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Moving From Metrics to Mechanisms to Evaluate Tobacco Retailer Policies: Importance of Retail Policy in Tobacco Control

See also Lawman et al., p. 547.

As suggested in the important study by Lawman et al. (p. 547), we live in cities and communities with an overabundance of tobacco retailers. In fact, there are more than 26 tobacco retailers for every McDonalds and more than 31 retailers for every Starbucks in the United States.[1] Living in neighborhoods with higher tobacco retailer density is associated with a greater likelihood of starting to use tobacco products and a reduced likelihood of successful quitting.[2,3] Consistent with this science, and driven by concerns about stalled or reversed progress in reducing tobacco use, states and localities have started planning, implementing, and evaluating a variety of policies with the common goal of reducing the retail supply of tobacco.

The Lawman et al. article describes how the novel retail environment policy of Philadelphia, Pennsylvania, reduced tobacco retailer density by 20.3% in the first three years and significantly reduced socioeconomic disparities in density. This study is important for several reasons. First, it adds to the small but growing evidence base for local solutions to supply reduction. Second, it looks at the potential of, in effect, multiple policies to improve the inequitable distribution of tobacco retailers in low-income neighborhoods. Finally, it is a stellar example of how communities continue to be the laboratories for tobacco policy implementation that can serve as exemplars for state and federal regulation.

THE IMPORTANCE OF POLICY MECHANISMS

As the example from Philadelphia shows, a density-reduction policy can have multiple "levers" (i.e., a density cap, increased license fees, and a school buffer for new retailers) and should be paired with strong enforcement (e.g., an innovative three-strikes penalty). The Lawman et al. study provides evidence that the combination can reduce retail density overall and improve inequities in low-income areas. Such evidence will help other communities and states as they consider how to address the similar challenges of oversupply and inequitable distribution that plague most urban areas.

Real-world policy evaluations demonstrate whether a policy works, but they are often less able to explain how, why, or for whom they work. In the context of tobacco retail policies, how do density-reduction policies actually change the environments of communities, and how do these changes, in turn, promote healthy behavior? Past research suggests that density reduction may shape behavior through at least three mechanisms: (1) increasing the search and purchase costs of obtaining tobacco, (2) reducing exposure to tobacco marketing (as well as cues for craving and unplanned purchasing), and (3) reducing tobacco industry influence and denormalizing tobacco use to address the "insidious ordinariness" of tobacco.[4]

Tobacco retail density (however it is defined) is a means, not an end. That is, in addition to collecting evaluation data that can document how much density changes, it is just as important to be able to describe and understand what those changes mean for communities and their residents. A few short examples can help illustrate this point.

The Limits of Modest Density Reduction

Reduced density will promote health only if it produces environmental changes strong enough to shape behavior. By this we do not suggest that people necessarily need to be conscious of environmental changes, but these changes do need to be strong enough to shape behavior. In urban environments, tobacco users may access a dozen or more tobacco retailers within a five-minute walk from their residence or workplace. A small reduction in density may not be enough to alter tobacco purchases and use frequency or to motivate quit attempts.

Varying Effects of Policies

Similarly, the metric we use to measure retail density is an overall average of the concentration of

