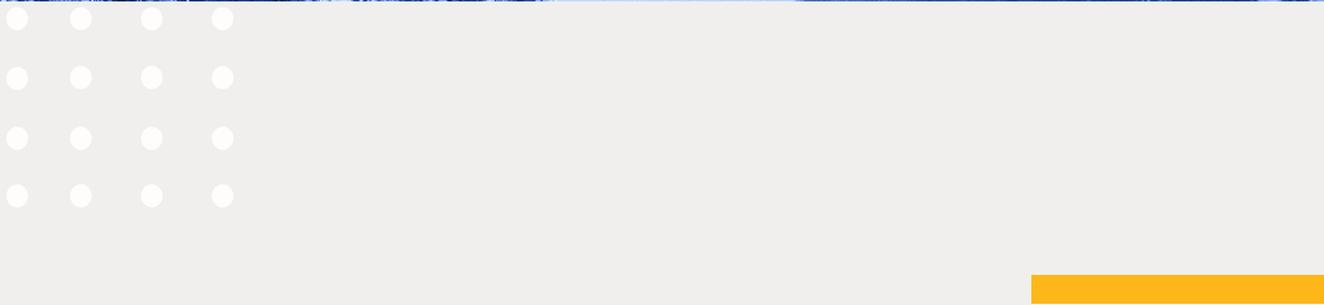




# CALIFORNIA STATE OF PUBLIC HEALTH



FULL  
REPORT  
2024



## Acknowledgements

This report was prepared by the California Department of Public Health (CDPH). This report is part of the broader State Health Assessment and Improvement Plan (SHA/SHIP) processes that include ongoing engagement with CDPH programs, California Health and Human Services Agency (CalHHS) and other State agencies, local health departments, tribes, advisory committee members, and community partners.

CDPH thanks the California State Legislature and Governor's Office for their partnership and leadership to establish the Support for Vital Public Health Activities statutory law that authorized the biennial State of Public Health Report.

CDPH is deeply grateful to our partners that reviewed and contributed to the California State of Public Health Report.

### CDPH Contributors

#### *Strategy and Coordination*

The report was developed in close coordination and consultation between the CDPH Director's Office, Office of Policy and Planning, and Office of Legislative and Governmental Affairs. The CDPH Office of Communications provided valuable assistance in developing the report's design concept and communications strategies.

#### *Data Analysis and Prevention Strategies*

Scientists and subject matter experts from across CDPH provided guidance, conducted analyses, and drafted and reviewed content for the report. Thank you to the: Center for Environmental Health; Center for Family Health's Maternal, Child and Adolescent Health Division; Center for Healthy Communities' Chronic Disease Control Branch, Chronic Disease Surveillance and Research Branch, Injury and Violence Prevention Branch, Nutrition and Physical Activity Branch, Occupational Health Branch, and Substance and Addiction Prevention Branch; Center for Infectious Diseases' Division of Communicable Disease Control, and Office of AIDS; Center for Preparedness and Response; Office of Health Equity's Climate Change and Health Equity Branch, and Health Research and Statistics Section; Office of Policy and Planning; and Regional Public Health Office.

Additional peer review was provided by Research and Analysis Section staff within the Office of Policy and Planning.





### *Editing and Graphic Design*

The graphic design of the Summary Report and Full Report was provided by Sepideh Pourkia, with creative direction and supervision from Sara Floor, from the Office of Communications. Rebecca Wass supported with proofreading.

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### **Suggested Citation:**

*California State of Public Health Report, 2024*. Sacramento, CA: California Department of Public Health, Office of Policy and Planning; 2024.



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A Letter from

# THE STATE PUBLIC HEALTH OFFICER AND CALIFORNIA DEPARTMENT OF PUBLIC HEALTH DIRECTOR



Tomás J. Aragón, MD, DrPH  
Director and State Public  
Health Officer  
California Department  
of Public Health

Dear Governor Newsom and Honored  
Members of the California State Legislature,

I am pleased to present the inaugural California State of Public Health Report as established in the California Health and Safety Code ([HSC 101320.3](#)). This comprehensive report, in the form of a Summary and Full Report, provides data and information on key public health indicators, health disparities, and leading causes of morbidity and mortality.

The mission of the California Department of Public Health (CDPH) is “to advance the health and well-being of California’s diverse people and communities” with the vision that all Californians enjoy “healthy communities with thriving families and individuals.”

Health is not the absence of disease or injury—it is a state of complete physical, mental, and social well-being. The National Academy of Medicine defines public health as “what we, as a society, collectively do to assure the conditions in which people can be healthy.”

Equity is a foundational guiding principle in public health. Every Californian should have the resources and opportunities to be healthy and thrive. California is taking on the pressing issues identified in this report. Through significant investments strengthening public



health infrastructure and workforce (e.g., Future of Public Health), addressing ongoing and emerging public health issues (e.g., Children and Youth Behavioral Health Initiative, Master Plan to Tackle the Fentanyl and Opioid Crisis, STD Prevention and Collaboration Grants), and bolstering supports for working families (e.g., California Earned Income Tax Credit), and so much more – we are charting a course toward a healthier, more equitable California for all.

Public health is OUR collective endeavor to protect, promote, and improve the health of our communities. By sharing this report with you, I hope to better foster collaboration and partnership to address the health challenges, especially health inequities, facing Californians. I look forward to working together in the coming months and years to achieve our shared mission and vision to protect and improve the health and well-being of California's communities.

I hope this report informs and inspires policymakers, communities, community-based organizations, and other stakeholders to thoughtfully prioritize prevention and evidence-based interventions that create environments in which all Californians can achieve their highest level of health.

I am deeply grateful for your continued dedication and support to improving health and well-being for all Californians. Together, we can make a significant and positive impact.

Respectfully submitted,



Tomás J. Aragón, MD, DrPH  
Director and State Public Health Officer  
California Department of Public Health



# INTRODUCTION TO THE STATE OF PUBLIC HEALTH IN CALIFORNIA

Public health works to prevent disease and injury at the community and population level. Public health aims to prevent people from getting sick or injured in the first place. Public health is a broad and multidisciplinary field that is often misunderstood and sometimes confused with health care. A distinction between health care and public health is that while clinicians treat diseases and injury one patient at a time, public health focuses its efforts on protecting and promoting the health of entire populations.

Public health is all around us and the role of CDPH is to protect and promote the health of all Californians in all communities. To achieve this, state and local governmental public health work to:

- Control and prevent communicable disease.
- Prevent non-communicable chronic disease and injury.
- Ensure health-promoting environments.
- Promote individual, family, and community health.
- Ensure patient safety in hospitals and other health care facilities.

Figure 1

*Example Responsibilities of State and Local Governmental Public Health*



The focus of these efforts is to ultimately protect communities, promote healthy behaviors, and prevent disease, disability, injury, and premature death.

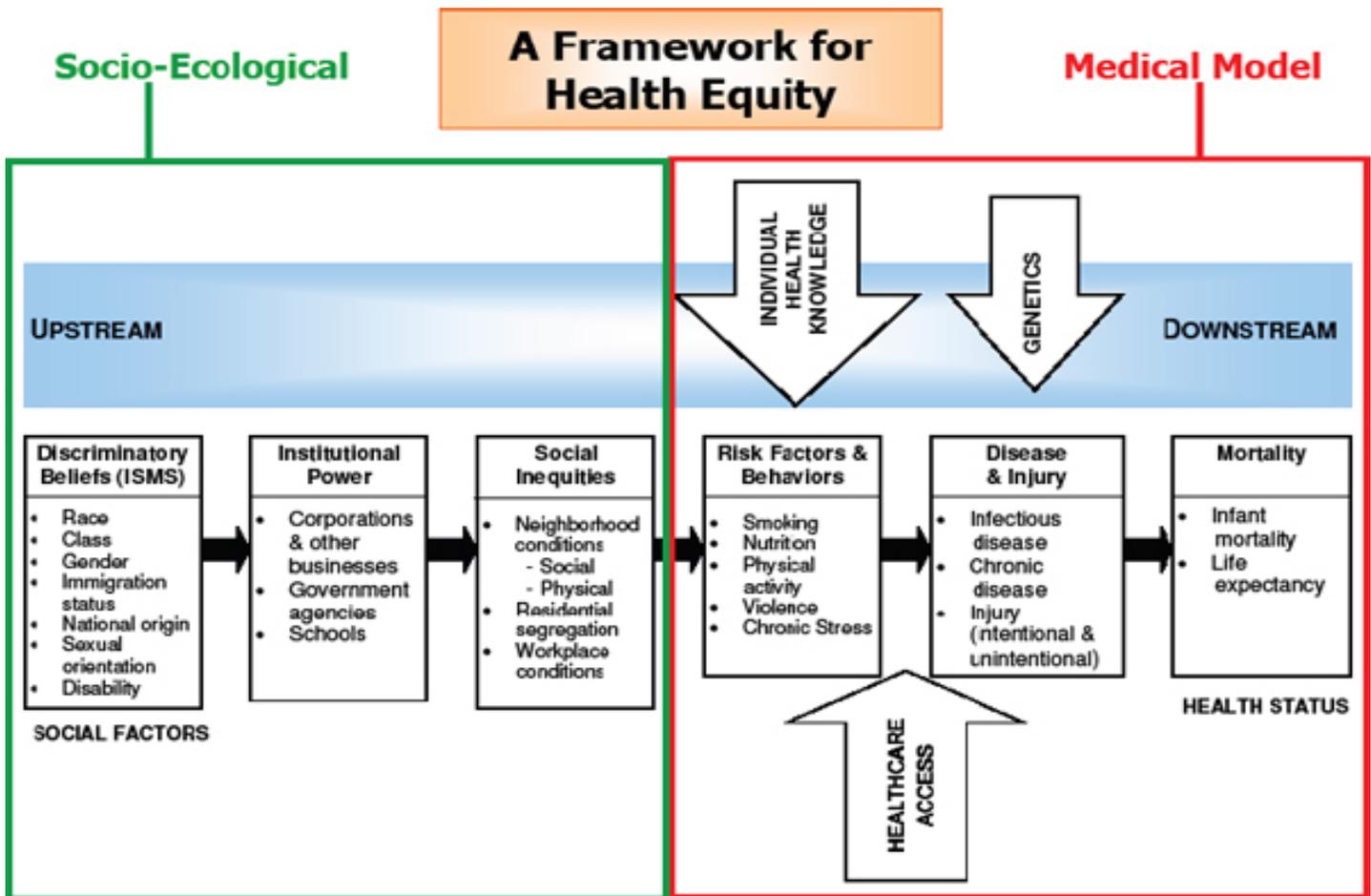
The public health approach tackles challenges by informing policies and implementing programs that address the underlying drivers of health and well-being. This is often referred to as taking a primary prevention approach to address “upstream” factors.

Public health recognizes that individual health and well-being do not exist in a vacuum. Multiple layers create the context in which individuals live, learn, work, play, and gather, and influence opportunity for health.

Many causes of death, injury, and disability are related to social and environmental factors, which influence opportunities and, ultimately, individual behaviors. These factors are often referred to as the social determinants of health.

Figure 2

*A Framework for Health Equity*



Source: Alameda County Public Health Department, adapted from the Bay Area Regional Health Inequities Initiative

Research shows that individuals deprived of these basic needs have a higher risk of health conditions such as asthma and heart disease, as well as mental health challenges like depression and anxiety.<sup>i,ii</sup>

Upstream approaches improving community conditions serve to increase protective factors (such as economic stability, safe housing, nutrition security, and increasing access to safe parks and open space, health services, and social supports), reduce inequities, decrease risk factors for negative health outcomes, and achieve public health goals.

Multisector partnerships and a whole-of-government approach are essential to achieving the policy, systems, and environmental change necessary to improve public health outcomes and achieve health equity. Public health plays a unique role in these partnerships, contributing understanding of health data and impacts, as well as strategies focused on prevention and community engagement.

To be effective, public health incorporates deep and authentic partnerships with leaders and organizations representative of California's diverse communities, who also have the knowledge, experience, and the trust of community members needed to develop and implement community-based solutions.

There have been significant improvements in life expectancy and disease prevention across California; however, critical opportunities to address significant disparities in the health status within communities remain.

As well, the size and complexity of California populations present challenges and opportunities for public health systems to include community, organizational, and policy-level strategies in all public health interventions for broad community change and improved health and equity. Importantly, many of the upstream factors or social determinants that affect health fall outside the traditional health system and are addressed by authentic partnerships between communities, government, and organizations to ensure long-term, equitable opportunities for health and living conditions.

The State of Public Health Report contributes to governmental public health's foundational function of surveillance, monitoring, and response by assessing and reporting on a variety of risk and protective factors and health outcome measures and conditions while elevating key public health prevention strategies and actions. With equity as a guiding principle and data forming the building blocks of population health narratives, this report provides perspectives on health outcomes and core determinants of health across the life course, to inform public health action, accountability, and impact.

## MEASURES OF HEALTH

Many sources of data are used in this report to assess the health status of California's population including vital statistics (birth and death), surveillance systems and registries (e.g., reportable communicable/infectious diseases case and lab reporting systems, cancer registry), hospital discharge and emergency department visit data, administrative data, surveys (e.g., the [California Health Interview Survey](#) and the [Behavioral Risk Factor Surveillance System](#)), socioeconomic and related data (e.g., the American Community Survey), and other sources.

Over the past 20 years, the health and well-being of Californian people and communities have improved significantly, as reflected in longer life expectancy and gains in key population health outcomes, such as reduced deaths due to ischemic heart disease; stroke; chronic obstructive pulmonary disease (COPD); lung, breast, prostate, and colon cancers; HIV/AIDS; and other causes. At the same time, mortality due to some conditions such as drug overdose and Alzheimer's disease have shown substantial increases over the past decade.

The COVID-19 pandemic also had an unprecedented and lasting impact on population health in California, with a drop in life expectancy for the first time in 20 years during 2020-2021. COVID-19 remains a key issue contributing to hospitalization and emergency department (ED) visits.

The public health system now faces a moment of challenge and opportunity as communities across the state work to rebound toward recovery with daunting pressures on population health, including collective trauma, secondary chronic health conditions (e.g., long COVID), disruptions in education, an escalating behavioral health crisis, associated socioeconomic effects, and increasingly severe climate change-driven emergency events.

Data in this report confirm persistent and unacceptable health disparities based on race and ethnicity, age, and other sociodemographic characteristics, disproportionately impacting under-resourced communities.

### Data Notes

*Unless otherwise noted: data in the report, including those in charts, are for California; all rates are per 100,000 population; death rates are age-adjusted; and data are for the most recent year for which data are available. Data referred to in the text that do not appear in specific charts are sourced from the [California Community Burden of Disease Engine](#) (CCB) unless otherwise stated. Additional technical notes and detail are available in the report Appendix.*

## Multiple Lenses

This chart incorporates several lenses, showing the top five leading conditions from different perspectives. The first five charts use measures relating to deaths, and the next four examine additional lenses of public health burden.

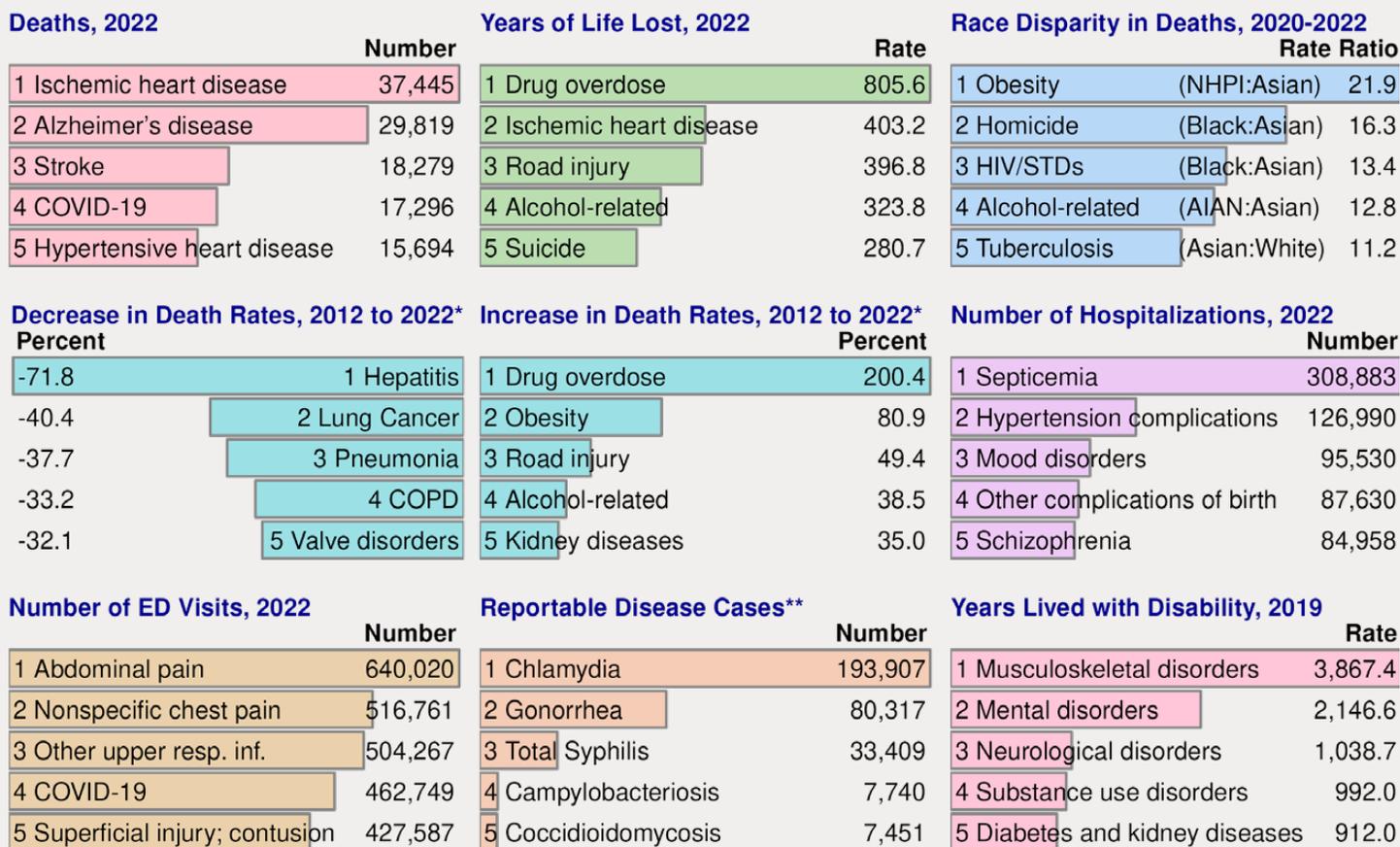
Many conditions appear on *more than one* of these ranking measures, even though the measures assess different levels of impact:

- In 2022, ischemic heart disease was the top cause for total number of deaths and a leading cause of years of life lost.

- Drug overdose was by far the leading cause of years of life lost, and a leading cause of increase in deaths and years lived with disability.
- Alcohol-related conditions were a leading cause of years of life lost and a leading contributor to racial and ethnic disparities in deaths.
- Mental health conditions were a leading cause for numbers of hospitalizations and years lived with disability.

Figure 3

Multiple Lenses - Top 5 Conditions Based on Multiple Measures†



Notes:

†Years of life lost and years lived with disability values are crude rates per 100,000. Increase and decrease in death rates are based on percent increases or decreases in age-adjusted death rates. Racial and ethnic disparities are indicated by ratios between the age-adjusted death rates in the group with the highest rate and the group with the lowest rate. Alcohol-related conditions do not include partially or indirectly attributed conditions. \*COVID-19 is excluded as a cause in comparisons that involve years before the pandemic. Conditions with fewer than 100 deaths in either period are excluded.

\*\*Data are for 2022 except for campylobacteriosis which is for 2021. Reported COVID-19 cases not shown.

Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

## Life Expectancy

Life expectancy at birth is a core measure of the overall health of a population. Life expectancy in California was increasing steadily for all groups before decreasing sharply in 2020 and 2021 and rebounding slightly in 2022.

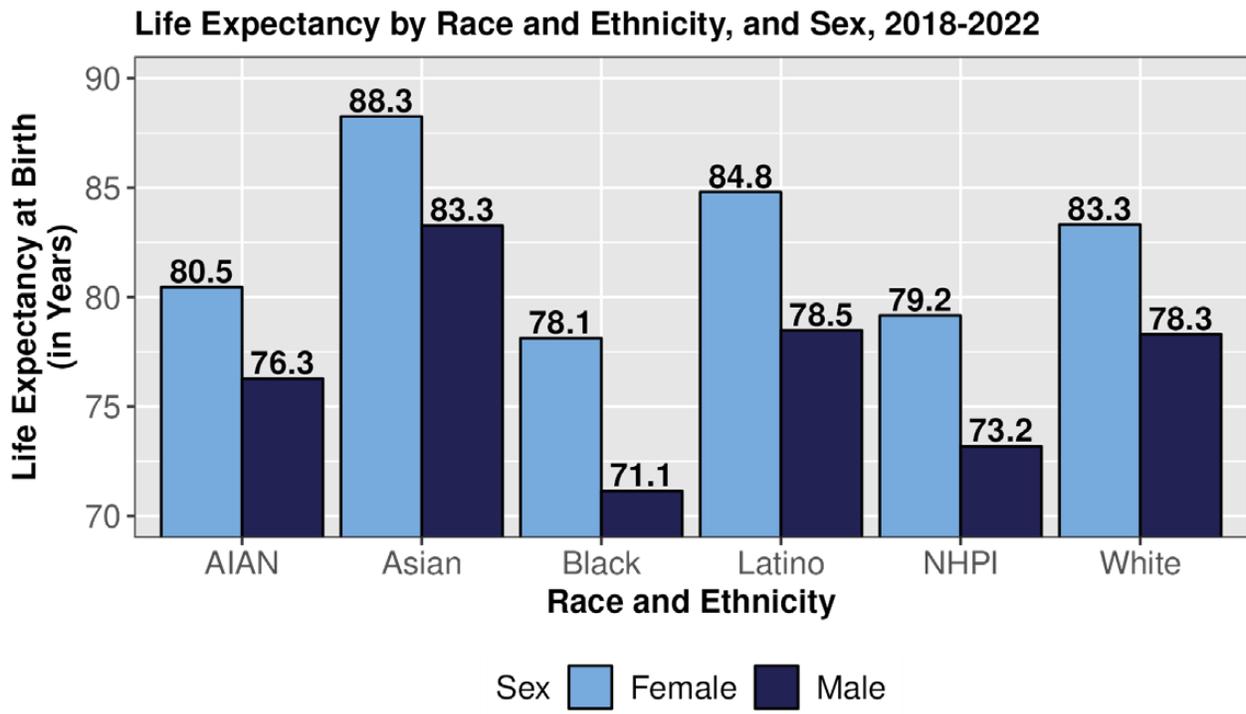
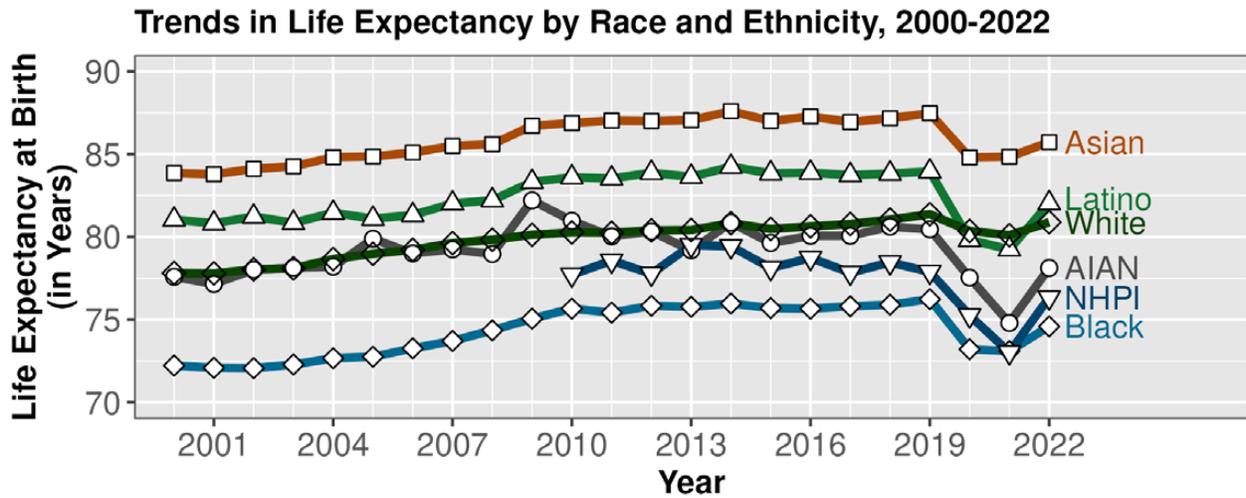
During and following the COVID-19 pandemic, life expectancy trends varied across groups.

- In 2020, life expectancy was lower for Latino<sup>1</sup> than White individuals for the first time in decades.
- In 2022, life expectancy increased for all groups, but remained below 2019 levels, reflecting that the health of Californians is still recovering from pandemic impacts.
- There is a gap of more than 10 years of life expectancy between the group with the highest and lowest life expectancy. In all years, life expectancy was substantially lower among Black individuals and highest among Asian individuals.

<sup>1</sup> Note on the use of “Latino:” With a few exceptions, this report uses the term “Latino” when describing data about people from or with roots in Latin America and the Caribbean. CDPH recognizes suitable alternatives such as Latine and Latinx and their use to advance gender-inclusive language.

Figure 4

Life Expectancy Trends (2000–2022) by Race/Ethnicity and Sex (2018–2022)



Abbreviations: NHPI - Native Hawaiian and Pacific Islander;  
AIAN - American Indian and Alaska Native

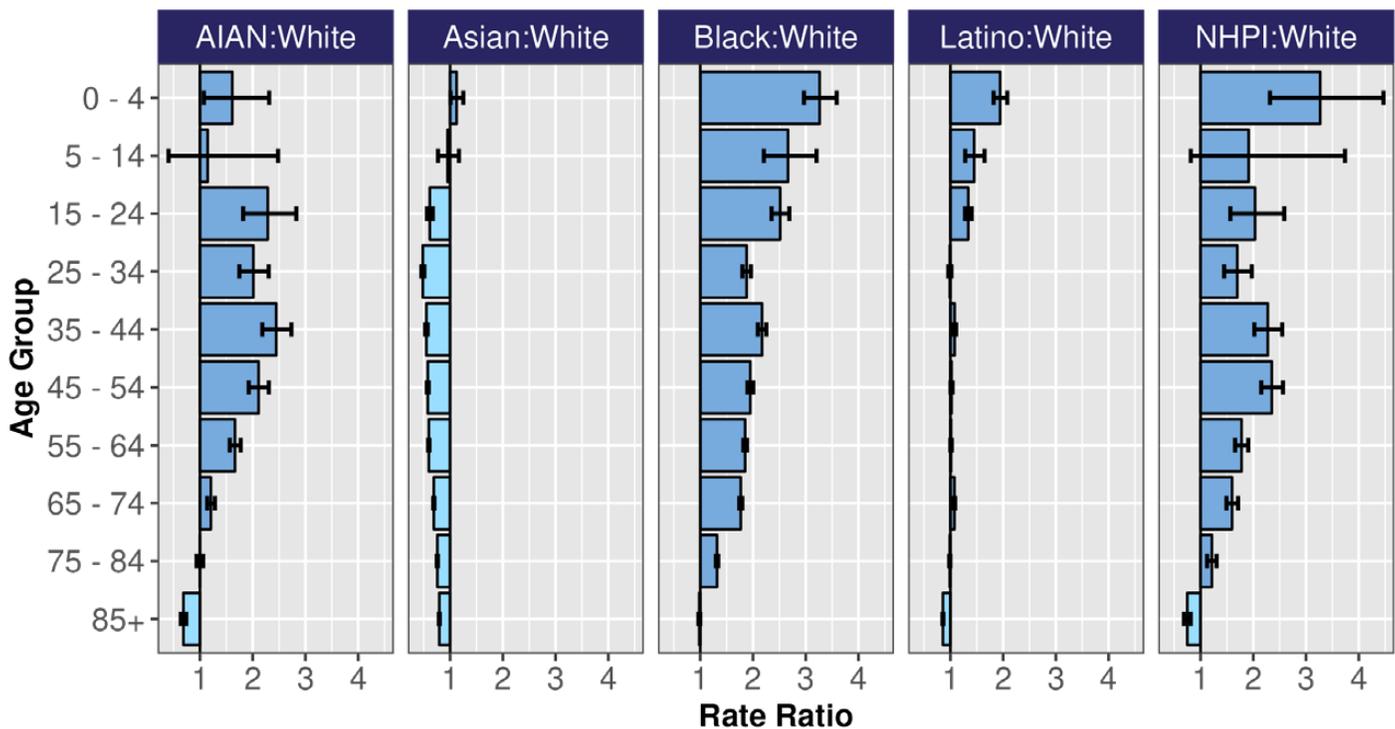
## Disparities in Health Outcomes Begin in the Earliest Life Stages

Some of the greatest disparities in mortality begin early in life.

- The mortality rate among ages 0–4 was over 3 times higher for Black children, and nearly 2 times higher for Latino children, compared to White children. For most age levels, Black individuals also had much higher rates than White individuals. A similar pattern was observed among Native Hawaiian and Pacific Islander and American Indian and Alaska Native individuals.<sup>2</sup>
- Disparities in death rates across the life course, especially those in the youngest ages, result in the gaps in life expectancy shown above.
- Rates among Latino populations were higher in younger years, but better (lower) than, or very similar to, those for White individuals in adulthood.
- Among Asian individuals, the rates of death were better (lower) than those among White individuals. The overall low rates likely mask differences between different Asian subgroups.

Figure 5

Age-Specific Death Rate Ratios (with White as Reference) by Race and Ethnicity, 2020–2022



Notes: Upper and lower bounds of the 95% confidence intervals for the rate ratio (indicated by horizontal lines) provide estimate of precision for the rate ratio.

Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

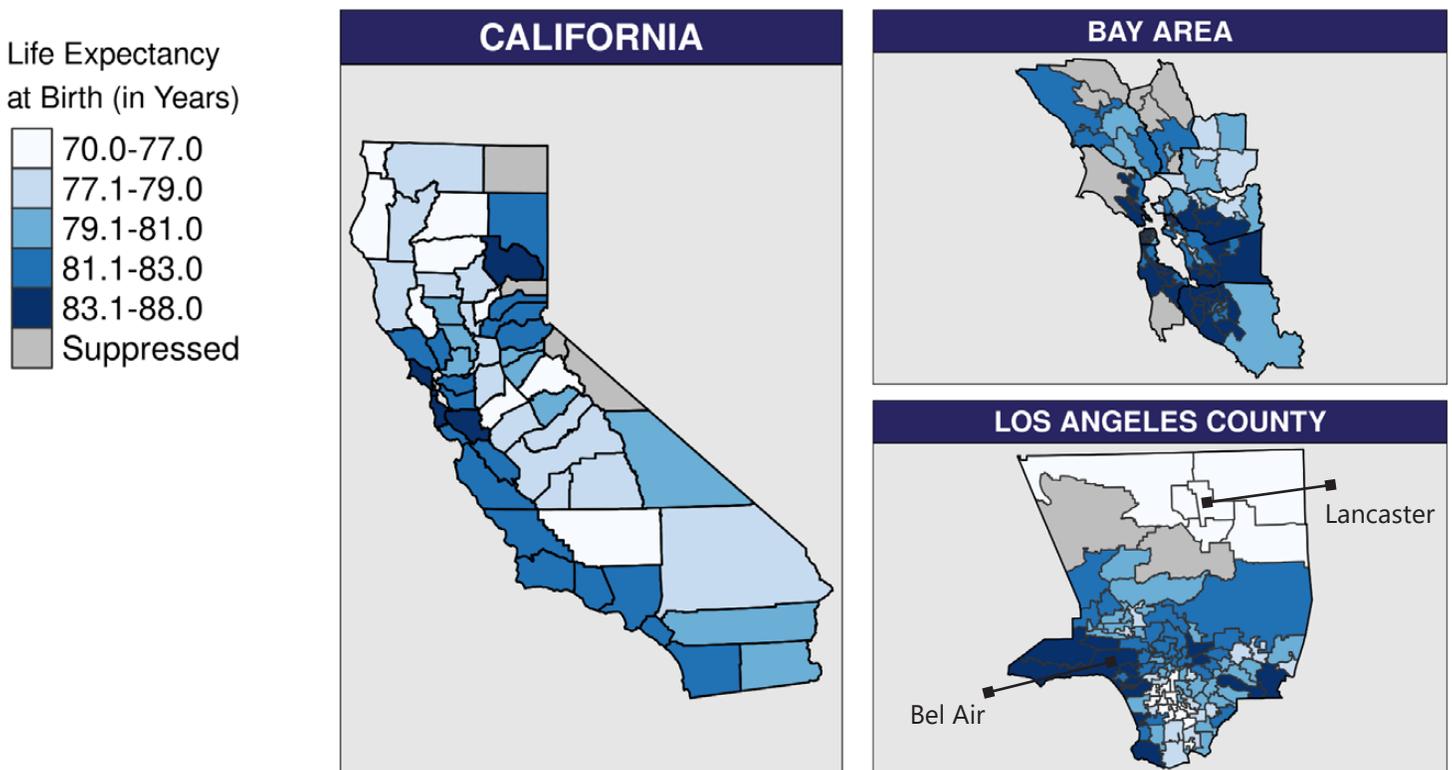
<sup>2</sup> White individuals are used as the reference group as it allows for comparison of minoritized racial and ethnic groups to a historically privileged population. A rate ratio of 1.0 means that the rates are the same for both groups.

## Life Expectancy by Place

In general, life expectancy is lower in the Central, Northern, and Inland part of the state and higher in the Bay Area and Coastal regions. Substantial variations in life expectancy between communities exist within most regions. Detailed maps are included reflecting this variation for Bay Area and Los Angeles County (two large areas with dense populations). For example, there is a difference of 15.4 years between two communities in Los Angeles County.<sup>3</sup> The Lancaster community had a life expectancy of 72.0 years, whereas the Bel Air community in the same county had a life expectancy of 87.4 years.

Figure 6

Life Expectancy Maps – California, Bay Area, and Los Angeles County, 2018–2022



<sup>3</sup> “Community” is defined based on Medical Service Study Area’s (MSSA) aggregation of census tracts; gradients in life expectancy are based on indicator cut points used to categorize communities into quartiles.

## Life Expectancy and Social Determinants of Health

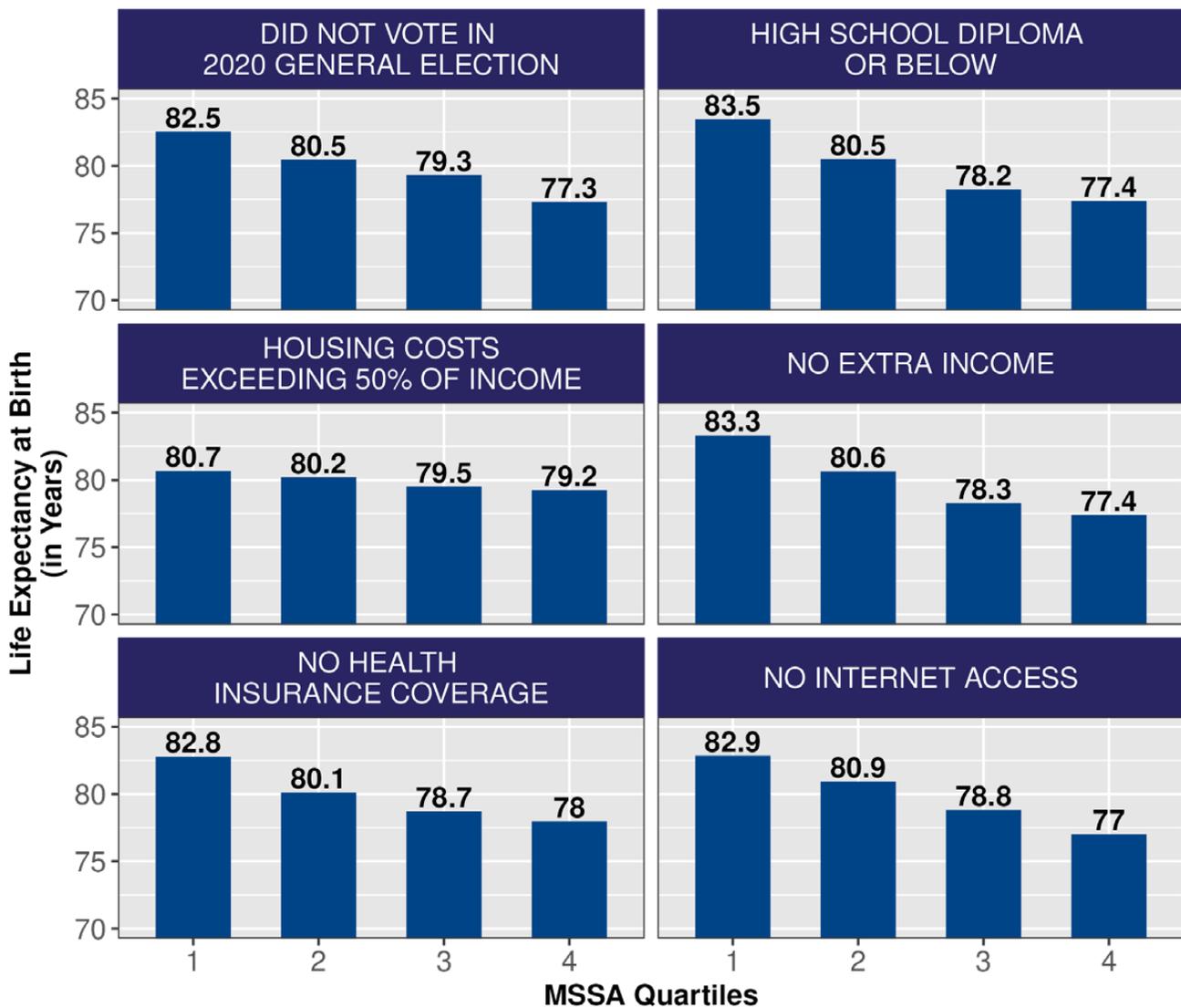
Social determinant of health (SDoH) indicators, such as measures of wealth, education, health care access, and civic engagement are significantly associated with community-level life expectancies.<sup>4</sup> Structural racism is also a social determinant of health and fundamental driver of racial health inequities. While racism oppresses all people of color, Black people in the U.S. and California experience specific and significant harm as a result of our 400-year history of chattel slavery, exploitation, and segregation, and its lingering effects. Racism permeates systems and institutions, and is perpetuated by economic, health care, housing, education, and other policies and practices that continue racial discrimination or fail to adequately address racial disparities and drive inequities in population health.<sup>iii</sup>

For example, life expectancy in 2018-2022 decreased from 82.5 years in community quartiles with the highest voter participation to 77.0 years in those with the lowest voter participation. Similar life expectancy disparities were observed for other health and social indicators at the community level (Figure 7). The interplay of mortality and community indices reinforces the need for further gains in public health prevention, and to target efforts to address the social, environmental, and economic forces that shape health and living conditions.

