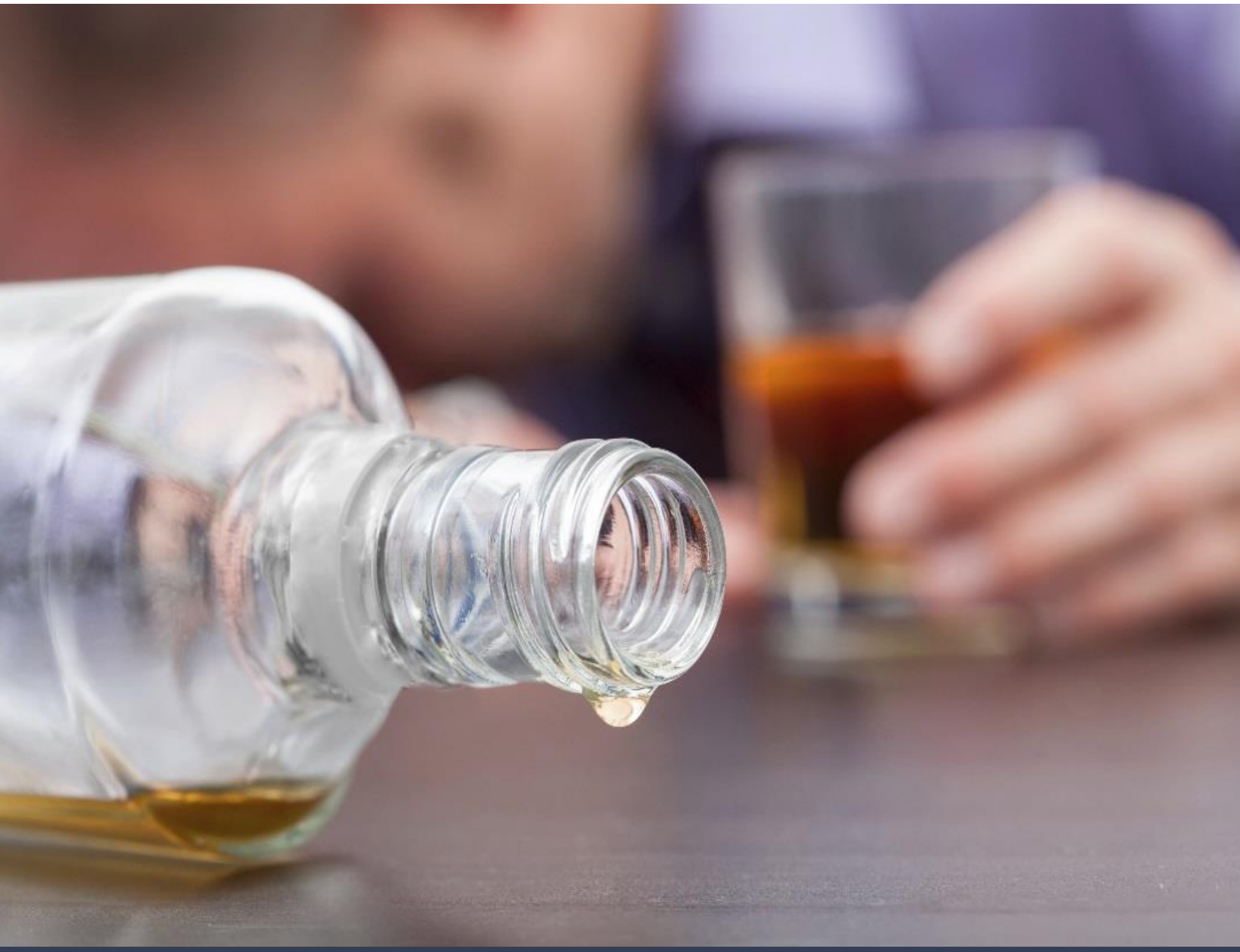
Alcohol Outlet Density and Alcohol-Related Consequences

by City and Community in Los Angeles County, 2020



Health Outcomes and Data Analytics Branch
Substance Abuse Prevention and Control
Los Angeles County Department of Public Health
December 2022

County of Los Angeles Public Health

Table of Contents

List of Maps/Tables

Objective

This report aims to examine and identify the spatial pattern and relationships between alcohol outlet density and alcohol-related consequences or harms, specifically violent crimes, vehicle crashes, emergency department visits, hospitalizations, and deaths across Los Angeles County (LAC) cities/community jurisdictions.

Introduction

Excessive alcohol consumption is one of the leading causes of premature death and disability in LAC, and is a serious public health concern with major health, economic, and social consequences or implications.[1] Each year, approximately 2,100 people die from alcohol-related causes, with approximately 41,000 years of potential life lost (YPLL),[2*] costing LAC an estimated $11.4 billion annually.[3] A review of scientific literature found that alcohol outlet densities are positively associated with alcohol consumption[4] and related harms, including violent crimes,[5] vehicle crashes,[6] emergency department (ED) visits,[7] hospitalizations,[8] and deaths[9], among other adverse outcomes.

In this report, alcohol outlet densities and the rates of the five consequences were examined for 78 cities, 31 unincorporated areas or communities, 8 Service Planning Areas (SPA), and 5 Supervisorial Districts (SD) in LAC.

Study Methods

Defining Cities and Communities in Los Angeles County

A total of 88 cities and 54 unincorporated communities in LAC were identified using the Census 2020 Incorporated Places and Census Designated Places.[10] Ten cities and 23 communities with less than 10,000 residents produced unstable estimates and were excluded from this report. Data for the City of Los Angeles was further divided into its 15 city council districts to provide more local information.[11]

Determining Alcohol Outlet Densities

Information on alcohol outlets within LAC in 2020 was obtained from the California Department of Alcoholic Beverage Control (ABC).[12] ABC categorizes alcohol outlets as follows:

- On-premises – outlets where alcohol is served to be consumed on site (bars and restaurants).

[*] Years of potential life lost (YPLL) is an estimate of the average time a person would have lived had he or she not died prematurely (before age 75 years). This measure is used to help quantify social and economic loss due to premature death, and it has been used to emphasize specific causes of death affecting younger age groups. YPLL incorporates age at death, and its calculation mathematically weights the total deaths by applying values to deaths at each age, retrieved from http://www.jstor.org/stable/25759821.

- Off-premises – outlets where alcohol is sold in original, sealed containers to be consumed off site (e.g., liquor stores, convenience stores such as gas station stores, and grocery stores).

The 2020 population estimates for each city and community were used to calculate the alcohol outlet densities.[13] The density (number of outlets per 10,000 residents) of on-premises and off-premises alcohol outlets was calculated separately and categorized into three equal groups (tertiles): "low," "medium," or "high" density.

Measuring Alcohol-Related Harms/Consequences

Five harms associated with alcohol consumption (violent crimes,[14] vehicle crashes,[15] ED visits, [16] hospitalizations,[16] and deaths[17]) were examined using 2020 data. Violent crimes included homicide/murder, sexual assault (rape and attempted rape), all other assaults (including domestic violence), and robbery. Alcohol-involved vehicle crashes included any motor vehicle crashes in which a driver, pedestrian, or bicyclist had been drinking, and excluded motor vehicle crashes with property damage only. Alcohol-related ED visits and hospitalizations included records listing any alcohol-related condition as the principal or other diagnosis. Alcohol-related deaths included all deaths that listed an alcohol-related condition as the underlying or contributing cause of death on the death certificate.

Geographic information for alcohol-related vehicle crashes and violent crimes were based on the location of the incident, and were based on residence for ED visits, hospitalizations, and deaths. If decedent residence data was missing, death location was used.

Rates per 10,000 residents for each of the five alcohol-related consequences were calculated using 2020 population estimates for each city/community, SPA, and SD, and were categorized into three equal groups: "low," "medium," or "high" rate.

Determining the Relationship between Alcohol Outlet Density and Alcohol-Related Consequences.

Logistic regression modeling was performed to examine the associations between on- and off-premises alcohol outlet densities (high – values above the County median; low – values below the County median) and alcohol-related harms (high – values above the County; low – values below the County median) adjusting for the Social Vulnerability Index (SVI)[18] to account for neighborhood socioeconomic conditions, household composition and disability, minority status and English language proficiency, and housing type and transportation. Statistical significance was determined using $p<0.1$.

Findings

Alcohol Outlets

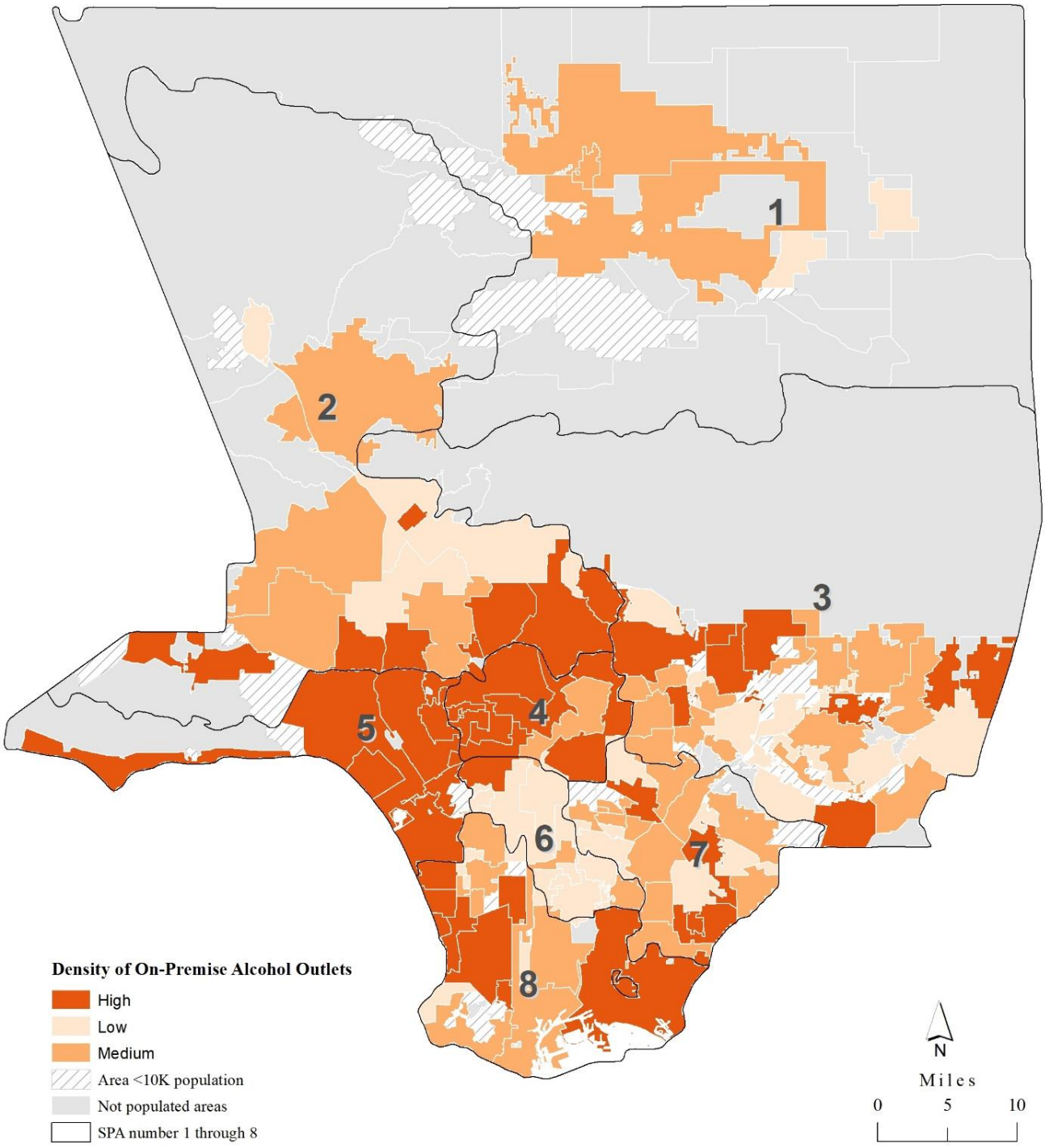
A total of 16,416 active alcohol outlet licenses were identified in LAC in 2020, of which on-premises outlets accounted for 10,577 (64%) and off-premises outlets accounted for 5,839 (36%). In 2020, the density of on-and off-premises alcohol outlets in LAC was 10.4 and 5.7 per 10,000 residents, respectively. Compared to the 2013 data[19], the overall number of