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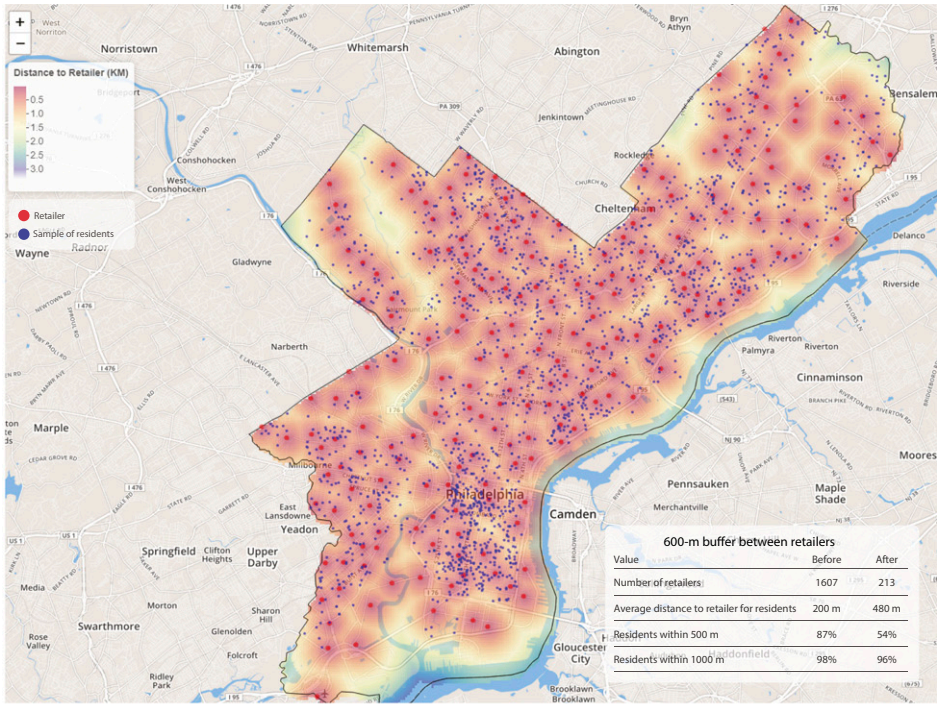
tobacco retailers over a typically large geographic area. This metric can hide a lot of variability. For example, a density-reduction policy that works through retailer caps may result in a randomly distributed pattern of reduced retailers, whereas a school buffer policy could result in more reductions of retailers in neighborhoods that have more youths and reduce racial disparities.[5] Lowered retailer density in and of itself tells us little about the disparity-reducing potential of the policy; we need to look further.

Policy Mechanisms and Environmental Changes

Both of these previous points can be seen more clearly in the maps in Figure 1. These maps are part of a retail policy dashboard that is being developed as part of the National Cancer Institute–funded ASPiRE Center (Advancing Science & Practice in the Retail Environment; grant P01CA225597). Combining geocoded data on tobacco retailers with demographic data used to generate realistic synthetic populations,[6] the Tobacco Swamps dashboard will support computational models of retail policies for 30 large US cities. It is designed collaboratively with community tobacco policy stakeholders as an interactive policy exploration tool that will be useful for those with on-the-ground knowledge of neighborhood and tobacco-related disparities.

In Figure 1, tobacco retailers are marked by red dots and a sample of residents by smaller blue dots. A heat map overlay indicates the estimated average distance that residents would need to travel to reach the nearest tobacco retailer. The top map shows the tobacco retailer

