

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

April 2018

## 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 Control Program (CTCP) in June 2013. The published summit proceedings can be found here: [Advancing Health Equity in Tobacco Control](#). Additional guidance from stakeholders on the development of *A Story of Inequity* was obtained as a result of three regional Health Equity Roundtables held in 2014. The summary report can be found here: [Health Equity Roundtables](#).

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

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

It is CTCP's intent to align *A Story of Inequity* with the tobacco-related priority populations identified in the [Tobacco Education and Research Oversight Committee \(TEROC\) Master Plan](#). These groups are those that have higher rates of tobacco use and tobacco-related disease than 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 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 (LGBT) people
- Rural residents
- Current members of the military and veterans
- Individuals employed in jobs or occupations not covered by smoke-free workplace laws
- People with substance use disorders or behavioral health issues
- People with disabilities
- Formerly incarcerated individuals

*A Story of Inequity* displays data for the following eight population groups:

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

### **Measure/Population Selection and Methodology**

Eighteen measures were chosen based on internal and external stakeholder input, data availability, and program priorities. Table 1 identifies each indicator and its data source. Several data sources were used for *A Story of Inequity*. Not all measures will have data for all priority population of interest, due to limitations of each data source. Data are available for the majority of measures highlighted on *A Story of Inequity*. Additionally, these eight population groups are the focus of CTCP's *Initiative to Reduce Tobacco-Related Disparities* through 2020.

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

<b>Measures</b>	<b>Main Data Source</b>
<b>ADULT TOBACCO USE</b>	
Adult Cigarette Use	
Adult cigarette smoking prevalence .....	CHIS
Change in Adult Cigarette Use	
Rate of change in adult cigarette smoking, 2007 to 2014.....	CHIS
Adult Tobacco Use	
Adult tobacco use prevalence (including all tobacco products, e.g. cigarettes, e-cigarettes, other tobacco products).....	BRFSS
<b>YOUTH TOBACCO USE</b>	
Youth Cigarette Use	
Youth cigarette smoking prevalence .....	CSTS
Change in Youth Tobacco Use	
Rate of change in youth cigarette smoking, 2002 to 2016.....	CSTS
Youth Tobacco Use	
Youth tobacco use prevalence (including all tobacco products, e.g. cigarettes, e-cigarettes, other tobacco products).....	CSTS
<b>AVAILABILITY OF TOBACCO &amp; TOBACCO INDUSTRY INFLUENCE</b>	
Cheapest Cigarettes	
Average price for the cheapest pack of cigarettes.....	HSHC <sup>1</sup>
Flavored Little Cigar Price	
Average price for a single flavored little cigar/cigarillo .....	HSHC <sup>1</sup>
Tobacco Retail Licensing	
Proportion of population protected by a strong tobacco retail licensing law .....	PETS <sup>1,2</sup>
Tobacco Stores	
Density of stores selling tobacco per 100,000 residents.....	CDTFA <sup>1</sup>
Flavored Tobacco	
Proportion of stores that sell flavored non-cigarette tobacco products.....	HSHC <sup>1</sup>
Menthol Cigarettes	
Proportion of stores that sell menthol cigarettes.....	HSHC <sup>1</sup>
Tobacco Advertising	
Percentage of stores that keep 90% of their storefront free from any advertising.....	HSHC <sup>1</sup>
<b>SECONDHAND SMOKE</b>	
Smoke-free Multi-unit Housing	
Proportion of population protected by a smoke-free multi-unit housing law .....	PETS <sup>1,2</sup>
Smoke-free Homes	
Proportion of smoke-free homes.....	BRFSS
<b>CESSATION</b>	
California Smokers' Helpline Enrollees	
Proportion of California Smokers' Helpline enrollees.....	CSH <sup>3</sup>
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 .....	Online CATS

**Abbreviations:** HSHC, Healthy Stores for a Health Community; CHIS, California Health Interview Survey; BRFSS, Behavioral Risk Factor Surveillance System; PETS, Policy Evaluation Tracking System; CDTFA, California Department of Taxes and Fees Administration; CSH, California Smokers' Helpline; Online CATS, Online California Adult Tobacco Survey.

**Notes:** (1) Matched to data from the American Community Survey (ACS). (2) Matched to data from the U.S. Census Bureau. (3) CSH data compared to percent of smokers from CHIS and not the general population.

