CA BRIDGE

RACIAL DISPARITIES IN ACCESS TO MEDICATION FOR ADDICTION TREATMENT

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Buprenorphine is one of three approved medications for addiction treatment (MAT) for opioid use disorder (OUD) and is considered the best option for many patients. However, since its approval in 2002 for the "suburban spread of narcotic addiction,"[1,2] numerous national studies have found significant racial disparities in access to buprenorphine.[3,4,5] A 2019 study found that Black patients were 77% less likely to receive buprenorphine than White patients.[6] Another national study found that counties with high concentrations of Black and Latinx residents had more facilities to provide methadone per capita, while counties with high concentrations of White residents had more facilities to provide buprenorphine.[7]

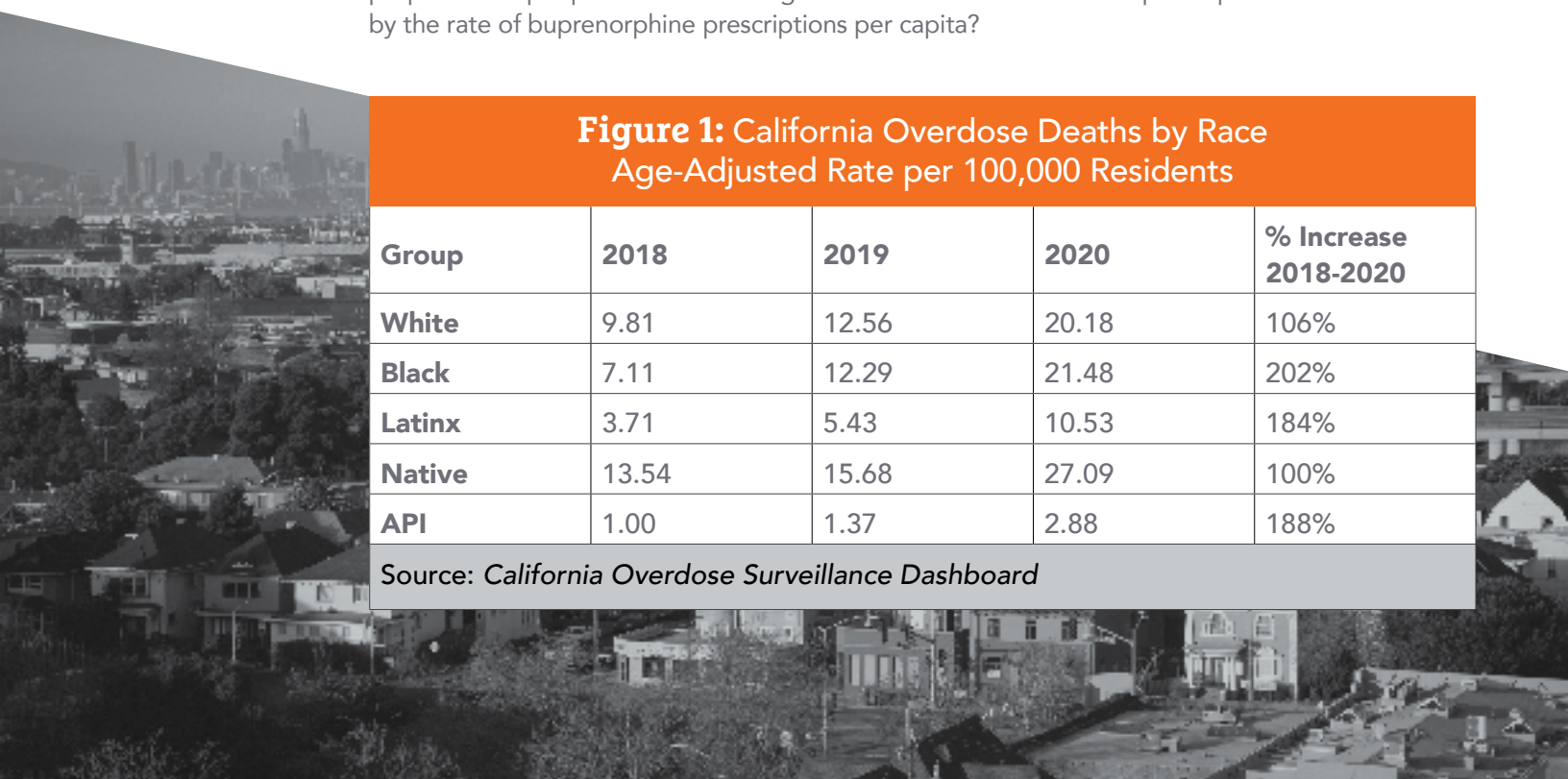
This paper addresses the question of whether racial disparities in access to buprenorphine exist in California even after significant efforts to expand MAT access. This question is particularly urgent as overdose rates have increased dramatically for people of color (Figure 1). Moreover, health disparities related to substance use are not limited to mortality. Communities of color have long experienced higher rates of arrest and incarceration for substance use despite rates of use similar to that of White populations.[8,9,10]

