

# Examining PrEP Uptake among Medi-Cal Beneficiaries in California: Differences by Age, Gender, Race/Ethnicity and Geographic Region



## Background

California (CA) has the largest number of new human immunodeficiency virus (HIV) diagnoses in the United States,[1] led by Los Angeles, San Francisco, and San Diego counties. The California Integrated HIV Surveillance, Prevention and Care Plan has detailed multiple strategies and objectives to get to zero new HIV infections, zero AIDS-related deaths, and zero stigma and discrimination against people living with HIV (PLWH). **A key strategy for “Getting to Zero” in California is increasing utilization of pre-exposure prophylaxis (PrEP).**<sup>[2]</sup> PrEP refers to the use of antiretroviral medications to prevent HIV infection prior to exposure. Taken as a single daily oral tablet, studies show that PrEP reduces the risk of contracting HIV from sexual intercourse by more than 90% and reduces the risk from injection drug use by more than 70%.<sup>[3]</sup> **However, despite its efficacy, data from Gilead Pharmaceuticals, the maker of the currently approved PrEP regimen, indicate that rates of PrEP uptake vary by demographic characteristics, risk group, and region in the US.**<sup>[4]</sup> In addition, racial/ethnic disparities in PrEP uptake have been observed among gay, bisexual, and other men who have sex with (MSM) in California.<sup>[5, 6]</sup>

According to the California Department of Public Health (CDPH) Office of AIDS, the number of new HIV diagnoses in California declined by 2.9% and the rate of new diagnosis of HIV declined by 6.1% from 2011 through 2015.<sup>[7]</sup> During that time, HIV incidence (newly diagnosed per population) and prevalence (living cases per population) remained highest among MSM,<sup>[8]</sup> particularly Black MSM.<sup>[9]</sup> The disparity in HIV prevalence between White MSM and Black and Hispanic MSM may be increasing, particularly among young MSM (YMSM).<sup>[9]</sup> Despite these disparities, Black MSM with HIV have lower awareness of their infection than do white MSM with HIV<sup>[9]</sup> and uninfected Black and Hispanic YMSM are also less aware of PrEP than are white YMSM. When we surveyed YMSM, ages 13-34, about PrEP in 2015, only 9.7% of YMSM using geosocial networking apps in California had ever used PrEP, and the rates were even lower among Black and Hispanic/Latino YMSM.<sup>[5]</sup> **This survey by the Southern California HIV/AIDS Policy Research Center, also found that higher income was significantly associated with PrEP usage, suggesting low-income YMSM may encounter barriers related to health care access and the cost of PrEP.**<sup>[5]</sup>

A number of studies have documented the important role of health insurance in making PrEP affordable. In a study addressing insurance coverage and PrEP utilization in clinic sites in Mississippi, Missouri, and Rhode Island, investigators found that private or public insurance coverage was significantly associated with PrEP utilization among those prescribed PrEP.<sup>[10]</sup> After adjusting for Medicaid expansion in Rhode Island and individual sociodemographic characteristics, insured patients had four times the odds of maintaining a PrEP prescription as compared to the uninsured patients.<sup>[10]</sup> New York State facilitated PrEP access as part of its plan to end the HIV/AIDS epidemic by 2020. New York’s Medicaid program approved coverage of Truvada® for PrEP through the program’s fee-for-service drug formulary in mid 2014.<sup>[11]</sup> Subsequently, the number of Medicaid recipients filling at least one prescription for PrEP increased dramatically, from just a 17% increase between July 2012-June 2013 and July 2013-June 2014, to a 339% increase between July 2013-June 2014 and July 2014-June 2015.<sup>[11]</sup>

