

# County Health Status Profiles 2021

**CALIFORNIA DEPARTMENT OF PUBLIC HEALTH AND  
CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS  
NATIONAL PUBLIC HEALTH WEEK, APRIL 5-11, 2021**

# COUNTY HEALTH STATUS PROFILES 2021

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## ACKNOWLEDGMENTS

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**Adeola Harewood Smith, PhD**, CDPH, Research Data Specialist I, Vital Statistics Branch, prepared tables, peer reviewed tables, thematic maps, and narrative pages.

**Joshua Endow-Monteiro, PhD**, CDPH, Research Data Specialist II, Vital Statistics Branch, peer reviewed tables, thematic maps, and narrative pages.

**Gloria Munguia, BA**, CDPH, Research Data Analyst II, Vital Statistics Branch, peer reviewed tables.

**Debra Gonzalez**, CDPH, Research Data Specialist II (Retiree), Vital Statistics Branch, consultant on thematic maps.

**Renee Kemp, PhD**, CDPH, Research Data Specialist II, Vital Statistics Branch, consultant on tables and thematic maps.

**Jennifer Rico, MA**, CDPH, Research Scientist III, Vital Statistics Branch, peer reviewed tables, thematic maps, narrative pages, and consulted policies associated with California Health and Human Services (CHHS) Data De-Identification Guidelines.

**Scott Fujimoto, MPH, MD**, CDPH, Public Health Medical Officer, Informatics Branch, reviewed report.

**Denise Gilson**, CDPH, Research Data Supervisor, Sexually Transmitted Disease Control Branch, provided chlamydia, male/female gonorrhea case incidence data, congenital syphilis, as well as reported incidence of primary and secondary syphilis among males and females.

**Saul Kanowitz, MPH**, CDPH, Surveillance Analyst, and **Janice Westenhause, MPH**, Research Scientist Supervisor, CDPH, Tuberculosis Control Branch, provided tuberculosis case incidence data.

**Nannie Song, MPH**, CDPH, Research Scientist II, and **Deanna Sykes, PhD**, Research Scientist Supervisor, CDPH, Office of AIDS, Surveillance Section, provided HIV and AIDS infection data.

**Jennifer Womack, MS**, CDPH, Research Data Supervisor, and staff at the Data Quality and Analysis Unit, collected, coded, amended, and matched the birth and infant death records from the Birth Statistical Master Files and the California Comprehensive Master Death Files to create the Birth Cohort-Perinatal Outcome Files used in this report.

Cover photography: Photograph by Taylor Fedechko: "Crescent City," Del Norte County, California.



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Dear Colleagues:

We are pleased to present California's County Health Status Profiles (*Profiles*) report for 2021. *Profiles* has been published annually for the State of California by the California Department of Public Health (CDPH) and the California Conference of Local Health Officers since 1993, and is updated each year in accordance with priorities developed by CDPH.

*Profiles* (2021) includes the years 2013-2019 and represents the 29<sup>th</sup> annual publication in its series. This publication reports on selected health status indicators recommended by the U.S. Department of Health and Human Services for monitoring state and local progress toward achieving the goals set forth in Healthy People 2020 National Objectives (HP 2020).

The HP 2020 challenges public health professionals to increase the span of high quality healthy lives, achieve health equity, and encourage healthy behaviors for all. This report is an important tool to measure progress toward those goals and to evaluate the health of Californians.

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The thematic maps are color-coded with a unique color scheme based on the health status indicator type.

- Mortality (Tables #1 to 19) = Blue
- Morbidity (Tables #20 to 23M) = Pink
- Birth Cohort Infant Mortality (Tables #24A to 24E) = Green
- Natality (Tables #25 to 27B) = Orange
- Poverty (Table #29) = Brown

# CALIFORNIA COUNTIES

2018 STATEWIDE POPULATION: 39,817,785



State of California, Department of Finance, Demographic Research Unit, State And County Population Projections 2010-2060 [computer file]. Sacramento, California. January 2020.

# INTRODUCTION

The County Health Status Profiles (*Profiles*) is an annually published report for the State of California by the California Department of Public Health (CDPH) in collaboration with the California Conference of Local Health Officers. *Profiles* current report includes data from years 2013-2019 and represents the 29<sup>th</sup> annual publication of its kind since 1993. This report presents public health data that can be directly compared to national standards and populations of similar composition. [Appendix A](#) provides a summary table of California's rates for selected health status indicators, target rates established for Healthy People 2020 National Objectives (HP 2020), and the previous period rates. For additional information on the HP 2020 recommendations, visit the [Centers for Disease Control and Prevention](#).

In keeping with the practice of using national standards, causes of death were coded using the International Classification of Diseases, Tenth Revision (ICD-10). Age-adjusted rates were calculated using the year 2000 U.S. standard population weights to facilitate meaningful comparison of vital statistics data rates over time and between groups.

*Profiles* contains vital statistics that display the total population estimates, event counts, crude case rates, and age-adjusted death rates/percentages by county of residence (except where noted). In these [tables](#), counties are ranked by rates or percentages based on the methodology described in the [Technical Notes](#) section. Data limitations and qualifications are also provided in the Technical Notes section to assist the reader with the interpretation and comparison of the data. For additional information on low event calculations, small area analysis, and age-adjusted death rates, the reader is referred to the [Bibliography](#) section located at the conclusion of this report.

The tables also identify the upper and lower 95 percent confidence limits, which are used to assess the degree of precision for the estimated rates and percentages. Confidence intervals based on 100 or more events are calculated using a normal distribution. In instances with greater than zero and less than 100 events, a gamma distribution is applied to estimate the confidence intervals. For additional information on the use of gamma distributions, please refer to the [National Vital Statistics Report, Volume 68, No. 9, June 24, 2019](#). Confidence intervals are not calculated for zero events.

Vital statistics rates and percentages are subject to random variation, which are inversely related to the number of events/occurrences (e.g., deaths) used to calculate the rates and percentages. Dashes ( - ) indicate those percentages and confidence levels that are not calculated due to zero events. Asterisks ( \* ) indicate rates and percentages that have a relative standard error greater than or equal to 23 or approximately less than 20 events and are considered unreliable. To provide sufficient information to the public in the determination of unreliable rates and percentages, the tables published in the Microsoft Excel workbook on the [Vital Records Data and Statistics web page](#) includes a column for total events. CDPH uses data masking and suppression in order to prevent inadvertent or intentional re-identification of individuals. As a result, some rates, counts, and percentages were masked and suppressed per [California Health and Human Services \(CHHS\) Agency's Data De-Identification Guidelines \(DDG\) standards](#). For further explanation, see the Technical Notes.

Thematic maps of California's 58 counties were created for each table (excluding Table 30), providing the additional visual comparison of rates or percentages from the table. These maps are presented alongside a brief description of the highlights and changes over time for that specific health indicator.

In previous publications, *Profiles* was published as a single PDF document. As an effort to improve accessibility to people with disabilities, *Profiles* (2021) is divided into four parts with tables and the Appendix A published in separate Microsoft Excel workbooks. The public can access Tables 1-27A-B, Table 29, Table 30, and Appendix A on the [Vital Records Data and Statistics](#) web page. Table 28: Breastfeeding Initiation During Early Postpartum is excluded from *Profiles* (2021) due to data unavailability. The Maternal, Child, and Adolescent Health Division was unable to provide the data due to the redirection of staff related to the COVID-19 pandemic.

The California Department of Finance (DOF), Demographic Research Unit, provided the population estimates stratified by county, age, and gender, with the exceptions of Tables 23C, 24A-E, 25, and 27A-27B, where the live births to residents were used. Rates/percentages developed for the current (2017-2019) and previous (2014-2016) periods used 2017 and 2014 population estimates, respectively, from the DOF, as of January 2020. The rates/averages for HIV/AIDS (Table 20) and Infant Mortality (Tables 24A-E), however, are calculated for the current period of 2016 to 2018 and previous period of 2013 to 2015. Table 20 used the 2017 population estimate from DOF and Tables 24A-E used the average number of live births as the denominator, collected by CDPH Center for Health Statistics and Informatics, for each measurement period.

The following CDPH programs provided data for this annual report: Center for Health Statistics and Informatics, Center for Infectious Diseases' Office of AIDS Surveillance Section, Division of Communicable Disease Control's Sexually Transmitted Diseases Control Branch, and Tuberculosis Control Branch.

Estimates of persons under 18 years old in poverty were obtained from the U.S. Census Bureau [Small Area Income and Poverty Estimates \(SAIPE\) Program](#).

To access electronic copies of this report, visit the [Vital Records Data and Statistics](#) web page.

If you would like additional copies, have questions about this report, or desire additional state or county health status data and statistics, please contact:

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## EXECUTIVE SUMMARY

The California Department of Public Health (CDPH) has produced the County Health Status Profiles (*Profiles*) in collaboration with the California Conference of Local Health Officers (CCLHO) since 1993. The health indicators presented in *Profiles* are selected jointly by the CDPH and CCLHO. This series of reports represent a broad historical perspective on the health status of California's counties over a span of 29 years.

*Profiles* provides unique insights that raise awareness of some county health issues. The report presents selected public health indicators and provides California state and county rates or percentages for natality, mortality, infant mortality, and morbidity conditions, assisting the counties in identifying health disparities, inequities, and areas of progress. State and county data are ranked and compared with the target rates established for Healthy People 2020 National Objectives (HP 2020), where available and applicable. The rates and percentages presented are based on a three-year average case count divided by the mid-year population or the average population for the measurement years: 2017-2019 for mortality and morbidity; and 2016-2018 for HIV/AIDS and infant mortality. The percentages for poverty; however, are calculated using the 2018 poverty estimates for persons under 18 years old and divided by the 2018 population. *Profiles* (2021) also presents rates and percentages for the previous three-year period, which refers to the measurement years: 2014-2016 for mortality and morbidity; and 2013-2015 for HIV/AIDS and infant mortality. The measurement years are in calendar years.

Counties are ranked in order by increasing rates or percentages then by decreasing population size. The ranking of counties for Table 27A: Prenatal Care Begun During the First Trimester of Pregnancy and Table 27B: Adequate/Adequate Plus Prenatal Care; however, are done in order by decreasing percentages then by decreasing population size.

Deviating from previous publications, Table 28: Breastfeeding Initiation During Early Postpartum is excluded from *Profiles* 2021 due to data unavailability. The Maternal, Child, and Adolescent Health Division was unable to provide the data due to the redirection of staff related to the COVID-19 pandemic.

### NOTABLE POINTS IN *PROFILES* (2021)

*Profiles* (2021) displays statewide notable improvements for the following health indicators compared to the previous three-year period:

- lung cancer has a reduction in mortality rate by about 15.8 percent and coronary heart disease has a reduction in mortality rate by about 9.0 percent (Tables 4 and 9); and,
- a decrease in the number of births to adolescent mothers between the ages of 15 to 19 years old by about 28.6 percent (Table 26).

*Profiles* (2021) also reveals notable statewide increases in age-adjusted death rates for the following health indicators compared to the previous three-year period:

- the rate for deaths due to accidents or unintentional injuries has increased by about 11.1 percent (Table 14); and,
- the rate for deaths due to drug induced deaths has increased by about 15.3 percent (Table 19).

*Profiles* (2021) reveals an increase in the rates of all measured sexually transmitted infections compared to the previous three-year period:

- the rate of individuals living with HIV/AIDS has increased by about 3.9 percent (Table 20);
- new cases of chlamydia have increased by about 20.2 percent (Table 21);
- new cases of gonorrhea among females between the ages of 15 to 44 years old have increased by about 40.1 percent (Table 22F);
- new cases of gonorrhea among males between the ages of 15 to 44 years old have increased by about 42.2 percent (Table 22M);
- new cases of congenital syphilis have increased by about 145.9 percent. The following counties had more than 500 percent increase of new congenital syphilis cases: Shasta (537.9 percent), Ventura (790.9 percent), Yuba (835.5 percent), and Contra Costa (929.6 percent) (Table 23C);
- new cases of primary and secondary syphilis among the female population have increased by about 130.8 percent (Table 23F); and,
- new cases of primary and secondary syphilis among the male population have increased by about 40.9 percent (Table 23M).

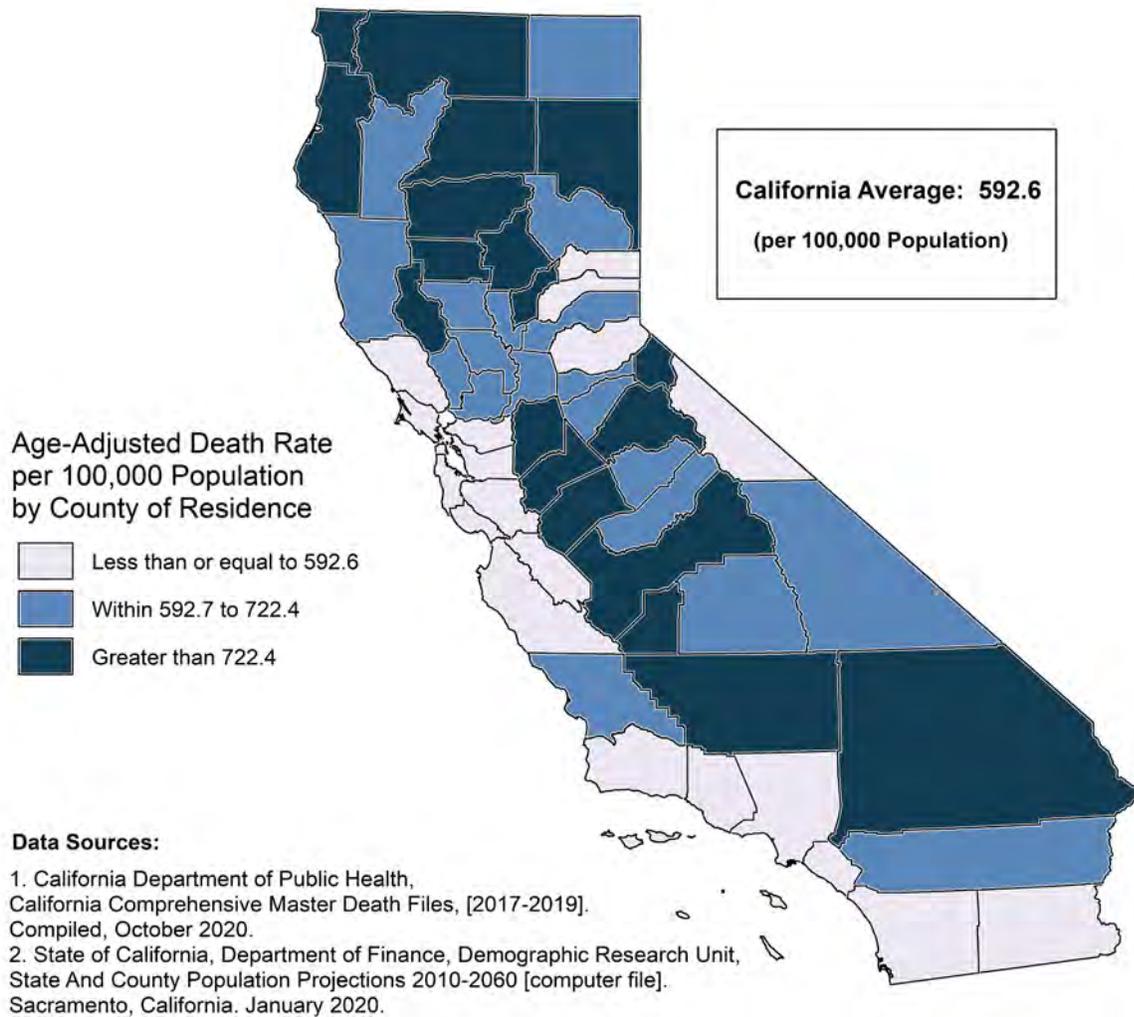
## NOTABLE OUTLIERS

- HIV/AIDS in Amador County: The rate of people living with HIV/AIDS has increased by about 25.0 percent in Amador County, from 497.5 cases per 100,000, as reported in *Profiles* (2020) (measurement years: 2015-2017) to 621.7 cases per 100,000 population for *Profiles* (2021) (measurement years: 2016-2018). The rates reflect the average number of cases for the corresponding three-year measurement period. The increased number in the transfer of inmates to Amador County in 2016 and 2017 has contributed largely to the observed increased rate.
- Alzheimer's Disease in Santa Clara County: Mortality due to Alzheimer's disease has remained an area of high concern for California. As previously observed in *Profiles* (2020), Santa Clara continues to appear to have a substantial increase in deaths due to Alzheimer's compared to the age-adjusted death rate reported in *Profiles* (2020), from 11.6 to 17.1 cases per 100,000 population. This is a pre-existing outlier, and this increase is due to a change in reporting beginning in 2016 that is more in line with the rest of the counties or statewide standard of Alzheimer's diagnosis.

## **VALUES UNIQUE TO CALIFORNIA**

California-specific data are used to create *Profiles*. While most of these data types are also sent to the federal government, standardization issues and other factors mean their availability in a national dataset is often delayed. As a result, *Profiles* typically provides more current data than similar national reports. Due to technical variations in collection and/or estimation, there may be slight differences between numbers for California-specific data versus the national level (an example would be population estimates from DOF versus those of the U.S. Census).

## DEATHS DUE TO ALL CAUSES, 2017-2019



The crude death rate for deaths due to all causes for California averaged 675.3 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 268,880.3 with a population count of 39,817,785 as of July 1, 2018.

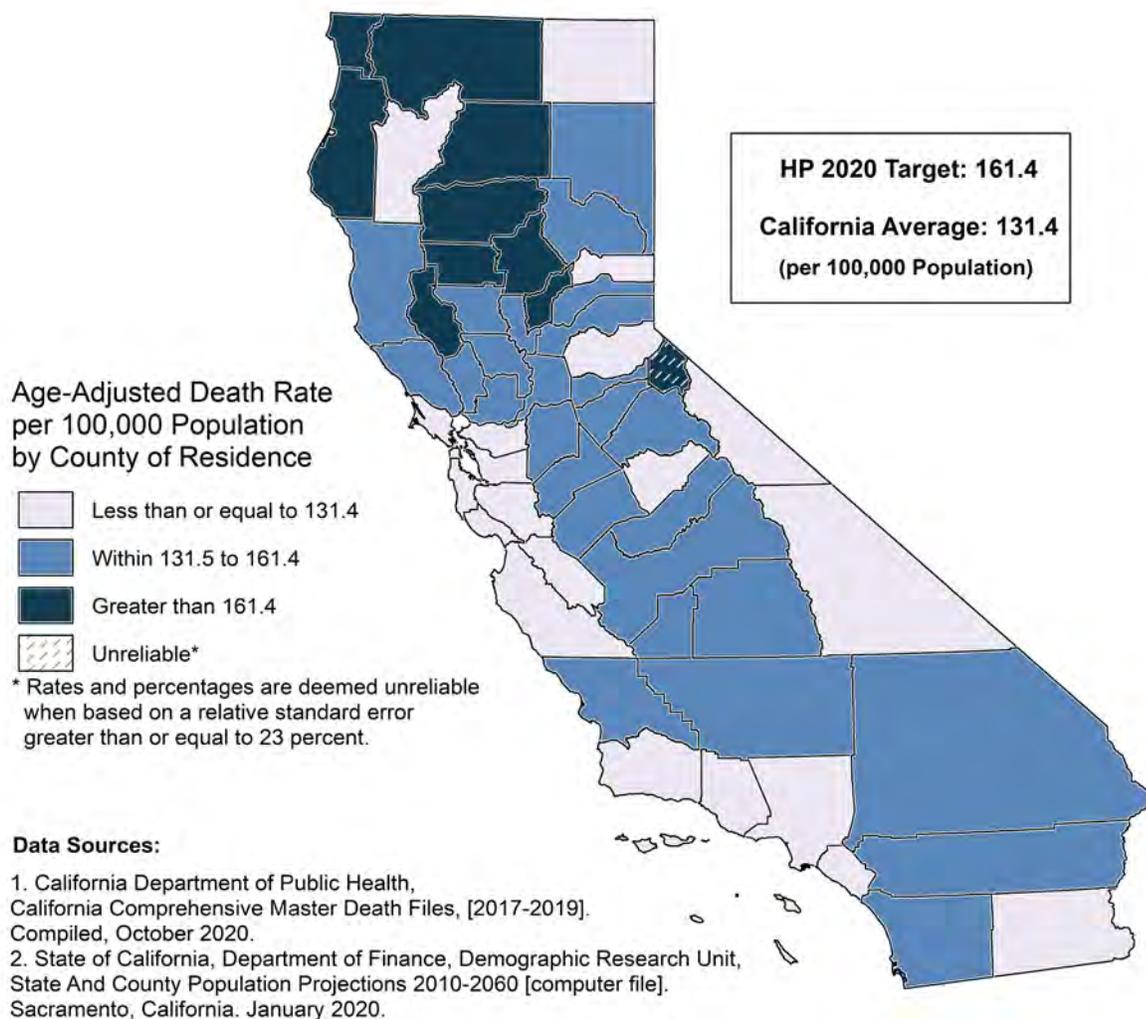
Among counties with reliable rates, the crude death rate ranged from a high of 1,793.1 in Alpine County to a low of 385.7 in Mono County, a factor of 4.6 to 1.

The age-adjusted death rate for deaths due to all causes for California during the 2017 through 2019 three-year period averaged 592.6 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 1,332.8 in Alpine County to a low of 348.3 in Mono County.

A Healthy People 2020 National Objective for deaths due to all causes has not been established.

The California age-adjusted death rate from deaths due to all causes for the 2014-2016 period averaged 606.6 per 100,000 population.

## DEATHS DUE TO ALL CANCERS, 2017-2019



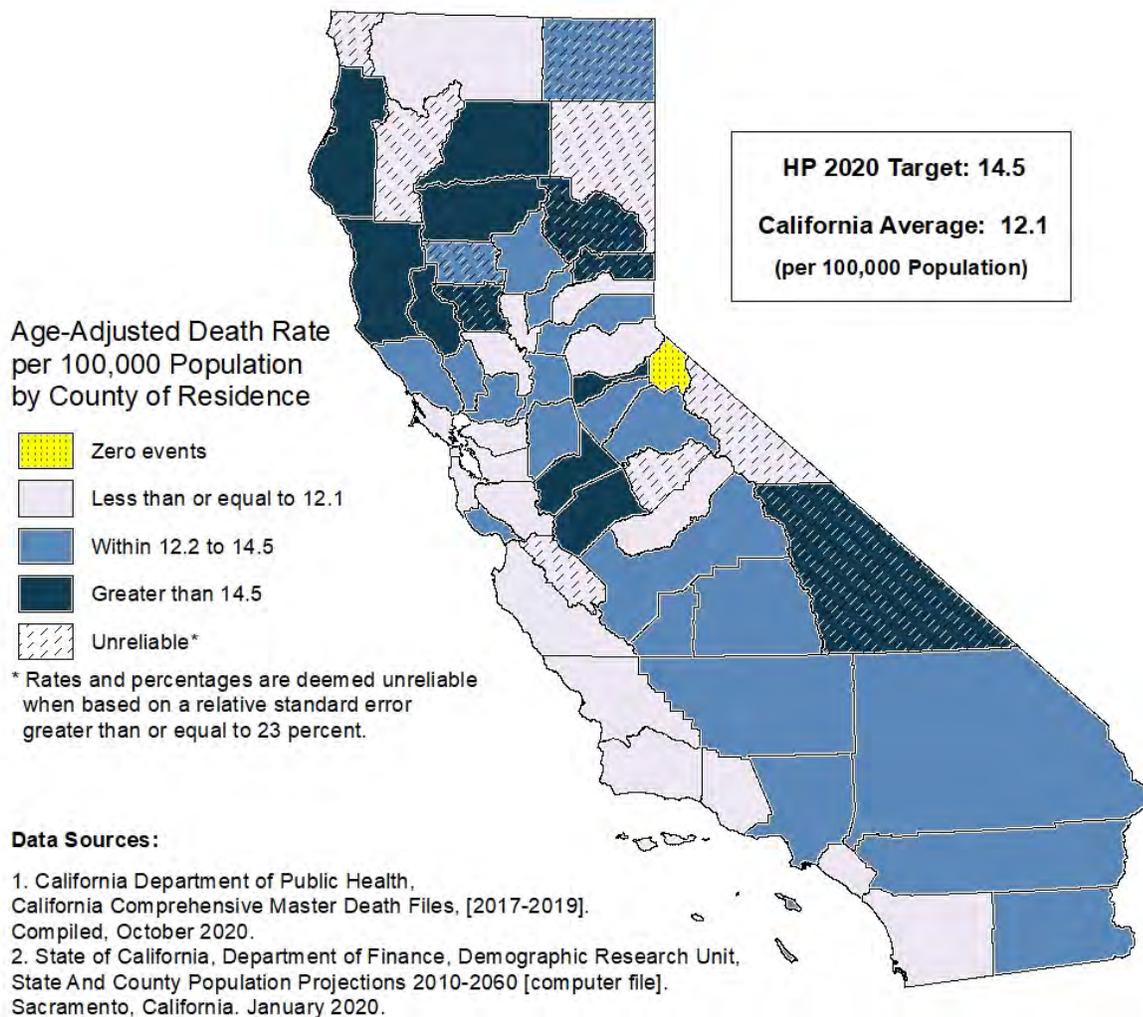
The crude death rate from cancer in California averaged 149.8 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 59,644.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 288.6 in Siskiyou County to a low of 84.4 in Mono County, a factor of 3.4 to 1.

