



Advancing Science  
& Practice in the  
Retail Environment

# Tobacco Retailer Density and Proximity

## What's the difference and how to talk about it

CDC OSH National Tobacco Control Program Awardee Meeting  
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STANFORD PREVENTION  
RESEARCH CENTER  
*the science of healthy living*

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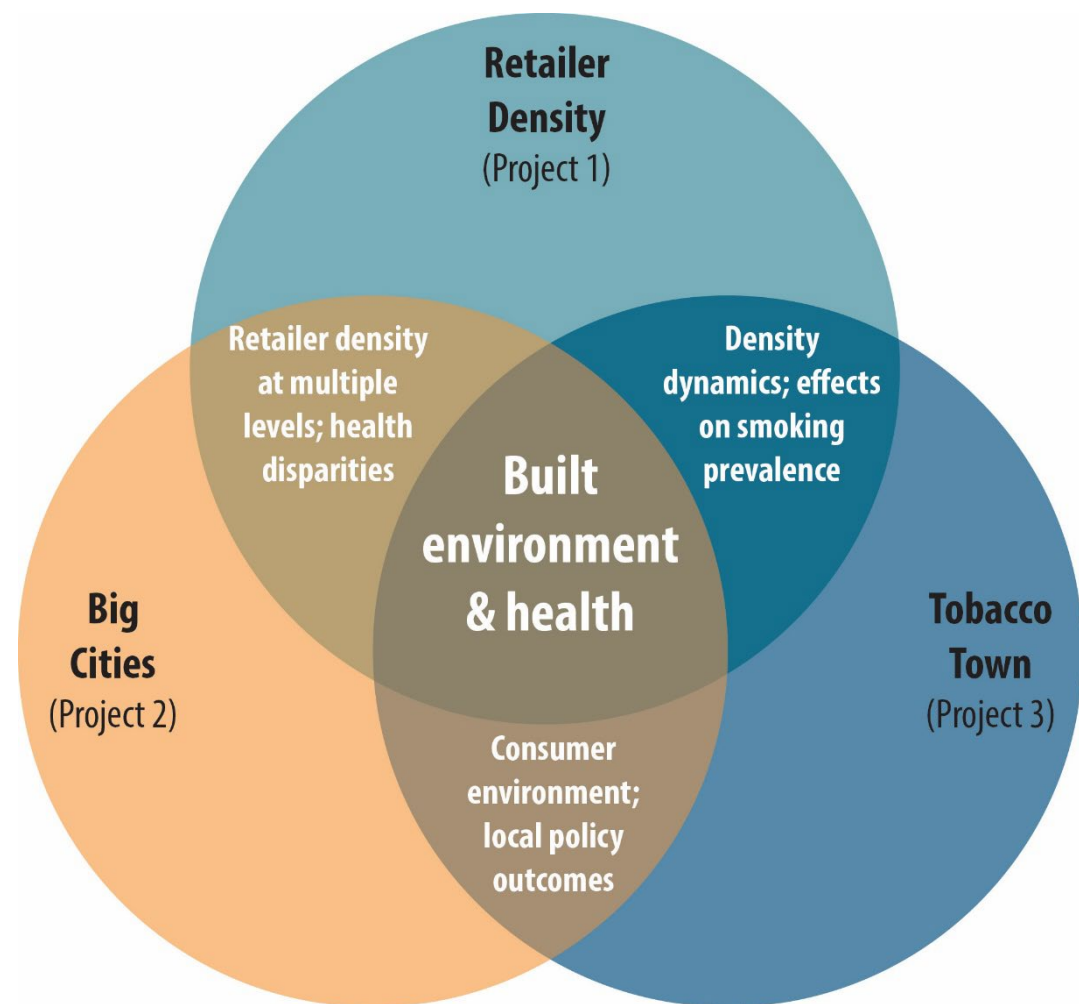
# Goals

- Compare concepts of tobacco retailer density and proximity
- Tobacco retailer concentration with an equity lens
- Message framing and selecting measures
- Resources