alcohol outlets increased by 1,163 (7.6%). The number of on-premises alcohol outlets increased by 1,552 (17.2%), while off-premises alcohol outlets decreased by 389 (-6.2%). Consequently, in LAC, the overall density of on-premises alcohol outlets increased from 8.9 in 2013 to 10.4 in 2020 per 10,000 residents, while that of off-premises alcohol outlets declined from 6.2 in 2013 to 5.7 in 2020 per 10,000 residents.

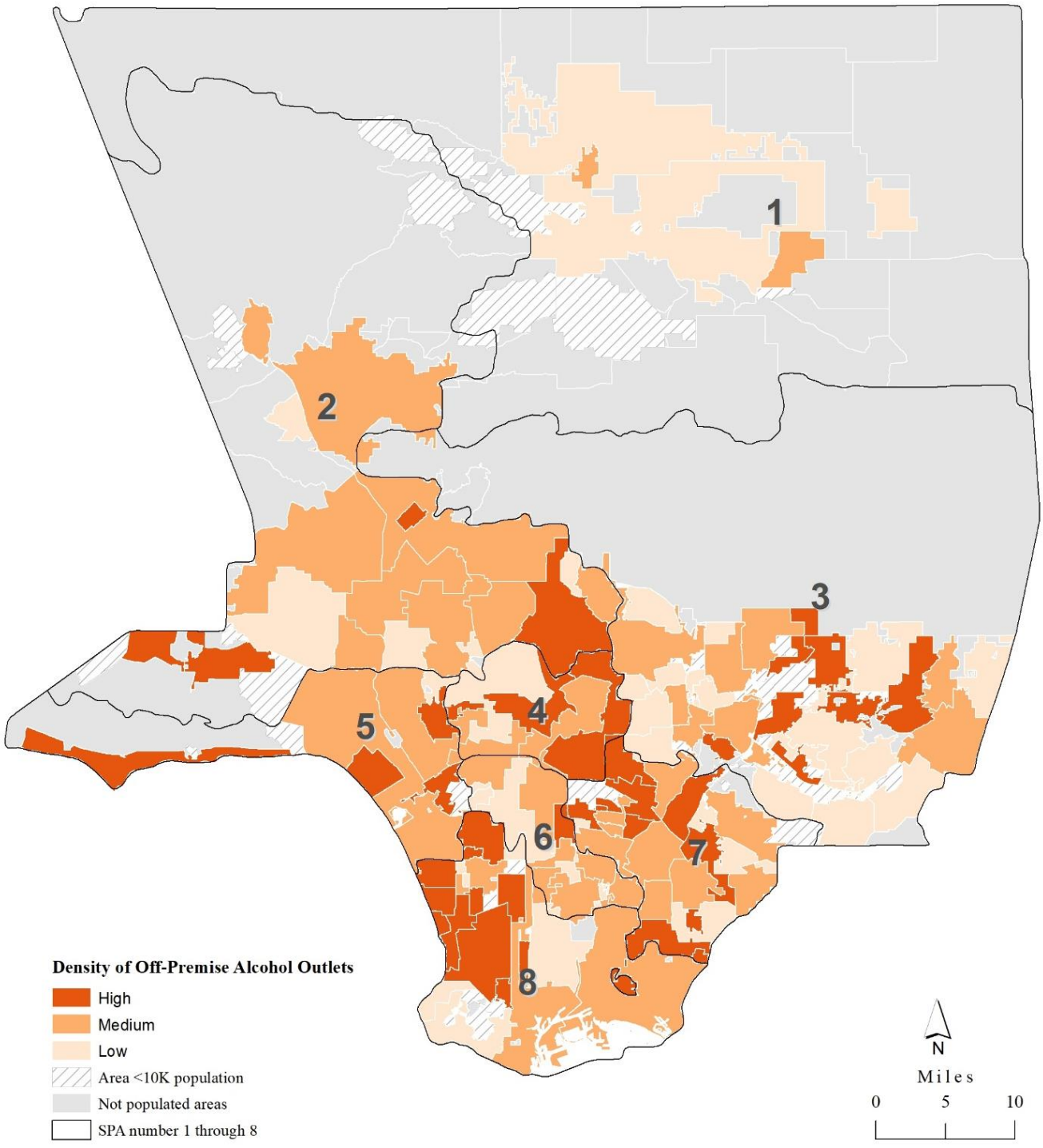
The density of on-premises alcohol outlets varied widely among cities and communities across the County, ranging from zero (Citrus, Sun Village, West Puente Valley) to 63 (West Hollywood), with 47 (38.2%) cities/communities above the countywide density of 10.4 per 10,000 residents. Off-premises alcohol outlet densities ranged from zero (San Marino, Citrus) to 14.8 (Santa Fe Springs), with 54 (43.9%) cities/communities above the countywide density of 5.7 per 10,000 residents. Tables 1A, 1B, and 1C present the densities of on-premises and off-premises alcohol outlets by cities and communities, SPAs, and SDs, respectively. Among on-premises alcohol outlets, 6,656 (62.9%) were in the cities and communities with high outlet density (Map1, and Table 1A). Among off-premises outlets, 1,783 (30.5%) were in the cities and communities with high outlet density (Map 2, and Table 1A).

The geographical distribution of on- and off-premises alcohol outlets varied across LAC (Maps 1 and 2). A higher density of on-premises alcohol outlets was associated lower SVI or more affluent communities, such as West Hollywood, El Segundo, Beverly Hills, Malibu, Marina del Rey, Santa Monica, and Culver City (Map 1, $p<0.1$). On the other hand, a higher density of off-premises alcohol outlets was associated with higher SVI or less affluent communities (Map 2, $p< 0.02$), such as the City of Commerce, Santa Fe Springs, and South El Monte City.

Map 1. On-Premises Alcohol Outlet Density (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPA), Los Angeles County, 2020



Map 2. Off-Premises Alcohol Outlet Density (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPA), Los Angeles County, 2020



Association Between Alcohol Outlet Density and Alcohol-related Consequences

The rates of alcohol-related consequences (violent crimes, vehicle crashes, ED visits, hospitalizations, and death) are presented by each city and community (Table 2A, Maps 3 to 7), SPA (Table 2B), and SD (Table 2C). The associations between on/off-premises alcohol outlet density and various alcohol-related consequences (e.g., violent crimes, vehicle crashes) were tested and accounted for the Social Vulnerability Index.

Violent Crimes

The violent crime rate within Los Angeles County cities/communities ranged from 2.9 (Stevenson Ranch) to 177.3 (Council District 8), with 25 (20.3%) cities/communities above the overall County rate of 53.6 per 10,000 population (Table 2A, Map 3).

The associations between **on/off-premises** alcohol outlet density and violent crimes were not statistically significant.

Alcohol-involved Vehicle Crashes

The alcohol-involved vehicle crash rate within Los Angeles County cities/communities ranged from zero (Artesia, East Whittier, Lomita, Palos Verdes Estates, and Sierra Madre) to 15.1 (City of Commerce), with 37 (30.1%) cities/communities above the overall County rate of 4.0 per 10,000 population (Table 2A, Map 4).

Cities and communities with a high density of **off-premises** alcohol outlets were 2.1 times more likely to have high alcohol-involved vehicle crashes than cities and communities with a low density of off-premises alcohol outlets, even after accounting for the Social Vulnerability Index ($p < 0.1$).

The association between **on-premises** alcohol outlets density and alcohol-involved vehicle crashes was not statistically significant.

Alcohol-related ED Visits

The alcohol-related ED visit rate within Los Angeles County cities/communities ranged from 1.6 (Sierra Madre) to 120.8 (West Rancho Dominguez), with 33 (26.8%) cities/communities above the overall County rate of 49.4, per 10,000 population (Table 2A, Map 5).

The associations between **on/off-premises** alcohol outlets density and alcohol-related ED visits were not statistically significant.

Alcohol-related Hospitalizations

The alcohol-related hospitalization rate within Los Angeles County cities/communities ranged from 2.0 (Sierra Madre) to 103.5 (View Park-Windsor Hills), with 42 (34.1%) cities/communities above the overall County rate of 44.7 per 10,000 population (Table 2A, Map 6).

Cities and communities with a high density of **on-premises** alcohol outlets were 2.6 times more likely to have high alcohol-related hospitalization rates than cities and communities with a low density of on-premises alcohol outlets, even after accounting for the Social Vulnerability Index (p <0.1).

Cities and communities with a high density of **off-premises** alcohol outlets were 2.1 times more likely to have high alcohol-related hospitalization rates than cities and communities with a low density of off-premises alcohol outlets, even after accounting for the Social Vulnerability Index (p <0.1).

