CDPH
California Department of Public Health

A Story of Inequity: Tobacco's Impact on Health Disparities in California

Methodology Report

Updated August 2026

Introduction

Development of *A Story of Inequity: Tobacco's Impact on Health Disparities in California* was pursued as a result of the Health Equity Summit convened by the California Tobacco Prevention Program (CTPP) in June 2013. Additional guidance from stakeholders on the development of *A Story of Inequity* was obtained from three regional Health Equity Roundtables held in 2014.

A Story of Inequity is used to track and communicate the progress made in reducing tobacco-related disparities among priority populations, foster accountability and transparency in the progress made, and assist in refining CTPP activities around reducing tobacco-related disparities. Measures used in *A Story of Inequity* are grouped into the following five categories:

- Adult Tobacco Use
- Youth Tobacco Use
- Availability of Tobacco & Tobacco Industry Influence
- Secondhand Smoke
- Cessation

It is CTPP's intent to align *A Story of Inequity* with the tobacco-related priority populations identified in the 2015-17 Tobacco Education and Research Oversite Committee (TEROC) Master Plan. These groups have higher rates of tobacco use and tobacco-related disease compared to the general population, experience greater secondhand smoke exposure at work and at home, and are disproportionately targeted by the tobacco industry. The priority population groups outlined in the TEROC Master Plan include:

- African Americans, other people of African descent, American Indian and Alaska Natives, Native Hawaiians and Pacific Islanders, some Asian American men, and Latinos
- People of low socioeconomic status, including the homeless, who are at or below 185% of the federal poverty level
- People with limited education, including high school non-completers
- Lesbian, gay, bisexual, and transgender (LGBTQ)
- Rural residents
- Current members of the military and veterans

- Individuals employed in jobs or occupations not covered by smokefree workplace laws
- People with substance use disorders or behavioral health issues
- People with disabilities
- Formerly incarcerated individuals

CTPP's *Initiative to Reduce Tobacco-Related Disparities*, which funds projects to address tobacco-related disparities, focuses on the following nine population groups:

- African American/Black
- American Indian
- Hispanic/Latino
- Asian
- Pacific Islander
- Low Income
- Lesbian, Gay, Bisexual, Transgender, Queer+ (LGBTQ+)
- People with Mental Health Challenges
- Rural Communities

Measure Selection and Methodology

Measures were chosen to be included in *A Story of Inequity* based on internal and external stakeholder input, data availability, and CTPP's priorities. Table 1 identifies each measure and its data source. Several data sources were used. Not all measures will have data for all priority populations due to limitations of each data source. However, data are available for most measures highlighted on *A Story of Inequity*. CTPP intends to update data from *A Story of Inequity* annually.

For each measure, a "thumbs up" (👍) or "thumbs down" (👎) icon may appear next to the result for a priority population. This indicates that the population's result is significantly more ("thumbs up") or less ("thumbs down") favorable compared to the general California population. Details about how "thumbs up" or "thumbs down" is defined for each measure is outlined below.

Table 1. Measures and data sources in *A Story of Inequity*

Measure	Data Source
ADULT TOBACCO USE	
• **Adult Cigarette Use**: Adult cigarette smoking prevalence	CHIS
• **Change in Adult Cigarette Use**: Rate of change in adult cigarette smoking, 2018 to 2023	CHIS
• **Adult Tobacco Use**: Adult tobacco use prevalence (e.g. cigarettes, e-cigarettes and other vaping products, other tobacco products)	CHIS
YOUTH TOBACCO USE	
• **Youth Cigarette Use**: Youth cigarette smoking prevalence	CYTS
• **Change in Youth Cigarette Use**: Rate of change in youth cigarette smoking, 2016 to 2024	CSTS / CYTS
• **Youth Tobacco Use**: Youth tobacco use prevalence (e.g. cigarettes, e-cigarettes and other vaping products, other tobacco products)	CYTS
AVAILABILITY OF TOBACCO & TOBACCO INDUSTRY INFLUENCE	
• **Cheapest Cigarettes**: Average price for the cheapest pack of cigarettes	HSHC[1]
• **Tobacco Stores**: Density of stores selling tobacco per 100,000 residents	CDTFA[1,2]
• **Tobacco Advertising**: Proportion of stores that keep 90% of their storefront free from any advertising	HSHC[1]
SECONDHAND SMOKE	
• **Smokefree Homes**: Proportion of adults with smokefree homes	CHIS
• **Adult Secondhand Tobacco Exposure**: Proportion of adults exposed to secondhand smoke	CHIS
• **Youth Secondhand Tobacco Exposure**: Proportion of youth exposed to secondhand smoke or vape	CHIS