Our analysis explores whether the level of buprenorphine prescriptions in a zip code varies based on the racial/ethnic composition of the zip code. Specifically, do zip codes that have a higher proportion of people of color residing in them have less access to buprenorphine as indicated by the rate of buprenorphine prescriptions per capita?

Figure 1: California Overdose Deaths by Race
Age-Adjusted Rate per 100,000 Residents

Group	2018	2019	2020	% Increase 2018-2020
White	9.81	12.56	20.18	106%
Black	7.11	12.29	21.48	202%
Latinx	3.71	5.43	10.53	184%
Native	13.54	15.68	27.09	100%
API	1.00	1.37	2.88	188%

Source: *California Overdose Surveillance Dashboard*



HOW WE CONDUCTED THE ANALYSIS

We used California's Opioid Overdose Surveillance Dashboard to gather the age-adjusted prescription rate for buprenorphine per 1,000 residents for each of California's 1,374 zip codes with at least 1,000 residents. We obtained demographic and income data from the U.S. Census and created five categories of zip codes based on the share of the population comprised of people of color as follows: 0-20% (mostly White communities), 20-40%, 40-60%, 60-80% and 80-100% (mostly communities of color). To look at the effect of income, we divided the zip codes into two groups: those where the percentage of the Medi-Cal eligible population is at or above the statewide average and those where the percentage is below the statewide average. Further methodological detail is provided in Appendix 1.

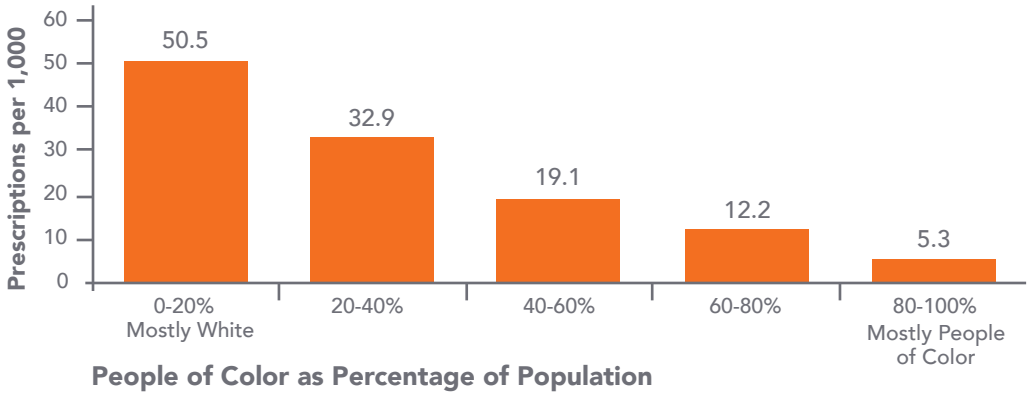
About CA Bridge

CA Bridge is a statewide initiative to make treatment for substance use disorder available in every California emergency room, on a 24/7 basis. We believe that addiction should be treated like every other chronic disease, without stigma or moral judgment. We provide funding and training to hospitals on medication for addiction treatment and patient navigation. We support innovation pilots and conduct research and policy analysis to develop sustainable funding models. Learn more at **www.cabridge.org**