The age-adjusted death rate from cancer for California during the 2017 through 2019 three-year period averaged 131.4 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 187.0 in Yuba County to a low of 68.2 in Mono County.

Forty-eight counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective C-1 of no more than 161.4 age-adjusted deaths due to cancer per 100,000 population.

The California age-adjusted death rate from cancer for the 2014-2016 period averaged 141.0 per 100,000 population.

## DEATHS DUE TO COLORECTAL CANCER, 2017-2019



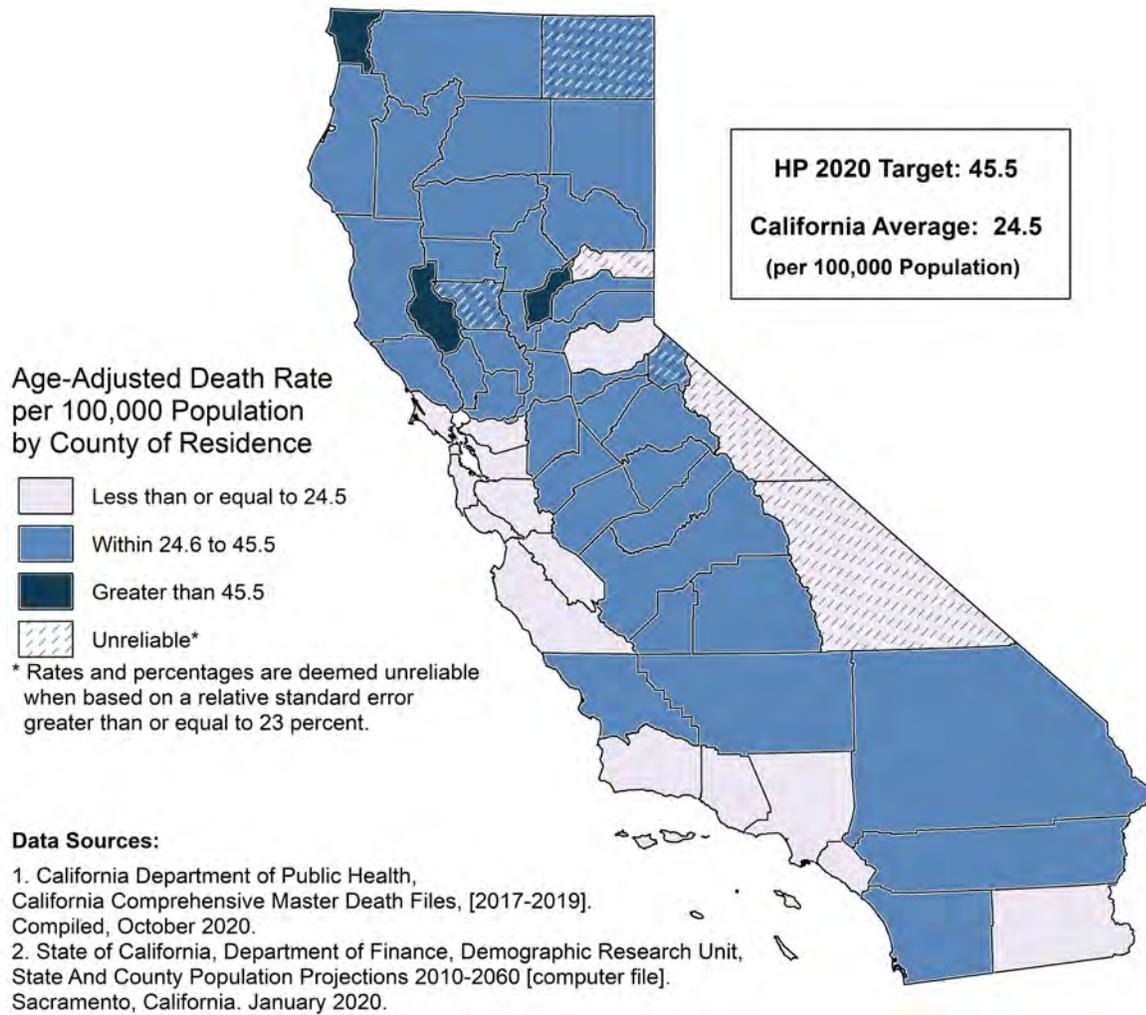
The crude death rate from colorectal cancer for California averaged 13.8 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 through 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 5,484.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 27.1 in Amador County to a low of 10.4 in Kings County, a factor of 2.6 to 1.

The age-adjusted death rate from colorectal cancer for California during the 2017 through 2019 three-year period averaged 12.1 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 17.9 in Lake County to a low of 8.2 in San Mateo County.

Thirty-seven counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective C-5 of no more than 14.5 age-adjusted deaths due to colorectal cancer per 100,000 population. An additional eight counties with unreliable rates and one county with zero deaths due to colorectal cancer also met the objective.

The California age-adjusted death rate from colorectal cancer for the 2014-2016 period averaged 12.8 per 100,000 population.

## DEATHS DUE TO LUNG CANCER, 2017-2019



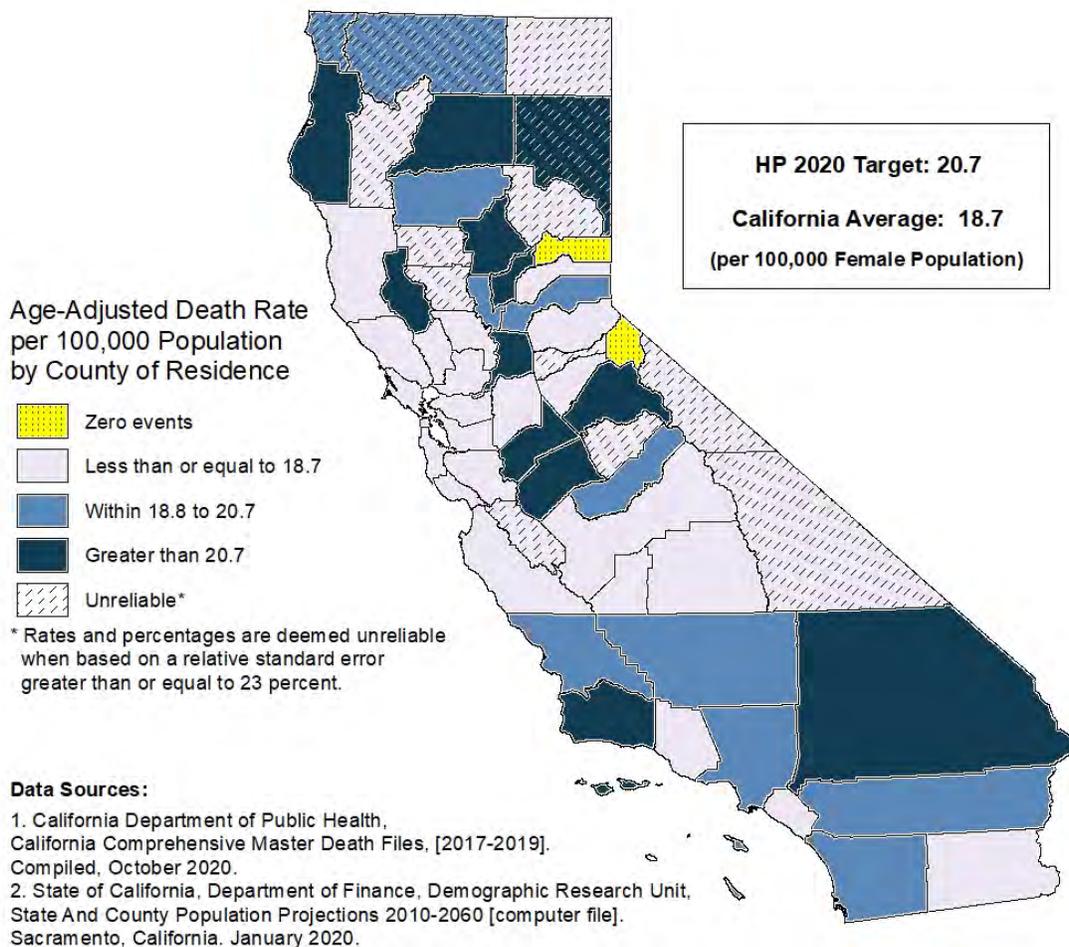
The crude death rate from lung cancer for California averaged 27.9 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 through 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 11,119.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 74.8 in Siskiyou County to a low of 16.2 in Imperial County, a factor of 4.6 to 1.

The age-adjusted death rate from lung cancer for California during the 2017 through 2019 three-year period averaged 24.5 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 50.7 in Yuba County to a low of 16.2 in Imperial County.

Forty-nine counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective C-2 of no more than 45.5 age-adjusted deaths due to lung cancer per 100,000 population. An additional six counties with unreliable rates also met the objective.

The California age-adjusted death rate from lung cancer for the 2014-2016 period averaged 29.1 per 100,000 population.

## DEATHS DUE TO FEMALE BREAST CANCER, 2017-2019



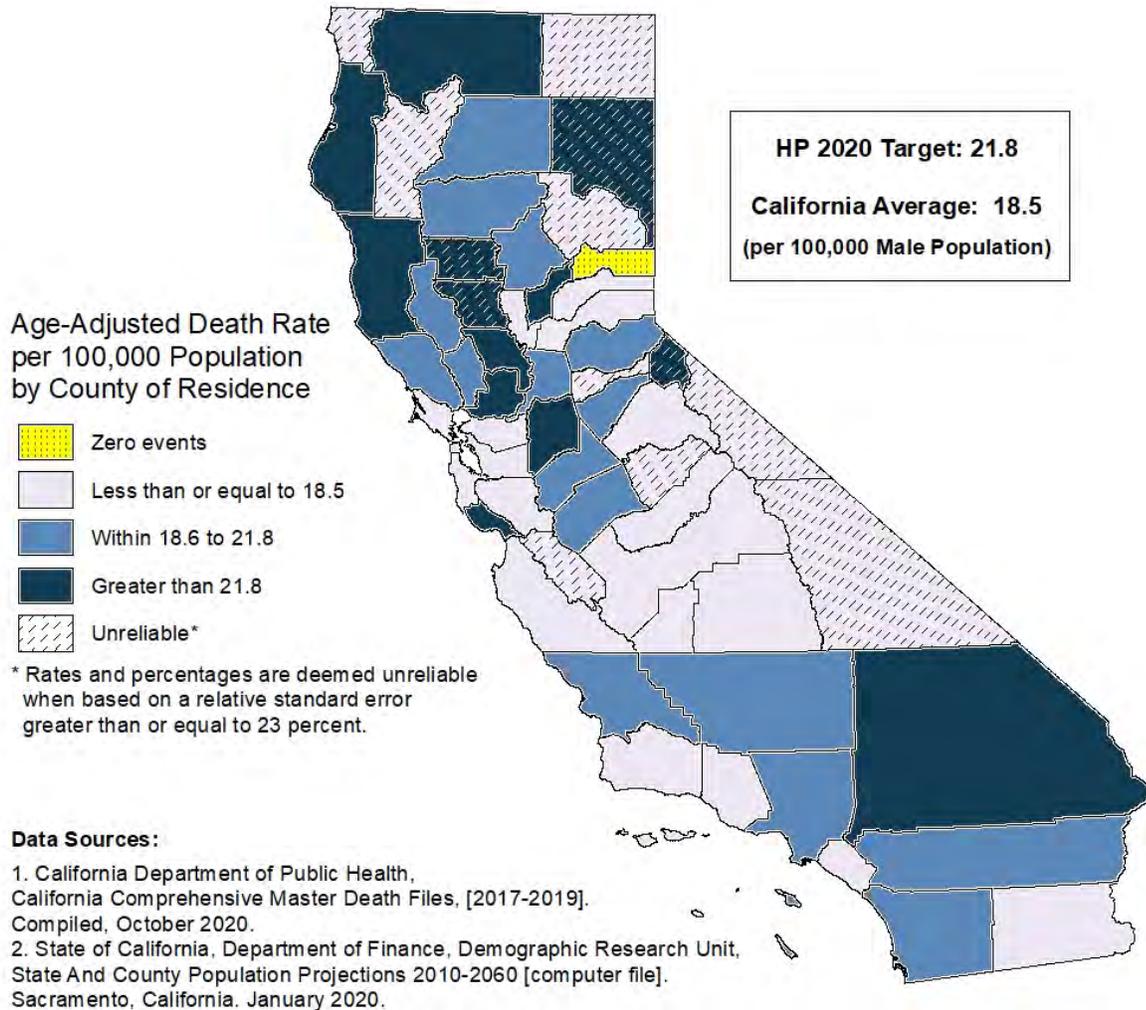
The crude death rate from female breast cancer for California averaged 22.8 deaths per 100,000 female population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 4,561.3 with a female population count of 20,017,906 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 46.2 in Tuolumne County to a low of 14.4 in Kings County, a factor of 3.2 to 1.

The age-adjusted death rate from female breast cancer for California during the 2017 through 2019 three-year period averaged 18.7 deaths per 100,000 female population. The reliable age-adjusted death rates ranged from a high of 24.9 in Yuba County to a low of 13.9 in Imperial County.

Thirty-two counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective C-3 of no more than 20.7 age-adjusted deaths due to female breast cancer per 100,000 female population. An additional twelve counties with unreliable rates and two counties with zero deaths due to breast cancer also met this objective.

The California age-adjusted death rate from female breast cancer for the 2014-2016 period averaged 19.3 per 100,000 female population.

## DEATHS DUE TO PROSTATE CANCER, 2017-2019



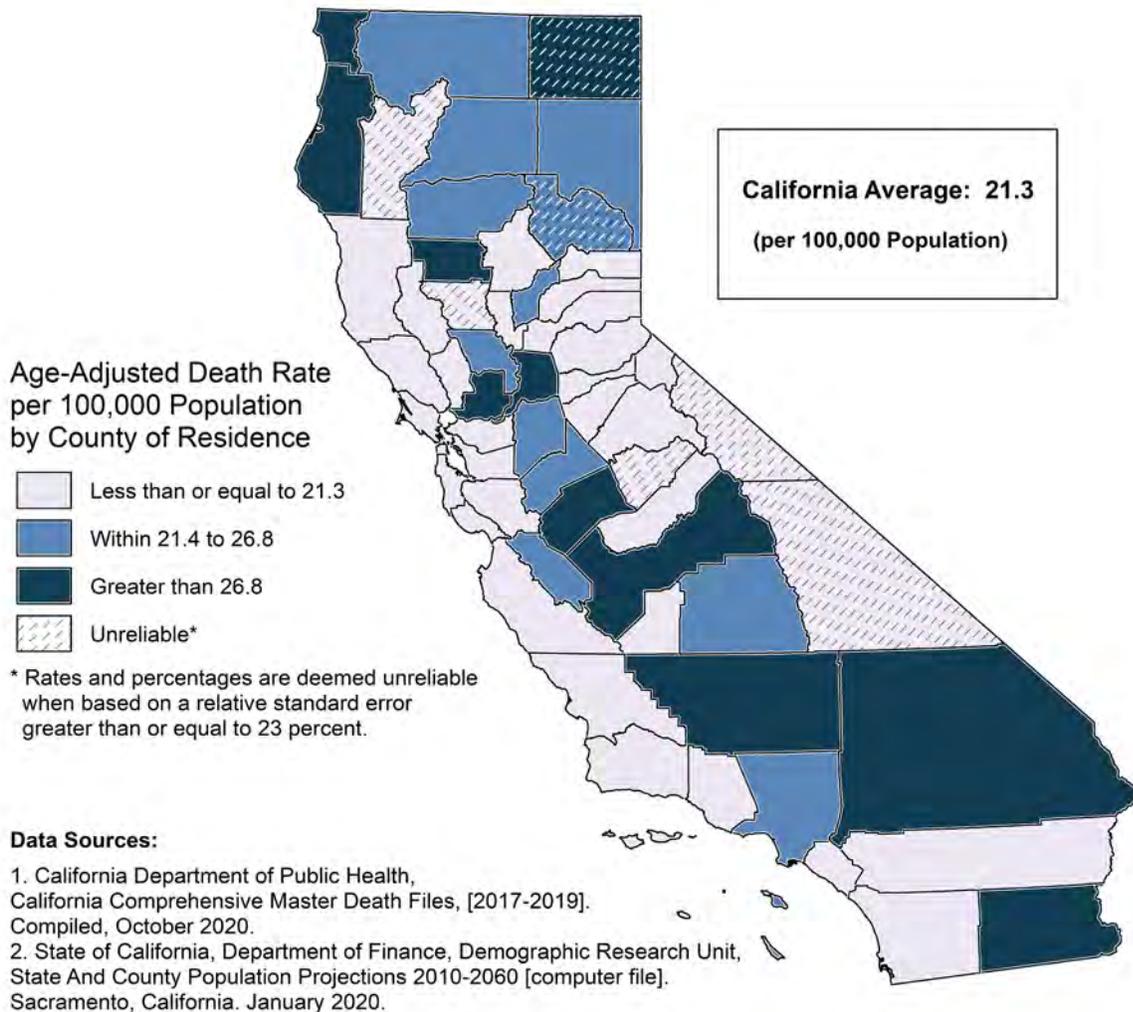
The crude death rate from prostate cancer for California averaged 18.2 deaths per 100,000 male population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 3,603.7 with a male population count of 19,799,879 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 40.6 in Calaveras County to a low of 9.1 in Kings County, a factor of 4.5 to 1.

The age-adjusted death rate from prostate cancer for California during the 2017 through 2019 three-year period averaged 18.5 deaths per 100,000 male population. The reliable age-adjusted death rates ranged from a high of 28.4 in Yuba County to a low of 12.6 in Imperial County.

Thirty-five counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective C-7 of no more than 21.8 age-adjusted deaths due to prostate cancer per 100,000 male population. An additional nine counties with unreliable rates and one county with zero deaths due to prostate cancer also met the objective.

The California age-adjusted death rate from prostate cancer for the 2014-2016 period averaged 19.2 per 100,000 male population.

## DEATHS DUE TO DIABETES, 2017-2019



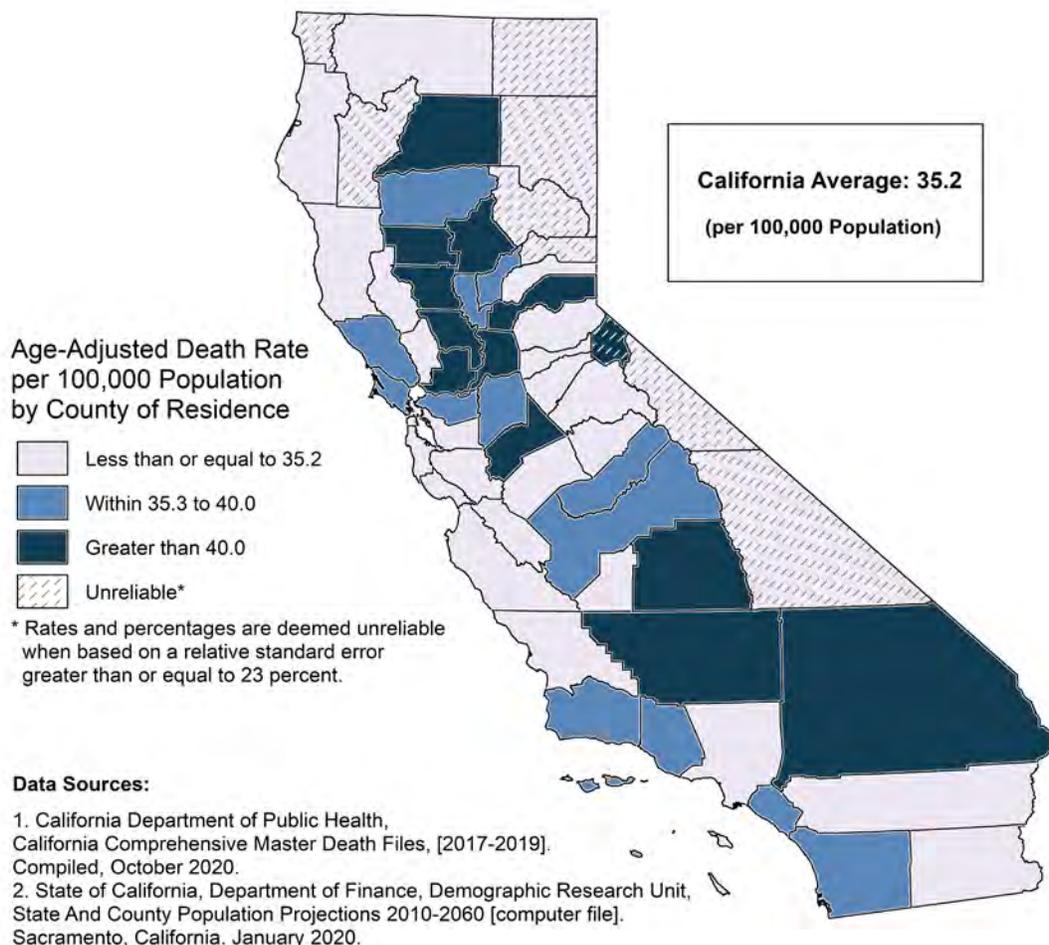
The crude death rate from diabetes for California was 24.2 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 9,651.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 41.3 in Del Norte County to a low of 12.8 in Marin County, a factor of 3.2 to 1.

The age-adjusted death rate from diabetes for California during the 2017 through 2019 three-year period averaged 21.3 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 37.8 in Kern County to a low of 7.8 in Marin County.

The Healthy People 2020 National Objective D-3 for diabetes mortality does not apply to the County Health Status Profiles 2020 report as the calculations do not include data for multiple causes of death.

The California age-adjusted death rate from diabetes for the 2014-2016 period averaged 20.8 per 100,000 population.

## DEATHS DUE TO ALZHEIMER'S DISEASE, 2017-2019



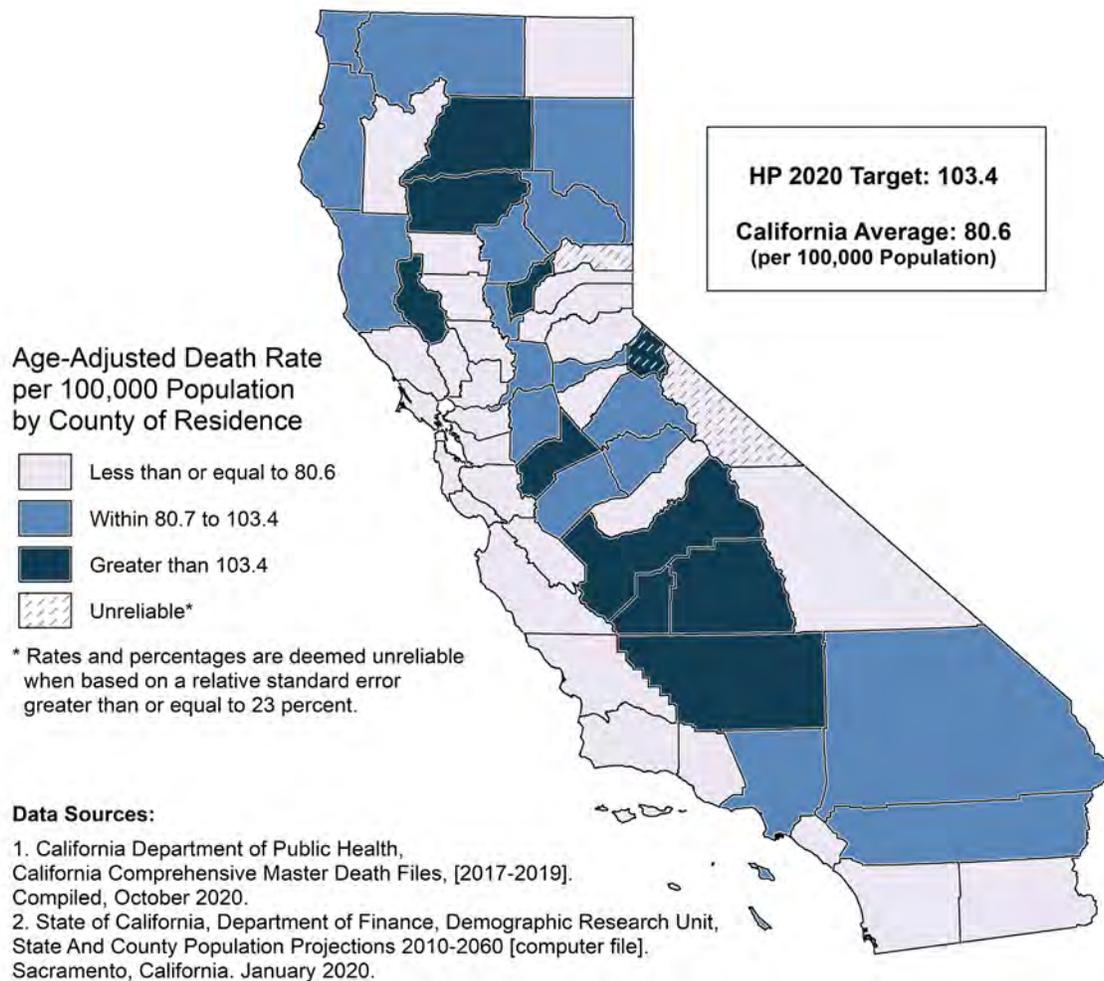
The crude death rate from Alzheimer's disease for California averaged 41.6 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 16,573.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 83.8 in Shasta County to a low of 15.7 in San Benito County, a factor of 5.3 to 1.