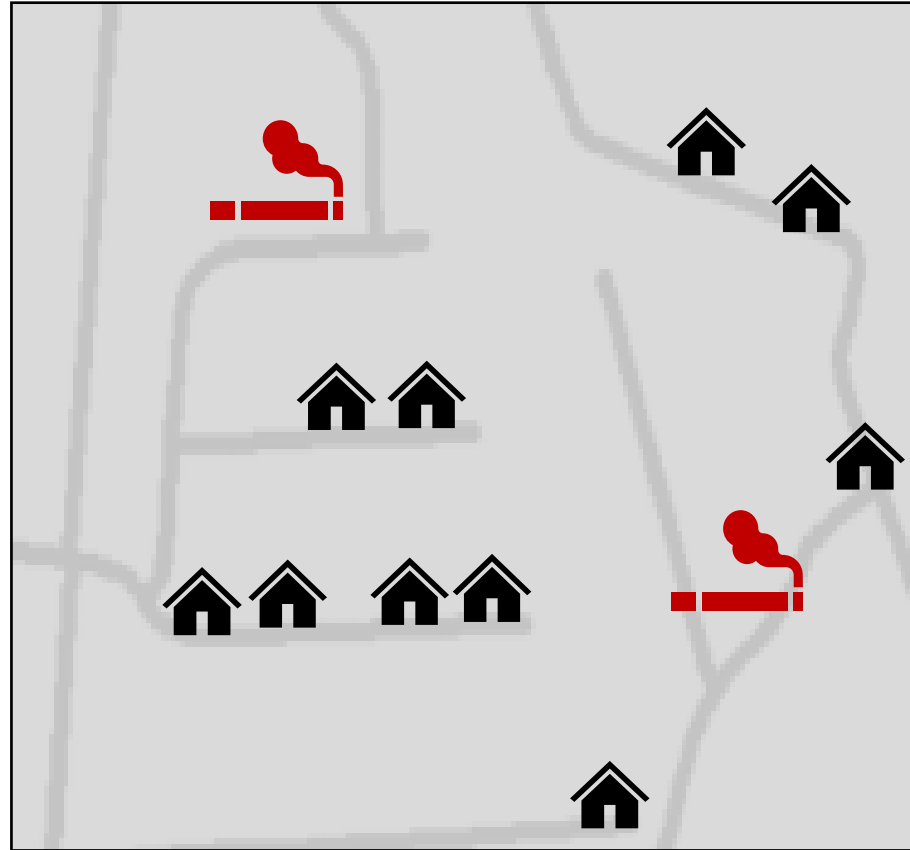


# ASPiRE

- **Goal:** *to build a rigorous, scientific evidence base for effective tobacco control in the retail environment to reduce the public health burdens of tobacco use*
- **3 research projects**
- **3 support cores**
  - Administrative core
  - Data core
  - D & I core