Measure	Data Source
CESSATION	
• **Kick It California Enrollees**: Proportion of Kick It California enrollees	Kick It CA[3]
• **Quitting**: Proportion of smokers who tried quitting in the last 12 months	CHIS
• **Doctor Advice to Quit**: Proportion of smokers whose doctors advised them to quit	CHIS

Abbreviations: CDTFA, California Department of Tax and Fee Administration; CHIS, California Health Interview Survey; Kick It CA, Kick It California; CYTS, California Youth Tobacco Survey; HSHC, Healthy Stores for a Health Community.
Notes: (1) Matched to data from the American Community Survey (ACS). (2) Matched to data from the 2010 Decennial Census. (3) Kick It CA data is compared to the percentage of current adult smokers from CHIS and not the general population.

A. California Department of Tax and Fee Administration Measures

The March 2024 list of licensed tobacco retailers from the California Department of Tax and Fee Administration (CDTFA) was matched to the 2018-2022 American Community Survey (ACS) data and the 2010 Decennial Census. The data were analyzed to produce results for the following indicator:

- **Tobacco Stores**: Density of stores selling tobacco per 100,000 residents

ACS is a mixed-mode survey conducted by the US Census Bureau and provides estimates of community characteristics at the census-tract level. For each priority population (except for the Rural Communities), ACS data were used to estimate the proportion of the priority population among census tracts in California. The number of stores in the highest 5% of census tracts for each priority population was then divided by the total population in those census tracts and multiplied by 100,000. The total population in each census tract includes all residents, both those in the priority population group and those not in the group. Census tracts with zero population were removed from the analysis.

Results for the rural priority population group were calculated by dividing the number of stores in ZIP Code Tabulation Areas (ZCTAs) with fewer than 500 people per square mile by the total population for those ZCTAs, multiplied by 100,000. ZCTAs with zero population were removed from the analysis. ZCTAs are geographical approximations of

zip codes developed by the US Census Bureau. The US Census Bureau generated county-level land area in square miles for the 2010 Decennial Census.

Results were calculated for priority populations using the definitions from ACS and the US Census Bureau:

- **African American/Black**: Black or African American, not Hispanic or Latino
- **American Indian**: American Indian or Alaska Native, not Hispanic or Latino
- **Asian/Pacific Islander**
  - **Asian**: Asian alone, not Hispanic or Latino
  - **Pacific Islander**: Native Hawaiian or other Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino**: Hispanic or Latino
- **Low Income**: People living in households below 185% of the Federal Poverty Level.
- **LGBTQ**: Unmarried-partner same-sex households (male household and male partner, and female household and female partner).
- **Rural Communities**: People living in ZCTAs with fewer than 500 people per square mile.

Data was not available for the following priority population: **People with Mental Health Challenges**.

Data is not disaggregated by Asian and Pacific Islander groups as the original ACS data was collected by entities outside of CDPH and did not include disaggregated data.

For the "Tobacco Stores" measure, a "thumbs up" icon indicates that the estimate is at least 10.0 stores per 100,000 *lower* than the general population. A "thumbs down" icon indicates that the estimate is at least 10.0 stores per 100,000 *higher* than the general population

B. California Health Interview Survey Measures

The 2017, 2018, 2021, 2022, and 2023 California Health Interview Survey (CHIS) data were analyzed to produce results for the following measures:

- **Adult Cigarette Use**: Adult cigarette smoking prevalence

- **Change in Adult Cigarette Use**: Rate of change in adult cigarette smoking, 2018 to 2023[1]
- **Adult Tobacco Use**: Adult tobacco use prevalence (e.g. cigarettes, e-cigarettes and other vaping products, other tobacco products)
- **Smokefree Homes**: Proportion of adults with smokefree homes
- **Adult Secondhand Tobacco Exposure**: Proportion of adults exposed to secondhand smoke or e-cigarette vapor
- **Quitting**: Proportion of smokers who tried quitting in the last 12 months
- **Doctor Advice to Quit**: Proportion of smokers whose doctors advised them to quit

CHIS is a population-based survey of the residential, non-institutionalized population in California. CHIS utilizes a large sample size to increase the statistical power and provide county-level health and health-related estimates for adults in most counties. The survey is conducted by the University of California, Los Angeles (UCLA) Center for Health Policy Research in partnership with the California Department of Health Care Services (DHCS), CDPH, and other public and private organizations. Since 2011, CHIS data has been collected on a continuous basis with annual data releases. Prior to 2011, CHIS data were collected during a seven- to nine-month period every other year.