The age-adjusted death rate from Alzheimer's disease for California during the 2017 through 2019 three-year period averaged 35.2 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 58.2 in Stanislaus County to a low of 13.3 in Mendocino County.

A Healthy People 2020 National Objective for deaths due to Alzheimer's disease has not been established.

The California age-adjusted death rate from Alzheimer's disease for the 2014-2016 period averaged 33.3 per 100,000 population.

## DEATHS DUE TO CORONARY HEART DISEASE, 2017-2019



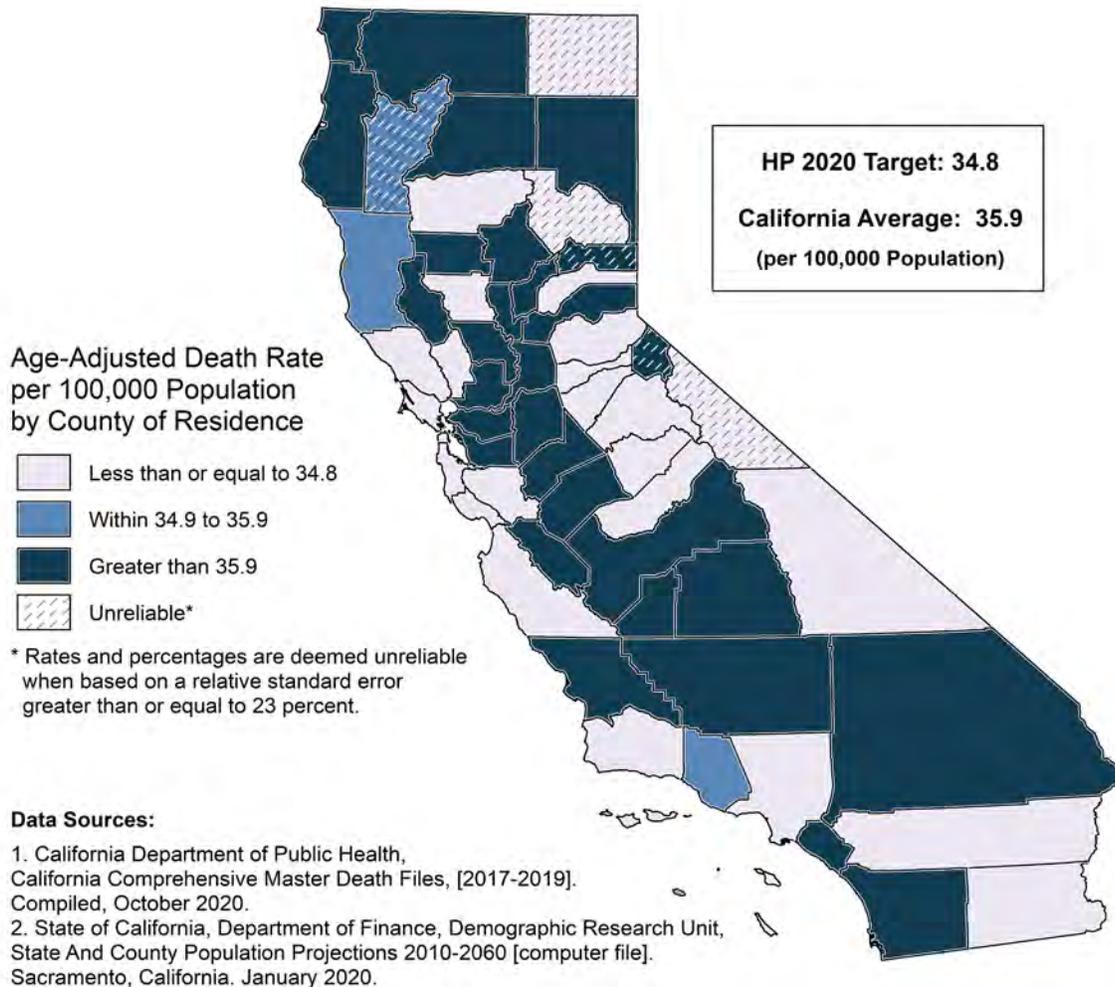
The crude death rate from coronary heart disease for California averaged 94.0 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 37,412.0 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 206.7 in Mariposa County to a low of 56.0 in Monterey County, a factor of 3.7 to 1.

The age-adjusted death rate from coronary heart disease for California during the 2017 through 2019 three-year period averaged 80.6 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 132.5 in Yuba County to a low of 44.0 in Marin County.

Forty-six counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective HDS-2 of no more than 103.4 age-adjusted deaths due to coronary heart disease per 100,000 population. An additional two counties with unreliable rates also met the objective.

The California age-adjusted death rate from coronary heart disease for the 2014-2016 period averaged 88.6 per 100,000 population.

## DEATHS DUE TO CEREBROVASCULAR DISEASE (STROKE), 2017-2019



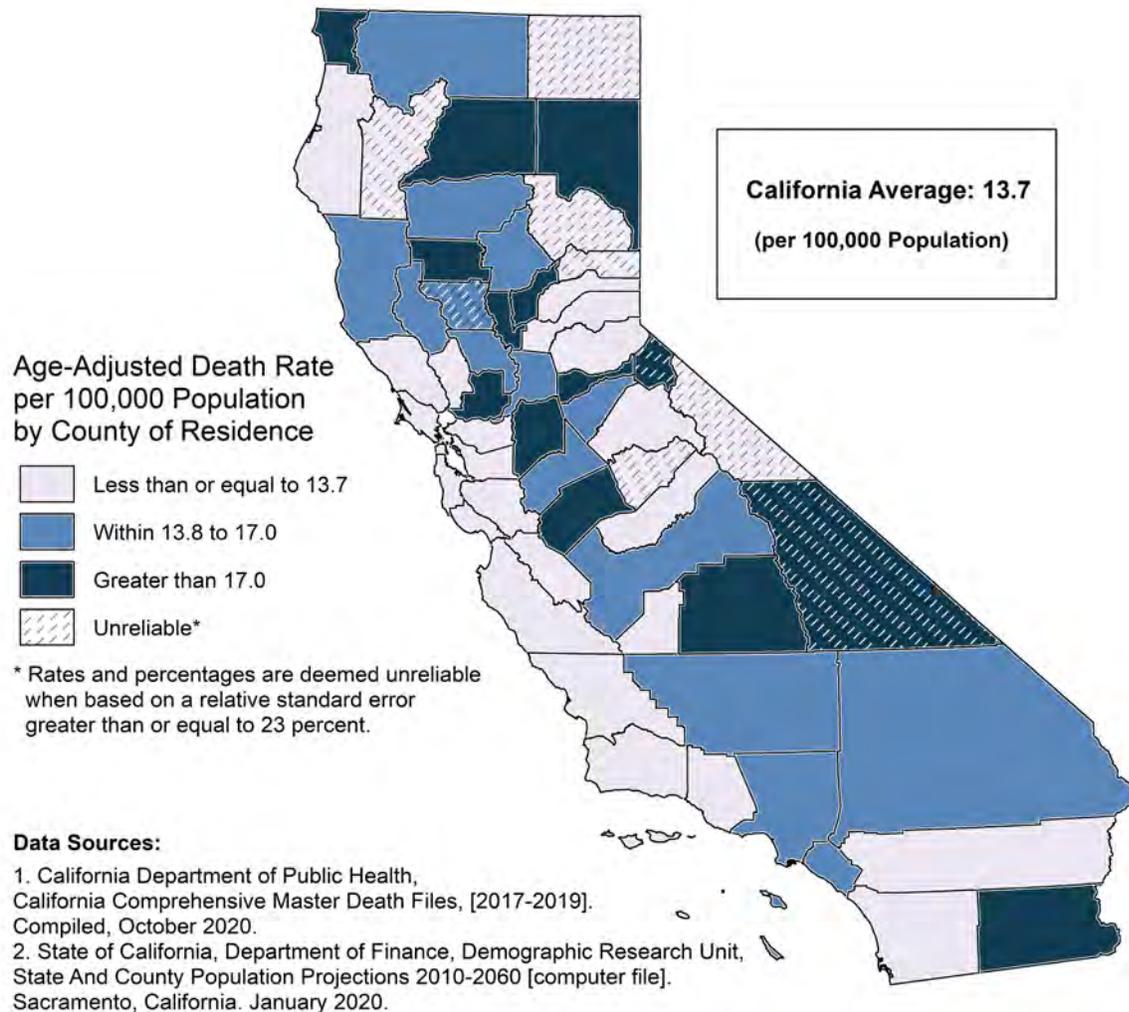
The crude death rate from cerebrovascular disease for California averaged 41.6 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 16,549.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 105.8 in Humboldt County to a low of 29.1 in Imperial County, a factor of 3.6 to 1.

The age-adjusted death rate from cerebrovascular disease for California during the 2017 through 2019 three-year period averaged 35.9 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 84.8 in Humboldt County to a low of 23.9 in Marin County.

Twenty-two counties with reliable death rates met the Healthy People 2020 National Objective HDS-3 of no more than 34.8 age-adjusted deaths due to cerebrovascular disease per 100,000 population. An additional three counties with unreliable rates also met the objective. The California age-adjusted death rate due to cerebrovascular disease did not meet the national objective.

The California age-adjusted death rate from cerebrovascular disease for the 2014-2016 period averaged 35.0 per 100,000 population.

## DEATHS DUE TO INFLUENZA/PNEUMONIA, 2017-2019



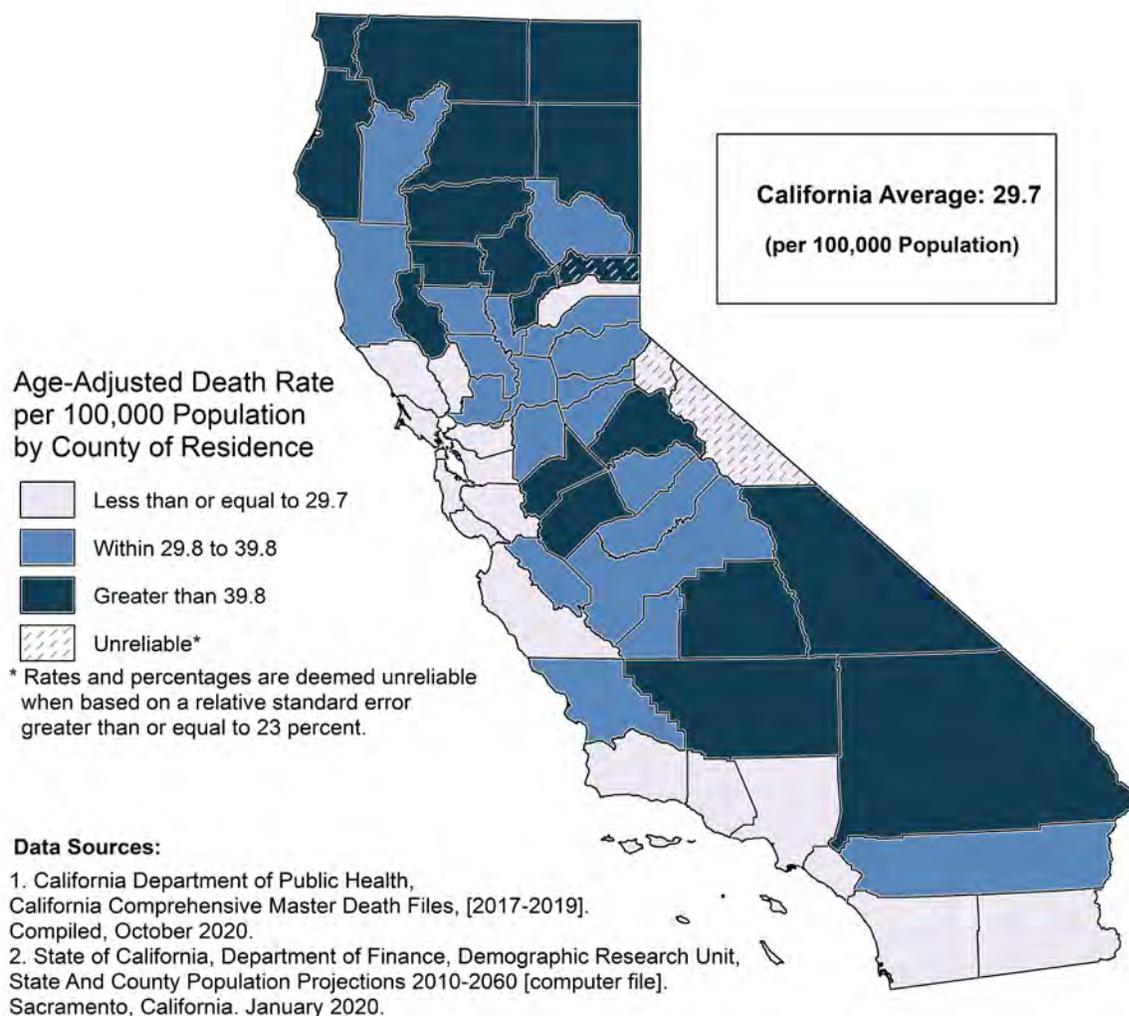
The crude death rate from influenza or pneumonia for California averaged 15.8 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 6,307.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 35.8 in Amador County to a low of 9.6 in Kings County, a factor of 3.7 to 1.

The age-adjusted death rate from influenza or pneumonia for California during the 2017 through 2019 three-year period averaged 13.7 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 23.9 in Del Norte County to a low of 8.0 in Ventura County.

A Healthy People 2020 National Objective for deaths due to influenza or pneumonia has not been established.

The California age-adjusted death rate from influenza or pneumonia for the 2014-2016 period averaged 14.2 per 100,000 population.

## DEATHS DUE TO CHRONIC LOWER RESPIRATORY DISEASE, 2017-2019



The crude death rate from chronic lower respiratory disease for California averaged 34.0 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 13,537.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 108.3 in Shasta County to a low of 18.0 in Santa Clara County, a factor of 6 to 1.

The age-adjusted death rate from chronic lower respiratory disease for California during the 2017 through 2019 three-year period averaged 29.7 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 71.8 in Shasta County to a low of 15.7 in San Mateo County.

A Healthy People 2020 National Objective for deaths due to chronic lower respiratory disease has not been established.

The California age-adjusted death rate from chronic lower respiratory disease for the 2014-2016 period averaged 32.1 per 100,000 population.

## DEATHS DUE TO CHRONIC LIVER DISEASE AND CIRRHOSIS, 2017-2019



The crude death rate from chronic liver disease and cirrhosis for California averaged 13.6 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 5,427.3 with a population count of 39,817,785 as of July 1, 2018.

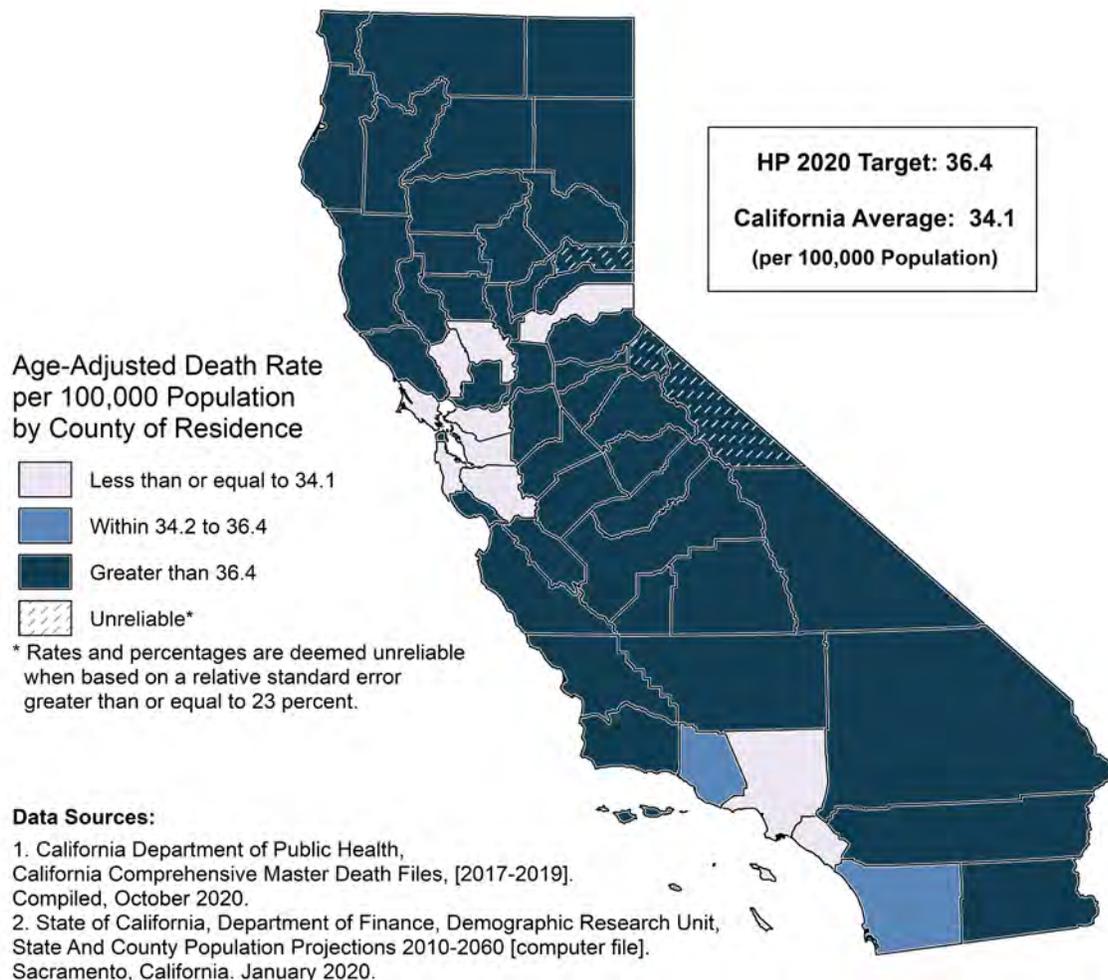
Among counties with reliable rates, the crude death rate ranged from a high of 45.1 in Lake County to a low of 7.7 in Santa Clara County, a factor of 5.9 to 1.

The age-adjusted death rate from chronic liver disease and cirrhosis for California during the 2017 through 2019 three-year period averaged 12.1 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 34.7 in Lake County to a low of 5.7 in Marin County.

Five counties with reliable death rates met the Healthy People 2020 National Objective SA-11 of no more than 8.2 age-adjusted deaths due to chronic liver disease and cirrhosis per 100,000 population. An additional one county with an unreliable death rate also met the objective. The California age-adjusted death rate due to chronic liver disease and cirrhosis did not meet the national objective.

The California age-adjusted death rate from chronic liver disease and cirrhosis for the 2014-2016 period averaged 12.3 per 100,000 population.

## DEATHS DUE TO ACCIDENTS (UNINTENTIONAL INJURIES), 2017-2019



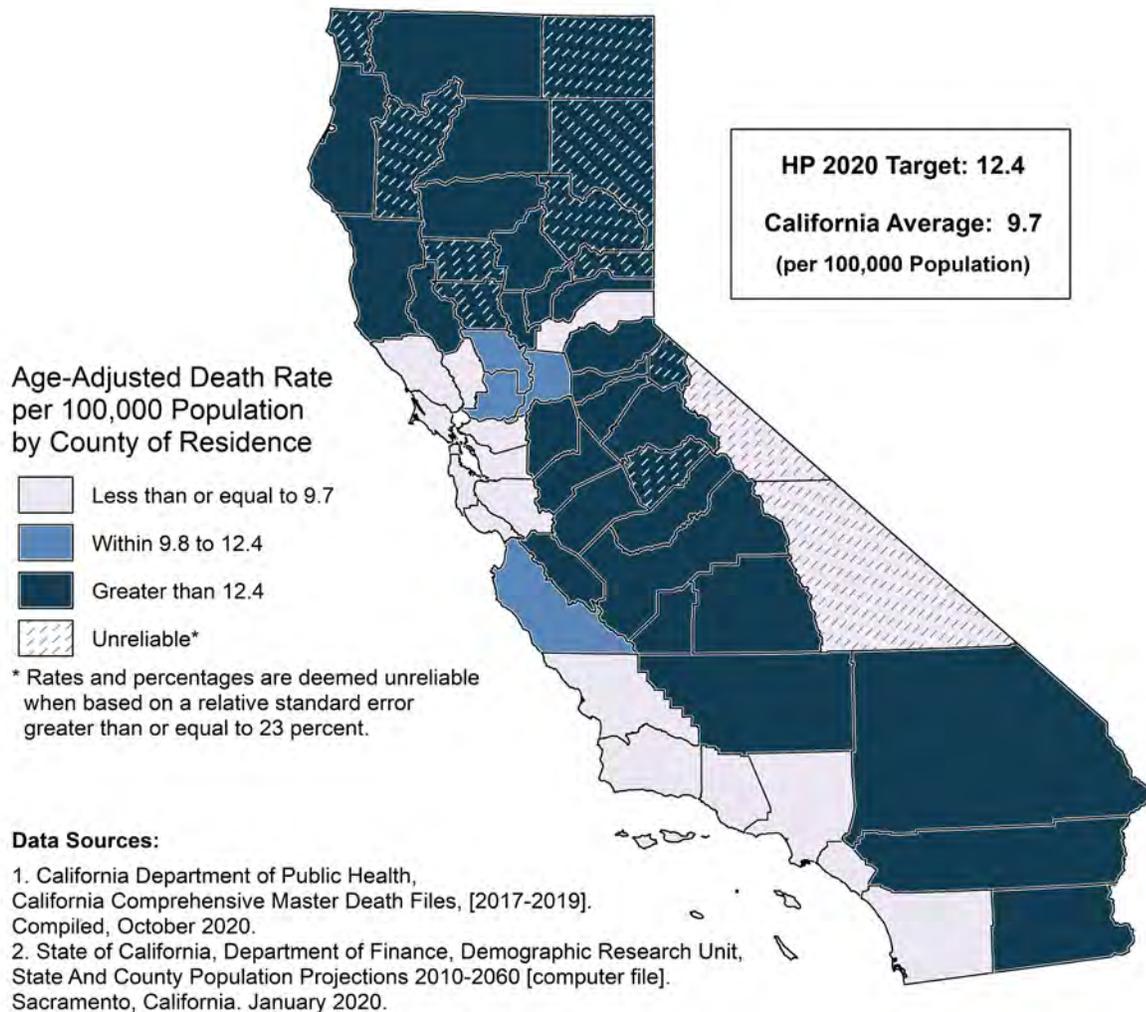
The crude death rate from accidents for California averaged 36.1 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 14,386.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 121.0 in Lake County to a low of 26.6 in Los Angeles County, a factor of 4.5 to 1.

The age-adjusted death rate from accidents for California during the 2017 through 2019 three-year period averaged 34.1 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 100.2 in Lake County to a low of 22.9 in San Mateo County.

Twelve counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective IVP-11 of no more than 36.4 age-adjusted deaths due to accidents per 100,000 population.

The California age-adjusted death rate from accidents for the 2014-2016 period averaged 30.7 per 100,000 population.