## **A. Behavioral Risk Factor Surveillance System Measures**

The 2013 and 2014 California Behavioral Risk Factor Survey, also known as the California Behavioral Risk Factor Surveillance System (BRFSS), data were analyzed to produce results for the following measures:

- Adult tobacco use prevalence (including all tobacco products, e.g. cigarettes, e-cigarettes, other tobacco products)
- Proportion of smoke-free homes

California BRFSS is an [annual random-dial telephone health survey](#) of randomly selected California adults to gather data on health-related risk behaviors, chronic health conditions, and preventive service usage. The 2013 survey was conducted by the Survey Research Group of the Public Health Institute and the 2014 survey was conducted by the Public Health Survey Research Program of the California State University, Sacramento, both in collaboration with the California Department of Public Health (CDPH) and the Centers for Disease Control and Prevention (CDC).

The final sample size for the 2013 survey is 11,214 adult respondents and for the 2014 survey is 8,832 adult respondents. The survey is structured into three tracks, with respondents only answering questions in one of the three tracks that had been selected for them. All tracks contain the CDC core survey, but individual tracks contain different optional modules. The analytic sample for the measures of interest are respondents who were selected for the third track (2013, n=3,355; 2014, n=2,819), as the questions of interests were only asked in the third track. To achieve statistically stable estimates for priority population groups, the 2013 and 2014 surveys were pooled together. The data is weighted to represent the non-institutionalized California population.

Adult tobacco use prevalence is based on current use of either cigarettes, cigars, little cigars or cigarillos, chewing tobacco, snuff, snus, hookah, or electronic cigarettes. A “smoke-free home” is defined as a household policy in which smoking is wholly prohibited inside the house.

Results were produced for priority population groups using the definitions from BRFSS:

- **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
- **Low Income:** People living at or below 185 percent of the Federal Poverty Level
- **Lesbian, Gay, Bisexual, Transgender, Queer (LGBTQ):** People who identify as gay, lesbian, homosexual, or bisexual. Data not available for people identifying as transgender or queer.
- **People with Mental Health Challenges:** People experiencing one or more days when their mental health was not good in the past 30 days.

These data were not available for the following population groups: **Rural Communities.**

## **B. California Department of Taxes and Fees Administration Indicator**

The list of licensed tobacco retailers from the California Department of Taxes and Fees Administration (CDTFA) was matched to the 2011-2015 American Community Survey (ACS) data. The data was analyzed to produce results for the following indicator:

- Density of stores selling tobacco per 100,000 residents

ACS is [mixed-mode survey](#) conducted by the U.S. Census Bureau and provides estimates of community characteristics at the census-tract level. ACS data were used to estimate the proportion of the total population of each census tract in California that was made up by each priority population. The number of stores in the highest five percent of all California census tracts for each priority population was then divided by 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 0 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 analysis. ZCTAs are geographical approximations of zip codes developed by the U.S. Census Bureau.

Results were produced for priority population groups 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 below 185% of the Federal Poverty Level
- **LGBTQ:** Unmarried-partner same-sex households (male household and male partner, and female household and female partner). Data not available for people identifying as transgender or queer.
- **Rural Communities:** People living in ZCTAs with fewer than 500 people per square mile.

These data were not available for the following population groups: **People with Mental Health Challenges.**

## **C. California Health Interview Survey Measures**

The 2007, 2013, and 2014 California Health Interview Survey (CHIS) data were analyzed to produce results for the following measures:

- Adult cigarette smoking prevalence
- Rate of change in adult cigarette smoking, 2007 to 2014
- Proportion of smokers who tried quitting in the last 12 months

CHIS is a [population-based random-digit dial telephone survey](#) of the residential, non-institutionalized population in California. CHIS utilizes a large sample size in order to increase the statistical power and to 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, in partnership with the California Department of Health Care Services (DHCS) and CDPH. Since 2011, CHIS data have 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 is 51,048 adult respondents for the 2007 survey, 20,724 adult respondents for the 2013 survey, and 19,516 adult respondents for the 2014 survey. Due to the switch to continuous data collection and annual data releases starting in 2011, the one-year data files contain smaller sample sizes. To achieve statistically stable estimates for priority population groups, the 2013 and 2014 survey data were pooled together. The data is weighted to represent the non-institutionalized California population, to compensate for the probability of selection and factors from the sampling design and administration of the survey.