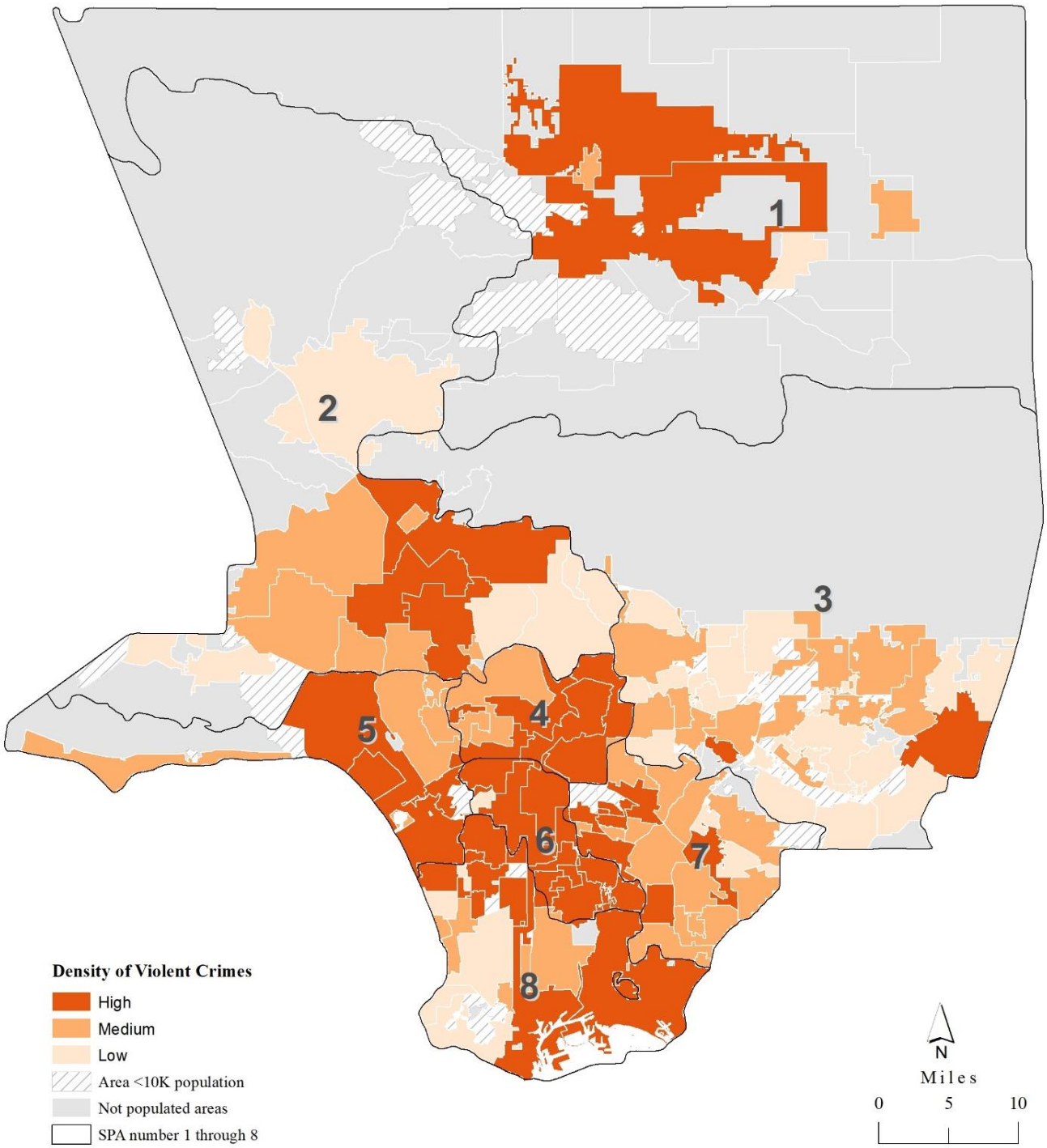
Alcohol-related Deaths

The alcohol-related death rate within Los Angeles County cities/communities ranged from 0.0 (Palos Verdes Estates, Calabasas, San Marino, View Park-Windsor Hills, Citrus, and Stevenson Ranch) to 5.2 (Lake Los Angeles, and Marina del Rey), with 64 (52.0%) above the overall County rate of 2.5 per 10,000 population (Table 2A, Map 7).

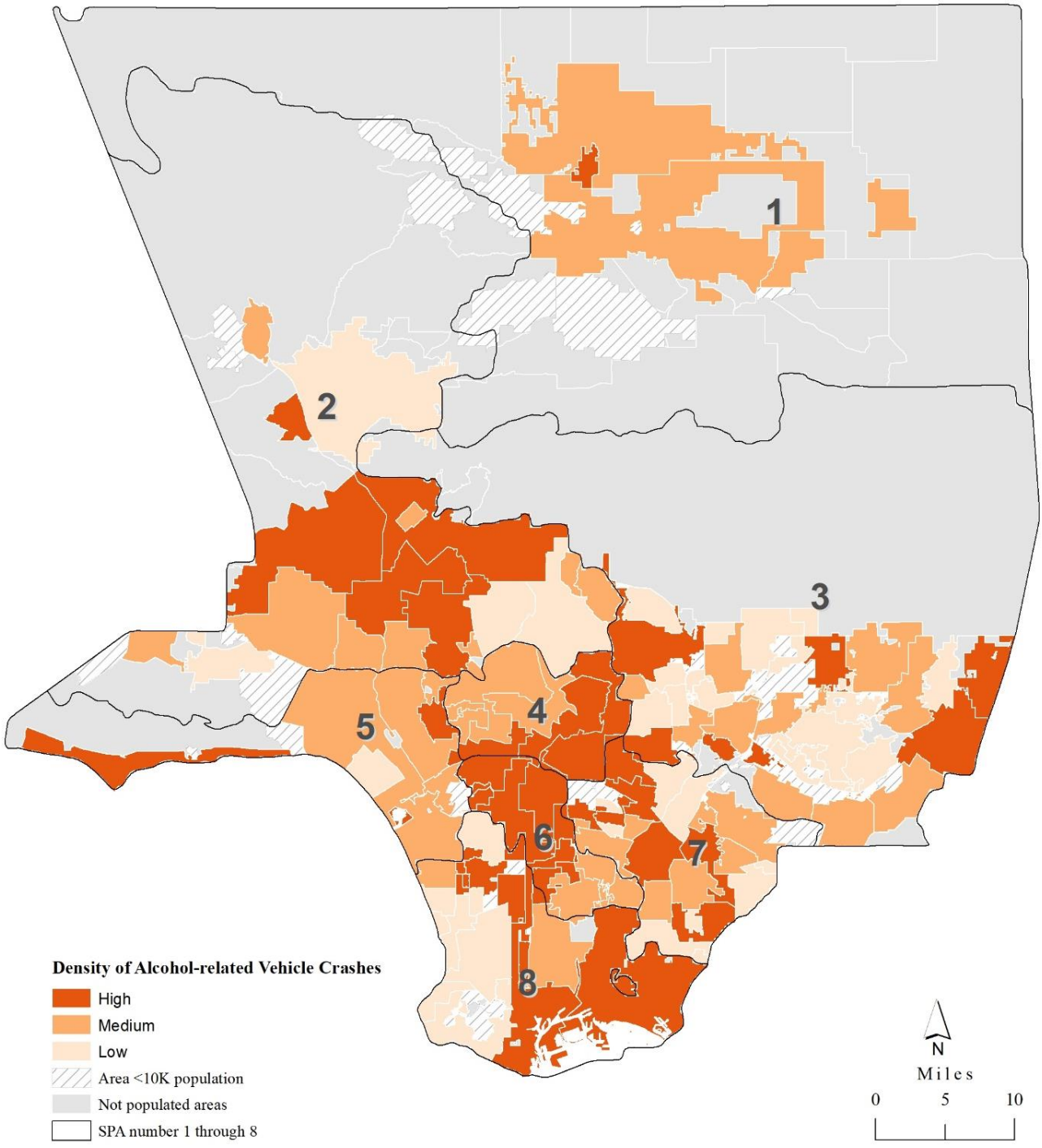
Cities and communities with a high density of **off-premises** alcohol outlets were 2.1 times more likely to have high alcohol-related death rates than cities and communities with a low density of off-premises alcohol outlets, even after accounting for the Social Vulnerability Index (p <0.1).

The association between **on-premises** alcohol outlets and alcohol-related deaths was not statistically significant.

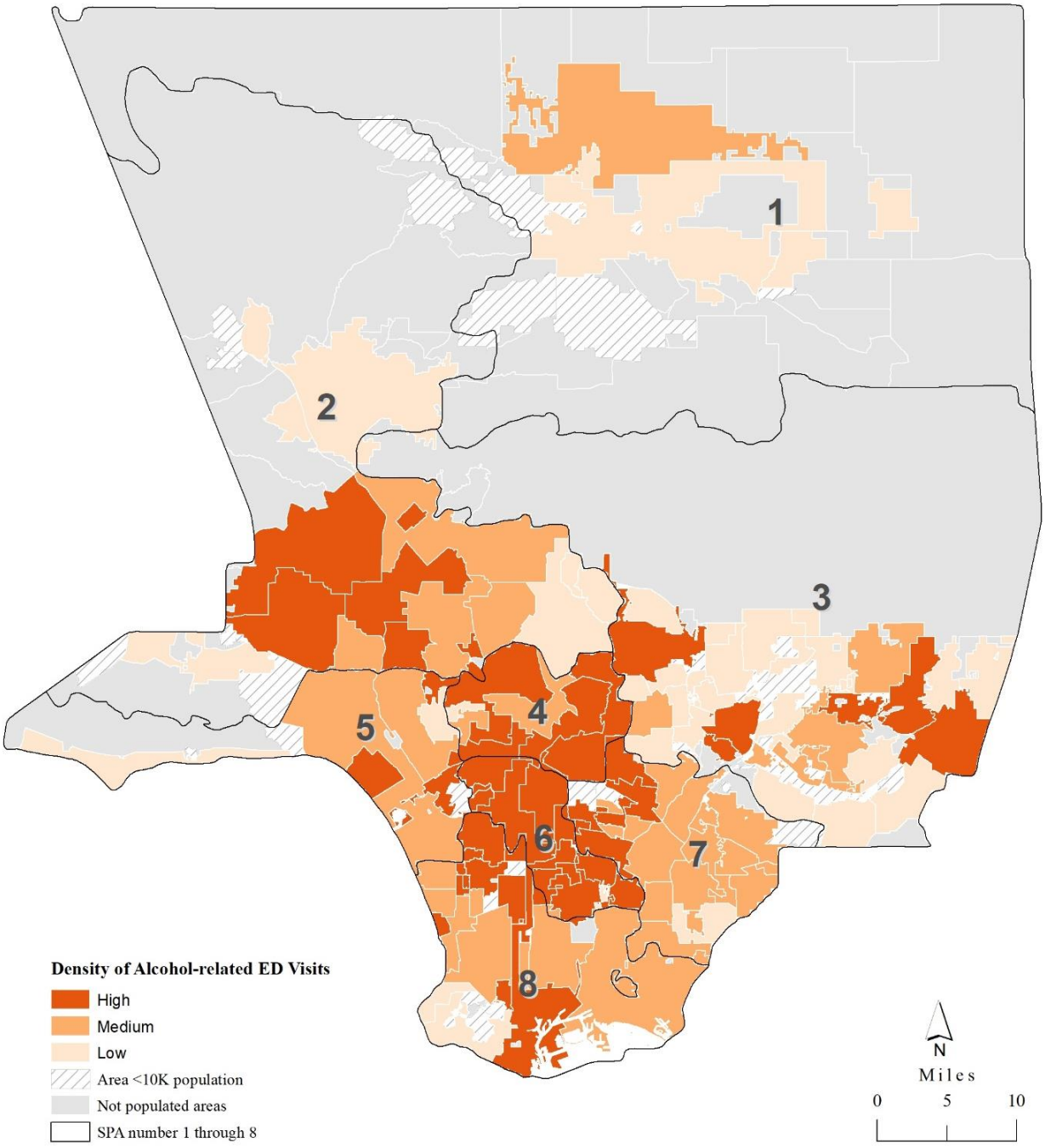
Map 3. Violent Crime Rates (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPAs), Los Angeles County, 2020



