



SOCIAL DETERMINANTS OF BEHAVIORAL HEALTH OUTCOMES IN SAN DIEGO COUNTY

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SAN DIEGO COUNTY



Welcome to San Diego County, the **2nd most populous county** in California and **5th most populous** in the United States!

San Diego has:

- Close to 3.2 million residents.
- Majority minority population.
- Busiest land border crossing in the world – 1 of every 13 people who enter US come through San Ysidro.
- 70 miles of Coastline.
- 16 naval and military installations.
- 18 federally recognized Indian reservations.
- A total area of 4,526 square miles, larger than Rhode Island and Delaware combined.



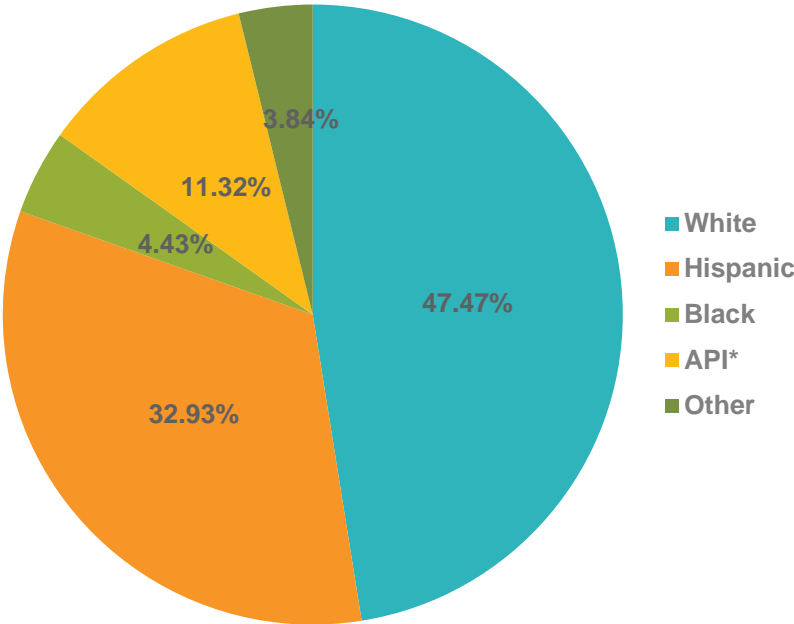
DEMOGRAPHICS



SNAPSHOT OF SAN DIEGO COUNTY

- 5th largest county in the U.S. with very diverse communities from rural to very urban areas covering 4,200 sq. miles
- 3.14 million residents (2012)
- Over 100 languages
- Median household income: \$70,926 (2012)

Race/Ethnicity Distribution among San Diego County Residents, 2012



*API includes Asian, Pacific Islander, and Native Hawaiian

OUR GEOGRAPHIES



IN THE FOLLOWING ANALYSES:

41 communities (aggregated census tracts)

- Reflect diverse population, lifestyles, urbanicity across county
- Allow consistent analysis of demographic & health data over time
- Excluding military population which is part of a different medical system



METHODS



- Big data analytics were used to test social variables from ACS for behavioral and environmental health outcomes.
- Given the production of recent literature on the environmental and social determinants of alcohol use^{1,2,3}, alcohol-related disorders were analyzed.
- Statistically significant correlations ($p < .05$) with alcohol-related disorders from the Emergency Medical Services' Core database were analyzed for trends.
- Alcohol-related outcomes were spatially analyzed for further assessment using hot spot analysis.

Sources: (1) Azar, D., et al. (2015). The association between alcohol outlet density and alcohol use among urban and regional Australian adolescents. *Addiction*, 111(1), 65-72. doi:10.1111/add.13143
(2) 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. doi:10.1016/j.jadohealth.2014.08.005
(3) Cameron, M. P., Cochrane, W., Gordon, C., & Livingston, M. (2015). Alcohol outlet density and violence: A geographically weighted regression approach. *Drug and Alcohol Review* *Drug Alcohol Rev*, 35(3), 280-288. doi:10.1111/dar.12295

DATA USED



- 724 variables from 2014 ACS data
- 351 variables from Esri's 2014 Market Potential data
 - Of these, there were nine variables representing adult's alcohol consumption patterns in the last 30 days
- Emergency Medical Services' 2013 Core data on acute and chronic alcohol-related disorders

RESULTS



ACUTE ALCOHOL-RELATED DISORDER EMERGENCY DEPARTMENT DISCHARGES (EDD)

- All variables regarding the consumption of beer, wine, or liquor at a bar/club in the past 30 days were positively associated.
- Further, smoking menthol cigarettes in the last 12 months was also positively associated.

