Spatiotemporal Analysis of the Impact of Homeless Encampment Sweeps on Crime in Denver, CO, 2019-2023

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Background

- >580,000 people experience homelessness nightly in the US
- Many cities have "camping bans" to address unsheltered homelessness
- Denver's camping ban went into effect on May 28, 2012
- Bans are enforced by "sweeps" of encampments
- Sweeps cited as necessary for "public health and safety"
- Limited evidence that sweeps are effective in reducing crime

Objective

To assess the spatiotemporal relationship between homeless encampment sweeps and area crime.

Methods

DATA SOURCES
- Crime data from Denver police
  - 196/day on average
  - Attributes: date/time, location, category (n=13)
- Sweep data from city of Denver
  - n=303
  - Attributes: date, location

STUDY DESIGN
- Pre-post ecological study
- Knox test statistic (κ) to detect excess spatiotemporal clustering
- 4 catchment areas: 0.25 mi, 0.5 mi, 0.75 mi, citywide
- 3 time periods: 7, 14, 21 days
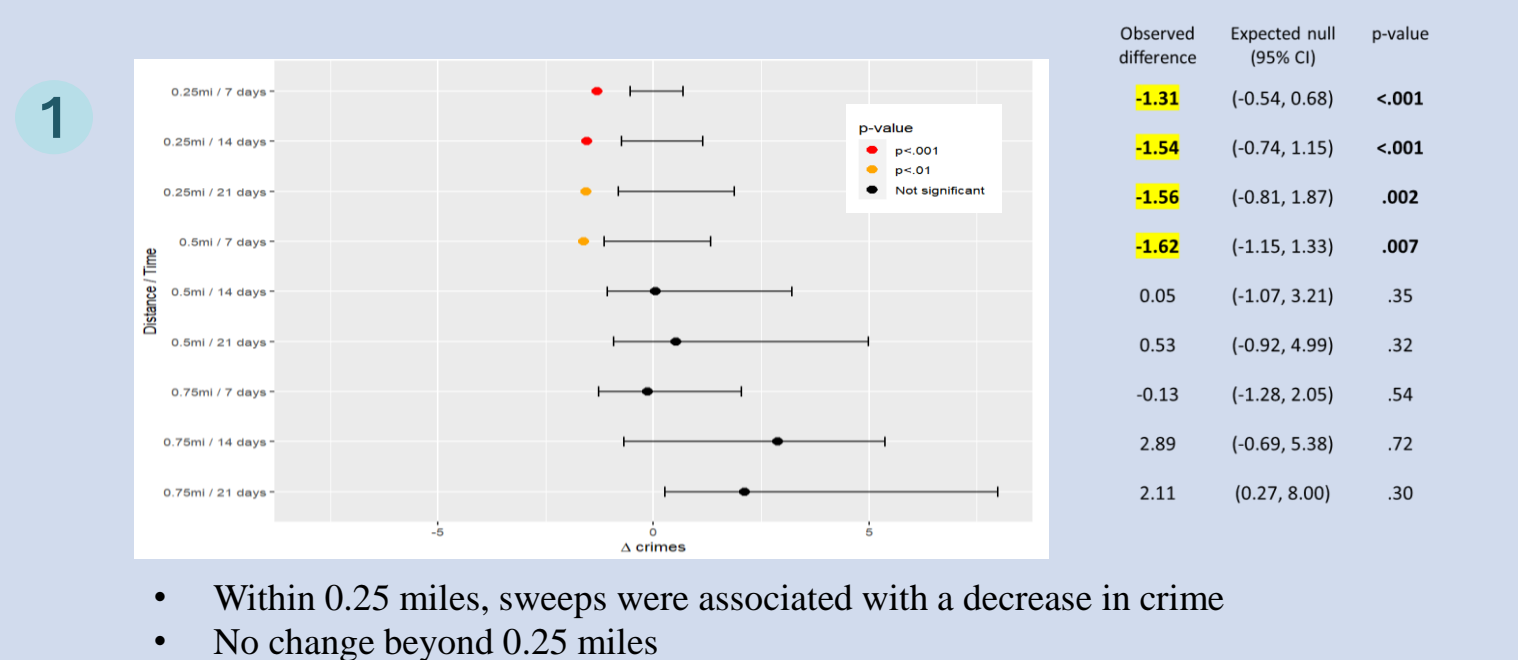- 95% confidence interval (95% CI) created via bootstrapping