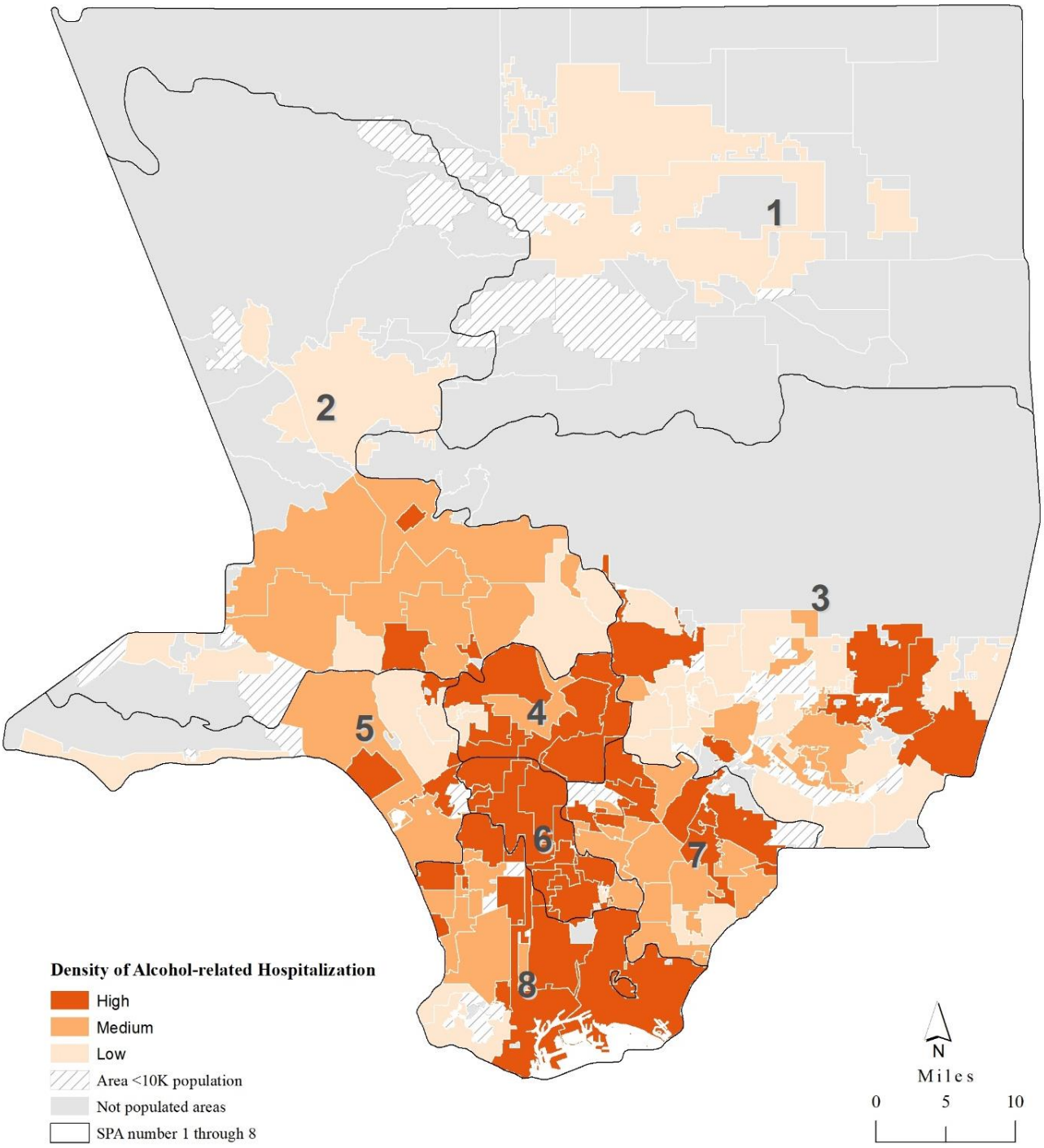
Map 4. Alcohol-related Vehicle Crash Rates (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPAs), Los Angeles County, 2020



Map 5. Alcohol-related Emergency Department Visit Rates (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPAs), Los Angeles County, 2020



Map 6. Alcohol-related Hospitalization Rate (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPAs), Los Angeles County, 2020



Map 7. Alcohol-related Deaths Rate (per 10,000 population) among Cities, Communities, and Service Planning Areas (SPAs), Los Angeles County, 2020

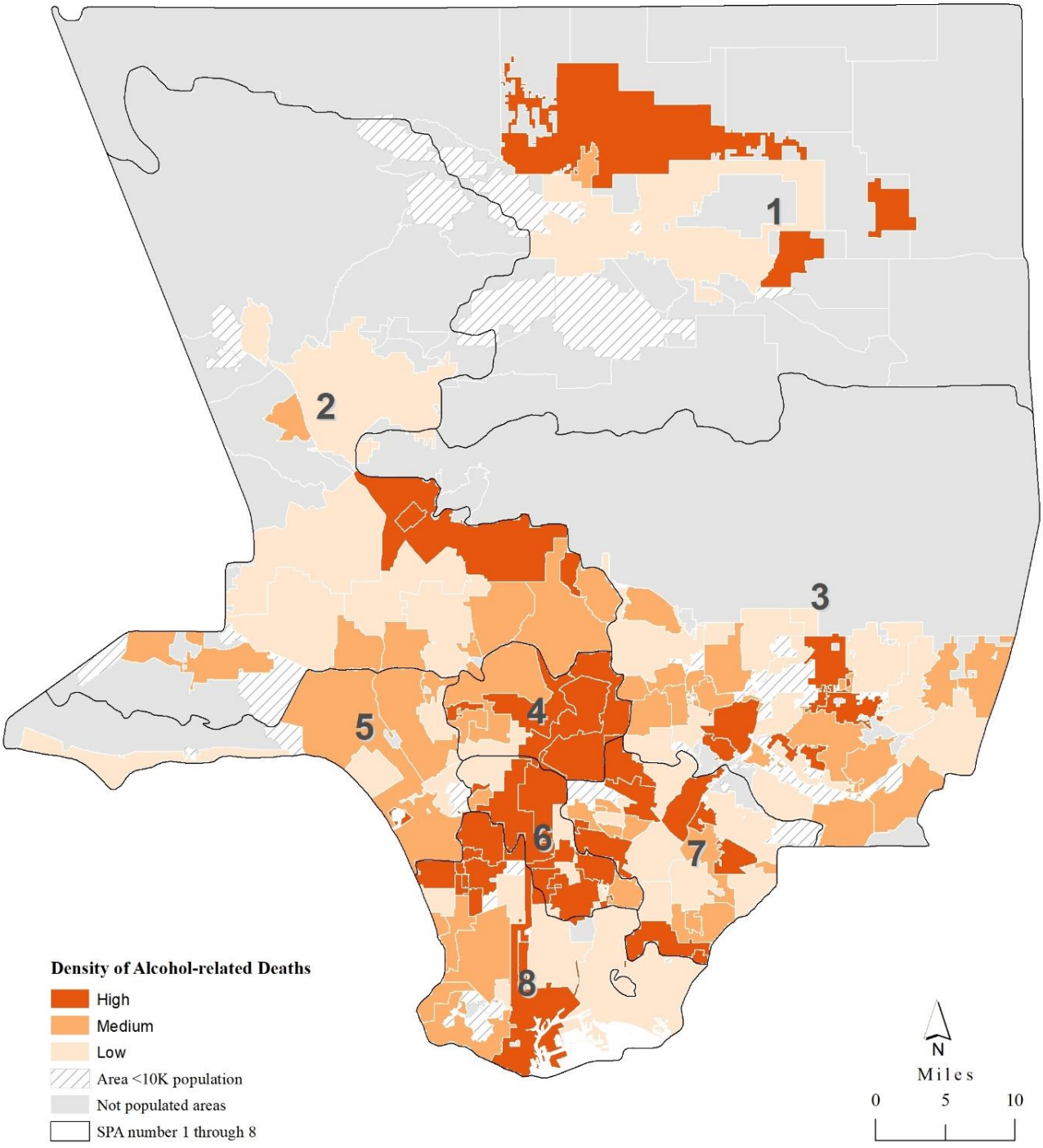


Table 1A. On-Premises and Off-Premises Alcohol Outlet Density (AOD) by City and Community, Los Angeles County, 2020*

City/Community	On-Premises AOD		Off-Premises AOD	
Los Angeles County	**10.4**	-	**5.7**	-
Agoura Hills	26.2		7.3	
Alhambra	8.7		4.5	
Altadena	3.9		3.7	
Arcadia	16.0		5.0	
Artesia	26.4		9.6	
Avocado Heights	3.7		5.9	
Azusa	7.3		7.1	
Baldwin Park	4.0		6.1	
Bell	5.9		5.9	
Bell Gardens	4.7		10.7	
Bellflower	5.5		5.8	
Beverly Hills	43.9		8.7	
Burbank	16.8		6.0	
Calabasas	12.7		6.3	
Carson	6.2		4.5	
Castaic	3.1		5.2	
Cerritos	16.5		4.2	
Citrus	0.0		0.0	
Claremont	16.9		3.2	
Commerce	14.3		11.9	
Compton	1.6		5.5	
Covina	11.7		7.7	
Cudahy	1.7		6.0	
Culver City	33.3		11.8	
Del Aire	3.8		2.9	
Diamond Bar	7.0		4.1	
Downey	10.8		5.4	
Duarte	7.2		6.3	
East Los Angeles	3.7		7.5	
East Rancho Dominguez	0.7		3.3	
East San Gabriel	1.3		1.7	
East Whittier	1.9		2.8	
El Monte	4.7		5.9	
El Segundo	47.3		8.5	
Florence-Graham	2.5		7.8	
Gardena	16.1		7.7	