## DEATHS DUE TO MOTOR VEHICLE TRAFFIC CRASHES, 2017-2019



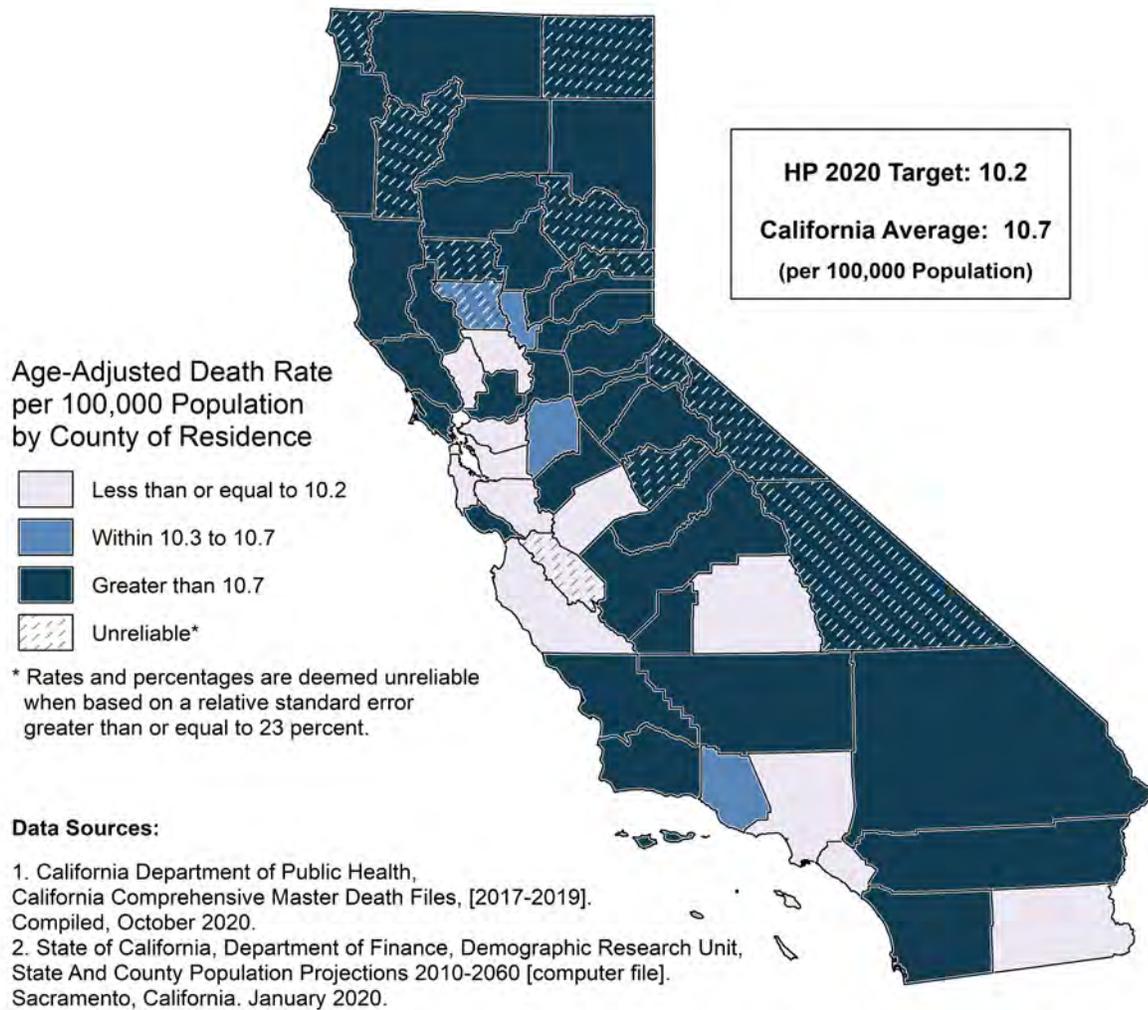
The crude death rate from motor vehicle traffic crashes for California averaged 10.0 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 3,986.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 31.0 in Siskiyou County to a low of 4.0 in San Francisco County, a factor of 7.8 to 1.

The age-adjusted death rate from motor vehicle traffic crashes for California during the 2017 through 2019 three-year period averaged 9.7 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 32.2 in Siskiyou County to a low of 3.4 in San Francisco County.

Twenty counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective IVP-13.1 of no more than 12.4 age-adjusted deaths due to motor vehicle traffic crashes per 100,000 population. An additional two counties with unreliable rates also met the objective.

The California age-adjusted death rate from motor vehicle traffic crashes for the 2014-2016 period averaged 8.9 per 100,000 population.

## DEATHS DUE TO SUICIDE, 2017-2019



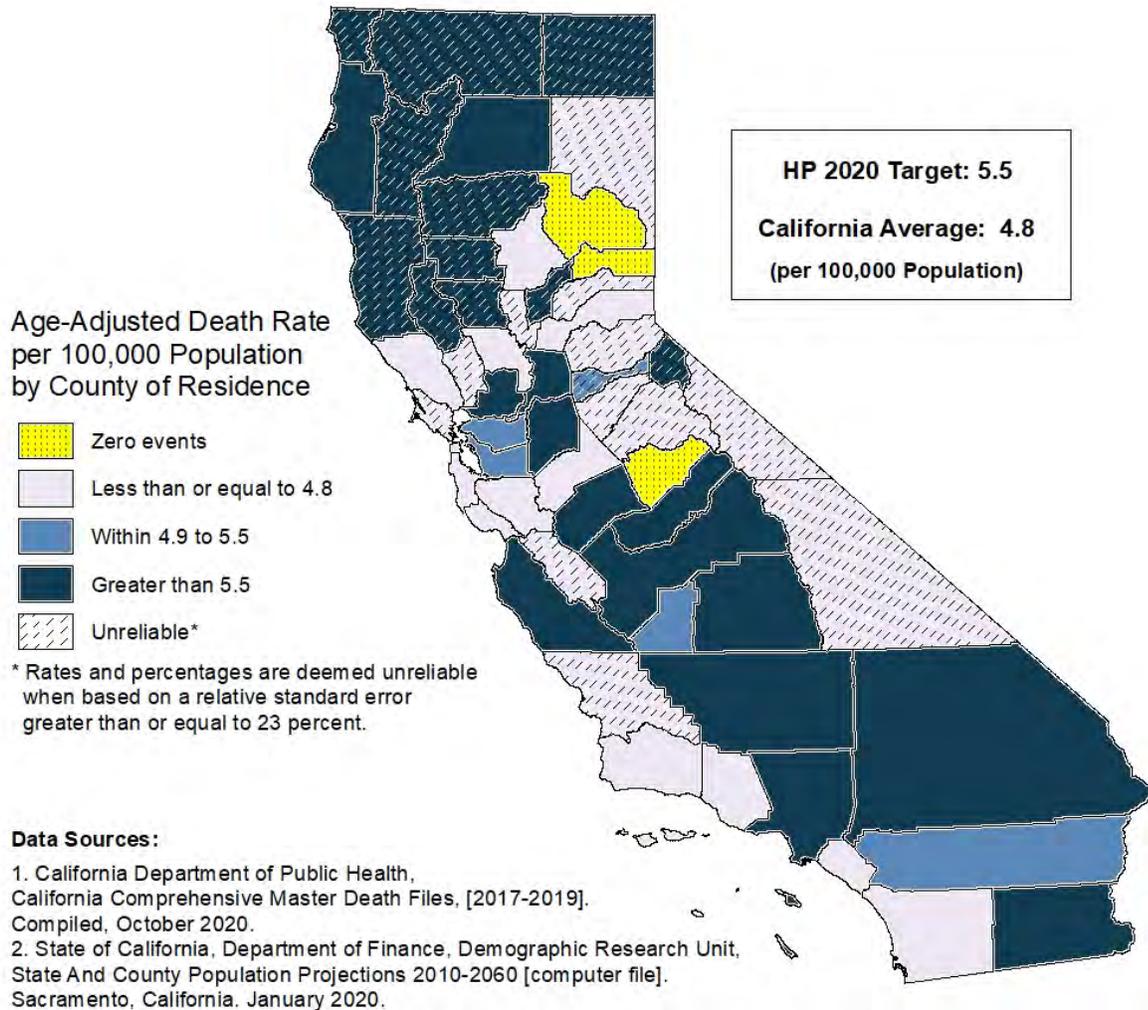
The crude death rate from suicide for California averaged 11.1 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 4,414.3 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 32.3 in Amador County to a low of 6.7 in Imperial County, a factor of 4.8 to 1.

The age-adjusted death rate from suicide for California during the 2017 through 2019 three-year period averaged 10.7 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 31.9 in Lake County to a low of 7.0 in Imperial County.

Thirteen counties with reliable death rates met the Healthy People 2020 National Objective MHMD-1 of no more than 10.2 age-adjusted deaths due to suicide per 100,000 population. An additional one county with an unreliable rate also met the objective. The California age-adjusted death rate due to suicide did not meet the national objective.

The California age-adjusted death rate from suicide for the 2014-2016 period averaged 10.5 per 100,000 population.

## DEATHS DUE TO HOMICIDE, 2017-2019



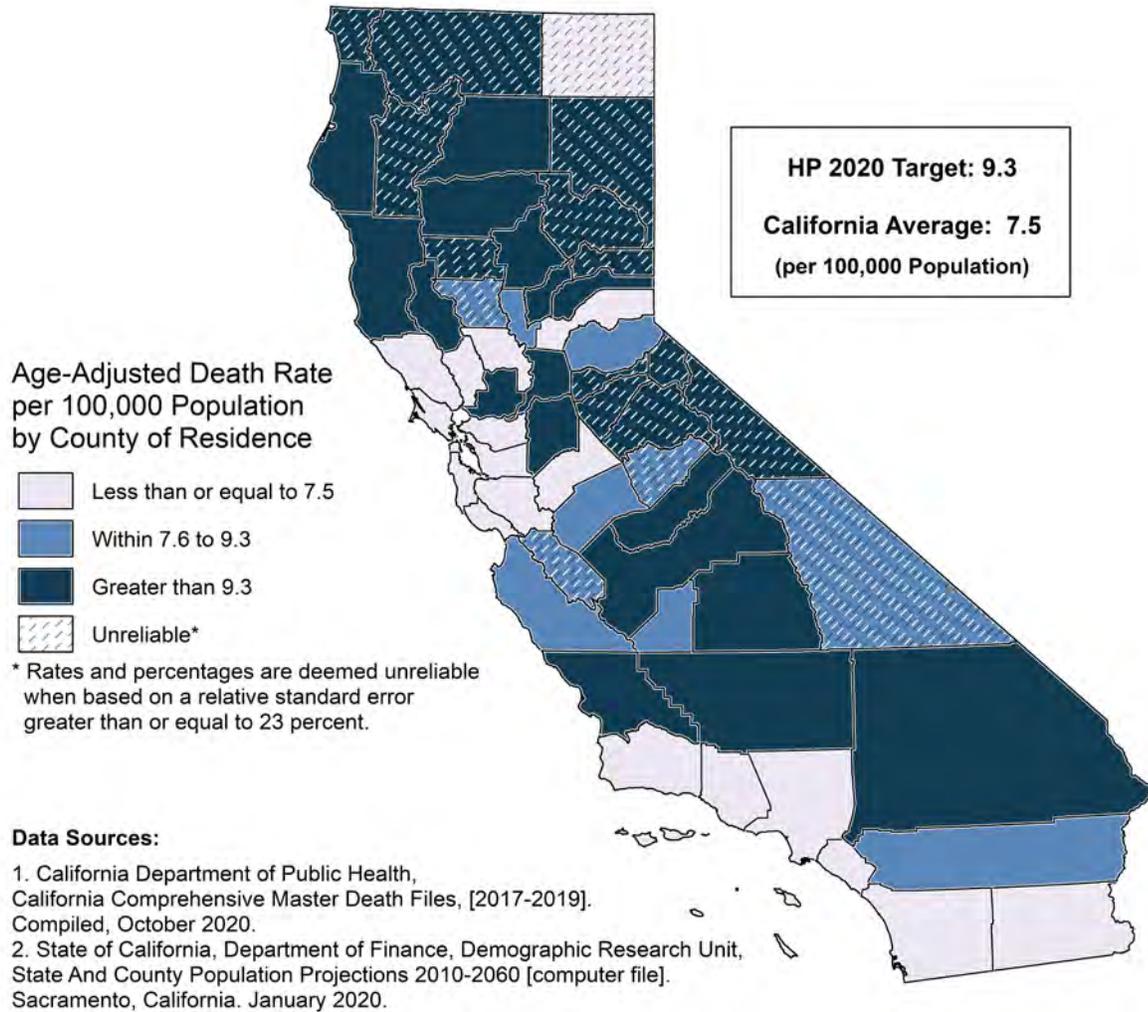
The crude death rate from homicide for California averaged 4.8 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 1,905.0 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 11.1 in Kern County to a low of 1.7 in San Mateo County, a factor of 6.5 to 1.

The age-adjusted death rate from homicide for California during the 2017 through 2019 three-year period averaged 4.8 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 11.2 in Kern County to a low of 1.7 in San Mateo County.

Seventeen counties with reliable death rates and California as a whole met the Healthy People 2020 National Objective IVP-29 of no more than 5.5 age-adjusted deaths due to homicide per 100,000 population. An additional thirteen counties with unreliable rates and three counties with zero deaths due to homicide met the objective.

The California age-adjusted death rate from homicide for the 2014-2016 period averaged 5.0 per 100,000 population.

## FIREARM RELATED DEATHS, 2017-2019



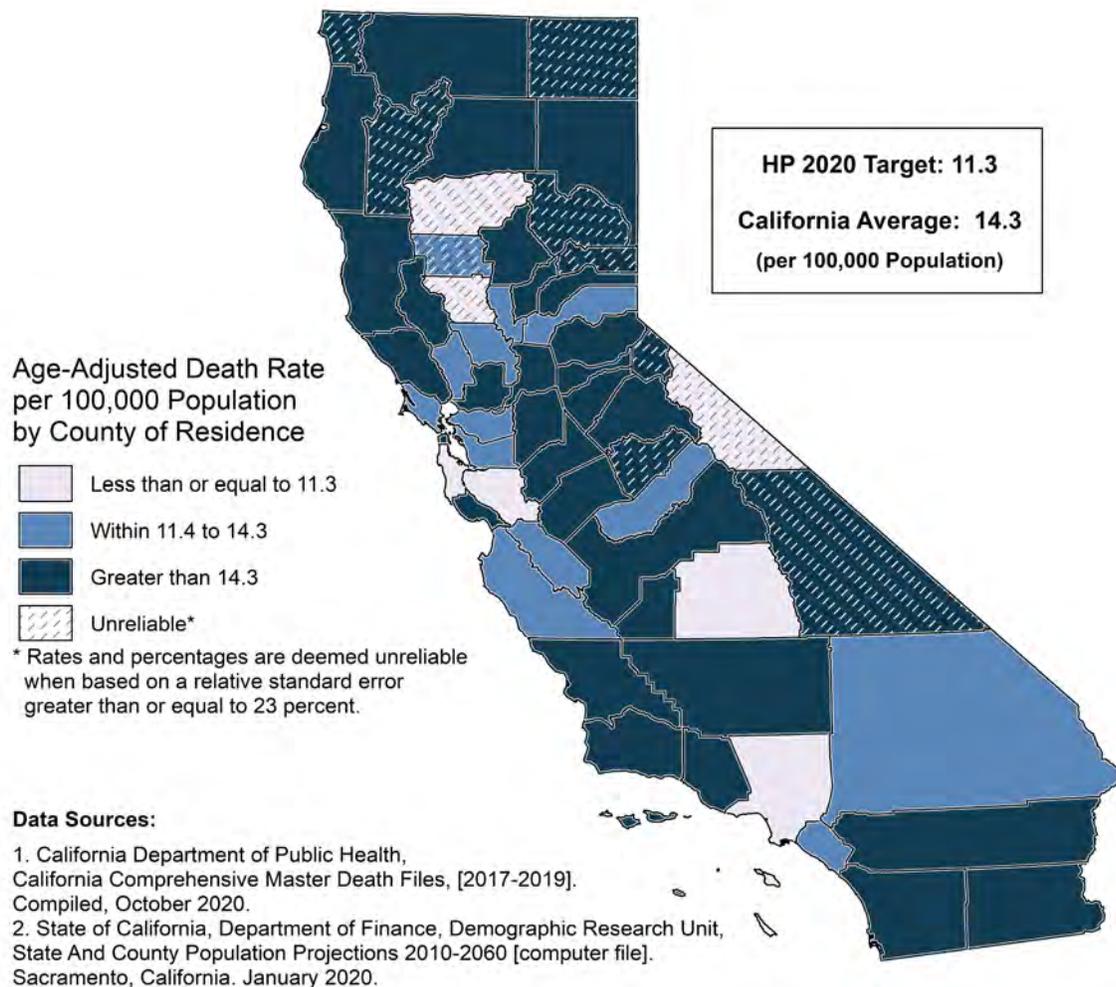
The crude death rate from deaths due to firearm related injuries for California averaged 7.7 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 3,057.0 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 23.1 in Lake County to a low of 3.9 in Santa Clara County, a factor of 5.9 to 1.

The age-adjusted death rate from firearm related deaths for California during the 2017 through 2019 three-year period averaged 7.5 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 24.6 in Lake County to a low of 3.7 in Santa Clara County.

Twenty-four counties with reliable age-adjusted death rates and California as a whole met the Healthy People 2020 National Objective IVP-30 of no more than 9.3 age-adjusted deaths due to firearm related injuries per 100,000 population. An additional five counties with unreliable rates due to firearm related deaths met the objective.

The California age-adjusted death rate from deaths due to firearm related injuries for the 2014-2016 period averaged 7.7 per 100,000 population.

## DRUG INDUCED DEATHS, 2017-2019



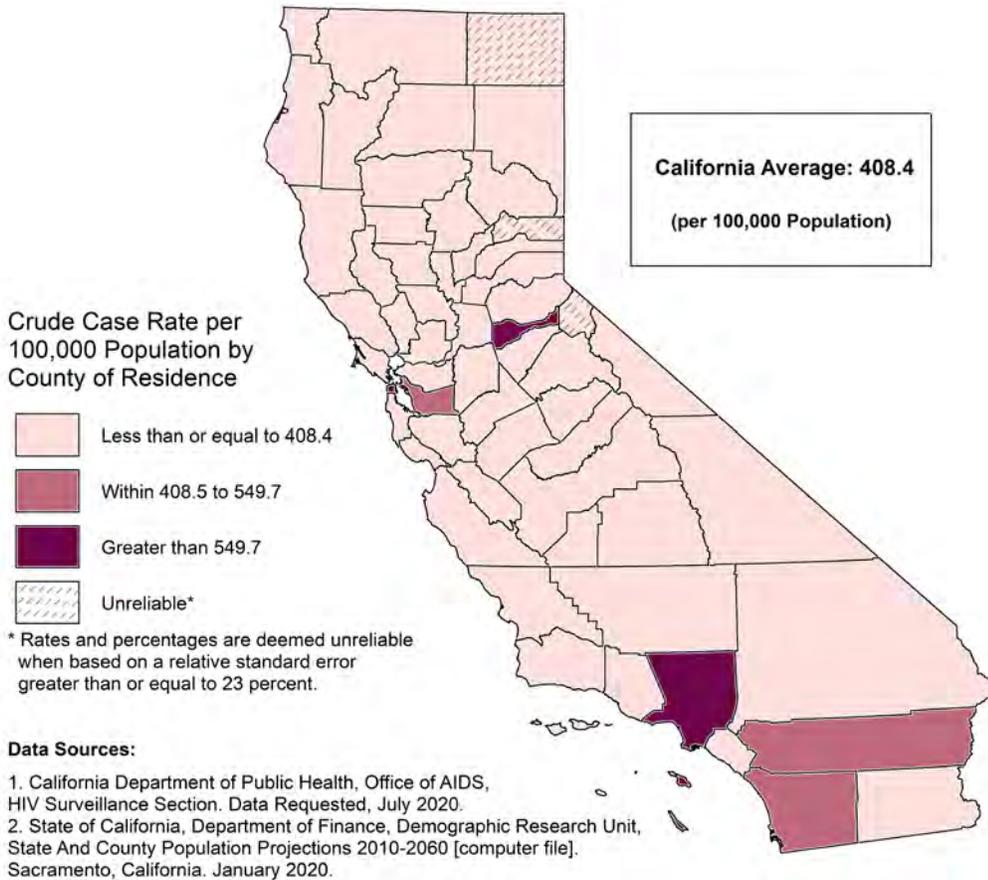
The crude death rate from drug induced deaths for California averaged 14.9 deaths per 100,000 population. The crude death rate resulted from averaging the number of deaths for 2017 to 2019 and dividing by the 2018 population count. The average number of deaths for the three years was 5,931.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude death rate ranged from a high of 64.1 in Lake County to 9.8 in Santa Clara County, a factor of 6.5 to 1.

The age-adjusted death rate from drug induced deaths for California during the 2017 through 2019 three-year period averaged 14.3 deaths per 100,000 population. The reliable age-adjusted death rates ranged from a high of 54.5 in Lake County to a low of 9.0 in Santa Clara County.

Four counties with reliable age-adjusted death rates met the Healthy People 2020 National Objective SA-12 of no more than 11.3 age-adjusted deaths due to drug induced causes per 100,000 population. An additional three counties with unreliable rates met the objective. The California age-adjusted death rate due to drug induced causes did not meet the national objective.

The California age-adjusted death rate from deaths due to drug induced causes for the 2014-2016 period averaged 12.4 per 100,000 population.

## REPORTED PREVALENCE OF PERSONS LIVING WITH HIV/AIDS AMONG AGES 13 YEARS AND OLDER, 2016-2018



The crude case rate of persons ages 13 years and older living with HIV/AIDS in California between 2016 and 2018 averaged 408.4 cases per 100,000 persons of corresponding age population<sup>†</sup>. This rate resulted from averaging the total number of cases of persons ages 13 years and older living with HIV/AIDS for 2016 to 2018 and dividing by the corresponding age population count. The average number of HIV/AIDS cases for the three years was 134,783.3 with the corresponding age population count of 33,002,251 as of July 1, 2017.

Among counties with reliable rates, the crude case rate ranged from a high of 1,667.5 in San Francisco County to a low of 63.4 in Colusa County, a factor of 26.3 to 1.

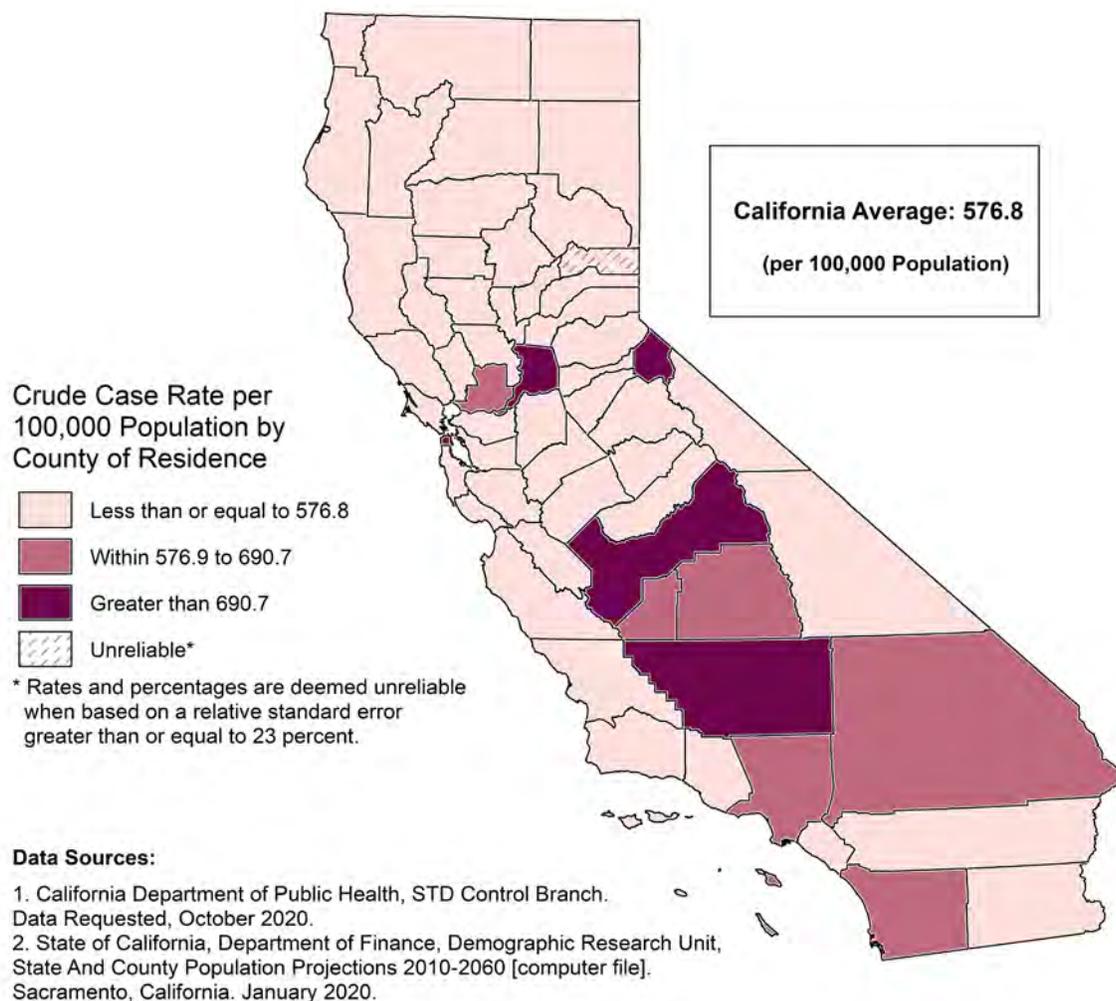
A Healthy People 2020 National Objective for the reported prevalence of persons living with HIV/AIDS among persons ages 13 years and older has not been established.