# Tobacco retailer density measures



# Tobacco retailer density measures

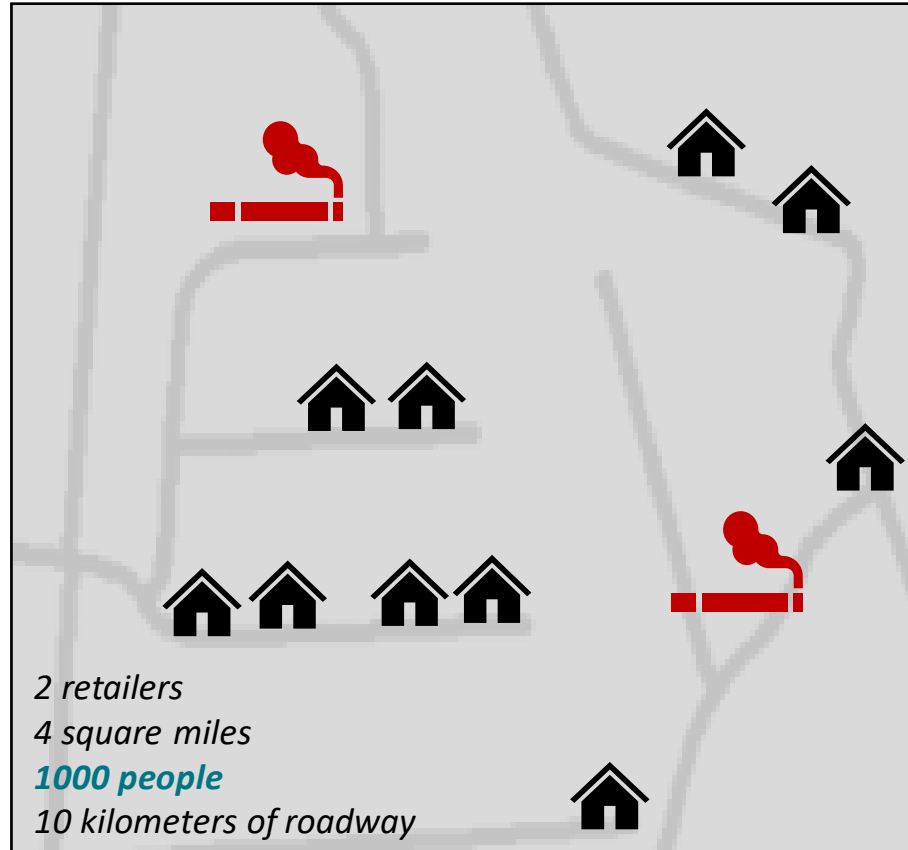


# Tobacco retailer density measures



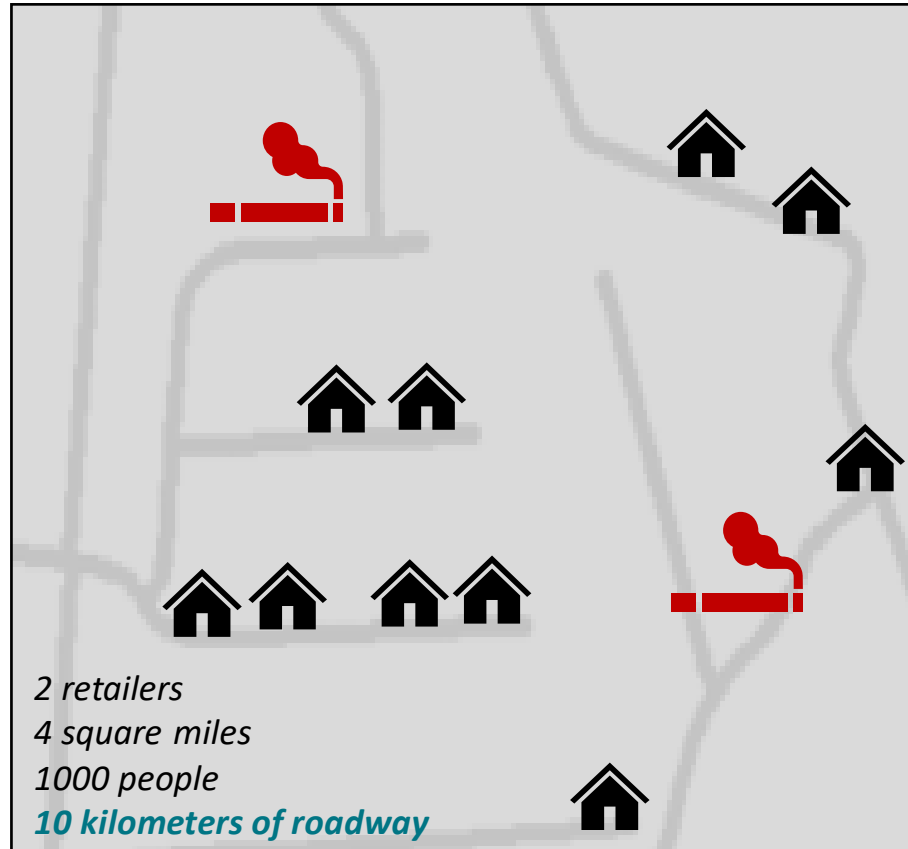
0.5 retailers per square mile

# Tobacco retailer density measures



0.5 retailers per square mile  
2 retailers per 1000 people