Disparities in insurance coverage contribute to disparities in PrEP utilization. To understand the role of demographic and geographic disparities in PrEP use among a group for whom financial barriers have been relaxed, this paper examines PrEP utilization among enrollees in Medi-Cal, California's Medicaid program. We examine PrEP use from 2012 through 2016. We focus on the last semester of 2016 (S1), and compare it to use of PrEP in the second semester of 2013 (S2), just prior to the Affordable Care Act's Medicaid expansion. Medi-Cal improved access to PrEP in April 2014 by lifting a requirement that doctors complete an authorization request when prescribing Truvada®. **Examining the differences in the rate of PrEP uptake by demographic group and geographic region over time will inform future policies by identifying priority regions and populations.**

## Methods

The Pharmacy Benefits and Information Management Divisions of the California Department of Health Care Services (DHCS) provided aggregate data on the number of PrEP prescriptions reimbursed by Medi-Cal and the number of Medi-Cal beneficiaries without an HIV diagnosis. Data were provided for the State as a whole and for Los Angeles, San Diego, and San Francisco counties for each half-year between 2012 and 2016. DHCS also provided these numerators (beneficiaries on PrEP) and denominators (total beneficiaries without an HIV diagnosis) within categories of age, race/ethnicity, sex, and rural/urban. Data were not available for subcategories of these groups (e.g., race and sex or sex and age group).

Our analysis examined time trends in several outcomes: 1) number of PrEP prescriptions, as defined above; 2) number of unique beneficiaries receiving PrEP; and 3) proportion of Medi-Cal eligible individuals receiving PrEP by demographics. Because there were minimal-to-no observed changes in PrEP prescriptions between 2012 and 2013 and because the change in Medi-Cal authorization for PrEP occurred in April 2014, we considered the last semester of 2013 as the baseline for our examination of trends. We adjusted our graphs to address the fact that several cells were suppressed to preserve confidentiality due to small numbers of observations. When, based on other available data we could reasonably assume the suppressed cells to contain 1-15 people, we imputed 10.

## Results

### **PrEP use increased across California, in three large counties, and in rural and urban areas, with the steepest increase in San Francisco.**

From 2012 to 2016, the total number of PrEP prescriptions written increased from 328 in the first half of 2012 to 11,089 by the end of 2016. The total number of PrEP beneficiaries in California also grew rapidly over time 79 to 3295 or rates of 9 per million Medi-Cal enrollees in 2012 to 228 per million in 2016 (a 25-fold increase). There are nuances to these trends that are not evident in the overall percent change presented in the Table. Over the first four semesters (2012-2013), little growth occurred, with an increase of just 0.42% per semester in rate of beneficiaries on PrEP. In the four semesters from the end of 2013 through the first half of 2015, PrEP use increased by 170% per semester. In the four semesters from the first half of 2015 to the end of 2016, it increased by 51% per semester.

**Changes in the proportion of beneficiaries (per million) on PrEP by area and demographic group, comparing the last semester of 2013 to the last semester of 2016**

