Supplementary Table 11. Local Environmental Change to Reduce Tobacco Use (Community Settings)

Reducing the Density of Tobacco Retail Outlets

Author, y	Design	Population	Duration	Intervention/Evaluation	Major Findings
West et al, 2010[375]	Observational, cross-sectional	N=205 Latino adolescents recruited from 7 high schools in San Diego, California, and participating in a larger RCT evaluating the effectiveness of a counseling intervention to increase medication adherence	2004-2005	Baseline data, including data on alcohol and tobacco use, were collected from participants. US Census Bureau data from the San Diego GIS were used to identify neighborhood characteristics. Alcohol and tobacco retailer addresses were obtained from the San Diego County Department of Environmental Health, Food and Housing Division. Distance to the nearest retailer from each participant's residential area was measured by the shortest road path.	Homes: • After ordinal regression while adjusting for hypothesized social predictors, greater distance from home to the nearest retailer was associated with lower alcohol and tobacco use (OR=0.90; 95% CI, 0.82, 0.99).
Pearce et al, 2009[376]	Observational, cross-sectional	N=12,529 persons age 15+ y living in noninstitutional permanent dwellings and participating in the New Zealand Health Survey	2002-2004	Smoking status was ascertained by questionnaire and categorized as "heavy" for 10+ cigarettes per day and "light" otherwise. Street addresses of supermarkets and local convenience stores were collected from territorial authorities in New Zealand and used to geocode geographical access to tobacco by road for each census block. Accessibility of outlets (measured as road travel time with a car) in each census block was divided into quartiles and paired with individual-level data. Multivariate-adjusted regression assessed if the neighborhood differed between smokers and nonsmokers and whether relationships for heavy smokers differed from light smokers and nonsmokers.	Homes: After adjusting for individual-level demographic and socioeconomic variables: • Persons living in the highest quartile for best supermarket access (<1.89 travel min by car) had 23% higher odds of being a smoker (OR=1.23; 95% CI, 1.04, 1.42) compared with the lowest quartile (>6.54 travel min). • Persons living in the highest quartile for best convenience store access (<0.98 travel minutes) had 19% higher odds of being a smoker (OR=1.19; 95% CI, 1.04, 1.38) compared with the lowest quartile. • Results were not statistically significant after adjustment for neighborhood deprivation and rural/urban residence. • Similar nonsignificant results were obtained for heavy smokers compared with light smokers and nonsmokers.
Li et al, 2009[377]	Observational, cross-sectional	N=55,467 individuals in 398 communities in Massachusetts	1999-2005.	BRFSS data were used to categorize individuals as current smokers or noncurrent smokers and obtain individual demographic characteristics. Large cities in Massachusetts were divided into communities according to ZIP code, and community-level sociodemographic data were obtained from the 2000 US Census. Tobacco retail outlet density was calculated by geocoding	Homes: • Higher tobacco retailer density near home was positively associated with current smoking. Each 1 additional retailer per 16 km of road was associated with 13% higher odds of current smoking (OR

				the Massachusetts state Department of Revenue license registry of tobacco retailers. Mixed-effects logistic regression models assessed individual- and community-level predictors of smoking.	=1.13; 95% CI, 1.00, 1.27), after adjusting for other covariates.
Novak et al, 2006[378]	Observational, cross-sectional	N=2116 youth (age 11-23 y) living in 178 randomly selected census tracts in Chicago	1995-1996 and 1997-1999	Smoking behavior and demographic characteristics were obtained by interviewer-administered questionnaires in 2 waves (1995-1996 and 1997-1999). Trained raters drove at 8 kph down every street within the selected census tracts. Both sides of blocks were videotaped, and observer logs gathered data on land use, physical conditions, patterns of social interaction, and retail locations licensed to sell tobacco. Density was computed by dividing the number of block faces with at least 1 retail outlet by the total number of observed block faces. Generalized estimation equation models, adjusted for neighborhood confounders and another with propensity score strata, were used to evaluate the relation of retail tobacco outlet density with youth smoking.	Homes: • After adjustment for census-tract level confounders, youths living in areas at the 75th percentile of retail tobacco outlet density were 21% more likely to have smoked in the past month (OR=1.21; 95% CI, 1.04, 1.41), compared with those living at the 25th percentile. • Findings were similar in the propensity score–adjusted model (OR=1.20; 95% CI, 1.00, 1.44).
Chuang et al, 2005[379]	Observational, cross-sectional	N=8121 adults age 25-74 y in 4 cities in northern California in the Stanford Heart Disease Prevention Program	5 cross-sectional assessments between 1979 and 1990	Individual-level data, including data on smoking, demographics, and SES, were collected from 5 cross-sectional surveys. Convenience store addresses were collected from business listings of telephone books for the years corresponding to the surveys and geocoded. The distance, number, and density of stores within a 1.6-km radius in each neighborhood were estimated. These scores were divided into tertiles, and multilevel models were adjusted for individual and neighborhood characteristics.	Homes: • Persons living in areas with high compared with low convenience store density have higher smoking prevalence. • Shorter distance to a store and higher number of stores within a 1.6-km radius of home were associated with higher smoking prevalence. • ORs and 95% CIs were not provided.
McCarthy et al, 2009[380]	Observational, cross-sectional	N=19,306 students from 245 randomly sampled schools in California participating in the California Student Tobacco Survey	2003-2004	Data on tobacco use were collected from students who were categorized as established smokers if they had smoked at least 1 cigarette in the last month and at least 100 lifetime cigarettes. Students were categorized as experimental smokers if they had smoked at least 1 cigarette in the last month but <100 lifetime cigarettes. Retailer density was assessed using geocoded 2006 California Board of Equalization data on tobacco retail licensees. The number of retail outlets within a 1.6-km radius buffer area around each school was counted. Random-intercept models in a generalized linear mixed-model	Schools: • The number of retailers within a 1.6-km radius of schools was associated with greater likelihood of students being experimental smokers (OR=1.11; 95% CI, 1.02, 1.21) in urban high schools but not middle schools. • The number of retailers within a 1.6-km radius was not significantly associated with likelihood of being an established smoker (OR=1.06; 95% CI, 0.94, 1.20) in all student groups.

