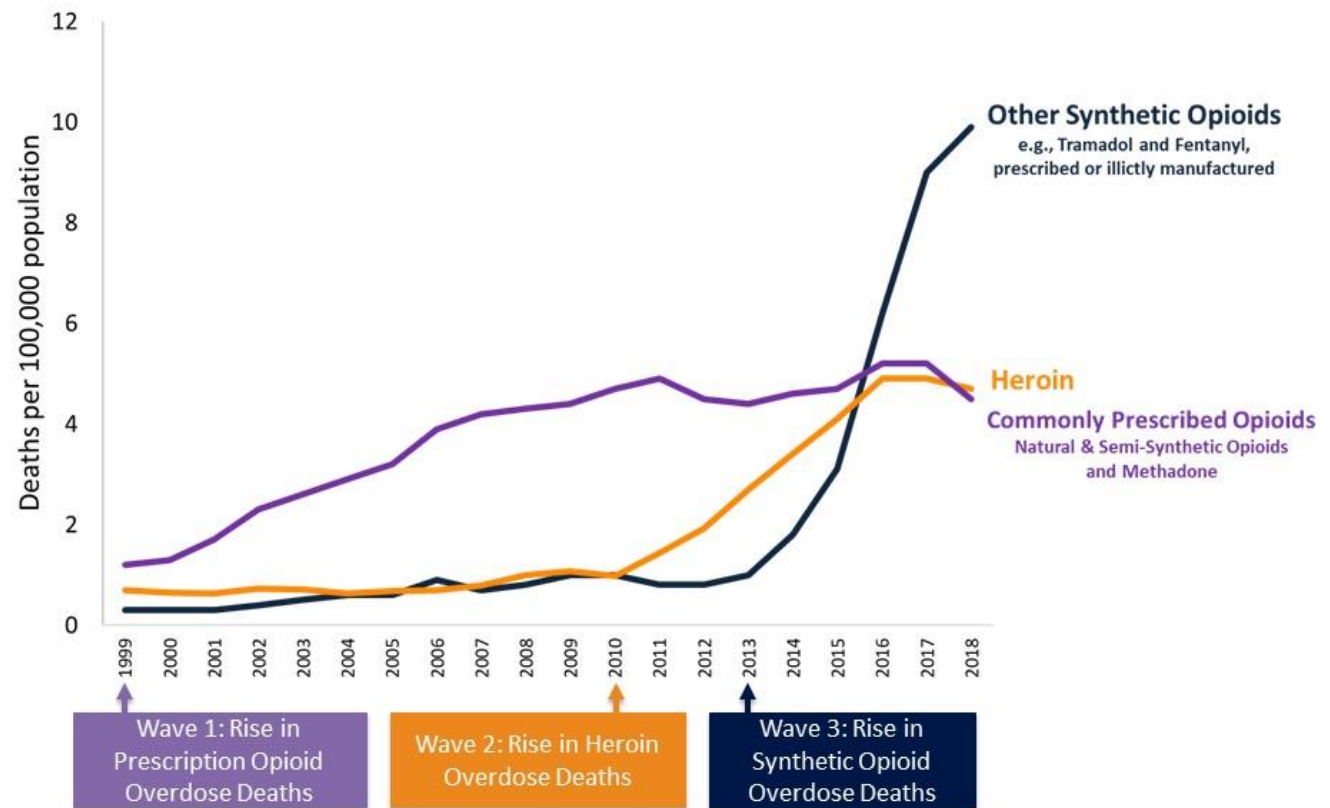
Thinkful Capstone 1

August, 2020

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.