<u>Market Potential</u>	<u>Pearson</u>
Consumed liquor in last 30 days at bar/club (sra, percent, adults)	.479**
Consumed beer in last 30 days at bar/club (sra, percent, adults)	.439**
Consumed wine in last 30 days at bar/club (sra, percent, adults)	.367*
<u>Smoking</u>	<u>Pearson</u>
Smoked menthol cigarettes in last 12 mos (sra, percent, adults)	.361*
<u>Social Determinants</u>	<u>Pearson</u>
Worked full-time, year-round in the past 12 months	.805**
Avg spent per week by HH at food stores: \$150+	-.532**
Now married (except separated), Working, Females Aged > 16	-.421**
* Correlation is significant at the 0.05 level (2-tailed)	
** Correlation is significant at the 0.01 level (2-tailed)	

RESULTS



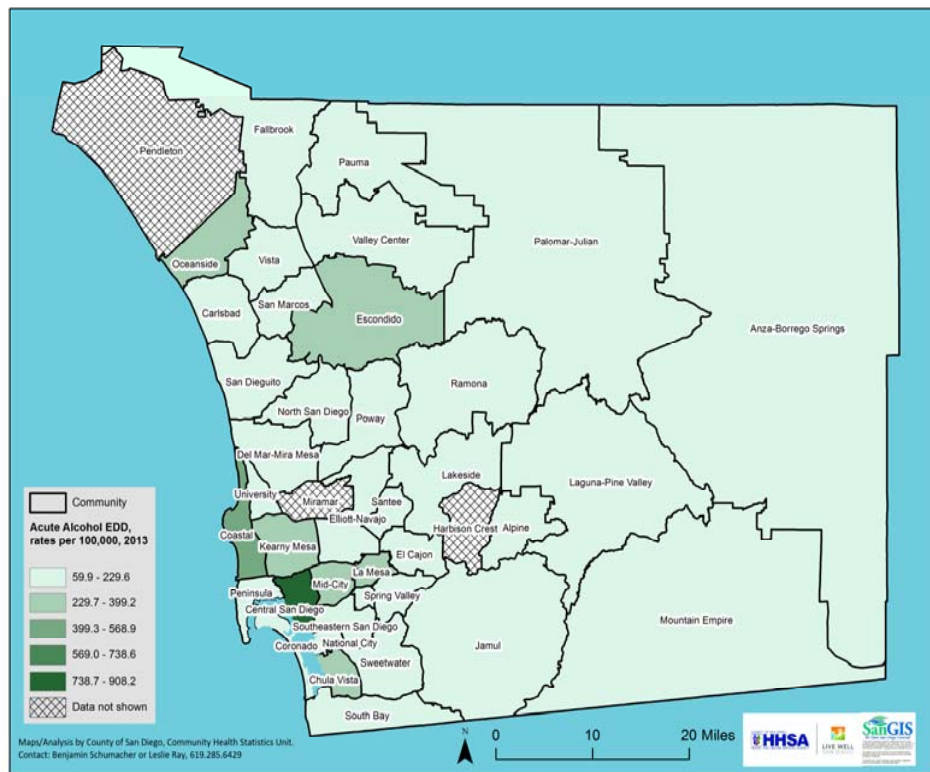
ACUTE ALCOHOL-RELATED DISORDER HOSPITALIZATIONS

- All variables related to prescription drug use were positively associated.
- Likewise, all smoking variables were positively associated.