OUTCOMES
- Primary
  1. Δcrimes: change in crime ($crimes_{post} - crimes_{pre}$)
- Secondary
  2. $crimes_{pre}$: average number of crimes before sweeps
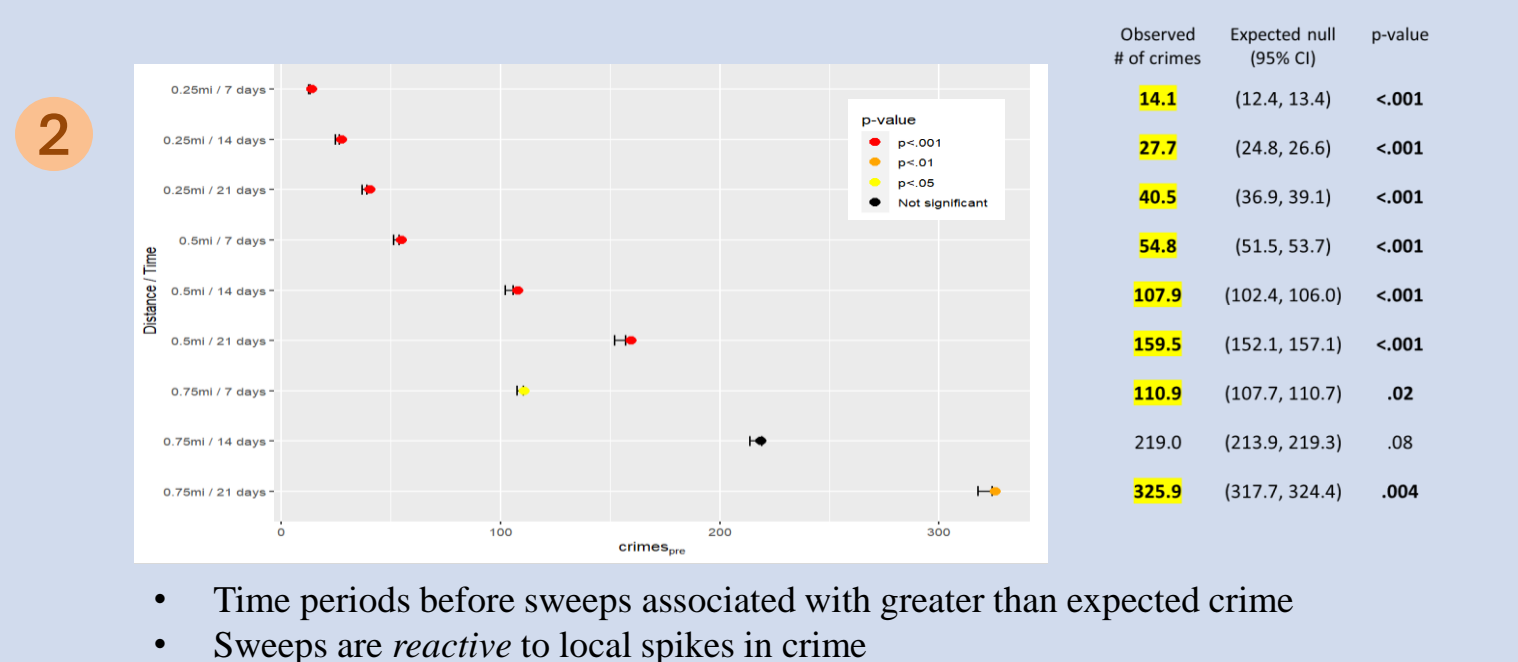 3. $crimes_{post}$: average number of crimes after sweeps
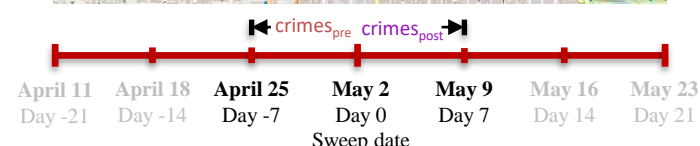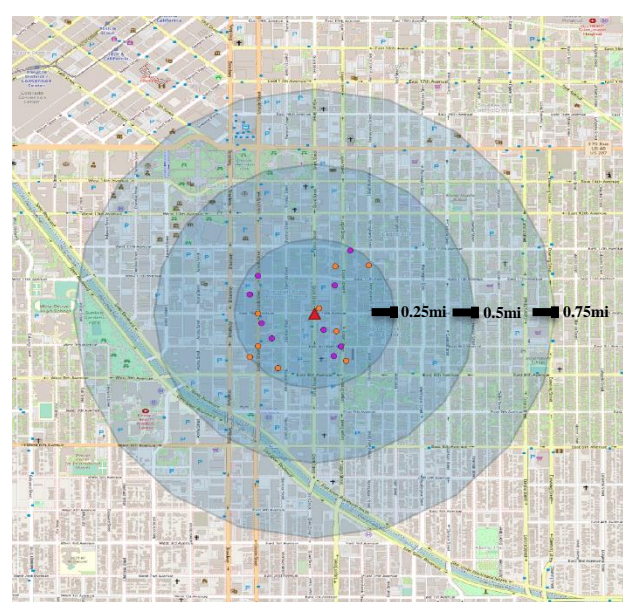
Results