Two counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of reported persons living with HIV/AIDS, ages 13 years and older, for the 2013-2015 period averaged 393.2 per 100,000 persons of the respective age population.

<sup>†</sup> CDPH has identified significant changes in the prevalence rate in Amador County. See Technical Notes for further detail.

## REPORTED INCIDENCE OF CHLAMYDIA, 2017-2019



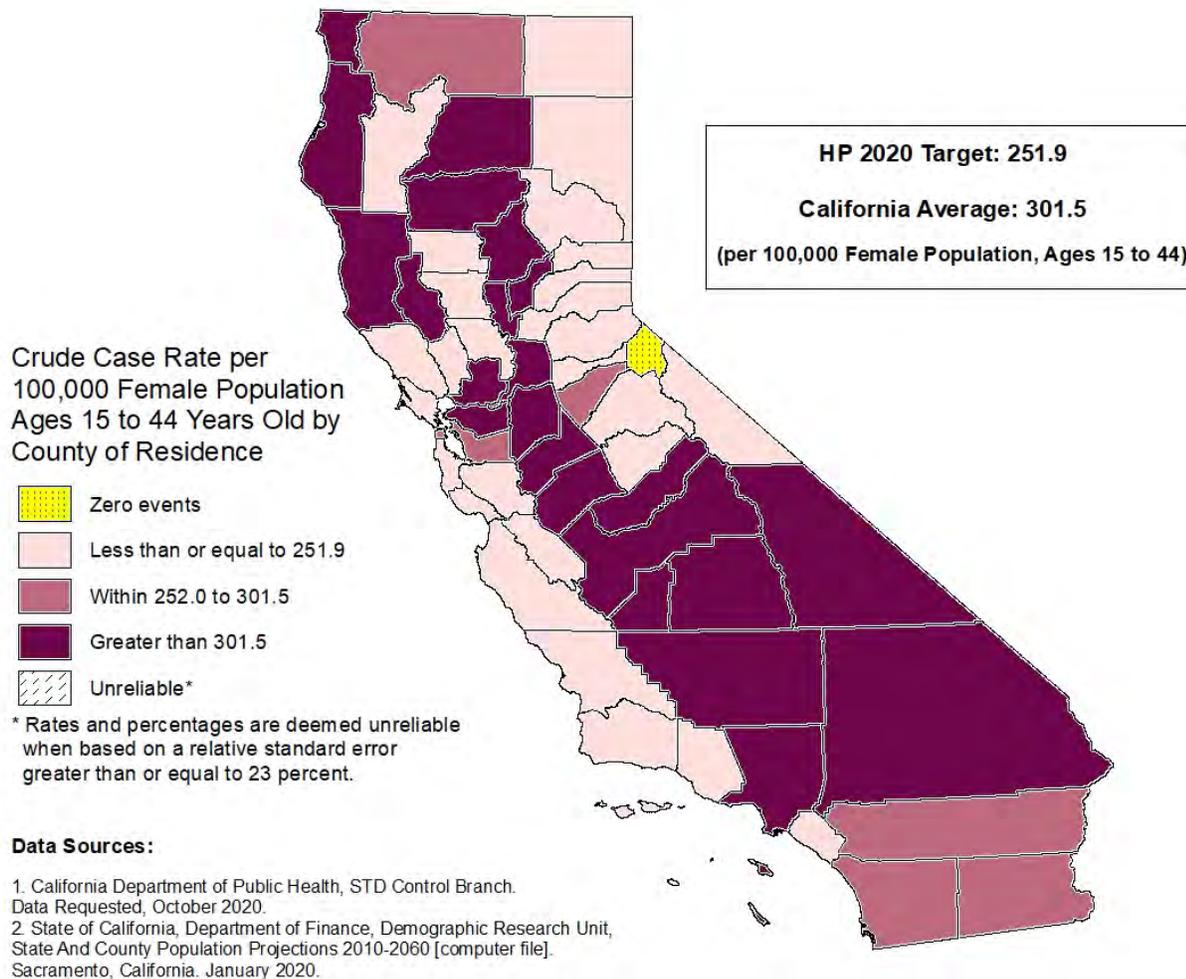
The crude case rate of reported incidence of chlamydia for California averaged 576.8 cases per 100,000 population. The crude case rate for California resulted from averaging the number of new chlamydia cases for 2017 to 2019 and dividing by the 2018 population count. The average number of chlamydia cases for the three years was 229,664.3 with a population count of 39,817,785 as of July 1, 2018.

Among counties with reliable rates, the crude case rate of reported incidence of chlamydia ranged from a high of 1,056.5 in San Francisco County to a low of 149.4 in Trinity County, a factor of 7.1 to 1.

Incidence data are not available in all California counties to evaluate the Healthy People 2020 National Objective STD-1, as the Healthy People objective is restricted to females ages 15 to 24 years old identified at a family planning clinic, and males and females under 24 years old who participate in a national job training program.

The California crude case rate of reported incidence of chlamydia for the 2014-2016 period averaged 479.9 per 100,000 population.

## REPORTED INCIDENCE OF GONORRHEA AMONG FEMALES 15 TO 44 YEARS OLD, 2017-2019



The crude case rate of reported incidence of gonorrhea among females ages 15 to 44 years old (FG-Cases) for California averaged 301.5 cases per 100,000 female population in the corresponding age group. The crude case rate for California resulted from averaging the number of reported new cases of FG-Cases for 2017 to 2019 and dividing by the 2018 population count. The average number of gonorrhea cases for the three years was 24,327.3 with the corresponding female population count of 8,069,866 as of July 1, 2018.

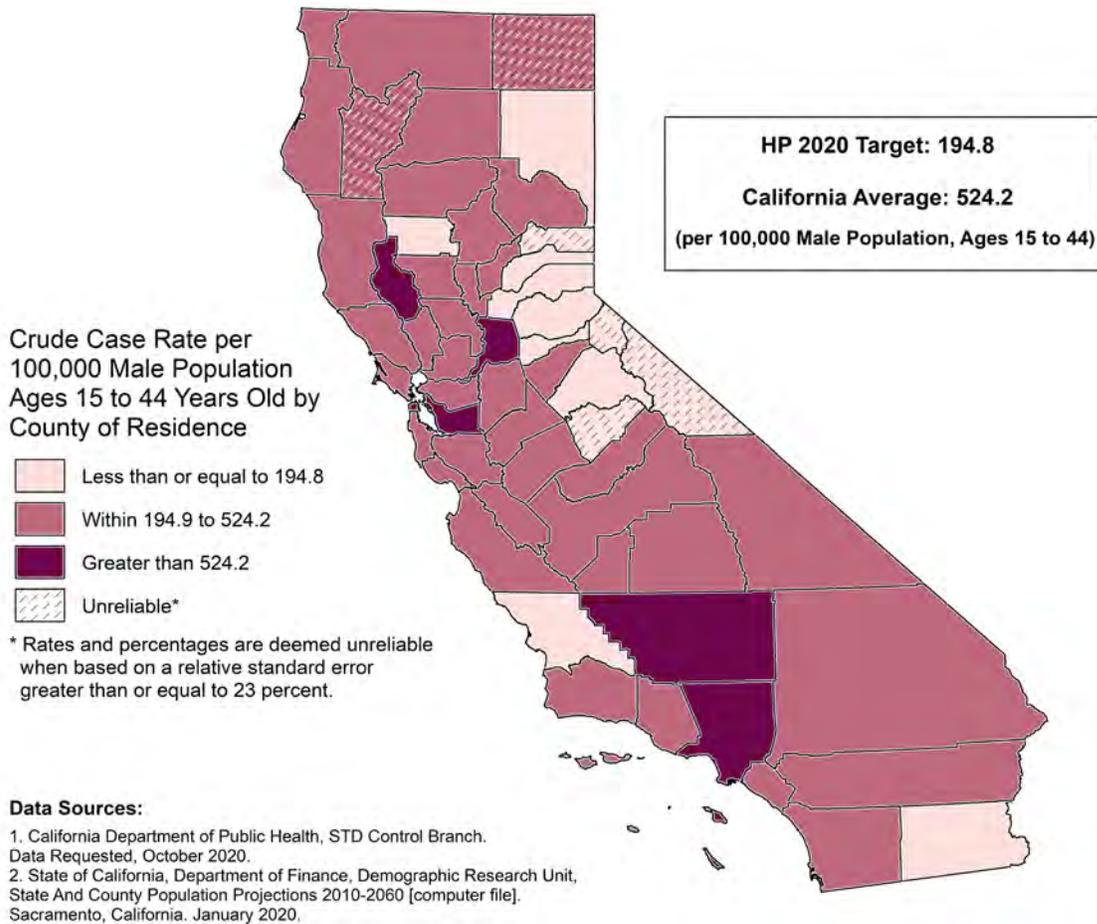
Among counties with reliable rates, the crude case rate ranged from a high of 707.9 in Lake County to a low of 120.4 in San Mateo County, a factor of 5.9 to 1.

Nineteen counties with reliable crude case rates met the Healthy People 2020 National Objective STD-6.1 of no more than 251.9 new reported FG-Cases per 100,000 female population. An additional eight counties with unreliable rates and one county with zero recorded incidences of FG-Cases met the objective. California's crude case rate for the FG-Cases did not meet the national objective.

Four counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of reported incidence of FG-Cases for the 2014-2016 period averaged 215.2 per 100,000 female population in the corresponding age group.

## REPORTED INCIDENCE OF GONORRHEA AMONG MALES 15 TO 44 YEARS OLD, 2017-2019



The crude case rate of reported incidence of gonorrhea among males ages 15 to 44 years old (MG-Cases) for California averaged 524.2 cases per 100,000 male population in the corresponding age group. The crude case rate for California resulted from averaging the number of reported new cases of MG-Cases for 2017 to 2019 and dividing by the 2018 population count. The average number of MG-Cases for the three years was 44,279.3 with the corresponding male population count of 8,446,969 as of July 1, 2018.

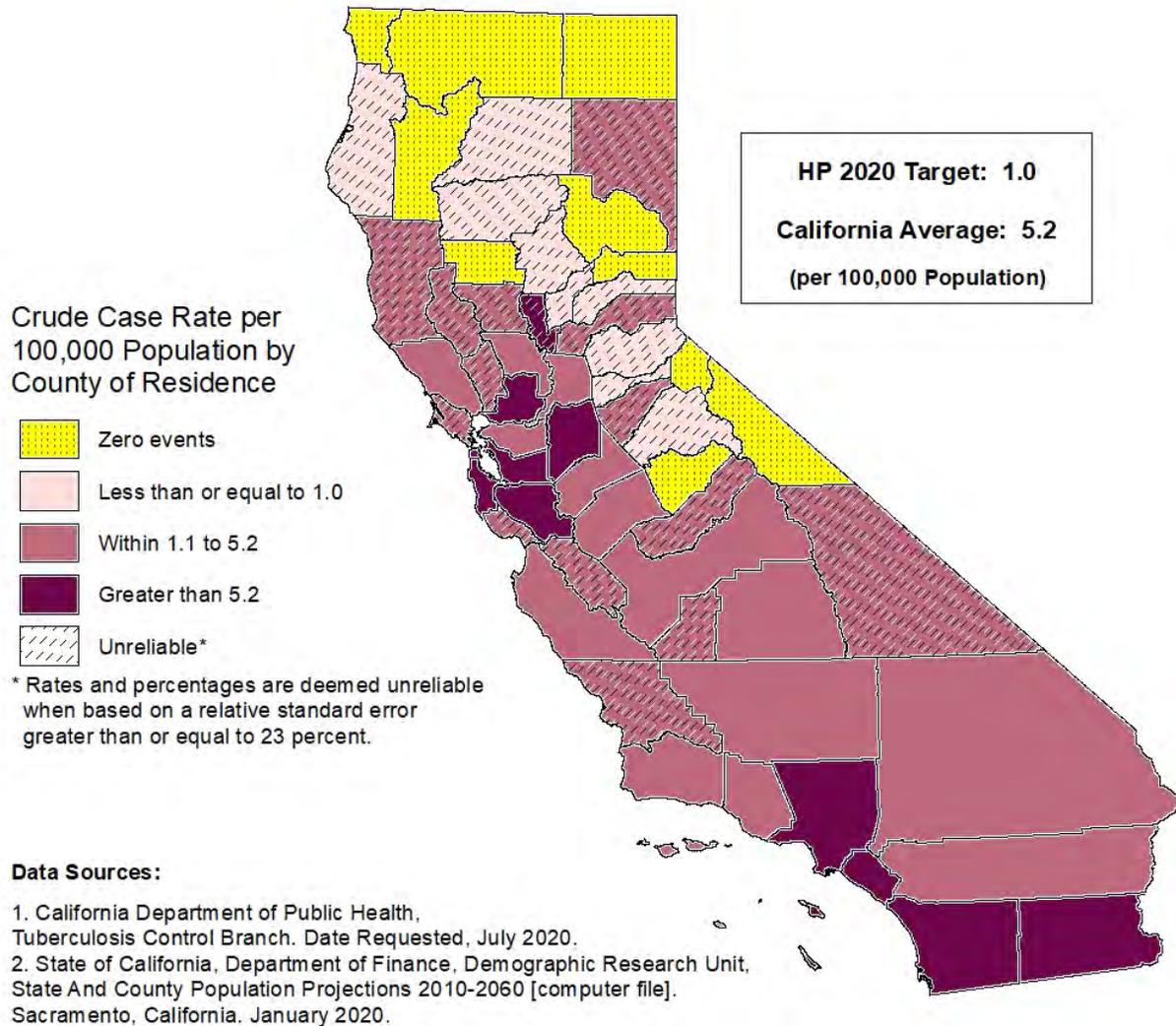
Among counties with reliable rates, the crude case rate ranged from a high of 1,915.1 in San Francisco County to a low of 70.5 in Lassen County, a factor of 27.2 to 1.

Nine counties with reliable crude case rates met the Healthy People 2020 National Objective STD-6.2 of no more than 194.8 new reported MG-Cases per 100,000 male population. An additional four counties with unreliable rates met the objective. California's crude case rate for the reported incidences of MG-Cases did not meet the national objective.

Four counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of reported incidence of MG-Cases for the 2014-2016 period averaged 368.7 per 100,000 male population in the corresponding age group.

# REPORTED INCIDENCE OF TUBERCULOSIS, 2017-2019

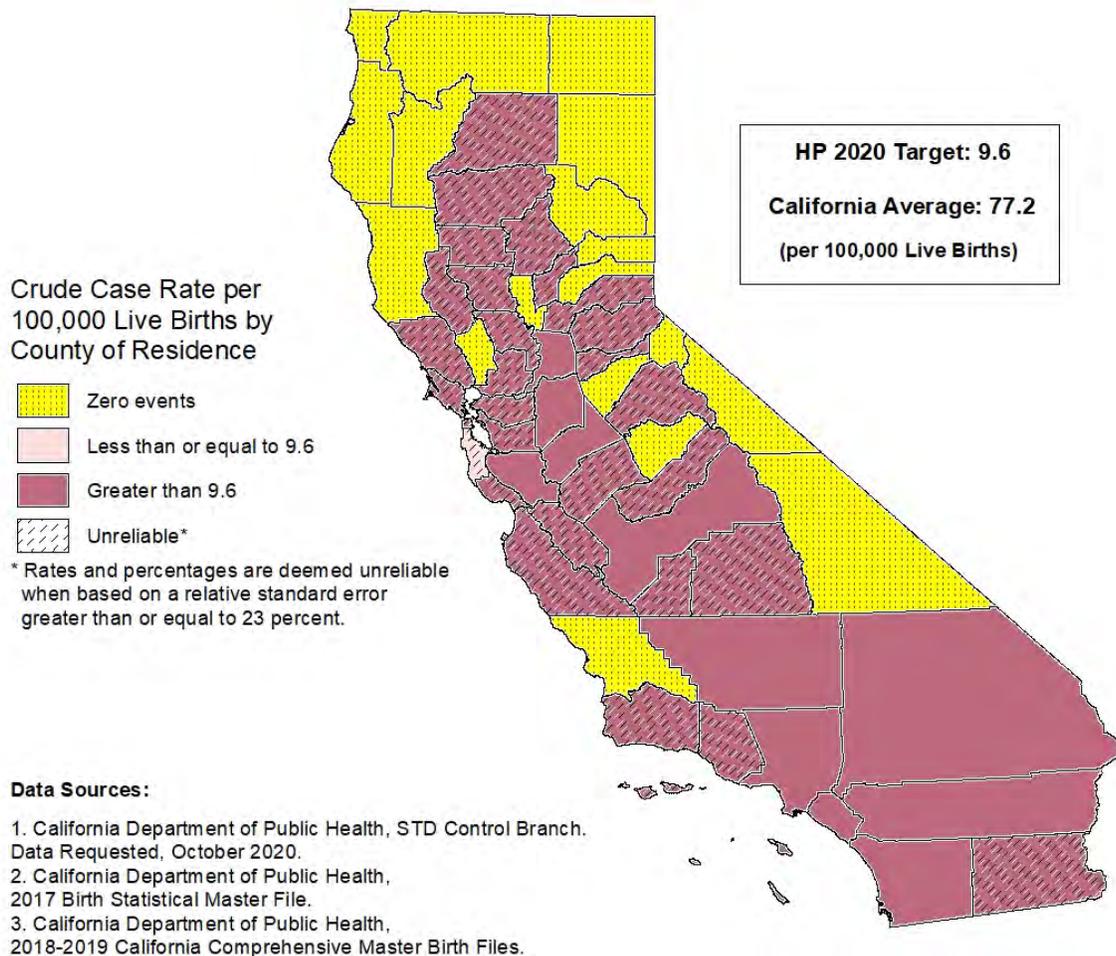


The crude case rate of reported incidence of tuberculosis for California averaged 5.2 cases per 100,000 population. The crude case rate for California resulted from averaging the reported number of new cases of tuberculosis for 2017 to 2019 and dividing by the 2018 population count. The average number of new cases of tuberculosis for the three years was 2,089.7 with a population count of 39,817,785 as of July 1, 2018. Among counties with reliable rates, the crude case rate of reported incidence of tuberculosis ranged from a high of 27.7 in Imperial County to a low of 1.6 in Sonoma county, a factor of 17.3 to 1.

Zero counties with reliable crude rates met the Healthy People 2020 National Objective IID-29 of no more than 1.0 new reported incidence of tuberculosis case per 100,000 population. Nine counties with an unreliable rate and ten counties with zero reported incidences of tuberculosis cases met the objective. California's crude case rate for reported incidences of tuberculosis did not meet the national objective.

The California crude case rate of reported incidence of tuberculosis for 2014 to 2016 averaged 5.4 per 100,000 population.

## REPORTED INCIDENCE OF CONGENITAL SYPHILIS, 2017-2019



The crude case rate of reported incidence of congenital syphilis for California averaged 77.2 cases per 100,000 live births. The crude case rate for California is derived from averaging the number of new congenital syphilis cases, 353.3, and dividing by the average number of live births, 457,528 for years 2017 to 2019.

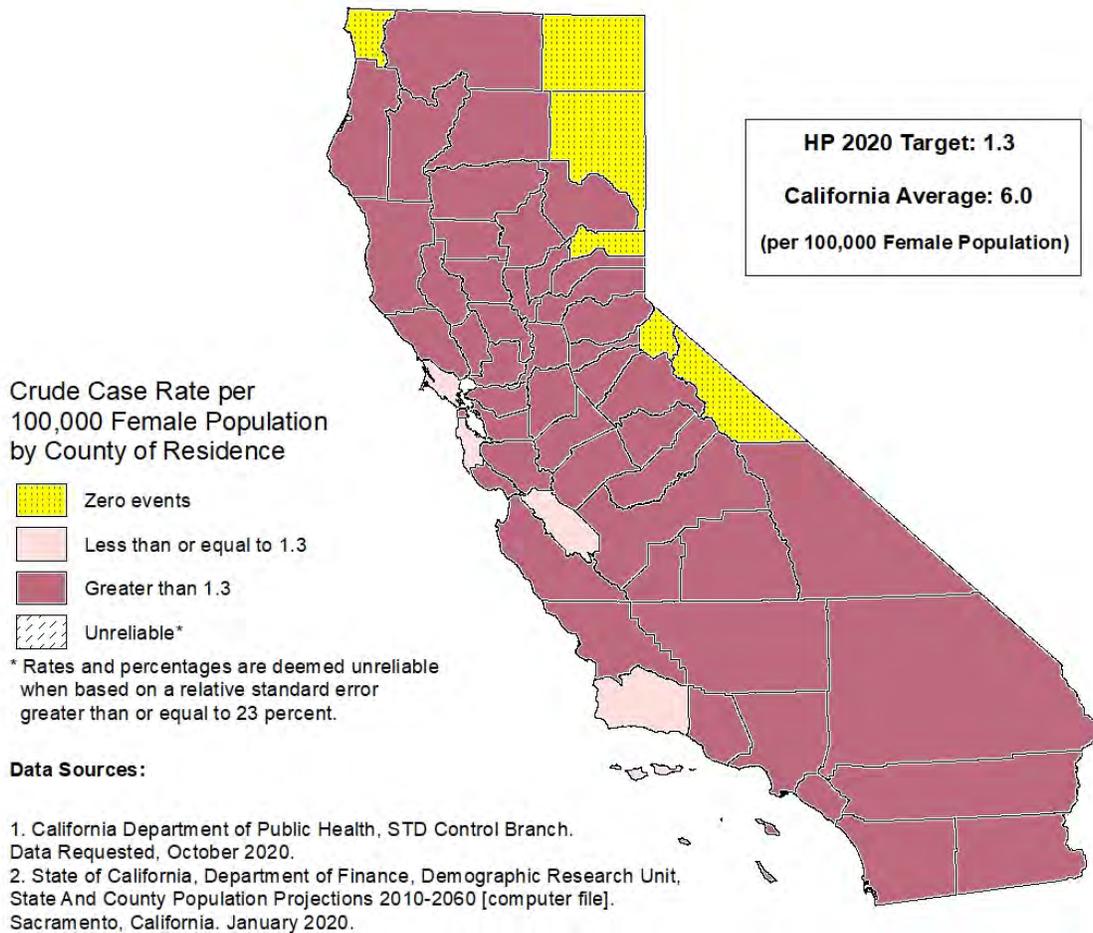
Among counties with reliable rates, the crude case rate ranged from a high of 325.8 in Kern County to a low of 33.3 in Orange County, a factor of 9.8 to 1.

Zero counties with reliable crude case rates met the Healthy People 2020 National Objective STD-8 of no more than 9.6 reported incidences of congenital syphilis per 100,000 live births. California did not meet the Healthy People 2020 National Objective. One county with an unreliable rate and eighteen counties with zero reported incidences of congenital syphilis met the objective.

Twenty-seven counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of congenital syphilis for the 2014-2016 period averaged 31.4 per 100,000 live births.

## REPORTED INCIDENCE OF PRIMARY AND SECONDARY SYPHILIS AMONG FEMALES, 2017-2019



The crude case rate of reported incidence of primary and secondary syphilis among females (FS-Cases) for California averaged 6.0 cases per 100,000 female population. The crude case rate for California is derived from averaging the number of reported FS-Cases for 2017 to 2019 and dividing by the average female population count for the last three years. The average number of new FS-Cases was 1,196.3 with the corresponding female population count of 20,017,906 as of July 1, 2018.