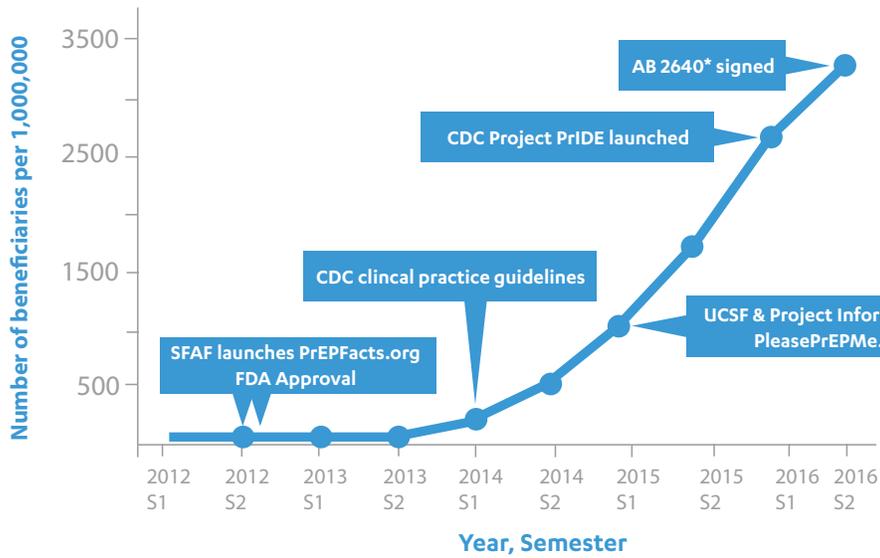
		<b>Last Semester 2013</b> (rate per 1,000,000)	<b>Last Semester 2016</b> (rate per 1,000,000)	<b>Percent Change 2013-16</b>
<b>Sex</b>	Men	12.9	450	+3390
	Women	6.9	34.8	+404
<b>Race/Ethnicity</b>	Black/AA	14.6	282	+1832
	Hispanic	3.4	106	+3018
	Asian	25.9	229	+785
	White	16.6	447	+2592
	Other	11.7	306	+2515
	13-24	---	153	---
	25-34	13.2	672	+4991
<b>Age Group</b>	35-44	20.6	474	+2201
	45-54	41.5	322	+675
	55-64	70.7	---	---
	65+	---	---	---
	Rural	8.5*	104	+1124
<b>Geographic Area</b>	Urban	17.4*	253	+1354
	San Francisco	76.6	2487	+3147
	Los Angeles	14.3	311	+2073
	San Diego	42.5**	443	+2160

\*Starting from first semester of 2014 due to suppressed data in last semester of 2013.

\*\* Starting from second semester of 2014 due to suppressed data in earlier semesters.

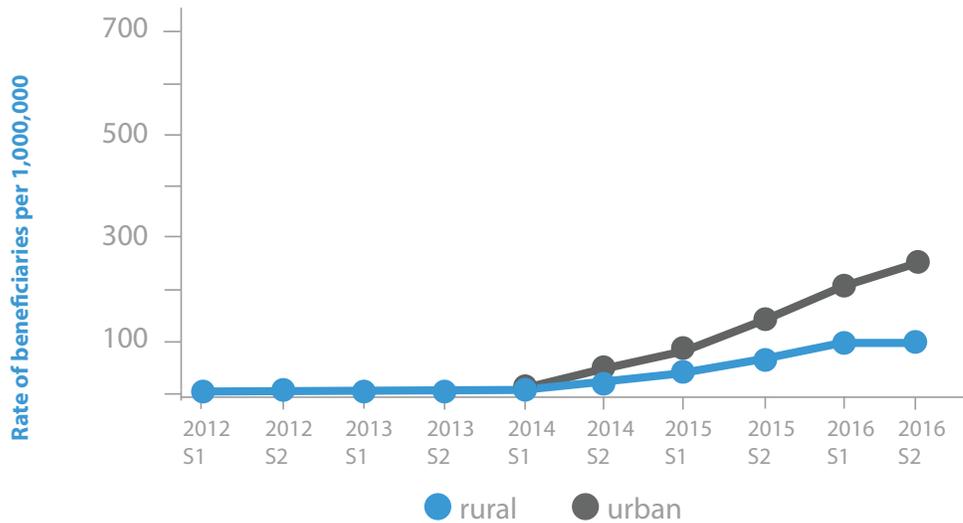
Los Angeles, San Francisco, and San Diego Counties all saw large increases in their numbers of PrEP beneficiaries. *Note: Unless otherwise noted, these and future numbers compare the second semester of 2013 to the second semester of 2016.* In Los Angeles County, the number of PrEP beneficiaries increased from 33 to 1246, from a rate of 13 per million in 2013 to 311 per million Medi-Cal enrollees in 2016. The number of PrEP beneficiaries in San Francisco County averaged below 10 per semester in 2012-13 and rose to 548, going from a rate of approximately 77 to 2487 per million Medi-Cal enrollees over the same period. San Diego County averaged below 10 PrEP beneficiaries per semester from 2012 to mid-2014. Its rate then increased from 43.5 per million Medi-Cal enrollees in the second half of 2014 to 443 per million enrollees in 2016. Increases were also observed in the number and proportion of beneficiaries on PrEP in both rural (8.5 to 104 per million) and urban (17.4 to 250 per million) areas of CA from the first half of 2014 to the end of 2016.