<sup>4</sup> Social determinant of health indicator definitions are included in the Appendix.

Figure 7

Life Expectancy (Mean) by Quartiles of Multiple Community-Level (MSSA) Social Determinant of Health Indicators, 2018–2022



Notes:

Quartile 1 refers to the most advantaged communities, whereas Quartile 4 refers to the least advantaged communities.

## Rankings of Leading Causes of Death

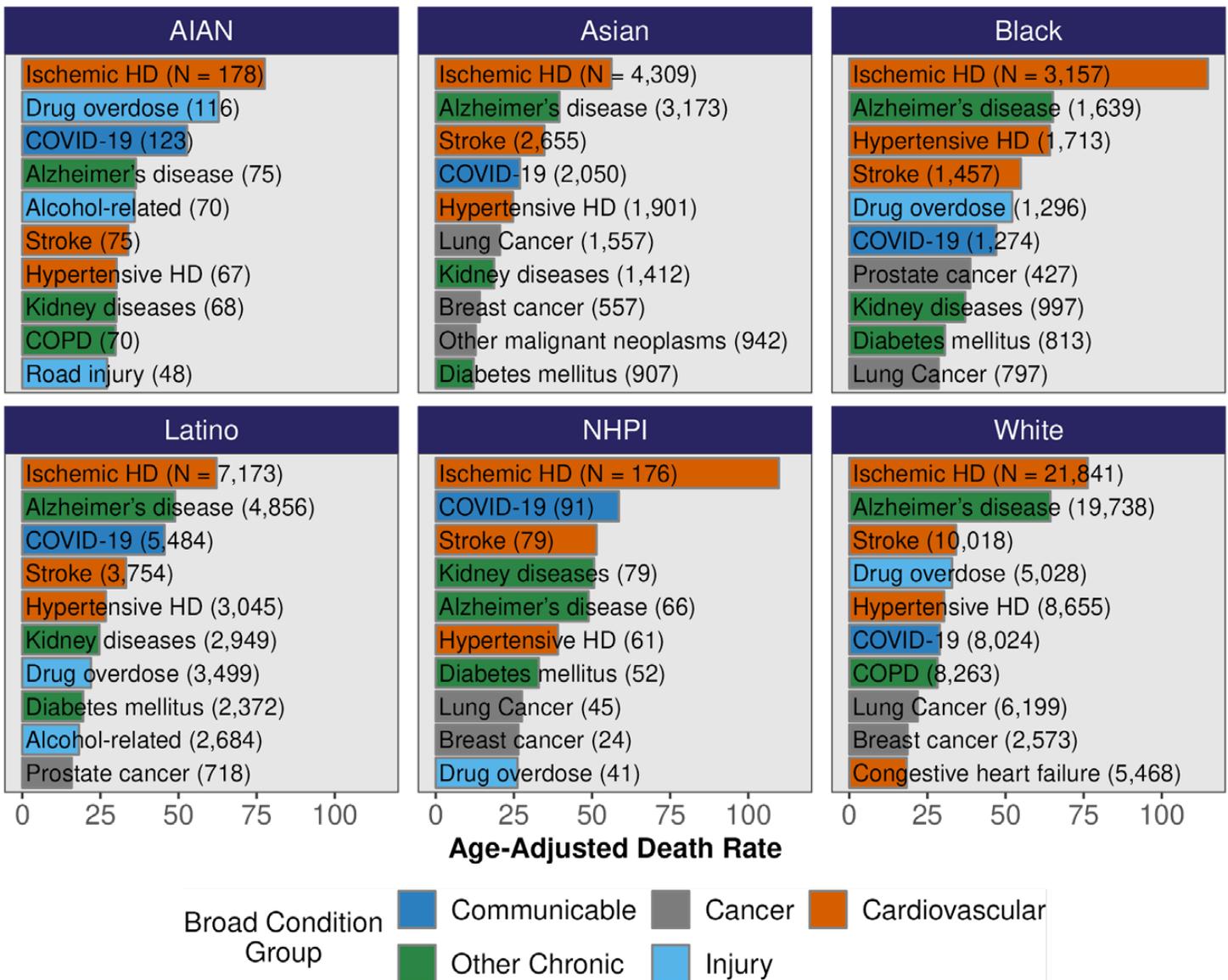
### Comparing Mortality Rates by Race and Ethnicity

- Ischemic heart disease was the leading cause of death for all groups.
- Alzheimer's disease was the second leading cause for most groups. For American Indian and Alaska Native individuals, drug overdose and COVID-19 ranked higher than Alzheimer's disease. For Native Hawaiian and Pacific Islander individuals, COVID-19, stroke, and kidney disease ranked higher than Alzheimer's disease.

- Drug overdose, diabetes and kidney disease, and lung cancer appeared in the top 10 leading causes of death for most groups, but not all. For example, drug overdose was not a leading cause for Asian individuals, and lung cancer was not a leading cause for American Indian, Alaska Native, or Latino individuals.
- Some conditions only ranked in the top 10 for one or a few groups. For example, road injury only appeared for American Indian and Alaska Native individuals. Alcohol-related conditions appeared for American Indian and Alaska Native and Latino groups.

Figure 8

Top 10 Causes of Death (Based on Age-Adjusted Death Rate per 100,000) by Race and Ethnicity, 2022



Notes:

Numbers alongside the causes of death refer to number of deaths.

Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native; HD - Heart Disease

## Mortality and Leading Causes of Death for Detailed (or Disaggregated) Race and Ethnicity Categories

Presenting data disaggregated into more detailed groups can illuminate health disparities that can be masked when collapsing data only into broad racial and ethnic categories. This is important since detailed race and ethnicity groups are likely to differ with respect to many characteristics, including health outcomes, health care access, and exposure to upstream social determinants of health. Analyses based on more specific race and ethnicity groups inform different strategies in terms of public health programs and interventions.

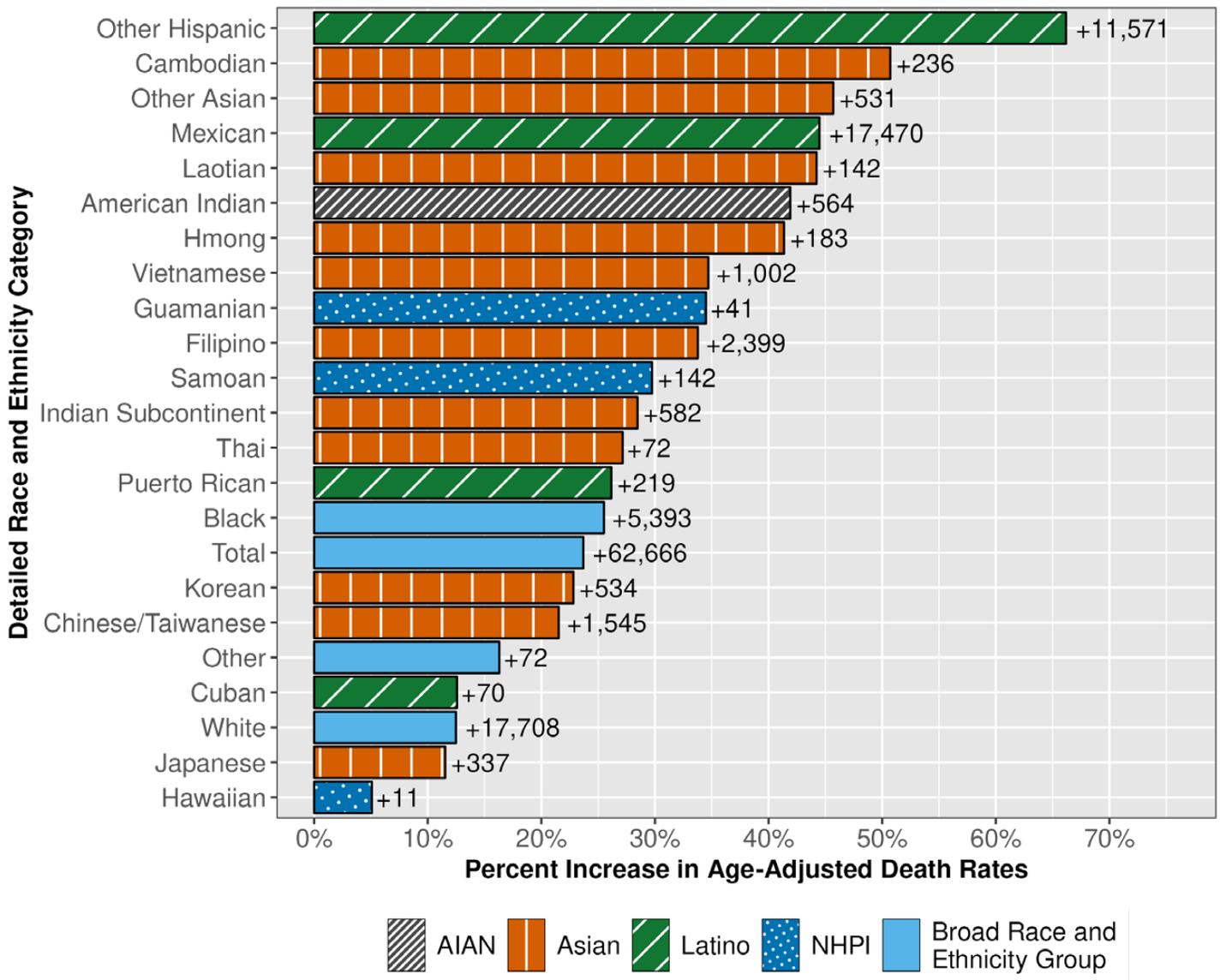
The figure below shows COVID-19-associated excess mortality by detailed race and ethnicity groups. Excess mortality here measures how much higher the death rate was in 2021 (the peak year of the pandemic) than in 2019 (the last year before the pandemic), based on a comparison of percent increase in the rates. The total increase in number of deaths is also noted for reference.

There are substantial differences in excess mortality *within* the broad Latino, Asian, and Pacific Islander groups.

- Among Latinos the “Other Hispanic” group had the highest excess mortality, whereas Puerto Ricans and Cubans had the lowest excess mortality.
- The “Other Hispanic” group data cannot be disaggregated at this time. But in population data, 62% of this group was Central American—this strongly suggests that most deaths in this group were among Central Americans, and that Central Americans had very high excess mortality.
- Among Asian groups, the Cambodian group had high excess mortality, whereas the Japanese group had low excess mortality.
- Among Native Hawaiian and Pacific Islander groups, there was high excess mortality among the Guamanian group.

Figure 9

Percent Increase in Age-Adjusted Death Rates (per 100,000) by Detailed Race and Ethnicity Categories, 2021 compared to 2019



The three figures below show the leading causes of death (based on *number of deaths*) for all detailed Asian, Pacific Islander, and Latino groups.<sup>5, 6, 7</sup>

- Ischemic heart disease was a leading cause of death for all groups.
- Alzheimer's disease, COVID-19, hypertensive heart disease, and stroke were leading causes of death in many groups.
- Some causes of death only appeared among the top five in a few groups. For example, lung cancer was one of the five leading causes of death only among Chinese, Taiwanese, Thai, and Vietnamese. Deaths from kidney disease were among the top five for only Filipino, Hmong, Japanese, Pakistani, Guamanian, and Samoan.

<sup>5</sup> Figure 9 (which uses 2019 and 2021 death data) uses the detailed race and ethnicity categories prior to CDPH's implementation of AB-1726. Indian Subcontinent consists of Asian Indian, Pakistani, Bangladeshi, and Sri Lankan.

<sup>6</sup> Figures 9-11 do not include multi-race categories due to ongoing investigations into the complexities and changes over time in multi-race classification.

<sup>7</sup> Figures 10-12 (which use 2022 death data) use the new AB-1726 detailed race and ethnicity categories implemented in late 2021. For Asian: Pakistani, Bangladeshi, and Sri Lankan, which were previously grouped together with Asian Indian as "Indian Subcontinent;" Indonesian, and Malaysian, which were previously in "Other Asian;" Taiwanese, which was previously grouped together with Chinese as "Chinese/Taiwanese." For NH/PI: Fijian, and Tongan, which were previously in "Other/Mult. Pacific Islander."

Figure 10

Leading Causes of Death by Detailed Asian Groups, 2022

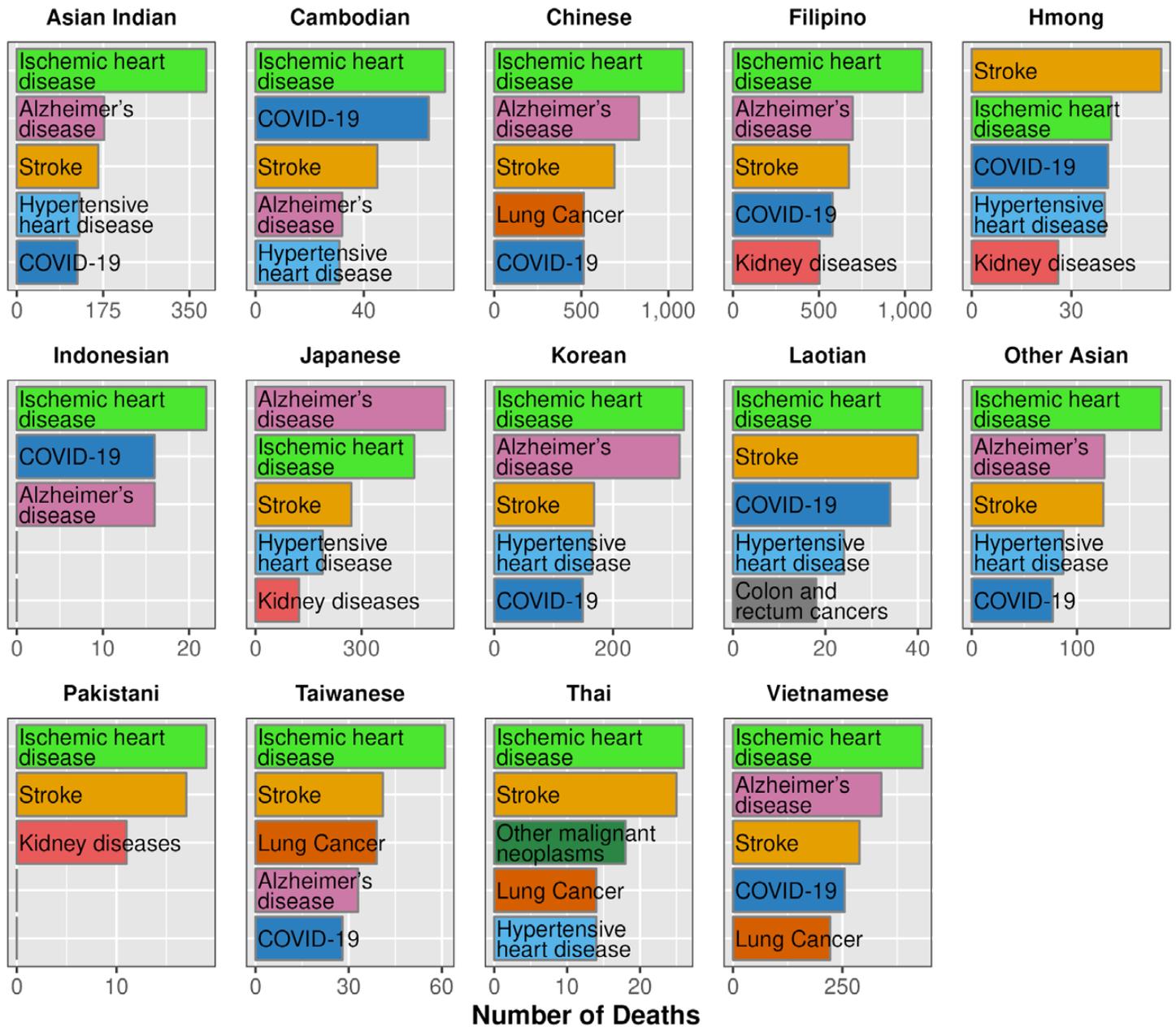


Figure 11

Leading Causes of Death by Detailed NHPI Groups, 2022

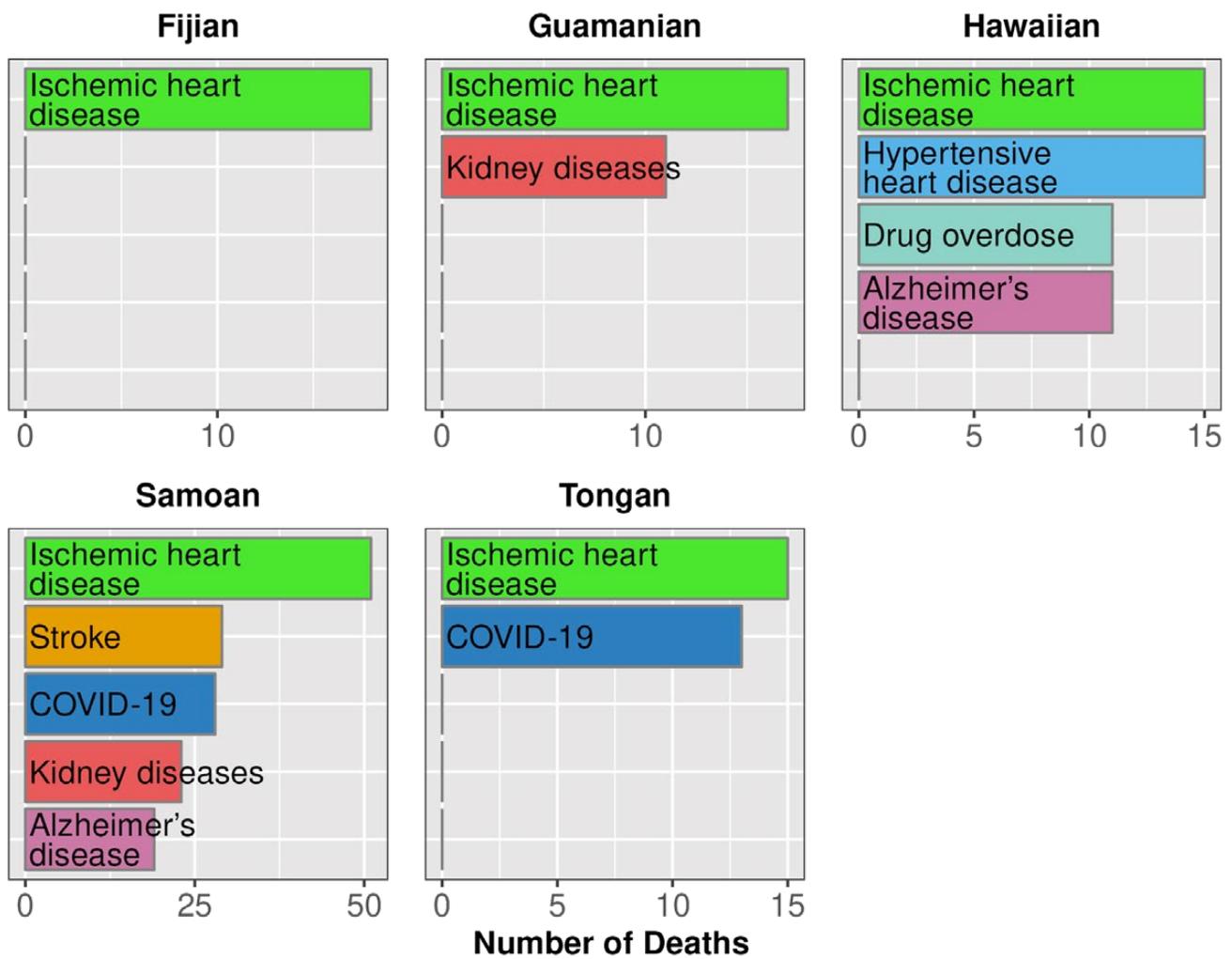
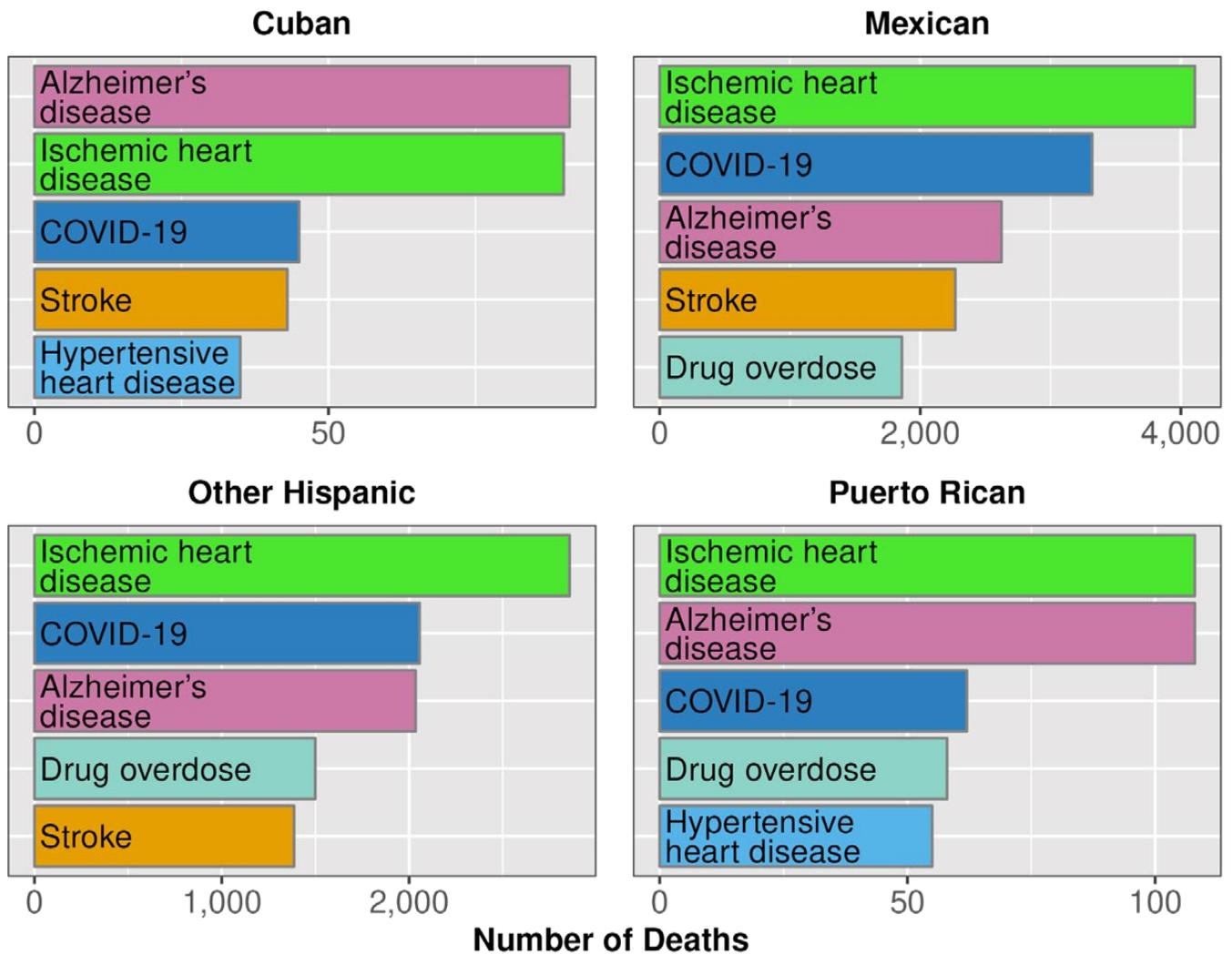


Figure 12

Leading Causes of Death by Detailed Latino Groups, 2022



## Mortality Over Time

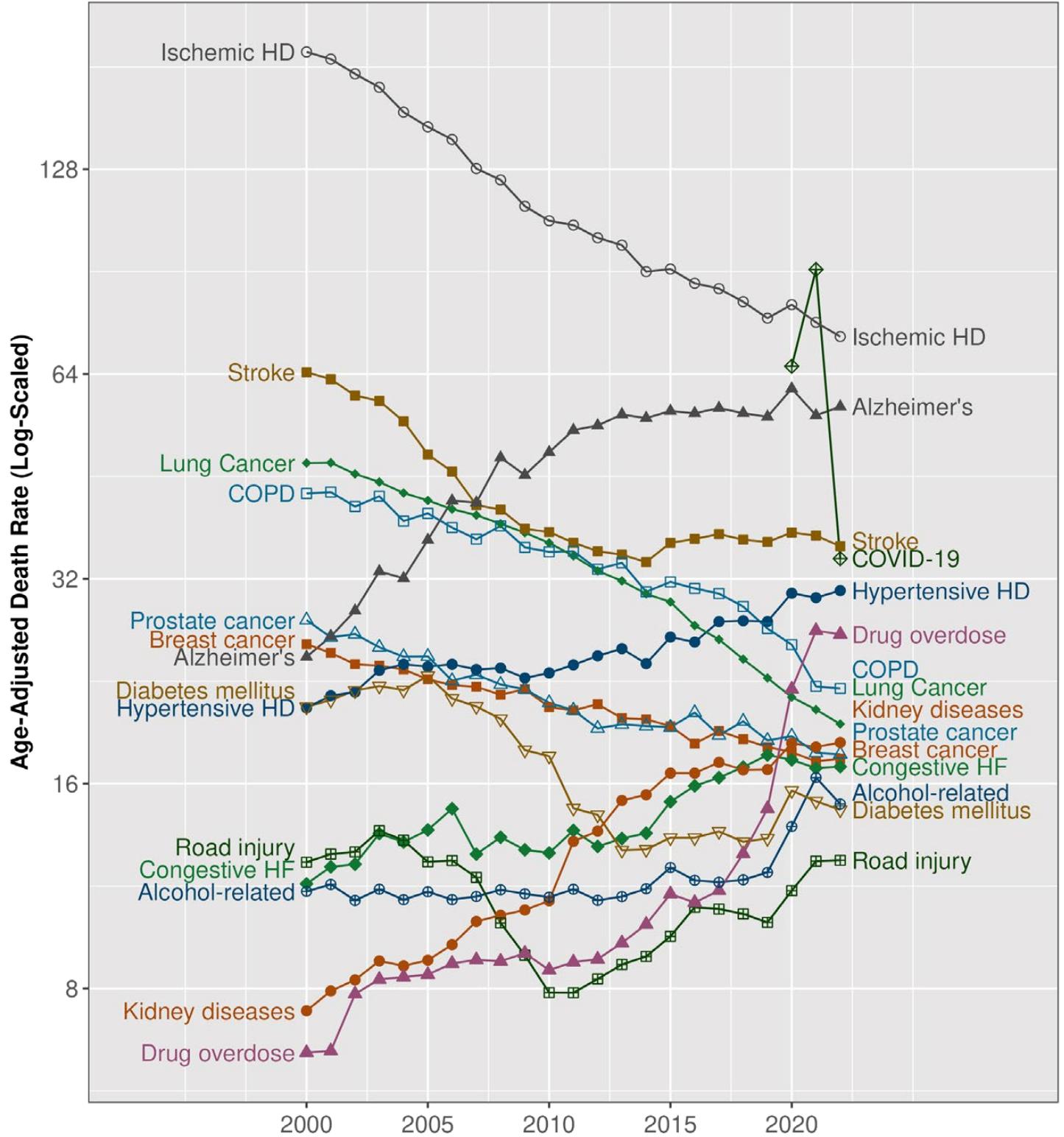
### Trends in Leading Causes of Death

Important trends for the period from 2000–2022 were observed for the 15 conditions with highest death rates in 2022.

- Death rates from ischemic heart disease, stroke, lung cancer, COPD, prostate cancer, and breast cancer decreased over the past 20 years.
- In contrast, Alzheimer's disease has more than doubled since 2000, and had the second-highest rate from 2008 onward, with a temporary exception between 2020 and 2021 because of COVID-19.
- COVID-19 emerged in 2020 and became the leading cause of death in 2021 at the height of the pandemic. Rates dropped sharply in 2022.
- Death rates for drug overdose and kidney diseases both have increased dramatically since 2000. Rates for drug overdose decreased slightly between 2021 and 2022 but remain high.

Figure 13

Trends in Age-Adjusted Death Rates (per 100,000) for Top 15 Conditions, 2000–2022



Abbreviations: HD – heart disease; HF – heart failure

## Before, During, and After the COVID-19 Pandemic

Leading causes of death presented here are based on percent increase in **rates** across several periods:

- Pre-pandemic: 10-year (2009–2019) and 5-year increases (2014–2019)
- Pandemic: 2-year increases (2019–2021)
- Recovery: 1-year period (2021–2022)

Each of these periods reflect time frames with unique factors impacting population health in California.

- Overdose deaths were a leading 10-year increase (63.1%) in the pre-pandemic period, then sharply increased 82.7% during the pandemic period. In the recovery period, overdose deaths did not increase further, though the death rate remains high.

Other causes associated with leading increases:

- pre-pandemic period: kidney disease, Parkinson's disease, and congestive heart failure,
- pandemic period: obesity, homicide, and alcohol-related conditions.
- recovery period: hypothyroidism and asthma (both with relatively small numbers).<sup>8</sup>

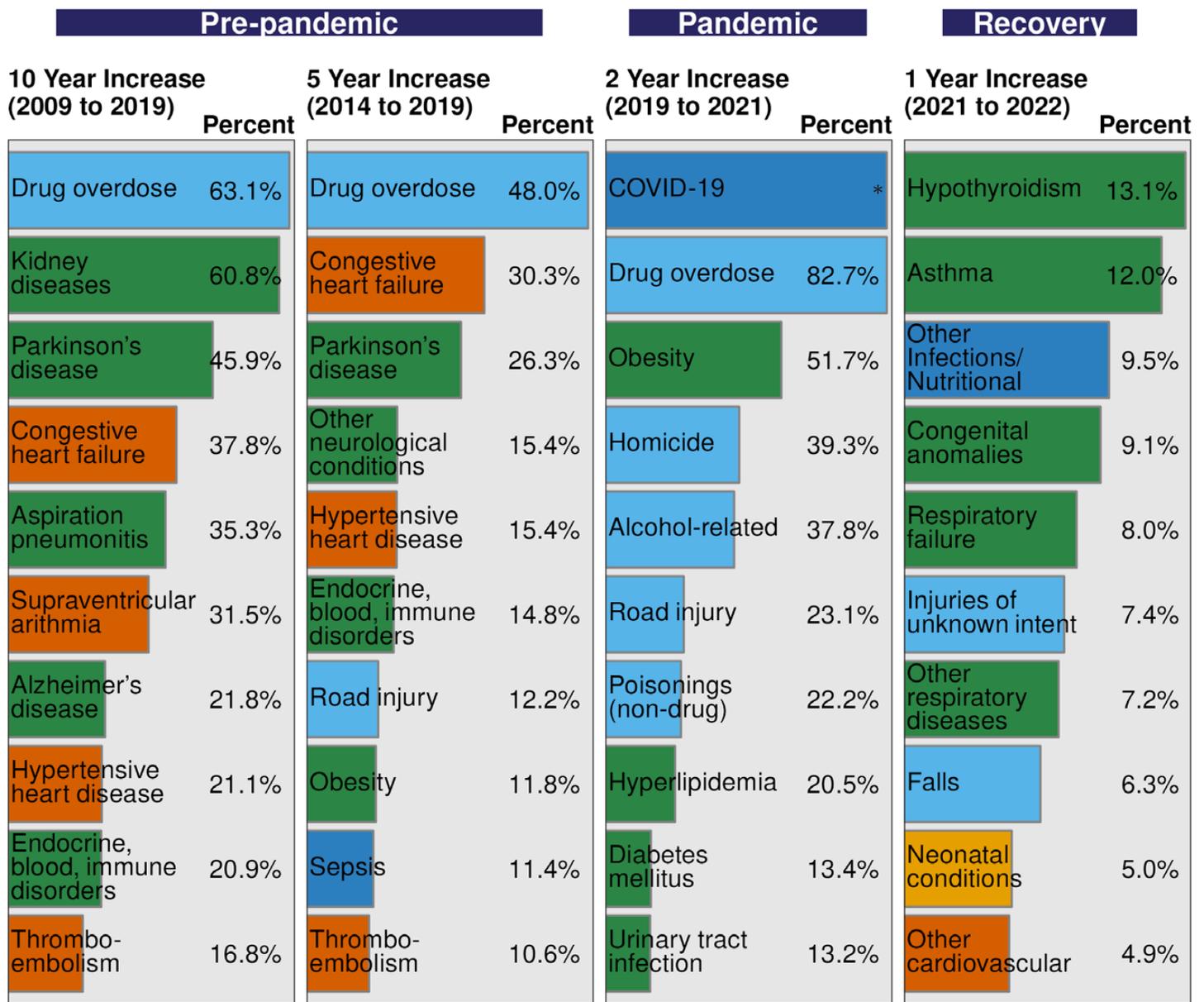
Based on increases in magnitude or total **number** of deaths:

- Mortality for Alzheimer's disease and other dementias increased more than any other condition in the pre-pandemic and recovery periods and increased substantially during the pandemic period.
- Cardiovascular diseases (hypertensive heart disease, congestive heart failure, and stroke) were among the top five increases in number of deaths both the pre-pandemic period and the recovery period.

<sup>8</sup> Conditions with fewer than 100 deaths are excluded from all time periods. For additional notes, see Appendix.

Figure 14

Top 10 Causes of Death based on Percent Increases in Age-Adjusted Death Rates (per 100,000) Across Multiple Time Periods



Percent Increase in Age-Adjusted Death Rates

Broad Condition Group: Communicable (Blue), Cancer (Grey), Cardiovascular (Orange), Other Chronic (Green), Injury (Light Blue)

\*There were zero COVID-19 cases in 2019 so the percent increase is undefined.