# Tobacco retailer density measures



0.5 retailers per square mile

2 retailers per 1000 people

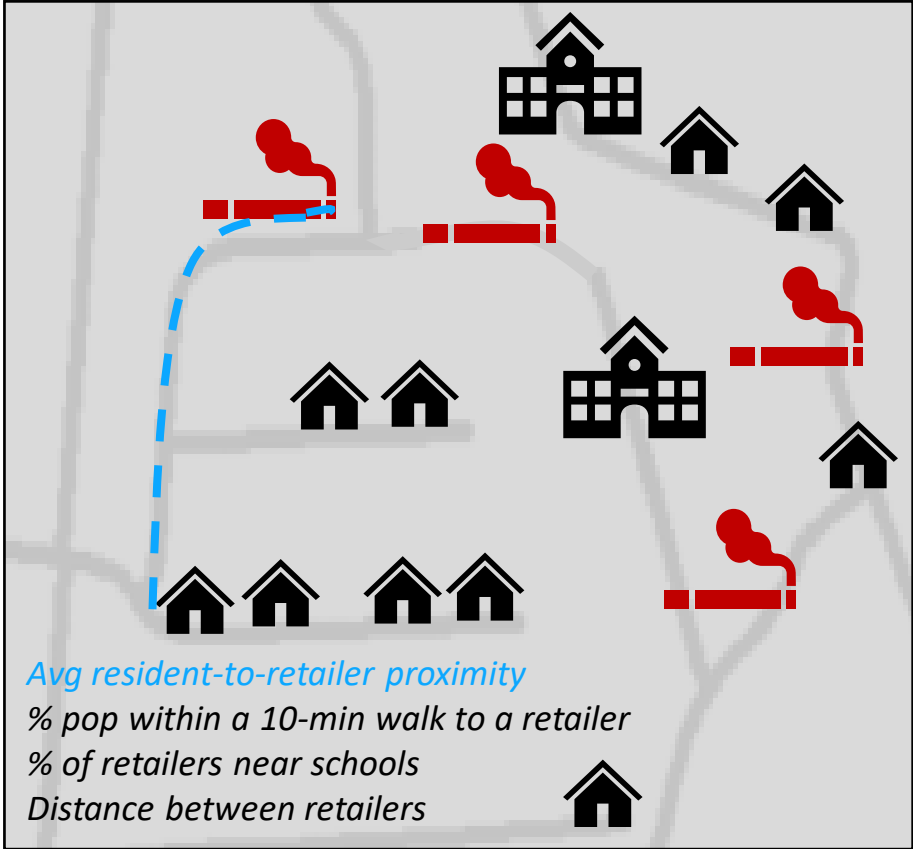
2 retailers per 10km roadway



# Tobacco retailer density measures



# Tobacco retailer density measures



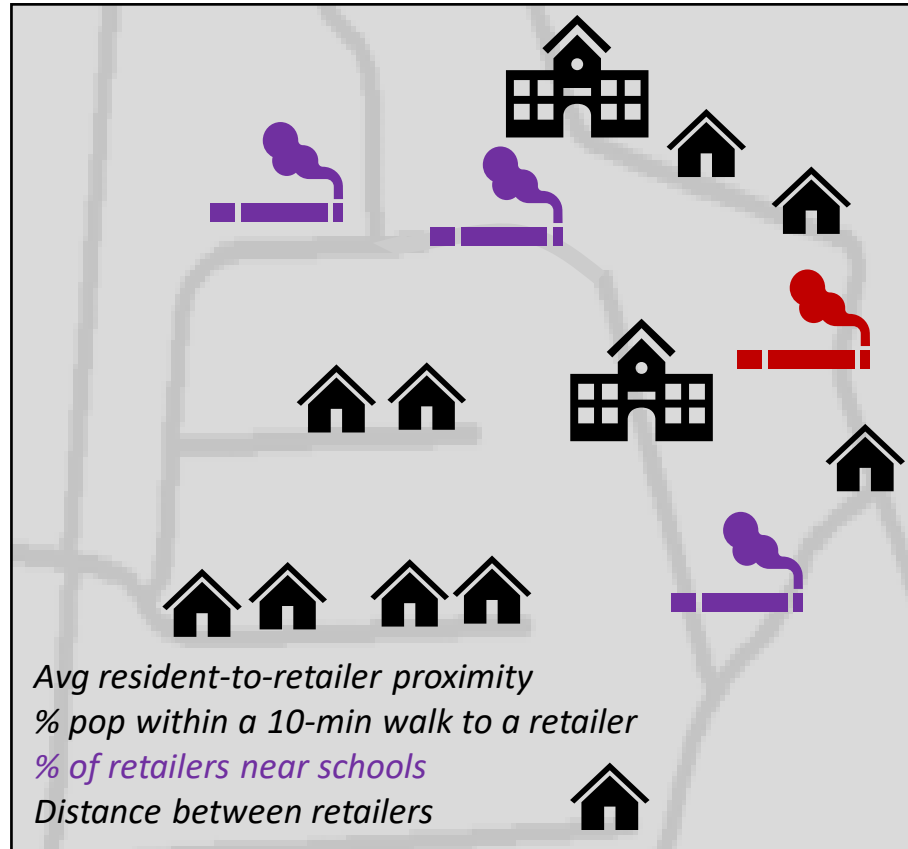
Avg resident-to-retailer distance: 0.25 mi