## Number of PrEP Beneficiaries among Medi-Cal Enrollees County, 2012-2016 & Key Events Related to PrEP Uptake <sup>[12-16]</sup>

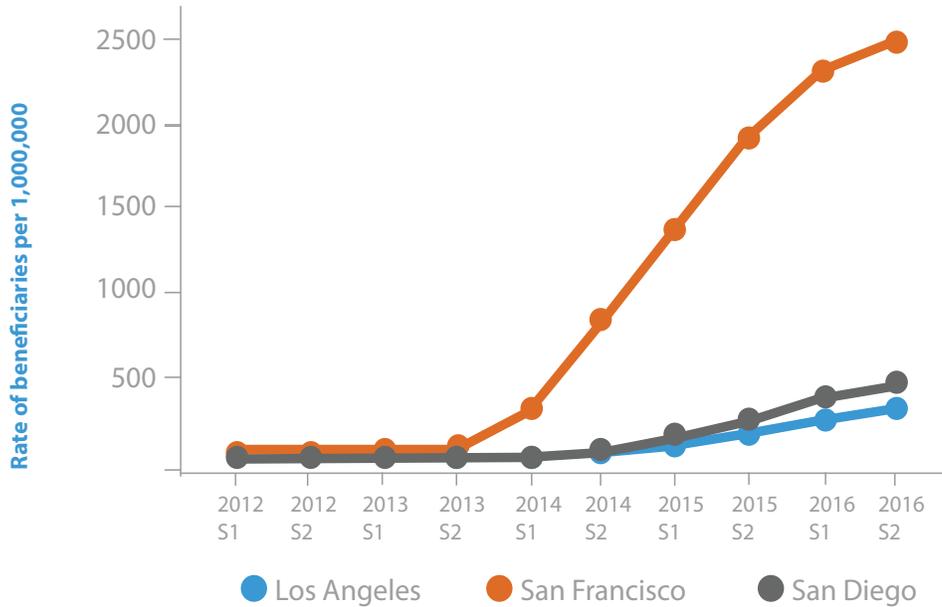


\*AB 2640 requires high-risk individuals tested for HIV to receive PrEP information

## Frequency of PrEP Beneficiaries among Medi-Cal Enrollees by County, 2012-2016



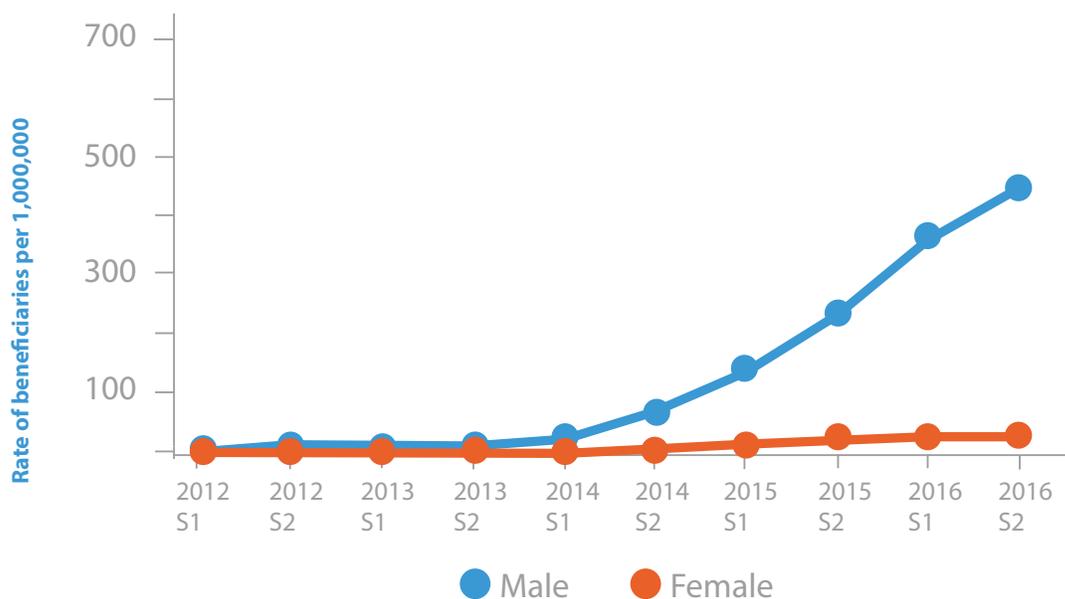
**Frequency of PrEP Beneficiaries among Medi-Cal Enrollees by Geographic Region, 2012-2016**