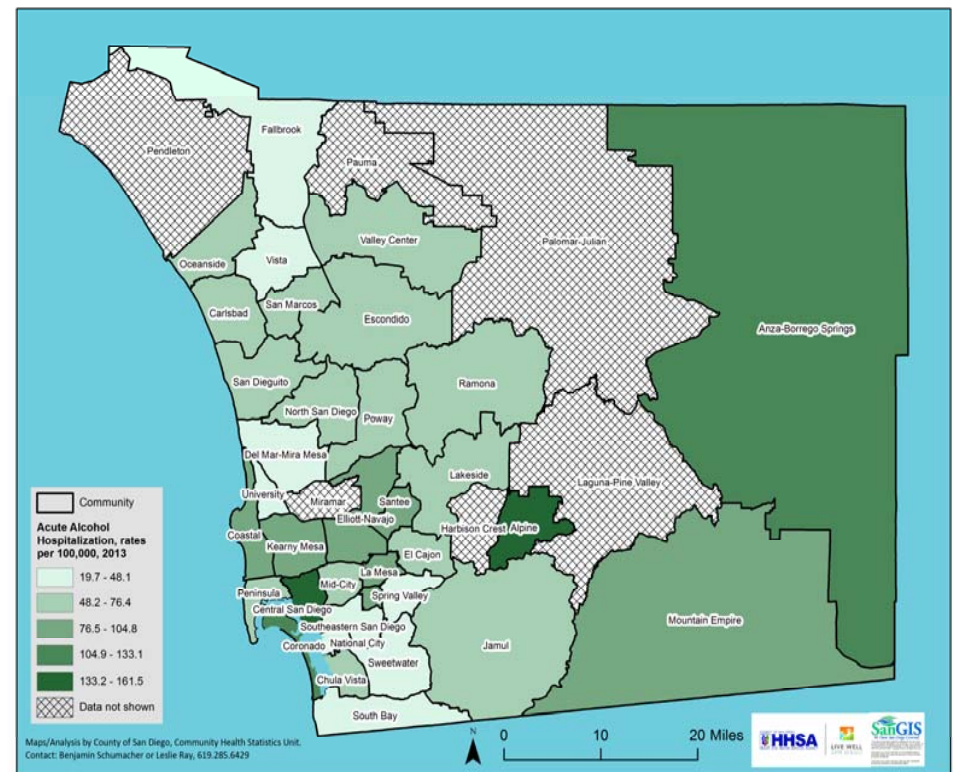
<u>Prescription Drug Use</u>	<u>Pearson</u>
Used prescr drug for arthritis/osteoarthritis (sra, percent, adults)	.458**
Used prescription drug for depression (sra, percent, adults)	.414*
Used prescription drug for heartburn/acid reflux (sra, percent, adults)	.362*
Used prescription drug for urinary tract infection (sra, percent, adults)	.346*
Used prescription drug for high blood pressure (sra, percent, adults)	.333*
<u>Smoking</u>	<u>Pearson</u>
Smoked cigarettes in last 12 mos (sra, percent, adults)	.362*
Smoked non-menthol cigarettes in last 12 mos (sra, percent, adults)	.349*
<u>Social Determinants</u>	<u>Pearson</u>
Medical insurance covers you alone (sra, percent, adults)	.530**
Average of Divorced Males Age 45 to 54 years	.504**
Mean income; 3 or more workers in family	-.488**
Per Capita by Race -- Asian	-.484**
* Correlation is significant at the 0.05 level (2-tailed)	
** Correlation is significant at the 0.01 level (2-tailed)	



ACUTE ALCOHOL-RELATED DISORDER EDD



ACUTE ALCOHOL-RELATED DISORDER HOSPITALIZATION





CHRONIC ALCOHOL-RELATED DISORDER EMERGENCY DEPARTMENT DISCHARGES (EDD)

- All variables related to prescription drug use were positively associated.
- Likewise, all smoking variables were positively associated.

<u>Prescription Drug Use</u>	<u>Pearson</u>
Used prescription drug for asthma (sra, percent, adults)	.367 [*]
<u>Smoking</u>	<u>Pearson</u>
Smoked cigarettes in last 12 mos (sra, percent, adults)	.449 ^{**}
Smoked 9+ packs of cigarettes in last 7 days (sra, percent, adults)	.445 ^{**}
Smoked 2+ cigars in last 7 days (sra, percent, adults)	.338 [*]
<u>Social Determinants</u>	<u>Pearson</u>
Average of Never married; Estimate; AGE AND SEX - Females 15 years and over	.603 ^{**}
Average of Never married; Estimate; AGE AND SEX - Males 15 years and over	.580 ^{**}
Used breakfast/cereal/granola bars in last 6 mo (sra, percent, adults)	-.617 ^{**}
Avg spent per week by HH at food stores: \$150+ (sra, percent,HH)	-.584 ^{**}
* Correlation is significant at the 0.05 level (2-tailed)	
** Correlation is significant at the 0.01 level (2-tailed)	

RESULTS



CHRONIC ALCOHOL-RELATED DISORDER HOSPITALIZATIONS

- All variables related to prescription drug use were positively associated.
- Likewise, all smoking variables were positively associated.
- Household (HH) income variables were inversely related to financial outlook.