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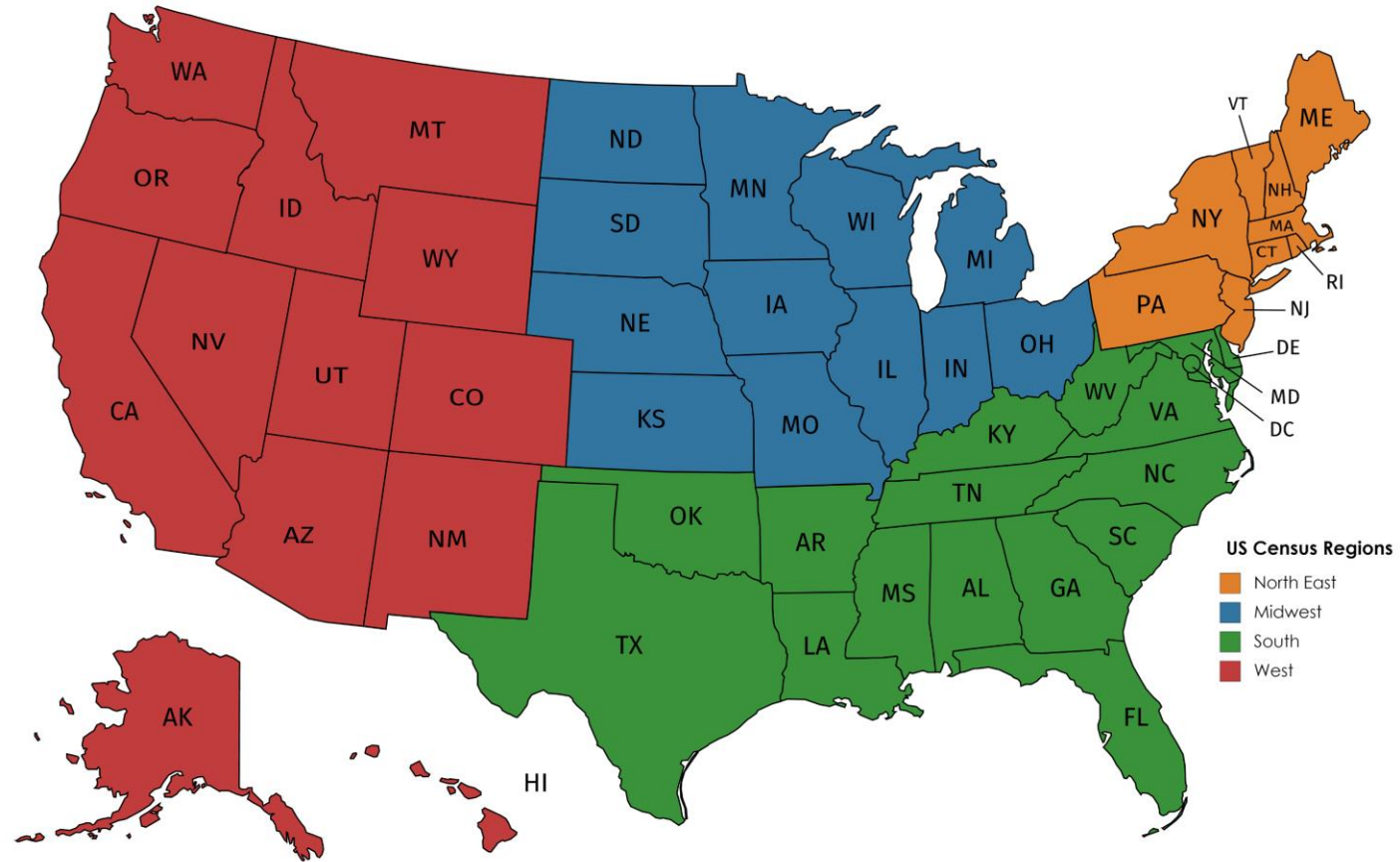
About the Data

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

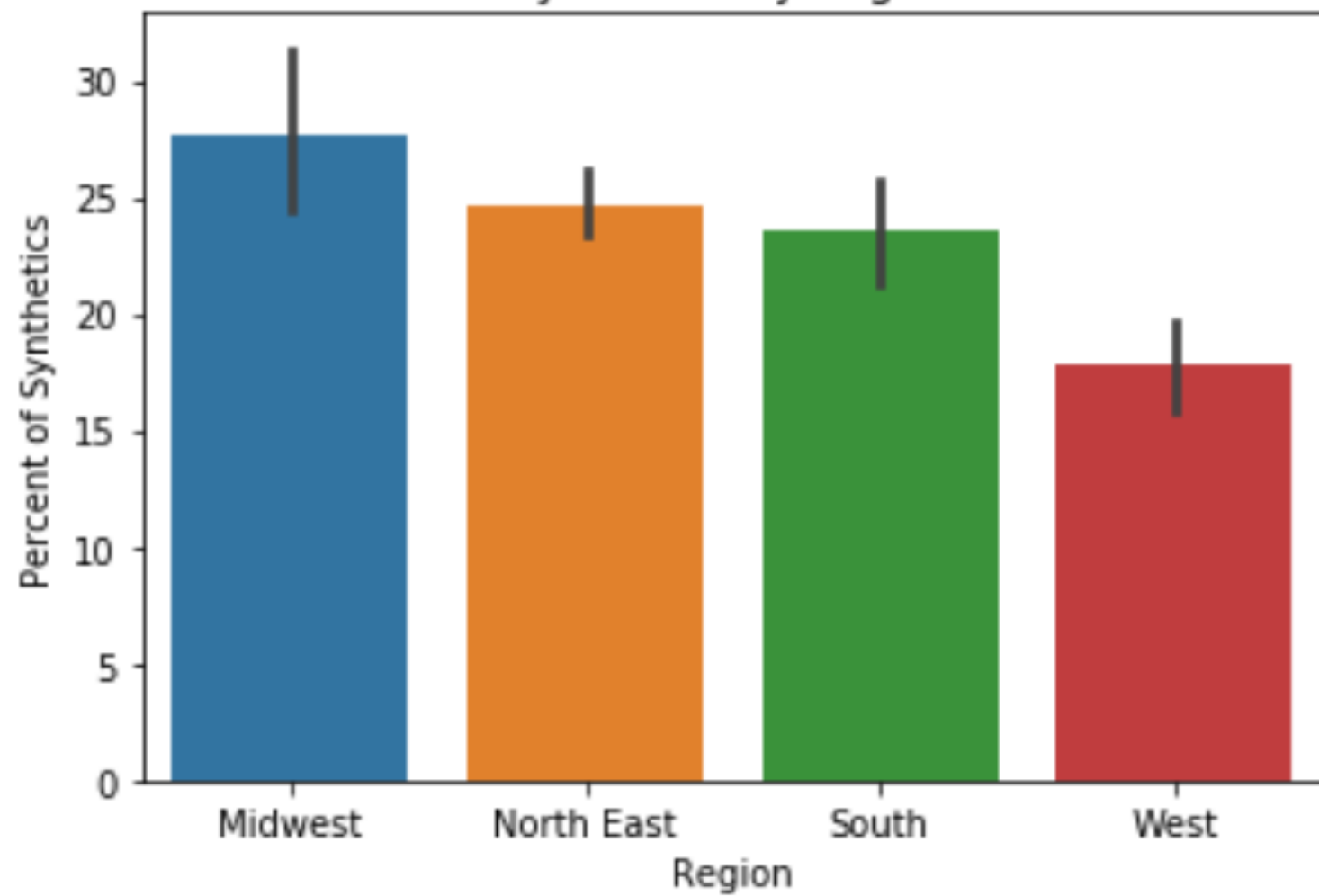
Alan “AJ” Pryor, Ph.D.