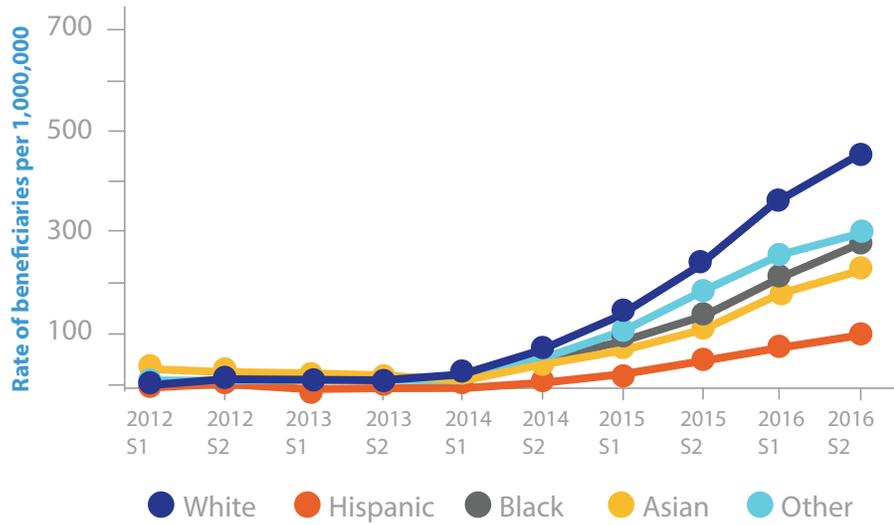
**Rates of PrEP Uptake Increased over Time for all Gender, Race/Ethnicity, and Age Groups  
Sharp rise in men. Slow and leveling rise in women.**

While data reveal PrEP use increased for both male and female Medi-Cal beneficiaries, we see a greater increase among males. Their rate increased from 12.9 per million in 2013 to 450 per million in 2016 (34 times). In contrast, PrEP use by females increased just four times, from a rate of 6.9 per million in 2013 to 34.8 per million by the end of 2016.

**Frequency of PrEP Beneficiaries among Medi-Cal Enrollees in CA by Gender, 2012-2016**



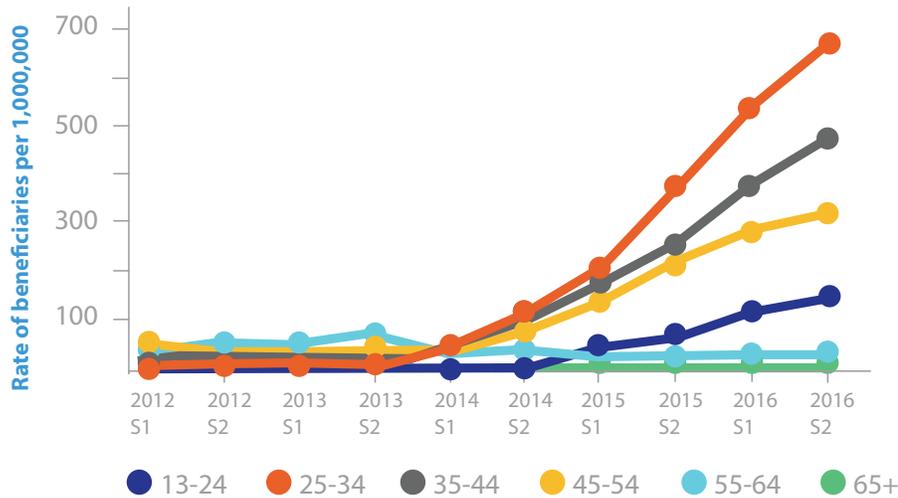
### Frequency of PrEP Beneficiaries among Medi-Cal Enrollees in CA by Race/Ethnicity, 2012-2016