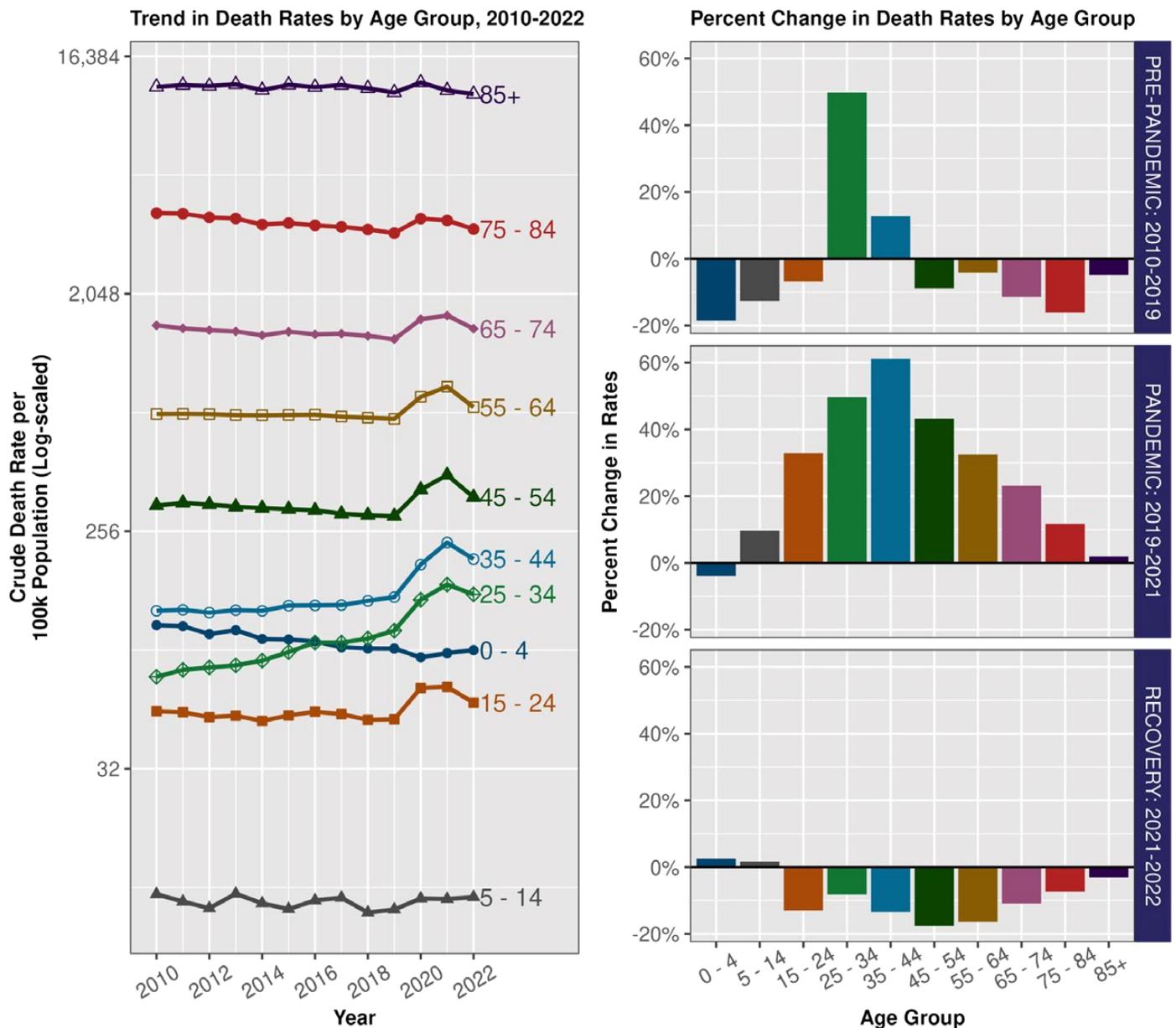
## Trends by Age Group

During the pre-pandemic period, death rates increased among young adults (25–34) and adults (35–44) while rates decreased for all other age groups.

- Pre-pandemic, death rates for young adults (ages 25–34) increased considerably (50%). Rates for adults (ages 35–44) increased (13%).
- These two age groups also experienced the greatest percent increase in death rates during the pandemic period.
- In 2022, death rates decreased across most groups, including among young adults and adults. However, despite these recent decreases, death rates among young adults and adults were still substantially higher than their pre-pandemic rates in 2019.

Figure 15

Trends in Death Rates (per 100,000) and Percent Change by Age Group, 2010–2022



## Years Lived with Disability

The term morbidity means having a specific illness or health condition. At the population level, morbidity measures incidence, or how much of a disease or condition there is in a population during a year (or other time period); or prevalence, how much of the disease or condition there is in the population at one point in time.

The years lived with disability (YLD) measure accounts for the number of years lived with an illness or health condition and the severity of the condition throughout life.

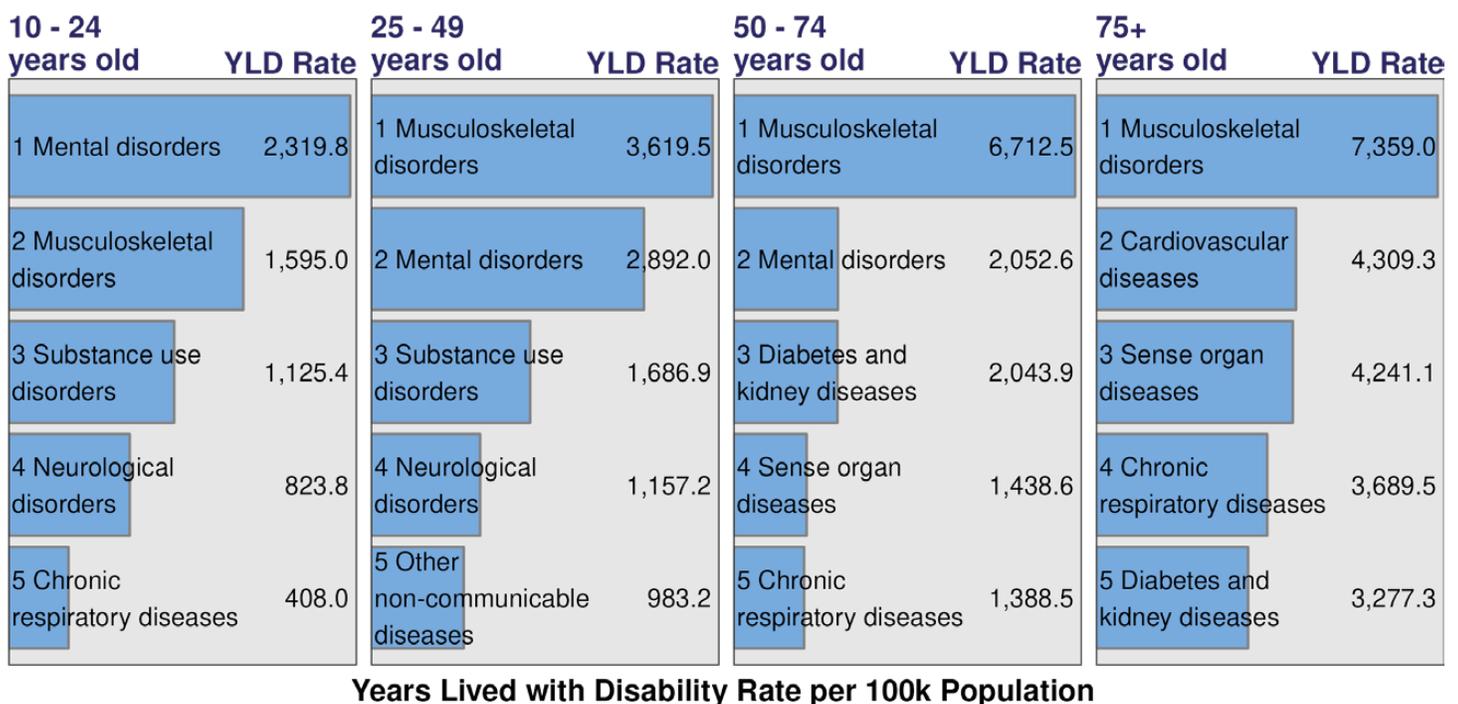
### Ranking of Conditions Based on Associated Years Lived with Disability

Information is presented on leading causes for years lived with disability (per 100,000 population) in 2019.

- Musculoskeletal disorders were a leading cause of years lived with disability for all age groups. These conditions include low back pain, neck pain, and others.
- Mental disorders were the highest leading cause of years lived with disability among the youngest age group, and the second leading cause among a wide age range. Mental disorders include depressive disorders, anxiety disorders, bipolar disorder, schizophrenia, autism spectrum disorders, conduct disorder, attention-deficit hyperactivity disorder, eating disorders, and others.

Figure 16

*Ranking of Conditions based on Associated Years Lived with Disability Rates (per 100,000) by Age Group, 2019*



- Physical environments such as housing and neighborhood both provide resources for health and contain health risks that can contribute to death and disability. In California, health impacts including 30,202 deaths and 751,565 disability adjusted life years (DALYs) were identified as directly attributable to preventable environmental factors (e.g., air pollution, unsafe water, occupational exposures to carcinogens and asthma triggers) in 2019 (Appendix Table 2).
- In 2020, 35.6% of adults ages 18 or older with a self-identified difficulty needed help with handling routine and personal care needs. Of those who did receive help with care needs, one-third (34.4%) reported their service only partially met or failed to meet their needs. These unmet needs often resulted in social isolation, going without groceries and personal items, and making mistakes when taking medication—contributing to other adverse health outcomes.

Many disabilities have precursors in chronic disease (e.g., diabetes, congestive heart failure) or psychiatric illness. Public health prevention strategies, in collaboration with community partners and services, may help mitigate the impact of disabilities interfering with activities of daily living.

## Incidence and Prevalence of Selected Causes by Public Health Condition Category

This section focuses on incidence and prevalence of selected morbidity and mortality causes by public health condition category: chronic disease, injury, and communicable disease. Later sections of the report describe key prevention activities that address these important public health issues (see Public Health Across the Life Course and Connecting the Dots).

### Chronic Disease

A chronic disease is a long-lasting illness or condition that can be controlled but not cured. Common examples include cardiovascular disease, cancer, Alzheimer’s disease and related dementias, chronic lower respiratory disease, kidney disease, and diabetes. Chronic diseases are the leading causes of death and disability in California and nationally accounting for 7 in 10 deaths in the United States each year.<sup>iv</sup> Based on national prevalence estimates, close to 23.5 million Californians have at least one chronic disease.<sup>v</sup>

In this section, chronic diseases are addressed in three groups: cancer, cardiovascular, and other chronic conditions.

### Cardiovascular Disease

Cardiovascular disease is a general term for conditions that affect the heart and blood vessels, including ischemic heart disease, hypertension, stroke, cardiomyopathy, congestive heart failure, and arrhythmias. Cardiovascular disease is by far the leading cause of death in California (with more than 93,000 deaths in 2022). It is also a leading contributor to years lived with disability and medical care-associated costs.

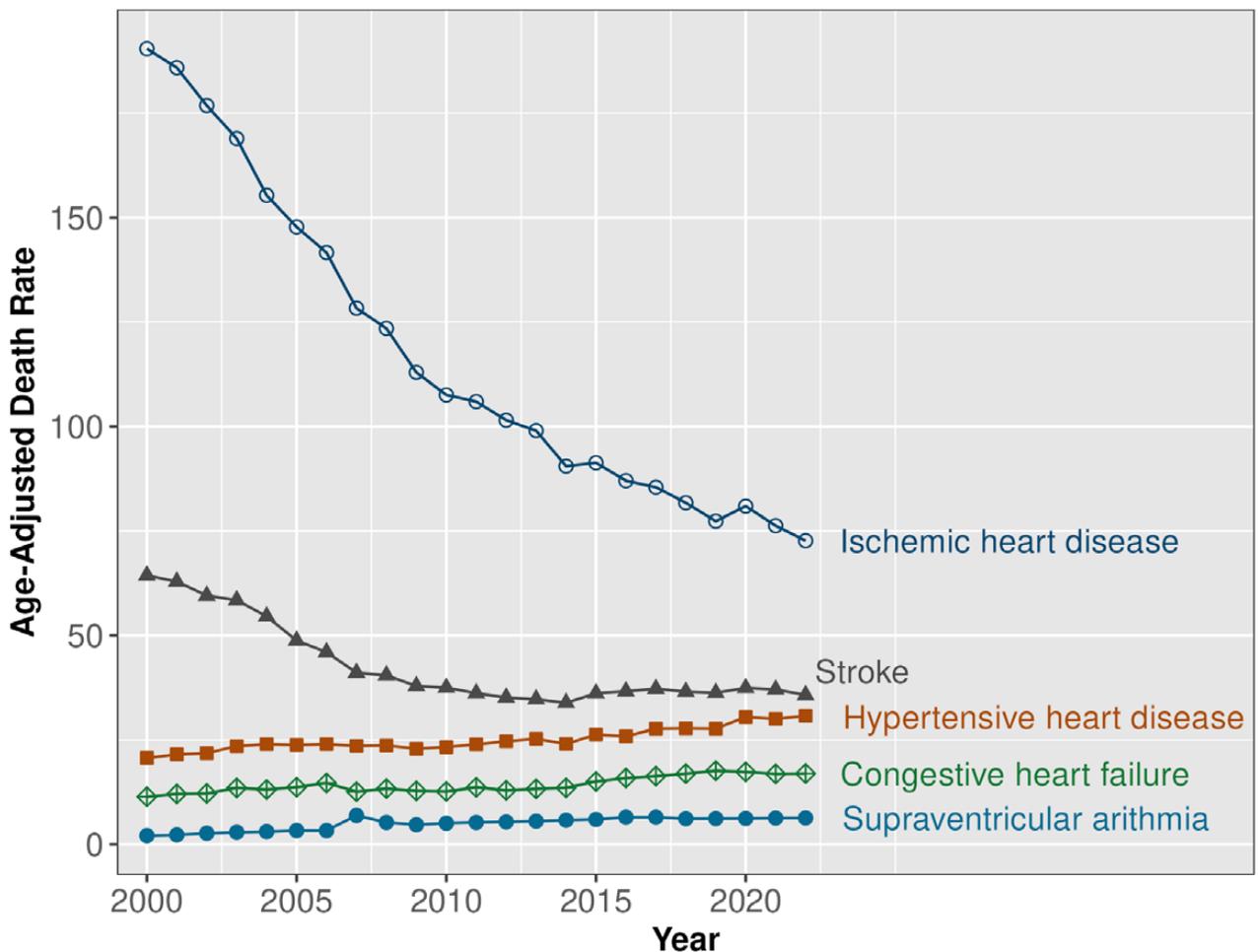
Table 1

Mortality by Type of Cardiovascular Disease, California, 2022

Type of Cardiovascular Disease	Number of Deaths	Age-Adjusted Death Rate (per 100,000)
Ischemic heart disease	37,445	72.7
Stroke	18,279	35.7
Hypertensive heart disease	15,694	30.8
Congestive heart failure	8,745	16.9
Other cardiovascular	5,013	10.1
Supraventricular arrhythmia	3,287	6.3
Cardiomyopathy, myocarditis, endocarditis	2,661	5.5
Valve disorders	1,809	3.5
Thromboembolism	565	1.2

Figure 17

Age-Adjusted Death Rate Trends (per 100,000) for Major Cardiovascular Diseases, 2000–2022



## Cancer

Cancer (all types combined) was a significant cause of death, resulting in over 60,000 deaths in California in 2022. It is a disease caused by uncontrollable cell growth in the body that can spread to other parts of the body. Some of the most common types of cancer are breast, lung and bronchus, prostate, cervical, and colon cancers.

Table 2  
*Incidence and Mortality by Type of Cancer in California*

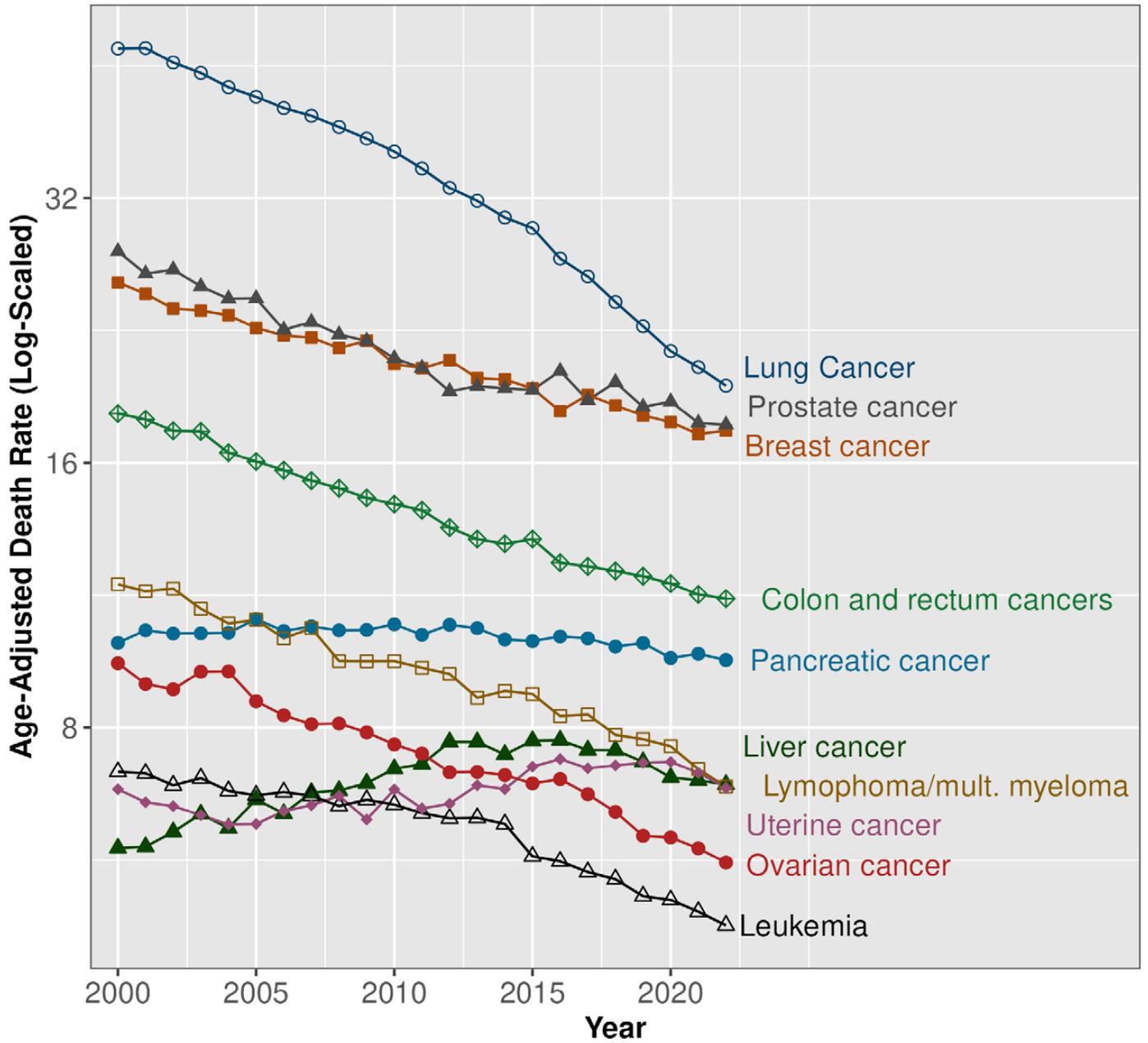
Type of Cancer	Incidence Rate* (2020)	Number of Deaths (2022)	Age-Adjusted Death Rate (per 100,000)	Key Observations in the Past Three Decades
Female breast cancer	59.9	4,634	17.4	The most commonly diagnosed cancer among females. Increased incidence among Latino, Asian and Pacific Islander, and American Indian and Alaska Native females.
Prostate cancer	41.6	3,883	17.7	The most commonly diagnosed cancer among males.
Lung cancer	32.9	10,078	19.6	Increased mortality among male American Indian and Alaska Native individuals and decreased mortality among Latino females.
Colon and rectum cancers	30.7	5,591	11.2	
Lymphomas and multiple myeloma	25.1	3,482	6.9	
Melanoma and other skin cancers	20.1	1,336	2.6	More predominant in Whites. Increasing incidence overall.
Kidney, renal pelvis, and ureter cancer	14.2	1,406	2.8	Increased incidence and mortality. Decreased mortality among White females.
Uterine cancer	13.8	1,809	6.8	Increased incidence among females of all racial and ethnic groups except White females. Increased mortality among Asian and Pacific Islander females.
Pancreatic cancer	11.7	4,910	9.5	Increased incidence among White and American Indian and Alaska Native individuals. Increased mortality among Asian and Pacific Islander females.
Leukemia	11.5	2,357	4.8	One of the most commonly diagnosed cancers among children.

Type of Cancer	Incidence Rate* (2020)	Number of Deaths (2022)	Age-Adjusted Death Rate (per 100,000)	Key Observations in the Past Three Decades
Mouth and oropharynx cancers	10	1,177	2.3	Decreased mortality among all racial and ethnic groups.
Liver cancer	8.9	3,569	6.9	Increased mortality among all racial and ethnic groups except Asian and Pacific Islander females.
Bladder cancer	8	1,699	3.3	Decreased mortality overall.
Stomach cancer	6.8	1,681	3.4	Decreased mortality overall.
Brain and other nervous system cancers	5.8	2,183	4.5	Incidence decreased, but mortality increased. Increased mortality among males of all racial and ethnic groups and among Latino females.
Ovarian cancer	5.1	1,513	5.6	
Esophageal cancer	3.5	1,399	2.7	Decreased incidence and mortality, more so among females than males. Increased incidence and mortality among White males.
Other malignant neoplasms		7,665	15.3	

\* California Cancer Registry ([www.ccrca.org](http://www.ccrca.org)), California Department of Public Health. SEER\*Stat Database: Incidence - California, Jan 2023 (1988–2020), 03/12/2023; NCHS population estimates 1990–2020.

Figure 18

Age-Adjusted Death Rate Trends (per 100,000) for Major Cancers, 2000–2022



## Other Selected Chronic Diseases

Other chronic diseases also contribute a significant public health burden. Some of these conditions result in high death rates. Others are conditions that people may live with for a long time which affect quality of life and health in other ways or contribute to other adverse health outcomes.

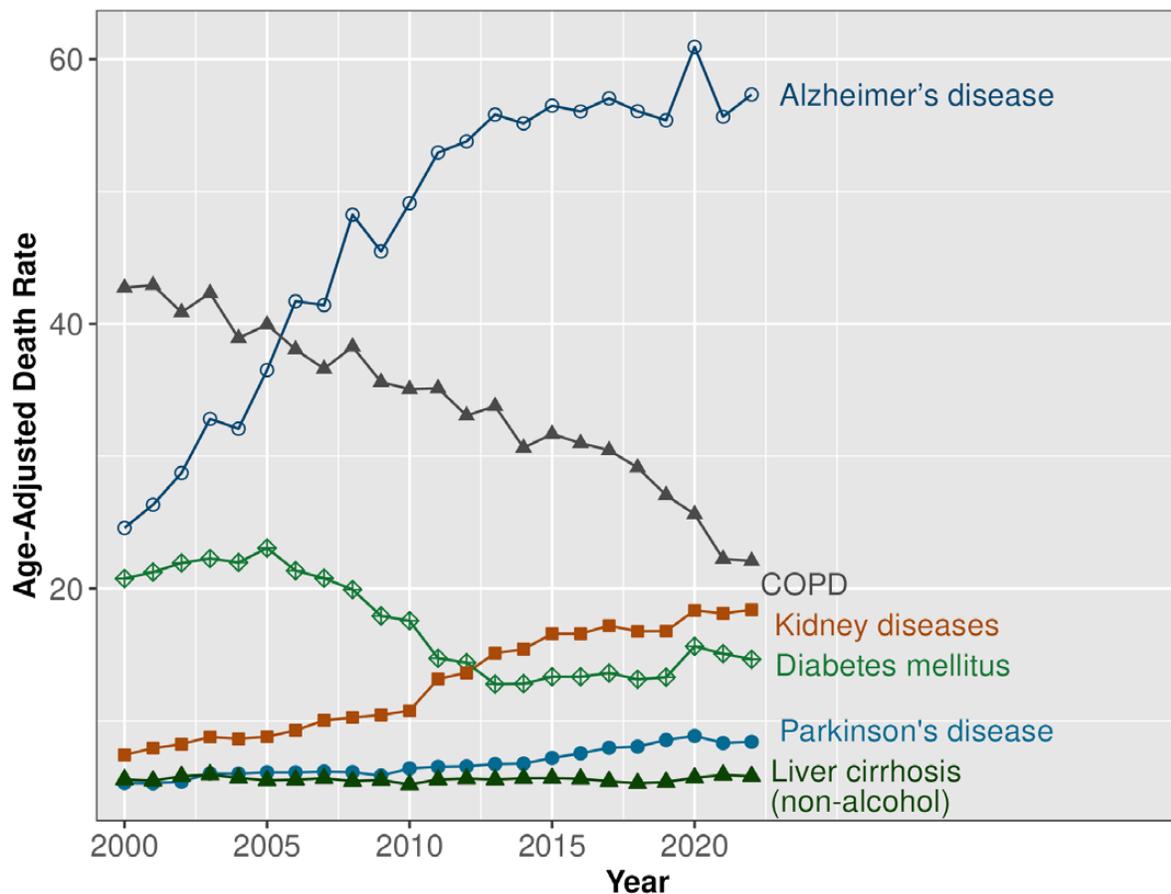
Table 3

*Mortality Burden of Other Selected Chronic Disease Conditions, 2022*

Condition	Number of Deaths	Age-Adjusted Death Rate (per 100,000)
Alzheimer's disease	29,819	57.3
COPD	11,397	22.1
Kidney disease	9,303	18.4
Diabetes	7,356	14.7
Parkinson's disease	4,272	8.4
Liver cirrhosis (non-alcohol)	2,903	5.8

Figure 19

*Age-Adjusted Death Rate Trends (per 100,000) for Selected Chronic Diseases, 2000–2022*



## Injury

Injury as a leading cause of morbidity and mortality falls into several major categories, including motor vehicle crashes, unintentional drug and non-drug poisoning, drowning, fall, suicide, and homicide, and others.

Table 4  
*Injury Morbidity and Mortality by Intent and Mechanism, California, 2022*

Injury Intent	Injury Mechanism	Deaths	Death Rate (per 100,000)	Hospitalizations**	Hospitalization Rate (per 100,000)	ED Visits**	ED Visit Rate (per 100,000)
All	All	27,974	71.7	301,000	771.2	2,559,380	6,557.7
Unintentional	Drowning/ Submersion	416	1.0	255	0.6	879	2.2
Unintentional	Fall	3,078	7.7	151,005	378.0	821,509	2,056.2
Unintentional	Motor Vehicle Traffic	4,836	12.1	29,242	73.2	272,549	682.2
Unintentional	Poisoning <sup>1</sup>	10,791	27.0	20,499	51.3	60,214	150.7
Unintentional	Other *	1,933	4.8	68,336	171.0	1,211,007	3,031.1
Suicide/ Self-harm	Firearm	1,673	4.2	115	0.3	34	0.1
Suicide/ Self-harm	Other *	2,604	6.5	16,373	41.0	33,483	83.8
Homicide/ Assault	Firearm	1,647	4.1	2,041	5.1	2,063	5.2
Homicide/ Assault	Other *	625	1.6	11,435	28.6	119,664	299.5
Undetermined	All *	269	0.7	12,534	31.4	85,485	214.0
Legal/War	All *	102	0.3	254	0.6	6,204	15.5

Source: California Department of Public Health, Center for Healthy Communities, Injury and Violence Prevention Branch.

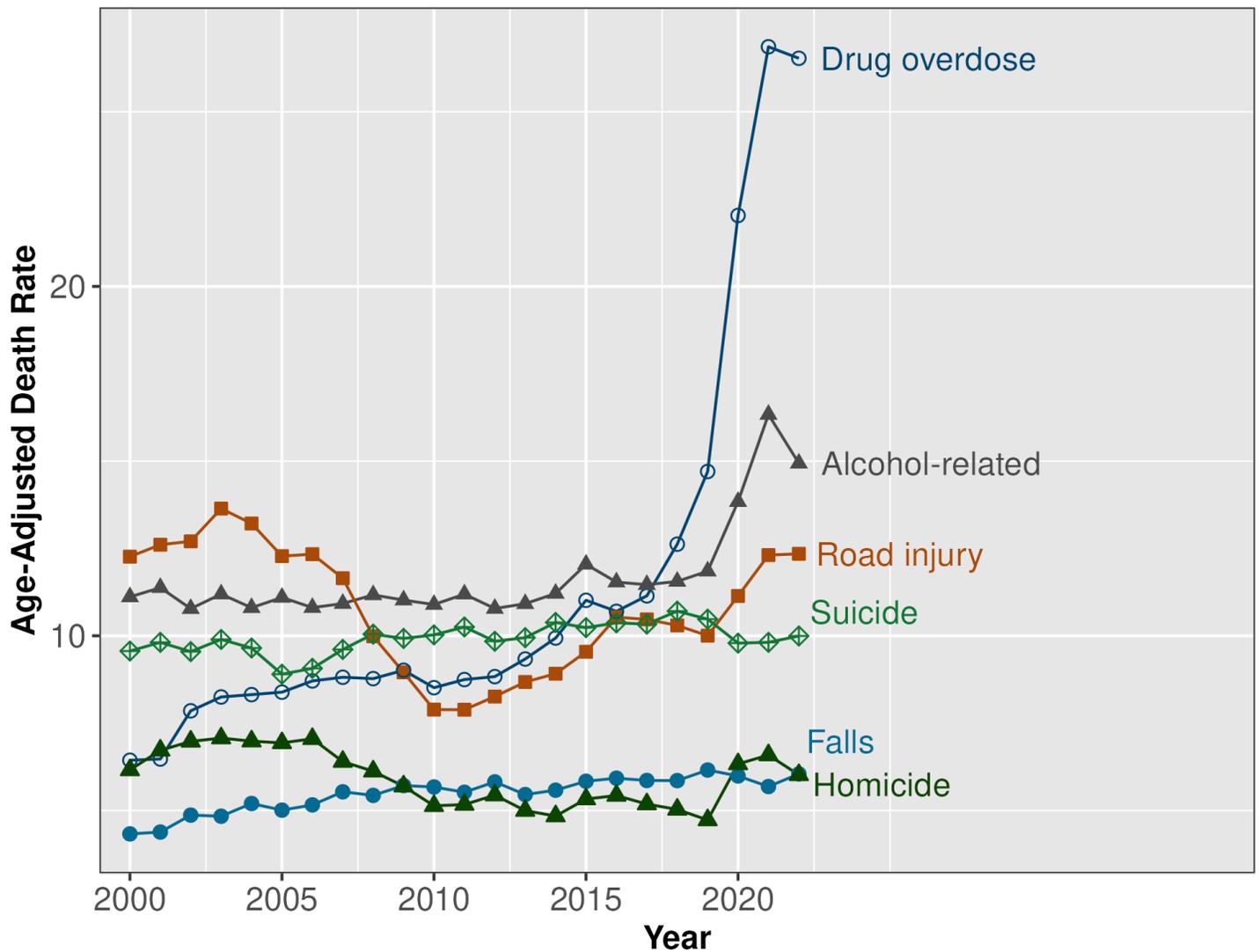
<sup>1</sup> Includes drug overdose and other poisonings

\* Injury mechanisms not explicitly listed may include: Cut/Pierce, Fire/burn, Machinery, Other Transportation, Natural/Environmental, Overexertion, Struck by/against, Suffocation, Other, and Unspecified.

\*\* Total non-fatal injuries may be less than the sum of injury intent and mechanism categories because some hospitalizations and ED visits may fall under more than one injury categories.

Figure 20

Age-Adjusted Death Rate Trends (per 100,000) for Selected Injury Causes, 2000–2022



## Communicable Disease

Control of communicable diseases is a core public health function and includes many programmatic efforts including promoting and facilitating vaccination, especially childhood vaccination; ensuring access to clean and safe water and food; promoting safer behavioral practices (or “harm reduction”) related to sexually transmitted infections (STIs) and bloodborne diseases; isolation and quarantine in rare instances; and many other programs and practices.

Due to these interventions, there has been extremely successful, sustained progress in minimizing the impact of communicable disease on the lives of Californians. Nevertheless, clear concerns persist about many of the conditions mentioned below, and the COVID-19 pandemic has been a stark reminder that the threat of large-scale impacts from communicable disease is always present.

Table 5  
Communicable Disease Incidence and Mortality, California, 2022

Diseases	Incidence (reported or projected)	Deaths	Transmission mode and/or other comments
COVID-19	5,375,989	20,862	Respiratory; vaccine available
Influenza <sup>1</sup>	1,080,000 – 4,920,000**	1,440 – 6,240**	Respiratory; vaccine available
Norovirus <sup>1</sup>	2,280,000 – 2,520,000	108	Food/Waterborne
Chlamydia	193,907	--	Sexually Transmitted
Gonorrhea	80,317	--	Sexually Transmitted
Hepatitis C (chronic)	35,448**	--	Bloodborne; Newly reported infections
Total syphilis	33,409	--	Sexually Transmitted; 7,854 primary & secondary; 8,869 early non-primary non-secondary; 16,071 late stage or unknown duration. Total syphilis reported here is exclusive of 615 incident congenital syphilis cases that occurred in 2022,
Coccidioidomycosis (Valley Fever)	7,000-9,000**	100-250**	Respiratory
Campylobacteriosis	7,740*	--	Food/Waterborne
Mpox	5,717	2	Sexually Transmitted
Salmonellosis	4,625*	--	Food/Waterborne
HIV	4,444*	2,224*	Bloodborne and sexually transmitted
Shigellosis	2,581*	--	Food/Waterborne
Hepatitis B, Chronic <sup>2</sup>	2,243	--	Vaccine available
Shiga toxin-producing E. coli (STEC) without hemolytic uremic syndrome	1,983*	--	Food/Waterborne
Tuberculosis	1,848	226	Respiratory; > 2 million infected in CA, with 13% treated to prevent TB disease. Infection rates are highest among Asian people born outside the United States; 40% of people with TB have diabetes, end stage renal disease, HIV, or another condition that can increase risk of TB disease and death.
Giardiasis	1,604*	--	Food/Waterborne

Diseases	Incidence (reported or projected)	Deaths	Transmission mode and/or other comments
Cryptosporidiosis	527*	--	Food/Waterborne
Legionellosis	461*	--	Respiratory
Yersiniosis	358*	--	Food/Waterborne
Vibrio Infection (non-Cholera)	309*	--	Food/Waterborne
Pertussis <sup>2</sup>	292	0	Vaccine available
Typhus Fever	209*	--	Vector: Fleas; vaccine available
Hepatitis A <sup>3</sup>	159	0	Food/Waterborne; vaccine available
Hepatitis C, acute/perinatal	115*	--	Bloodborne; 8 (6.9%) reported in children aged 2-36 months and were perinatally acquired.
Listeriosis	107*	--	Food/Waterborne
Lyme Disease	106*	--	Vector: Ticks
Malaria	82*	--	Vector: Mosquitos
Mumps <sup>3</sup>	20	0	Vaccine available

<sup>1</sup> - Not reportable; CA estimates based on 12% of nationwide estimates from CDC; <sup>2</sup> - Newly reported cases per case definition and does not reflect cases previously known; many cases remain undetected. <sup>3</sup> - Number of reported cases that meet CSTE confirmed case definition.

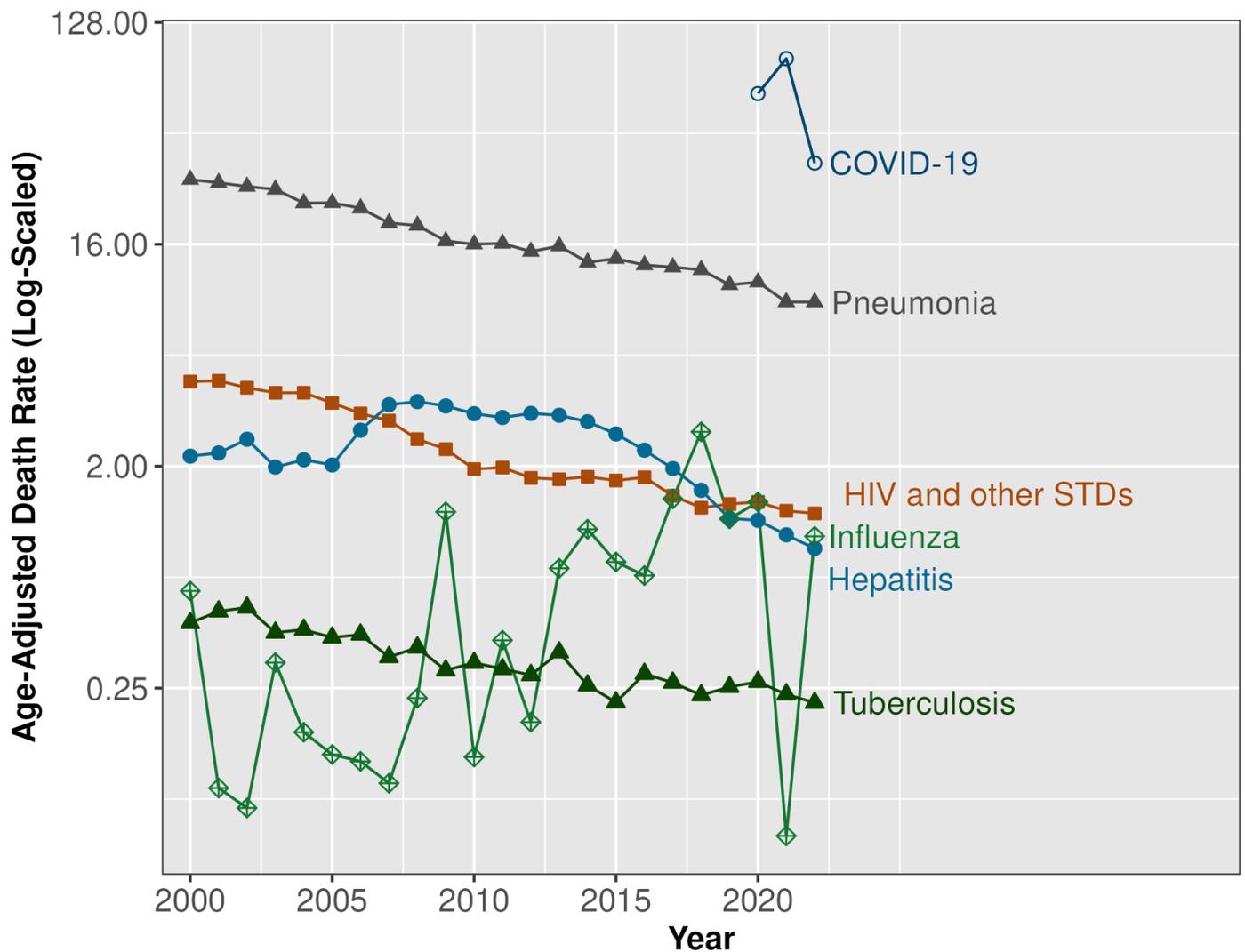
Source: California Department of Public Health, Center for Infectious Diseases. Data are for 2022, unless \*2021, \*\*older sources. Deaths presented if available and denoted by '--' if not available. Reported incidences are underestimates of true incidences in general.