# Tobacco retailer density measures



Avg resident-to-retailer distance: 0.25 mi  
80% pop within 1km of a retailer

# Tobacco retailer density measures

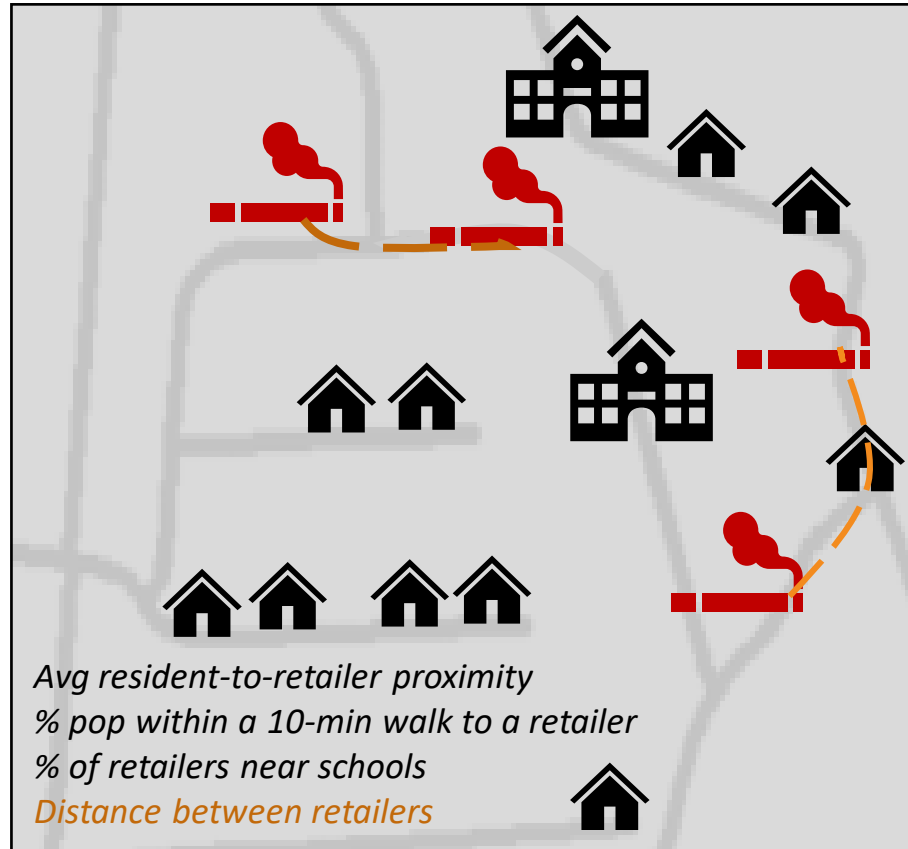


Avg resident-to-retailer distance: 0.25 mi

90% pop within 1km of a retailer

75% of retailers within 1km of a school

# Tobacco retailer density measures



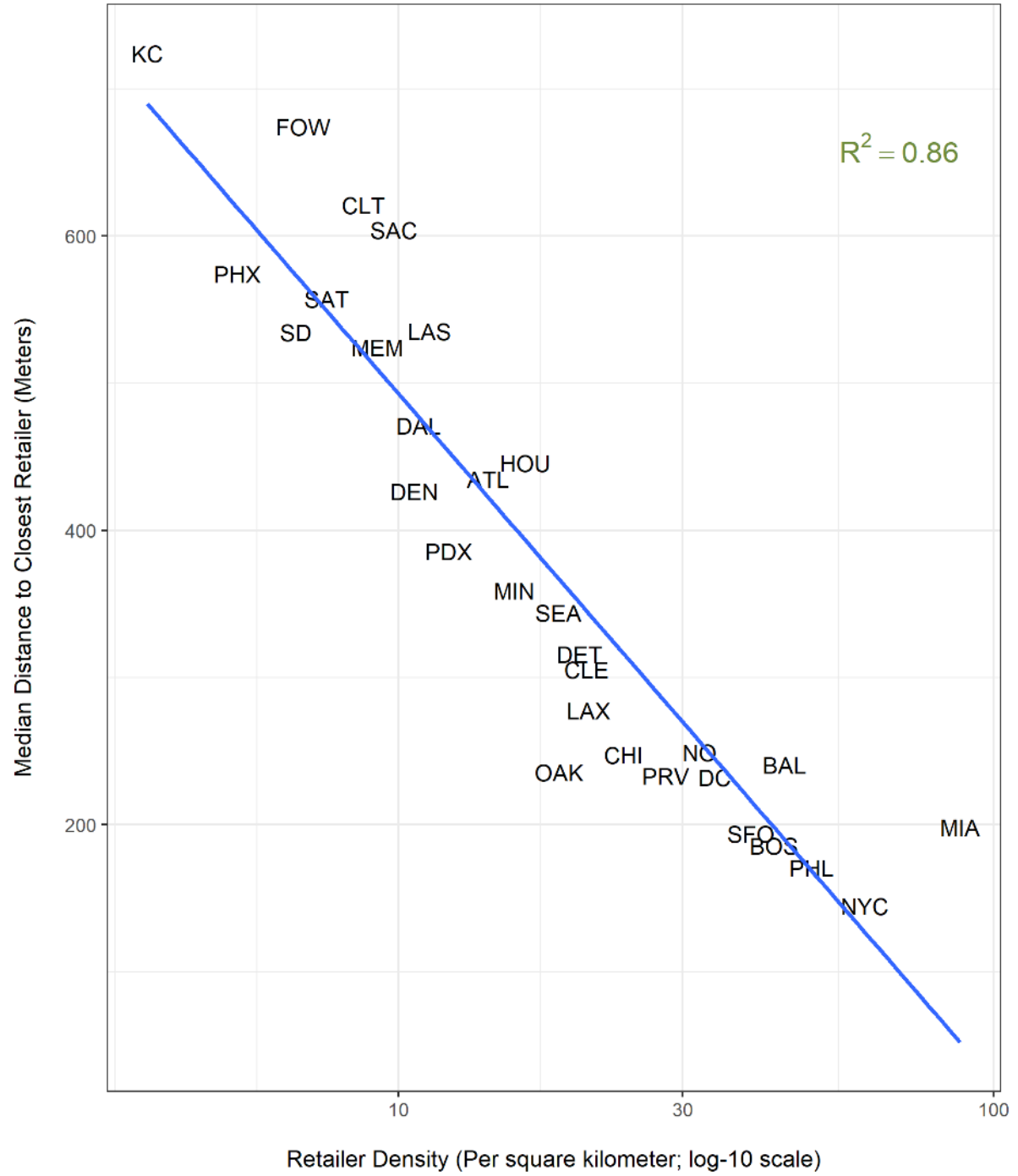
Avg resident-to-retailer distance: 0.25 mi

90% pop within 1km of a retailer

75% of retailers within 1km of a school

Avg retailer-to-retailer distance: 0.30 mi

# Density v Proximity in ASPIRE Cities



# Tobacco retailer concentration correlates

<b>Smoking and cessation behaviors</b>	Youth initiation, current smoking, impulse purchases <sup>1-3</sup>
<b>Health outcomes</b>	COPD hospitalizations, life expectancy, mortality <sup>4-5</sup>
<b>Neighborhood sociodemographics</b>	Socioeconomic status, racial composition <sup>6-9</sup>