Results for CHIS measures were produced using [AskCHIS](#), the publicly available web-based query system developed by the UCLA Center for Health Policy. Adult cigarette prevalence is based on current smoking habits. Adults who have not smoked more than 100 or more cigarettes are classified as non-smokers. Quit attempts is based on current smokers who had stopped smoking for one day or longer to try to quit smoking during the past 12 months.

Results were produced for priority population groups 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 below 185 percent of the Federal Poverty Level
- **LGBTQ:** People who identify as gay, lesbian, homosexual, or bisexual. Data not available for people identifying as transgender or queer.
- **Rural Communities:** People who live in an area with fewer than 1,000 people per square mile, as defined by the Nielsen Consumer Activation
- **People with Mental Health Challenges:** People who likely had serious psychological distress during the past month based on the Kessler Psychological Distress Scale (K6).

## **D. California Smokers' Helpline Measures**

Data from the July to December 2016 California Smokers' Helpline (CSH) call reports were analyzed to produce results for the following indicator:

- Proportion of California Smokers' Helpline enrollees

CSH publishes [aggregate data about callers](#) who completed intake to the Helpline biannually. Reports include age, gender, ethnicity, language spoken, referral source, and caller's county of residence. Data on Medi-Cal enrollees was provided to CTCP from the California Smokers' Helpline. The total number of CSH enrollees between July and December 2016 was 10,144.

Results for this indicator were produced for priority population groups using the definitions from CSH:

- **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
- **Low Income:** People enrolled in Medi-Cal, a program that offers free or low-cost health coverage for children and adults with limited income and resources.
- **LGBTQ:** People identifying as lesbian, gay or bisexual. Data not available for people identifying as transgender or queer.
- **People with Mental Health Challenges:** People reporting one or more of the following conditions: anxiety, depression, bipolar disorder, schizophrenia, or substance abuse disorder.

These data were not available for the following population groups: **Rural Communities**.

## **E. California Student Tobacco Survey Measures**

The 2001-02 and 2015-16 California Student Tobacco Survey (CSTS) data were analyzed to produce results for the following indicators:

- Youth cigarette smoking prevalence
- Rate of change in youth cigarette smoking, 2002 to 2016
- Youth tobacco use prevalence (including all tobacco products, e.g. cigarettes, e-cigarettes, other tobacco products)

The CSTS assesses behavior, attitude, and tobacco usage from middle school and high school students in California. WestEd conducted the 2001-02 CSTS and the University of California, San Diego conducted the 2015-16 survey, both in collaboration with CTCP. The 2001-02 survey was conducted using a paper survey, while the 2015-16 survey was conducted using both paper surveys and online surveys. The latest cycle utilizes a multi-stage cluster sampling design. The sample only consists of public and non-sectarian schools. Schools that were special education only, juvenile court schools, district/county community schools, continuation high schools, online-only schools, or other alternative schools were excluded.

The final sample size is 18,668 students from 325 randomly selected schools for the 2001-02 survey and 47,981 students from 117 randomly selected schools for the 2015-16 survey. The analytic sample for the CSTS measures of interest are only of high school students (2001-02, n=12,312; 2015-16, n= 41,821). The data is weighted to account for the probability of selection.

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 cigarettes, little cigars or cigarillos, big cigars, kreteks, hookah, e-cigarettes (including vape pens, tanks, mods, e-hookah, and hookah pens), or smokeless tobacco (including chew, dip, snuff, and snus).

Results were produced for priority population groups using the definitions from CSTS:

- **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 other Pacific Islander, not Hispanic or Latino
- **Hispanic/Latino:** Hispanic or Latino

These data were not available for the following population groups: **Low Income, LGBTQ, People with Mental Health Challenges, or Rural Communities.**

## **F. Healthy Stores for a Healthy Community Measures**

The 2016 Healthy Stores for a Healthy Community (HSHC) marketing survey data was matched to the 2011-2015 ACS data and analyzed to produce results for the following measures:

- Average price for the cheapest pack of cigarettes
- Average price for a single flavored little cigar/cigarillo
- Proportion of stores that sell flavored non-cigarette tobacco products
- Proportion of stores that sell menthol cigarettes
- Proportion of stores with less than 10 percent of the storefront covered by any advertising

The HSHC marketing survey is a statewide data collection effort conducted by CTCP in coordination with the Nutrition Education and Obesity Prevention, Chronic Disease Control Branch, and the Sexually Transmitted Diseases Control Branches 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 marketing survey data were used to estimate the estimate measures on the average price for the cheapest pack of cigarettes sold in stores, the average price of a single Swisher Sweet cigarillo, retail availability of flavored tobacco and menthol cigarettes, and the proportion of stores with less than 10 percent of the storefront covered by signs.