Citywide, encampment "sweeps" are not associated with decreases in crime
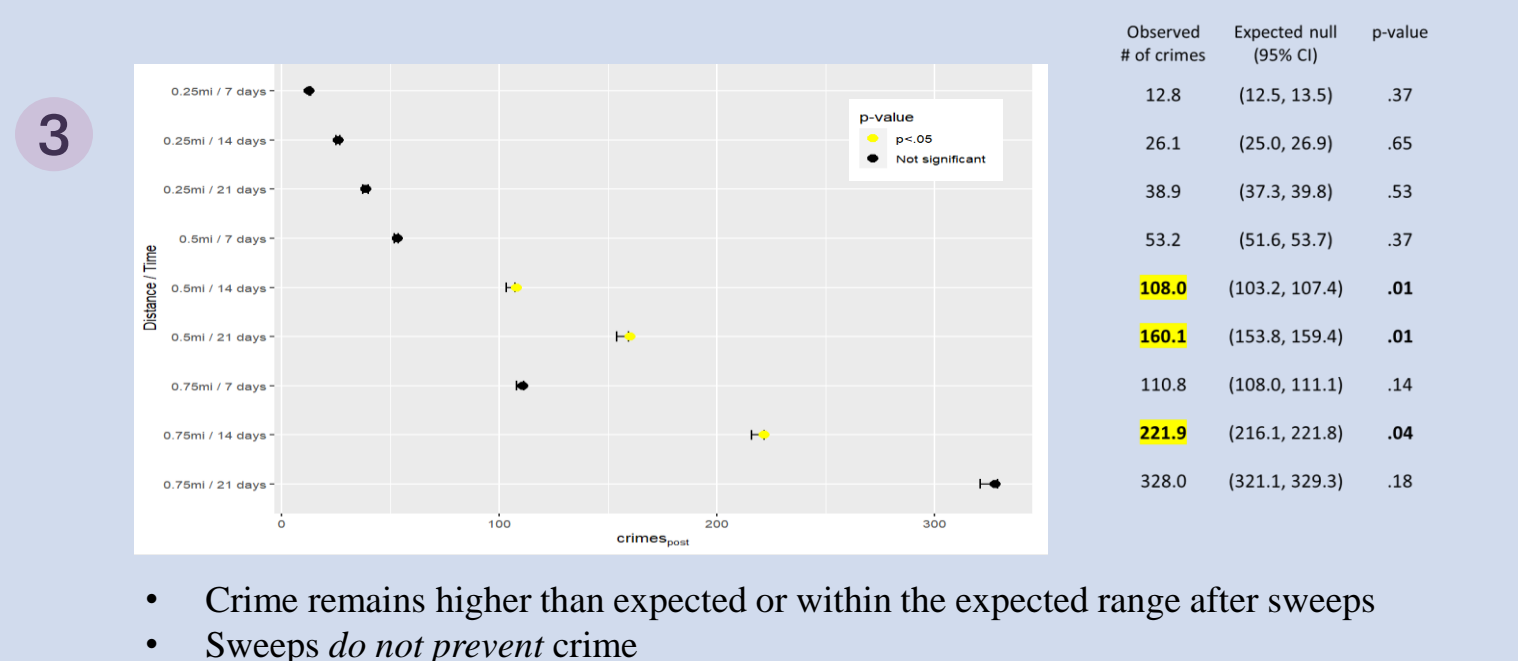
FINDING 1: CRIME DOES NOT GENERALLY DECREASE AFTER A SWEEP

- Within 0.25 miles, sweeps were associated with a decrease in crime
- No change beyond 0.25 miles

FINDING 2: CRIME IS GENERALLY HIGH IN PERIODS BEFORE A SWEEP

- Time periods before sweeps associated with greater than expected crime
- Sweeps are reactive to local spikes in crime

FINDING 3: CRIME GENERALLY REMAINS HIGH AFTER A SWEEP

- Crime remains higher than expected or within the expected range after sweeps
- Sweeps do not prevent crime