## Communicable Disease Rate Trends

The vast majority of communicable disease infections do not result in severe outcomes like hospitalization or death. However, some do, including COVID-19, sepsis, pneumonia (overwhelmingly among older adults), HIV/AIDS, hepatitis, and tuberculosis. Due to a range of public health and medical interventions, mortality from most communicable diseases is in decline.

Figure 21

Age-Adjusted Death Rate Trends (per 100,000) for Leading Communicable Diseases, 2000–2022



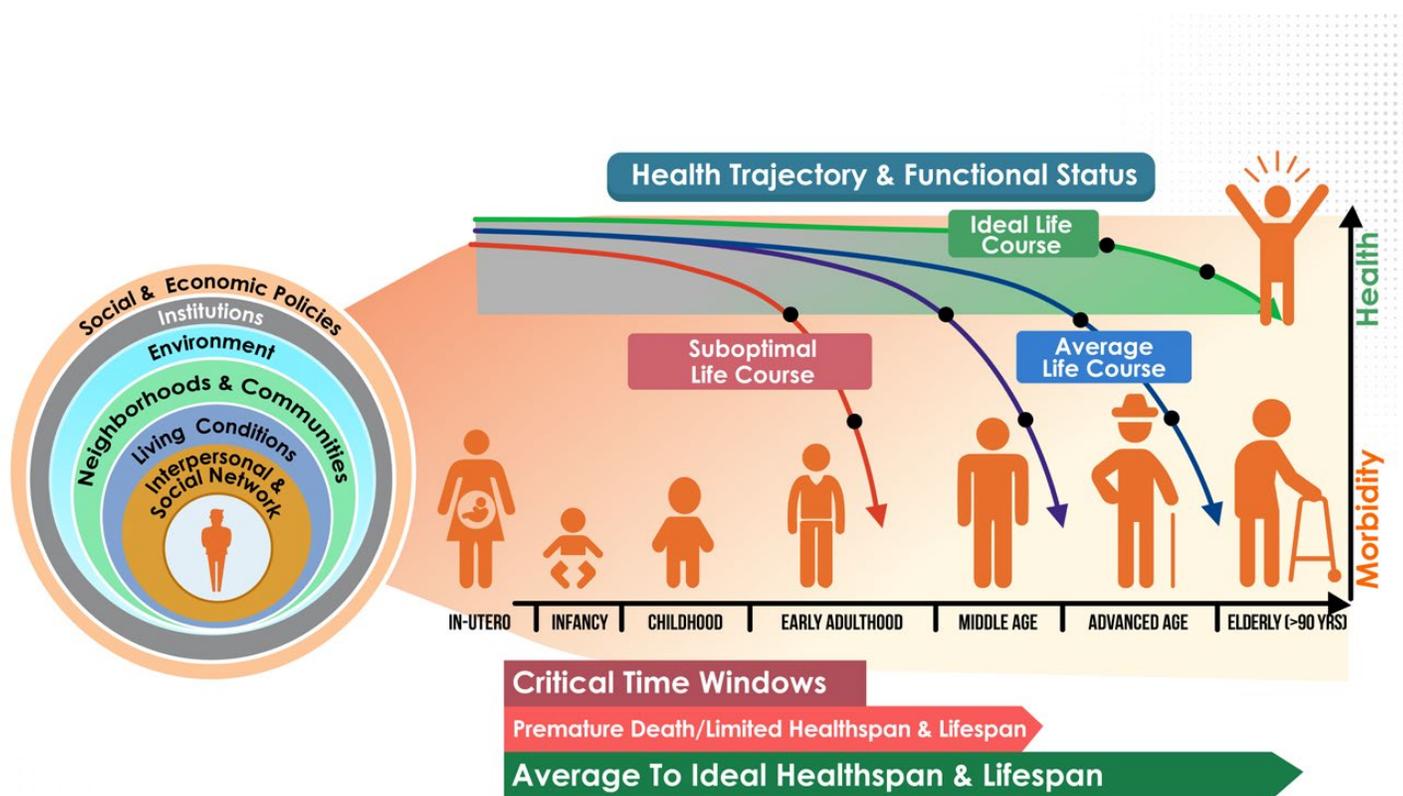
# PUBLIC HEALTH ACROSS THE LIFE COURSE

Public health uses a life course perspective when developing and implementing policies and prevention strategies, with an emphasis on intervening early in the life course.

Many of the health conditions and outcomes highlighted in this section impact individuals at all stages of life; however, some age groups and populations experience a greater burden than others. This section contains trends and disparities for select health issues across life stages as well as public health prevention strategies.

Figure 22

*The Evolution of Health Trajectories Under the Influence of Macro- and Micro-Level Factors*



Note: Vasan, R, Zachariah, J, Xanthakis, V. (2020). Life course developmental approach to cardiovascular health and cardiovascular disease prevention: Opportunities and unanswered questions. *Journal of American College of Cardiology*, 76(23), 2708–2711. <https://doi.org/10.1016/j.jacc.2020.10.011>

## Leading Causes of Death Across the Life Course, 2022

Death rates for the five leading causes of death in different age groups, for both males and females, reveal mortality patterns across the life course:

- Prominent mortality causes were injury among younger age groups cardiovascular disease, cancer, and other chronic diseases in middle age groups, and Alzheimer's in older age groups.
- COVID-19 was the only communicable disease condition in the top five leading causes among females in the 35–44 age group and for both males and females 45–84.
- Death rates for most causes and age groups were higher among males.
- The youngest age group (0–4) was most impacted by heart defects, Down syndrome, and other neonatal conditions and congenital anomalies.
- Road injuries were the leading cause of death among 5–14 age group.
- Drug overdose was a leading cause of death (either first or second) for a wide age range spanning from age 15–54 for females and 15–64 for males.

Figure 23

Leading Causes of Death Across the Life Course, 2022

Rank	Ages 0 - 4	Ages 5 - 14	Ages 15 - 24	Ages 25 - 34	Ages 35 - 44	Ages 45 - 54	Ages 55 - 64	Ages 65 - 74	Ages 75 - 84	Ages 85+	
<b>Female</b>	1	Neonatal conditions 425	Road injury 32	Road injury 196	Drug overdose 420	Drug overdose 479	Drug overdose 472	Ischemic heart disease 1,171	Ischemic heart disease 2,583	Alzheimer's disease 4,345	Alzheimer's disease 14,056
	2	Congenital anomalies 204	Brain & nervous system cancers 22	Drug overdose 193	Road injury 261	Alcohol-related 260	Breast cancer 449	Breast cancer 919	COVID-19 1,422	Ischemic heart disease 3,791	Ischemic heart disease 6,976
	3	Other unintentional injuries 37	Congenital anomalies 18	Suicide 91	Suicide 158	Breast cancer 217	Alcohol-related 421	COVID-19 837	Lung Cancer 1,319	Stroke 2,524	Stroke 5,582
	4	Road injury 20	Suicide 18	Homicide 56	Alcohol-related 98	Road injury 173	COVID-19 338	Alcohol-related 626	Stroke 1,283	COPD 1,924	Hypertensive heart disease 4,359
	5	Endo., blood, immune dis. 19	Leukemia 15	Other neurological 39	Homicide 78	COVID-19 142	Ischemic heart disease 287	Hyper-tensive heart disease 617	COPD 1,148	COVID-19 1,830	Congestive heart failure 2,762
<b>Male</b>	1	Neonatal conditions 577	Road injury 48	Road injury 568	Drug overdose 1,887	Drug overdose 1,902	Drug overdose 1,600	Ischemic heart disease 3,460	Ischemic heart disease 5,607	Ischemic heart disease 5,881	Alzheimer's disease 6,190
	2	Congenital anomalies 218	Congenital anomalies 27	Drug overdose 528	Road injury 826	Alcohol-related 735	Ischemic heart disease 1,146	Drug overdose 1,686	COVID-19 2,213	Alzheimer's disease 3,026	Ischemic heart disease 6,096
	3	Other unintentional injuries 60	Brain & nervous system cancers 22	Homicide 424	Homicide 590	Road injury 654	Alcohol-related 1,046	COVID-19 1,442	Lung Cancer 1,715	COVID-19 2,495	Stroke 2,765
	4	Other Infections or Nutrition 22	Other neurological 20	Suicide 348	Suicide 563	Suicide 520	COVID-19 639	Alcohol-related 1,438	Stroke 1,582	Stroke 2,101	COVID-19 2,653
	5	Endo., blood, immune dis. 18	Suicide 19	Other neurological 65	Alcohol-related 310	Homicide 442	Hyper-tensive heart disease 535	Hyper-tensive heart disease 1,151	Hyper-tensive heart disease 1,532	COPD 1,967	Hyper-tensive heart disease 2,319

Broad Condition Group		
Communicable	Cancer	Cardiovascular
Other Chronic	Injury	Perinatal

Notes: Neonatal conditions are health issues affecting newborns in the first few weeks of life. Preterm birth, childbirth-related complications (birth asphyxia or lack of breathing at birth), infections, and birth defects cause most neonatal conditions and comprise the vast majority of neonatal mortality. Alcohol-related conditions do not include partially or indirectly attributed conditions.

## Leading Causes of Death Across the Life Course by Race/Ethnicity, 2022

Age patterns in mortality varied by race/ethnicity:

- The leading cause of death varied for females aged 15–24:
  - Drug overdose surpassed road injury for White and Black females.
  - Suicide was ranked as the top cause among Asian females.
- For Black males aged 15–24, homicide was the leading cause of death.
- COVID-19 was the leading cause of death for Latina females aged 55–64.
- Additional leading causes include congestive heart failure for White females aged 85+, liver cancer for Asian males aged 55–64, and leukemia for Asian individuals aged 15–24.

## Life Course – Shared Risk Factors

While each life phase has specific vulnerabilities and health potentials, the various determinants and ecological-social context of health over the life course impact children, youth, and adults in similar ways. Health protective and risk factors also interact with social and community environments to reinforce health vulnerabilities or resilience. Unhealthy diet, lack of physical activity, and tobacco use are risk factors that significantly contribute to many chronic conditions, including: heart disease, hypertension, stroke, cancer, Type 2 diabetes, chronic lower respiratory disease, and liver disease. Importantly, community infrastructure and economic resources shape opportunities for chronic disease prevention. For example, physical activity levels can be limited by broad community factors such as access to exercise opportunities and safe walking or biking infrastructure.

- In 2022, 28.8% of California adults were obese, with large disparities by race/ethnicity, income, and insurance status,<sup>vi</sup> and 21.9% of California adults did not participate in any leisure-time physical activity.<sup>vii</sup>
- About 1 in 5 California children and adolescents reported consuming fruits and vegetables five or more times a day before in 2019-2020.<sup>viii</sup>
- In 2022, 5.8% of California adults smoked cigarettes and 5.2% vaped.<sup>ix</sup>
- In 2022, 44% California adults below 200% Federal Poverty Level were food insecure, and among them, about one-half of families with children were food insecure.<sup>x</sup>
- Adults with the lowest income and education levels report the greatest difficulty accessing fresh fruits and vegetables locally.<sup>xi</sup>
- Communities with high fast-food outlet density and high-priced convenience stores have higher rates of obesity and diabetes.<sup>xii</sup>

Public health approaches focus on improving health outcomes for under-resourced communities. This includes addressing the impact of cumulative lifetime exposure to structural racism, a primary contributor to sociodemographic differences in physical and mental health outcomes.<sup>xiii,xiv</sup>

To address structural barriers and social, political, and economic limitations imposed on disadvantaged populations, public health utilizes a health equity lens to inform the program implementation in chronic disease prevention including a policy framework rooted in continuous community engagement. As well, interventions positioned upstream such as healthy food access, safe environments, and supportive family and community environments along with strategic approaches that focus on encouraging healthy behaviors remain priorities of the public health system.

## Early Life Stages



A healthy beginning (from infancy to adolescence)<sup>xv</sup> sets the stage for health and well-being for a person's entire life. Factors that contribute to a healthy start include health before and during pregnancy, access to health care, economic stability and social support, along with family and community health.

Many adult health conditions originate in childhood and adolescence. It is more effective and less costly to create the right conditions for early childhood development than to address problems later on.

This section examines significant public health conditions in early life stages.

- Prenatal and Birth: Infant mortality and other pregnancy-related outcomes
- Childhood and Adolescence: Adverse and Positive Childhood Experiences, flourishing in early life, and asthma

## Perinatal and Birth

A life-long trajectory of health starts before a child is born, with access to resources to support good health before pregnancy, followed by early child development when social, physical, and emotional environments impact children's current health and future vulnerabilities and resilience.

### Infant Mortality and Other Pregnancy-Related Outcomes

Infant and pregnancy-related mortality are important indicators of overall community health that are associated with multiple factors, including: access to quality health care, the health status of the pregnant person, as well as community living conditions.

Infant mortality rates (4 per 1,000 live births in 2020) and pregnancy-related mortality rates (18.6 pregnancy-related deaths per 100,000 live births; national average: 24)<sup>xvi</sup> in California are among the lowest in the nation. Congenital malformations and perinatal conditions such as preterm birth and low birth weight, as well as unintentional injury (sudden unexplained infant death) are leading causes of infant mortality.

#### Disparities

There are significant racial and ethnic and geographic disparities in infant and pregnancy-related mortality.

- The mortality rate for Black infants was 3 times higher than the rate for White or Asian infants.<sup>xvii</sup>
- The preterm and low birthweight death rates were about twice as high for Black infants than for White infants.
- The sudden unexplained infant death (SUID) rate was more than 6 times higher for Black infants than Asian infants.<sup>xviii</sup>
- Pregnancy-related mortality rates have more than doubled since 2000, with Black and American Indian and Alaska Native birthing people experiencing the worst impacts.<sup>xix,xx</sup>

Figure 24

Infant Mortality Rate (per 1,000 Live Births) by Race and Ethnicity, 2007–2020

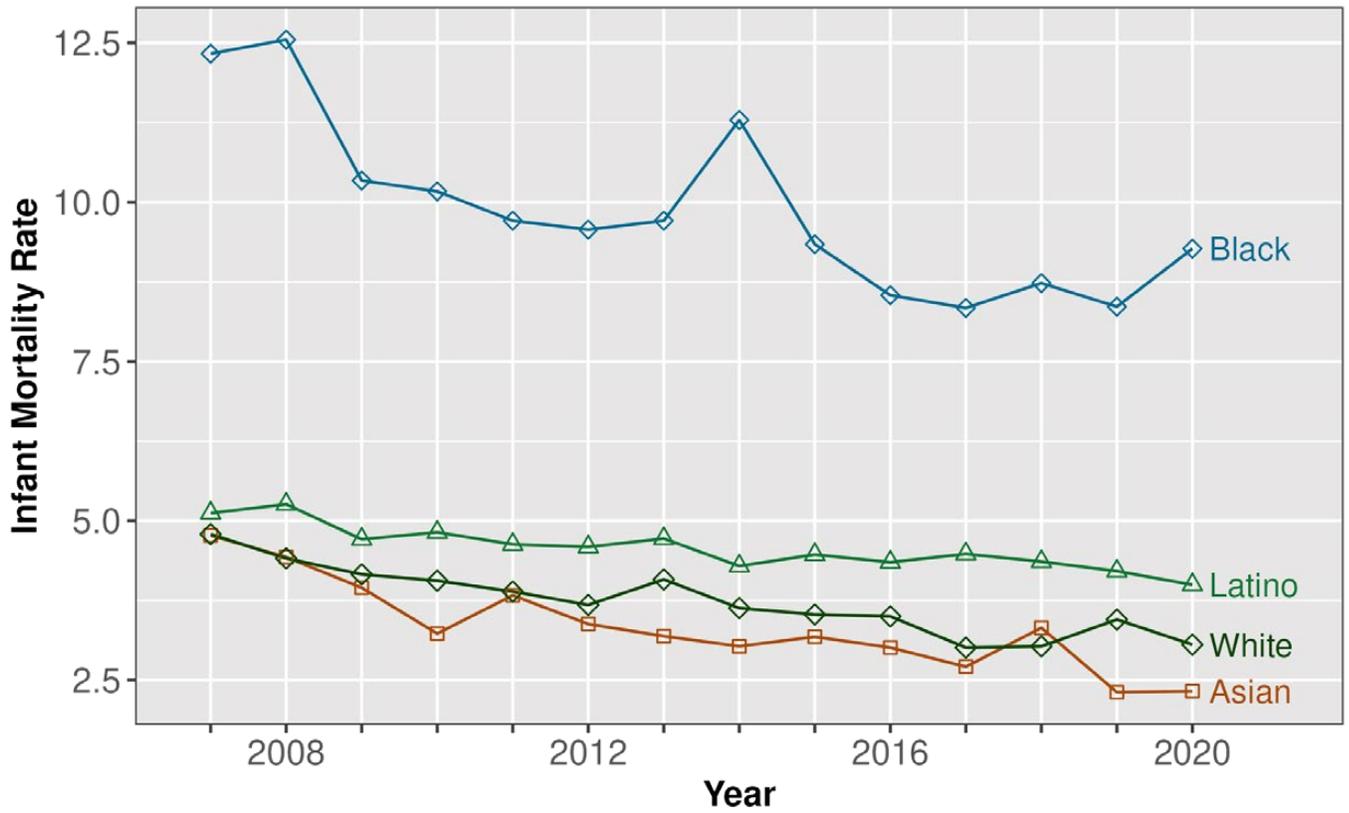


Figure 25

Infant Mortality Rate (per 1,000 Live Births) by Neighborhood Poverty, 2020

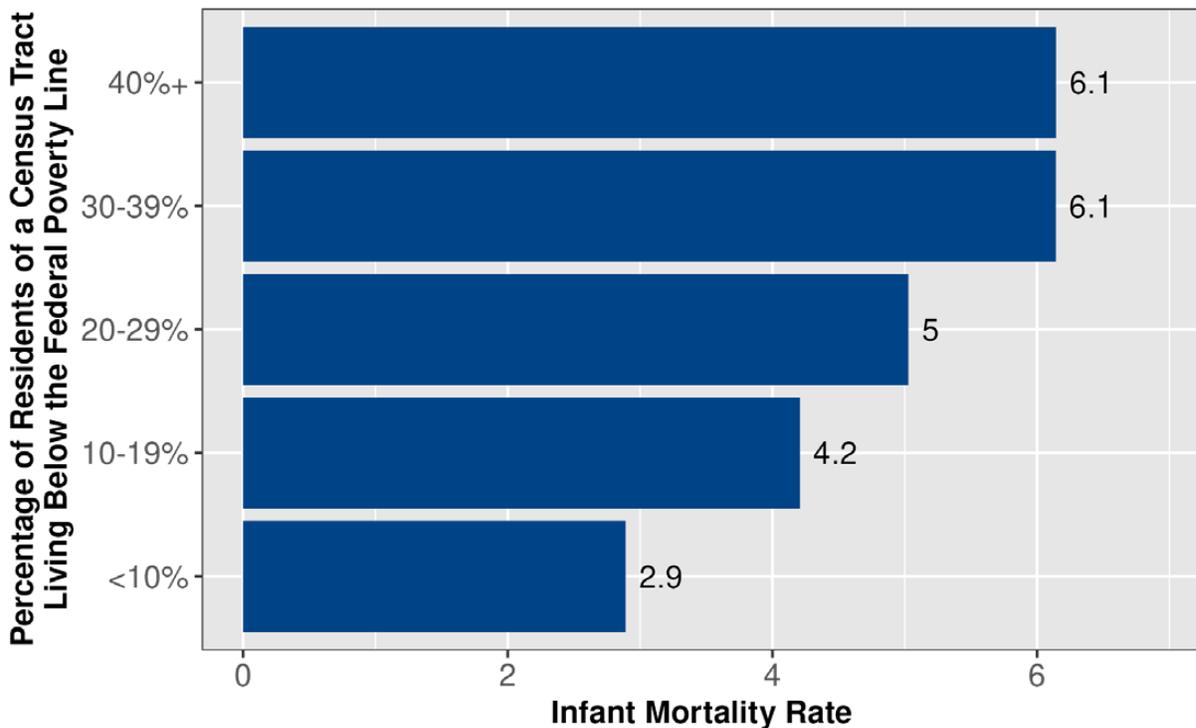
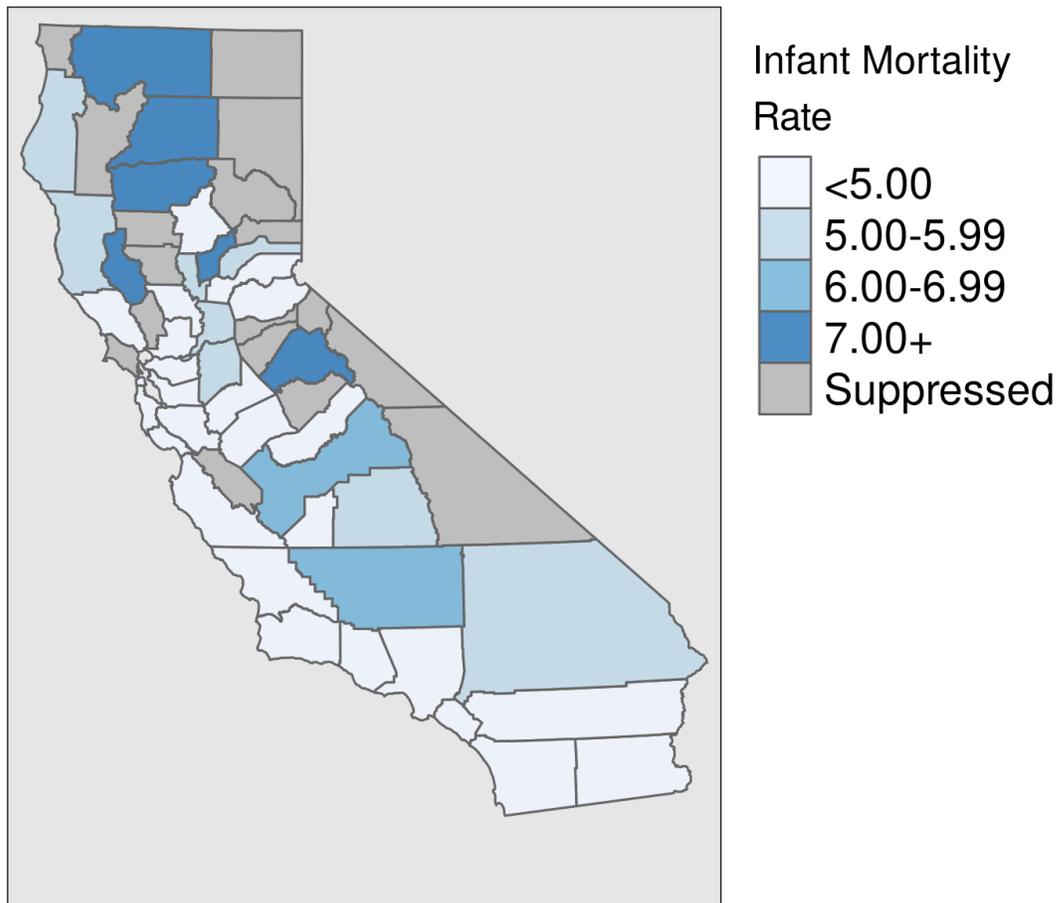


Figure 26

Infant Mortality Rate (per 1,000 Live Births) by County, 2018–2020



An individual's exposures and health status before and during pregnancy affect the health of the infant and pregnant person. Structural racism contributing to inequitable access to resources such as economic and social infrastructure and health care services, age, nutrition, substance use, mental health, and medical conditions (such as hypertension and diabetes) are key drivers of poor birth outcomes.

Among other adverse pregnancy outcomes:

- Fetal Alcohol Spectrum Disorder (FASD), is a group of lifelong impairments due to exposure to alcohol before birth that is estimated to affect up to 1 in 20 U.S. school-aged children.<sup>xxi</sup> In 2013-2015, 7.3% of birthing individuals reported drinking during the third trimester.<sup>xxii</sup>
- Neonatal abstinence syndrome (NAS) is a drug withdrawal syndrome in newborns who were exposed to opioids before birth. In 2021, the NAS rate in California was 2.7 per 1,000 birth hospitalizations; the rate among American Indian and Alaska Native infants was 9.6, and 5.2 among White newborns.<sup>xxiii</sup>

## Public Health Prevention and Current Activities

- A 2023 collaboration between CDPH's Maternal, Child, and Adolescent Health Division (MCAH), University of California San Francisco, and community partners found that health disparities for Black birthing people occur due to intergenerational inequities in social determinants of health, from the individual-level to societal-level factors. Efforts to reduce the risk of infant and pregnancy-related mortality and morbidity include: improving neighborhood conditions and economic opportunity, reducing and repairing the harmful impacts of racism on health, offering supports to buffer stress, focusing on safe infant sleep environments, breastfeeding, and improved access to quality health care.<sup>xxiv</sup>
- The 2021 California Momnibus Act funds a basic income statewide pilot with a focus on pregnant people to improve survival rates of Black and Indigenous people during childbirth.
- California expanded its Earned Income Tax Credit (EITC) in 2020, which has been shown to improve birth outcomes (e.g., reductions of up to 12% in low birthweight births for Black and White birthing people)<sup>xxv</sup> and reduce child poverty, income volatility, and nutrition insecurity—all of which impact health outcomes.<sup>xxvi,xxvii</sup>
- Recent policy changes include expanding access to care through increased training funding for midwives—especially those from underrepresented groups—as well as updates to Medi-Cal to cover care provided by doulas.<sup>xxviii,xxix</sup>
- The Department of Health Care Services is developing the [Birthing Care Pathway](#) as a care model with Medi-Cal benefit and payment strategies to reduce pregnancy-related morbidity, mortality, and disparities.

## Congenital Syphilis<sup>xxx</sup>

Congenital syphilis is an infection that is transmitted from pregnant person to child during pregnancy or delivery. Untreated syphilis in pregnancy can result in stillbirth or early infant death in up to 40% of cases and can cause severe illness in infants, including: premature birth, low birthweight, meningitis, blindness, hearing loss, skin rashes, severe anemia, and enlarged liver or spleen.<sup>xxxi</sup>

- Consistent with national trends, congenital syphilis cases increased for the tenth year in a row; from 33 cases in 2012 to 615 cases in 2022; these trends mirror the sharp increase in syphilis among females. The 615 congenital syphilis cases reported in 2022 was a 16% increase compared to 2021 and the most congenital syphilis cases reported in California in more than 25 years. Among the 615 congenital syphilis cases, there were 48 infant stillbirths and 11 neonatal deaths, which were preventable.
- 68.9% (n = 42) of California's local health jurisdictions reported at least one case of congenital syphilis in 2022.

### Risk Factors and Disparities

- Risk factors among the parent who gives birth to a child with congenital syphilis can include late or no prenatal care, experiencing homelessness, incarceration in the past 12 months, previous history of syphilis, and methamphetamine use.<sup>xxxii</sup>
- Risk factors occur and are amplified in the context of complex intersections of adverse social determinants of health including poverty, disparities in access to care, stigma, and structural racism, among others.
- Risk factors for congenital syphilis overlap with those for HIV and other STIs. Co-infections with HIV or other STIs can lead to worse perinatal outcomes.

## Public Health Prevention and Current Activities

- Congenital syphilis is highly preventable. Prenatal screening and timely treatment of syphilis early in pregnancy (>30 days before delivery) can prevent up to 90% of cases.<sup>xxxiii</sup>
- All pregnant people should receive routine prenatal care, which includes syphilis testing. Recent legislation ([Statutes 2021, Chapter 486](#)) requires pregnant patients be screened for syphilis at their first prenatal visit, during third trimester and again at delivery unless low risk.
- CDPH has championed cross-program efforts to address syphilis and congenital syphilis, and supports all counties to implement syphilis and congenital syphilis programs through public health efforts focused on:
  - Promoting screening in settings that serve populations at increased risk for syphilis and HIV, as well as patients who might have disruptions in prenatal care and treatment due to contributing social factors (e.g., substance use, incarceration, poverty, homelessness, etc.).
  - Providing safety-net antibiotic medication Bicillin L-A to address shortages for local health departments with less than a two-week supply to treat priority populations for syphilis.
  - Conferring 340b drug pricing program eligibility to local health departments, clinical settings and correctional facilities that provide STI services to eligible populations.
  - Providing for field delivery of testing and treatment to meet patients where they are.
  - Facilitating support of routine opt out testing in emergency departments and correctional facilities.
  - Holding Congenital Syphilis Review Boards with high burden local health departments to provide a rigorous, systematic, and collaborative review of congenital syphilis cases.
  - Developing adviserships, trainings, guidelines, and recommendations on screening, treatment, and prevention.
  - Creating Dear Colleague Letters to inform local health departments about changing epidemiology and increases in cases.
  - Implementing statewide campaigns focused on sexual health to increase awareness of syphilis and congenital syphilis, and purchasing test kits and condoms to support local health departments.
- Local health departments are instrumental to the prevention of congenital syphilis in California, including but not limited to their roles in: guiding clinical care, surveillance, public health lab services, disease investigation, expanding community health worker workforce, supporting partner follow up, and treatment.

## Childhood and Adolescence

### Positive and Adverse Childhood Experiences: Impacts Across the Life Course

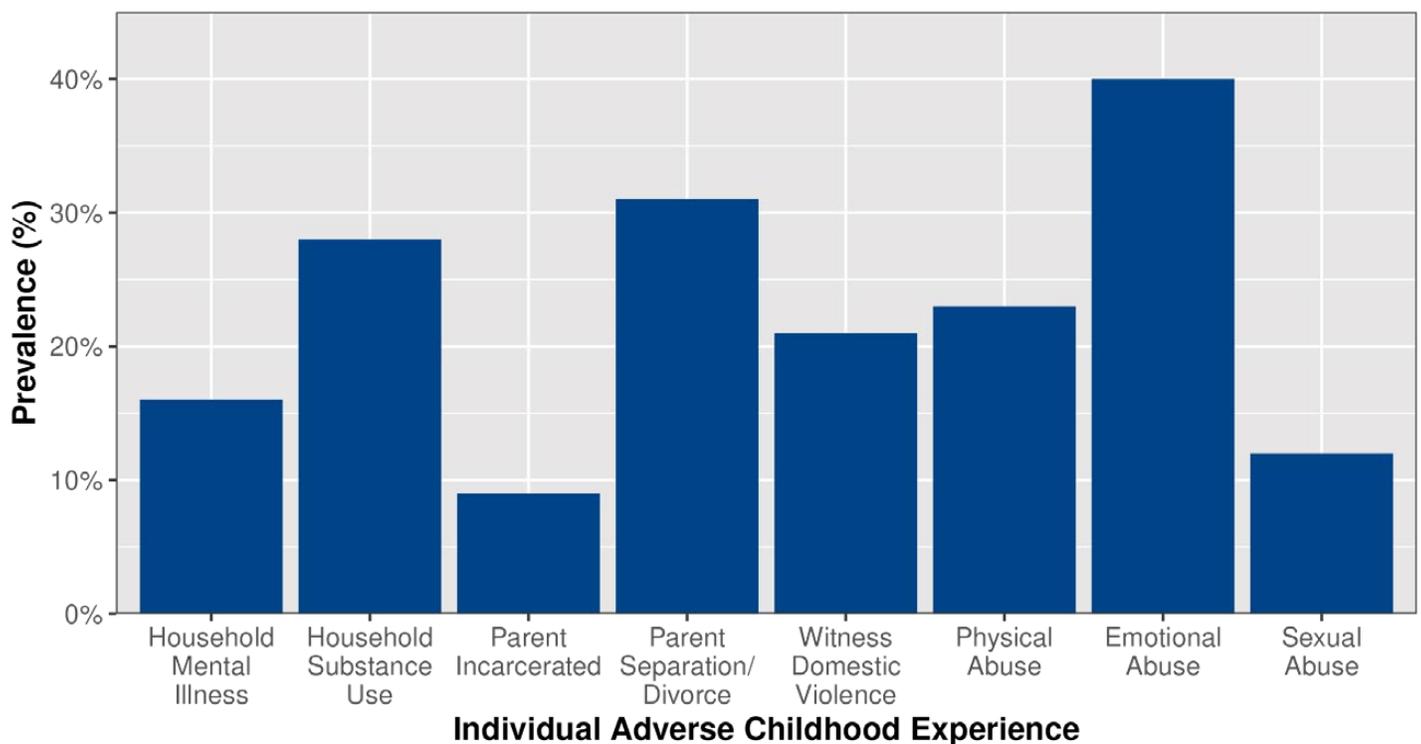
Positive Childhood Experiences (PCEs) are events, relationships, and feelings of support and safety during childhood that lead to improved physical and mental health in adulthood. Adverse Childhood Experiences (ACEs) are traumatic events that occur among children and adolescents, including maltreatment, hardship, and other household and community challenges.

ACEs are a significant public health problem in California and can have long-term impacts. The cumulative effects of toxic stress can alter brain development and physical responses to stress in ways that have negative health consequences into adulthood.<sup>xxxiv</sup> Research shows that experiencing four or more ACEs increases the likelihood of several health outcomes, including behavioral health challenges (e.g., acute drinking, smoking, depression, suicide attempts) and chronic disease risks (e.g., heart disease, stroke, COPD, obesity, asthma).<sup>xxxv</sup> Prevention of ACEs during childhood may reduce the likelihood of experiencing these conditions later in life. While not all ACEs can be prevented, PCEs have the potential to lessen or prevent the negative impacts of ACEs when they do occur.

#### Most Californians Experience both ACEs and PCEs<sup>xxxvi</sup>

Figure 27

*Prevalence of Individual Adverse Childhood Experiences, 2015–2021 (N=18,240)*

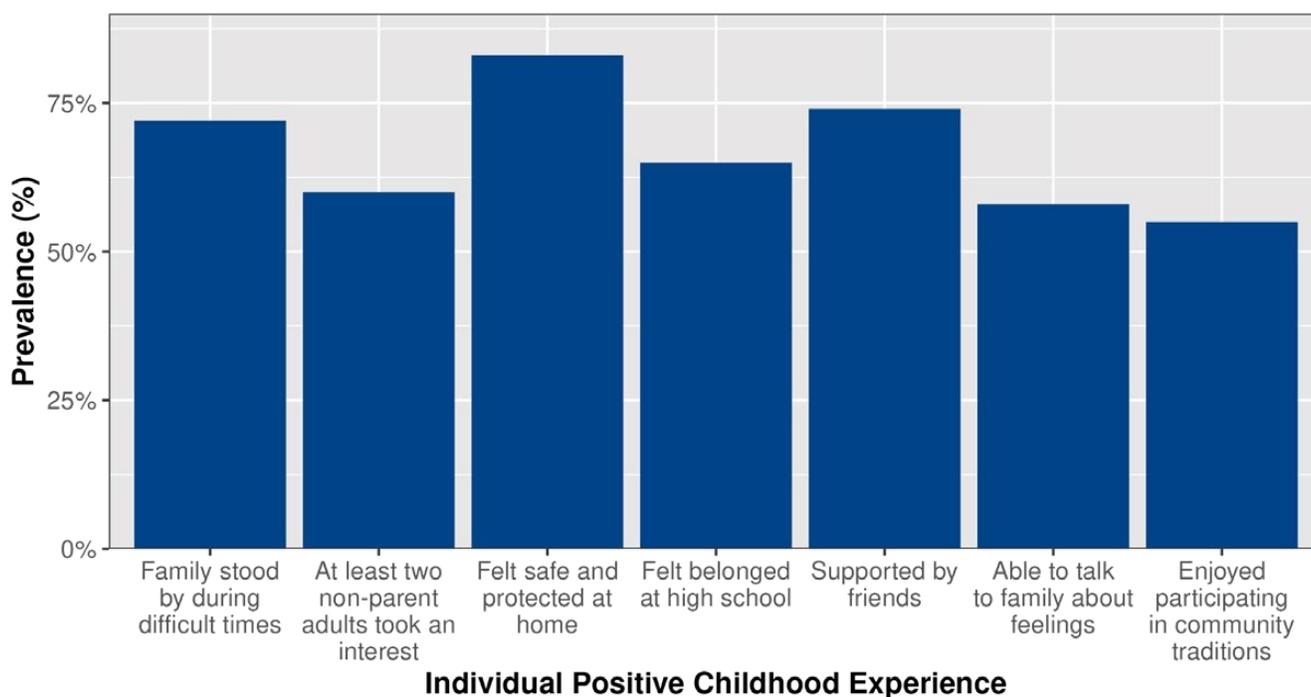


- 66% of Californian adults retrospectively reported experiencing one or more ACEs before age 18, and 17% reported experiencing four or more ACEs.
- Prevalence of exposure to four or more ACEs was highest among Californians who identified as American Indian or Alaska Native, Pacific Islander, Black, or other race/ethnicity (22%); those who identified sexual orientation as “homosexual or bisexual” (34%), or as “other/don’t know/not sure” (28%); and households with income of less than \$25,000 (22%).

