Associations between local zoning for recreation spaces and public park frequency and characteristics

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UIC INSTITUTE FOR HEALTH RESEARCH AND POLICY

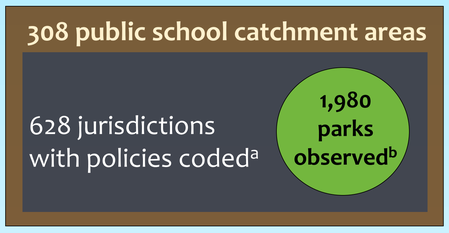
bridging the gap
Research Informing Policies & Practices for Healthy Youth

Research Questions

1. Is zoning for recreation spaces associated with quantity and/or density of local public parks?
2. Do communities with policies requiring spaces for active recreation have more local parks with sports features and playgrounds?

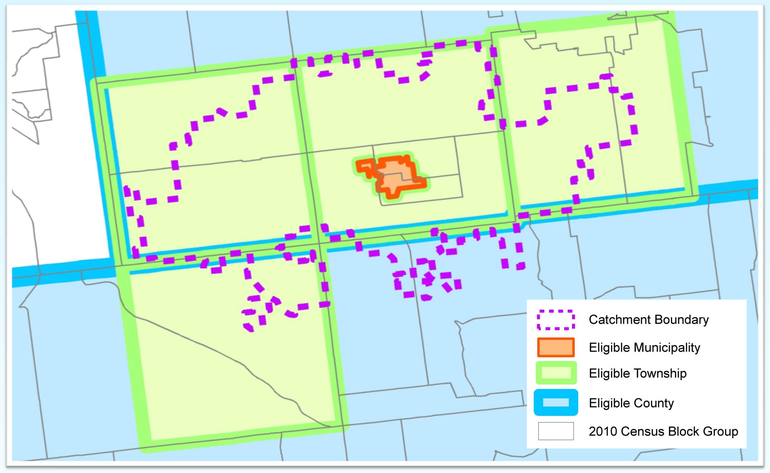
Methods

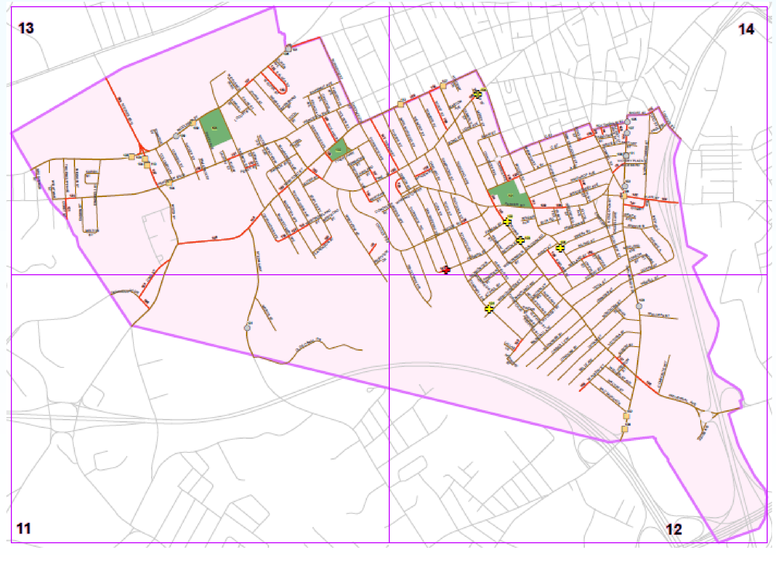
- Direct observation of local public parks in public middle and high school catchment areas across the United States
- Collection and coding of local county and municipal zoning policies and related ordinances for presence and strength of active-living-oriented regulations
- Data collected in 2010 and 2011, aggregated to catchment-area level
- Descriptive statistics and negative binomial and log-gamma regression analyses for complex survey data



[a] *There were 14 additional jurisdictions for which policies could not be collected*
[b] *A total of 2,259 eligible parks were included in park count and density measures*