a



b

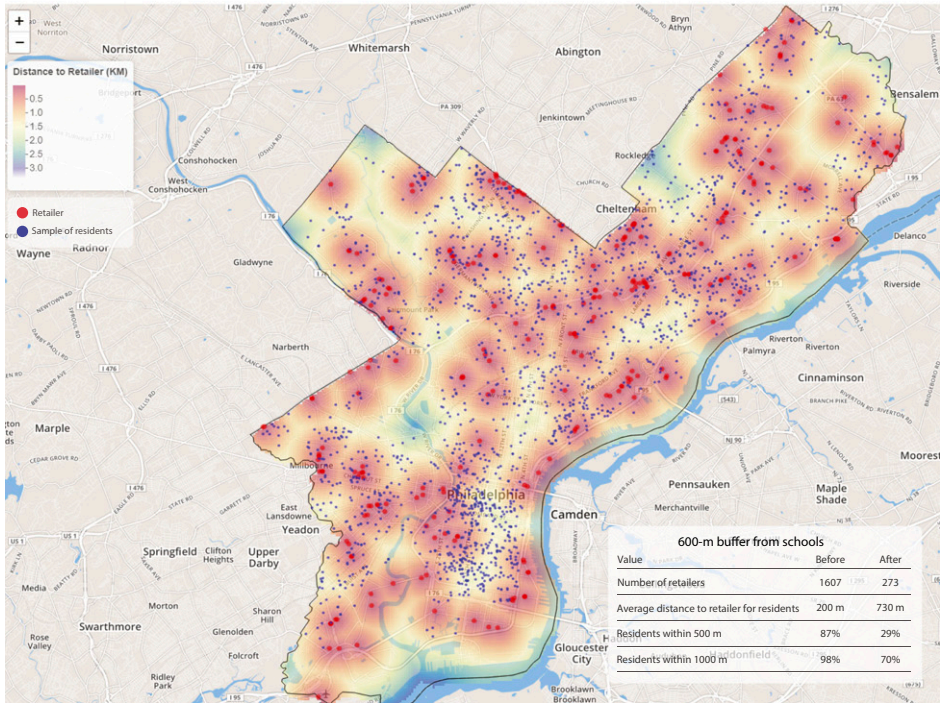


FIGURE 1—Estimated Tobacco Retail Density in Philadelphia, Pennsylvania, for Two 600-M Buffer Policies by (a) Buffer Around Retailers, and (b) Buffer Around Schools: 2019

locations after a policy requiring a minimum distance of 600 meters between retailers. The bottom map shows the retailer landscape after a policy requiring 600 meters between tobacco retailers and schools.

These density-reduction policies would have different effects on the tobacco retail environment in Philadelphia. Although the retailer buffer removes 87% of tobacco retailers (leaving only 213 of 1607), it does little to increase travel distance. The average distance to the nearest retailer is 0.48 kilometers, and 96% of residents live within a 10-minute walk of a tobacco retailer (1 km). The school buffer policy leaves more retailers in place (273), but the effects on travel distance are more dramatic. The average distance to the nearest retailer is 0.73 kilometers, and 70% of the population lives within one kilometer of a tobacco retailer.

The heat map demonstrates why the school-focused policy works better in this context: fewer retailers remain in the densely populated areas, including downtown Philadelphia (see the light yellow areas of the map). Thus, two policies that have the same goal of density reduction would eventually have very different effects on the built environment. Of course, the dashboard simulates immediate effects of local policies. The value of the Lawman et al. article is the real-world estimates of how much and how quickly density reduction can be accomplished, which is an important complement to computational models.

CONCLUSIONS

It is critical to continue evaluating tobacco retail policies in communities like Philadelphia. However, in addition to monitoring basic metrics, such as retail density, we should make sure to understand and describe the underlying mechanisms by which these policies are thought to work. Using visualization and computational modeling tools are particularly useful for revealing policy mechanisms, understanding causal relationships, and communicating policy effects to stakeholders.[7] Most importantly, by focusing on policy mechanisms, communities will be better able to design new tobacco control policies that meet the specific demands of their geographies and residents, as well as their political, commercial, and public health contexts. AJPH

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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Centrality of Employment Policies for Individual and Public Health

See also Schneider, p. 499.

In this issue of *AJPH* (p. 499), sociologist Daniel Schneider at the University of California, Berkeley adds to the mounting evidence in support of paid sick time laws with his study of the short-term effects of Washington State's paid sick leave law, passed in 2016 and effective January 2018. Schneider provides an important and empirically strong demonstration of how the establishment of workplace standards and worker protections can benefit worker well-being and public health.

Paid sick leave benefits afford employees the ability to stay home from work to care for themselves or a family member in times of ill health without financial penalty. Such laws are presumed to have positive effects for workers as well as broader benefits to society through preventing illness contagion to coworkers and customers (when sick employees stay home) and to schoolchildren (when healthy employees stay home to care for sick children). Paid sick leave laws can also benefit employers through reduced absenteeism and higher productivity.[1]

Nevertheless, according to Bureau of Labor Statistics March 2019 data, more than one quarter of workers in private industry have no access to paid sick leave benefits, and 57% of part-time workers and 53% of workers in the lowest wage quartile are without such access.[2] Workers in retail and food service occupations,

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