While ACEs are very common, positive experiences in childhood are relatively common as well, and offer opportunities for prevention and early intervention against the negative impacts of trauma. Most individual PCEs were retrospectively reported as being experienced “often” or “very often” with relatively high prevalence (between 55-83%). The most common PCEs relate to experiences of support among close family and friends. Less common PCEs involve being able to talk about feelings (58%) and experience of participating in community traditions (55%).

Figure 28

*Prevalence of Individual Positive Childhood Experiences, 2021 (N=2,926)*



## Trends and Disparities in Children and Youth Behavioral Health

Rates of behavioral health conditions have worsened in recent years, with disproportionate impacts among youth and families in traditionally underserved communities.

- Over 30% of California students in grades 7-11 reported experiencing constant feelings of sadness or hopelessness in 2017-2019, with reported rates of depressive feelings increasing by 8.6%, 5.2%, and 14.4% among 7th, 9th, and 11th graders respectively, compared with reported rates in 2008-2010.<sup>xxxvii</sup>

- Between 2016-2020, California youth had the second largest percent increase in depression and anxiety among children ages 3-17 in the nation.<sup>xxxviii</sup>
- LGBTQ+ students reported experiencing these feelings at levels twice as high as heterosexual-identifying students (62.9% vs 25.9%).
- Across the U.S., adolescents experiencing homelessness, in the child welfare and juvenile justice systems, living in rural areas, or who are LGBTQ+ were least likely to receive mental health services.<sup>xxxix</sup>
- In 2021, more than 1 in 3 California teens reported feeling nervous, depressed, or emotionally stressed about climate change.<sup>xl</sup>
- As of March 31, 2023, 44,570 of California's children under 18 had lost a parent or caregiver due to COVID-19. Almost 30,000 of those were Latino children. Combined with other stressors, and without robust support to help prevent behavioral health crisis, this type of traumatic family loss can have both immediate and long-term health consequences among children and families.<sup>xli</sup>
- Substance use was higher among students who report low social connectedness (30.3%) compared with those who report high social connectedness (13.5%).<sup>xlii</sup>
- California high school students engaging exclusively in same sex encounters reported higher use of methamphetamines (28.8% vs 5.6%) and illegal injection drugs (24.9% vs 4.8%) than heterosexual classmates.<sup>xliii</sup>

There are opportunities to prevent, manage, or treat most child and youth mental health. The balance between exposure to stress and access to support can significantly impact child and adolescent health outcomes. Policies and systems change strategies can promote protective factors and improve access to early intervention and treatment of behavioral health concerns.

## Flourishing among Children and Adolescents

Flourishing refers to a state of optimal well-being, growth, and positive development. The percent of children reported as flourishing by parents or guardians was highest among children ages 0-5 (82%) and lower at ages 6-11 (64%) and 12-17 (59%) during 2020-2021.<sup>xliv</sup>

When assessing child flourishing by household income, disparities were most notable among children aged 0-5 in 2018-2021. Among families with household incomes at or below 200% of the poverty level, 75% of children aged 0-5 were flourishing, compared to 86% of children in households with incomes above 200% of the poverty level.

### Risk and Protective Factors

Children and adolescents can be protected against long-term negative behavioral and physical health outcomes when stress caused by unmet social needs and ACEs are identified and addressed to keep the stress from turning chronic or toxic.

Strengthening protective factors in the family; improving safety, stability, and nurturing relationships in the home; enriching school environments; fostering social connectedness; and positive self-efficacy can promote resilience and support healthy early development.

### Public Health Prevention and Current Activities

For adolescents to thrive, they need families, communities, and systems that support and encourage them. The public health approach to youth health promotion requires concerted efforts across policies and systems.

California is leading the way in preventing and addressing ACEs and the health impacts of toxic stress. This includes [Office of the Surgeon General](#) initiatives, such as expanded research, a public awareness campaign, and a first-in-the-nation effort with the Department of Health Care Services to [screen for ACEs](#) in primary care. In addition, over 40 different CDPH projects and programs address children and youth behavioral health, including:

- Strategies to support healthy and nurturing relationships and environments for children and youth.
- Key CDPH activities support the [Governor's Master Plan for Kids' Mental Health](#) and the [California Health and Human Services Agency's Children and Youth Behavioral Health Initiative](#) (CYBHI). CDPH designs and implements youth-centered and culturally responsive public education and change campaigns for suicide prevention, reducing mental health stigma, promoting awareness and acceptance of mental health supports and treatment, as well as prevention of substance use and overdose.
- Individual and family-level case management, home visiting, and public health nursing programs that ensure families have the tailored and comprehensive support they need to reach their goals.

## Asthma

Asthma is a chronic lung condition that makes it hard to breathe. Swelling in the airways can cause wheezing, coughing, shortness of breath, and chest tightness. Asthma attacks can be caused by triggers including pollution, pet dander, mold, pollen, exercise, tobacco, wood smoke, dust mites, or infections like the cold or flu.

Asthma rates increased dramatically during the last three decades.<sup>xlv</sup> More than 1 in 10 Californians (14.9%) are estimated to have asthma, and every year about 40,000 are hospitalized because of asthma.

- Black Californians had five times more emergency department visits for asthma and four times more hospital stays, compared to White Californians.

Asthma is one of the most common chronic diseases among children. It makes it difficult to exercise, play, and is a top health-related reason for missed days of school.<sup>xlvi</sup>

- Compared to adults, children (0-17 years old) are more likely to have severe asthma, including two times more emergency department visits and three times more hospital stays.<sup>xlvii</sup>
- Black children were more likely to suffer from more severe asthma than White children. Black children had six times higher emergency department visits, and five times higher hospital stays.

In 2020, the rate of emergency department visits due to asthma was higher among Californians in the lowest income quartile (33.1 per 10,000 population), compared to those in the highest income quartile (21.2 per 10,000).<sup>xlviii</sup>

- Higher rates of emergency department visits for asthma may indicate disparities in access to quality preventive care and increased environmental exposures.

## Public Health Prevention and Current Activities

There is no cure for asthma, but with proper care and management, most people with asthma can lead active and normal lives. Unhealthy housing conditions can be asthma triggers such as secondhand smoke, mold, dampness, and pests. Workplace, housing, school, childcare settings, and outdoor environments are other opportunities for prevention to minimize exposure.

CDPH programs like [California Breathing](#) and [Healthy Homes and Communities](#) conduct disease surveillance, raise awareness of asthma triggers, and develop interventions to improve environmental conditions that cause or exacerbate asthma in the most vulnerable populations.

## Adult Life Stages

From a public health perspective, many of the health outcomes we see in adulthood are the result of health conditions faced earlier in life. Nevertheless, there are prevention and health-promoting opportunities in adulthood to mitigate poor health outcomes.

We will examine several lenses within this life stage.

- Young Adulthood: Elevated risks associated with unintentional and intentional injuries
- Adulthood: Increasing impact of chronic conditions and occupational exposures
- Older Adulthood: Alzheimer's disease and stroke are conditions that affect people more at age 75 and greater

Of note, many health challenges are common across different life stages. For example, substance use is a leading cause of death from youth into adulthood from ages 15 to 64. Importantly, health vulnerabilities among children and youth often have downstream health consequences later in life. For example, long term effects of adverse childhood experiences and trauma may result in physical and mental health outcomes during adulthood.

Although subjective, self-reported health-related quality of life measures indicate that the general health status of noninstitutionalized residents ages 45-64 declined slightly across a 20-year period, with 50.3% reporting very good or excellent health status in 2001, compared to 48.4% in 2021. It is likely that the current midlife groups will move into older adulthood with a greater burden of substance use/addiction related health concerns than earlier cohorts, underscoring the importance of responsive prevention strategies.

## Young Adulthood



For young adults (and those aged 15-44), the leading causes of death in 2022 were primarily injury-related, including deaths from traffic injuries, drug overdose and alcohol-related deaths, suicide, and homicide. This age group has the highest rates of mental health related emergency department visits and hospitalization. This section of the report provides additional details on several of these conditions.

### Mental Health Conditions

Mental health involves an individual's cognitive, emotional, and social well-being, and affects their ability to manage stress, relate to others, and make choices.<sup>xlix</sup> Behavioral health is a broader term that includes mental health and extends to behaviors influenced by substance use.

Mental health conditions are common and typically include depression and other mood disorders (e.g., bipolar disorder), suicidal ideation, and psychosis (e.g., schizophrenia). They affect more than half of people in the U.S. over the course of their lifetimes, and 1 in 5 Californians every year.<sup>l</sup> The interplay of social, historical, cultural, environmental, economic, and other factors (e.g., economic stability, education access and quality, physical environment, and health care access) directly or indirectly shape mental health. Increases in mental health conditions in California are at the forefront of public health attention.<sup>li</sup>

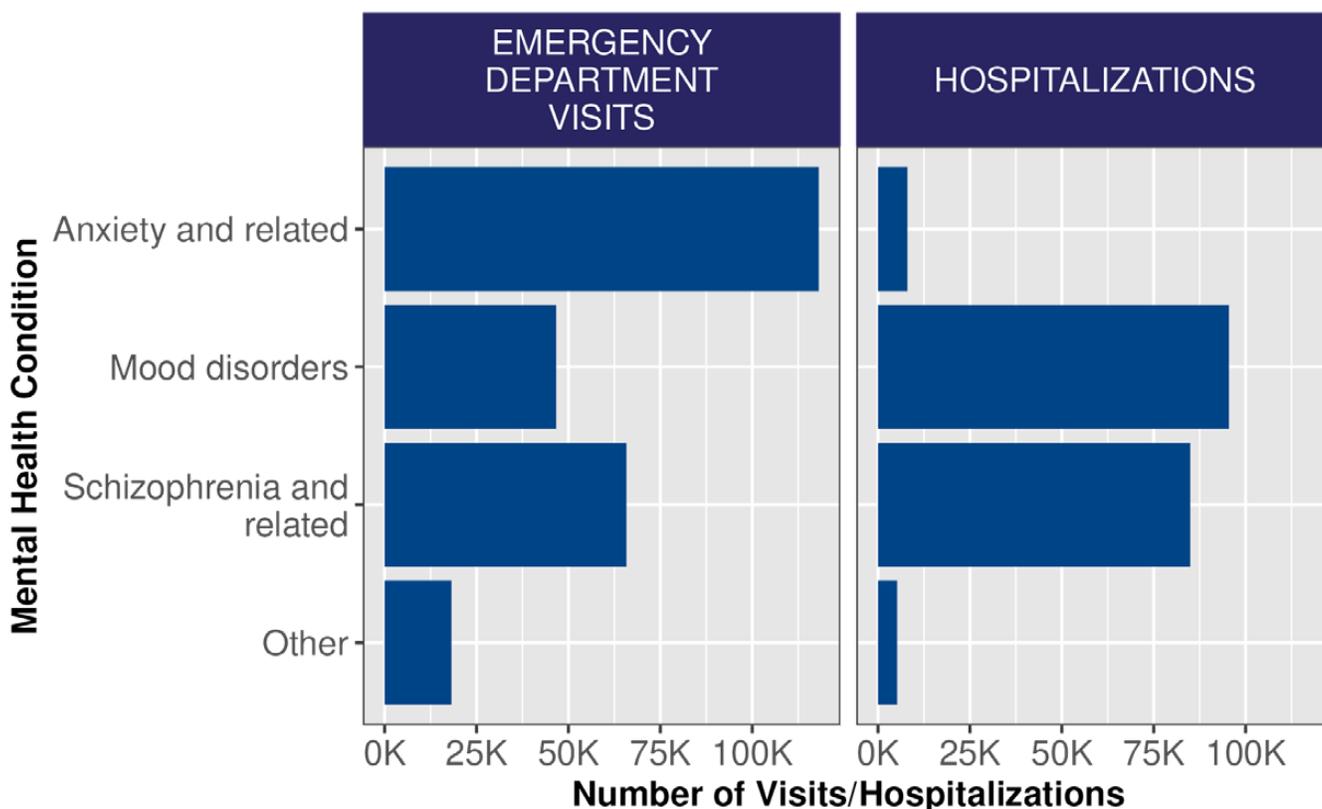
## Health Care Encounters

Emergency department (ED) visit and hospitalization rates provide a lens for understanding severe impacts of mental health conditions. Information is presented for the broad mental health condition categories of anxiety and related disorders (including trauma and stressor-related disorders such as post-traumatic stress disorder), mood disorders, schizophrenia and related disorders, and other mental health disorders not otherwise classified.

- In 2022, anxiety and related disorders accounted for the highest number of emergency department visits, followed by schizophrenia and related disorders. Mood disorders accounted for the highest number of hospitalizations, followed by schizophrenia and related disorders.

Figure 29

*Emergency Department Visits and Hospitalizations for Selected Mental Health Conditions, 2022*



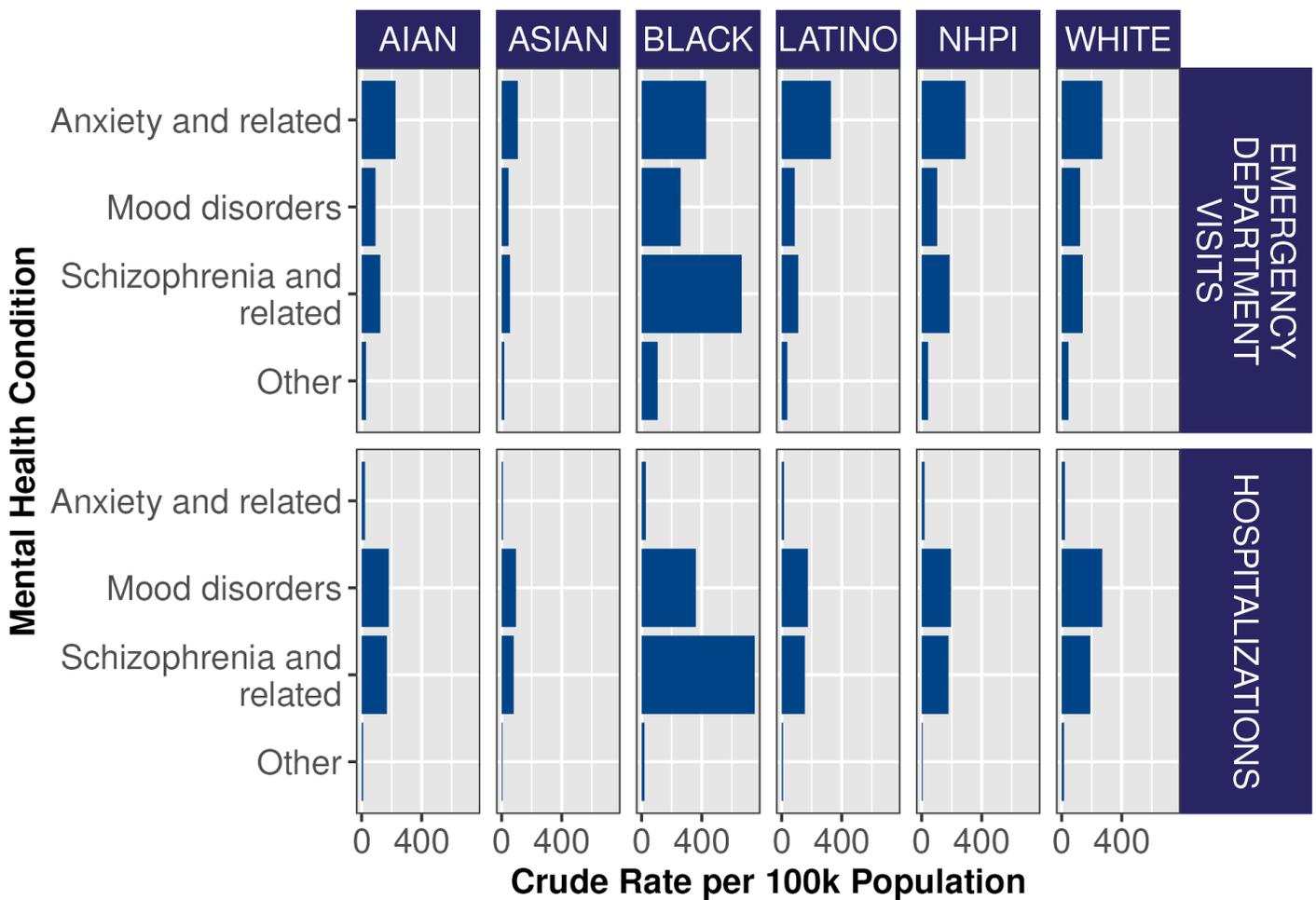
Notes: These data do not include some conditions associated with mental health including suicide/self-harm or accidental injury, such as vehicle accidents. Furthermore, developmental disorders, personality and behavioral disorders, physiological/physical behavioral syndromes, and physiologic-induced delirium are grouped into "Other" due to their overall small numbers.

Disparities

- Emergency department visit rates for mood disorders were higher for adults ages 15–34 than other age groups. For schizophrenia, emergency department visits were greatest for adults ages 25–34 for all races and ethnicities.
- At almost every age, Black individuals experienced higher rates of emergency department visits for mental health conditions than other groups.

Figure 30

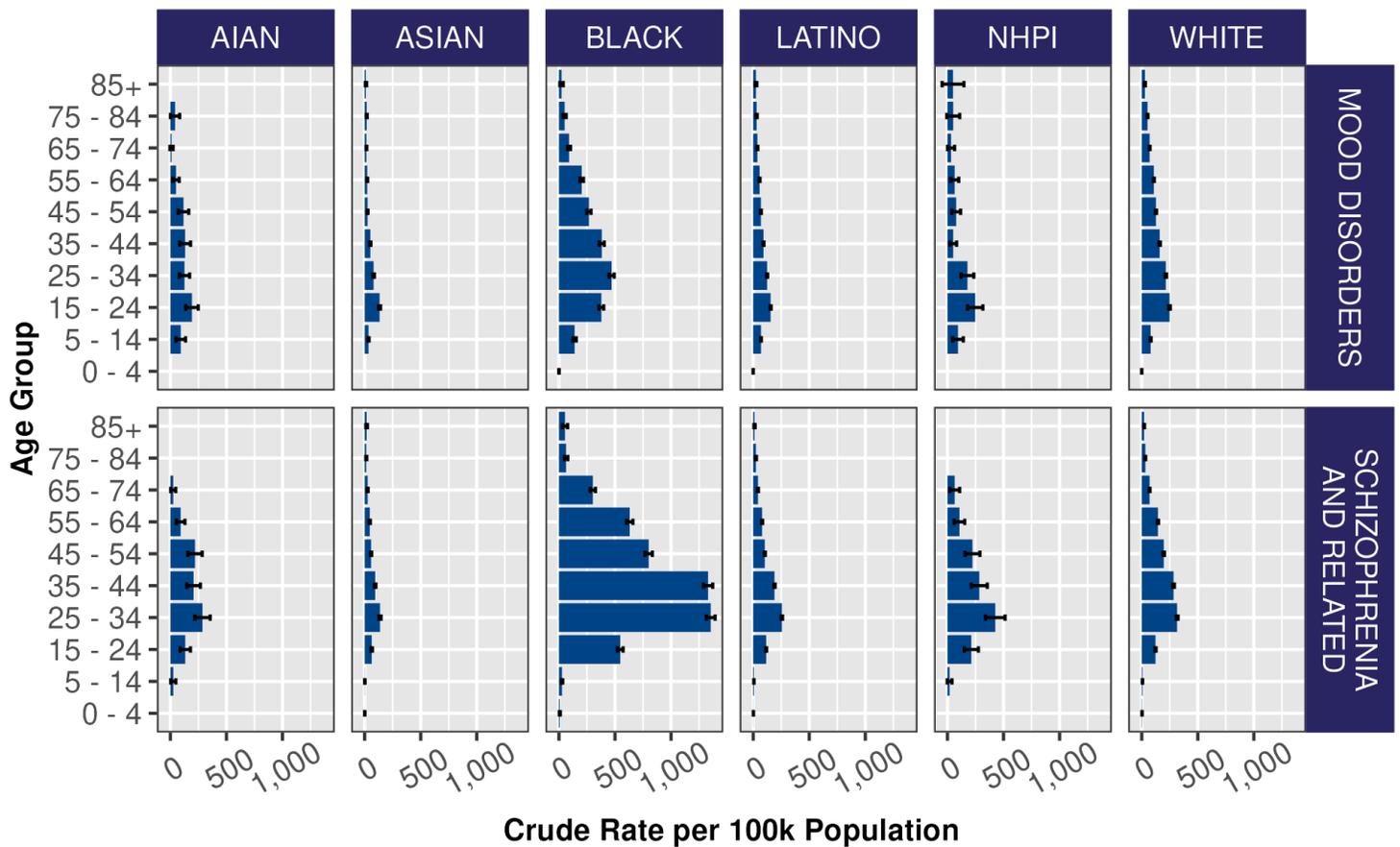
*Emergency Department Visit and Hospitalization Rate (per 100,000) for Selected Mental Health Conditions by Race and Ethnicity, 2022*



Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

Figure 31

Emergency Department Visit Rate (per 100,000) for Mood Disorders and Schizophrenia by Race and Ethnicity, and Age, 2022



Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

- Schizophrenia was the leading cause of hospitalizations and emergency department visits for Black individuals, with rates more than 3 times that of any other race or ethnicity.
- People of color may be overrepresented in specific diagnosed mental health conditions due partly to implicit provider bias and diagnostic criteria that fail to incorporate lived experience. For example, Black individuals may receive a misdiagnosis of schizophrenia when expressing symptoms related to other mood disorders or post-traumatic stress disorder.<sup>iii</sup>
- Asian individuals had the lowest rates of hospitalizations and emergency department visits for all mental health disorders relative to other races or ethnicities.

Contributors to mental health disparities arise from social, environmental, and structural and systemic factors.

- Increased exposure to complex traumas, including the effects of historical, institutional, and structural racism and discrimination on family structures, social supports, and life opportunities.
- Disparities in access to supportive (i.e., safe, stable, and nurturing) environments and to preventive services in lower acuity settings.
- Impact of systemic and implicit bias in the identification, labeling, and response to different cultural and social norms of behavior, including in schools (e.g., special ed diagnoses; differential suspensions and expulsions) and health care (e.g., lack of strength-based practices that honor racial and cultural identity).

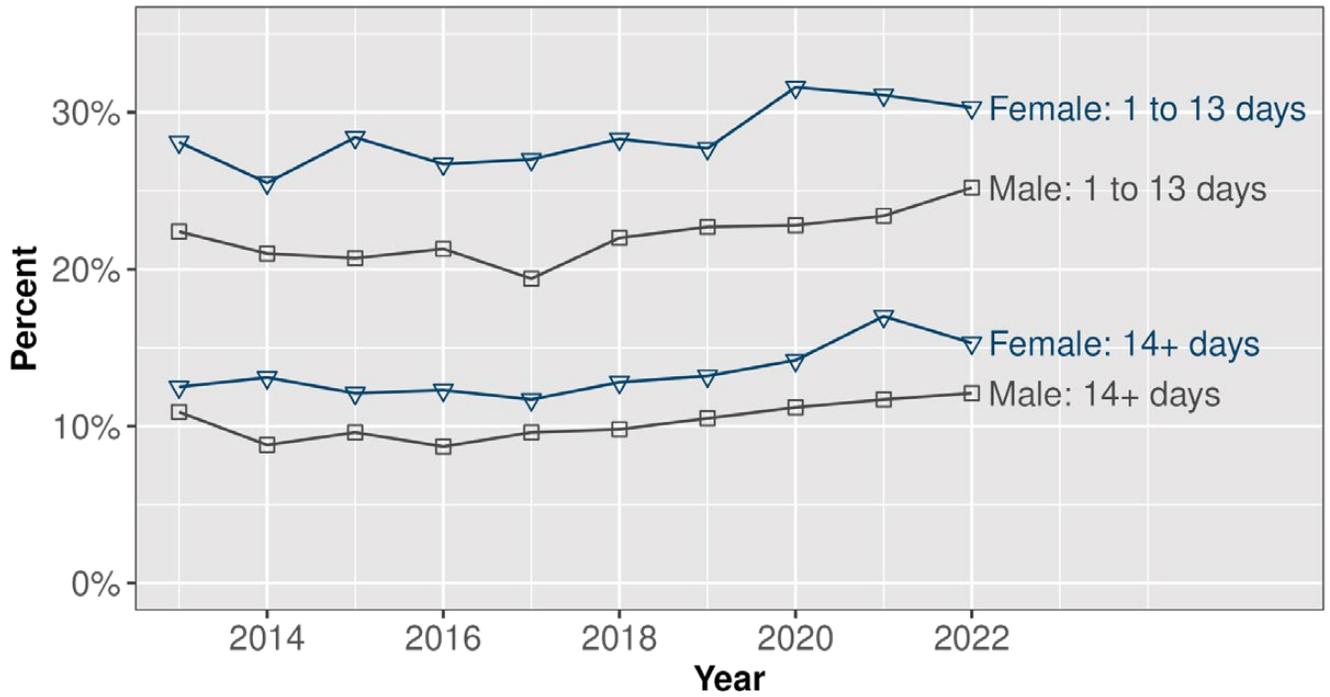
### **Self-Reported Depression and Poor Mental Health**

Depression is estimated to affect about 18.1% of adults in California in 2022.<sup>liii</sup> It is a serious mental health condition affecting how a person feels, thinks, and handles daily activities such as sleeping, eating, or working, and is an important correlate of physical disability in older adults.

- Over the last decade, both depression rate and poor mental health status prevalence have increased in males and females.<sup>liv</sup>
- 41.5% of California adults reported having one or more days of poor mental health in the last 30 days.
- Overall, females reported a higher prevalence of poor mental health and depression than males.

Figure 32

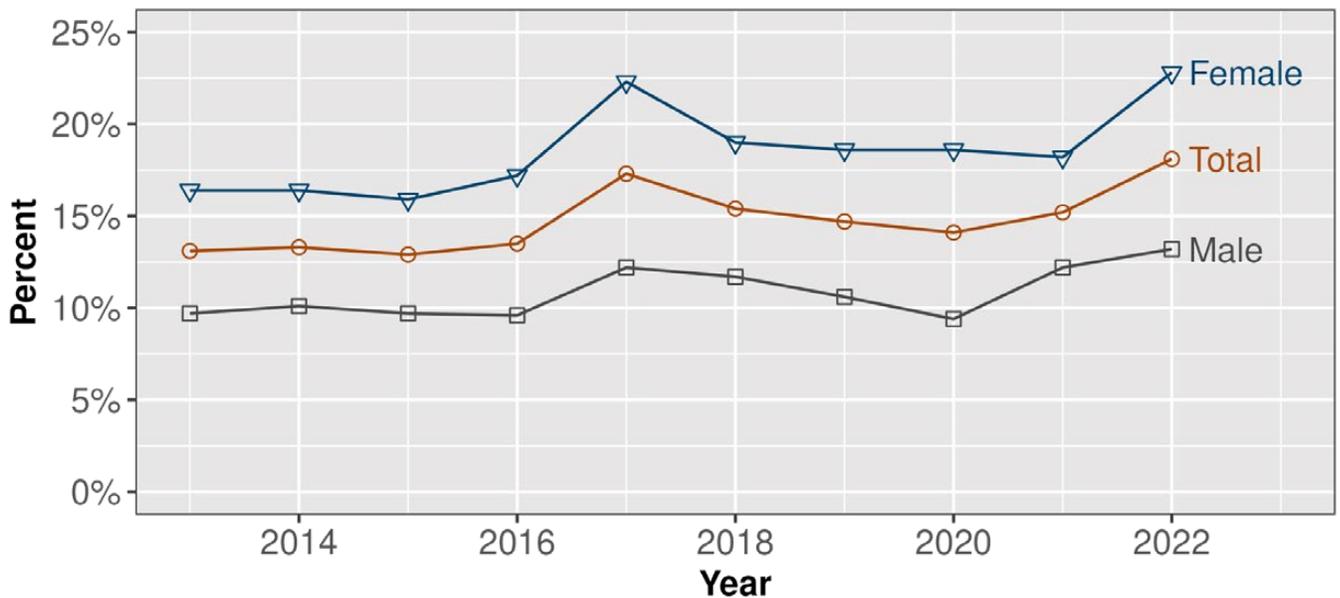
Prevalence of Reported Number of Days when Mental Health was Not Good among Adult Californians by Sex, 2013–2022



Notes: Prevalence reflects proportion of adults reporting mental health was not good, including stress, depression, and problems with emotions, from 1 to 13 days versus 14 or more days in last 30 days.

Figure 33

Prevalence of Depression Reported Among Adult Californians by Sex, 2013-2022



## Disparities

- White individuals reported the highest prevalence of depression (22.3%), while Asian and Pacific Islander individuals reported the lowest (10.5%).<sup>iv</sup>
- Among adults that reported experiencing “poor mental health” (defined as 14 or more poor mental health days in the last 30 days), 39.5% reported having a depression diagnosis.
- American Indian and Alaska Native individuals reported the highest prevalence (24.4%) of experiencing poor mental health status.
- The highest prevalence of experiencing poor mental health and depression was observed among young adults ages 18–34.
- The prevalence of poor mental health status decreased with increasing household income.
- Among adults that did not graduate from high school, Latino adults reported the highest prevalence of experiencing poor mental health status (25.6%).
- The prevalence of mental health conditions is higher among LGBTQ+ adults, with gay and bisexual adult males 2 and 3 times more likely, respectively, to experience a serious mental health condition (e.g., mood disorders) than straight males.<sup>vi</sup> LGBTQ+ individuals often experience social stigma from family and peers, discrimination, and poor quality of health care, which can take a toll on their mental health and general well-being.

## Intersections with Other Health Conditions

- Mental health and physical health are closely connected. Mental health conditions like depression can deter the ability to take part in healthy behaviors, while poor physical health can impede the ability to engage in preventive activities or get treatment. Similarly, chronic conditions can increase the risk for mental health conditions.
- People with depression have an increased risk for chronic conditions such as cardiovascular disease, diabetes, stroke, pain, Alzheimer's disease, among others.<sup>lvii</sup>
- An increased number of poor mental health days in the past month is associated with increased odds of delayed oral health care use and poorer oral health outcomes.<sup>lviii</sup>
- About 3.2 million Californians with diabetes are 2 to 3 times more likely to develop depression than people without diabetes, but less than 50% of diabetics with depression get diagnosed and treated.<sup>lix, lx</sup>
- Among Californians diagnosed with depression, 52.7% reported having at least one disability (e.g., vision, hearing, physical or emotional issues, or self-care).<sup>lxi</sup>
- People experiencing serious psychological distress had the highest current tobacco use rate (20.3%) of all groups.<sup>lxii</sup>

## Substance Use

Substance use and addiction can result in a range of harmful health outcomes including poisoning, hospitalization, and fatal or non-fatal overdose. Related early life intersections (e.g., Fetal Alcohol Spectrum Disorder and Neonatal Abstinence Syndrome) can have devastating impacts on health trajectories across the life course. This section provides information related to drug overdose, alcohol-related conditions, and cannabis-related emergency department visits.

Table 6  
Deaths or Emergency Department (ED) Visits Attributed  
to Drug or Alcohol-Related Conditions, California

Condition	Number of Deaths	Age-Adjusted Rate (per 100,000)	ED Visits	Data Year
All drug-related overdose	10,410	25.7	55,598	2022*
Any opioid-related overdose	6,959	17.6	21,316	2022*
Fentanyl-related overdose	6,095	15.6	7,786	2022*
Psychostimulants with abuse potential-related overdose (e.g., methamphetamine, MDMA, Ritalin)	5,521	13.6	2,369 <sup>1</sup>	2022*
Prescription opioid (excluding synthetics) related overdose	1,037	2.4	12,140 <sup>2</sup>	2022*
Heroin-related overdose	472	1.1	1,390	2022*
Any cannabis-related poisoning	--	--	2,519	2022
Alcohol-related conditions (fully attributable conditions)	6,663 <sup>3</sup>	14.9 <sup>3</sup>	233,527	2022*

<sup>1</sup>Amphetamines (stimulants such as methamphetamine) overdose emergency department visits.

<sup>2</sup>Prescription opioid (excluding fentanyl) emergency department visits.

\*Deaths are from preliminary 2022 data on the CA Overdose Surveillance Dashboard (accessed November 2023). except <sup>3</sup>California Community Burden of Disease Engine (CCB).

Drug overdose is a leading cause of death in California. Stimulants, illicit opioids, and polysubstance use are contributing to increases in drug overdoses.

Based on preliminary data in 2022, there were 10,410 all drug-related overdose deaths in California, with an age-adjusted rate of 25.7 deaths per 100,000 residents. The majority (66.8%) of these drug-related overdose deaths involved an opioid (n= 6,959).

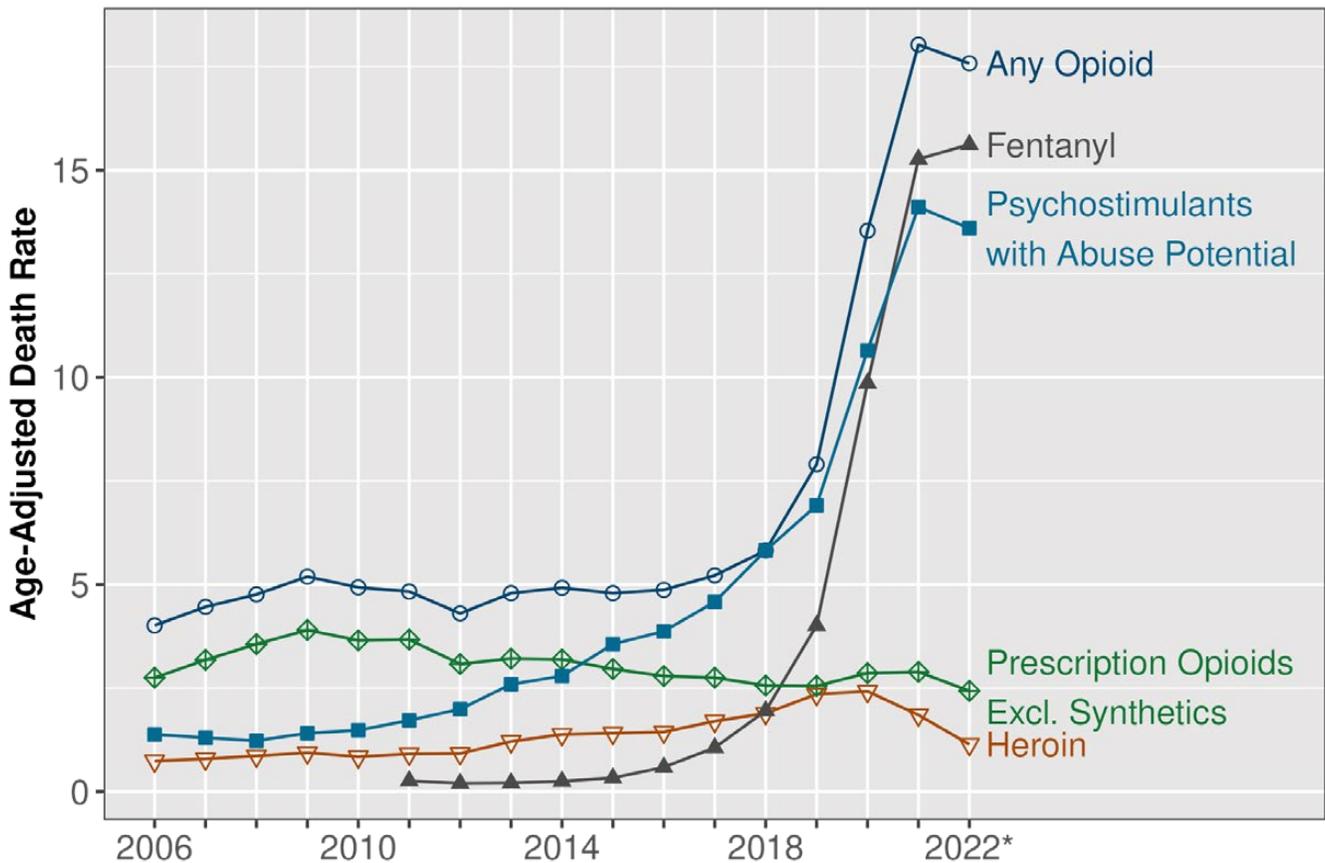
### Long Term and Recent Increases in Drug Overdose Death

- Drug overdose contributes significantly to premature mortality and life expectancy gaps and accounted for the greatest increase in mortality in both absolute and relative terms over the past decade in California.
- Deaths from all drug-related overdoses increased 54.3% between 2009 (n=4,031) and 2019 (n=6,219). A sharp increase of 75.2% occurred between 2019 and 2021 (n=10,898).
- Based on preliminary data in 2022, all drug-related overdose deaths did not increase further, but the death rate remains among California's highest in the past 20 years.