### Sharp increases across most race/ethnic groups. Sharpest and highest overall uptake in Whites and Others. Lowest overall uptake in Hispanics, despite steep rise.

Although Asians begin 2013 with higher rates of uptake, subsequently, White PrEP beneficiaries experienced the highest rates of uptake, as well as a tremendous increase from 16.6 to 447 PrEP beneficiaries per million -- and an increase of 26 times. Those of other race/ethnicities and Blacks begin to outpace Asians in the second half of 2014, with the next highest rates of uptake over the time period (with 306 and 282 per million, respectively, on PrEP at the end of 2016). Although Hispanics post the largest percentage increase comparing 2013 to 2016 (30 times), their overall level of uptake in 2016 is less than half that of any other group.

### Frequency of PrEP Beneficiaries among Medi-Cal Enrollees in CA by Age, 2012-2016



## Fastest rise in 25-34 and 35-44 year-olds. Slowest rise in the youngest and oldest age groups.

By age, the largest rate of increase of PrEP use occurred among Medi-Cal beneficiaries aged 25-34 years. This age group increased from a rate of 13.2 per million in 2013 to 670 per million in 2016 (50 times). Although data for beneficiaries aged 13-24 were suppressed from 2012-2014, we observed a rate increase from 40 per million in the first half of 2015 to 153 per million by the last half of 2016. PrEP beneficiaries in the 35-44 age group increased from a rate of 20.6 to 474 per million between 2013 and 2016, while PrEP beneficiaries ages 45-54 increased from a rate of 41.5 to 322 per million. The small numbers of PrEP beneficiaries among those ages 65 and over led to data suppression for all years for this group and also for suppression of data among those age 55-64 after 2014.

## Summary and Implications

Several major conclusions can be drawn from these findings. **PrEP uptake has increased dramatically throughout the State of California and across most demographic groups, except those ages 65 and older and women, whose rates of uptake rose and then leveled from the second half of 2015 on.** Overall, however, the overall upward trend appears to be continuing. **The data also reveal several other areas of concern, namely in terms of disparities in rates of uptake.**

**Disparities are observed for Blacks and Hispanics versus other groups.** Although we do not know what proportion of each ethnic group is at risk for HIV, if rates of HIV in Medi-Cal beneficiaries are similar to that observed in the general population, it is of concern that the rates of PrEP uptake for Hispanics and Blacks are consistently lower than observed for Whites. Rates of newly diagnosed HIV cases in Blacks/African Americans are 4.1 times that of Whites in California. Furthermore, while HIV rates for Hispanics in the state are 1.5 times those of Whites, their rates of PrEP uptake in 2016 are just 24% of Whites.<sup>[3]</sup> The racial/ethnic disparities in PrEP uptake observed here are largely consistent with data found from studies of MSM.<sup>[6]</sup>

**We also note age disparities with rates of uptake that are much lower for the youngest age group, 13-24, than for those ages 25-34 or 35-44 years.** Overall HIV rates in CA for 2015 are highest among those age 20 to 24 (29.3 per 100,000) and 25 to 29 (34.7 per 100,000).<sup>[3]</sup> Given the high incident rates observed in young MSM, especially young Black and Hispanic MSM,<sup>[8]</sup> the uptake rates in younger Medi-Cal enrollees warrant more attention and improvement.

