Opioid Overdose Mortalities and Emergency Department Visits in Michigan Counites and ZCTAs:

A Geographic Comparison Using the Michigan Substance Use Vulnerability Index (MI-SUVI)

PRESENTER:
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BACKGROUND:

- The opioid overdose crisis (OOC) continues to be a major issue facing the nation and the State of Michigan.
- Timely, relevant data is necessary for prevention and planning efforts for State and municipal entities.
- Little research explores current, publicly available, statewide data related to this issue.

METHODS:

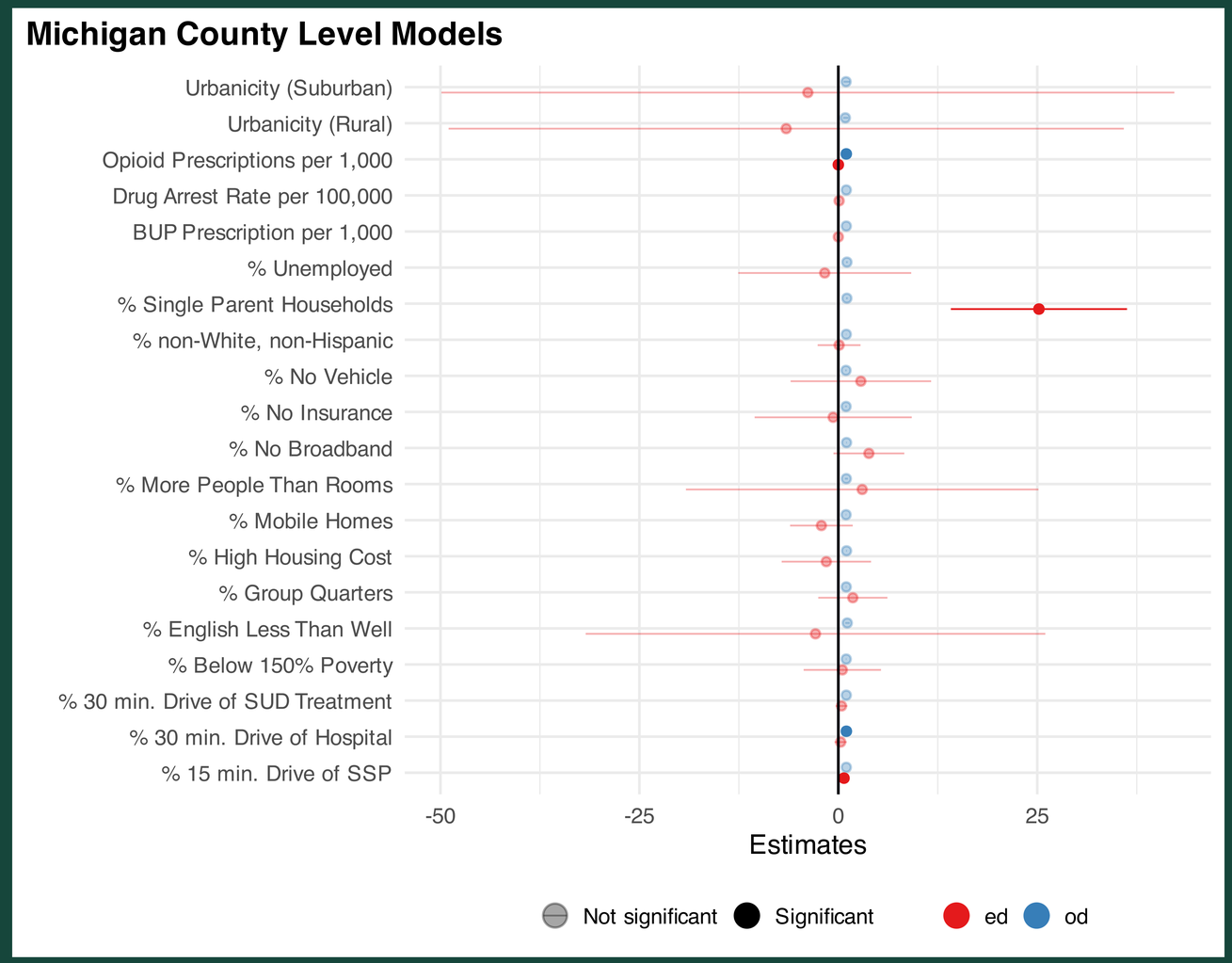
- MI-SUVI variables were analyzed on both county and ZCTA levels with the 5-year average fatal OD rate per 100,000 and 3-year average nonfatal overdose ED visit rate per 100,000 as the main outcomes of interest.
- SVI variables, geographic groupings, and variables on substance use treatment/resources were used as independent variables.
- Data sets were analyzed using multiple linear regression.
- ZCTA model for OD rates required a two-stage model to analyze zero-inflated data.

RESULTS:

- The two geographic levels diverge on the level of explanatory ability between the two predictor variables.
- The strongest predictor of ED visits was the percentage of single parent households.
- The strongest predictor of ODs was % Speaking English less than well with a small protective effect.

County level data were **better** at explaining **nonfatal Overdose ED visit rates.**

Outcome	Level	Adjusted R^2	Observations
Fatal Overdose Rate	County	0.35	83
	ZCTA	0.41	763
Nonfatal Overdose ED Visit Rate	County	0.65	83
	ZCTA	0.23	971

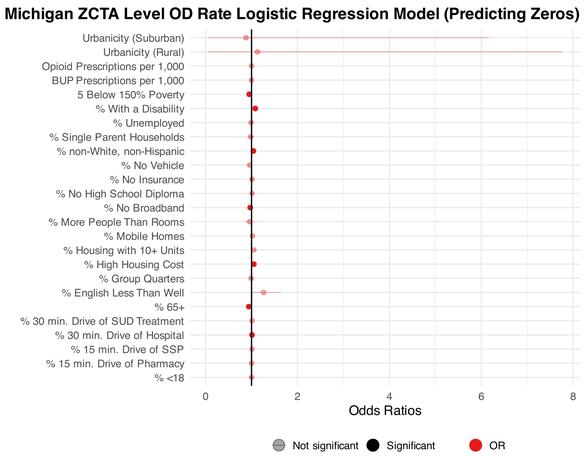


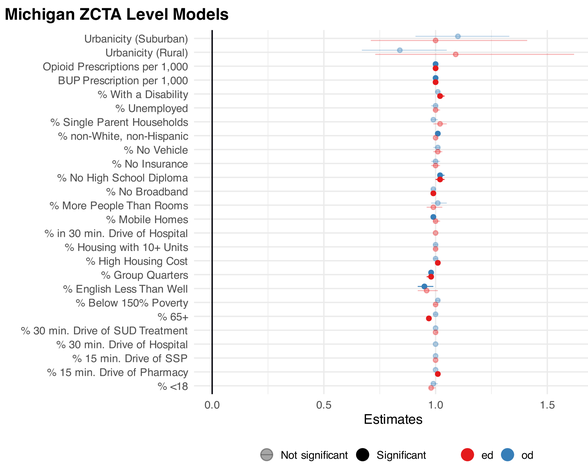
CONCLUSION:

- .Models show most independent variables have marginal impacts on the outcomes of interest.
- Study results indicate that different geographic levels may be better suited for statistical modeling.

NOTES:

- **The county level model predicting OD rates, as well as both ZCTA models were log transformed to meet the assumption of a normal distribution.**





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