<sup>9</sup> Substance use information reported here is based on preliminary vital records data. Mortality records including cause-of-death information may not be completely captured in preliminary data. A small portion of delayed or amended registrations are routinely omitted in preliminary vital records while still being captured in the state's vital records master file (not available at the time of this writing).

Figure 34

Opioid and Stimulant-Related Overdose Death Rate (per 100,000), 2006–2022



\*2022 data are preliminary.

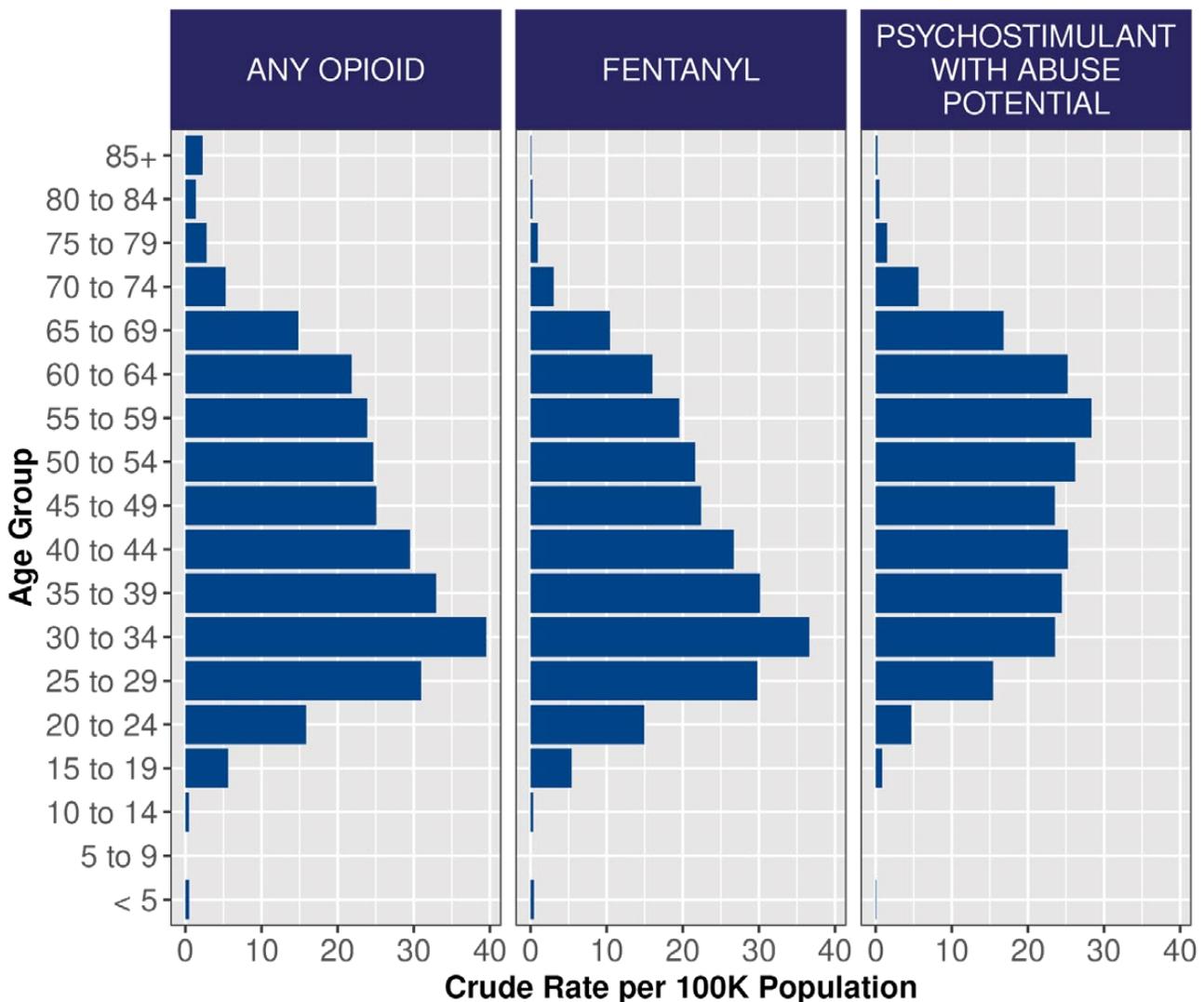
Notes: Any Opioid related fatal overdose includes drug overdose deaths caused by acute poisonings that involve any opioid as a contributing cause of death, regardless of intent (e.g., unintentional, suicide, assault, or undetermined). Opioids include both prescription opioid pain relievers such as hydrocodone, oxycodone, and morphine, and narcotics such as heroin and opium. Deaths involving psychostimulants with abuse potential exclude cocaine and include such psychotropic drugs as methamphetamine, MDMA, dextroamphetamine, levoamphetamine, or Ritalin. Deaths related to chronic use of drugs (e.g., damage to organs from long-term drug use), are excluded from this indicator.

### Drug Overdose across Age Groups

- Drug overdose was a leading cause of death across ages 15–64.
- The age groups most impacted by drug overdose deaths varied by substance.
- Young adults and adults (25–44) had higher rates of any opioid-related and fentanyl-related overdose deaths than older age groups.
- Based on preliminary 2022 data, overdose deaths due to psychostimulants with abuse potential were higher among older age groups (>50 years), with the highest rates among those 55–59 years old (age-specific rate: 28.4) and 50–54 years old (rate: 26.2).

Figure 35

Opioid and Stimulant-Related Overdose Death Rate by Age Groups, 2022



Risk and Protective Factors

Many factors contribute to the sustained drug overdose epidemic. Substance use risks encompass social isolation, mental health challenges, economic distress, and structural inequities that give rise to systematic social and economic disadvantages.

- Due to historical, institutional, and structural inequities, low income and Black, Indigenous, and other people of color have greater exposure to factors associated with an increased risk for substance use (e.g., residing in racially segregated communities experiencing systemic disadvantage) and less exposure to protective factors (e.g., generational wealth, safe and affordable housing, education, and employment opportunities).
- Unequal enforcement of drug laws leads to higher arrests and conviction rates for specific communities of color despite similar levels of reported substance use (e.g., the War on Drugs; harsher sentencing for the possession of crack versus powdered cocaine; racially motivated traffic stops). Individuals who are justice involved are at greater risk for overdose.<sup>lxiv</sup>

- Gaps in access to mental health care and substance use treatment services, implicit provider bias, and uncoordinated support or transition services (e.g., for individuals exiting foster care and correctional settings) can increase risk of adverse outcomes.<sup>lxv</sup>
- Access to prescription opioids through the health care delivery system can result in dependence and future misuse, as well as diversion of drugs.
- The illicit drug supply chain results in inconsistencies and alterations in terms of content, strength, purity, adulterants, etc., for many drugs including heroin, fentanyl, and methamphetamine, increasing the risk of harm and overdose.

### Mixing Substances

Use of more than one drug or co-use of a drug with alcohol, also known as polysubstance use, is common, and can occur intentionally or unintentionally. Mixing drugs can increase the risk of damage to the brain or other organs and overdose, and contributes to other health consequences.

- Polysubstance use patterns such as mixing stimulants and depressants (e.g., opioids and sedatives) can have detrimental complications including heart conditions, respiratory infections, and kidney failure.<sup>lxvi</sup>
- Polysubstance use can complicate overdose reversal and treatment, worsen psychosis, mood disorders, or other mental health problems, and pose challenges for prevention and treatment interventions.<sup>lxvii</sup>
- [Xylazine](#), a tranquilizer not approved for use in humans, is dangerous when combined with opioids like fentanyl. Although not currently widespread in California, it is increasingly being found in the U.S. illicit drug supply and linked to overdose deaths.

### Drug Overdose Intersections with Other Conditions

Based on 2019 data from a total of 3,551 drug-related overdose death cases (60.3% of all unintentional and undetermined drug-related overdose deaths in the state) that were received and abstracted from participating State Unintentional Drug Overdose Reporting System (SUDORS) counties:

- About 5% of individuals who died from a drug-related overdose had a history of major injury, 4.6% had a history of back pain, and 9.2% had a history of other chronic pain.<sup>lxviii</sup>
- Other known medical conditions observed included: heart disease (16.5%), obesity (8%), COPD (4.8%), asthma (4.8%), sleep apnea (1.7%), other breathing problem(s) (3.2%), hepatitis C (4.6%), HIV/AIDS (1.9%), and migraine (0.8%). 911 (25.7%) individuals who died from a drug overdose had only one of the above medical conditions, 367 (10.3%) had two, and 194 (5.5%) had three or more.
- Among individuals with drug overdose as cause of death and at least one mental health diagnosis, the top four diagnoses were: depression (10.7%), anxiety (6.8%), bipolar disorder (4.3%), and schizophrenia (3.2%).

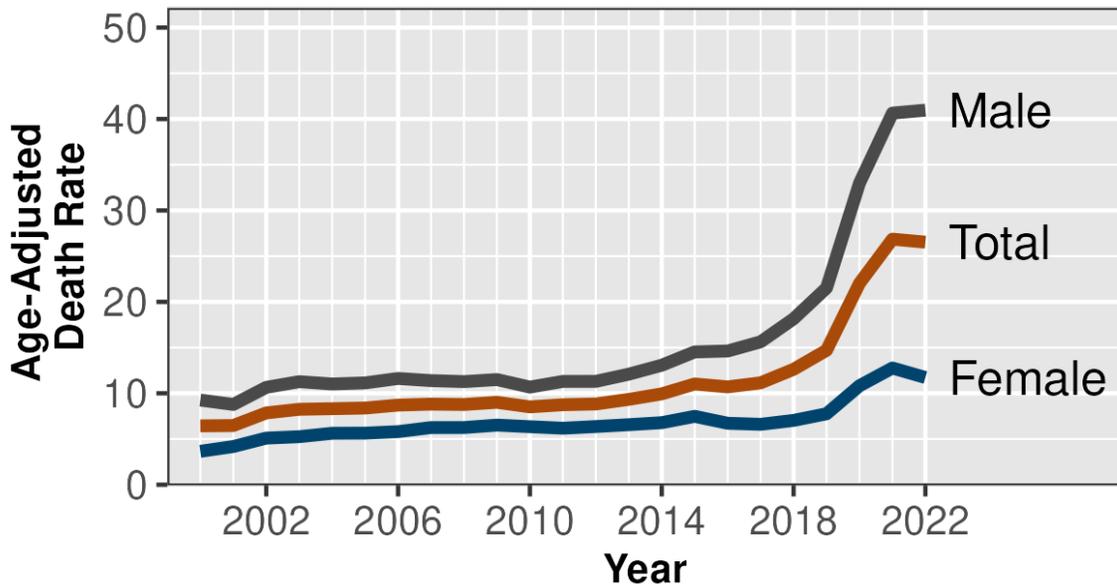
### Disparities in Drug Overdose

- Males had higher overall drug overdose death rates.
- American Indian and Alaska Native individuals had the highest rate of mortality due to opioid-related and fentanyl-related overdose. The mortality rate was also high among Black and White groups.
- The highest number of overdose deaths occurred in the White population, followed by the Latino population.

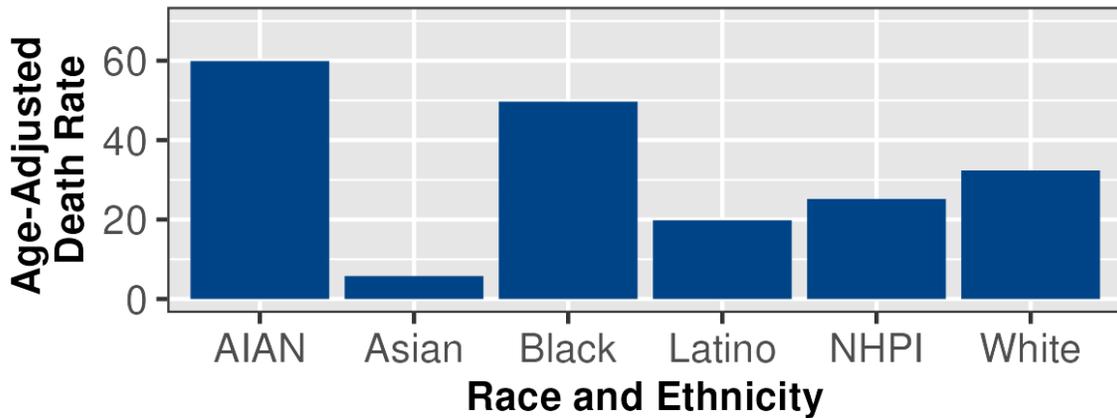
Figure 36

Death Rate (per 100,000) due to Drug Overdose by Subgroups, 2000–2022

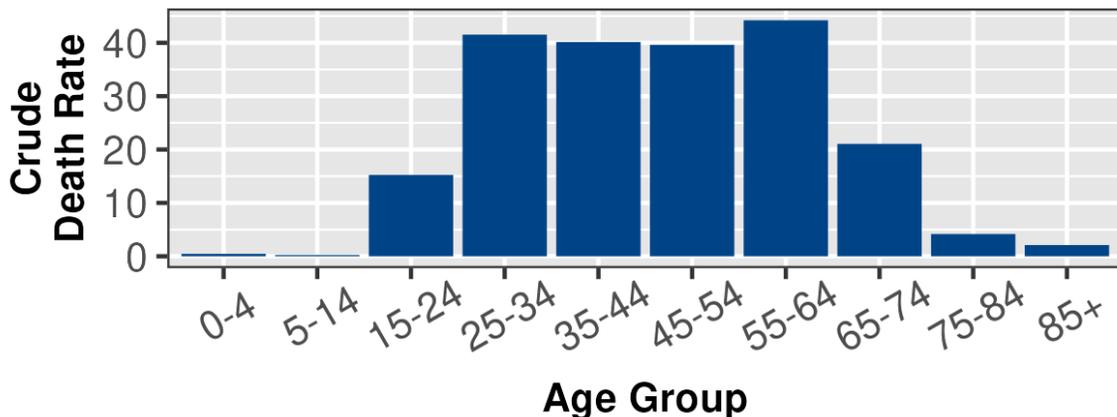
### Death Rate Trends by Sex, 2000-2022



### Death Rates by Race and Ethnicity, 2020-2022



### Death Rates by Age Group, 2020-2022



Abbreviations: NHPI - Native Hawaiian and Pacific Islander;  
AIAN - American Indian and Alaska Native

## Alcohol Use

Alcohol attributable deaths are deaths from dependent and nondependent use of alcohol, including those fully attributable to alcohol use (e.g., alcoholic liver disease, alcohol dependence syndrome) and partially attributable to alcohol use (e.g., other poisonings, motor vehicle crashes, hypertension). In 2021, 54.6% of adults reported recently consuming at least one alcoholic beverage in the past 30 days, 15.6% reported binge drinking, and 6.1% reported drinking heavily.<sup>lxix,10</sup>

### Recent increases in alcohol attributable deaths<sup>11</sup>

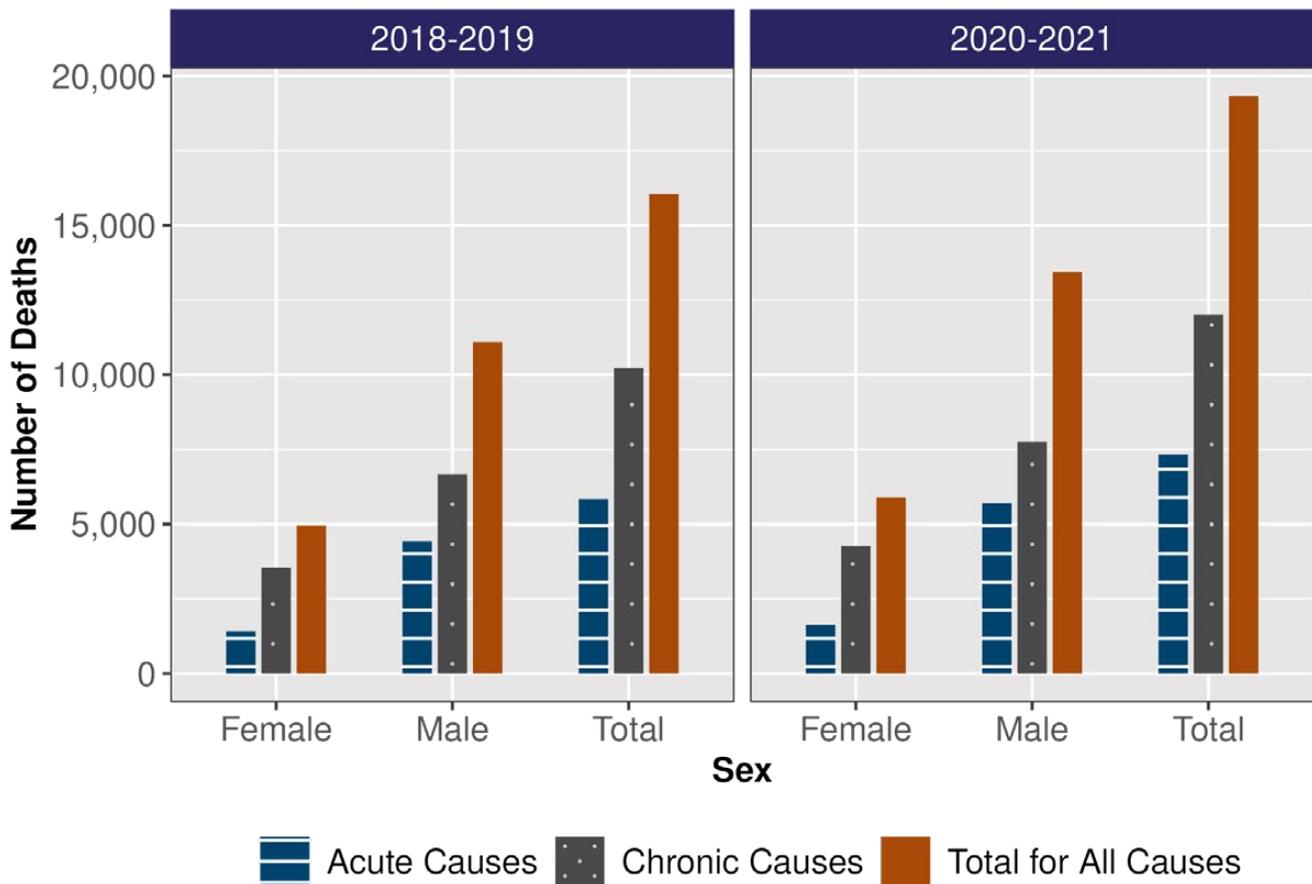
- From 2020-2021, 19,335 people died per year on average due to excessive alcohol use in California—a 20% increase on average from 2018-2019 (16,050 deaths). 62.1% of these alcohol attributable deaths were from chronic causes, (e.g., cancer, heart disease, diseases affecting the liver, gallbladder, and pancreas); 37.9% were from acute conditions induced by alcohol (e.g., injuries, violence, and motor vehicle crashes).<sup>lxx</sup>
- The highest burden of these deaths occurred as a result of chronic causes among middle-aged and older adults.

<sup>10</sup> Binge drinking is defined as consuming 4 or more drinks on one occasion for women and 5 or more drinks consumed on one occasion for men (one occasion= 2-3 hours). Heavy drinking is defined as consuming 8 or more drinks per week for females and 15 or more drinks consumed per week for males.

<sup>11</sup> Alcohol attributable deaths reported here include both fully and partially attributable causes spanning 58 different causes of death or 18 acute and 40 chronic causes per CDC's Alcohol-Related Disease Impact (ARDI) ICD Codes and Alcohol-Attributable Fraction (AAF) Sources available at <https://www.cdc.gov/alcohol/ardi/alcohol-related-icd-codes.html>.

Figure 37

Deaths (annual average) Fully or Partially Attributable to Alcohol Use, 2018–2019 and 2020–2021

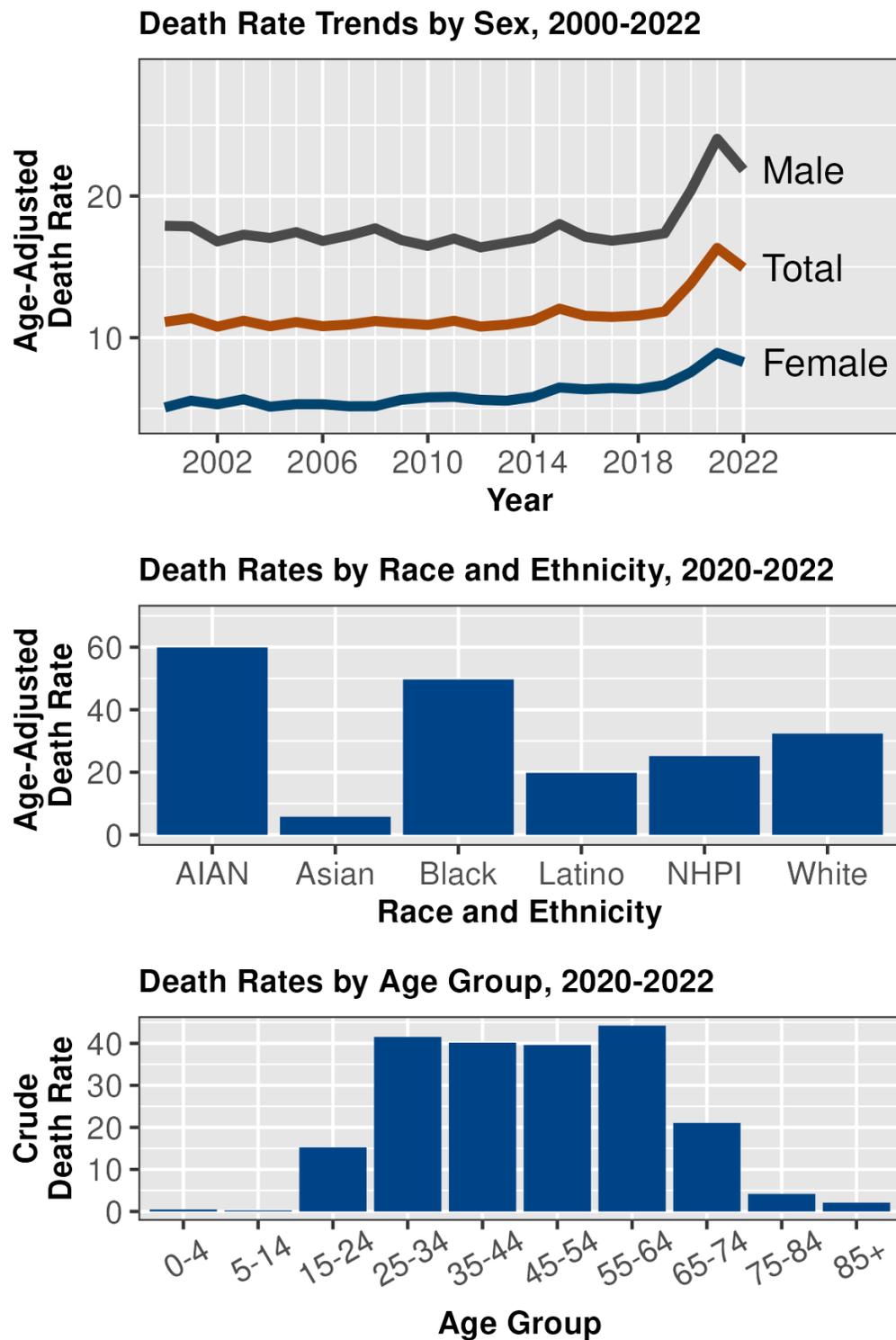


### Disparities in Alcohol Attributable Deaths

- From 2020–2021, males accounted for 70% of fully or partially attributable alcohol-related deaths. The top three causes were alcoholic liver disease, other poisonings, and motor vehicle crashes.
- The highest overall number of alcohol attributable deaths in 2020–2021 occurred among those aged 50–64 and those aged 65 or older (5,874 and 6,721 average deaths per year, respectively), which accounted for most of the deaths associated with alcohol-induced chronic conditions, while deaths due to acute, alcohol-induced conditions saw the highest burden in young adults ages 20–34 (2,335 average deaths per year).
- Although rates were lower among females, fully attributable alcohol-related conditions were a leading cause of death for females ages 25–64. Rates generally increased with age from 3.7 in ages 25–34, to 25.1 in ages 55–64 (based on preliminary 2022 data). Fully attributable alcohol-related conditions were associated with a greater mortality burden in females ages 35–44 compared with all other mortality causes but drug overdose.

Figure 38

Death Rate (per 100,000) Fully Attributable to Alcohol Use by Subgroups, 2000–2022



Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

## Public Health Prevention and Current Activities

Like other health concerns, substance use disorders and related harms including overdose events can be prevented. The majority of those with substance use disorders reported initiation before age 18,<sup>lxxi</sup> underscoring the importance of youth prevention.

- Promoting protective factors and reducing risk factors for substance use can support individual and community resiliency.
- Because 61% of drug overdose deaths from 2019 SUDORS participating counties occurred with a bystander present, building awareness of how to identify and prevent an overdose is an important prevention opportunity (CA SUDORS).<sup>lxxii</sup>
- Responding to substance use disorders as a health condition, rather than a criminal behavior, can promote access to treatment and reduce escalation of harm.
- California has taken action to reduce disparities in overdose due to incarceration, such as expanding Medi-Cal to incarcerated people prior to release to facilitate re-entry and reduce overdose rates, as well as implementing the Integrated Substance Use Disorder Treatment program that provides medication assisted treatment to incarcerated individuals with substance use disorder.
- Harm reduction programs, such as naloxone and fentanyl testing strip distribution and syringe services programs, are critical to protecting public health, particularly in the context of preventing hepatitis C infection and fentanyl intoxication.
- The [Master Plan for Tackling the Fentanyl and Opioid Crisis](#) outlines aggressive steps to support overdose prevention efforts, hold the opioid pharmaceutical industry accountable, crack down on drug trafficking, and raise awareness about the dangers of opioids, including fentanyl.
- Healthy community policy approaches are important prevention strategies, examples include zoning policies that limit the density of alcohol retailers within a certain neighborhood/zip code and in proximity to schools.

### Program Highlight: Opioid Prevention and Education Campaign

In September 2023, CDPH launched the first phase of a [statewide opioid and fentanyl prevention and education campaign](#). The first phase aims to prevent substance use and raise awareness of fentanyl contamination for teens, young adults, and adults. The campaign features messaging in English and Spanish across multiple communication platforms, including social media, radio, television, billboards, and bus stops, and is expected to run through 2025. It is part of [CDPH's larger Overdose Prevention Initiative](#), which collects and shares data on overdose, risk factors, prescriptions, and substance use, and supports substance use prevention programs across the state.

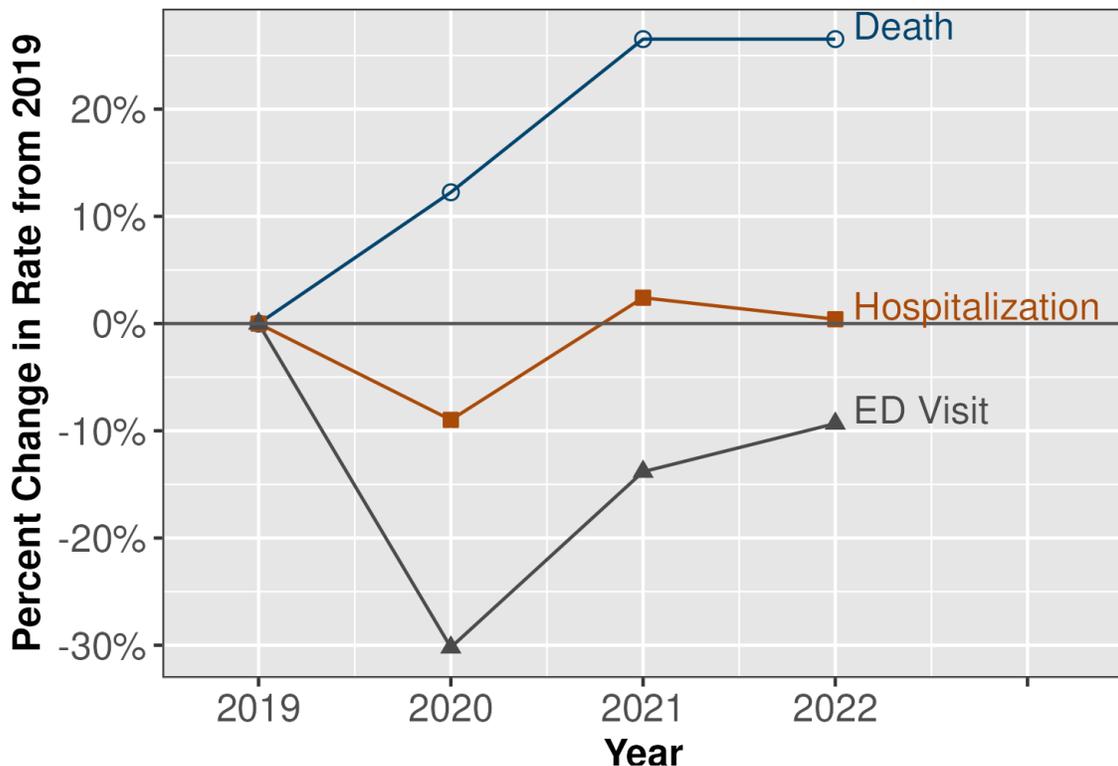
## Road Injury

Unintentional motor vehicle traffic (MVT) injuries or road injuries include injuries from unintentional motor vehicle collisions on public rights of way to all road users, with most injuries occurring among motor vehicle occupants, motorcyclists, pedestrians, and cyclists. Although unintentional MVT injuries impact individuals at all stages of life, fatal MVT injury rates are highest among Californians ages 20-24 and was a leading cause of death among young adults in 2022.

- In 2022, unintentional MVT injuries resulted in 4,836 deaths, 29,242 non-fatal hospitalizations, and 272,549 non-fatal emergency department (ED) visits among Californians, resulting in a rough average of 13 deaths, 80 hospitalizations, and 750 emergency department visits per day related to Californians driving, walking, or biking on public roads.
- Fatal MVT injury rates among California residents steadily increased by 27%, between 2019 and 2021 (from 9.8 to 12.4 per 100,000) and remained stable in 2022.
- Rates of non-fatal MVT hospitalizations and emergency department visits declined in 2020 (as the COVID-19 pandemic hit), then rebounded in 2021.
- Although fewer people drove during the pandemic, traffic fatalities increased in California and nationally because drivers were more likely to engage in risky behavior, including speeding, failure to wear seat belts, and driving under the influence of alcohol or other substances.<sup>lxxiii</sup>
- In 2022, 27% of fatal MVT injuries were among pedestrians and another 4% were among cyclists.

Figure 39

Percent Change in Crude Rate of Unintentional Motor Vehicle Traffic Injuries, 2019-2022

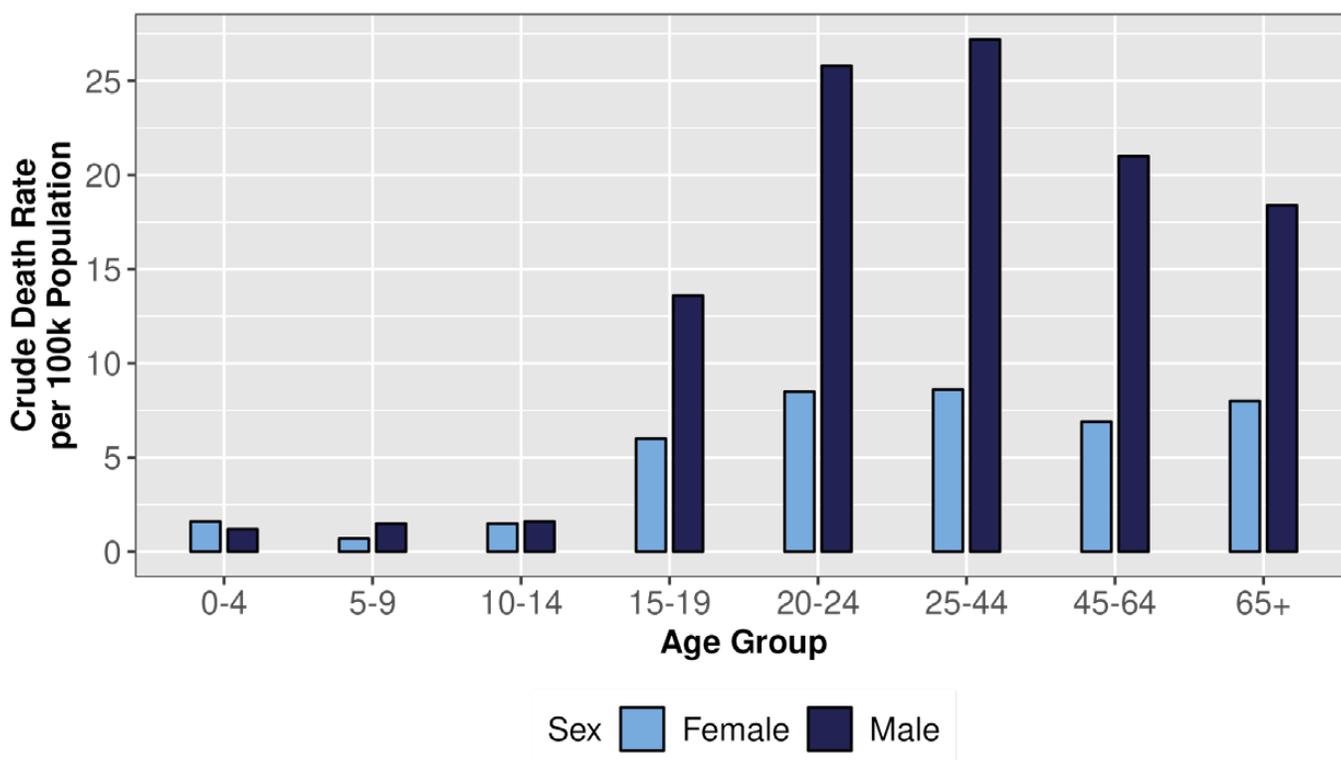


## Risk Factors

- Fatal unintentional MVT injury rates are higher when Californians reach legal driving age and peaked in the 20–24 age group. Rates among adult males were about three times greater than females in the same age group.
- At all age levels, substance misuse may contribute to unintentional MVT injuries.