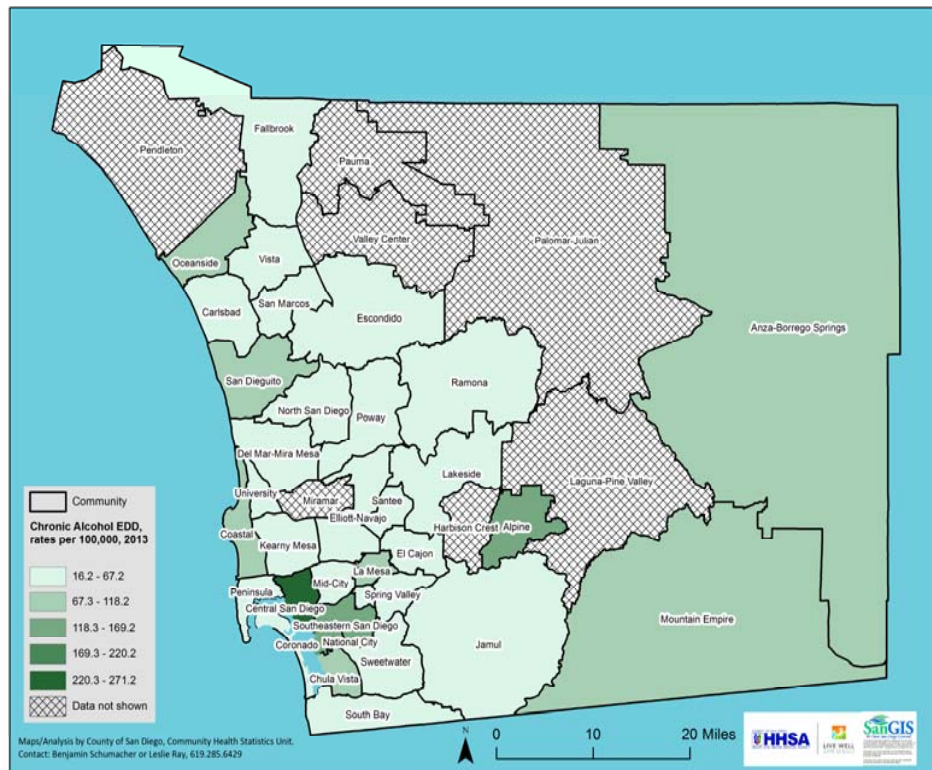
Prescription Drug Use	Pearson		
Used prescr drug for arthritis/osteoarthritis (sra, percent, adults)	.656**		
Used prescription drug for heartburn/acid reflux (sra, percent, adults)	.610**		
Used prescription drug for urinary tract infection (sra, percent, adults)	.563**		
Used prescription drug for backache/back pain (sra, percent, adults)	.517**		
Used prescription drug for high blood pressure (sra, percent, adults)	.510**		
Used prescription drug for high cholesterol (sra, percent, adults)	.492**		
Used prescription drug for depression (sra, percent, adults)	.491**		
		HH Income Outlook	Pearson
Used prescr drug for rheumatoid arthritis (sra, percent, adults)	.489**	HH will be worse financially in next 12 mos (sra, percent, adults)	.540**
Used prescription drug for asthma (sra, percent, adults)	.392*	HH is worse now financially than last 12 mos (sra, percent, adults)	.335*
Used prescription drug for allergy/hay fever (sra, percent, adults)	.374*	HH will be better financially in next 12 mos (sra, percent, adults)	-.436**
Used prescr drug for diabetes (non-insulin depend) (sra, percent, adults)	.335*	HH is better now financially than last 12 mos (sra, percent, adults)	-.380*
Used prescription drug for anxiety/panic (sra, percent, adults)	.334*		
		Smoking	Pearson
Smoked non-menthol cigarettes in last 12 mos (sra, percent, adults)	.604**		
Smoked cigarettes in last 12 mos (sra, percent, adults)	.460**		
Smoked 9+ packs of cigarettes in last 7 days (sra, percent, adults)	.400*		

