Office of Health Equity
Healthy Communities Data and Indicators Project

Short Title: Proximity to alcohol outlets.

Full Title: Percent of the population within ¼ mile of alcohol outlets by type of establishment sales.

1. Healthy Community Framework:
Social relationships that are supportive and respectful.

2. What is our aspirational goal?
Safe communities, free of crime and violence.

3. Why is this important to health?

a. Description of significance and health connection.
Excessive alcohol consumption caused approximately 88,000 deaths and 2.5 million years of potential life lost annually in the U.S. during 2006-2010, making it the fourth leading preventable cause of death. Evidence shows that high density and proximity to alcohol outlets in neighborhoods is associated with higher rates of binge drinking and associated harms, like drinking and driving, motor vehicle-related pedestrian injuries, child abuse and neglect, youth drinking, intimate partner violence, and violent crime. In California, the rate of alcohol- attributable deaths (ADD/year/100,000 population, 2006-2010) is higher for males (43.9) and African Americans (36.6) in comparison with the total population (29.4). Low-income and minority neighborhoods are more likely to have higher concentrations of stores selling alcohol.

Alcohol outlet density is controlled by the states and local regulations. In California the number of on-sale and off-sale alcohol licenses at the county level is restricted based upon the ratio of number of current licenses to the population within each Census tract. Additional licenses may be allowed based on a showing of public convenience or necessity. Limiting alcohol outlet density through the use of regulatory authority (e.g., licensing and zoning) is a public health strategy to prevent deaths and harms associated with excessive alcohol consumption.

b. Summary of evidence.
Multiple studies provide empirical evidence that higher alcohol outlet density and closer proximity to alcohol outlets is positively associated with outcomes like excessive alcohol consumption and other alcohol related harms like injuries and violence. However, some studies have found variations in the patterns; for example, four California cities showed higher rates of heavy drinking in high income neighborhoods with low alcohol outlet density than in lower income

neighborhoods.

c. References.

1. Gonzalez K, Roeber J, Kanny D, et al. Alcohol-attributable deaths and years of potential life lost - 11 States, 2006–2010.
2. *MMWR* 2014; 63(10): 213-216.
3. Michigan Department of Community Health. Bureau of Disease Control, Prevention & Epidemiology. The Association of Increased Alcohol Outlet Density & Related Harms: Summary of Key Literature (http://www.michigan.gov/documents/mdch/Outlet_Density_Associated_ Harms_Summary-3.10.2011_373894_7.pdf). Accessed May 19th, 2014.
4. California Department of Alcohol and Drug Programs. Racial/Ethnic Disparities – A data informed perspective, 2013. Accessed May 19th, 2014.
5. ABC Act (Business and Professions Code Sections 23815-23827) (https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml? lawCode=BPC&sectionNum=23824). Accessed May 19th, 2014.
6. Community Anti-Drug Coalitions of America, Center on Alcohol Marketing and Youth, Johns Hopkins Bloomberg School of Public Health. Regulating Alcohol Outlet Density: an Action Guide (http://www.camy.org/_docs/research-to-practice/place/alcohol-outlet-density/ outlet-density-strategizer-nov-2011.pdf). Accessed May 19th, 2014.
7. Task Force on Community Preventive Services. Preventing Excessive Alcohol Consumption: Regulation of Alcohol Outlet Density (https://www.thecommunityguide.org/topic/excessive-alcohol-consumption). Accessed June 15th, 2014.
8. Popova S, Giesbrecht N, Bekmuradov D, Patra J. Hours and days of sale and density of alcohol outlets: impacts on alcohol consumption and damage: a systematic review. *Alcohol Alcsm* 2009; 44(5): 500–516.
9. Campbell CA, Hahn RH, Elder R, et al. The effectiveness of limiting alcohol outlet density as a means of reducing excessive alcohol consumption and alcohol-related harms. *Am J Prev Med* 2009; 37(6): 556-569.
10. Truong KA, Sturm R. Alcohol environments and disparities in exposure associated with adolescent drinking in California. *Am J Pub Health* 2009; 99(2): 264-270.
11. Pollack CE, Cubbin C, Ahn D, Winkleby M. Neighbourhood deprivation and alcohol consumption: does the availability of alcohol play a role? *Int J Epidemiol* 2005; 34:772–780.

4. What is the indicator?

a. Detailed Definition: Proximity to alcohol outlets.

$$\text{Percent of the population living within } \frac{1}{4} \text{ mile of an alcohol outlet} = \frac{\text{Population living within } \frac{1}{4} \text{ mile of an alcohol outlet}}{\text{Total Population}}$$

b. Stratification:

Race/ethnicity (8 categories); type of establishment or license (3 categories).

c. Data Description.

i. Data sources: California Department of Alcohol and Beverage Control (ABC), raw data April 2014 (https://www.abc.ca.gov/licensing/licensing-reports/). California Department of Public Health, California Environmental Health Tracking Program (CEHTP), Browser Based Geocoder. Department of Finance (DOF), Demographic Research Unit, Redistricting files, 2010 (https://www.dof.ca.gov/Reports/Demographic_Reports/Census_2010/#PL94)

ii. Years available: 2014.

iii. Updated: ABC raw data is updated weekly; block population data is available every 10years.

iv. Geographies available: Census tracts, cities/towns, counties, county divisions, regions and state.

Part 1: The addresses of all establishments with active off-sale (ABC types 20 and 21) and on- sale licenses (ABC types 40, 41, 42, 47 and 48) (cross-sectional April 23rd 2014) were obtained from the raw data file. Using the Browser Based Geocoder (CEHTP), 97.7% of the 67,617 alcohol outlets with active licenses were successfully geocoded. Geocoded addresses were imported into ArcMap and displayed as X, Y points. Buffers of ¼ mile around each point were created for establishments with off-sale and on-sale alcohol licenses separately, and later for establishments with one or both types of licenses (total). Census blocks centroids (2010) were spatially joined to the buffers for each type of establishment. Part 2: The Census blocks within buffers were imported into SAS and merged with total population (2010) counts by block. The number of people that live within ¼ mile of alcohol outlets by race/ethnicity and by type of establishment sales (numerator) was calculated for each Census block and later aggregated to Census tracts, cities/towns, counties, county divisions, regions and state levels. The denominator was the total number of people on each

geographic level. Standard errors, relative standard errors, and 95% upper and lower confidence intervals were calculated. Decile rankings of places and relative risk in relation to state average were calculated. Regions were based on counties of metropolitan transportation organizations (MPO) regions as reported in the *2010 California Regional Progress Report (http:// www.adeusa.com/pages/62).*

5. **Limitations.**

The indicator was constructed with ABC alcohol outlet data from April 23rd 2014 and population data from 2010. Updates of the indicator should use ABC data from the same date; alternatively a new version could be created using data from the end of the calendar or fiscal year. Because proximity to outlets is only an indicator of an increased likelihood of alcohol related problems, it is not a direct measure of alcohol related problems.

6. **Projects using similar indicators.**

   a. San Bernardino County Department of Public Health. Healthy San Bernardino County: Better Health through Community. Healthy Communities Institute; 2014. https://wp.sbcounty.gov/dph/programs/community-outreach-education/healthy/

   b. San Francisco Department of Public Health. San Francisco Department of Public Health Sustainable Communities Index. San Francisco Department of Public Health; 2014. https://www.sfdph.org/dph/EH/PHES/PHES/sfip.asp