Figure 40

*Unintentional Motor Vehicle Traffic Injury Death Rate by Age and Sex, 2022*

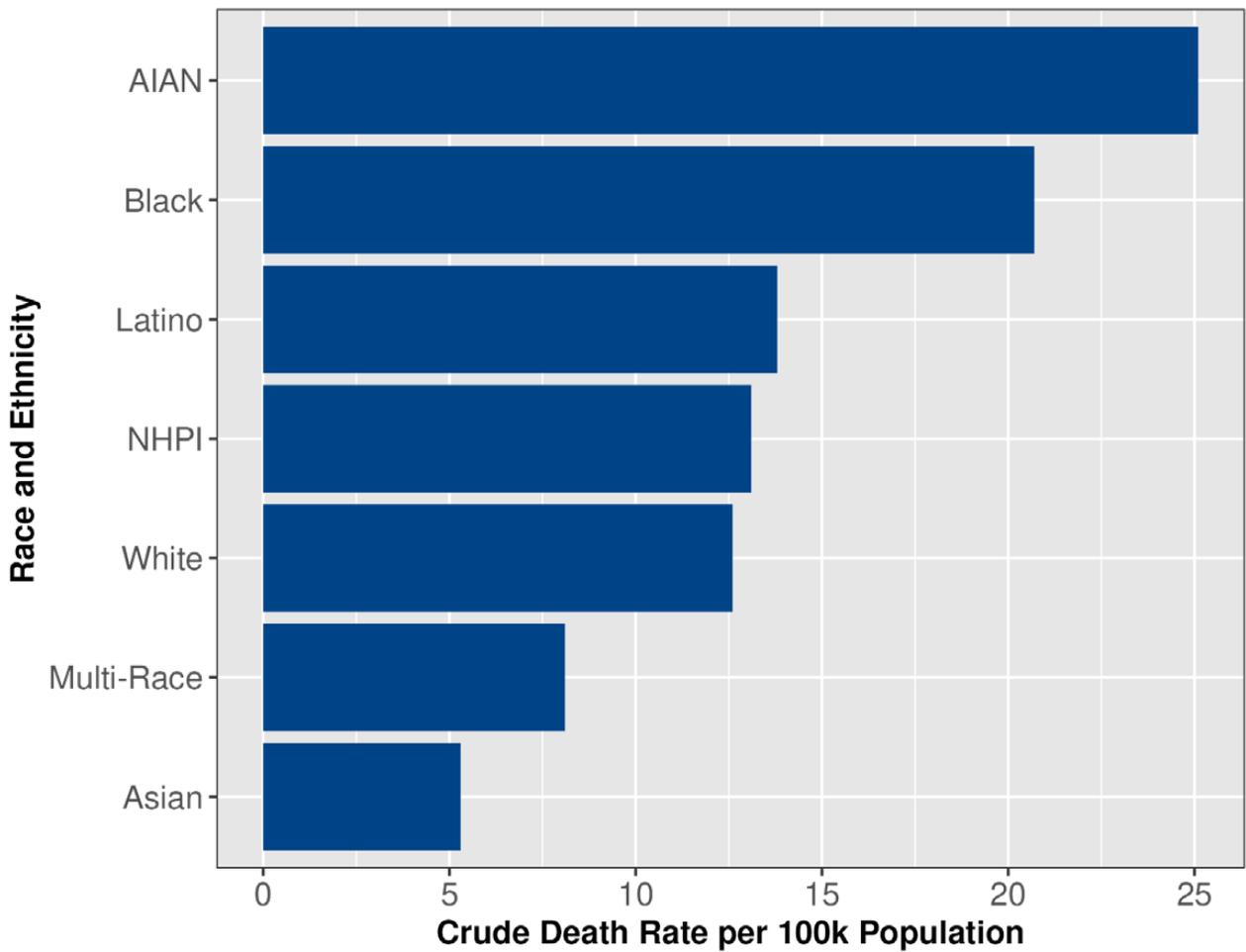


## Disparities

- Street design impacts the risk and severity of unintentional MVT injuries. Roads that carry high volumes of vehicles at high speeds increase the risk of a severe MVT injury.
- High-risk streets tend to be concentrated in neighborhoods with lower income residents and a historic underinvestment in traffic safety infrastructure, such as medians, sidewalks, or crosswalks.<sup>lxxiv</sup>
- Fatal unintentional MVT injury rates in 2022 were highest among American Indian and Alaska Native and Black individuals.

Figure 41

Unintentional Motor Vehicle Traffic Injury Death Rate by Race and Ethnicity, 2022



Abbreviations: NHPI - Native Hawaiian and Pacific Islander;  
AIAN - American Indian and Alaska Native

### Public Health Prevention and Current Activities

- The [Active Transportation Safety Program](#) advances [safe, complete streets](#) to reduce risk of traffic injury promote walking, biking, and other modes of active travel that contribute to physical activity, which reduces the risk of cardiovascular disease, diabetes, depression, dementia, and various cancers. Active travel models contribute to cleaner air and reduced greenhouse gas emissions when they displace driving.

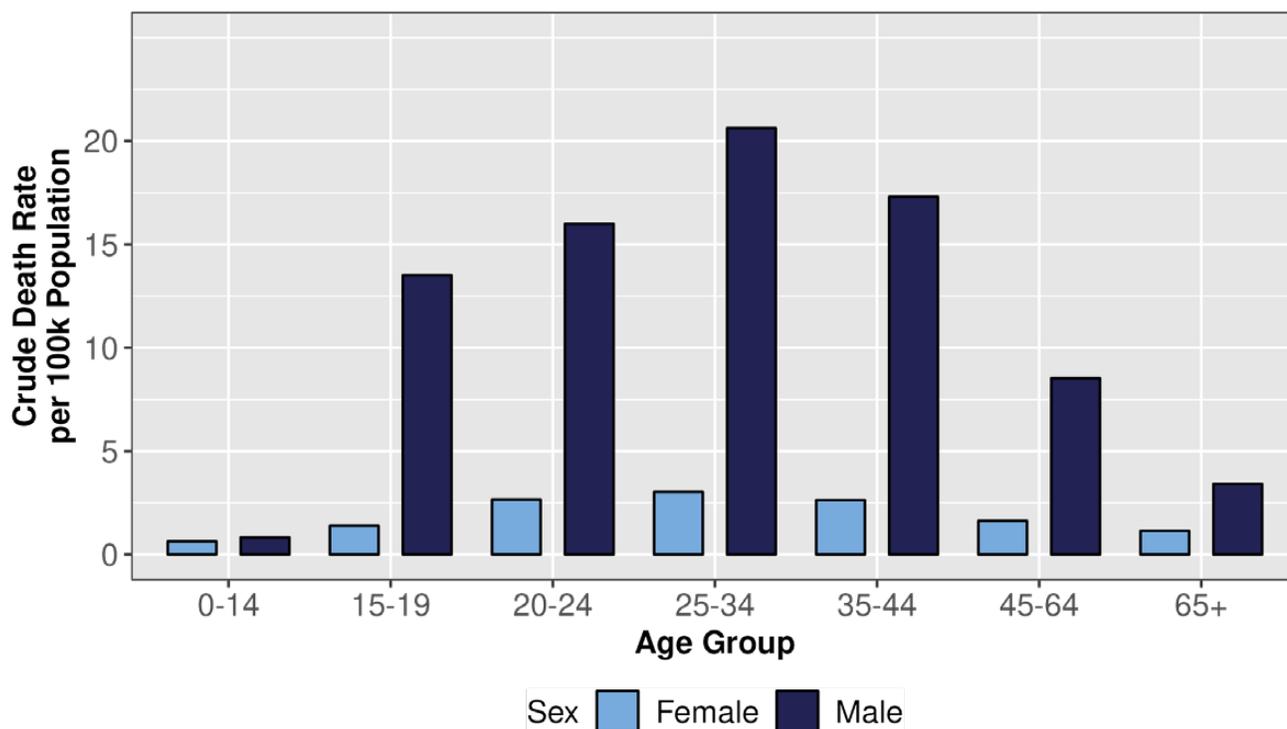
## Homicide Death and Assault Injury

Homicide deaths and assault injuries are preventable public health concerns that have immediate and long-term impacts on the health of individuals, families, and entire communities.

- The rate of homicide (assault) deaths in California increased from 4.5 to 6.4 per 100,000 from 2019 to 2021, while falling to 5.8 per 100,000 in 2022 (still higher than the 2019 level). There were 2,272 homicide deaths among California residents in 2022. Assault injuries resulted 13,446 non-fatal hospitalizations and 121,700 non-fatal emergency department (ED) visits in 2022.<sup>lxv</sup>
- Young adults experienced the highest rates of homicide deaths. Homicide was in the top five leading causes of death among young males (25–34) for all racial and ethnic groups in 2020–2022.

Figure 42

*Homicide Death Rate by Age and Sex, 2022*



## Impact of Firearms

Firearms are a uniquely fatal weapon, accounting for 72% of all homicide deaths in 2022.

- The overall increase in homicide death between 2019 and 2022 was driven primarily by a 35% increase in firearm-related homicides.
- Rates for emergency department visits related to firearm assault injury increased by 31% and hospitalizations increased by 15% from 2019 to 2022, while rates of emergency department visits and hospitalization for assault by all mechanisms either decreased or did not change.

Figure 43

Percent Change in Crude Rate of Assault Injuries, 2019–2022

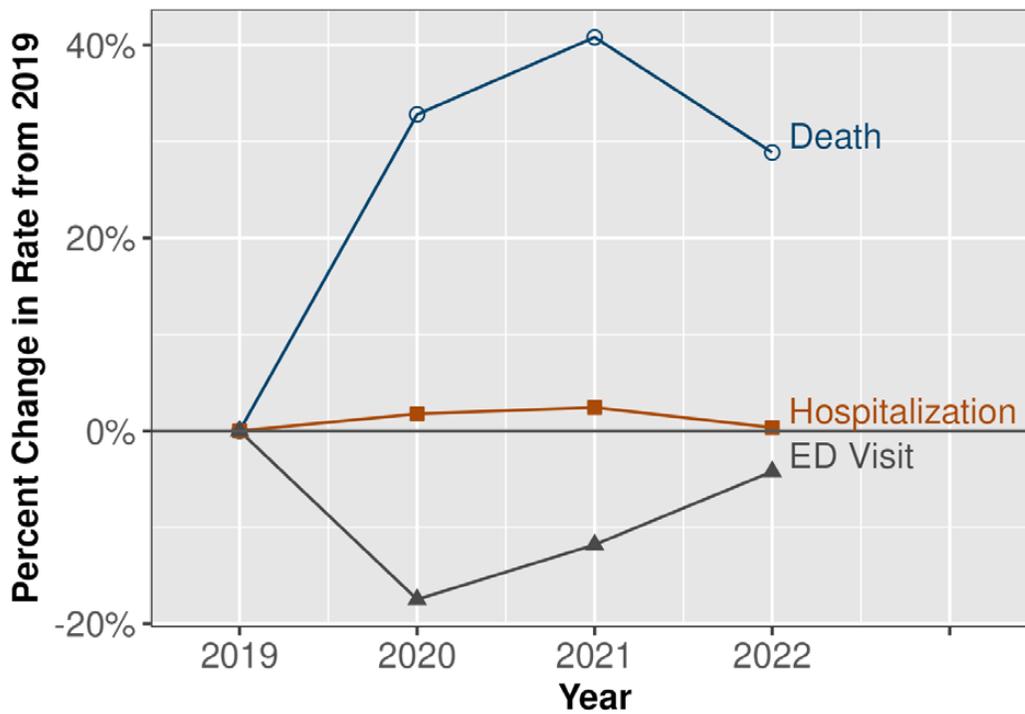
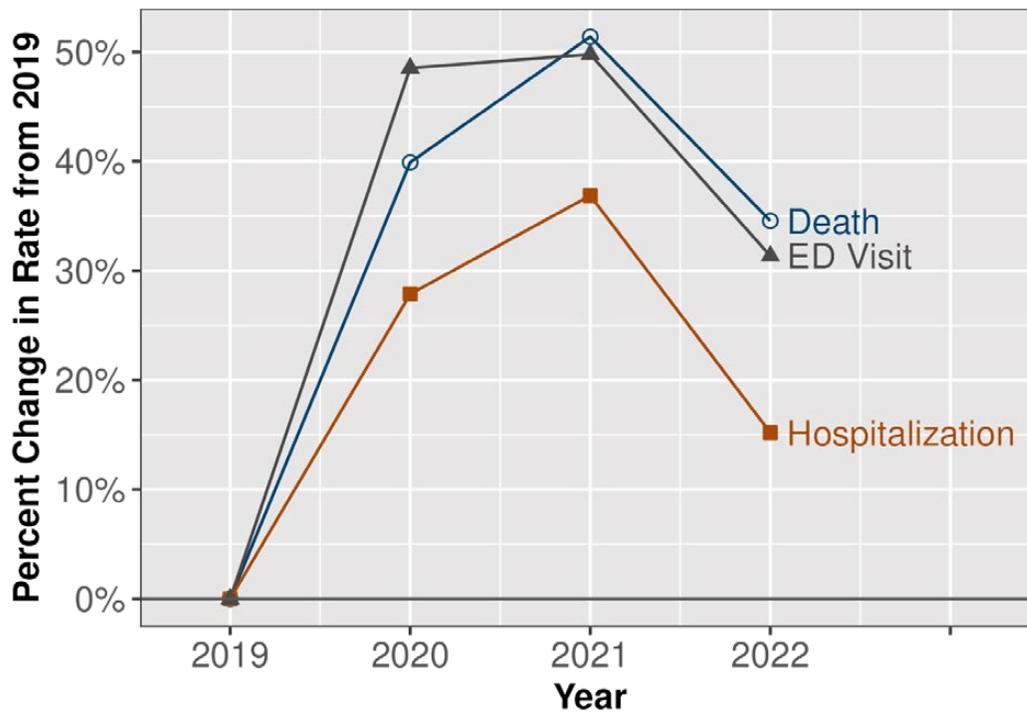


Figure 44

Percent Change in Crude Rate of Assault Injuries Due to Firearms, 2019–2022



Death and injury represent only a fraction of the societal burden of gun violence.

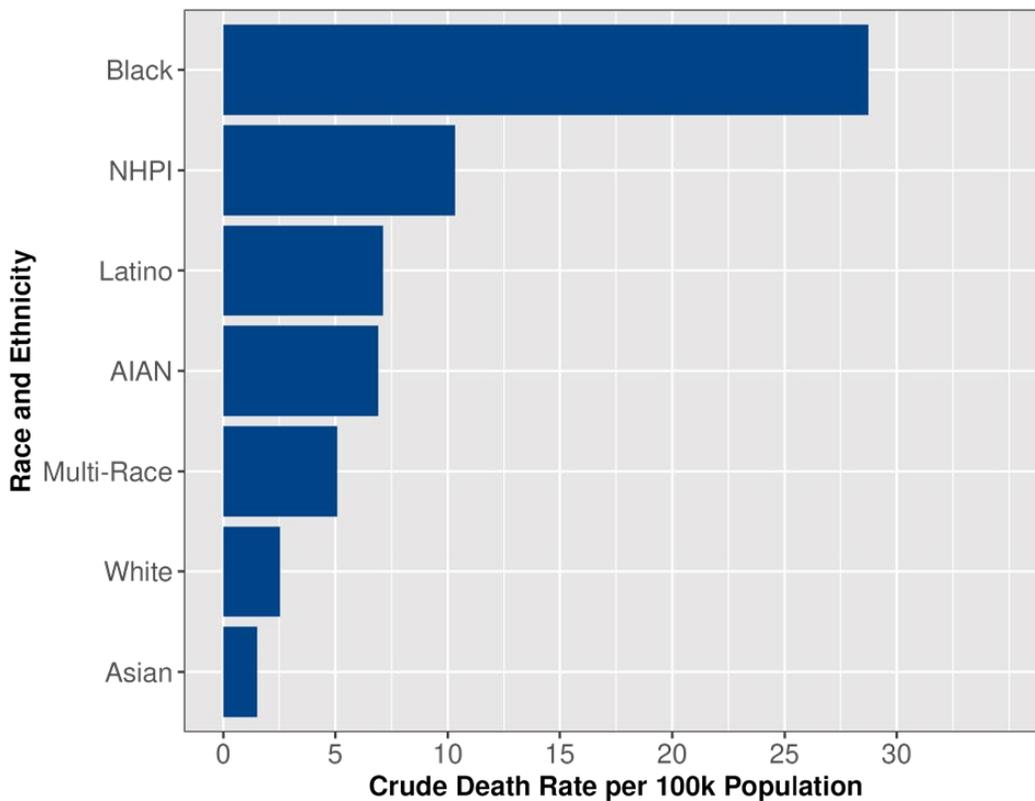
- There are more than twice as many non-fatal firearm assaults as deaths, with many others exposed directly or indirectly.
- Statewide, an estimated 4.5 million people know two or more people who have been harmed by firearms.<sup>lxxvi</sup>
- Exposure to gun violence traumatizes survivors and communities, impacting physical and mental health, as well as social well-being.
- Communities with high levels of violence experience trauma from secondary and anticipatory exposure to violence, such as hearing gun shots and walking to work or school near sites of violent events.<sup>lxxvii</sup>
- Nationally, 1 in 3 youth (37%) experienced a past-year gun homicide less than a mile from their home. Black and Latino youth in poor households in highly disadvantaged neighborhoods had about an 80% chance of experiencing a firearm homicide near their home in the past year.<sup>lxxviii</sup>

### Disparities

Racial and ethnic disparities in homicide rates represent one of the most significant health disparities in California, and are partially driven by economic, physical, and social inequities, with young and Black Californians bearing a disproportionate impact of death, injury, and collateral trauma.

Figure 45

*Homicide Death Rate by Race and Ethnicity, 2022*



Abbreviations: NHPI - Native Hawaiian and Pacific Islander;  
AIAN - American Indian and Alaska Native

- In 2022, the homicide rate for Black individuals was 28.7 per 100,000, which is nearly 5 times the statewide rate (5.8). Homicide was the leading cause of death among Black young adults (first leading cause for males ages 15–34, second leading cause for females ages 15–24).<sup>lxxix</sup>
- Black males had a homicide rate more than 8 times greater than the overall state rate, and nearly 17 times greater than the overall rate among young adults ages 25–34. The homicide death rate for Black young adult males (98.2) is higher than any other cause of death for all individuals ages 0–34.
- There was a high homicide burden among Latino individuals. In 2022, 49% of homicide victims were of Latino ethnicity.
- More than 4 in 5 homicide victims in 2022 were male. The homicide rate for male victims of all ages was nearly 6 times the rate for females, and over 8 times greater for those ages 25–34.
- While less frequent, homicides with female victims were more likely to be personal. In 2021 data from the California Violent Death Reporting System (CalVDRS), 62% of suspects in female-victim homicides were known to the victim, and intimate partner violence was known to have contributed to 39% of the deaths.

The disparities in where violence occurs and who it impacts were exacerbated during the COVID-19 pandemic.

- The economic and social stressors that contribute to violence were made worse by the pandemic.
- There were also historic increases in gun purchases in 2020, likely contributing to increases in firearm homicide in 2020 and 2021.<sup>lxxx</sup>

### Risk Factors

Social determinants of health have a significant impact on exposure to violence. Those who grow up and live in environments with limited social, educational, and economic opportunities—and where racism, discrimination, and community and domestic instability are daily stressors—are at an increased risk of exposure to multiple forms of violence.

- Increased interpersonal firearm violence is associated with income inequality, residential segregation, hunger, and unemployment.
- Lack of economic opportunities and unemployment as well as norms in society or in communities that support aggression or coercion are associated with perpetration of child maltreatment, intimate partner violence, self-harm, sexual violence, and youth violence.
- Most individuals who are victims of violence do not act violently; however, people who are exposed to community violence are at a higher risk for experiencing other forms of violence and inflicting harm on others.<sup>lxxxi</sup>
- Exposure to community violence, in particular firearm homicide, is associated with increased depression among youth, with the most disadvantaged youth at greater risk of experiencing depression.<sup>lxxxii</sup>

### Public Health Prevention and Current Activities

Public health strategies to reduce homicide, and other forms of violence, address the context in which violence occurs. Effective existing violence prevention efforts focus on addressing the inequities and barriers to health and safety that exist for those who are disproportionately impacted by violence.<sup>lxxxiii</sup>

- Reducing unsafe access to firearms and creating protective environments through strategies such as mentoring programs, addressing unhealthy gender

norms, promoting connectedness in communities, and supporting other positive changes to social norms can lower the risk of assault, shootings, and homicide.

- Strengthening economic supports through income assistance such as the existing [California Earned Income Tax Credit \(CalEITC\)](#), livable wages, income-building programs to build wealth, paid family leave and paid time off, and affordable and safe housing reduce economic stressors that are known to contribute to homicide and other forms of violence.
- Public Health data systems such as the [California Violent Death Reporting System \(CalVDRS\)](#) link and analyze data from multiple sources to better understand the context and circumstances for violent deaths to pinpoint opportunities for prevention.
- Promoting healthy home environments through home visiting programs (like [CDPH's California Home Visiting Program](#)) and programs to develop parenting skills and family relationships can reduce conflict, physical aggression, and domestic violence.
- Childhood and adolescent interventions such as preschool enrichments with family engagement, connecting youth to volunteer mentors from the community, school-based and after-school programs to promote health relationship skills and develop emotional, social, and academic skills decrease the risk of bullying, violent behavior, and justice system involvement.

## Suicide

Suicide and self-harm are major preventable public health concerns in California that can have emotional and economic impacts in both the immediate and long-term on individuals, families, and entire communities.

Health conditions that are risk factors for suicide or self-harm include both psychosocial conditions (e.g., depression, substance use disorders, conditions that lead to impulsive tendencies) and physical conditions (e.g., occurrence of chronic pain).

- There was a 6.3% decrease in statewide suicide rates from 2019 to 2020, the first year of the pandemic. Rates stabilized between 2020 and 2021, and then increased slightly between 2021 and 2022.<sup>lxxxiv</sup>
- The use of firearms was the most common mechanism for suicide overall. For those ages 10 to 24, suffocation was the most prevalent mechanism.
- There were 33,506 non-fatal self-harm-related emergency department visits among California residents in 2022; 57% of them were among individuals ages 10 to 24.

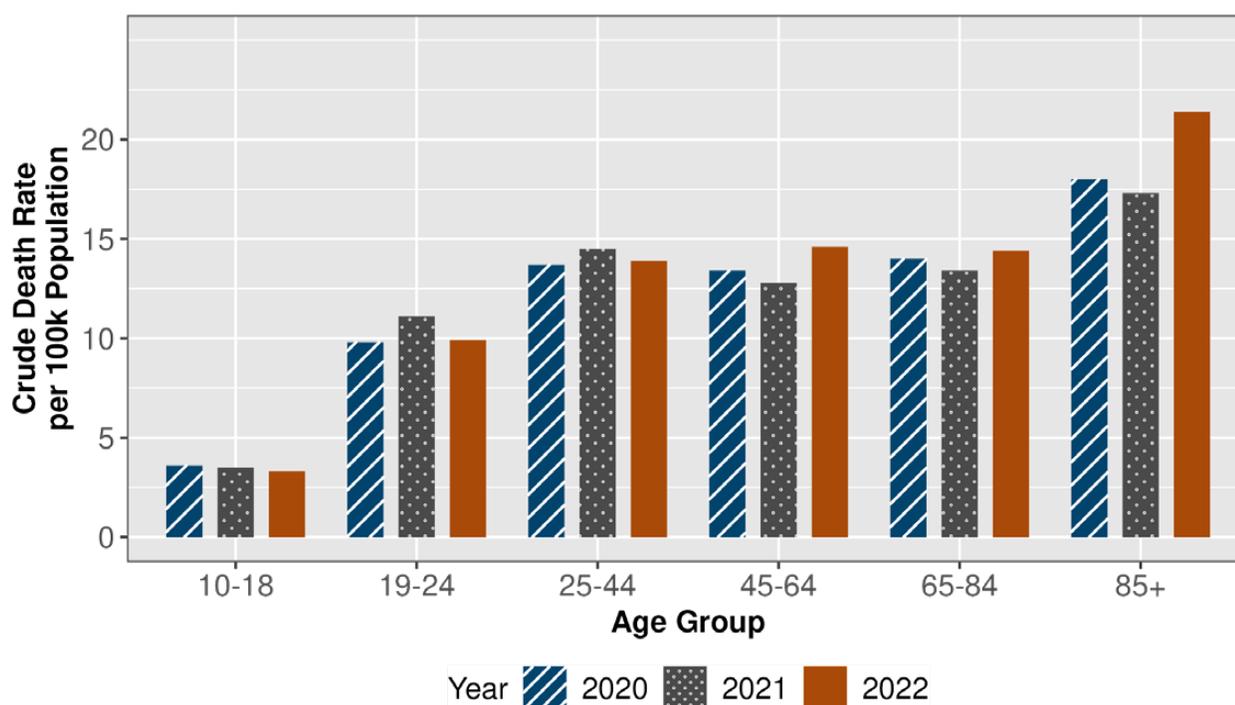
Suicide is a significant health burden across most life stages. Recent trends reflect increases in rates among youth and young adults.

- Older adults ages 85 years and older have the highest rates of suicide compared to any other age group.
- Suicide death rates increased slightly (<5%) over 2012–2022, mostly driven by increases in younger ages (10–44), despite an overall decrease going into the pandemic before an uptick in 2020–2022.
- While suicide counts decreased in California from 2019 to 2020, counts among youth ages 18 and below increased going into 2020 and then decreased slightly between 2021 and 2022.

- Youth aged 10–18 had the highest rates of self-harm emergency department visits and experienced the largest increase (23.2%) from 2020 to 2021, dropping from the new high by only 1.9% in 2022.
- Between 2020 and 2021 and for the first time in the past decade, there were suicide deaths reported for youth under age 10. Although the number of deaths was low (<10), the emergence of suicide deaths in this young age group is very concerning.
- In 2021 and for the first time since 2018, veterans between the ages of 25 and 44 years old have a greater number of suicide deaths compared to those between the ages of 45 to 64 years old.<sup>lxxxv</sup>

Figure 46

*Suicide Death Rate by Age Group, 2020-2022*



### Disparities

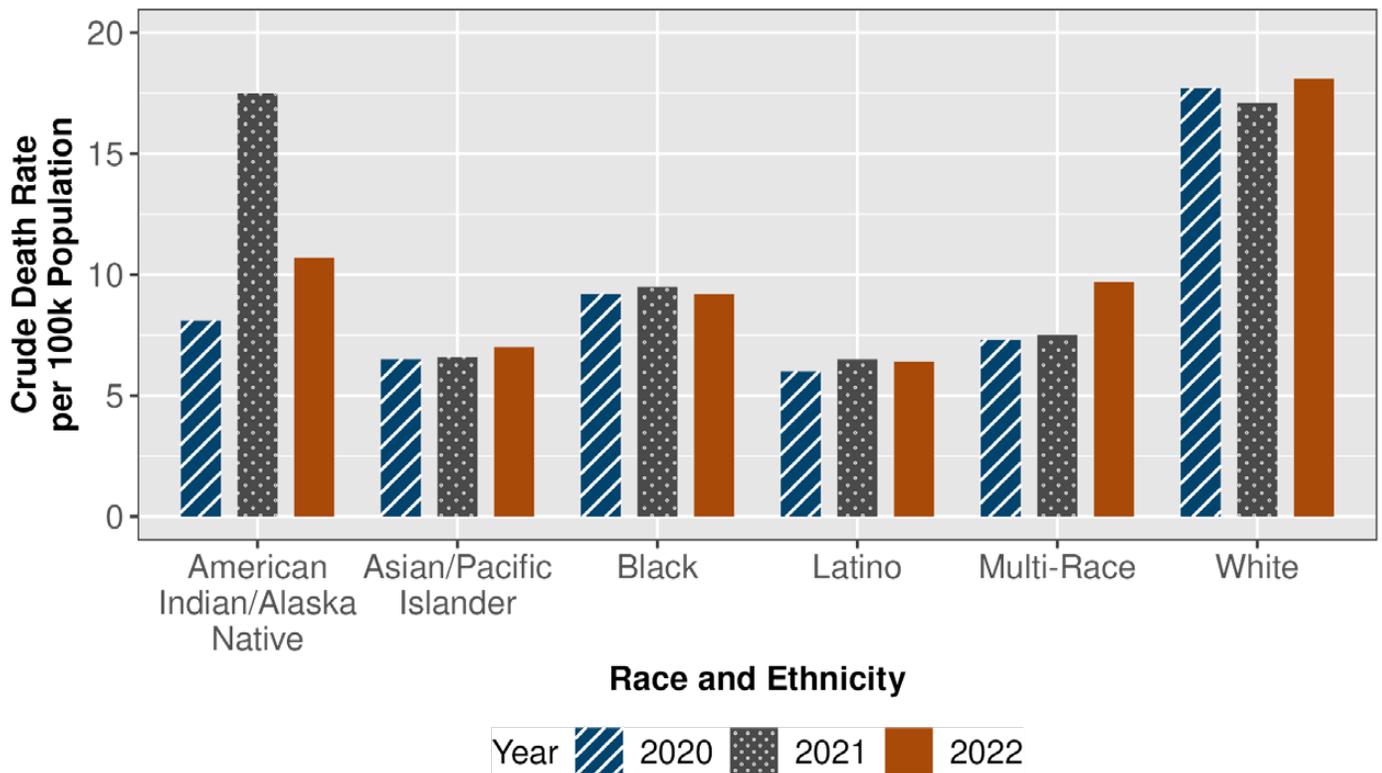
- Males had more than three times the rate of suicide deaths than females in 2020 through 2022 while female self-harm emergency department visit rates were more than 75% higher than male rates in 2021 and 2022.
- American Indian and Alaska Native individuals and White individuals had the highest rates of suicide in 2021, with White individuals maintaining their higher rates into 2022. Suicide rates among American Indian and Alaska Native individuals more than doubled from 2020 to 2021.
- The total number of suicides was highest among White individuals, accounting for 58% of all suicide deaths in California from 2020 to 2022.
- Black, Indigenous, and other people of color (American Indian and Alaska Native, Latino, Black, and Asian and Pacific Islander) and Multiracial groups saw an

increase in suicide rates from 2020 to 2021. From 2021 to 2022, an increase in suicide rates was observed for Asian and Pacific Islander, White, and Multiracial individuals.

- Black youth had an alarmingly high increase in suicides (more than 40%), increasing from 32 to 46 for ages 10 to 24 between 2019 and 2020.

Figure 47

*Suicide Rate by Race and Ethnicity, 2020–2022*



### Self-Harm Emergency Department Visits

- Black individuals had the highest self-harm emergency department visit rates compared to any other race/ethnic group in 2021 and 2022.
- All race/ethnic groups saw an increase in self-harm emergency department visit rates from 2020 to 2021, with Multiracial individuals experiencing the largest percent increase (24.0%), followed by Asian and Pacific Islander individuals (19.7%). From 2021 to 2022, this increase continued for American Indian and Alaska Native, Asian and Pacific Islander, and Latino individuals.
- Demographic shifts in suicide and self-harm rates during recent years were likely linked to the stressors and impacts associated with the COVID-19 pandemic, which may have impacted various communities differently.

### Place-Based Disparities

- Suicide rates showed regional variations, with higher mortality rates for rural communities in Northern California. Elevated suicide risks among rural communities have been attributed to both individual and community level factors including access to lethal means, economic stress, and limited access to quality behavioral health care (compared to urban areas).<sup>lxxxvi</sup>

Figure 48

Age-Adjusted Suicide Death Rate (per 100,000) by County, 2022

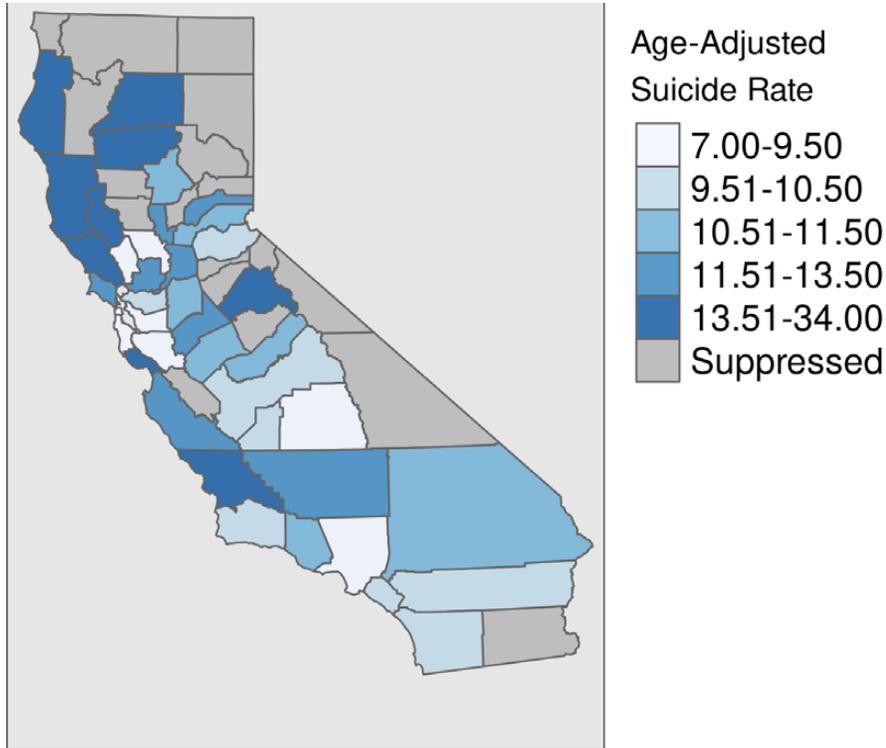
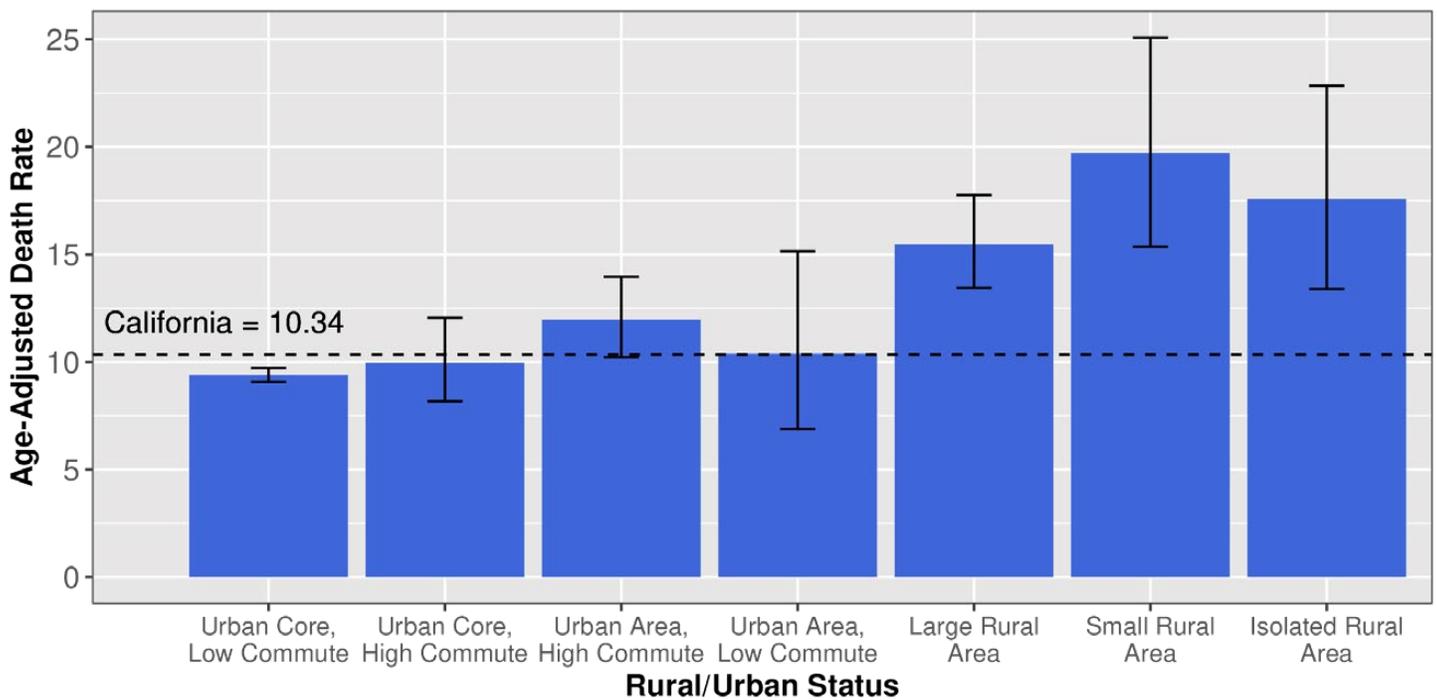


Figure 49

Age-Adjusted Suicide Death Rate (per 100,000) by Rural/Urban Status, 2022



Notes: Rural-Urban Commuting Area (RUCA) codes is a system used by the Federal Health Resources and Services Administration (HRSA) to define census tract level urban and rural areas. These codes are on a continuum and have been collapsed into the seven rural/urban status categories in the chart.

## Risk Factors

Suicide and suicide attempts relate to both individual and community-level exposures.<sup>lxxxvii</sup> Individual factors include previous suicide attempts, history of mental illness, substance use, job loss or financial problems, history of ACEs, violence victimization and/or perpetration, among others. For example, having any ACE is associated with an increased risk for suicide. The odds of ever attempting suicide are 30 times higher for adults who have experienced four or more ACEs compared to adults with no ACEs.<sup>lxxxviii</sup> Further, the communities most burdened by the health, economic, and social crises of 2020 and 2021 faced disproportionate threats to their health as a result of systemic racism<sup>lxxxix</sup> and other forms of marginalization that concentrate greater risk factors associated with suicide (e.g., poverty, unemployment, and mass incarceration)<sup>xc</sup> and fewer protective factors (e.g., quality education, economic development, and culturally competent mental health care).<sup>xcii</sup>

## Public Health Prevention and Current Activities

Public health strategies to reduce all forms of violence address the shared risk and protective factors, with a focus on preventing the risk of suicide before it occurs and reducing the immediate and long-term harms of suicidal behavior. Existing public health initiatives include creating protective environments, strengthening economic supports, promoting healthy connections, improving access and delivery of suicide care, and teaching coping and problem-solving skills.<sup>xcii</sup>

- [CDPH's Office of Suicide Prevention \(OSP\)](#) has partnered with local health and behavioral health departments to distribute lock boxes across California to promote the safe storage of firearms and medications so that children, youth, and adults in crisis are less likely to gain access to these lethal means. The OSP has also supported efforts to promote positive coping skills for youth by working with partners to distribute [Mental Health Thrival Kits](#) throughout schools in California.
- [CDPH's Comprehensive Suicide Prevention Program](#) implements prevention strategies such as the promotion of safe access to lethal means, gatekeeper trainings for health care providers, and promotion of tele-mental health to address provider shortages.