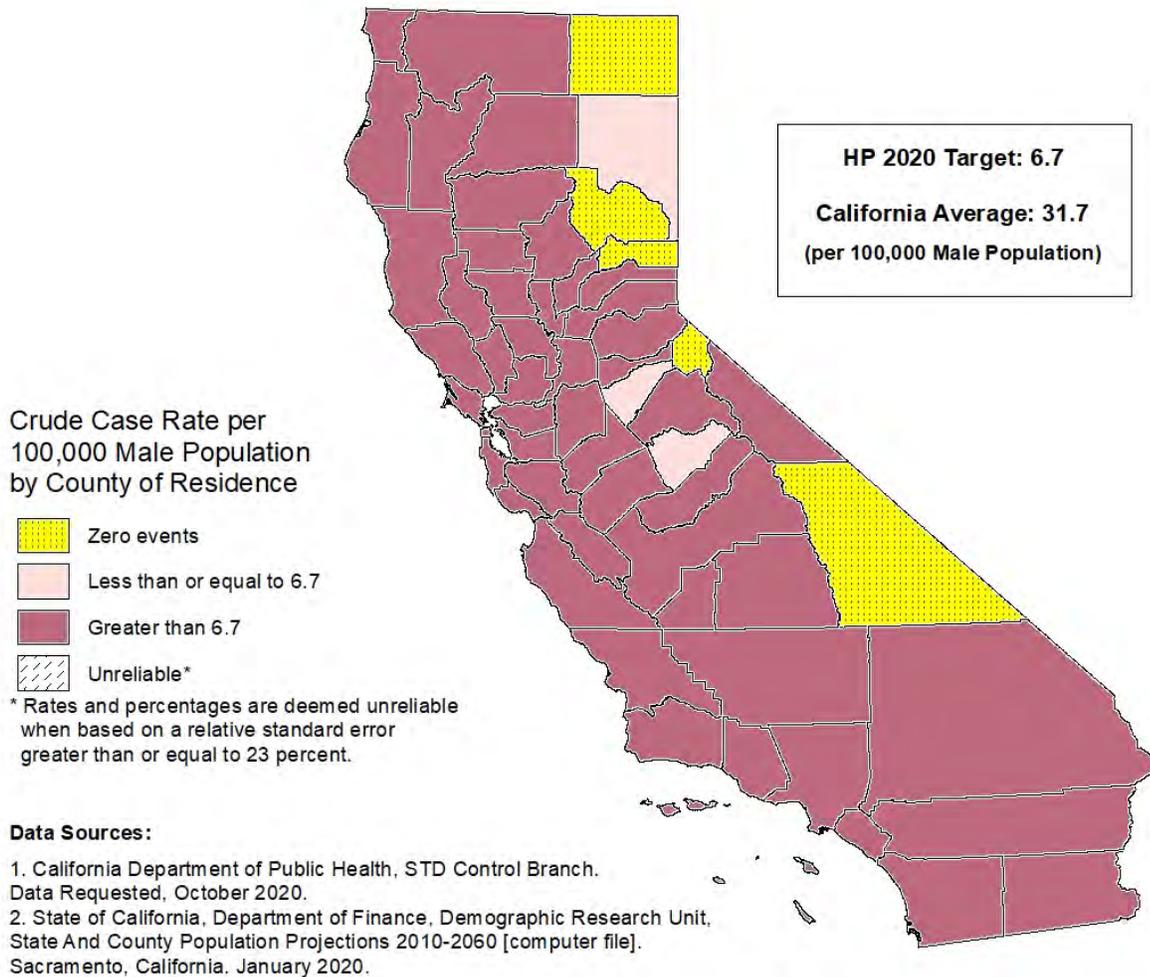
Among counties with reliable rates, the crude case rate ranged from a high of 31.3 in San Joaquin County to a low of 2.0 in Orange County and Ventura County, a factor of 15.7 to 1.

Zero counties with reliable crude case rates met the Healthy People 2020 National Objective STD-7.1 of no more than 1.3 reported FS-Cases per 100,000 female population. California also did not meet the Healthy People 2020 National Objective. Four counties with unreliable rates and six counties with zero events either met or exceeded the Healthy People 2020 National Objective.

Twenty counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of FS-Cases for the 2014-2016 period averaged 2.6 per 100,000 female population.

## REPORTED INCIDENCE OF PRIMARY AND SECONDARY SYPHILIS AMONG MALES, 2017-2019



The crude case rate of reported incidence of primary and secondary syphilis among males (MS-Cases), for California averaged 31.7 cases per 100,000 male population. The crude case rate for California is derived from averaging the number of reported MS-Cases for 2017 to 2019 and dividing by the average male population count for the last three years. The average number of new MS-Cases was 6,281.7 with the corresponding male population count of 19,799,879 as of July 1, 2018.

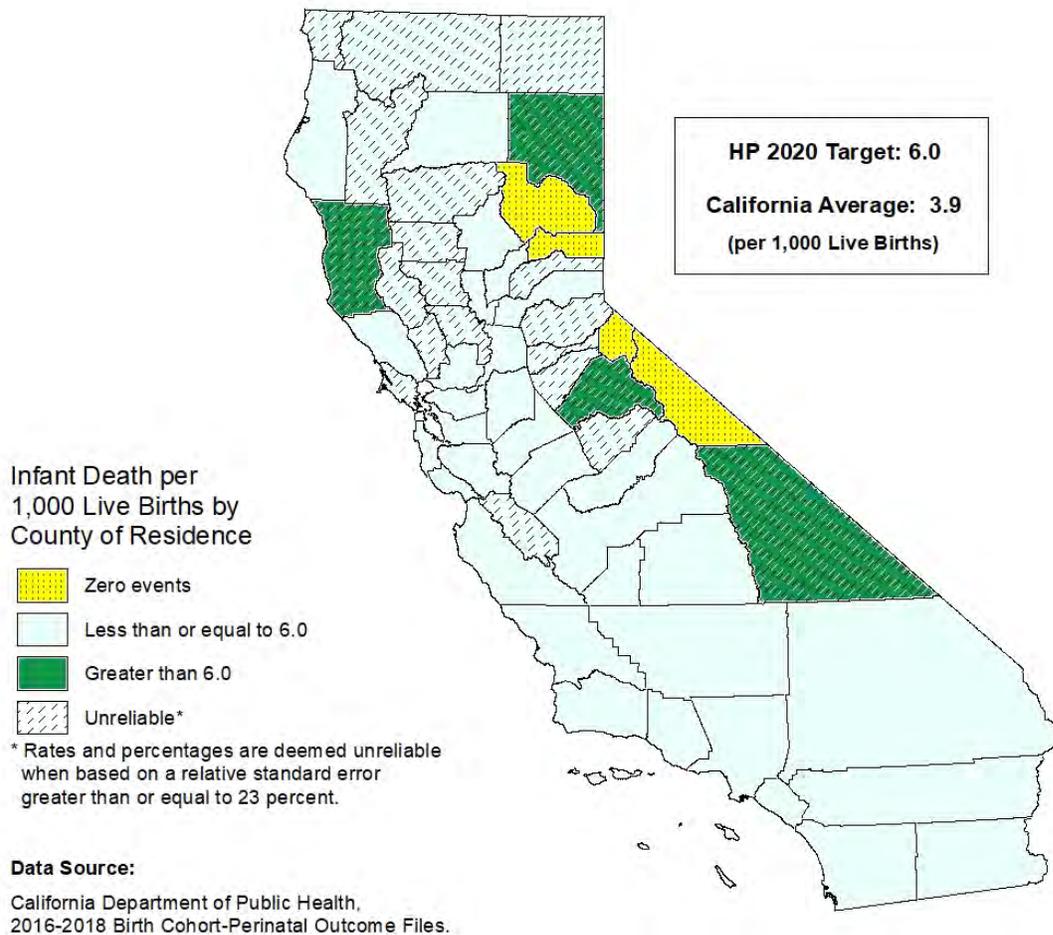
Among counties with reliable rates, the crude case rate ranged from a high of 111.8 in San Francisco County to a low of 9.2 in El Dorado County, a factor of 12.2 to 1.

Zero counties with reliable crude case rates met the Healthy People 2020 National Objective STD-7.2 of no more than 6.7 reported MS-Cases per 100,000 male population. California also did not meet the Healthy People 2020 National Objective. Three counties with unreliable rates and five counties with zero incidences met the Healthy People 2020 National Objective.

Twelve counties contain suppressed data for the case count, crude case rate, and confidence limits per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California crude case rate of MS-Cases for the 2014-2016 period averaged 22.5 per 100,000 male population.

## INFANT MORTALITY, ALL RACE/ETHNIC GROUPS, 2016-2018



The California birth cohort infant mortality death rate (IMR) for all race/ethnic groups under 12 months of age, averaged 3.9 infant deaths per 1,000 live births. The IMR for all race/ethnic groups is derived from averaging the number of infant deaths, 1,837.7, and dividing by the average number of live births, 466,017.0, for years 2016 through 2018.

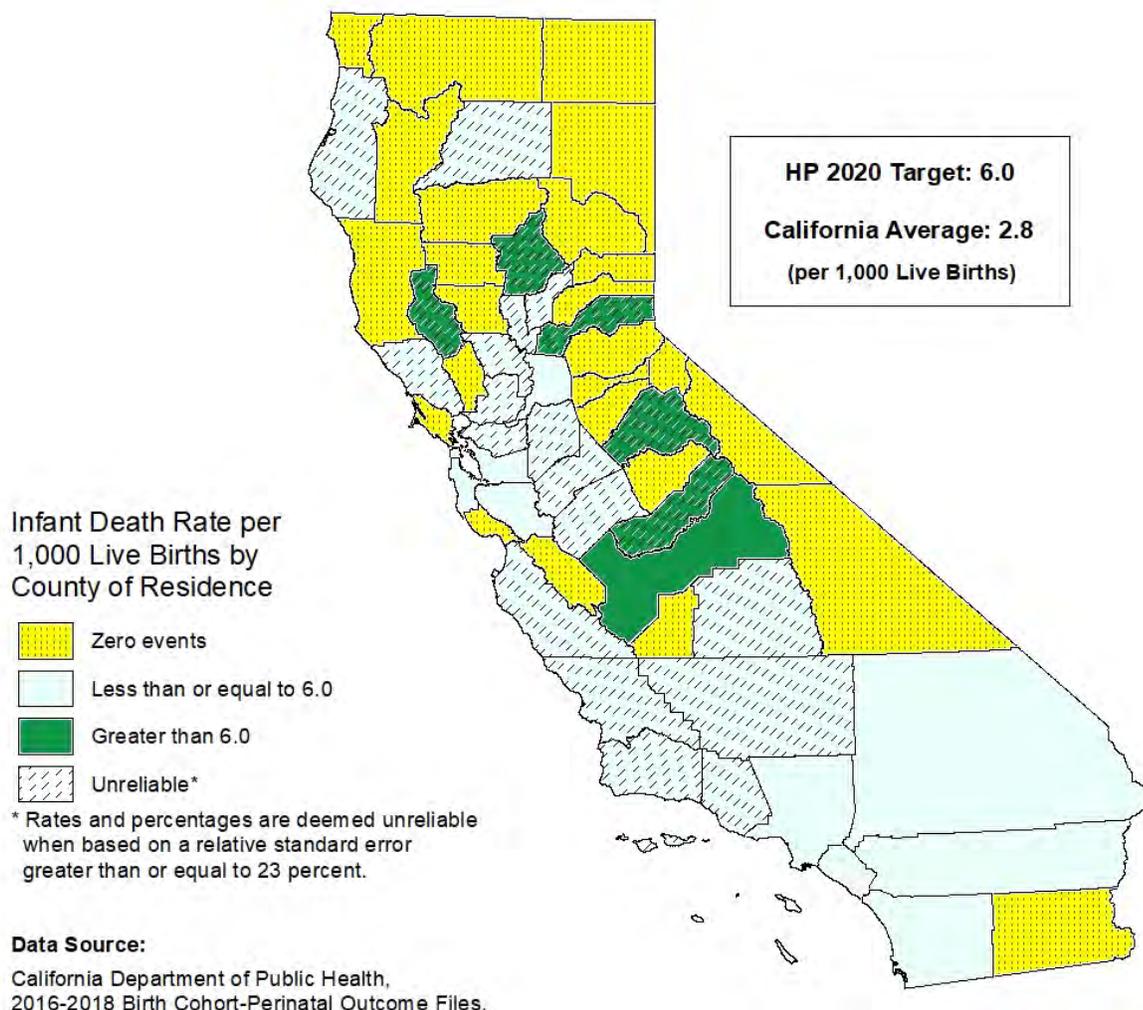
Among counties with reliable rates, the birth cohort IMR for all race/ethnic groups ranged from a high of 5.9 in Fresno County to a low of 2.1 in Placer County, a factor of 2.8 to 1.

California as a whole, along with 54 counties, met the Healthy People 2020 National Objective (HP 2020) MICH-1.3 of no more than 6.0 infant deaths for all race/ethnic groups per 1,000 live births. The counties include 33 with reliable rates and 17 with unreliable rates. Four counties had zero deaths. Four counties did not meet HP 2020, and all of these counties had unreliable rates.

Sixteen counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions were applied: infant death counts, IMR, and confidence limits. See Technical Notes for more information regarding DDG.

The California birth cohort IMR for all race/ethnic groups for the 2013-2015 period averaged 4.2 per 1,000 live births.

## ASIAN/PACIFIC ISLANDER INFANT MORTALITY, 2016-2018



The California birth cohort infant mortality death rate (IMR) for Asian/Pacific Islanders averaged 2.8 deaths per 1,000 live births. The IMR for Asian/Pacific Islanders is derived from averaging the number of infant deaths, 205.3, and dividing by the average number of live births, 72,311.0, for years 2016 through 2018.

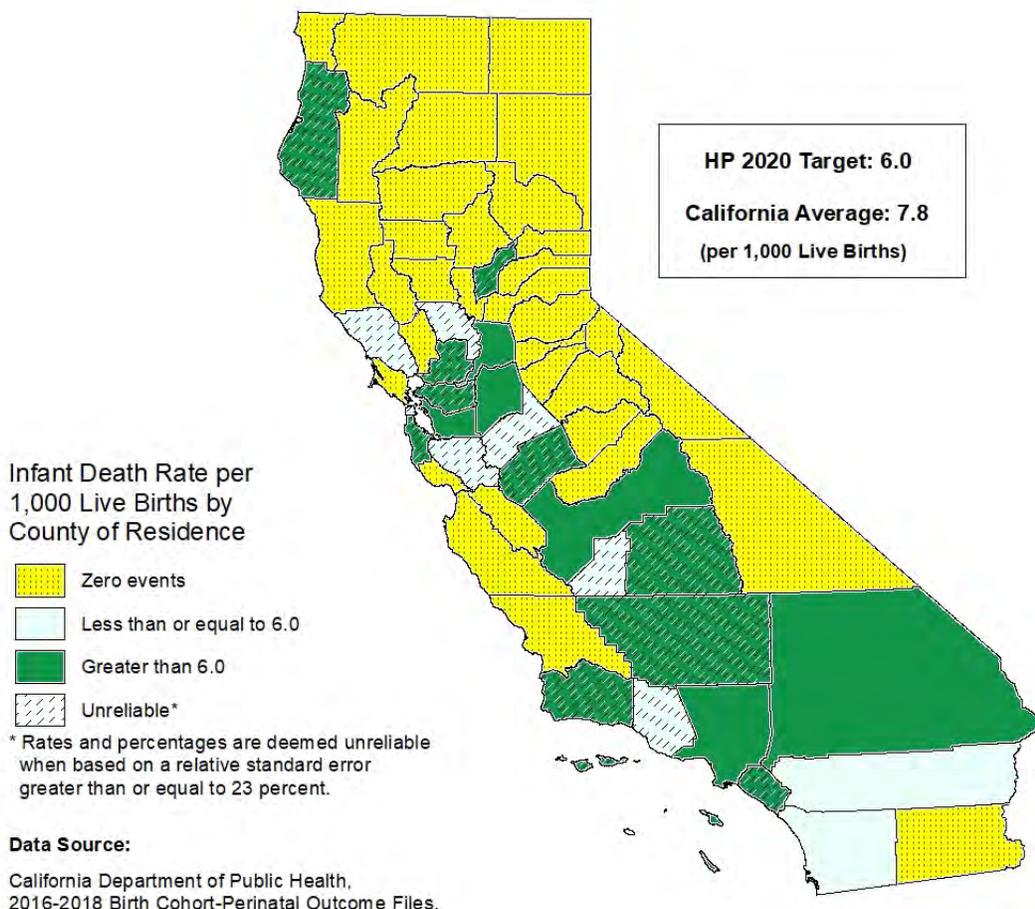
Among counties with reliable rates, the birth cohort IMR for Asian/Pacific Islanders ranged from a high of 6.7 in Fresno County to a low of 2.0 in Orange County, a factor of 3.4 to 1.

California as a whole, along with 50 counties, met the Healthy People 2020 National Objective (HP 2020) MICH-1.3 of no more than 6.0 infant deaths per 1,000 live births among Asian/Pacific Islander infants. The counties include 10 with reliable rates, 17 with unreliable rates, and 23 with zero deaths. Six counties did not meet HP 2020 and five of these counties had unreliable rates; two counties had zero births.

Twenty-six counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions were applied: infant death counts, IMR, and confidence limits. Three-year average live birth counts were suppressed where applicable. See Technical Notes for more information regarding DDG.

The California birth cohort IMR for Asian/Pacific Islander infants under 12 months of age for the 2013-2015 period averaged 2.9 infant deaths per 1,000 live births.

## BLACK INFANT MORTALITY, 2016-2018



The California birth cohort infant mortality death rate (IMR) for Blacks averaged 7.8 deaths per 1,000 live births. The IMR for Blacks is derived from averaging the number of infant deaths, 176.7, and dividing by the average number of live births, 22,697.7, for years 2016 through 2018.

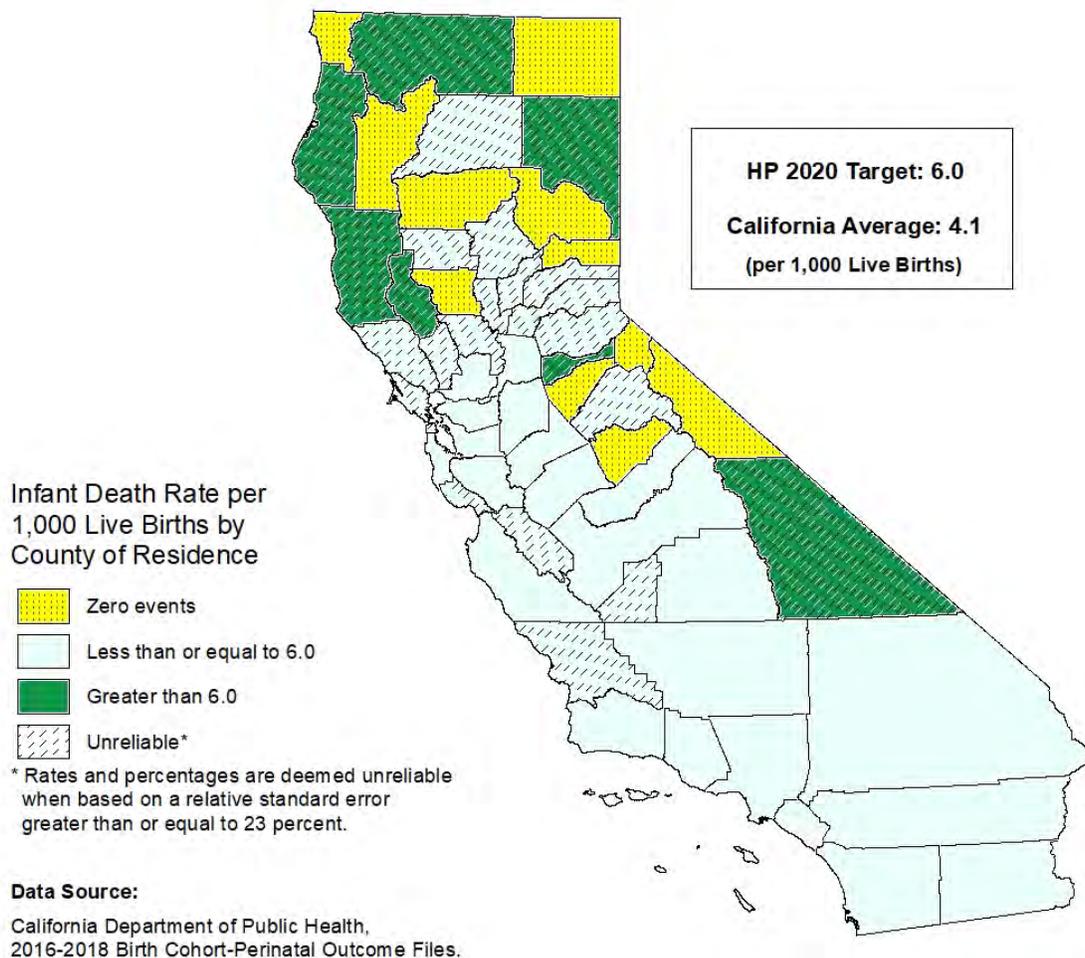
Among counties with reliable rates, the birth cohort infant death rate for Blacks ranged from a high of 12.1 in Fresno County to a low of 5.8 in Riverside County, a factor of 2.1 to 1.

Thirty-seven counties met the Healthy People 2020 National Objective (HP 2020) MICH-1.3 of no more than 6.0 infant deaths per 1,000 live births among the Black population. Of the 37 counties, two had reliable rates, seven had unreliable rates, and 28 had zero deaths. Five counties had zero births. California as a whole, along with 16 counties, did not meet HP 2020, and ten of these counties had unreliable rates.

Twenty-eight counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions were applied: infant death counts, IMR, and confidence limits. Three-year average live birth counts were suppressed where applicable. See Technical Notes for more information regarding DDG.

The California birth cohort IMR for Black infants under 12 months of age for the 2013-2015 period averaged 8.9 infant deaths per 1,000 live births.

## HISPANIC INFANT MORTALITY, 2016-2018



The California birth cohort infant mortality rate (IMR) for Hispanics averaged 4.1 deaths per 1,000 live births. The IMR for Hispanics is derived from averaging the number of infant deaths, 893.3, and dividing by the average number of live births, 217,122.7, for years 2016 through 2018.

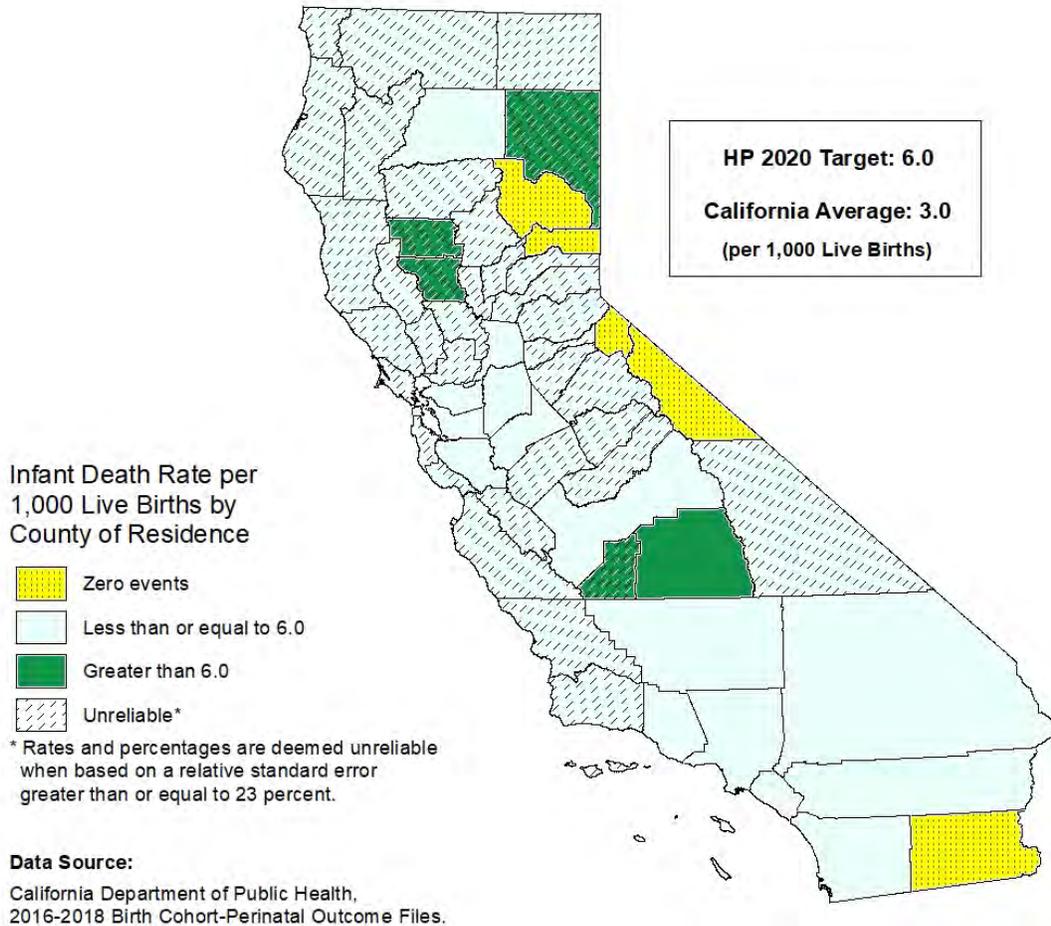
Among counties with reliable rates, the birth cohort IMR for Hispanics ranged from a high of 5.6 in Fresno County to a low of 3.0 in San Diego and Contra Costa counties, a factor of 1.9 to 1.

California as a whole, along with 51 counties, met the Healthy People 2020 National Objective (HP 2020) MICH-1.3 of no more than 6.0 infant deaths per 1,000 live births among the Hispanic population. The counties include 22 with reliable rates, 18 with unreliable rates, and 11 with zero deaths. Seven counties, all with unreliable rates, did not meet HP 2020.