The final sample size was 21,153 adult respondents for the 2017 survey, 21,177 adult respondents for the 2018 survey, 24,453 adult respondents for the 2021 survey, 21,463 adult respondents for the 2022 survey, and 21,671 adult respondents for the 2023 survey. To achieve statistically stable estimates for priority population groups, the 2017 and 2018 survey data were pooled together, the 2021 and 2022 survey data were pooled together, and the 2022 and 2023 survey data were pooled together. The data was weighted to represent the non-institutionalized California population and to compensate for the probability of selection and factors from the sampling design and administration of the survey.

Adult cigarette prevalence is based on current smoking habits. Adults who have not smoked more than 100 or more cigarettes in their lifetime are classified as non-smokers. Adult tobacco use prevalence is based on current or past 30-day use of either cigarettes, big cigars, little cigars or cigarillos, chewing tobacco, snuff, snus, hookah, or

[1] Caution should be utilized for the "Change in Adult Cigarette Use" measure due to changing methodology between CHIS 2017-18 and CHIS 2012-23.

e-cigarettes and other vaping products. Smokefree homes are defined as a household policy in which smoking and vaping is wholly prohibited inside the house. Secondhand tobacco exposure is based on exposure of secondhand tobacco smoke or e-cigarette vapor in the past two weeks in California. Quit attempt is based on current smokers who had stopped smoking for one day or longer to try to quit smoking during the past 12 months. Doctor advice to quit is based on current smokers who were advised to quit smoking by a doctor or other health professional in the past 12 months.

Results were calculated for priority populations using the definitions from CHIS:

- **African American/Black**: Black or African American, not Hispanic or Latino
- **American Indian**: American Indian or Alaska Native, not Hispanic or Latino
- **Asian/Pacific Islander**: Asian, Native Hawaiian, or other Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino**: Hispanic or Latino
- **Low Income**: People living in households below 185% of the Federal Poverty Level.
- **LGBTQ**: People who identify as lesbian, gay, bisexual, or transgender. Data is not available for people identifying as another sexual orientation or gender identity.
- **People with Mental Health Challenges**: People who likely had serious psychological distress during the past month based on the Kessler Psychological Distress Scale (K6).
- **Rural Communities**: People who live in an area with fewer than 1,000 people per square mile, as defined by Nielsen Consumer Activation.

Due to statistical unreliability the following demographic groups are not presented: Asian and Pacific Islander groups. Presenting data for these groups may result in misleading estimates of underlying patterns and trends because they do not meet a statistical reliability threshold of having a coefficient of variation of less than 0.3 (or 30 percent).

For the “Adult Cigarette Use”, “Adult Tobacco Use”, and “Adult Secondhand Tobacco Exposure” measures, a “thumbs up” icon indicates that the estimate is *lower* than the general population’s estimate and the 95% confidence interval do not overlap. A “thumbs down” icon indicates that the estimate is *higher* than the general population’s estimate and the 95% confidence interval do not overlap.

For the “Change in Adult Cigarette Use” measure, a “thumbs up” icon indicates that the 2023 estimate is *lower* than the population’s 2018 estimate and the 95% confidence

interval do not overlap. A "thumbs down" icon indicates that the 2023 estimate is *higher* than the population's 2018 estimate and the 95% confidence interval do not overlap.

For the "Smokefree Homes", "Quitting", and "Doctor Advice to Quit" measure, a "thumbs up" icon indicates that the estimate is *higher* than the general population's estimate and the 95% confidence interval do not overlap. A "thumbs down" icon indicates that the estimate is *lower* than the general population's estimate and the 95% confidence interval do not overlap.

C. Kick It California Measures

Data from January to December 2024 Kick It California[2] reports were analyzed to produce results for the following indicator:

- **Kick It California Enrollees**: Proportion of Kick It California enrollees

Kick It California releases aggregate data to CTPP about users who completed intake when contacting the Helpline. Reports include age, gender, ethnicity, language spoken, Medi-Cal coverage, referral source, and county of residence. The number of individuals who completed an intake form and agreed to receive services from Kick It California between January and December 2024 was 29,044.