City/Community	On-Premises AOD		Off-Premises AOD	
Glendale	11.7		6.6	
Glendora	10.3		4.5	
Hacienda Heights	4.7		4.0	
Hawaiian Gardens	13.2		7.0	
Hawthorne	5.4		5.5	
Hermosa Beach	31.9		9.5	
Huntington Park	7.0		9.3	
Inglewood	5.2		7.1	
La Cañada Flintridge	16.7		4.8	
La Crescenta-Montrose	2.0		3.4	
La Mirada	7.4		4.9	
La Puente	5.7		8.3	
La Verne	15.4		5.7	
Lake Los Angeles	1.5		4.5	
Lakewood	7.5		6.6	
Lancaster	6.8		4.3	
Lawndale	4.9		7.4	
Lennox	1.9		6.3	
Lomita	14.1		6.1	
Long Beach	13.2		6.0	
Los Angeles†	**10.3**	-	**5.4**	-
Council District 1	7.5		5.9	
Council District 2	8.4		6	
Council District 3	8.5		4.6	
Council District 4	15.7		4.6	
Council District 5	18.9		4.8	
Council District 6	3.9		5.0	
Council District 7	1.6		4.7	
Council District 8	1.3		4.6	
Council District 9	3.3		5.4	
Council District 10	12.2		5.3	
Council District 11	18.9		5.3	
Council District 12	6.4		5.2	
Council District 13	20.2		6.4	
Council District 14	22.1		7.6	
Council District 15	5.3		5.5	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

* Cities/communities with less than 10,000 residents were excluded

† For the City of Los Angeles, both on-premises and off-premises Alcohol Outlet Densities were medium (61Th and 50Th percentile, respectively)

Table 1A. On-Premises and Off-Premises Alcohol Outlet Density (AOD) by City and Community, Los Angeles County, 2020* (*continued*)

City/Community	On-Premises AOD		Off-Premises AOD	
Lynwood	3.9		5.1	
Malibu	39.7		12.9	
Manhattan Beach	28.3		7.2	
Marina del Rey	35.6		5.2	
Maywood	7.4		10.2	
Monrovia	18.2		5.7	
Montebello	7.9		5.5	
Monterey Park	10.5		4.0	
Norwalk	3.7		5.2	
Palmdale	4.9		3.3	
Palos Verdes Estates	4.5		1.5	
Paramount	6.4		6.0	
Pasadena	20.3		4.9	
Pico Rivera	7.9		7.0	
Pomona	4.7		5.1	
Quartz Hill	6.0		6.0	
Rancho Palos Verdes	5.1		2.8	
Redondo Beach	20.8		6.5	
Rosemead	8.8		5.2	
Rowland Heights	11.8		2.9	
San Dimas	11.0		6.5	
San Fernando	11.5		8.2	
San Gabriel	15.4		5.7	
San Marino	6.3		0.0	
Santa Clarita	9.5		4.9	
Santa Fe Springs	13.8		14.8	

City/Community	On-Premises AOD		Off-Premises AOD	
Santa Monica	34.1		6.6	
Sierra Madre	14.0		1.7	
Signal Hill	12.5		6.6	
South El Monte	10.6		11.6	
South Gate	4.7		5.9	
South Pasadena	10.6		4.0	
South San Jose Hills	0.5		1.0	
South Whittier	1.6		4.5	
Stevenson Ranch	9.3		3.4	
Sun Village	0.0		4.8	
Temple City	8.4		4.3	
Torrance	14.3		7.0	
Valinda	0.9		3.1	
View Park-Windsor Hills	1.7		3.4	
Vincent	2.5		4.4	
Walnut	4.2		4.2	
Walnut Park	3.9		3.9	
West Carson	3.4		7.3	
West Covina	6.8		3.7	
West Hollywood	63.0		9.9	
West Puente Valley	0.0		1.3	
West Rancho Dominguez	2.0		4.8	
West Whittier-Los Nietos	2.3		3.5	
Westmont	0.3		4.4	
Whittier	10.8		6.1	
Willowbrook	0.4		4.5	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

* Cities/communities with less than 10,000 residents were excluded

Table 1B. On-Premises and Off-Premises Alcohol Outlet Density (per 10,000 population) by Service Planning Area (SPA), Los Angeles County, 2020

SPA	On-premises AOD		Off-premises AOD	
Los Angeles County	**10.4**	**-**	**5.7**	**-**
Antelope Valley (SPA 1)	6.0		5.0	
San Fernando (SPA 2)	7.4		5.1	
San Gabriel (SPA 3)	9.8		5.5	
Metro (SPA 4)	19.5		7.0	
West (SPA 5)	25.5		6.5	
South (SPA 6)	2.1		4.5	
East (SPA 7)	7.0		6.3	
South Bay (SPA 8)	11.7		6.3	

Table 1C. On-Premises and Off-Premises Alcohol Outlet Density (per 10,000 population) by Supervisorial District (SD), Los Angeles County, 2020

SD	On-premises AOD		Off-premises AOD	
Los Angeles County	**10.4**	**-**	**5.7**	**-**
District 1	10.2		5.8	
District 2	8.2		6.0	
District 3	13.2		5.5	
District 4	9.4		6.3	
District 5	10.2		5.0	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

Table 2A. Alcohol-Related Consequences (rates per 10,000 population) by City and Community, Los Angeles County, 2020*

City/Community	Violent Crimes		Vehicle Crashes		ED Visits		Hospitalizations		Deaths**	
Los Angeles County	**53.6**	-	**4.0**	-	**49.4**	-	**44.7**	-	**2.5**	-
Agoura Hills	11.1		2.4		11.1		10.1		0.5	
Alhambra	20.8		2.3		30.9		28.2		1.4	
Altadena	14.5		1.1		15.1		18.1		0.9	
Arcadia	15.1		2.6		20.4		24.7		1.7	
Artesia	30.0		0.0		32.4		34.2		1.2	
Avocado Heights	18.5		4.4		36.7		34.7		0.7	
Azusa	30.5		4.9		11.8		10.9		3.1	
Baldwin Park	21.9		2.9		23.8		21.1		2.7	
Bell	53.4		7.3		49.0		50.7		2.6	
Bell Gardens	37.4		3.0		38.3		39.7		0.5	
Bellflower	43.2		3.0		40.4		38.6		2.0	
Beverly Hills	33.4		5.7		20.1		27.3		2.7	
Burbank	15.9		1.0		35.9		33.5		1.4	
Calabasas	16.5		1.7		15.2		10.8		0.0	
Carson	40.4		3.0		41.0		45.1		2.1	
Castaic	4.7		2.6		3.1		2.3		2.6	
Cerritos	19.8		3.8		17.1		27.9		1.0	
Citrus	18.2		1.0		15.7		12.0		0.0	
Claremont	13.5		6.6		13.4		23.7		0.3	
Commerce	108.1		15.1		102.5		92.0		3.2	
Compton	115.6		2.9		68.7		56.6		3.2	
Covina	29.2		2.1		60.1		57.2		3.5	
Cudahy	39.2		2.2		33.8		34.8		1.3	
Culver City	47.3		3.1		55.9		61.9		2.7	
Del Aire	18.1		3.8		81.4		59.6		3.8	
Diamond Bar	11.1		2.7		16.6		14.4		0.7	
Downey	25.9		4.6		36.9		37.5		2.5	
Duarte	23.1		2.3		28.4		29.9		2.7	
East Los Angeles	36.4		4.7		49.0		45.0		3.2	
East Rancho Dominguez	67.7		3.3		30.1		29.3		2	
East San Gabriel	6.0		1.7		14.0		20.1		0.9	
East Whittier	13.3		0.0		40.4		56.0		0.9	
El Monte	31.3		3.4		59.7		41.9		3.0	
El Segundo	64.9		2.8		32.5		45.6		3.4	
Florence-Graham	52.7		7.8		68.1		56.1		2.7	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

*Cities/communities with less than 10,000 residents are excluded.
** Death rates by cities/communities were based on residential addresses of decedents. If residential address was missing, death location or event address was used.

Table 2A. Alcohol-Related Consequences (rates per 10,000 population) by City and Community, Los Angeles County, 2020* (*continued*)

City/Community	Violent Crimes		Vehicle Crashes		ED Visits		Hospitalizations		Deaths**	
Gardena	43.4		4.5		61.8		48.0		2.7	
Glendale	10.3		1.4		27.2		27.3		1.5	
Glendora	18.9		2.8		42.7		49.6		2.8	
Hacienda Heights	9.4		2.5		30.2		22.3		2.2	
Hawaiian Gardens	36.2		0.7		43.4		37.2		3.5	
Hawthorne	75.4		4.0		58.3		42.1		3.0	
Hermosa Beach	23.4		1.5		49.4		49.4		1.0	
Huntington Park	75.5		5.0		72.8		45.5		1.1	
Inglewood	62.0		2.0		69.6		55.6		3.8	
La Canada Flintridge	4.3		2.4		5.8		7.5		1.0	
La Crescenta-Montrose	3.0		3.0		18.3		30.3		3.0	
La Mirada	18.9		2.0		31.0		37.7		2.5	
La Puente	32.1		1.8		37.2		35.4		2.8	
La Verne	13.8		1.6		4.4		5.9		1.3	
Lake Los Angeles	29.1		3.0		10.4		5.5		5.2	
Lakewood	28.1		1.7		32.1		41.2		3.2	
Lancaster	67.9		3.1		32.0		12.7		2.9	
Lawndale	47.6		0.6		42.6		36.3		4.0	
Lennox	42.6		5.3		53.8		43.5		3.4	
Lomita	36.7		0.0		73.2		65.7		2.8	
Long Beach	49.4		6.1		43.1		52.4		2.7	
Los Angeles†	**73.6**	-	**4.7**	-	**51.7**	-	**45.6**	-	**2.6**	-
Council District 1	79.0		5.2		51.5		53.7		3.3	
Council District 2	44.4		4.4		45.2		40.5		2.5	
Council District 3	41.4		3.2		56.7		37.5		2.1	
Council District 4	35.9		3.4		53.3		47.8		1.6	
Council District 5	32.9		2.8		32.8		27.2		1.3	
Council District 6	56.7		5.3		49.6		39.8		2.6	
Council District 7	43.8		4.2		36.0		30.7		3.1	
Council District 8	177.3		9.1		70.3		64.3		3.8	
Council District 9	139.9		7.2		61.6		61.8		3.6	
Council District 10	83.9		4.7		49.6		46.4		2.7	
Council District 11	42.6		3.0		31.0		32.6		1.4	
Council District 12	26.0		4.0		54.5		39.1		1.8	
Council District 13	85.0		3.3		43.6		44.8		3.0	
Council District 14	130.5		6.5		72.7		68.0		3.3	
Council District 15	96.9		4.5		68.2		53.2		3.2	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

*Cities/communities with less than 10,000 residents were excluded.