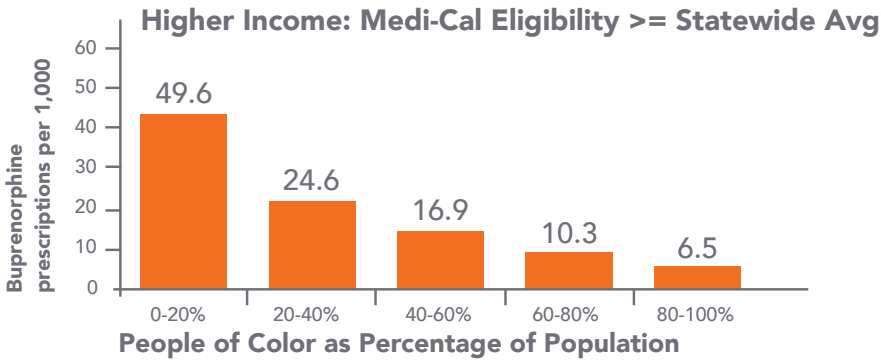
WHAT WE FOUND

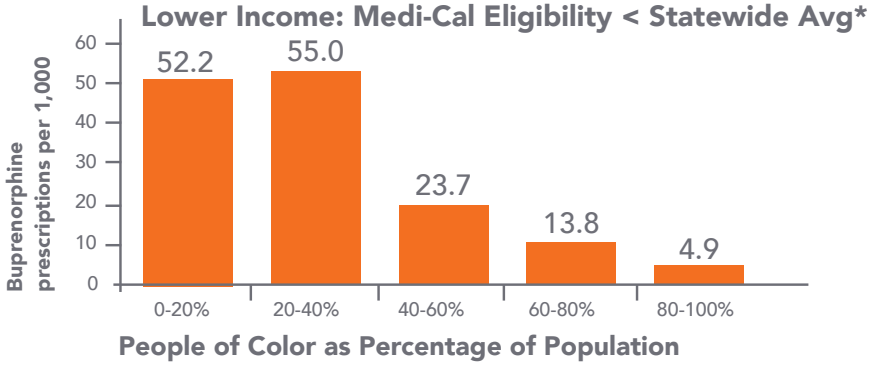
Buprenorphine prescription rates decrease as the proportion of people of color in a zip code increases.
Prescription rates in the zip codes with the highest percentage of White residents are almost ten times higher than the rates for zip codes with the highest percentage of people of color.

Buprenorphine Prescriptions by Zip Code Racial/Ethnic Distribution



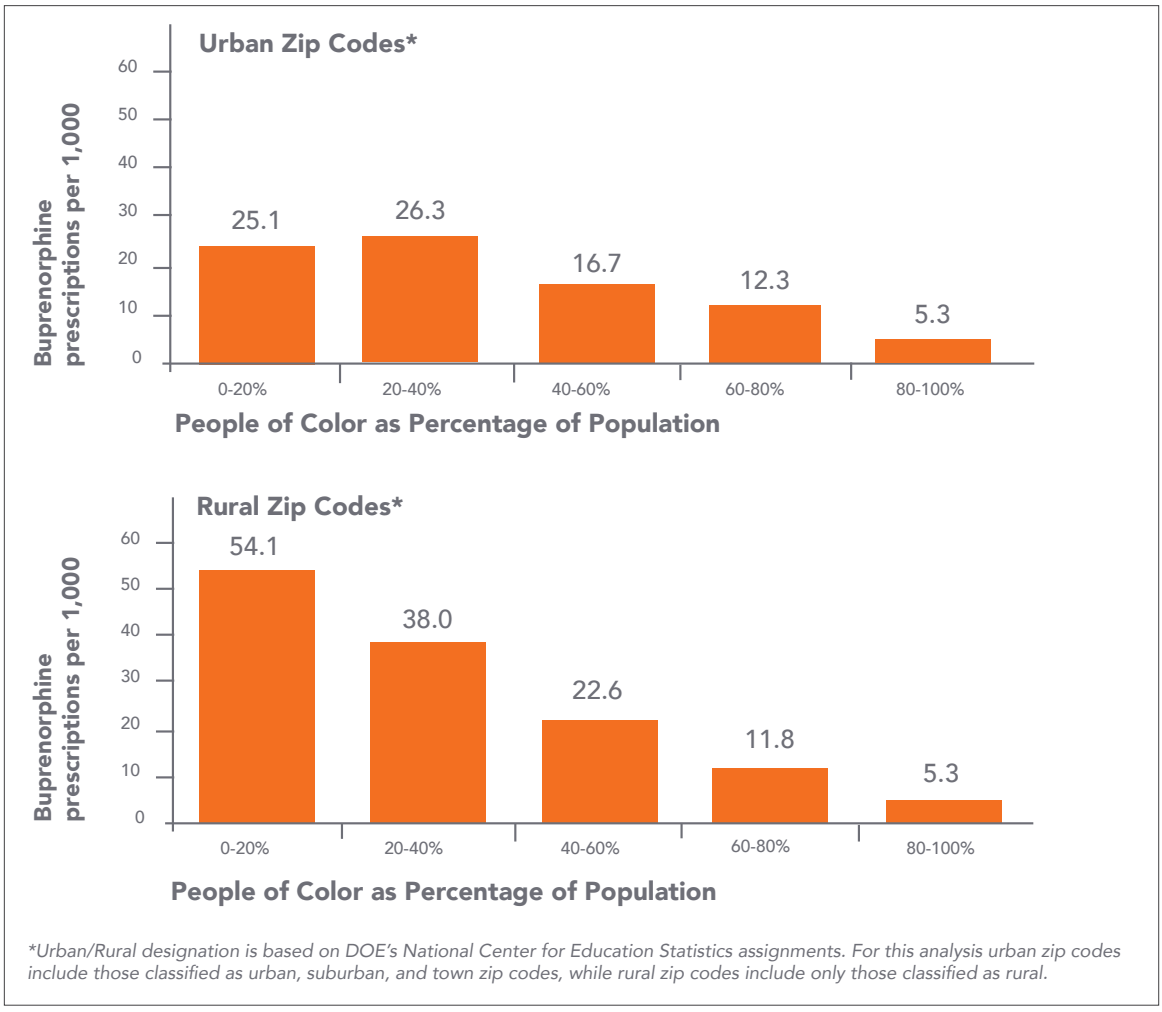
Income does not explain the lower rates of buprenorphine prescriptions in communities of color.
When lower-income areas and higher-income areas are compared, the overall levels of buprenorphine prescriptions across both groups are similar (21.7 vs. 21.4). However, within both lower and higher-income communities, there are significant differences by race/ethnicity.