1. Clemens T, *Tobacco Control* (2018)
2. Henriksen L, *Preventive Medicine* (2008)
3. Robertson L, *Tobacco Control* (2016)
4. Lipton R, *International Journal of Medical Sciences* (2007)
5. Galiatsatos P, *Tobacco Control* (2018)
6. Lee JG, *J Epidemiol Community Health* (2017)
7. Lee JG, *American Journal of Public Health* (2015)
8. Kong A, *Nicotine & Tobacco Research* (2020)
9. Mills S, *Health & Place* (2018)



# Context matters

- No one size fits all solutions
- Retailer density and proximity vary at the neighborhood and community levels
- Importance of local control for equity<sup>1,2</sup>

1. <https://www.changelabsolutions.org/product/equity-first-approach-assessing-preemption>

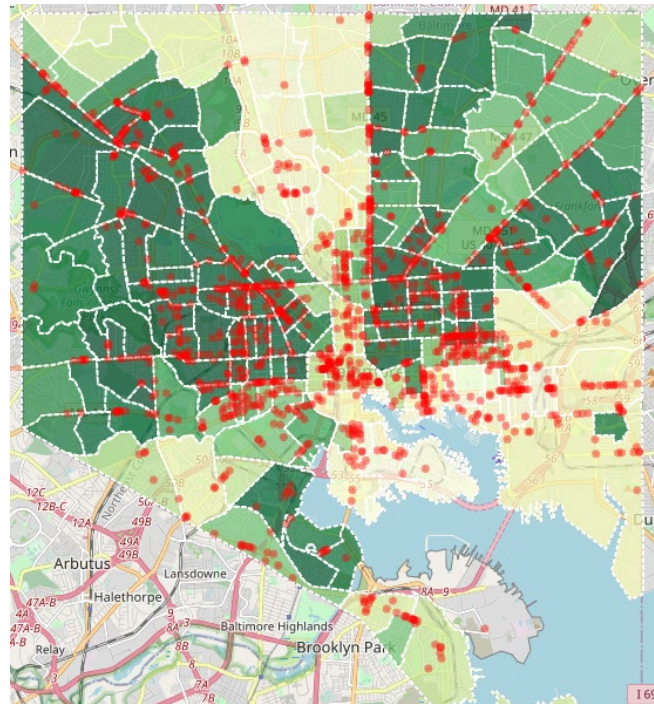
2. <https://www.publichealthlawcenter.org/webinar/why-state-preemption-and-local-authority-matter>





# Equity-increasing policy potential

## Baseline: Baltimore, MD

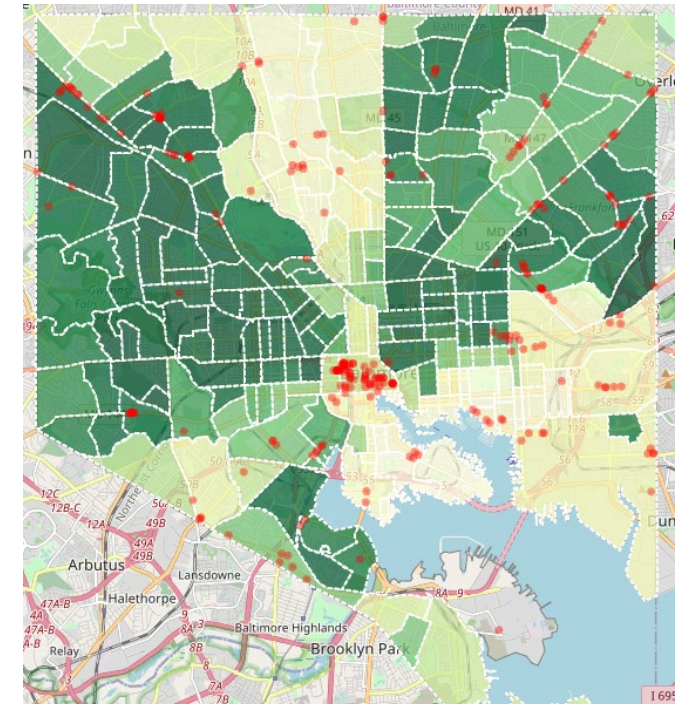
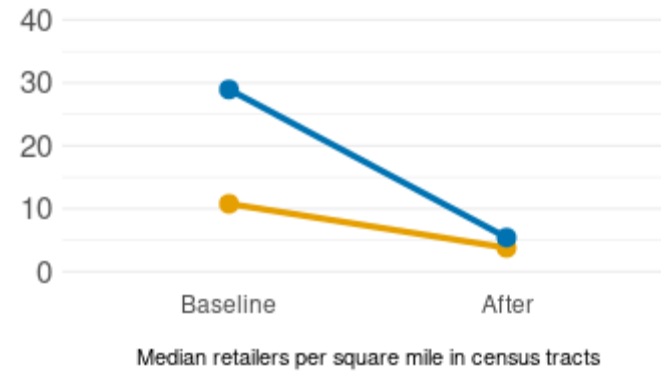


