

Introduction

- More than 130 opioid-related drug overdose deaths per day in the United States (US) in 2020¹
- Growing need for opioid use disorder (OUD) prevention and treatments²
- Under examination of social determinants of health (SDOH) in addressing drug overdose crisis³
- Limited published literature on the association between opioid overdose mortality and medical care access

Objectives

- To examine the association between opioid overdose mortality and access to medical care while considering the impact of social determinants of health

Methods

- Ecological study focused on the Maryland population
- County-level data obtained via PolicyMap tool⁴
- Predictors: Demographics (age, sex, race), social vulnerability index (SVI), access to medical care (pharmacy and physician density)
- Outcome: opioid overdose mortality rate in 2019
- SVI comprises 15 social factors within 4 categories of vulnerability: socioeconomic status, household composition and disability, minority status and language, and housing and transportation

Methods

- A bivariate analysis using a negative binomial regression was performed to measure and describe the association between each predictor variable and the outcome
- A multiple regression analysis was performed to examine the association between access to medical care and opioid overdose mortality while adjusting for SDOH factors

Results

- Median county-level opioid overdose mortality: 36 deaths per 100,000 people
- A statistically significant association (P = 0.02) between opioid overdose mortality and pharmacy density in unadjusted model (**Table 1**)
- A statistically significant association (P = 0.002) between opioid overdose mortality and physician density in adjusted model (**Table 1**)

Table 1. Association between demographics, social vulnerability index (SVI), access to medical care and drug overdose mortality in unadjusted and adjusted models

Characteristic	Unadjusted		Adjusted	
	Percent change (95%CI)	p-value	Percent change (95%CI)	p-value
Demographics				
Median age	-4.09 (-15.46, 8.81)	0.52	16.70 (-1.60, 38.39)	0.08
Male	-7.31 (-26.97, 17.64)	0.53	-21.56 (-48.83, 20.27)	0.27
African American	0.72 (-0.74, 2.20)	0.33	-1.57 (-4.29, 1.23)	0.27
Social vulnerability index	152.94 (-8.30, 597.69)	0.07	329.01 (-8.63, 1914.19)	0.07
Access to medical care				
Pharmacy density	8.61 (1.31, 16.18)	0.02*	5.33 (-3.79, 15.29)	0.26
Physician density	-2.0 (-4.05, 0.10)	0.06	-3.20 (-5.15, -1.20)	0.002*

* Statistically significant

Conclusion

- Lower physician density by county was associated with higher rates of opioid overdose mortality while controlling for demographics, social factors, and pharmacy density.
- Findings suggest that in addition to considering the impact of social factors, efforts for prevention and treatment strategies should focus on areas with lower physician density at the county level.
- Further studies are needed to collect more data in other states and to confirm the findings seen in this analysis.

References

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Contact

Farideh Sistani, PharmD.
Ellen H. Yankellow Health Outcomes Postdoctoral Fellow
Email: Fsisani@rx.umaryland.edu