The sampling frame for the HSHC marketing survey is based on the CDTFA list of licensed tobacco retailers. Zip codes were randomly selected within each county and three funded municipal agencies to ensure a sufficient sample size for each county and funded municipality. The final statewide random sample size in 2016 was 7,152 stores.

ACS data were used to estimate the proportion of the total population of each census tract in California that was made up by each priority population. Store neighborhoods were defined by the characteristics of the census tracts in which they were located. Results for HSHC measures were generated for each group by ranking all stores in the random sample by their store neighborhood characteristics; that is, the proportion of the population made up by each group in the census tract in which the store was located. Stores ranked in the highest 20 percent for each neighborhood characteristic were included in the analysis. For example, the reported results for the average price of the cheapest pack of cigarettes for the African American/Black group is the average price sold in the 20 percent of surveyed stores with the highest 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 produced for priority population groups 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 below 185 percent of the Federal Poverty Level
- **LGBTQ**: Unmarried-partner same-sex households (male household and male partner, and female household and female partner). Data not available for people identifying as transgender or queer.
- **Rural Communities**: People living in ZCTAs with fewer than 500 people per square mile.

These data were not available for the following population groups: **People with Mental Health Challenges**.

## **G. Online California Adult Tobacco Survey Measures**

The 2016 Online California Adult Tobacco Survey (Online CATS) data were analyzed to produce results for the following indicator:

- Proportion of smokers whose doctors advised them to quit

The GfK Group, in collaboration with CTCP, conducted the 2016 survey. The Online CATS is a probability-based online health survey aimed at assessing tobacco-related behaviors and attitudes of California adults, ages 18 through 64 years old through GfK's [KnowledgePanel](#).

The final sample size is 3,071 adult respondents. The analytic sample size is 635 adult respondents as the Online CATS indicator of interest is only asked of current and former smokers who had smoked within the past year who saw a doctor or other health provider in the past 12 months. The sample was weighted to the California population using benchmarks from the March 2015 Current Population Survey.

Results were produced for priority population groups using the definitions from Online CATS:

- **African American/Black:** Black or African American, not Hispanic or Latino
- **Hispanic/Latino:** Hispanic or Latino
- **Low Income:** People living below 185 percent of the Federal Poverty Level
- **Rural Communities:** People who do not live in a Metropolitan Statistical Area as defined by the U.S. Office of Management and Budget

These data were not available for the following population groups: **American Indian, Asian, Pacific Islander, LGBTQ, or People with Mental Health Challenges.**

## **H. Policy Evaluation Tracking System Measures**

The Policy Evaluation Tracking System (PETS) is a longitudinal policy surveillance database of tobacco control policies in local jurisdictions in California. It was developed for CTCP to meet its tobacco control policy evaluation needs in the areas of tobacco retail licensing (TRL), outdoor secondhand smoke (OSHS), multi-unit housing (MUH), and sampling. Policies are scored in PETS according to a set of instructions for each question on a scoring rubric for each policy type. PETS data were matched with 2009-2013 ACS data and analyzed to produce results for the following measures:

- Proportion of population protected by a strong tobacco retail licensing law
- Proportion of population protected by a smoke-free multi-unit housing law

Data on TRL policies included policies passed as of December 2015, while data on MUH policies included policies passed as of December 2016. The database contains 154 total local TRL laws and 53 total local MUH laws. A strong TRL law is defined as a policy with language that dictates sufficient fees to cover enforcement.

Results were calculated for each priority population group by adding up the total population for each group in jurisdictions with the policy type of interest and then dividing that by the total population for each group statewide. The rural population was defined as people living in jurisdictions with fewer than 500 total population per square mile. The U.S. Census Bureau generated [county-level land area in square miles](#). Unincorporated county land areas were calculated by subtracting the land area for all incorporated areas in that county from the total county land area.

Results for this indicator were produced for priority population groups using the following definitions from the ACS and the U.S. 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 below 185 percent of the Federal Poverty Level
- **Rural Communities:** People living in jurisdictions with fewer than 500 people per square mile.

These data were not available for the following population groups: **People with Mental Health Challenges**.