Change in crime after sweeps, citywide

	Change in crimes (Δcrimes) per sweep	Expected change per sweep (95% CI)	p-value
7 days	-5.32	(-9.97, 11.42)	.27
14 days	3.44	(-13.27, 27.09)	.74
21 days	10.32	(-4.04, 40.61)	.49

Change in crime after sweeps, by crime category

*Result reported if significance holds at 2/3 time periods within a certain distance
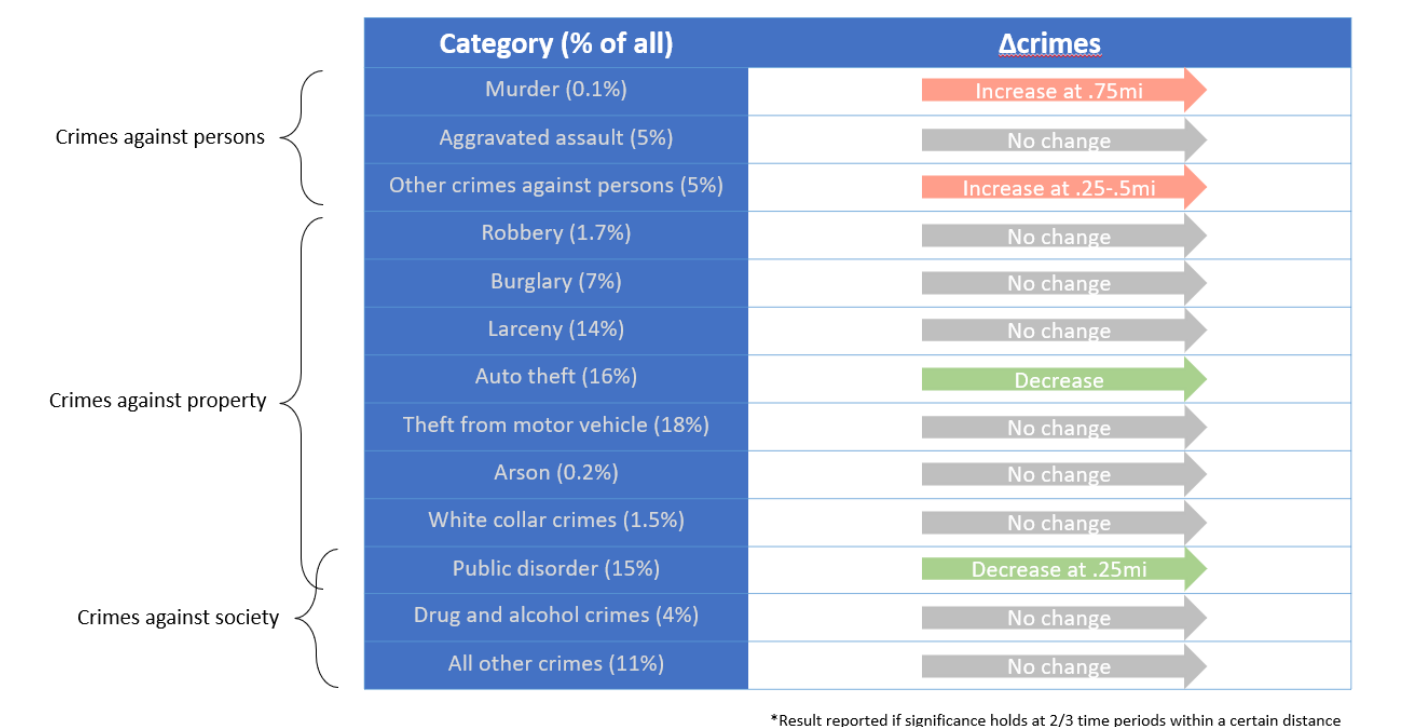
- Hyperlocal decrease in crime primarily driven by auto theft and public disorder
- Significant increase in murder and other crimes against persons (primarily simple assault and domestic violence) at certain distance and time combinations

Conclusion

- Sweeps are **reactive to crime**; they occur when crime is spiking locally
- Sweeps **do not prevent crime**; spatiotemporal clustering of crime remains higher than expected near swept areas in post-sweep periods
- Sweeps are **not an effective solution for crime**
  - Hyperlocal decreases in crime after sweeps are temporary
  - Decreases are driven by less serious crimes, while more serious types of crimes increase
  - Some crime is diffused outward rather than curtailed outright
  - Sweeps exacerbate cycles of violence against people experiencing homelessness, increasing their risk of overdose, injury, and victimization