Twenty-one counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions were applied: infant death counts, IMR, and confidence limits. Three-year average live birth counts were suppressed where applicable. See Technical Notes for more information regarding DDG.

The California birth cohort IMR for Hispanic infants under 12 months of age for the 2013-2015 period averaged 4.1 infant deaths per 1,000 live births.

## WHITE INFANT MORTALITY, 2016-2018



The California birth cohort infant mortality rate (IMR) for Whites averaged 3.0 deaths per 1,000 live births. The IMR is derived from averaging the number of infant deaths, 375.7, and dividing by the average number of live births, 125,911.0, among the White population for years 2016 through 2018.

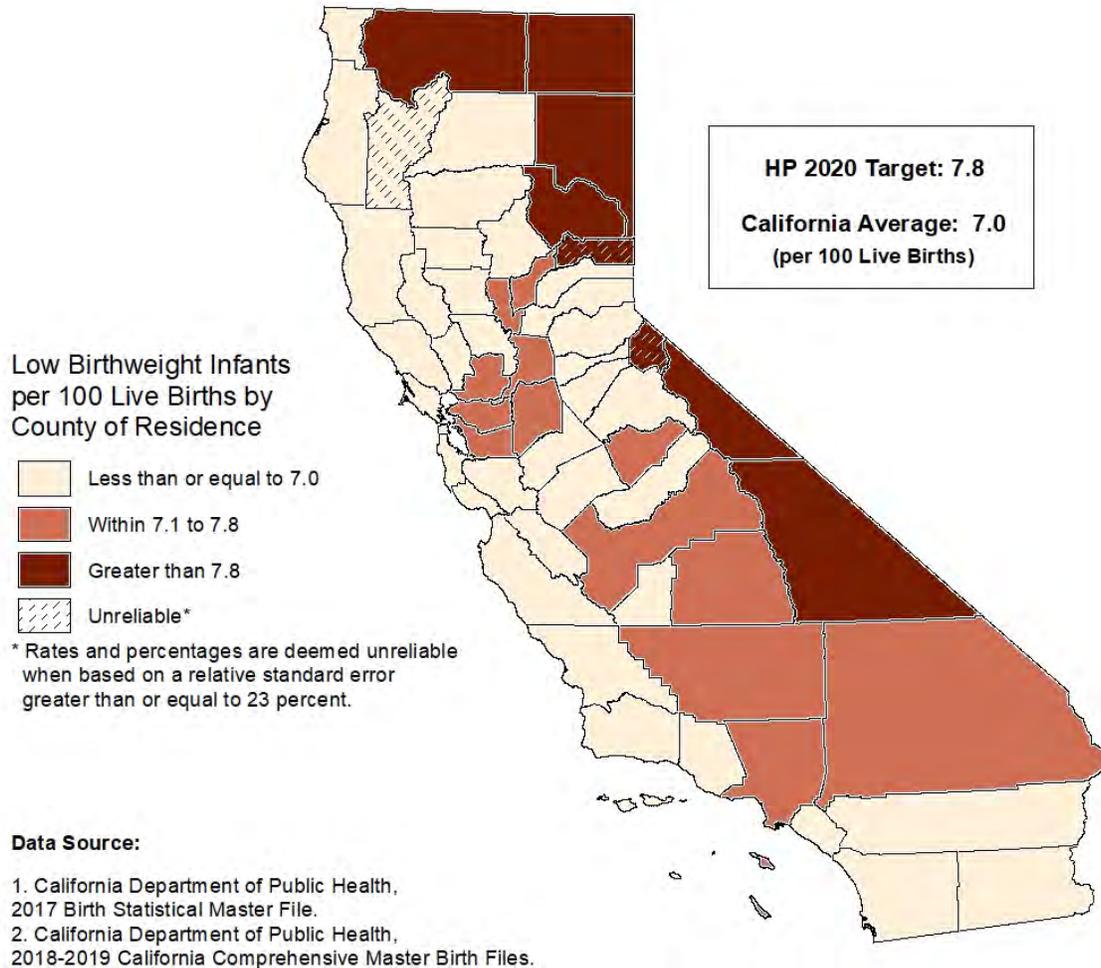
Among counties with reliable rates, the birth cohort IMR for Whites ranged from a high of 6.3 in Tulare County to a low of 1.9 in San Francisco County, a factor of 3.3 to 1.

California as a whole, along with 53 counties, met the Healthy People 2020 National Objective (HP 2020) MICH-1.3 of no more than 6.0 infant deaths per 1,000 live births among the White population. The counties include 16 with reliable rates, 32 with unreliable rates, and five with zero deaths. Five counties did not meet HP 2020, and four of these counties had unreliable rates.

Thirty counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions were applied: infant death counts, IMR, and confidence limits. Three-year average live birth counts were suppressed where applicable. See Technical Notes for more information regarding DDG.

The California birth cohort IMR for White infants under 12 months of age for the 2013-2015 period averaged 3.5 infant deaths per 1,000 live births.

## LOW BIRTHWEIGHT INFANTS, 2017-2019



The relative average number of low birthweight infants for California is 7.0 per 100 live births, or 7.0 percent. The percentage for California is derived from averaging the number of low birthweight infants, 32,008.0, and dividing by the average number of live births, 457,496.0, for years 2017 to 2019.

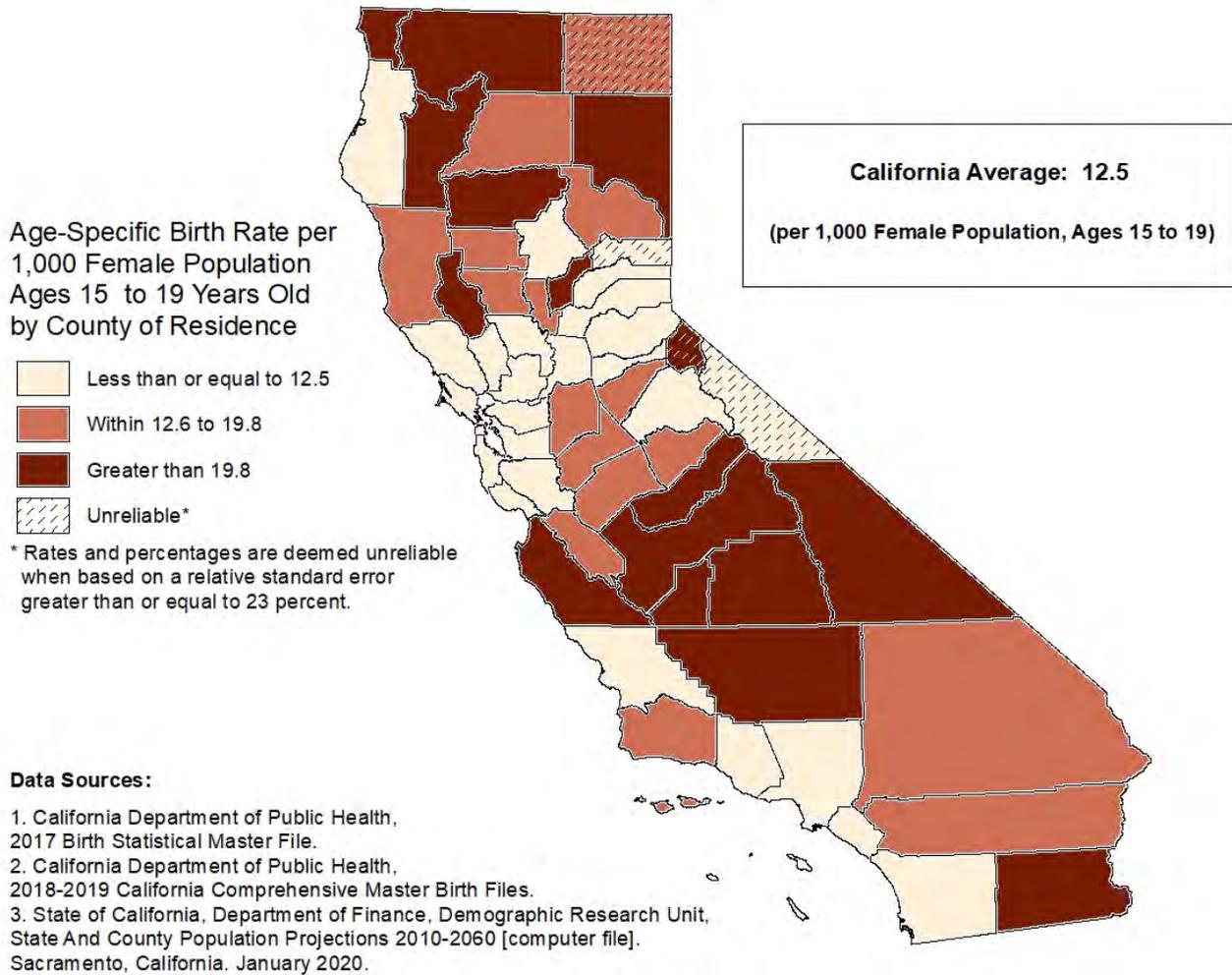
Among counties with reliable percentages, the percentage of low birthweight infants ranged from a high of 9.1 in Mono County to a low of 5.2 percent in Colusa County, a factor of 1.8 to 1.

Forty-nine counties with reliable percentages and California as a whole met the Healthy People 2020 National Objective (HP 2020) MICH-8.1 of reducing the incidence of low birthweight infants to no more than 7.8 percent of live births. One county with an unreliable percentage also met HP 2020.

Two counties contain suppressed data per the Data De-Identification Guidelines (DDG). For these counties, the following suppressions have been applied: low birthweight count, low birthweight percentage, and confidence limits. See Technical Notes for more information regarding DDG.

The California percentage of low birthweight infants for the 2014-2016 period averaged 6.8 per 100 live births.

## BIRTHS TO ADOLESCENT MOTHERS, 15 TO 19 YEARS OLD, 2017-2019



The age-specific birth rate to adolescent mothers, ages 15 to 19 years old, in California averaged 12.5 births per 1,000 female population. The age-specific birth rate for California is derived from averaging the number of births to adolescent mothers for 2017 to 2019 and dividing by the female population as of July 1, 2018. The average number of births for the three years was 17,058.7 and the 2018 female population count was 1,367,732.

Among counties with reliable rates, the age-specific birth rate of births to adolescent mothers ranged from a high of 26.8 in Lake County to a low of 4.6 in Marin County, a factor of 5.8 to 1.

A Healthy People 2020 National Objective for births to adolescent mothers, ages 15 to 19 years old, has not been established.

Two counties contain suppressed data for the live births and age specific birth rate per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California age-specific birth rate to adolescent mothers for the 2014-2016 period averaged 17.5 per 1,000 female population in the corresponding age group.

## PRENATAL CARE BEGUN DURING THE FIRST TRIMESTER OF PREGNANCY, 2017-2019



The number of births to California mothers who began prenatal care during the first trimester of pregnancy averaged 85.1 per 100 live births or 85.1 percent. The California percentage is derived from averaging the number of live births to mothers who began prenatal care during the first trimester of pregnancy for 2017 to 2019, 384,288.7, and dividing by the average number of live births, 451,550.3, which excluded births with an unknown number of prenatal care visits, during the same period.

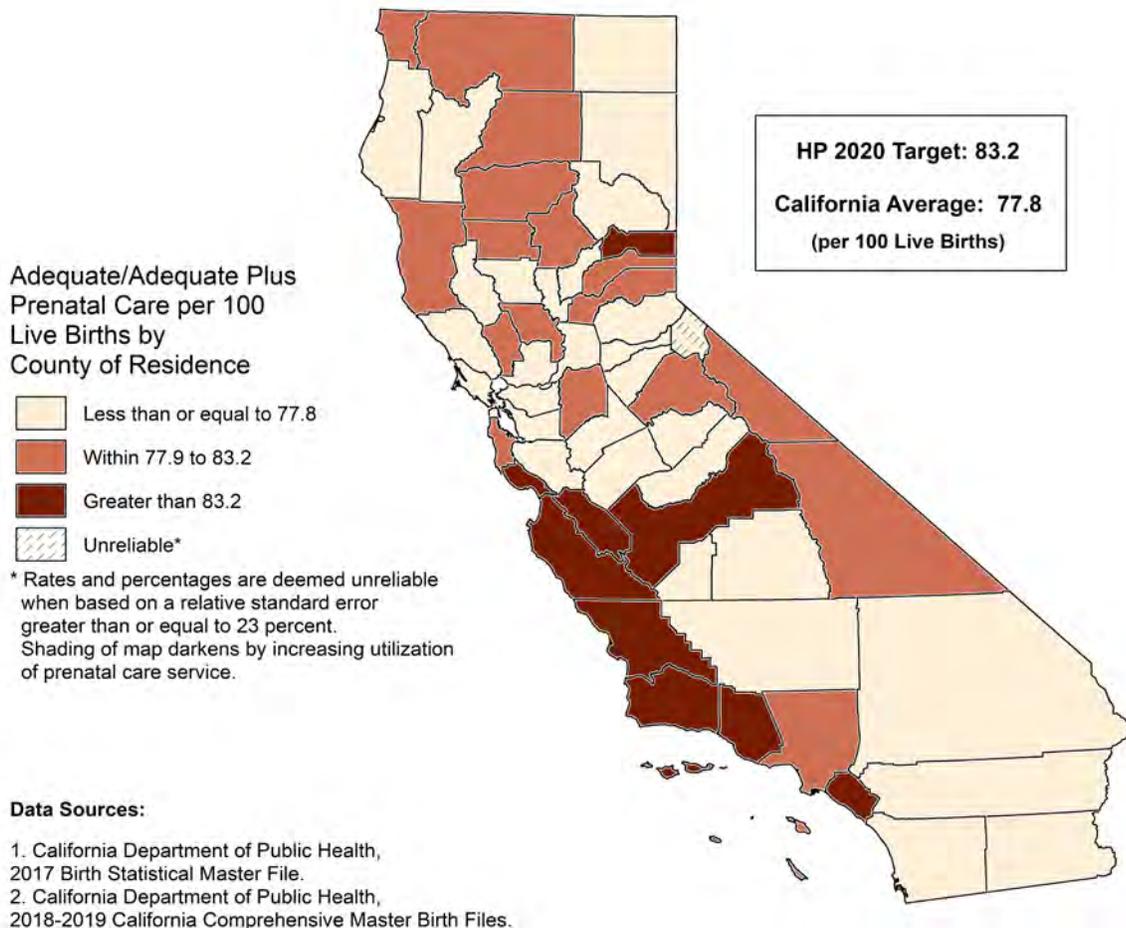
Among counties with reliable percentages, the percentage of births to mothers who began prenatal care during the first trimester of pregnancy ranged from a high of 92.7 in San Mateo County to a low of 47.9 in Imperial County, a factor of 1.9 to 1.

Twenty counties with reliable percentages met the Healthy People 2020 National Objective MICH-10.1 with at least 84.8 percent of live births born to mothers who began prenatal care during the first trimester. One county with an unreliable percentage did not meet the objective.

One county contains suppressed data for the prenatal care count and percentage per the Data De-Identification Guidelines (DDG). See Technical Notes for more information regarding DDG.

The California number of live births to mothers who began prenatal care during the first trimester of pregnancy for the 2014-2016 period averaged 83.3 per 100 live births, or 83.3 percent.

## ADEQUATE/ADEQUATE PLUS PRENATAL CARE (ADEQUACY OF PRENATAL CARE UTILIZATION INDEX), 2017-2019



**A**bout 77.8 per 100 babies in California, or 77.8 percent, were born to mothers who received Adequate/Adequate Plus prenatal care. The percentage is derived from averaging the number of births to mothers who received Adequate/Adequate Plus prenatal care, 349,686.7, and dividing by the average number of live births with the exclusion of unknown adequacy of prenatal care, 449,332.7, for years 2017 through 2019.

Among counties with reliable percentages for births to mothers who received Adequate/Adequate Plus prenatal care, the percentage ranged from a high of 86.8 in San Luis Obispo County to a low of 52.1 in Imperial County, a factor of 1.7 to 1.

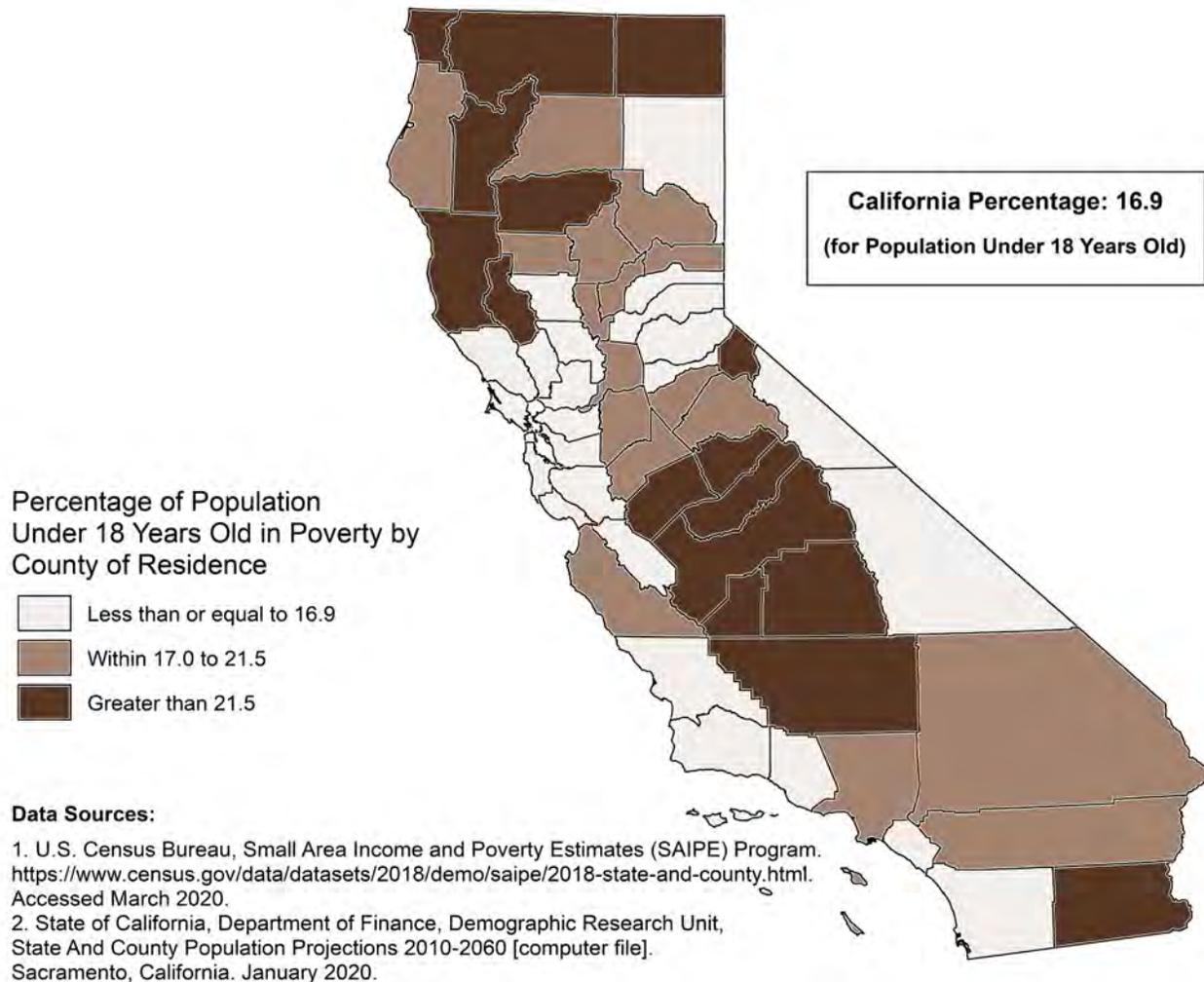
Nine counties with reliable percentages met the Healthy People 2020 National Objective MICH-10.2 of increasing the proportion of pregnant women receiving early and adequate prenatal care to at least 83.2 percent of total births according to the Adequacy of Prenatal Care Utilization Index. One county with an unreliable percentage did not meet the objective. See Technical Notes, Natality Section, for the determination of Adequate/Adequate Plus and additional clarification.

The California percentage of births to mothers who received Adequate/Adequate Plus prenatal care for 2014-2016 averaged 78.0 per 100 live births.

**BREASTFEEDING INITIATION  
DURING EARLY POSTPARTUM, 2017-2019**

Table 28: Breastfeeding Initiation During Early Postpartum is excluded from *Profiles* (2021) due to data unavailability.

## PERSONS UNDER 18 YEARS OLD IN POVERTY, 2018



In California, 16.9 percent of individuals under 18 years old were living in poverty. This percentage resulted from the estimated population of persons under 18 years of age living in poverty in California, 1,539,628, as published in the 2018 American Community Survey conducted by the U.S. Census Bureau, and the corresponding population count of 9,114,243 as of July 1, 2018.

All 58 counties demonstrated reliable percentages for persons under 18 years of age living in poverty. The percentages ranged from a high of 36.1 in Alpine County to a low of 6.4 in Marin County, a factor of 5.6 to 1.

A Healthy People 2020 National Objective for persons under 18 years of age living in poverty has not been established.

In 2017, 17.7 percent of people under 18 years old lived in poverty.

# TECHNICAL NOTES

## DATA SOURCES

County Health Status Profiles (*Profiles*) presents birth and death data using records from the California Department of Public Health (CDPH), Center for Health Statistics and Informatics (CHSI) birth and death registration systems as sources. Birth statistics were tabulated from the Birth Statistical Master Files for years 2013 through 2017 and the California Comprehensive Master Birth Files for 2018 through 2019. Death statistics were tabulated from the Death Statistical Master Files for year 2013, and the California Comprehensive Master Death Files for years 2014 through 2019.

The linked birth-death records in the Birth Cohort-Perinatal Outcome Files for years 2013 through 2018 are based on the Birth and Death Master Files. For additional information, please visit the [Vital Statistics Data](#) webpage.

The following CDPH programs provided data: [Sexually Transmitted Diseases Control Branch](#) and the [Tuberculosis Control Branch](#) of the [Division of Communicable Disease Control](#) were the sources for the reported case incidence of chlamydia, gonorrhea, congenital syphilis, primary/secondary syphilis, and tuberculosis, respectively; and the [Office of AIDS, Surveillance Section](#) provided incidence data of diagnosed HIV and AIDS cases.

The [State of California, Department of Finance](#): State And County Population Projections 2010-2060 data file, was provided by the Demographic Research Unit. Projections were used in the development of the age-adjusted rates, crude case rates, and age-specific birth rates for the current (2017 to 2019) and previous (2014 to 2016) periods with the exceptions of HIV/AIDS and Birth Cohort Infant Mortality. The current measurement period for HIV/AIDS and Birth Cohort Infant Mortality is 2016 to 2018 and the previous measurement period is 2013 to 2015.

Estimates of persons under age 18 years old in poverty were obtained from the U.S. Census Bureau [Small Area Income and Poverty Estimates \(SAIPE\) Program](#).

Tables in this report may reflect small undercounts where case data were received late or vital event data were registered after the cutoff date for the creation of the data files.

Website addresses can be found at the conclusion of this report.

## DATA DEFINITIONS

Statistics include only individuals with a known California county of residence.

### **Data De-Identification**

In order to prevent inadvertent or intentional re-identification of individuals from the *Profiles* data, the CHSI reviews all tables prior to release, and implements cell suppression procedures in accordance with the [California Health and Human Services Agency \(CHHS\) Data De-Identification Guidelines \(DDG\)](#).

### **Mortality (Tables 1-19)**

Use of the consensus set of health status indicators has been facilitated by reference to the causes of mortality coded using the International Classification of Diseases, Tenth Revision (ICD-10). Beginning with 1999 mortality data, changes to ICD-10 follows a worldwide standard set by the World Health Organization. Standards for ICD-10 implementation were set by the National Center for Health Statistics (NCHS).

The following is a list of the mortality tables in this report and the ICD-10 codes used to create these tables. The ICD-10 codes used to collect the mortality data for the tables, per Healthy People 2020 National Objectives (HP 2020), where applicable, are current as of January 7, 2021. Tables 1, 8, 11, and 12 are not included in HP 2020.