We acknowledge limitations related to these data. These data lack information on behavioral risk groups, sexual orientation, and gender identity. Hence, the numbers of MSM, transgender women and men and people with PrEP indications are not available. In 2015, the CA Prevention Training Center (CAPTC) estimated the number of MSM who have an indication for PrEP by local health jurisdiction. Leading the local jurisdictions is Los Angeles, with over 31,222 MSM that can benefit from PrEP. Following Los Angeles is San Diego with over 10,326 MSM and San Francisco with nearly 7,655 MSM who have an indication for PrEP. **If we were to assume that all PrEP prescriptions to male Medi-Cal patients in the last semester of 2016 were purchased for MSM, these men would comprise a small percentage of the**

**estimated numbers of MSM who could benefit from PrEP – just 3.8%, 3.3%, and 7.7%, for LA, SD, and SF Counties, respectively.**

We also note that the Medi-Cal population not only expanded over the 2014-2016 period, but its composition also changed. For example, the number of male beneficiaries increased by 61%, from 4.2 to 6.7 million from the second half of 2013 to the last half of 2016. For females, it increased from 5.2 to 7.7 million or 49%. Prior to Medicaid expansion, the primary reason for Medi-Cal coverage of men was disability. Subsequently, men were eligible if they met the income thresholds, regardless of disability. **By increasing the numbers of men and people without disabilities on Medi-Cal, it is likely that Medicaid expansion increased the proportion of Medi-Cal enrollees at increased risk for HIV.** However, we do not know the size of the Medi-Cal population with indicators for PrEP.

Despite these limitations, Medi-Cal data provide a rich resource for examining PrEP uptake particularly among vulnerable populations that might most benefit from public health policy interventions to support uptake. For example, the shift in policy that dropped the prior authorization requirement for Medi-Cal beneficiaries in early 2014 clearly contributed to the growth over time observed here. Increased HIV risk is associated with poverty through multiple pathways – heightening the need for efforts to examine use of new interventions among recipients of public benefits.

**In this first look at these Medi-Cal data, we found evidence of PrEP disparities affecting Blacks, Hispanics, women, and people between the ages of 13-24. We also found disparities comparing Los Angeles and San Diego Counties to San Francisco County.**

Furthermore, despite large increases in PrEP uptake over time, the findings point to a large potential gap between Medi-Cal beneficiaries who have accessed PrEP and those with indications for this preventive measure. Given that these findings are limited to Medi-Cal beneficiaries, the comparison groups are comparable in their health insurance coverage and, to some extent, their income. Hence, other factors such as access to PrEP, HIV risk perception, PrEP-related stigmas, competing priorities, level of patient and provider PrEP knowledge, willingness and motivation to prescribe PrEP among providers, medical mistrust among patients, and utilization of primary care services, likely play a role in the disparities observed.

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#### FUNDERS

This study was conducted by the Southern California HIV/AIDS Policy Research Center, through a generous grant from the University of California HIV/AIDS Research Program (Grant Number RP15-LA-007).

#### ACKNOWLEDGMENTS

This study was conducted by the Southern California HIV/AIDS Policy Research Center, through a grant from the University of California HIV/AIDS Research Program (RP15-LA-007) and by the UCLA Center for HIV Identification, Prevention and Treatment Services through a grant from the National Institutes of Health (MH058107). The content is solely the responsibility of the authors and does not necessarily represent the official views of the funders. We express our gratitude to our colleagues at the California Department of Health Care Services, including Michael Wofford, Susannah Cohen, and Jennifer Carney for providing aggregate data.

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#### CITATION

Harawa N, McBride S, Leibowitz A, Pulsipher C, Holloway I. Examining PrEP Uptake among Medi-Cal Beneficiaries in California: Differences by Age, Gender, Race/Ethnicity and Geographic Region. California HIV/AIDS Policy Research Centers. February 2018. [www.chprc.org](http://www.chprc.org).

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