** Death rates by cities/communities were based on residential addresses of decedents. If residential address was missing, death location or event address was used.

† For the City of Los Angeles, most alcohol-related consequences measures ranked high (violent crimes, vehicle crashes, ED visits, and hospitalizations were at 90th, 81th, 76th, and 70th percentile, respectively), and deaths ranked medium (52th percentile).

Table 2A. Alcohol-Related Consequences (rates per 10,000 population) by City and Community, Los Angeles County, 2020* (*continued*)

City/Community	Violent Crimes		Vehicle Crashes		ED Visits		Hospitalizations		Deaths**	
Lynwood	64.5		3.7		61.6		54.5		4.2	
Malibu	36.9		7.4		14.1		13.4		1.8	
Manhattan Beach	12.7		1.9		33.9		34.5		2.5	
Marina del Rey	25.2		4.3		45.7		29.5		5.2	
Maywood	45.8		1.6		43.4		34.9		1.2	
Monrovia	17.9		1.8		30.5		28.4		2.6	
Montebello	28.0		0.8		43.0		42.7		2.8	
Monterey Park	18.2		4.2		24.1		20.5		1.9	
Norwalk	41.8		2.4		42.5		42.1		2.0	
Palmdale	43.2		3.1		17.7		11.2		2.7	
Palos Verdes Estates	3.0		0.0		13.0		25.4		0.0	
Paramount	48.2		2.9		47.9		37.4		1.6	
Pasadena	29.4		3.8		54.0		51.2		2.1	
Pico Rivera	27.4		1.1		41.2		51.4		4.0	
Pomona	50.7		4.5		46.2		46.3		2.6	
Quartz Hill	24.1		6.9		5.1		3.0		1.7	
Rancho Palos Verdes	10.0		0.2		18.4		19.9		1.6	
Redondo Beach	23.0		1.6		36.1		43.0		1.6	
Rosemead	36.3		3.3		29.9		27.3		2.5	
Rowland Heights	16.9		3.1		13.8		13.6		0.8	
San Dimas	23.4		3.1		48.5		53.0		2.0	
San Fernando	35.3		2.5		50.6		45.4		4.1	
San Gabriel	18.6		2.2		15.1		23.0		0.7	
San Marino	9.4		1.6		5.2		12.3		0.0	
Santa Clarita	12.5		1.9		28.4		22.5		2.2	
Santa Fe Springs	47.1		7.7		41.2		50.9		0.5	
Santa Monica	57.2		0.5		57.0		50.8		2.7	
Sierra Madre	12.2		0.0		1.6		2.0		2.6	
Signal Hill	78.1		4.2		38.3		54.9		2.5	
South El Monte	59.3		5.5		78.7		52.6		3.0	
South Gate	67.6		3.3		45.4		41.6		3.0	
South Pasadena	9.5		3.3		28.6		29.7		1.5	
South San Jose Hills	12.9		1.0		31.7		30.1		2.5	
South Whittier	16.9		2.6		32.7		42.6		3.1	
Stevenson Ranch	2.9		4.4		20.9		17.5		0.0	
Sun Village	14.3		3.2		8.0		7.9		3.2	
Temple City	13.2		0.8		18.2		27.2		1.3	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

*Cities/communities with less than 10,000 residents were excluded.
**Death rates by cities/communities were based on residential addresses of decedents. If residential address was missing, death location or event address was used.

Table 2A. Alcohol-Related Consequences (rates per 10,000 population) by City and Community, Los Angeles County, 2020* (*continued*)

City/Community	Violent Crimes		Vehicle Crashes		ED Visits		Hospitalizations		Deaths**	
Torrance	18.3		2.1		42.5		41.3		1.7	
Valinda	14.5		1.3		38.9		37.3		3.1	
View Park-Windsor Hills	18.1		5.2		108.5		103.5		0.0	
Vincent	14.4		2.5		45.0		31.2		3.8	
Walnut	13.2		0.3		13.5		13.3		1.4	
Walnut Park	33.0		2.6		67.3		41.6		3.9	
West Carson	24.1		6.5		39.5		29.8		3.9	
West Covina	18.5		2.3		32.1		34.7		1.3	
West Hollywood	56.4		3.6		29.1		23.6		3.6	
West Puente Valley	18.4		1.3		26.7		24.8		3.0	
West Rancho Dominguez	61.0		12.5		120.8		96.7		3.2	
West Whittier-Los Nietos	16.3		3.5		38.7		50.2		3.1	
Westmont	79.2		5.2		63.9		62.2		3.8	
Whittier	26.7		2.9		42.7		55.4		2.9	
Willowbrook	66.8		8.1		82.4		62.7		2.4	

Table 2B. Alcohol-Related Consequences (rates per 10,000 population) by Service Planning Area (SPA), Los Angeles County, 2020

SPA	Violent Crimes		Vehicle Crashes		ED Visits		Hospitalizations		Deaths**	
Antelope Valley (SPA1)	54.2		5.2		69.0		36.1		3.0	
San Fernando (SPA2)	34.5		3.6		44.5		35.9		2.2	
San Gabriel (SPA3)	25.6		3.3		45.0		43.2		2.0	
Metro (SPA4)	88.9		4.5		55.1		53.0		2.8	
West (SPA5)	45.1		2.9		37.7		37.0		1.8	
South (SPA6)	123.3		6.6		65.7		59.2		3.2	
East (SPA7)	59.3		3.3		42.9		44.0		2.5	
South Bay (SPA8)	40.2		4.0		52.0		49.8		2.7	

Table 2C. Alcohol-Related Consequences (rates per 10,000 population) by Supervisorial District (SD), Los Angeles County, 2020

SD	Violent Crimes		Vehicle Crashes		ED Visit		Hospitalization		Deaths**	
District 1	49.7		3.5		40.5		37.9		2.3	
District 2	107.8		6.2		72.4		66.0		3.6	
District 3	37.0		3.3		39.7		32.6		1.9	
District 4	47.8		3.7		45.0		45.9		2.5	
District 5	36.8		3.9		58.6		48.7		2.4	

Low (0-33%) **Medium (34-66%)** **High (67-100%)**

*Cities/communities with less than 10,000 residents were excluded. ** Death rates by cities/communities were based on residential addresses of decedents. If residential address was missing, death location or event address was used.

Discussion

Excessive alcohol consumption continues to be a serious public health concern with substantial implications for disease, violent crimes, traffic collisions, work loss, and social relationships.[2] During 2020 in Los Angeles County, alcohol was involved in an estimated 4,060 motor vehicle crashes, 5,745 motor vehicle injuries, 123 motor vehicle fatalities, 50,600 ED visits, 45,726 hospitalizations,[3] and 2,498 alcohol-attributable deaths.[17]

Drinking among youth and adults is strongly influenced by environmental or structural factors, such as alcohol control policies, retailer marketing strategies[20], as well as alcohol access and availability. The findings of this report are consistent with the research literature on the positive relationship between alcohol availability, measured by alcohol outlet density, and alcohol-related adverse public health consequences. LAC communities and cities with higher alcohol outlet densities were more likely to have higher rates of alcohol-involved vehicle crashes, alcohol-related hospitalizations, and alcohol-related deaths even after accounting for the social vulnerability index (SVI). Although the literature as well as in the 2013 report[19] indicated positive associations between alcohol outlet density and violent crime and emergency department (ED) visits, these associations were not statistically significant in this report, which may be partially attributable to differences in methodological approaches. The impact of COVID-19 on the on-premises alcohol outlet closures may potentially have contributed to the pattern of alcohol consumption and its consequences[21], and warrants further research.

This report has several limitations. Some data on alcohol outlets and alcohol-related harms were aggregated to city, community, and/or other geographical boundaries based on zip codes due to data availability, which may have led to a loss in precision in assigning incidents to geographic areas when the zip codes are shared with multiple areas. Binary logistic regression may have reduced power to detect statistically significant associations and potential unknown or unmeasured confounders were not controlled for in this study. In addition, this type of ecological analysis cannot be used to infer causality and thus findings should be interpreted with caution. Nevertheless, the findings in the report suggest there are potential harms associated with higher alcohol outlet density. A high alcohol outlet density can increase alcohol consumption and its consequences by increasing local availability of alcohol, reducing alcohol prices due to retailer competition, and establishing and reinforcing drinking behavior norms.[22]

Alcohol misuse and abuse is highly preventable and treatable. The findings in this report underscore the need to take targeted preventive actions to reduce alcohol outlet density and adverse alcohol-related consequences among adults and youth, especially among those cities/communities that had particularly high alcohol outlet densities and rates of alcohol-related social and health consequences.

Recommendations

Policymakers, schools, businesses, health care providers, and other community stakeholders can collaborate and implement a more comprehensive array of the following strategies to reduce the burden of excessive alcohol consumption in our cities and communities.

1. Limit Alcohol Outlet Density

Limiting alcohol outlet density has been found to be effective in limiting the availability of alcohol and reducing harms in communities. For example, eliminating one bar per zip code was estimated to lead to 290 fewer serious assaults per year in California.[4]

Although the California Alcoholic Beverage Control (ABC) has sole authority over the issuing and renewal of alcohol retail licenses in California, local jurisdictions, law enforcement, and community advocates can play an important role in the ABC decision-making process, including commenting on or protesting an application, and informing or working with ABC to identify problem outlets and encouraging revocation of an existing ABC license for continued violations.[23,24] Further, local jurisdictions can apply land use powers to influence the process by limiting the number of new alcohol outlets allowed by the city or county general plans or by imposing operating restrictions on new or existing outlets.[4]

> ***New Alcohol Outlets*:** Local jurisdictions can require applicants to obtain a Conditional Use Permit (CUP) or implement zoning ordinances prior to new ABC license approval, which place legal conditions on the operation of alcohol outlets, such as restrictions on locations/density, hours of sale, training of staff, types of beverages sold, alcohol ads on public property, and business operations (e.g., no drinking allowed outside of the premises).[25]
>
> ***Existing Alcohol Outlets:*** Local jurisdictions can implement "deemed approved" ordinances that require off-premises outlets to comply with business performance standards (e.g., properly maintained premises that do not adversely affect the surrounding community), require owner/employees not to permit or facilitate unlawful behavior (e.g., alcohol sales to minors, public consumption on property or surrounding sidewalk, or conducting other illegal activities),[26] and recommend replacement of strong alcohol beverages with products of lower alcohol content and alternative drinks.