	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%

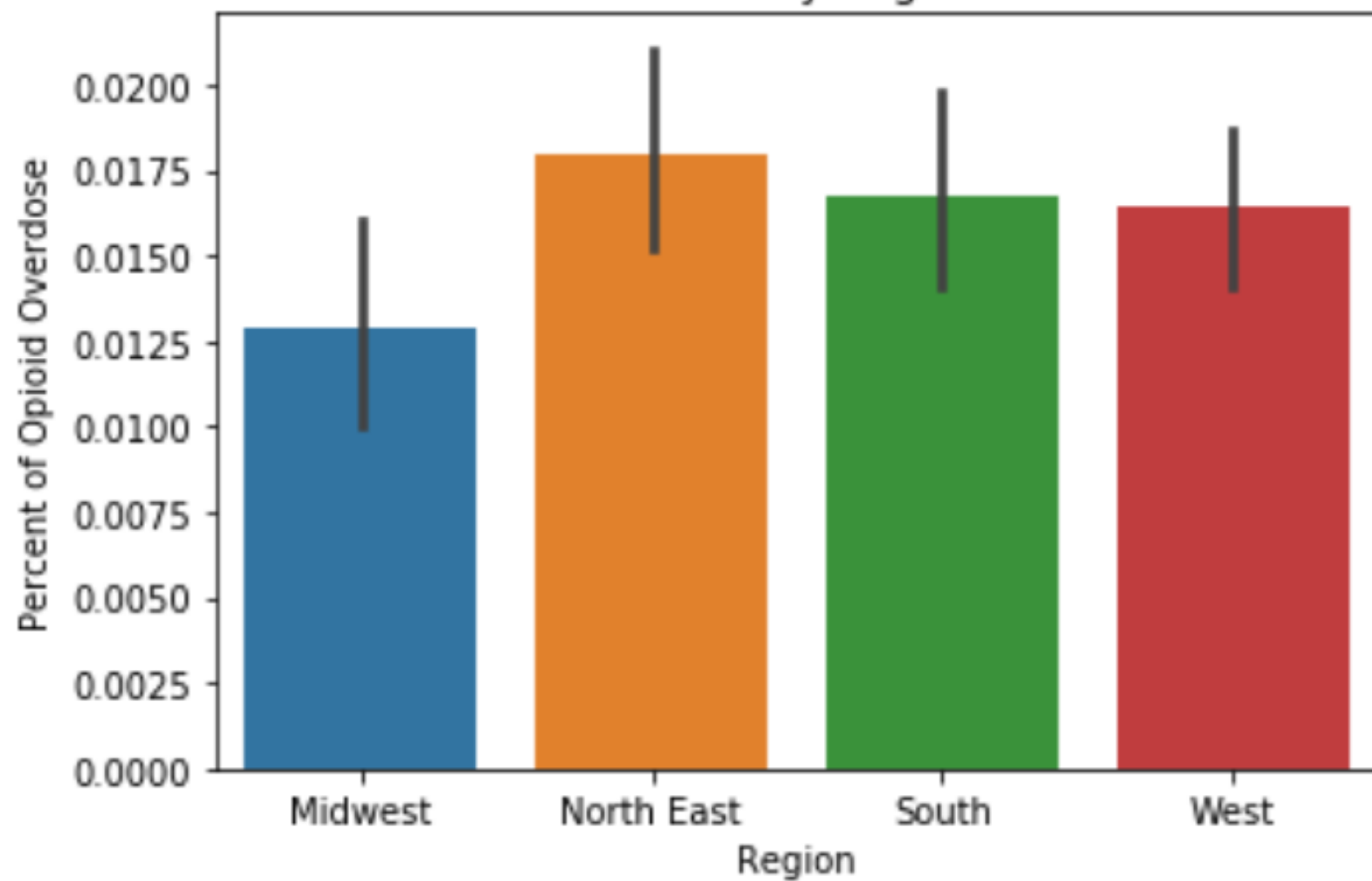