* Correlation is significant at the 0.05 level (2-tailed)

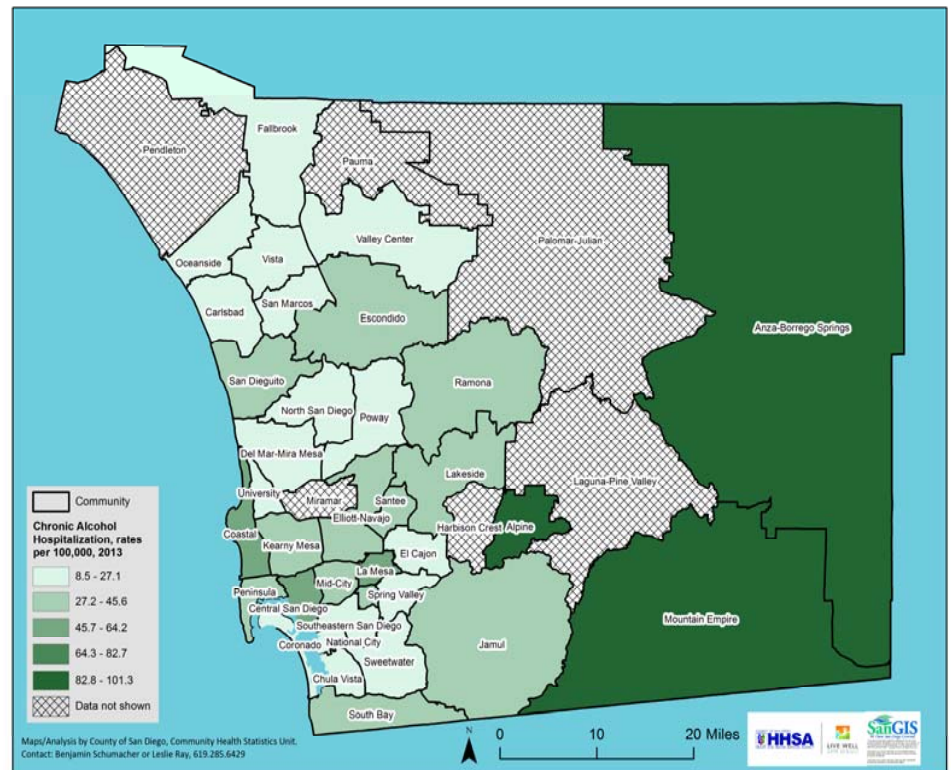
** Correlation is significant at the 0.01 level (2-tailed)



CHRONIC ALCOHOL-RELATED DISORDER EDD



CHRONIC ALCOHOL-RELATED DISORDER HOSPITALIZATION



DISCUSSION



POSITIVELY CORRELATED VARIABLES ACROSS OUTCOMES:

- Smoking
- Poverty status
- Divorced, widowed, never married
- Disability (hearing, cognitive, vision, etc.)
- Public insurance coverage
- Prescription drug usage (except acute alcohol EDD)

NEGATIVELY CORRELATED VARIABLES ACROSS OUTCOMES:

- Married or separated
- Private or employer-based insurance coverage

DISCUSSION



- Educational attainment is negatively correlated with chronic alcohol-related disorder hospitalizations and ED discharges.
 - Acute alcohol-related outcomes do not have the same educational patterns; all levels of educated people can be hospitalized and discharged from the ED for acute alcohol-related disorder.
 - Educational attainment ceases to be negatively correlated when poverty status is determined.
 - Those that have higher than a Bachelor's degree are positively correlated with alcohol-related disorders when poverty status is determined.

CONCLUSION



- Prescription drug usage, smoking, and drinking at a club/bar, are health behaviors that are positively associated with alcohol-related disorders.
- Social determinants that are positively associated with alcohol-related disorders include: discouraging household financial outlook, impoverished, disabled, unemployed, divorced/widowed/never married marital status, and having public insurance.
- Social determinants that are negatively associated with alcohol-related disorders include: married/separated, private insurance, educational attainment (in chronic outcomes, where no poverty status is established).

LIMITATIONS



- Core data is no more specific than SRA



LIVE WELL
SAN DIEGO

FOR MORE INFORMATION

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