Table 1: All Causes of Death.....	A00-Y89
Table 2: All Cancers.....	C00-C97
Table 3: Colorectal Cancer.....	C18-C21, C26.0
Table 4: Lung Cancer .....	C34
Table 5: Female Breast Cancer .....	C50
Table 6: Prostate Cancer.....	C61
Table 7: Diabetes .....	E10-E14
Table 8: Alzheimer’s Disease .....	G30
Table 9: Coronary Heart Disease.....	I20-I25
Table 10: Cerebrovascular Disease (Stroke) ....	I60-I69
Table 11: Influenza/Pneumonia .....	J09-J18
Table 12: Chronic Lower Respiratory Disease ..	J40-J47
Table 13: Chronic Liver Disease and Cirrhosis..	K70, K73-K74
Table 14: Accidents (Unintentional Injuries).....	V01-X59, Y85-Y86
Table 15: Motor Vehicle Traffic Crashes.....	V02-V04 (.1, .9), V09.2, V12-V14 (.3-.9), V19 (.4-.6), V20-V28 (.3-.9), V29-V79 (.4-.9), V80 (.3-.5), V81.1, V82.1, V83-V86 (.0-.3), V87 (.0-.8), V89.2
Table 16: Suicide .....	*U03, X60-X84, Y87.0
Table 17: Homicide.....	*U01-*U02, X85-Y09, Y87.1
Table 18: Firearm Related Deaths .....	*U01.4, W32-W34, X72-X74, X93-X95, Y22-Y24, Y35.0
Table 19: Drug Induced Deaths.....	D52.1, D59.0, D59.2, D61.1, D64.2, E06.4, E16.0, E23.1, E24.2, E27.3, E66.1, F11.0-F11.5, F11.7-F11.9, F12.0-F12.5, F12.7-F12.9, F13.0-F13.5, F13.7-F13.9, F14.0-F14.5, F14.7-F14.9, F15.0-F15.5, F15.7-F15.9, F16.0-F16.5, F16.7-F16.9, F17.0, F17.3-F17.5, F17.7-F17.9, F18.0-F18.5, F18.7-F18.9, F19.0-F19.5, F19.7-F19.9, G21.1, G24.0, G25.1, G25.4, G25.6, G44.4, G62.0, G72.0, I95.2, J70.2-J70.4, L10.5, L27.0, L27.1, M10.2, M32.0, M80.4, M81.4, M83.5, M87.1, R78.1-R78.5, X40-X44, X60-X64, X85, Y10-Y14

## **Morbidity (Tables 20-23)**

In general, the case definition of a disease means positive laboratory test results, or in the absence of a confirmatory test, a constellation of clearly specified signs and symptoms that meet a series of clinical criteria as defined by the Centers for Disease Control and Prevention (CDC). These criteria can be found at the [CDC - Online case definitions](#) webpage.

Due to incomplete reporting of infectious and communicable diseases by many health care providers, caution is advised in interpreting morbidity tables. Many factors contribute to the underreporting of these diseases. These factors include lack of awareness regarding disease surveillance; lack of follow-up by support staff assigned to report; failure to perform diagnostic lab tests to confirm or to rule out infectious etiology; concern for anonymity of the client; and expedited treatment in lieu of waiting for laboratory results because of time or cost constraints. County designation reflects county of residence. Although table headings indicate the data shown are reported cases, please contact the CDPH [Division of Communicable Disease Control](#) and the [Office of AIDS](#), Surveillance Section for complete morbidity reporting technical definitions and procedures.

## **HIV/AIDS (Table 20)**

Effective 2018, counts and rates are based on a population of 13 years and older living with HIV or AIDS. Since *Profiles*' inception in 1993, CDPH had collected only the reported incidences of AIDS among the population of 13 years and older. Accordingly, the inclusion of data that reports, both HIV positive counts as well as clinically diagnosed AIDS incidence, are not made available until March of each year and are therefore presented with a one-year delay for this publication. Consequently, Table 20 reflects data from 2016-2018.

## **Tuberculosis (Table 23)**

A Tuberculosis (TB) case submitted to the TB Control Branch Registry by April 12, 2017 was included as a 2016 case in this report if the case was confirmed as active TB between January 1 and December 31, 2016. After reporting the case, a jurisdiction may subsequently decide that a reported case did not have TB. Also, a few cases may be reported after the submission deadline. These changes are reflected in future reports. Therefore, the total number of TB cases counted in a given year may change, usually by a small number of cases. This small change in case numbers may also be reflected in the two sets of TB numbers released each year. A provisional case count is used in early reports and materials generated for World TB Day. A final case count is used in this report.

For surveillance purposes, a case of TB is defined by laboratory and clinical evidence of disease caused by *Mycobacterium tuberculosis* (*Mtb*) complex. TB cases with culture or nucleic acid amplification evidence of *Mtb*, or acid-fast bacilli from a clinical specimen (when either a culture could not be obtained, or positive results were negative or contaminated), were classified as laboratory confirmed. In the absence of laboratory confirmation, cases that were reported from a positive tuberculin skin test (TST) or positive interferon gamma release assay (IGRA) for *Mtb*, or abnormal chest imaging (in those with pulmonary disease), and persons who have undergone treatment with two or more anti-TB medications, were classified as clinically confirmed TB. Reported cases not meeting one or more of the clinical criteria for TB were classified as provider-diagnosed cases because the health care provider determined there was sufficient evidence of active TB disease to report the case. All of these cases were considered active cases of disease and were reportable.

## **Birth Cohort Infant Mortality (Table 24A-E)**

The [infant mortality](#) rate is the number of deaths among infants under one year of age per 1,000 live births. It is a universally accepted and easily understood indicator, which represents the overall health status of a community.

Studies of infant mortality that are based on information from death certificates alone have been found to underestimate infant death rates for all race/ethnic groups. Due to problems such as confusion about event registration requirements, incomplete data, and transfers of newborns from one facility to another for medical care, infant mortality rates in this report are based on linked birth and infant death records in the Birth Cohort-Perinatal Outcome Files, which generate more accurate estimates of the total number of infant deaths as well as race-specific infant mortality rates.

Because birth and death certificate registration data are included in the Birth Cohort-Perinatal Outcome Files after the Birth and Death Master Files have been closed to further processing, and hospital follow-back is conducted to resolve questionable cases, cohort files cannot be as timely as the Statistical Master Files. However, the Birth Cohort-Perinatal Outcome Files are more complete and consequently more accurate.

The results for tables 24B – Asian/Pacific Islander Infant Mortality, 24C – Black Infant Mortality, 24D – Hispanic Infant Mortality, and 24E – White Infant Mortality were mostly suppressed due to DDG. In accordance with California Government Code Section 8310.7(e), data within this report do not include disaggregated subcategories of Asian and Pacific Islander because such tabulations would result in statistical unreliability and possible re-identification.

## **Nativity (Tables 25-27B)**

The natality data were obtained from the Birth Statistical Master Files for years 2013 through 2017 and the California Comprehensive Master Birth Files for years 2018 through 2019. Records with unknown attributes were excluded from the total number of live births in developing certain tables as follows: Table 25 excludes unknown birthweights; Table 27A excludes unknown prenatal care; and Table 27B excludes unknown adequacy of prenatal care.

Two high-risk natality factors along with the following records with unknown attributes are analyzed within this report. Low birthweight has been associated with negative birth outcomes and may indicate a lack of access to health care or preventive care, and/or the need for prenatal care services. Prevalence of low birthweight is defined as the percentage of live births weighing less than 2,500 grams (approximately 5.5 pounds). Birth rates for adolescents are an indicator of other [high-risk pregnancy factors](#). Adolescent birth rate is defined as the number of births to mothers 15 to 19 years of age per 1,000 female population.

The prenatal care indicator, Month Prenatal Care Began, has been associated with access to care. However, the percentage of births in which the mother's prenatal care began in the first trimester, as a health indicator, does not readily permit an unambiguous interpretation. Accordingly, it may fail to document whether or not prenatal care actually continues throughout the pregnancy.

In addition to Prenatal Care Beginning during the First Trimester of Pregnancy, this report includes adequacy of prenatal care based on the Adequacy of Prenatal Care Utilization Index. From 1995 through 1998, the Kessner Index was used to measure the adequacy of prenatal care (Kessner, 1973). The Kessner Index was replaced in the 1999 report by the Adequacy of Prenatal Care Utilization Index, which is the methodology specified in HP 2020.

The Adequacy of Prenatal Care Utilization Index developed by Milton Kotelchuck (1994) attempts

to characterize prenatal care utilization in two independent and distinctive dimensions: adequacy of prenatal care initiation and services received (once prenatal care has begun).

The initial dimension, adequacy of prenatal care initiation, characterizes the month prenatal care began and its timeliness. The second dimension, adequacy of received services, characterizes the number of prenatal care visits received from the time the mother began prenatal care until delivery. The adequacy of prenatal visits is based on the recommendations established by the American College of Obstetricians and Gynecologists. These two dimensions are then combined into a single summary prenatal care utilization index, which contains the following five categories for adequacy of prenatal care:

- (1) Adequate Plus: Prenatal care begun by the fourth month and 110 percent or more of the recommended visits received.
- (2) Adequate: Prenatal care begun by the fourth month and 80 to 109 percent of the recommended visits received.
- (3) Intermediate: Prenatal care begun by the fourth month and 50 to 79 percent of the recommended visits received.
- (4) Inadequate: Prenatal care begun after the fourth month, or less than 50 percent of the recommended visits received.
- (5) Missing Information: Unknown adequacy of prenatal care.

Only adequate and adequate plus prenatal care is used in Table 27B to measure the adequacy of prenatal care utilization. Also, please note the two-factor index does not assess the access to or quality of the prenatal care that was delivered, but simply its utilization. For further information on the Adequacy of Prenatal Care Utilization Index, see [Kotelchuck \(1994\)](#).

### **Persons Living in Poverty (Table 29)**

People under 18 years old and living in households with incomes at or below the poverty level define the category of the population under 18 in poverty. The percent of people under 18 years old in this category is an indicator of global risk factors that have implications for access to health services. For additional information, visit the [Small Area Income and Poverty Estimates \(SAIPE\) Program](#) website. SAIPE uses the Official Poverty Level, which estimates poverty rate by examining an individual's income. It does not account for other factors such as geographical differences in the cost of housing, and thus may not accurately reflect the actual level of poverty in California.

### **CRUDE RATES AND AGE-ADJUSTED RATES**

Crude rates and age-adjusted rates are calculated for mortality data. The numerator data used to compute mortality rates and percentages were three-year averages compiled by county of residence of the decedent; mother's county of residence for birth data (including linked birth-death data for infant mortality); and county of residence for morbidity data. Records with unknown county of residents were excluded from the analysis. Three-year averages tend to reduce the year to year fluctuations and increase the reliability of estimates.

The crude rate (or non-standardized) is calculated by dividing the total number of events (e.g., deaths) by the total population at risk, then multiplying by a base (e.g., 100,000). Subpopulations, such as counties with varying age compositions, can have highly disparate crude death rates, since the risk of dying is primarily a function of age. Therefore, counties with a large component of elderly experience a higher death rate. The effect of different age compositions among counties or

other demographic groups can be removed from the death rates by the age-adjustment process. This produces age-adjusted rates that permit comparisons among geographic and demographic groups, which are directly comparable with those that are expressed as age-adjusted rates in HP 2020.

Age-adjusted death rates are hypothetical rates obtained by calculating age-specific rates for each county and multiplying these rates by proportions of the same age categories in a “standard population,” then summing the apportioned specific rates to a county total. The “standard population” used in the age-adjusted rates in this report is drawn from the 2000 U.S. Standard Population distribution that applies the same age groupings and proportions as those established by NCHS for the United States Department of Health and Human Services. Crude death rates, which include the effect of age, are the rates that should be applied when measuring the actual risk of dying in a specific population. For further information on age-adjusted rates, see NCHS report by [Curtin and Klein \(1995\)](#) listed in the bibliography.

Only crude case rates were calculated. Although age and aging do affect morbidity, the effect is not as prominent as their impact on mortality. Birth cohort infant death rates are not age-adjusted. Since the deaths are linked to the births on a record by record basis within the birth cohort, these rates are based on a numerator (deaths) and a denominator (live births) from the same birth cohort. Birth cohort comparisons among counties reflect the actual risk of dying within one year of birth, are unaffected by confounding age compositions because the cohorts represent the same age group (under one year).

## RELIABILITY OF RATES

Age-adjusted rates were calculated using the year 2000 U.S. standard population weights to facilitate meaningful comparison of vital statistics data rates over time and between groups. For additional information on the HP 2020 recommendations, visit the [CDC](#) webpage. All vital statistics rates and morbidity rates are subject to random variation. This variation is inversely related to the number of events (e.g., deaths) used in calculating the rate. Small frequencies in the occurrence of events produce a greater likelihood that random fluctuations will be found within a specified time period. Rare events are relatively less stable in their occurrence from observation to observation. Consequently, counties with a small number of deaths, or few cases of morbidity, can yield highly unstable rates from year to year. The observation of zero events is especially hazardous, regardless of the population size. All observations and comparisons are limited to what was reported to CDPH. This report reduces to an extent the year to year fluctuation in the occurrence of infrequent events by basing rates on three-year average numbers of events (e.g., 2017-2019), divided by the population in the middle year (e.g., 2018).

The relative standard error (RSE) provided the rational basis for determining which rates may be considered “unreliable.” Conforming to [NCHS standards](#), any rates that are calculated with an RSE of 23 percent or more, approximately 20 data elements, are considered unreliable. Using an RSE of 23 percent or more as the basis deviates from previous publications that relied strictly on less than 20 events, which provided a more conservative outcome. Unreliable rates are notated with an asterisk ( \* ) in data tables and, where applicable, are presumed to have “Met” or “Not Met” the HP 2020 National Objective, as reported. Unreliable rates should always be interpreted with caution. When rates, percentages, and confidence limits are not calculated due to zero events, they are shown as dashes ( - ). For *Profiles* (2021) and future publications, the total events column has been incorporated into the tables published in the [Microsoft Excel workbook](#) on the [Vital Records Data and Statistics web page](#). The public can access Tables 1 to 29 via the [California Health and Human Services Open Data Portal](#).

The 95 percent confidence limits define the range within which the rate would probably occur in 95

out of 100 sets of data. In five of those 100 data sets, the rate or percent would fall outside the limits. Confidence intervals based on 100 or more data elements are calculated utilizing a normal distribution. In cases where there are fewer than 100 data elements, the gamma distribution is used. For appropriate statistical methodologies in comparing independent rates or percentages, please see the NCHS reports listed in the bibliography by Curtin and Klein (1995) on "[Direct Standardization](#)" and by Kleinman (1977) on "[Mortality](#)."

## **RANKING OF COUNTIES**

Data for each health indicator are displayed with the counties in rank order by increasing rates or percentages (rounded to the nearest tenth) with the exceptions of "Prenatal Care Begun During the First Trimester of Pregnancy" (Table 27A) and prenatal care adequacy (Table 27B). The county with the lowest rate or percentage (and the highest population) is in the first rank moving down the column to the highest rate or percentage. To rank counties regarding their Birth Cohort Infant Mortality, counties were rank ordered by increasing birth cohort death rate and then by the decreasing total number of live births. Data for prenatal care begun during the first trimester of pregnancy and adequacy of prenatal care are displayed with the counties in rank order by decreasing percentages. The county possessing the highest percentage is in the first rank and the county with the lowest percentage is in the 58<sup>th</sup> rank. For all health indicators, counties with identical rates or percentages are ranked first by the largest population or number of births.

Suppression is in accordance with the CHHS DDG and counties have been arranged alphabetically above or below each applicable table's HP 2020 line. For counties where the rate/percentage met or exceeded the established HP 2020, the suppressed rates/percentages and counts have been replaced with "Met." Additionally, these counties have been listed alphabetically above the HP 2020 line. Conversely, counties with rates/percentages that did not meet the established HP 2020 were listed alphabetically below that table's HP 2020 line. Some of the counties with data that must be suppressed have rates/percentages and counts replaced with "Not Met." Caution should be used for all rates and percentages with an RSE greater than or equal to 23 percent, as these counties had unreliable rates and percentages as reported. Data events reported with unknown or missing resident geography are excluded from the total counts.

## **COMPARISON OF RATES AND PERCENTAGES (TABLE 30)**

Rates and percentages have been calculated for one prior period, which facilitates comparison between that earlier period and the current reported statistics for selected health indicators.

Readers are cautioned against measuring progress toward target attainment for an HP 2020 using only one data point. The [HP 2020](#) provide basic formulas to measure progress toward achieving a target for the selected health outcome. When rates and counts have been suppressed in accordance with the CHHS DDG, the suppressed values are represented in this table as "LNE" (Low Number Evaluated).

## **THEMATIC MAPS**

Esri® ArcMap™ version 10.5 software was used to create the thematic maps. Mapped data were derived from the rates or percentages displayed in the column to the immediate left of the 95 percent lower confidence limit in the adjacent table. Counties with rates or percentages based on fewer than 20 data elements are shown with an overlay pattern of diagonal dashes to indicate "unreliable rate," whether or not they are presumed to have met the selected health objective. Counties with zero events are shown in a bright yellow color with black spots.

The mapping methodology strives to illustrate rates/percentages for each indicator in a way that highlights a county's status in meeting the HP 2020, if a target exists, and provides a comparison

with the California statewide rate. For example, a typical map for an indicator with an HP 2020 displays counties that achieved the target in the lightest shade; counties with a rate between the California rate and the target in the medium shade; and counties with a rate above the California rate are shown in the darkest shade.

Rates or percentages for health indicators without established HP 2020, or with HP 2020 data collection criteria that California did not meet, are mapped according to counties with rates/percentages at or below the California three-year average rate or percentage. The remaining counties above California's rate/percentage were divided into two groups in accordance with the 50<sup>th</sup> percentile of the rates or percentages amongst those counties.

### **ALZHEIMER'S DISEASE REPORTING – SANTA CLARA COUNTY**

Santa Clara County reported an abrupt decline in the number of Alzheimer's deaths for each year from 2013 to 2015 due to a change in the cause of death reporting practice among some certifiers of death in that county. Consequently, previously published data in *Profiles* (2019) for Santa Clara County may not reflect a true decline in the number of Alzheimer's deaths. Additionally, Santa Clara County has observed a reversal of this trend since 2016. There has been a year by year increase in deaths from Alzheimer's disease and a corresponding decrease in deaths from neurodegenerative disease from 2016 to 2019. As a result of this downward trend followed by a reversal, the reporting of deaths due to Alzheimer's disease in *Profiles* (2021) for the current reporting period (2017 to 2019) displays a 47.4 percent increase compared to *Profiles* (2020). If this trend reversal in Santa Clara County continues, the statewide average for the number of deaths due to Alzheimer's disease will steadily change in following years.

### **HIV/AIDS PREVALENCE RATE – AMADOR COUNTY**

Amador County observed an increase of about 25 percent in the rate of individuals living with HIV/AIDS as reported between *Profiles* (2021) and *Profiles* (2020). The increased in prevalence rate is largely attributed to Amador County receiving a large number of transferred inmates in 2016 and 2017, which affected the three-year average for the current reporting period (2016 to 2018).

## FORMULAS USED IN THIS REPORT

### Rates and Error

$$CR = (n / N_{pop}) \times B$$

$$ADR = \sum W_a (n^{D_a} / N_{pop_a}) \times B$$

$$ASDR = (n^{D_a} / N_{pop_a}) \times B$$

$$IMR = (D_i / B_L) \times B$$

$$SE_x = (CR / \sqrt{n})$$

$$SE_y = \sqrt{\sum (W_a \times ASDR)^2 / n^{D_a}}$$

$$SE_{IMR} = IMR \times (RSE_{IMR} / 100)$$

$$RSE_x = (SE_x / CR) \times 100$$

$$RSE_y = (SE_y / ADR) \times 100$$

$$RSE_{IMR} = 100 \times \sqrt{(1/D_i + 1/B_L)}$$

$$D_{adj} = 1 / (RSE / 100)^2$$

Where:

CR = Crude Rate

ADR = Age-Adjusted Death Rate

ASDR = Age-Specific Death Rate

IMR = Infant Mortality Rate

n = Number of Cases or Deaths

D<sub>i</sub> = Total Number of Infant Deaths

B<sub>L</sub> = Total Number of Live Births

N<sub>pop</sub> = Population Size

N<sup>D</sup><sub>a</sub> = Number of Deaths in an Age Group

N<sub>pop<sub>a</sub></sub> = Population Size in Same Age Group

B = Base

W<sub>a</sub> = Age-Specific Weight (Standard Population Proportion)

SE<sub>x</sub> = Standard Error of a Crude Rate

RSE<sub>x</sub> = Relative Standard Error of a Crude Rate

SE<sub>y</sub> = Standard Error of an Age-Adjusted Death Rate

RSE<sub>y</sub> = Relative Standard Error of an Age-Adjusted Death Rate

SE<sub>IMR</sub> = Standard Error of an Infant Mortality Rate

RSE<sub>IMR</sub> = Relative Standard Error of an Infant Mortality Rate

D<sub>adj</sub> = Adjusted Number of Deaths (rounded to the nearest integer)

CL = Confidence Limit

## **Normal Distribution Confidence Intervals**

### **For Crude Rates**

$$\text{Lower 95\% CL} = \text{Rate} - (1.96 \times \text{SE}_x)$$

$$\text{Upper 95\% CL} = \text{Rate} + (1.96 \times \text{SE}_x)$$

### **For Age-Adjusted Deaths Rates**

$$\text{Lower 95\% CL} = \text{ADR} - (1.96 \times \text{SE}_y)$$

$$\text{Upper 95\% CL} = \text{ADR} + (1.96 \times \text{SE}_y)$$

### **For Infant Mortality Rates**

$$\text{Lower 95\% CL} = \text{IMR} - (1.96 \times \text{SE}_{\text{IMR}})$$

$$\text{Upper 95\% CL} = \text{IMR} + (1.96 \times \text{SE}_{\text{IMR}})$$

## **Gamma Distribution Confidence Intervals**

### **For Crude Rates**

$$\text{Lower 95\% CL} = \text{Rate} \times \text{GamInv}(0.025, \text{Numerator of Rate}) / \text{Numerator of Rate}$$

$$\text{Upper 95\% CL} = \text{Rate} \times \text{GamInv}(0.975, \text{Numerator of Rate} + 1) / \text{Numerator of Rate}$$

### **For Age-Adjusted Death Rates**

$$\text{Lower 95\% CL} = \text{ADR} \times \text{GamInv}(0.025, D_{\text{adj}}) / D_{\text{adj}}$$

$$\text{Upper 95\% CL} = \text{ADR} \times \text{GamInv}(0.975, D_{\text{adj}} + 1) / D_{\text{adj}}$$

### **For Infant Mortality Rates**

$$\text{Lower 95\% CL} = \text{IMR} * (\text{gaminv}(0.025, D_{\text{adj}}) / D_{\text{adj}})$$

$$\text{Upper 95\% CL} = \text{IMR} * (\text{gaminv}(0.975, D_{\text{adj}} + 1) / D_{\text{adj}})$$

Where: Rate is CR or ASDR depending on which table is being calculated. GamInv is the gamma inverse function as used in SAS.

## PROCEDURE FOR CALCULATING AGE-ADJUSTED RATES BY THE DIRECT METHOD

Age-adjusted rates calculated in this report follow the procedure that was used to set the HP 2020 based on the 2000 U.S. standard population. The data in the following example were extracted from Table 1: Deaths Due to All Causes, 2017-2019 for Alameda County.

<b>ALAMEDA COUNTY</b>					
Age Groups	2017–2019 Deaths (Average)  (A)	2018 Population  (B)	Age-Specific Rate/100,000  (C)	2000 U.S Standard Population Proportions  (D)	Weighted Rate Factors  (E)
Total	10,047.3	1,662,730.0			
Unknown	1.3				
<1	63.0	18,680.0	337.3	0.013818	4.7
1-4	9.0	76,551.0	11.8	0.055317	0.7
5-14	19.0	200,195.0	9.5	0.145565	1.4
15-24	108.3	234,941.0	46.1	0.138646	6.4
25-34	182.0	218,902.0	83.1	0.135573	11.3
35-44	258.7	231,273.0	111.8	0.162613	18.2
45-54	559.0	222,027.0	251.8	0.134834	33.9
55-64	1,239.7	211,627.0	585.8	0.087247	51.1
65-74	1,796.0	151,147.0	1,188.2	0.066037	78.5
75-84	2,269.0	64,878.0	3,497.3	0.044842	156.8
>84	3,542.3	32,509.0	10,896.5	0.015508	169.0
<b>AGE-ADJUSTED RATE .....</b>					<b>531.9</b>

**STEP 1:** Arrange the data for the three-year average number of deaths and population for 11 age groups in columns A and B.

**STEP 2:** Calculate age-specific rates by dividing the number of deaths in column A (numerator) by the population in column B (denominator). Multiply the result (quotient) by the base of 100,000 to obtain the rates in column C.

**STEP 3:** Multiply each age-specific rate in column C by the corresponding 2000 U.S. Standard Population proportion in column D and enter the result in column E.

**STEP 4:** The values for each age group in column E are summed to obtain the Age-Adjusted Death Rate for Alameda County of 565.3 per 100,000 population.

**STEP 5:** Repeat Steps 1 through 4 for each county and the statewide total. Note that the 2000 U.S. Standard Population proportions remain the same for each county and the State. Direct comparisons can now be made among the counties, with the removal of the effect that varying county age compositions may have on death rate.

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