Results were calculated for priority populations using the definitions from Kick It California:

- **African American/Black**: Black or African American, not Hispanic or Latino
- **American Indian**: American Indian or Alaska Native, not Hispanic or Latino
- **Asian/Pacific Islander**: Asian or Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino**: Hispanic or Latino
- **LGBTQ**: People who identify as lesbian, gay, or bisexual. Data is not available for people identifying as another sexual orientation or gender identity. Sexual orientation is not ascertained of callers to the Asian Smokers' Quitline.
- **People with Mental Health Challenges**: People reported having one or more of the following conditions: anxiety, depression, bipolar disorder, schizophrenia, or substance abuse disorder.

[2] The California Smokers' Helpline was rebranded to Kick It California in September 2021.

Data is not disaggregated by Asian and Pacific Islander groups as the original data was collected by entities outside of CDPH and did not include disaggregated data.

These data were not available for the following priority population: **Low-Income** or **Rural Communities**.

For the "Kick It California Enrollees" measure, a "thumbs up" icon indicates that the estimate is *higher* than the population's make-up of California's adult smokers and the 95% confidence interval do not overlap. A "thumbs down" icon indicates that the estimate is *lower* than the population's make-up of California's adult smokers and the 95% confidence interval do not overlap.

D. California Youth Tobacco Survey Measures

The 2016 and 2024 California Youth Tobacco Survey (CYTS), previously known as the California Student Tobacco Survey (CSTS), produced results for the following indicators:

- **Youth Cigarette Use**: Youth cigarette smoking prevalence
- **Change in Youth Cigarette Use**: Rate of change in youth cigarette smoking, 2016 to 2024
- **Youth Tobacco Use**: Youth tobacco use prevalence (including all tobacco products, e.g. cigarettes, e-cigarettes and other vaping products, other tobacco products)
- **Youth Secondhand Tobacco Exposure**: Proportion of youth exposed to secondhand smoke or vape

The CYTS has been administered annually to 8th-, 10th-, and 12th-grade students in California since 2021, and biennially before that. The 2016 survey was conducted using both paper surveys and online surveys before switching to an online only survey in 2018. The 2016 sample only consists of public and non-sectarian schools, the 2024 CYTS sampling frame was constructed of public schools and private schools from the California Department of Education website. For the *Story of Inequity*, high school students were the measure of interest. For the 2016 CSTS the sample size was 41,821 high school students. For the 2024 CYTS the sample size was 12,648 high school students.

The survey assesses the use of, knowledge of, and attitudes toward tobacco products, including cigarettes, vapes, little cigars or cigarillos, cigars, hookah, smokeless tobacco,

heated tobacco products (HTPs), and nicotine pouches. The survey also examined social and environmental exposure to tobacco. Cannabis and alcohol were included in the survey because the co-use of cannabis and alcohol with tobacco products is common.

Youth cigarette prevalence is based on past 30-day use of cigarettes. Youth tobacco use prevalence is based on past 30-day use of either vapes (sometimes called by their brand names (e.g., Puff Bar, Bang Bar, JUUL) or by terms such as e-cigarettes, vape pens, personal vaporizers and mods, e-cigars, e-pipes, e-hookahs, and hookah pens.), cigarettes, little cigars or cigarillos, cigars, hookah, smokeless tobacco (chewing tobacco, snuff, snus, dip, or dissolvable tobacco), heated tobacco products, or nicotine pouches. Secondhand smoke or vape exposure is based on being in a car or in a room where someone was either smoking a cigarette, little cigar, or cigarillo in the past 30 days, or using an e-cigarette or other vaping product in the past 30 days.

Results were calculated for priority populations using the definitions from CYTS:

- **African American/Black**: Black or African American, not Hispanic or Latino
- **American Indian**: American Indian or Alaska Native, not Hispanic or Latino
- **Asian/Pacific Islander**
  - **Asian**: Asian, not Hispanic or Latino
  - **Pacific Islander**: Native Hawaiian or Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino**: Hispanic or Latino
- **LGBTQ:** Youth were classified as LGBTQ+ if they reported a transgender or "something else" gender identity and/or identified their sexual orientation as gay or lesbian, bisexual, or "something else." While respondents who selected unsure or "don't know" for gender identity or sexual orientation were assigned an unclear LGBTQ+ status.
- **People with Mental Health Challenges**: Youth who rate their mental health as fair or poor.
- **Rural Communities**: Youth who currently attend a school located in a town or a rural locale, as defined by the National Center for Education Statistics.