Regional Differences

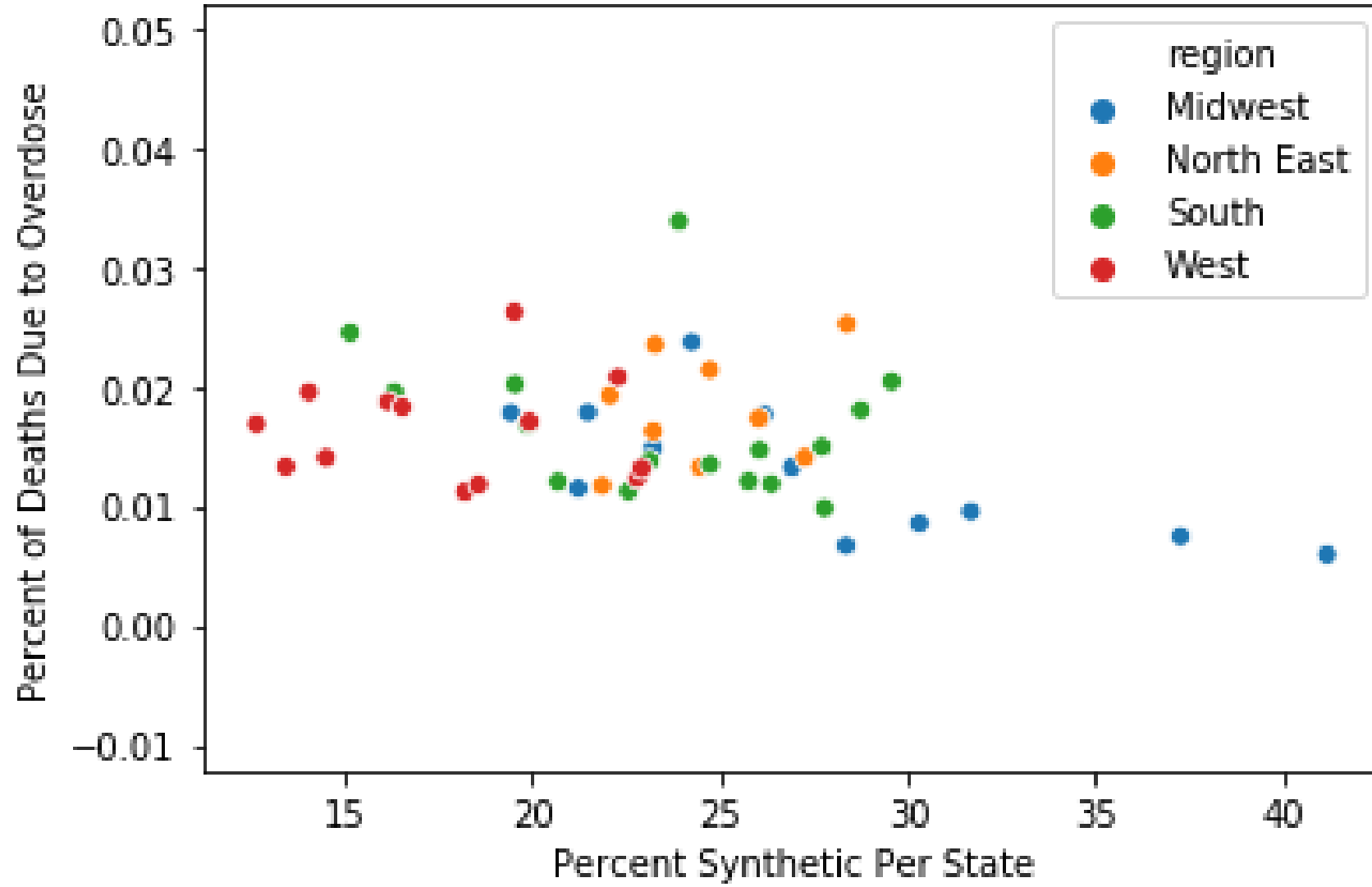


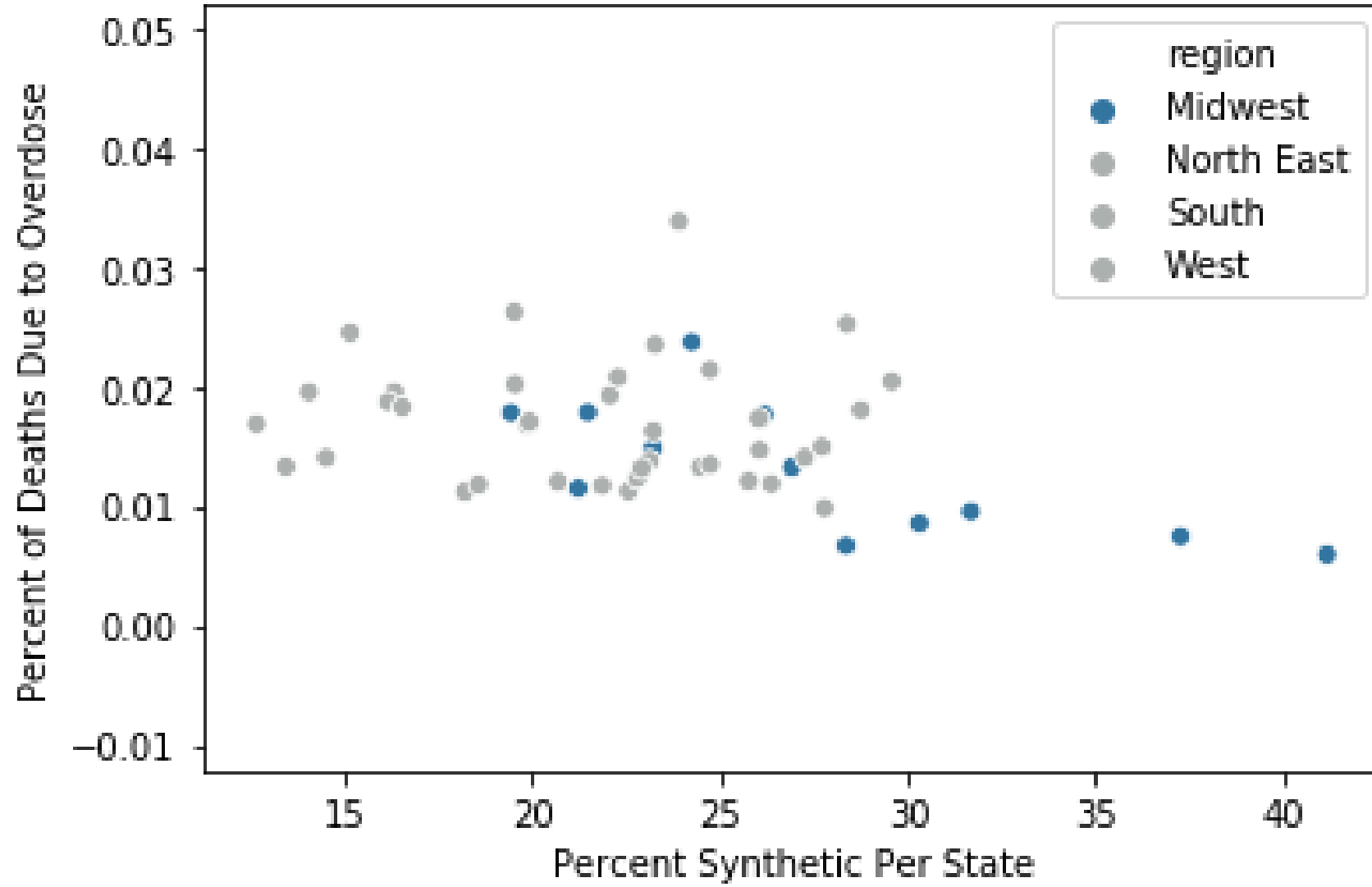
Synthetics By Region