Example Catchment Areas with Policy Jurisdictions and Parks





Preliminary Results

Local Zoning Policy	Proportion of Catchments with Policy[c]	Mean Proportion of Youth Exposed to Policy[d]
Any active recreation (required/ encouraged, allowed use)	0.98	0.88 (.01)
Required active recreation	0.73	0.60 (.03)
Any passive recreation (required/ encouraged, allowed use)	0.98	0.90 (.01)
Required passive recreation	0.88	0.75 (.02)
Park Presence and Characteristics[e]	**Mean**	**Range**
Number of parks per catchment	7.96 (.46)	0-47
Park density per square mile[f]	0.75 (.08)	0-17.27
Proportion of parks in catchment with 1 or more sports feature(s)	0.80 (.01)	0-1
Proportion of parks in catchment with a playground	0.67 (.02)	0-1

Note: Standard errors in parentheses
[c] Any jurisdiction overlapping the catchment had the policy
[d] Measured as the product of the estimated jurisdiction population (as a proportion of the overall catchment population) and a dummy variable for the policy, summed to the catchment area
[e] Park count and density estimates include additional eligible parks in the sampling frame not observed on the ground; park characteristics include only observed parks
f Density calculated as the number of parks in the catchment area divided by the catchment area size in square miles (excluding bodies of water and military installations)

Increasing the proportion of the catchment -area youth population that lives in a jurisdiction with an active recreation policy is associated with more parks in the catchment.

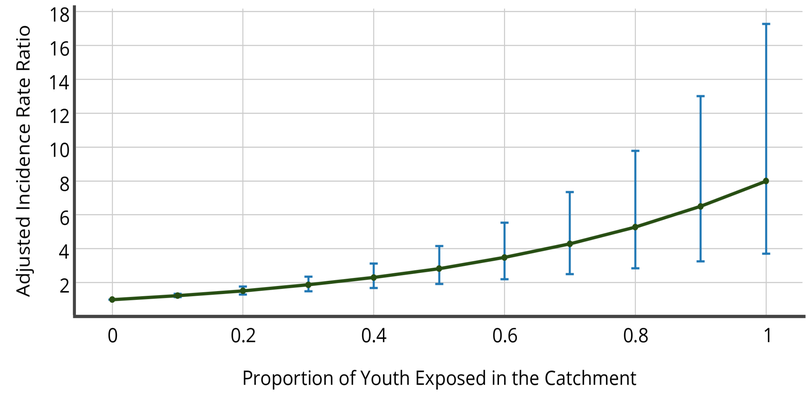
10% population exposure to any active rec. policy ⇒ **6% increase in number of parks in the catchment***

- Compared to a catchment area with no active rec. policy, a catchment entirely covered by a policy has 1.8 times the number of parks (Adj. IRR=1.80, 95% CI 1.10, 2.93).*
- A 10% population increase in exposure to a required active rec. policy is associated with a more modest 2.5% increase in the number of parks.*

*controlling for urbanization, median household income, and a sprawl index

- Population exposure to passive rec. zoning policies was significantly associated with an increased number of parks in the bivariate model but not after adjusting for covariates in preliminary analyses.

Adjusted Incidence Rate Ratio[g] for Park Density by Youth Exposure to Any Active Recreation Zoning Policy



[g] Adjusted for urbanization, community median household income, racial/ethnic composition, sprawl index, and study year

Park density per square mile increases with greater population exposure to any active recreation policy

- Population exposure to required active rec. policies was associated with higher park density in bivariate analysis, but not in the preliminary full model
- Passive rec. policies were significantly associated with park density in the full model
  - A 10% increase in population exposure to any passive rec. policy was associated with a 20% increase in park density
  - A catchment area 100% covered by a passive rec. policy was associated with a park density 6 times that of a catchment with no policy
- Active recreation policies were not associated with the mean number of sports features or playgrounds in parks or the proportion of parks with these features.

Conclusions

✓**Increasing population exposure to recreation zoning policies is associated with greater number and density of local public parks.**

✓**In preliminary analyses, the presence and number of sports/exercise features in parks were not associated with the zoning policies.**

✓**Zoning and land use law may be an important mechanism for increasing opportunities for exercise in the community.**

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