20 40 60 80  
 Black or African American (%)  
 ● Tobacco retailer

## School-to-retailer buffer: 2,000 ft

At baseline, is retailer density higher in tracts with higher percentages of a priority population?  
 After a policy, are disparities projected to shrink or worsen?

- Tracts with HIGHEST % Black/African American (92.5-99.3%)
- Tracts with LOWEST % Black/African American (0-33.2%)



20 40 60 80  
 Black or African American (%)  
 ● Tobacco retailer

# So which measure do I choose?

## Considerations

- Data availability
- Policymaker familiarity
- Community familiarity
- Equity
- Multiple measures
- Goals

## Examples

- Youth
  - *“90% of tobacco retailers are within a 10-minute walk of a school”*
- Historical disadvantage comparisons
  - *“Low-income neighborhoods in our city have 10 tobacco retailers per mi<sup>2</sup>, compared to 2/mi<sup>2</sup> in high-income neighborhoods”*
  - *“On average, Black residents live within 0.2 miles of a tobacco retailer, while the average distance for white residents is 0.5 miles”*



# Resources

- **The ASPIRE Center:** <http://aspirecenter.org/>
- **Tobacco Swamps Dashboard:** <https://aspirecenter.org/tobacco-swamps/>
- **Other ASPIRE resources:** <https://aspirecenter.org/resources/>
- **Recent articles on tobacco retailer concentration and equity:**

1. Adibe C, Craigmile P, Onnen N, Schwartz E, Roberts M. [The relationship between tobacco retailer density and neighborhood demographics in Ohio](#). Ohio journal of public health. 2019;2(1):12-18.
2. Caryl FM, Pearce J, Reid G, Mitchell R, Shortt NK. [Simulating the density reduction and equity impact of potential tobacco retail control policies](#). Tobacco control. 2021;30(e2):e138-e143.
3. Craigmile PF, Onnen N, Schwartz E, Glasser A, Roberts ME. Evaluating how licensing-law strategies will impact disparities in tobacco retailer density: a simulation in Ohio. Tobacco Control. 2021;30(e2):e96-e103.
4. Giovenco DP, Spillane TE, Mauro CM, Hernández D. [Evaluating the impact and equity of a tobacco-free pharmacy law on retailer density in New York City neighbourhoods](#). Tobacco control. 2019;28(5):548-554.
5. Glasser AM, Roberts ME. [Retailer density reduction approaches to tobacco control: a review](#). Health & place. 2021;67:102342.
6. Kong AY, Delamater PL, Gottfredson NC, Ribisl KM, Baggett CD, Golden SD. [Neighborhood inequities in tobacco retailer density and the presence of tobacco-selling pharmacies and tobacco shops](#). *Health Education & Behavior*. Published online 2021:10901981211008390.
7. Kong AY, Delamater PL, Gottfredson NC, Ribisl KM, Baggett CD, Golden SD. [Sociodemographic inequities in tobacco retailer density: Do neighboring places matter?](#) Health & place. 2021;71:102653.
8. Lawman HG. [The Pro-Equity potential of tobacco Retailer licensing regulations in Philadelphia](#). American journal of public health. 2019;109(3):427.
9. Mills SD, Kong AY, Reimold AE, Baggett CD, Wiesen CA, Golden SD. [Sociodemographic Disparities in Tobacco Retailer Density in the United States, 2000-2017](#). Nicotine & Tobacco Research. Published online 2022.
10. Ribisl KM, Luke DA, Bohannon DL, Sorg AA, Moreland-Russell S. [Reducing disparities in tobacco retailer density by banning tobacco product sales near schools](#). Nicotine & Tobacco Research. 2017;19(2):239-244.