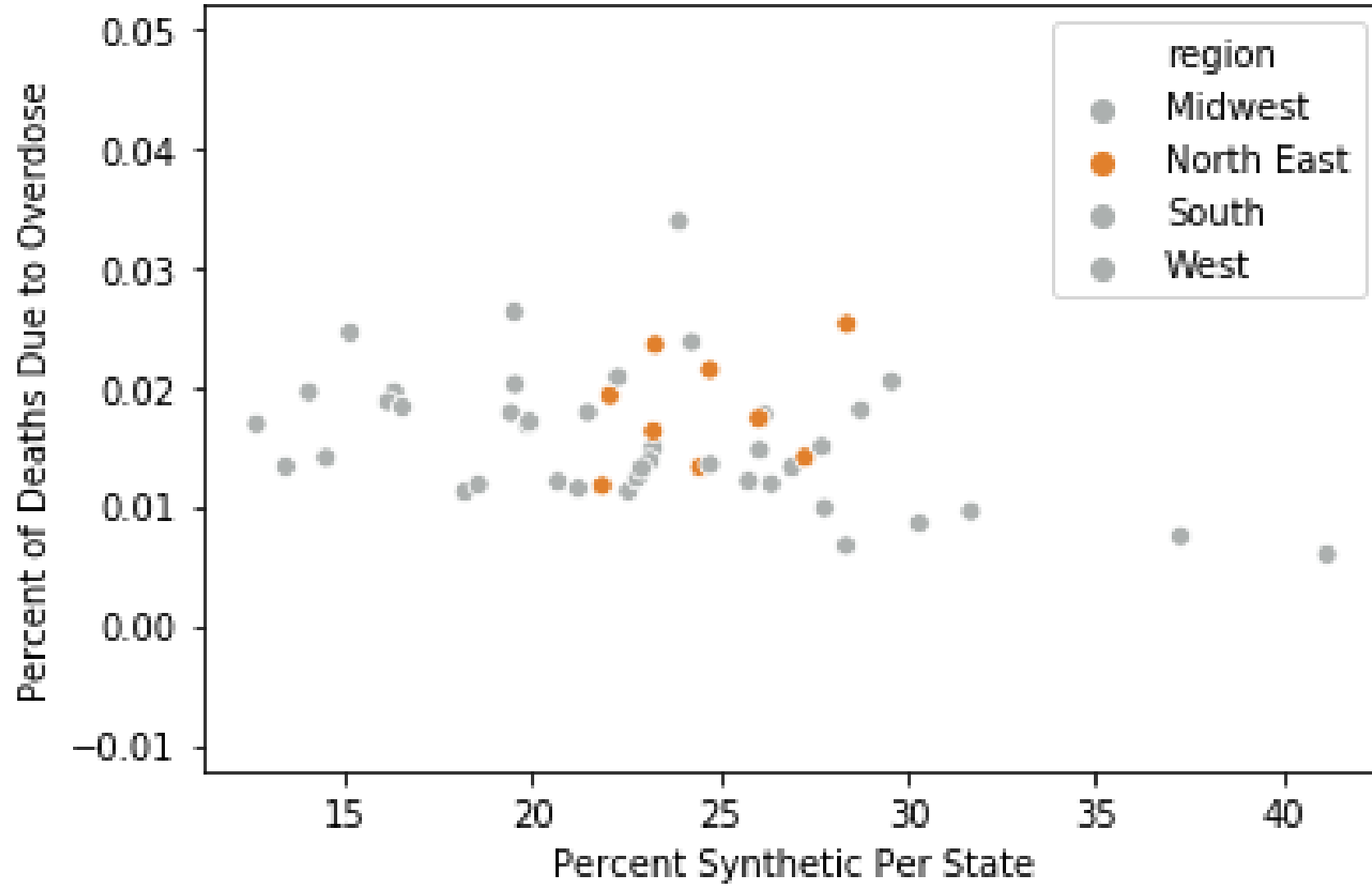


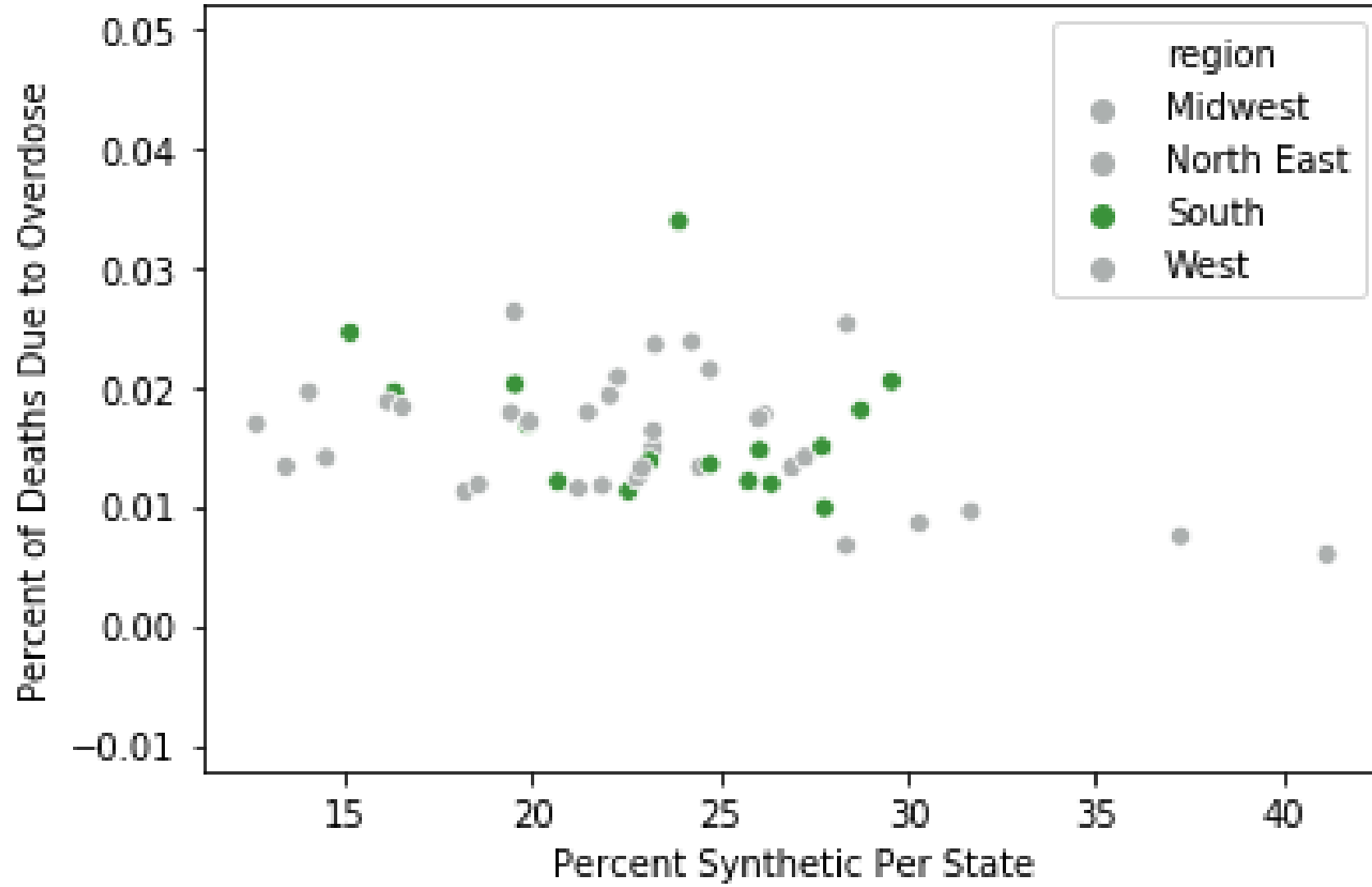
Deaths by Region