**Zip codes separated into those where the share of the population with household income below 150% of federal povety level (approximate level for Medi-Cal eligibility) is above or below the overall statewide share of the population, which is 19.8%.*

Racial disparities exist in both urban and rural areas.
Rural zip codes generally have higher rates of buprenorphine prescriptions than urban zip codes (29.5 vs. 14.7). However, both urban and rural zip codes have a trend of decreasing buprenorphine prescription rates as the share of people of color increases, although this disparity is less pronounced in urban areas.



**Urban/Rural designation is based on DOE's National Center for Education Statistics assignments. For this analysis urban zip codes include those classified as urban, suburban, and town zip codes, while rural zip codes include only those classified as rural.*

Even after controlling for other factors, race has a statistically significant effect on the availability of buprenorphine in a community.
We conducted a regression analysis to control for potentially confounding factors, including urban/rural location, income, and opioid morbidity and mortality rates. While each of these factors had a statistically significant relationship to buprenorphine prescription rates, they did not "explain away" the disparities by race/ethnicity. In fact, the proportion of people of color in a zip code was the strongest single predictor of buprenorphine prescription rates among all the factors analyzed.

WHERE WE GO FROM HERE

This analysis suggests that California has been successful in creating access to buprenorphine for low-income people and people in rural areas. However, despite these successes, there is still a wide gap between access in predominantly White communities and communities of color. Given the pervasive inequities in our society's response to substance use, as California continues efforts to increase access to medication for addiction treatment, it is critical to assess and monitor whether we are closing this gap.

At CA Bridge, we are looking closely at all aspects of our trainings, funding, research, materials, and communications to determine how we can more effectively address equity in access to MAT. We invite readers to build on this work in progress.

- Tool for Advancing Equity and Reducing Harm to Communities of Color from Drug Use
- Webinar on Stigma and Inequity in OUD Care
- Webinar for Navigators on Engaging Special Populations – Racial Disparities
- Tool on First Steps for Advancing Diversity, Equity, and Inclusion in Your Emergency Department: A Case Study from UC Davis Health's Department of Emergency Medicine
- Policy Position on Decriminalization of Personal Use and Possession of Small Quantities of Drugs
- Video on Treatment Not Criminalization: Why Clinicians Should Care about Drug Policy

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APPENDIX 1: COMPREHENSIVE METHODOLOGY

Data sources: We collected the annual age-adjusted prescription rate for buprenorphine per 1,000 residents for 2017 through 2020 from the Controlled Substance Utilization Review and Evaluation System (CURES) using California's Opioid Overdose Surveillance Dashboard. These data were compiled by zip code based on patient, not prescriber, location. We also collected morbidity data from the Dashboard in the form of the annual age-adjusted hospitalization rate per 100,000 residents for nonfatal acute poisonings due to the effects of any opioid drug, regardless of intent. Finally, we included mortality data from the Dashboard in the form of the annual age-adjusted death rate per 100,000 residents from any opioid overdose. Hospitalization and death rate data were only available through 2019 at the time of the analysis, so for these measures we use the average for each zip code over the three-year period from 2017 through 2019.