Due to statistical unreliability the following demographic groups are not presented: Asian and Pacific Islander groups. Estimates for this group were suppressed due to small sample sizes—specifically, a nominal or effective sample size less than 30.

These data were not available for the following priority population: **Low Income**.

For the “Youth Cigarette Use”, “Youth Tobacco Use”, and “Youth Secondhand Tobacco Exposure” measures, a “thumbs up” icon indicates that the estimate is *lower* than the general population’s estimate and the 95% confidence interval do not overlap. A “thumbs down” icon indicates that the estimate is *higher* than the general population’s estimate and the 95% confidence interval do not overlap.

For the “Change in Youth Cigarette Use” measure, a “thumbs up” icon indicates that the 2024 estimate is *lower* than the population’s 2016 estimate and the 95% confidence interval do not overlap. A “thumbs down” icon indicates that the 2024 estimate is *higher* than the population’s 2016 estimate and the 95% confidence interval do not overlap.

E. Healthy Stores for a Healthy Community Measures

The 2019 Healthy Stores for a Healthy Community (HSHC) retail survey data were matched to the 2014-2018 ACS data and analyzed to produce results for the following measures:

- **Cheapest Cigarettes**: Average price for the cheapest pack of cigarettes
- **Tobacco Advertising**: Proportion of stores that keep 90% of their storefronts free from any advertising

The HSHC retail survey was a statewide data collection effort conducted by CTPP in coordination with the Nutrition Education and Obesity Prevention Branch, Chronic Disease Control Branch, and the Sexually Transmitted Diseases Control Branch at CDPH, as well as the Substance Use Disorders Program at the California DHCS. The observational survey of tobacco retail stores began in 2013 and is conducted every three years, measuring the availability of a range of unhealthy and healthy products, as well as marketing practices for tobacco, alcohol, and food and beverage items. HSHC retail survey data were used to estimate the average price for the cheapest pack of cigarettes sold in stores and the proportion of stores with less than 10% of the storefront covered by signs.

The sampling frame for the HSHC retail survey was based on the CDTFA list of licensed tobacco retailers. Zip codes were randomly selected within each county as well as in three funded municipal agencies to ensure a sufficient sample size for each county and funded municipality. The final statewide random sample size was 7,969 stores in 2019.

ACS data were used to estimate the proportion of the priority population among census tracts in California. Store neighborhoods were defined by their census tract characteristics. Results for HSHC measures were generated for each group by ranking all stores in the sample by their neighborhood characteristics. Stores ranked in the highest 20% for each neighborhood characteristic were included in the analysis. For example, the results for the average price of the cheapest pack of cigarettes for the African American/Black population is the average price sold in the 20% of surveyed stores with the largest proportion of non-Hispanic African American/Black residents.

Results for the rural group were calculated by analyzing HSHC survey results in only rural ZCTAs, where a rural zip code was defined as a ZCTA with less than 500 people per square mile.

Results were calculated for priority populations using the definitions from ACS:

- **African American/Black**: Black or African American, not Hispanic or Latino
- **American Indian**: American Indian or Alaska Native, not Hispanic or Latino
- **Asian/Pacific Islander**
    - **Asian**: Asian alone, not Hispanic or Latino
    - **Pacific Islander**: Native Hawaiian or other Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino**: Hispanic or Latino
- **Low Income**: People living in households below 185% of the Federal Poverty Level
- **LGBTQ**: Unmarried-partner same-sex households (male household and male partner, and female household and female partner).
- **Rural Communities**: People living in ZCTAs with fewer than 500 people per square mile.

Data was not available for the following priority population: **People with Mental Health Challenges**.

Data is not disaggregated by Asian and Pacific Islander groups as the original ACS data was collected by entities outside of CDPH and did not include disaggregated data.

For the “Cheapest Cigarettes” and “Tobacco Advertising” measures, a “thumbs up” icon indicates that the estimate is *higher* than the general population’s estimate and the 95% confidence interval do not overlap. A “thumbs down” icon indicates that the estimate is *lower* than the general population’s estimate and the 95% confidence interval do not overlap.