				framework evaluated the relation of tobacco retailer density with tobacco use.	
Henriksen et al, 2008[381]	Observational, cross-sectional	N=24,875 adolescents enrolled in 135 randomly selected schools in California participating in the California Student Tobacco Survey conducted by the California Department of Public Health	2005-2006	Tobacco use data were obtained from the survey. Tobacco outlet addresses were obtained from state retailer licensing data using unique postal ZIP codes within 0.8 km of high schools. Distance from each school street address to every tobacco outlet within 0.8 km was measured "as the crow flies," and tobacco outlet density was measured by the total number within 0.8 km of each school. After multiple regressions and adjustment for school and neighborhood demographics, the association between density and proximity of tobacco outlets in high school neighborhoods and school smoking prevalence was evaluated.	Schools: • Prevalence of current smoking was 3.2 percentage points higher at schools in neighborhoods with the highest tobacco outlet density (≥5 outlets) vs neighborhoods without any tobacco outlets. • The density of retail cigarette advertising in school neighborhoods was similarly associated with high school smoking prevalence. • Proximity (presence of a tobacco outlet within 300 m of a school; distance to the nearest tobacco outlet from school) was not associated with smoking prevalence.
Provision of Community Telephone Quit Lines					
Author, y	**Design**	**Population**	**Duration**	**Intervention/Evaluation**	**Major Findings**
Ossip-Klein et al, 1991[385]	RCT	N=1813 smokers with intention to quit, recruited from a 10-county region in Western New York state	From 1985 to 1987, with an 18-mo follow-up	Counties were matched on population size and other demographics, and pairs of counties were randomly assigned to manual only (American Lung Association self-help packet, containing a quit manual, maintenance manual, and relaxation tape) or manual plus hotline intervention. Participants in hotline counties were offered access to a telephone hotline, hotline stickers, and flyers and were encouraged to call the hotline in addition to the manual-only intervention. Validation of abstinence was by significant-other report for all subjects and salivary cotinine levels for about 50% of subjects.	• In the hotline group, 35.9% (n=321) of subjects called the hotline at least once during the 18-mo follow-up. • Abstinence was consistently higher in the manual-plus-hotline counties compared with manual-only counties across all follow-ups and abstinence definitions. • 1-, 3-, and 6-mo 48-h abstinence prevalence was higher in manual-plus-hotline counties based on both significant-other report and salivary cotinine ($P < 0.05$ each). • Abstinence rates were higher in hotline counties at 12 and 18 mo (10.3% vs 6% at 18 mo for salivary cotinine validation), and continuous abstinence from months 3 to 18 (6.6% vs 4.0%).

RCT indicates randomized controlled trial; GIS, geographical information systems; OR, odds ratio; CI, confidence interval; BRFSS, Behavioral Risk Factor Surveillance System; and SES, socioeconomic status.

Note: Reference numbers (eg, West et al, 2010[375]) appearing in this supplementary table correspond with those listed in the reference section of the statement. For the purposes of this supplementary table, these meta-analyses or systematic reviews (see "Author, y" column) are considered the primary citation. Additional studies mentioned in the primary citation may be included in the "Intervention/Exposure" and "Findings" columns. The additional studies can be accessed through the primary citation.