We mapped in current demographic data for race/ethnicity and various income measures using Census data. Specifically, we used the U.S. Census Bureau's American Community Survey 5-year estimates for 2019. These data, which are summarized at the zip code tabulation area (ZCTA) level, were retrieved from https://censusreporter.org. It was necessary to define the White population versus people of color using the racial and ethnic categories available in the Census data. The Census data first separate the population into two categories based on ethnicity, "Hispanic or Latino" and "Not Hispanic or Latino." Within these groupings, the population is further broken down into several racial groups, including White, Black, Asian, Native American groups, and mixed-race groups. Here, only the "White Only" population that is also described as "Not Hispanic or Latino" is categorized as White, while all other groups are categorized as people of color. This results in 37 percent of the population statewide categorized as White and 63 percent as people of color, though these rates vary considerably across individual zip codes.

Zip code exclusions: To avoid fluctuations in prescription or morbidity rates due to extremely small population size, we excluded from our analysis zip codes with fewer than 1,000 residents. We also excluded one zip code, 95546, which represents a tribal area in Humboldt County and is an extreme data outlier with exceptionally high rates of both opioid deaths and buprenorphine prescriptions. These exclusions resulted in the removal of 255 of the 1,629 total zip codes. It should be noted, however, that the remaining 1,374 zip codes used in the analysis represent 99.7% of the state's population.

Income/Poverty measures: We divided the zip codes into two groups based on the percent of the zip code's population with household income at or below 150% of the federal poverty level, which is approximately the threshold for Medi-Cal eligibility. Statewide, approximately 19.8 percent of the population has household income below this threshold. We separated the zip codes into two groups, those where the percent of the Medi-Cal eligible population is at or above the statewide average (610 zip codes), and those where the percent is below the statewide average (764 zip codes). For the regression analysis, we also included the median income level for each zip code.

Rural/urban designation: We classified zip codes as urban or rural based on the U.S. Department of Education's National Center for Education Statistics assignments (https://nces.ed.gov/programs/edge/Geographic/ZCTAAssignments). We categorized a zip code as urban if it was classified as "city," "suburban," or "town," and categorized any zip code as rural if it was classified as "rural," resulting in 742 urban and 632 rural zip codes.

Regression analysis: The dependent variable for our regression analysis was each zip code's buprenorphine prescription rate averaged over the 2017-2020 period. The dependent variables included the percent of the population that are people of color, a variable to denote urban zip codes (set equal to 1 for urban and 0 for rural zip codes), and the hospitalization rate and death rate per 100,000 residents averaged over the 2017-2019 period. We also included two measures for the zip code's poverty/income level, which were the percent of the population with household income above the Medi-Cal threshold (150% of the federal poverty level) as well as the median income level for the zip code. As the statistics below show, all the explanatory variables used in the regression are highly statistically significant. After accounting for other factors, including whether the zip code is urban or rural, hospitalization and death rates, and poverty and income measures, buprenorphine prescription rates are still lower in communities with a higher percentage of people of color. Finally, the "Standardized Estimate" values indicate that the percentage of people of color in the zip code is the strongest predictor of the buprenorphine prescription rate among all the factors considered, as its absolute value (0.465) is the largest among all the explanatory variables included in the analysis.

Dependent Variable: Buprenorphine Prescriptions/1,000

Number of Observations	1,364
R-Squared	0.377
Adj R-Squared	0.375
Dependent Mean Value	21.549

		Standard			Standardized
	Coefficient	Error	T- Statistic	Pr >|t|	Estimate
Intercept	36.117	6.782	5.326	<.0001	0.000
People of Color					
Pct of Population	(0.498)	0.028	(17.724)	<.0001	(0.465)
Urban Zip Code (Dummy)	(3.666)	1.314	(2.789)	0.005	(0.067)
Hospitalization					
Rate per 100K	0.342	0.045	7.545	<.0001	0.168
Death Rate per 100K	0.450	0.056	8.042	<.0001	0.180
Pct of Population					
w/Income > 150%FPL	0.272	0.091	3.001	0.003	0.109
Median Income ($000)	(0.184)	0.027	(6.858)	<.0001	(0.237)

In addition to the regression model presented above, numerous alternative model specifications were also tested using alternative income measures, annual data for each year rather than the average across 2017-2020, etc. For each of these alternative models, the coefficient for the percent of the zip code's population represented by people of color was consistently estimated to be approximately negative 0.5 and statistically significant, indicating that for every increase of 10 percentage points in a zip code's population represented by people of color there are 5 fewer buprenorphine prescriptions per 1,000 residents after controlling for other factors. Separate models for individual racial/ethnic groups (Black, Asian, Latinx, and Native American/Other/Mixed) were also tested and indicated that the prescription rate was statistically significant and negative for all non-White groups except for the Native American/Other/Mixed group, for which it was positive. The negative effect was greatest for the percentage of Black (-0.54) and Latinx (-0.48) populations, but less pronounced for the percentage of the Asian population (-0.22).