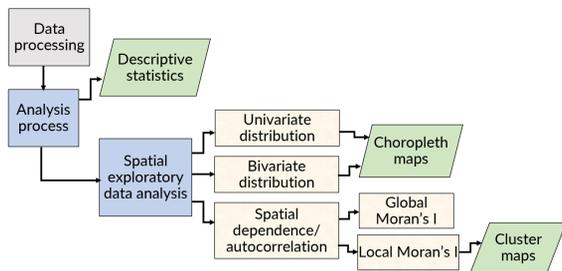# HIV-HCV syndemic in California: Spatial epidemiological approach.

Spatial distribution of intertwined epidemics of opioid misuse, HIV and chronic HCV in California.

PRESENTER:
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BACKGROUND:

In the USA, HIV, HCV, and opioid misuse form intertwined epidemics, primarily impacting marginalized communities due to deleterious contextual. This syndemic underscores the need for exploration to enhance public health policy interventions. The study explores county-level distribution and clustering of HIV, chronic HCV, and opioid prescription rates.

METHODS

The county-level data of 2018 on chronic HCV, HIV, opioid prescription, and poverty rates was used in this analysis

RESULTS
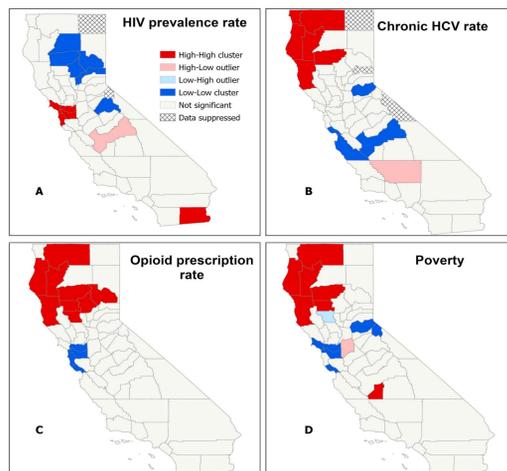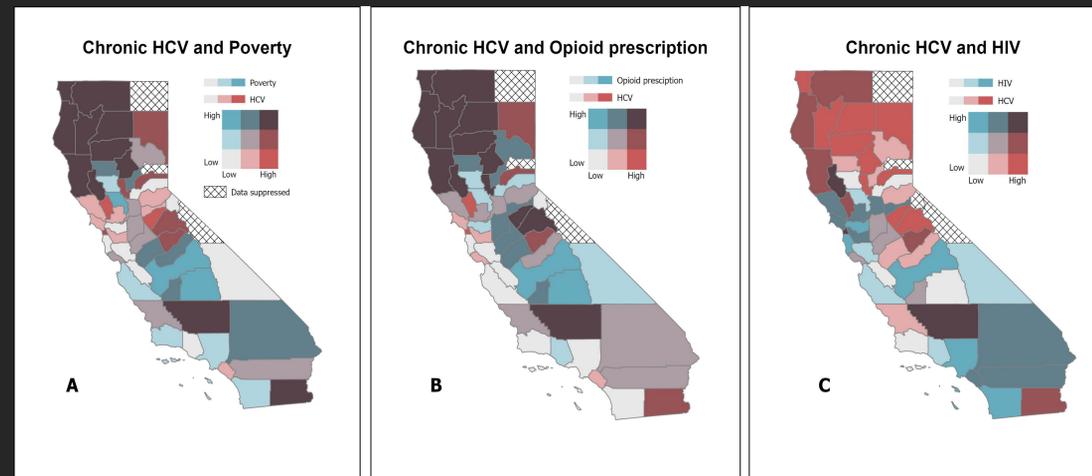

Figure : Univariate spatial cluster analysis for HIV (A), chronic HCV (B), poverty (C), and opioid prescription rates (D) in California, 2018

The spatial distribution of Chronic HCV, HIV, and opioid prescriptions in California's countries reveals distinct clusters. Notably, Northern counties exhibit higher rates of chronic HCV in conjunction with opioid prescription and poverty rates.
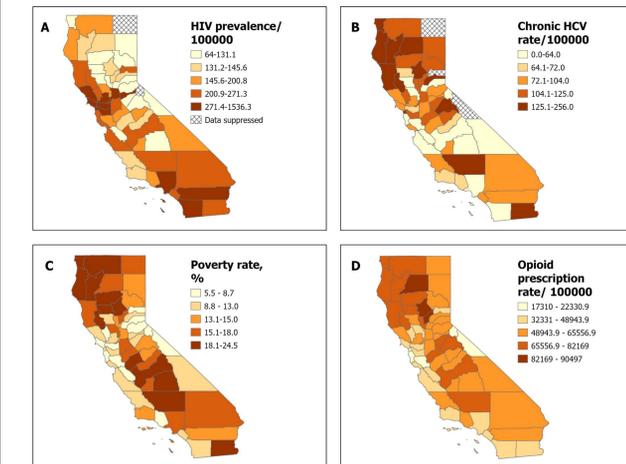

Bivariate choropleth maps of chronic HCV rate + poverty rate (A), chronic HCV rate + opioid prescription rate (B), and HIV prevalence + chronic HCV rate (C), for each county in California, 2018.

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Overall descriptive statistics

Variables	Overall (N=58)	Range
HIV cases per 100,000 Mean (SD)	232.5 (212.5)	64.0 - 1536.3
Chronic HCV cases per 100,000 Mean (SD)	100.0 (45.1)	0.0 - 256.0
Opioid prescriptions per 100,000 Mean (SD)	57,250.3 (16,758.0)	17,313.0-90,487.0
Poverty, % Mean (SD)	13.8 (4.6)	5.5 - 24.5

Univariate choropleth maps showing the HIV prevalence (A) chronic HCV rate per 100000 (B), poverty rate (%) (C) and opioid prescription rate per 100,000 population (D) by quintiles for each county in California in 2018.

Overall descriptive statistics

Variable	Moran's I	p.value	Z_score
HIV	0.1759	0.0123	2.2374
Chronic HCV	0.3606	0.001	4.3785
Opioid prescription	0.5329	0.001	6.3662
Poverty	0.2926	0.001	3.5932

CONCLUSION

- There is a spatial pattern in the distribution of HIV, chronic HCV, opioid prescription, and poverty, with Northern California counties exhibiting high rates.
- Elevated rates of chronic HCV coincide with high opioid prescription and poverty rates.
- Geospatial methods are valuable for understanding and guiding targeted resource allocation to address intertwined epidemics.

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