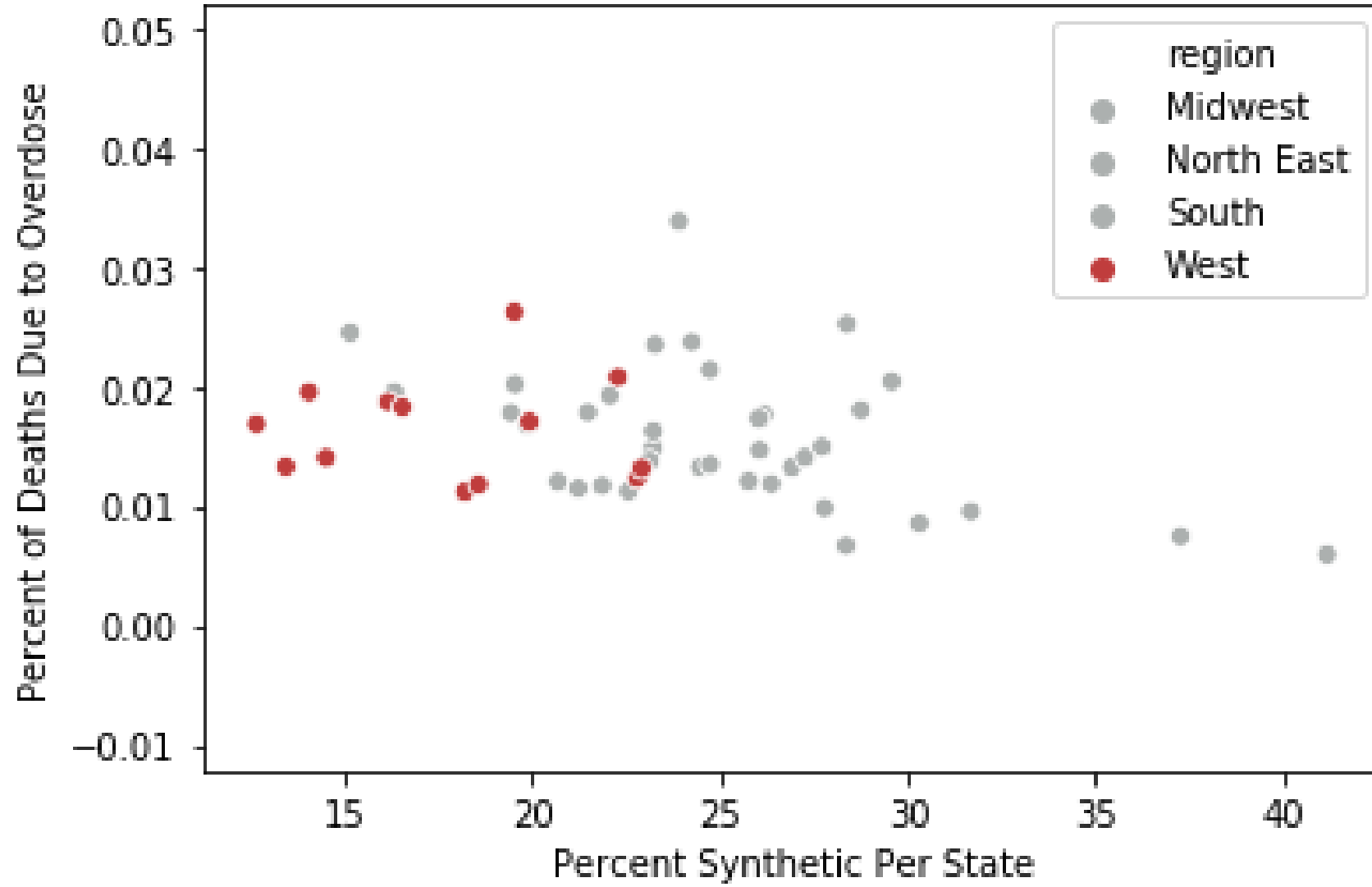






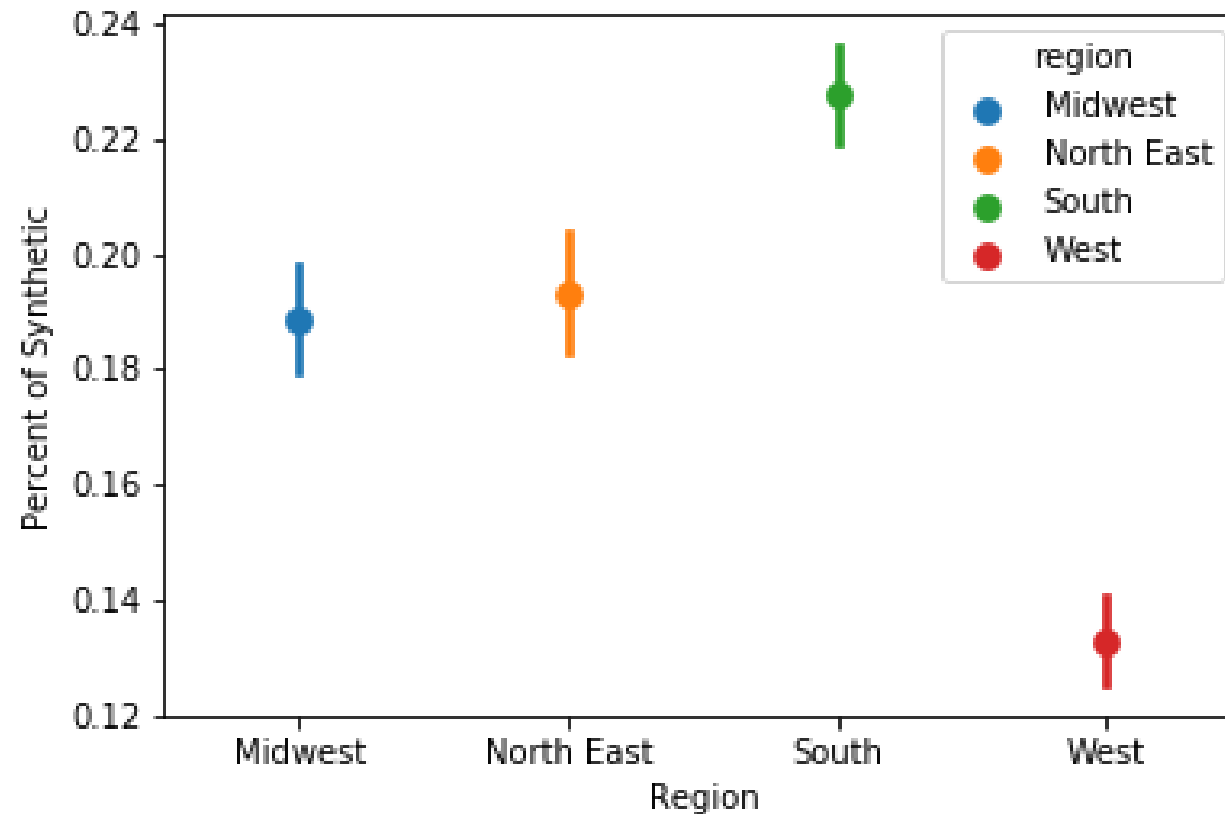






Is there a regional difference in synthetic percentages?

- Kruskal-Wallis Test



Conclusion

- 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?

Further Research

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