2. Enforce Restrictions on Alcohol Availability and Accessibility to Minors

Early initiation and use of alcohol by youth increase the risk of alcohol-related problems in adulthood.[27] Restricting the ability of minors to obtain alcohol at home or in the community can change perceived norms regarding the permissibility of underage drinking and may delay early initiation of alcohol use.[28] Parents and guardians should closely monitor alcoholic beverages in the home and ensure underage drinking does not occur at family events. Cities can implement and enforce social host ordinances that increase consequences for parents, guardians, or adults who knowingly permit underage drinking in private settings, such as parties. Cities can also influence the availability and accessibility of alcohol to minors by enforcing regulations focused on commercial availability (e.g., restricting alcohol sales at community events),[29] social/public accessibility (e.g., implementing teen party ordinances, highly visible enforcement of youth access sales laws), and possession (e.g., banning false identification). Further, enforcing geographic buffer zones (e.g., 600 feet[30]) between alcohol outlets and schools or other youth facilities may also reduce the accessibility of alcohol for minors.[31]

3. Enforce Restrictions on Alcohol Marketing to Minors

A substantial body of scientific research establishes a positive link between youth exposure to marketing and early initiation and consumption.[32] Restrictions on marketing ads in public places (e.g., billboards, sporting events, street-front stores) or enforcing signage restrictions at liquor and convenience stores (e.g. no more than 33% of square footage of window ads, specific area for alcohol product placement) can help reduce youth exposure to alcohol marketing.[33,34,35] In addition, restrictions for alcohol ads on social media may also be important in limiting alcohol exposure among youth.

4. Expanding Available Community and Social -Support Programs for Alcohol Consumers and Their Families

Community-wide efforts have been shown to effectively reduce alcohol consumption and its consequences[36] by developing and expanding community programs and social groups to provide emotional support for alcohol drinkers and their families and decreasing stigmatization or discrimination against affected groups or individuals who are struggling with addiction. Through these awareness and educational programs, communities can also help to change social norms about drinking, raise awareness and recognition of alcohol-related harms, and promote alcohol use disorder treatment programs.

Workplaces can play an important role in reducing alcohol-related harms among employees through prevention and intervention programs, such as implementing policies restricting alcohol use in workplaces, creating health and wellness programs, and providing support for screening and brief interventions.[37] These programs may benefit workers and reduce productivity loss.

5. Provide Educational Services for Minors Regarding the Risks of Substance Abuse

Educating the public on recognizing substance misuse and abuse, skills in dealing with alcohol issues and concerns, along with educating on the short-term effects and long-term dangers of alcohol, is a key tool to reduce alcohol use and alcohol-related harms. Schools can provide education-based curricula (e.g., Building Skills, Creating Lasting Family Connections) to help youth develop personal and social skills, to help students identify internal stressors (e.g., fears, anxiety) and external pressures (e.g., peer pressure, advertising) to use alcohol, and to give students the skills to resist these pressures while maintaining relationships.[38] School-based educational programs that have parental or community involvement (e.g., Communities Mobilizing for Change on Alcohol) can play an important role in reducing alcohol use among youth.[39,40]

6. Increase Screening, Brief Intervention, and Referral to Treatment.

Early screening and intervention are cost-effective in helping individuals with or at risk of developing alcohol use disorders recognize and avoid problem alcohol use. A substantial body of evidence supports using universal Screening, Brief Intervention, and Referral to Treatment (SBIRT) to reduce alcohol consumption and heavy drinking, particularly in the primary care setting. SBIRT for alcohol is recommended by the U.S. Preventive Services Task Force,[41,42] and ranks among the best in return on investment of preventive services.

Although SBIRT can easily be incorporated into clinical workflows, it is currently not commonly practiced in primary care.[43] Health care providers who are unable to directly provide alcohol use disorder treatment should refer patients that screen positive to further assessment and treatment services and follow up with patients to ensure that necessary services were received.

7. Increase Access to Substance Use Disorder Treatment Services.

Alcohol use disorder treatment can be provided in a variety of health settings, including substance use disorder treatment clinics, primary care, or mental health clinics. As such, it is important for health care providers and the community to be aware of where they can receive treatment services for alcohol and other drugs. Importantly, alcohol use disorder treatment is effective and can reduce alcohol-related hospitalizations [44], ED visits, homelessness [45], and motor vehicle accidents [46,] and improve productivity and quality of life.[47] Ensuring access to necessary substance use disorder treatment can help to prevent alcohol-related individual and societal impacts.

In LAC, individuals with alcohol problems, including persons eligible for Medi-Cal or without insurance, can call the Substance Abuse Service Helpline at (844) 804-7500 to find the nearest appropriate treatment centers.

In summary, alcohol outlet densities were significantly associated with a variety of alcohol-related consequences. However, by working together, policymakers, health care providers, schools, and community stakeholders can reduce the burden of these human, economic, and societal repercussions by focusing on strategies to limit alcohol outlet densities, reducing access/availability/marketing to minors, ensuring access to educational services and community/social support programs, and increasing access to necessary substance abuse screening and treatment.

Notes

This is an ongoing report on alcohol density, alcohol-related consequences, and their association in Los Angeles County. Some results from this report may not be comparable to the results from previous reports due to the use of different data sources or measurement methods. This report is subject to limitations due to data availability (e.g., aggregated city level of data based on zip codes, use of de-identified data precludes data verification, potential unknown or unmeasured confounders not controlled for), and thus results should be interpreted with caution. It is important to note that COVID-19 may also impact the alcohol outlet figures and related consequences.

References

1. Kominski, G.F., Simon, P.A., Ho, A.Y., & Fielding J.E. (2010). Financial burdens and disability-adjusted life years in Los Angeles County. In V.R. Preedy and R.R. Watson (Eds.), Handbook of Disease Burdens and Quality of Life Measures. New York, New York: Springer. Retrieved from http://publichealth.lacounty.gov/wwwfiles/ph/ohae/epi/DALY_AH.pdf.

2. Alcohol related deaths and years of potential life lost (YPLL) were computed using 5-year averages using 2016-2020 data from the State of California, California Department of Public Health, VRBIS California Comprehensive Death File, 2020. Prepared on 5/5/2022.

3. Los Angeles County Department of Public Health, Substance Abuse Prevention and Control. SAPC Data Brief: Excessive Drinking and Consequences, July 2022. Retrieved from http://ph.lacounty.gov/sapc/MDU/MDBrief/AlcoholBrief.pdf

4. Campbell, C.A., Hahn, R.A., & Elder, R., et al. (2009). The effectiveness of limiting alcohol outlet density as a means of reducing excessive alcohol consumption and alcohol-related harms. American Journal of Preventive Medicine, 37(6): 556-569. Retrieved from http://www.ajpmonline.org/article/S0749-3797(09)00604-7/abstract

5. Livingston, M. (2011). Alcohol outlet density and harm: Comparing the impacts on violence and chronic harms. Drug and Alcohol Review, 30(5): 515-523.https://doi.org/10.1111/j.1465-3362.2010.00251.x

6. Ponicki, W.R., Gruenewald, P.J., & Remer, L.G. (2013). Spatial panel analyses of alcohol outlets and motor vehicle crashes in California: 1999–2008. Accident Analysis and Prevention, 55: 135-143. Retrieved from http://www.sciencedirect.com/science/article/pii/S0001457513000894.

7. Das, M., Stewart, R., & Ardagh M., et al. (2014). Patterns and sources of alcohol consumption preceding alcohol-affected attendances to a New Zealand hospital emergency department. New Zealand Medical Journal, 127: 40-55.

8. Maheswaran, R., Green, M. A., Strong, M., Brindley, P., Angus, C., & Holmes, J. (2018). Alcohol outlet density and alcohol related hospital admissions in England: A national small-area level ecological study. Addiction, 113(11), 2051–2059. Retrieved from https://doi.org/10.1111/add.14285.

9. Richardson, E.A., Hill, S.E., Mitchell, R., Pearce, J., & Shortt, N.K. (2015). Is local alcohol outlet density related to alcohol-related morbidity and mortality in Scottish cities? *Health & Place,* 33:172-180. Retrieved from http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4415114/pdf/main.pdf.

10. Boundary data for cities and unincorporated communities in LAC was obtained from the County of Los Angeles, Enterprise Geographic Information System (eGIS), and retrieved from https://egis lacounty.hub.arcgis.com/datasets/lacounty::census-designated-places-2020/explore? Location=34.040139%2C-118.303573%2C8.86

11. Boundary data for City of Los Angeles Council Districts was obtained from the Los Angeles County GIS Data Portal and retrieved from http://egis3.lacounty.gov/dataportal/2012/08/07/la-city-council-districts-2012/

12. 2020 Active License data by State of California Alcoholic Beverage Control (ABC) were retrieved from http://www.abc.ca.gov/datport/DataExport.html. Records of active licensed retail businesses authorized by the State of California to sell alcoholic beverages for either on- or off-premises retail consumption in Los Angeles County (LAC) were included in this report. Please note the ABC license dataset represented all active ABC licensed businesses in LAC as of June 30th, 2020.

13. 2020 Population Estimates by Hedderson Demographic Services and Los Angeles County Internal Services Department Social Services Division and retrieved from https://egis-lacounty.hub.arcgis.com/datasets/lacounty::census-blocks-2020/explore?location=33.983372%2C-118.426298%2C14.76. Population estimates are based on 2020 U.S. Census population counts and adjusted for projected annual demographic changes in LAC.

14. 2020 Violent Crime data for Los Angeles County were retrieved from three different sources - (1) Los Angeles Police Department (LAPD) Data for City of Los Angeles where the LAPD is the law enforcement agency; (2) Los Angeles County Sheriff's Department (LASD) data for unincorporated areas and 42 cities where the LASD is the law enforcement agency; and (3) Data on all other cities with independent police departments (*n* = 45) were obtained from the California Department of Justice in aggregate count format at the city-level. Violent crimes include homicide/murder, sexual assault (rape and attempted rape), all other assaults (including domestic violence), and robbery.

15. 2020 Statewide Integrated Traffic Records System (SWITRS) by University of California Berkeley Transportation and Injury Mapping System were retrieved from http://tims.berkeley.edu/. SWITRS records about persons involved in alcohol-related vehicle crashes for 2020 from Los Angeles County include time and date of accident, whether alcohol was involved, number of injuries and fatalities, and the latitude (Y) and longitude (X) points for each reported vehicle accident.

16. 2020 Emergency Department Visits and Patient Discharge (Hospitalization) data were obtained from California Office of Statewide Health Planning and Development (OSHPD). International Classification of Diseases, 9th Revisions (ICD-9). Diagnostic codes were used to identify alcohol-related emergency visits or hospitalizations.

17. 2020 Death data were obtained from the State of California, California Department of Public Health, Vital Record Business Intelligence System (VRBIS) California Comprehensive Death File, 2020. Prepared on 5/5/2022.

18. Social Vulnerability Index (SVI) data for Los Angeles cities and communities were obtained from CDC / Agency for Toxic Substances and Disease Registry/ Geospatial Research, Analysis, and Services Program. CDC/ATSDR Social Vulnerability Index [2018] Database [California]. Retrieved from https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

19. Alcohol Outlet Density and Alcohol-Related Consequences by City and Community in Los Angeles County, 2013. Substance Abuse Prevention and Control, Los Angeles County Department of Public Health, November 2016. Retrieved from http://publichealth.lacounty.gov/sapc/MDU/mdr.htm.

20. Reboussin, B.A., Song, E., & Wolfson, M. (2011). The impact of alcohol outlet density on the geographic clustering of underage drinking behaviors within census tracts. Alcoholism: Clinical and Experimental Research, 35(8): 1541–1549. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3132245/pdf/nihms275766.pdf.

21. Pollard, M. S., Tucker, J. S., & Green, H. D. (2020). Changes in adult alcohol use and consequences during the COVID-19 pandemic in the US. JAMA Network Open, 3(9), e2022942. https://doi.org/10.1001/jamanetworkopen.2020.22942

22. Richardson, E.A., Hill, S.E., Mitchell, R., Pearce, J., & Shortt, N.K. (2015). Is local alcohol outlet density related to alcohol-related morbidity and mortality in Scottish cities? Health & Place, 33: 172-180. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4415114/pdf/main.pdf.

23. The Alcohol Research Group (2011). Alcohol control systems and the potential effects of privatization, 3rd ed. Retrieved from http://www.nabca.org/Resources/Files/2012131124314.pdf.

24. Colman, V., & Sparks, M. (2006). Public convenience or necessity: A guide for local government and interested citizens. Retrieved from http://www.ca cpi.org/docs/Publications/Other/CARS_PCorN.pdf.

25. California Business and Professions Code Section 23790. Retrieved on 08/22/16 from http://www.leginfo.ca.gov/cgi-bin/displaycode?section=bpc&group=23001-24000&file=23770-23793

26. Saetta, S.L., & Mosher, J.F. (2014). Policy briefing 2: Best practices in municipal regulation to reduce alcohol-related harms from licensed alcohol outlets. NOTE: Original report prepared for Ventura County Behavioral Health Department. Retrieved from www.venturacountylimits.org.

27. Nelson, S.E., Van Ryzin, M.J., & Dishion, T.J. (2015). Alcohol, marijuana, and tobacco use trajectories from age 12 to 24 years: Demographic correlates and young adult substance use problems. Development and Psychopathology, 27(1): 253-277. doi: 10.1017/S0954579414000650

28. Rowland, B., Toumbourou, J.W., & Livingston, M. (2015). The association of alcohol outlet density with illegal underage adolescent purchasing of alcohol. Journal of Adolescent Health, 56(2): 146-152

29. Mosher, J., & Stewart, K. (2011). Regulatory strategies for preventing youth access to alcohol: Best practices. NOTE: Guide written in support of the U.S. Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention. Retrieved from https://www.stopalcoholabuse.gov/townHallMeetings/pdf/tipsresources/accesslaws.pdf

30. Legal Source: State of California Alcohol Beverage Control (ABC) Frequently Asked Questions (see Q. 18). Retrieved from https://www.abc.ca.gov/questions/licenses_faq.html

31. Interagency Coordinating Committee on the Prevention of Underage Drinking. (2014). Environmental prevention of underage drinking: Controls on alcohol outlet location and density. Retrieved from https://www.stopalcoholabuse.gov/townhallmeetings/pdf/2014/ControlonAlcoholOutlets_508.pdf.

32. Substance Abuse and Mental Health Services Administration. (2015). Risk and protective factors associated with binge or heavy episodic drinking among adolescents and young adults. Retrieved from http://www.samhsa.gov/capt/sites/default/files/resources/binge-episodic-adolescents-young-adults.pdf

33. Anderson, P., Bruijn, A.D., Angus, K., Gordon, R., & Hastings, G. (2009). Impact of alcohol advertising and media exposure on adolescent alcohol use: A systematic review of longitudinal studies. Alcohol and Alcoholism, 44(3): 229-243. doi:10.1093/alcalc/agn115

34. Snyder, L.B., Milici, F.F., Slater, M., Sun, H., & Strizhakova, Y. (2006). Effects of alcohol advertising exposure on drinking among youth. Archives of Pediatrics & Adolescent Medicine, 160(1): 18-24. doi:10.1001/archpedi.160.1.18

35. Byden, A., Roberts, B., McKee, M., & Petticrew, M. (2012). A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. Health & Place, 18: 349-357. Retrieved from http://ac.els-cdn.com/S1353829211002097/1-s2.0-S1353829211002097-main.pdf?_tid=9f620486-7ab6-11e6-b9c7 00000aacb361&acdnat=1473883725_457a17d8194de0d8efbbfc492d9407e5

36. Roski, J., Perry, C.L., McGovern, P.G., Williams, C.L., Farbakhsh, K., & Veblen-Mortenson, S. (1997). School and community influences on adolescent alcohol and drug use. Health Education Research, 12(2): 255-266. Retrieved from http://her.oxfordjournals.org/content/12/2/255.long.

37. Giesbrecht, N. (2003). Alcohol, tobacco and local control: A comparison of several community-based prevention trials. Nordic Studies on Alcohol and Drugs, 20: 25–40. Retrieved from http://www.nordicwelfare.org/PageFiles/9708/Alcohol,%20tobacco%20and%20local%20control.%20A%20comparison%20of%20several%20community-based%20prevention%20trials.pdf.

38. Stigler, M.H., Neusel, E., & Perry, C.L. (2011). School-based programs to prevent and reduce alcohol use among youth. Alcohol Research & Health, 34(2): 157-162.

39. Jackson, C. (2002). Perceived legitimacy of parental authority and tobacco and alcohol use during early adolescence. Journal of Adolescent Health, 31(5): 425-432. Retrieved from http://bha.dhmh.maryland.gov/MSPF/Documents/Jackson_article_Parentl_authority.pdf.

40. Nash, S.G., McQueen, A., & Bray, J.H. (2005). Pathways to adolescent alcohol use: Family environment, peer influence, and parental expectations. Journal of Adolescent Health, 37(1): 19-28. Retrieved from http://www.sciencedirect.com/science/article/pii/S1054139X04004161.

41. Altarum Institute Center for Prevention. Rankings of Preventive Services for the U.S. Population. 2016. Retrieved from http://www.prevent.org/National-Commission-on-Prevention-Priorities/Rankings-of-Preventive-Services-for-the-US-Population.aspx

42. Jonas, D.E., et al. (2012). Screening, behavioral counseling, and referral in primary care to reduce alcohol misuse. Comparative Effectiveness Review No. 64 (AHRQ Publication No. 12-EHC055-EF). NOTE: Prepared for Agency for Healthcare Research and Quality. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK99199/pdf/Bookshelf_NBK99199.pdf.

43. Los Angeles County Department of Public Health, Substance Abuse Prevention and Control. Medical director's brief: Costs of alcohol and other drug misuse/abuse, August 2016. Retrieved from http://publichealth.lacounty.gov/sapc/MDU/MDBrief/SUDCostBrief.pdf.

44. Parthasarathy, S., Weisner, C., Hu, T.W., Moore, C., (2001). Association of outpatient alcohol and drug treatment with health care utilization and cost: revisiting the offset hypothesis. Journal of Studies on Alcohol, 62(1): 89-97.

45. Annual Review of Clients in Publicly Funded Substance Use Disorder Treatment Programs in Los Angeles County, 2014-2015 Fiscal Year (2016). Research and Evaluation, Office of Medical Director and Science Officer, Substance Abuse Prevention and Control, Los Angeles County Department of Public Health, pg 105.

46. Hingson, R.W., Zakocs, R.C., Heeren, T., Winter, M.R., Rosebloom, D., DeJong, W. (2005). Effects on alcohol related fatal crashes of a community-based initiative to increase substance abuse treatment and reduce alcohol availability. Injury Prevention, 11:84-90.

47. Srivastave, S., Bhatia M.S. (2011). Quality of life as an outcome measure in the treatment of alcohol dependence. Industrial Psychiatry Journal, 22(1): 41-46.

Substance Abuse Prevention and Control
Los Angeles County Department of Public Health

1000 South Fremont Avenue, Building A-9 East, 3rd Floor

Alhambra, CA, 91803

Tel (626) 299-4198 • Fax (626) 299-3591

Los Angeles County Department of Public Health

Barbara Ferrer, PhD, MPH, MEd
Director

Muntu Davis, MD, MPH
Health Officer

Megan McClaire, MSPH
Chief Deputy Director

Deborah Allen, ScD
Deputy Director, Health Promotion Bureau

Substance Abuse Prevention and Control

Gary Tsai, MD
Division Director

Health Outcomes and Data Analytics Branch

Tina Kim, PhD, MA
Branch Chief

Negassi Gebrekidan, MS, GIS Team Manager

Shahe Kaimatlian, BA

Acknowledgement:
Special thanks to **Paul Simon**, MD, MPH, Chief Science Officer, **Rashmi Shetgiri**, MD, Chief Physician I, **Amy Lightstone**, MPH, Chief Epidemiologist for their review; **Kairong Wang**, PhD, MS and **Diana Khuu**, PhD, MPH for their review and contributions to this report; and **Ying Fan**, MS and **Joanne Estevez**, MPH for contributing to this report.

Suggested Citation:
Alcohol Outlet Density and Alcohol-Related Consequences by City and Community in Los Angeles County, 2020. Substance Abuse Prevention and Control, Los Angeles County Department of Public Health, December 2022.

This report can be downloaded from: http://publichealth.lacounty.gov/sapc/MDU/mdr.htm.
For more information about this report, please contact Dr. Tina Kim at tkim@ph.lacounty.gov.