## Adulthood



Adulthood has specific vulnerabilities such as higher risks for chronic disease outcomes. For example, cardiovascular diseases are among the leading causes of death for adult age groups. Other prominent chronic conditions examined here include cancers, diabetes, and occupational health risks such as Valley fever. This section focuses on conditions affecting adults 45 and older.

### Cardiovascular Disease

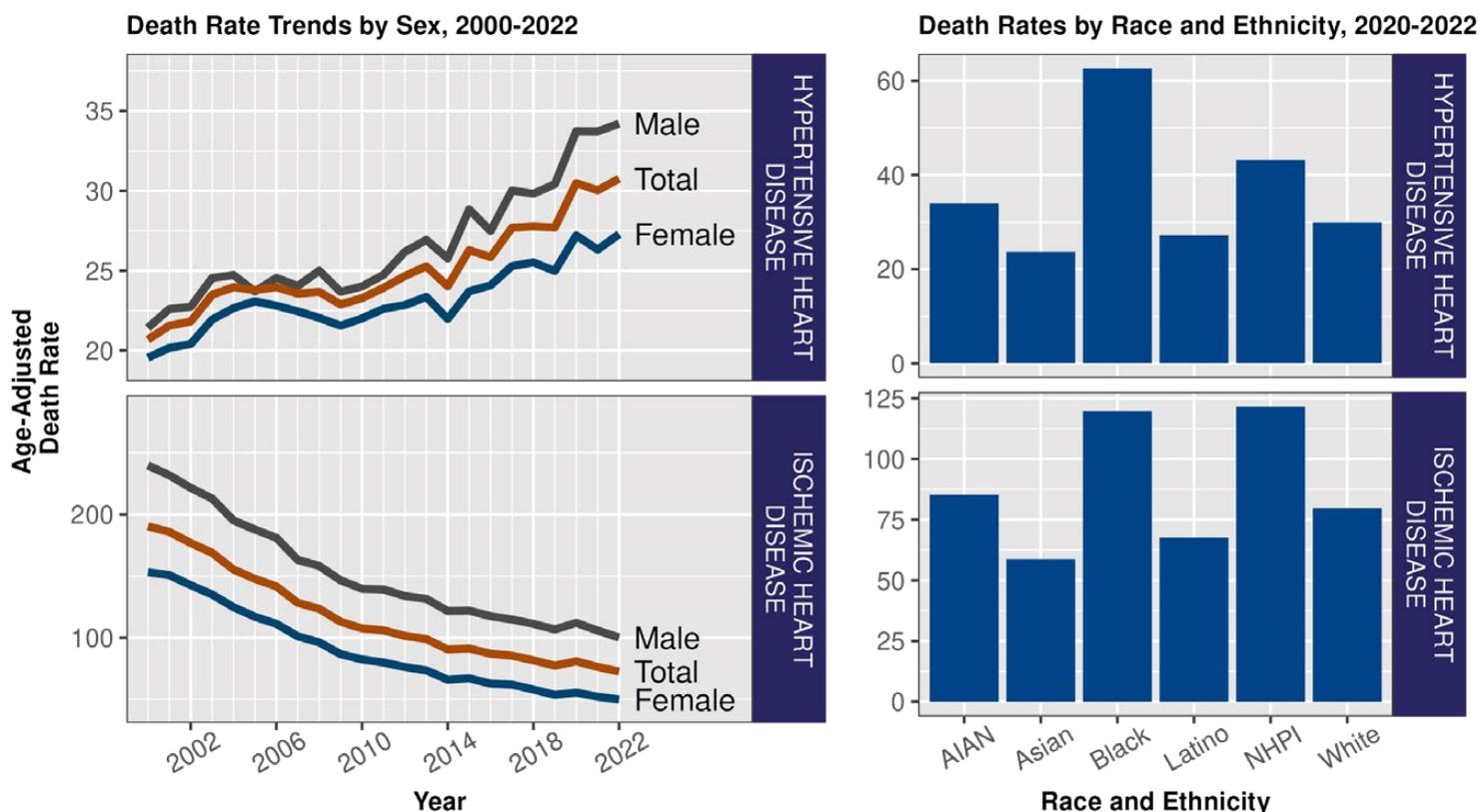
While ischemic heart disease has decreased in recent decades, other major cardiovascular diseases such as hypertensive heart disease have increased. These differences may be due to available preventative treatment for ischemic heart disease (e.g., statins) and/or other factors.

- Ischemic heart disease is the leading cause of death in many demographic groups despite strong long-term decreases in rates. It's one of the most frequent causes of heart failure, which may result in fatigue, depression, and difficulty engaging in physical activity.<sup>xciii</sup>
- Recent increases have been observed for hypertensive heart diseases. About 26.8% California adults are estimated to have the condition hypertension, a precursor for hypertensive heart disease, with an additional 6.9% estimated to have borderline hypertension.<sup>xciv</sup>

- Stroke is the third leading cause of death in California—ranking higher than COVID-19 in 2022. Stroke is a leading cause of death among Californians ages 65 and older. Stroke can cause disabilities including paralysis, speech difficulty, and emotional problems.<sup>xcv,xcvi</sup>

Figure 50

Ischemic/Hypertensive Heart Disease Death Rate Trend (per 100,000), by Sex and Race/Ethnicity, 2020–2022



Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska Native

### Disparities

Black, American Indian and Alaska Native, and Native Hawaiian and Pacific Islander individuals experience disparities compared with their White counterparts in cardiovascular disease risks and outcomes.

- Black individuals experienced a higher burden of cardiovascular risk factors such as hypertension and obesity.<sup>xcvii</sup>
- American Indian individuals were 1.5 times more likely to be diagnosed with coronary heart disease than White individuals.<sup>xcviii</sup>
- Mortality risks attributed to ischemic and hypertensive heart diseases were substantially higher among Black, American Indian and Alaska Native, and Native Hawaiian and Pacific Islander Californians than other race/ethnic groups.

- Risk factors for cardiovascular disease in California are more common among lower-income communities, racial minorities, and the Latino population.<sup>xcix,c</sup> These communities face barriers to regular physical activity, healthy food access, gainful employment, and quality education.<sup>ci,cii</sup>

### Public Health Prevention and Current Activities

Public health approaches to addressing the health inequities evident in cardiovascular disease and its predisposing conditions (e.g., hypertension and diabetes) are impacted by the broader determinants of health, including structural and environmental barriers to healthy nutrition, physical activity, education, employment, and access to preventive services.

- The CDPH Chronic Disease Control Branch (CDCB) promotes cardiovascular health through the federally-funded [Cardiovascular Disease Prevention Program](#), [Cardiovascular Health Innovation Program](#), [California Well-Integrated Screening and Evaluation for Women Across the Nation](#) (CA WISEWOMAN) Program, the [HeartBeatCA Program](#), and partnerships with local health departments and health systems to advance electronic health record initiatives and team-based care models that include pharmacists and community health workers, blood pressure self-monitoring with clinical support, and comprehensive medication management.
- These initiatives aim to reduce the risk and prevalence of heart disease and stroke by addressing the needs and risk factors of populations with a high prevalence of cardiovascular disease, hypertension, and high blood cholesterol.
- To address the prevalence of hypertension in the priority populations of Solano and Los Angeles Counties, HeartBeatCA Program implemented the Healthy Heart Ambassadors (HHA) program. During this four-month program, and with support from a trained “Healthy Heart Ambassador”, participants measured and recorded their blood pressure, and attended personalized consultations and nutrition education seminars to improve diet quality and physical activity.

## Diabetes

Diabetes is a chronic condition characterized by high levels of blood sugar resulting from issues with the body’s insulin production, insulin action, or both. Lifestyle factors, such as obesity, physical inactivity, and poor diet can contribute to diabetes.

Left uncontrolled, diabetes can lead to serious health problems such as cardiovascular disease, kidney disease, nerve damage, vision impairment, and foot problems.

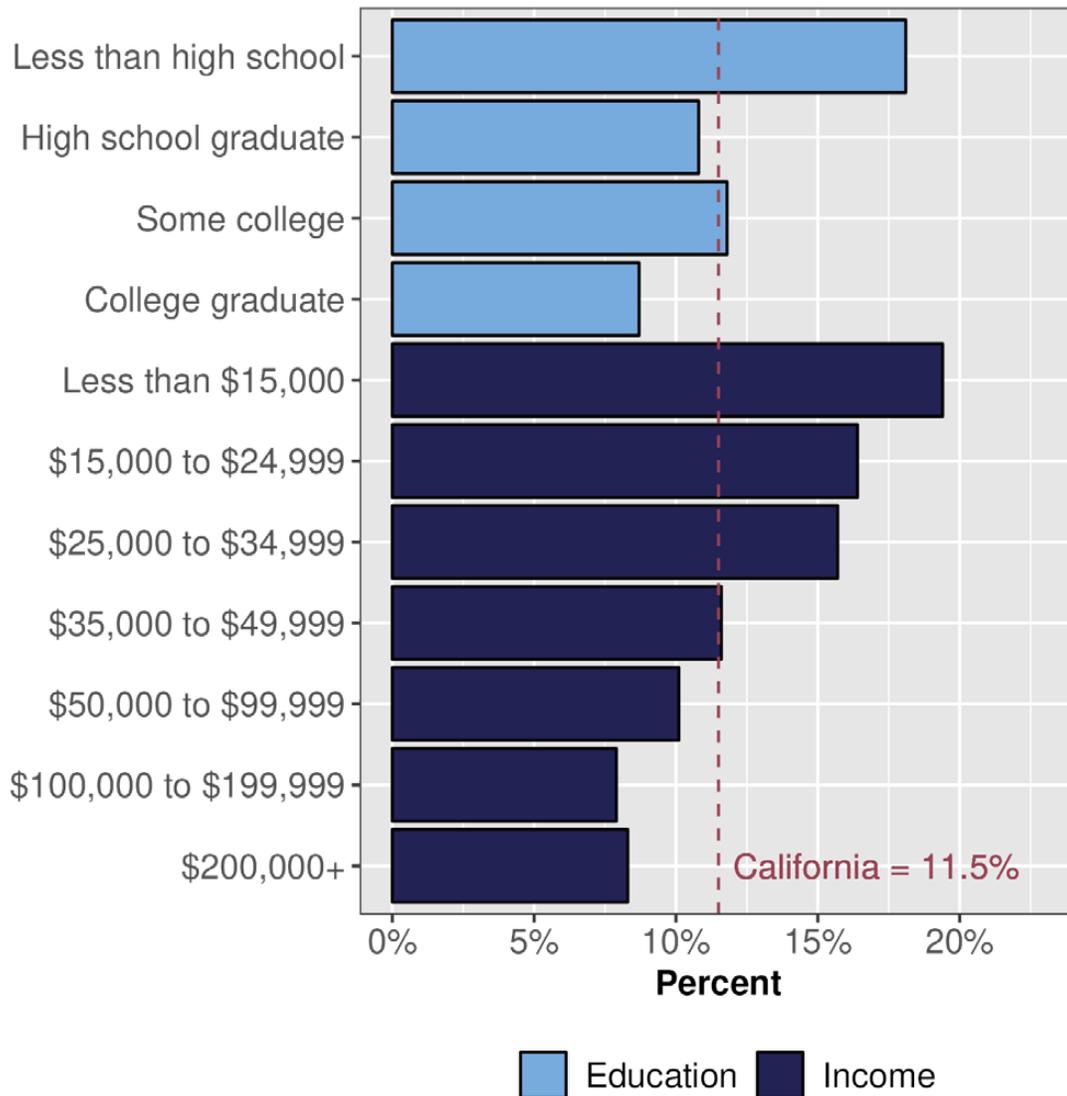
- In 2022, over 3.5 million California adults had diabetes and 6 million were estimated to have prediabetes, and of those diagnosed, 80% take medication to treat their diabetes.<sup>ciii</sup>
- Diabetes prevalence increases with age, with the highest rate among ages 65 and above, at 25.2% in 2022 (vs. 11.5% among California adults).
- The long-term diabetes mortality trend shows a general pattern of decline over the past decade except for a period of increase from 2019 to 2020.

### Disparities

Groups with lowest levels of income and education experienced about twice the rate of diagnosed diabetes compared with the total population or the highest income or education groups.<sup>civ</sup>

Figure 51

*Prevalence of Diabetes Among Adults by Educational Attainment and Household Income, 2022*



### Public Health Prevention and Current Activities

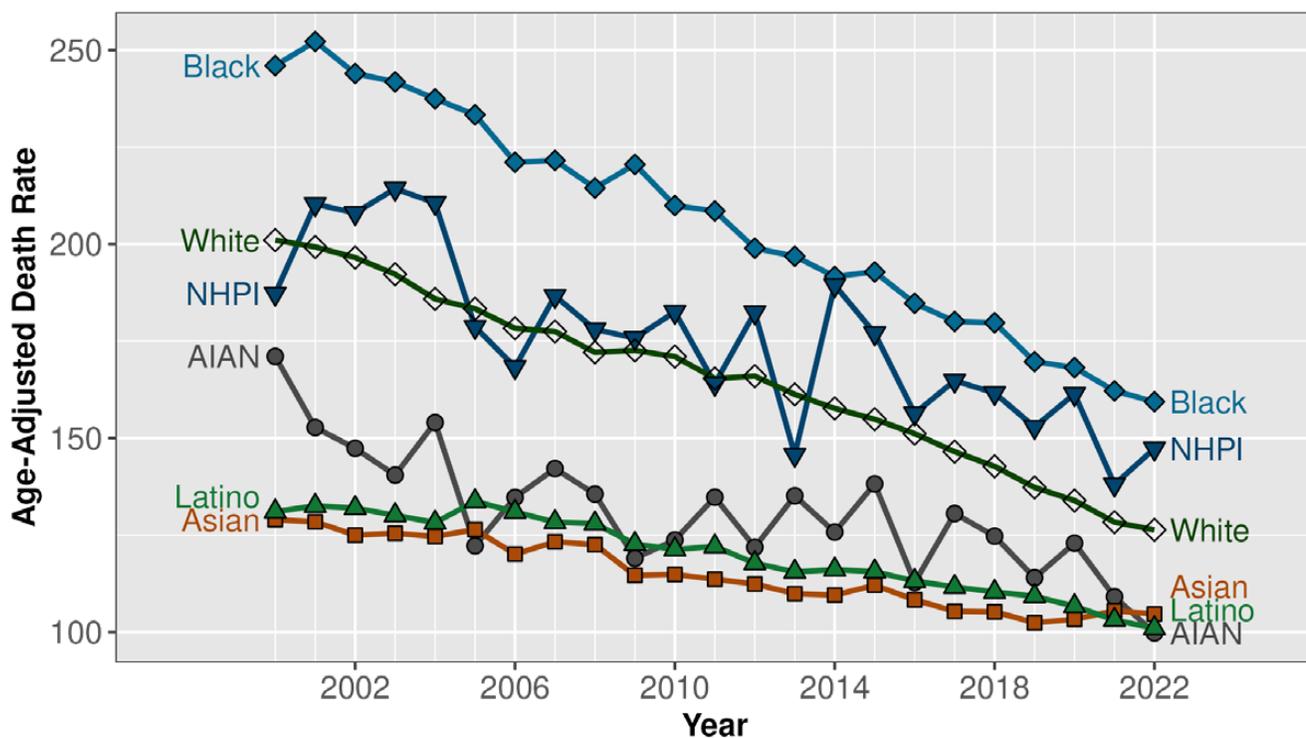
- The CDPH Chronic Disease Control Branch (CDCB) addresses the rising prevalence of diabetes statewide through the federally funded [Type 2 Diabetes Program](#) that increases awareness, availability, and utilization of evidence-based diabetes prevention and self-management lifestyle change programs in partnership with local health departments and health systems, and community-based organizations.
- CDCB coordinates evidence-based lifestyle change programs such as expanding community health workers (CHWs) workforce to support the infrastructure of diabetes prevention services and programs at the local level. Through lived experience, CHWs have a deep understanding of their communities, which make them uniquely qualified to address social and behavioral determinants of health and to support participants in diabetes prevention lifestyle change interventions.
- CDCB also works with internal state agencies and community agencies that advance evidence-based childhood obesity interventions to address risk factors for diabetes early in life and to prevent negative health outcomes due to chronic disease later in life.

## Cancer

Over the last two decades, cancer death rates have generally declined among all racial and ethnic groups.<sup>cv</sup>

Figure 52

Trends in Death Rates (per 100,000) of All Cancer Sites Combined by Race and Ethnicity, 2000–2022



### Disparities

- Overall cancer death rates were generally lower among Asian and Latino groups than other groups.
- White individuals had the highest incidence rate of overall cancers among males and females.<sup>cvi</sup>
- Specific forms of cancer have worse outcomes in certain groups.
  - Latino women had higher incidence rates of invasive cervical cancer compared to White women.
  - Black men had the highest incidence and mortality rates of prostate cancer.
  - White women have the highest incidence rate of breast cancer.
  - Asian and Pacific Islander individuals and Latino individuals have higher incidence rates for liver and stomach cancers than their White counterparts.
- From 1988 to 2020, overall cancer incidence rates increased annually for children and young adult age groups (under 40), while cancer incidence rates decreased for all other age groups.

## Risk Factors

- As leading causes of mortality in the United States, cancer and other chronic diseases (e.g., cardiovascular disease, chronic obstructive pulmonary disease, and Type 2 diabetes) share common preventable risk factors. Type 2 diabetes independently increases risk for several cancers (e.g., liver, endometrium, pancreas, colorectum, kidney, bladder, breast, and perhaps ovary).<sup>cvii</sup>
- Multiple studies show a clear causal link reflecting that social determinants may contribute to up to 70% of cancer cases, and significantly increase the risk of death.<sup>cviii</sup> Certain factors are directly related to cancer survival rates, such as education, housing, and social inclusion. In addition, smoking, alcohol misuse, and obesity—all of which disproportionately affect lower socioeconomic groups—are risk factors that contribute to higher rates of cancer.

## Public Health Prevention and Current Activities

Prevention strategies for cancer include promoting early and regular screening, culturally relevant and stigma-free health care, along with promoting safe and healthy living conditions and preventing associated chronic disease risk factors.

Chronic conditions such as cardiovascular disease, diabetes and cancer share many risk factors and can be addressed through interconnected prevention strategies. CDPH develops and supports intersectoral and integrated initiatives to address the broader determinants of health, including structural and environmental barriers to healthy nutrition, physical activity, education, employment, and access to preventive services. There are multiple ongoing and collaborative efforts across CDPH to promote healthy living strategies and equitable outcomes:

- The [Nutrition and Physical Activity Branch](#) (NPAB) promotes nutrition security through community education activities and evidence-based local and state-level policy, systems, and environmental change strategies.
  - NPAB implements the USDA-funded Supplemental Nutrition Assistance Program-Education (SNAP-Ed) known as [CalFresh Healthy Living \(CFHL\)](#)<sup>12</sup> providing more than \$54 million dollars annually in grants to local health departments and their partners.
  - NPAB also implements strategies that address health disparities related to poor nutrition, physical inactivity, and/or obesity, with an emphasis on early life growth and development, and facilitates collaboration among sectors in the promotion of physical activity resources and mental well-being.
- The Injury and Violence Prevention Branch's [Active Transportation Safety Program](#) (ATSP) collaborates with the California Department of Transportation (Caltrans) to support the development and implementation of walkable and bicycle-friendly communities.

<sup>12</sup> CFHL is a collaboration among multiple state departments including the California Department of Social Services and Department of Aging. Intended program participants are Californians with low-incomes or those experiencing poor health outcomes.

- CDPH's ATSP team supports regional and local jurisdictions to apply for and receive Caltrans funding for active transportation projects through the advancement of Complete Streets, Vision Zero, and Safe Routes to School program and policies and built environment enhancements (e.g., sidewalks, bikeways, safer crossings, and intersections). The program improves cardiovascular health, reduces diabetes risk, promotes balance and musculoskeletal health, and fosters community cohesion that can extend Californians' functional physical capacity as well as mental well-being.

## Occupational Health Risks

Californians face a wide range of occupational health risks, which can span chronic, communicable, and injury related conditions. Over 2 million California workers are employed in high-risk occupations (e.g., nursing homes, construction, foundries, trucking) where the rate of work-related injury and illness is comparatively higher than in other industry sectors.<sup>cxix</sup> Work-related injury and illness can involve exposure to harmful materials or conditions (e.g., pesticides, lead, silica, heat), trauma (e.g., amputations, concussions), chronic repetitive stresses (e.g., work-related musculoskeletal disorders of muscles, tendons, spinal discs, psychological stress). The type and prevalence of occupational health risks vary by industry. For instance, individuals have high rates of work-related asthma in local transportation, hospitals, utilities, manufacturing, and construction.<sup>cx</sup> About 40% of adults with asthma report that it was caused or triggered at work, sometimes resulting in absences, or even leaving a job.<sup>cxii</sup>

The COVID-19 pandemic disproportionately impacted workers from certain industries; Californians working in manufacturing, retail, transportation, and health care had higher COVID-19 mortality rates than in other industries.<sup>cxiii</sup> Some occupational health disparities have been magnified by changes in the California climate, such as heat waves and droughts. For example, severe heat-related illness and death have occurred among agricultural and construction workers.<sup>cxiii,cxiv</sup> Climate changes can greatly affect outdoor workers in refining, surface mining, hazardous waste site activities, forestry, and fishing.<sup>cxv</sup> This section features an occupational health topic highlight on Valley fever.

## Valley Fever

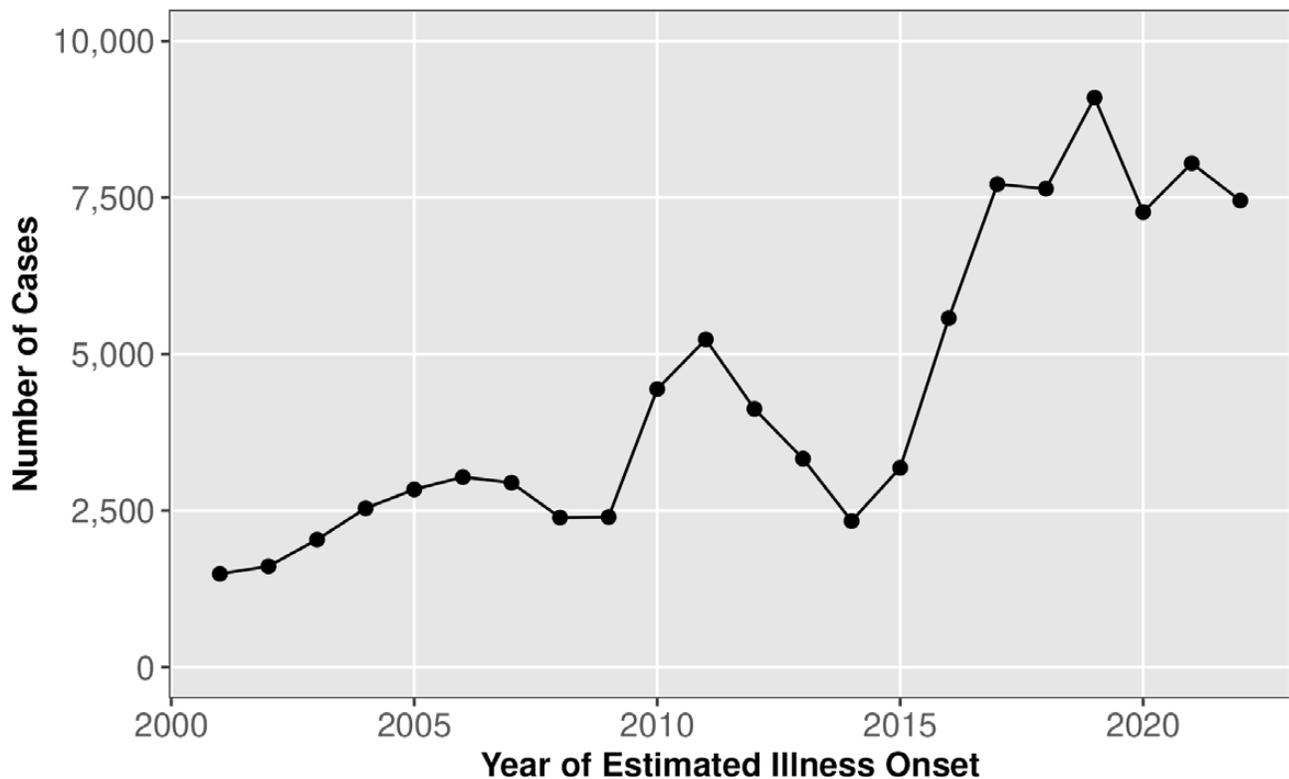
[Valley fever](#) (also called coccidioidomycosis or “cocci”) is a disease caused by breathing in a fungus that grows in the soil in some parts of California. When dry soil containing this fungus is stirred up by strong winds or by digging, the dust containing the fungus gets into the air. Anyone who breathes in this contaminated dust can develop Valley fever. Valley fever can be a mild respiratory illness, but it can become severe and even fatal, or persist as a chronic disease.

Valley fever is on the rise in California, likely due to changes in climate, such as extended periods of drought.<sup>cxvi</sup>

- The number of California Valley fever cases has increased from about 1,500 cases in 2001 to over 9,000 cases in 2019.
- In recent years, there were 3,000 to 4,000 hospitalizations and 100 to 250 deaths among patients hospitalized with Valley fever annually.
- Climate and environmental factors influence the fungus that causes Valley fever, and California Environmental Protection Agency (CalEPA) has named Valley fever as a climate change indicator impacting human health in California.

Figure 53

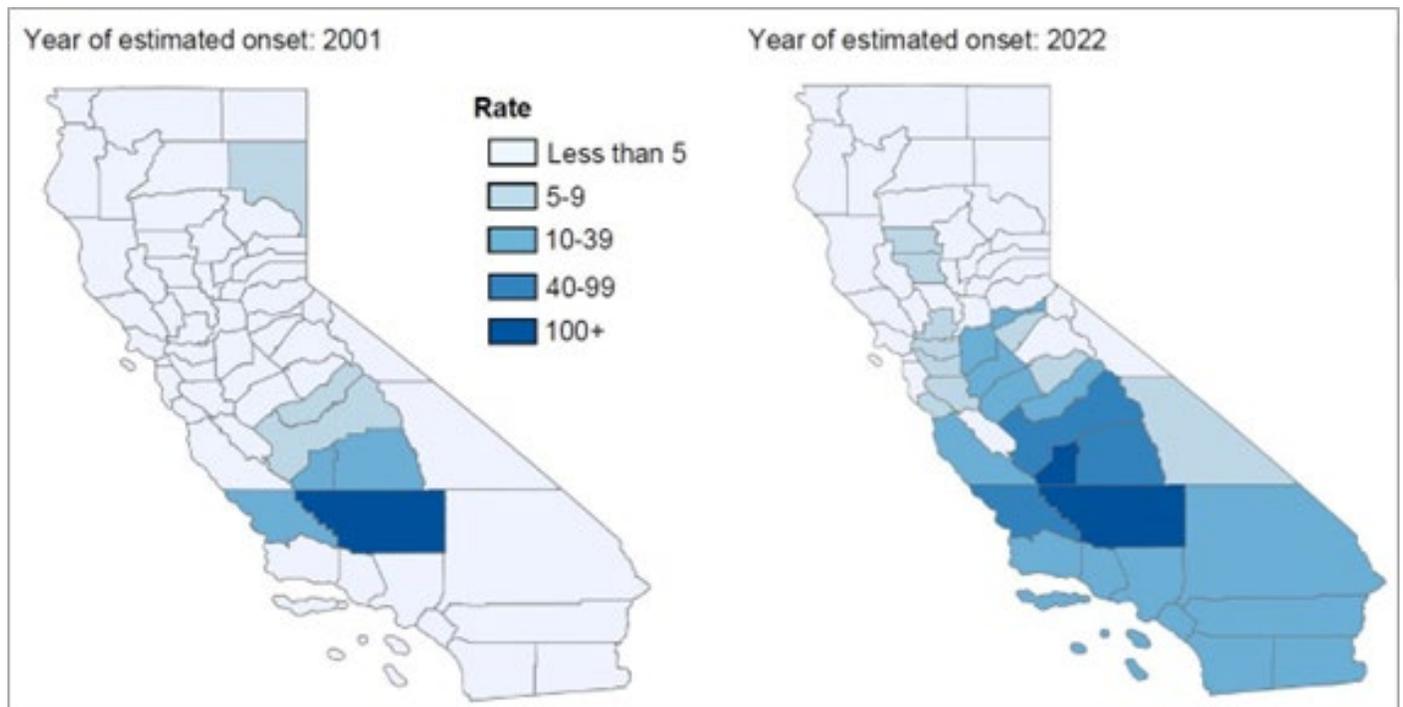
*Total Number of Valley Fever Cases by Year of Estimated Illness Onset, 2001–2022*



Valley fever appears to be expanding into more regions. Historically, Valley fever rates in California were consistently highest in the Central Valley and Central Coast regions. However, recent rates have increased most in the Northern San Joaquin Valley and in Southern California.

Figure 54

Valley fever Case Rate (per 100,000) by County, 2001 and 2022



## Disparities

Valley fever disproportionately impacts certain Californians.

- Outbreaks of Valley fever have been reported among outdoor workers, including construction workers, wildland firefighters, archaeologists, and wildlife biologists in California.<sup>cxvii,cxviii,cxix,cxx,cxxi,cxxii</sup>
- Black populations have approximately twice the rates of reported infection and hospitalization as compared to White populations.
- Filipino populations have increased risk of severe disease.
- Other populations with increased Valley fever risk include males, older age groups, pregnant women, and people with diabetes or weakened immune systems.
- Eight of California's state prisons are in places where Valley fever is endemic. Two prisons in the San Joaquin Valley account for over 80% of cases among incarcerated individuals in California.<sup>cxxiii</sup>

## Public Health Prevention and Current Activities

- Education of the public, especially outdoor workers and their employers, health care providers, and public health departments are key to Valley fever control efforts.
- There are no vaccines to protect against Valley fever currently. Current prevention recommendations are limited to practical methods for reducing dirt and dust exposure (e.g., limiting soil disturbance; wetting the soil to minimize dust generation in places where Valley fever is common; covering open dirt areas around the workplace; using ventilated, enclosed cabs on heavy equipment; and masking with an N95 respirator).
- Awareness of Valley fever is important to prompt early diagnosis, proper management, possible treatment, and better outcomes.

## Older Adulthood

Because of increasing lifespan and the fact that California has the second highest life expectancy in the United States,<sup>cxxiv</sup> the growing population of older adults (60 years of age and older) requires unprecedented attention. Most of these individuals will require services and support with activities of daily living. A coordinated, culturally and linguistically responsive system of services will support California's increasingly diverse population ages in the coming decades.

More importantly, the COVID-19 pandemic has masked and accelerated cognitive decline in older adults, while increasing the isolation and stress of older adults living with dementia, and that of their caregivers as well. More than 690,000 older adults and 1.62 million caregivers in California are living with the impact of dementia.<sup>cxxv</sup> The toll falls disproportionately on women and people of color, who are disproportionately more susceptible to developing the disease, and on caregivers and health care workers who are overburdened and under-supported.

Recognizing the need for a person-centered, home and community-based direct care workforce, the state's [Master Plan for Aging](#) makes substantial investments in programs that serve our vulnerable, aging, and disabled populations, with a key focus on retaining and building a skilled and linguistically and culturally responsive caregiver workforce.<sup>cxxvi</sup>

## Alzheimer's Disease and Related Dementias

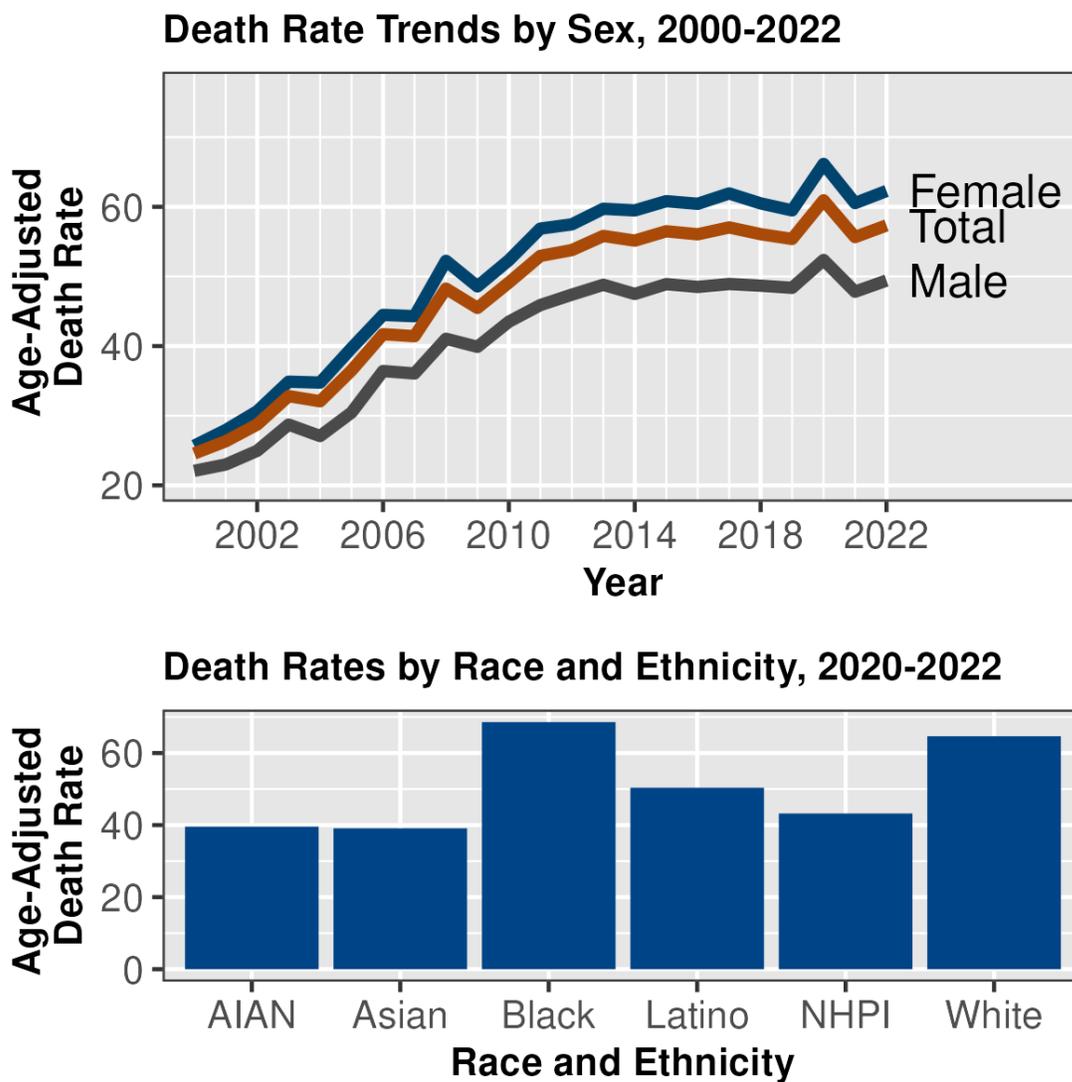
Alzheimer's disease and related dementias are a group of conditions that primarily affect memory, thinking, and behavior. Dementia is a general term for loss of memory and other cognitive abilities serious enough to interfere with daily living. Alzheimer's disease is the most common type of dementia. It is a progressive disease, meaning that symptoms worsen over time eventually growing severe enough to interfere with daily tasks and the ability to live independently.

- Alzheimer's disease (and related dementias) is the leading cause of death in adults 85 years and older, and the second leading cause of death (after ischemic heart disease) overall among Californians.

- It is estimated that there will be a 21.7% increase in the number of people ages 65 and older with Alzheimer's disease from 2020 to 2025.<sup>cxxvii</sup> By 2040, California's population will have expanded by 16%, yet the adults living with Alzheimer's disease will have expanded by 127%, or by nearly 1.6 million adults.<sup>cxxviii</sup>
- Nationally, close to two-thirds of Alzheimer's disease and related dementias cases are among women.<sup>cxxix</sup> In 2022, females in California had a higher rate (62.3 per 100,000) of death due to Alzheimer's disease compared to males (49.4).<sup>cxxx</sup>

Figure 55

Alzheimer's Disease\* Death Rate Trends (per 100,000), by Sex and Race and Ethnicity, 2020–2022

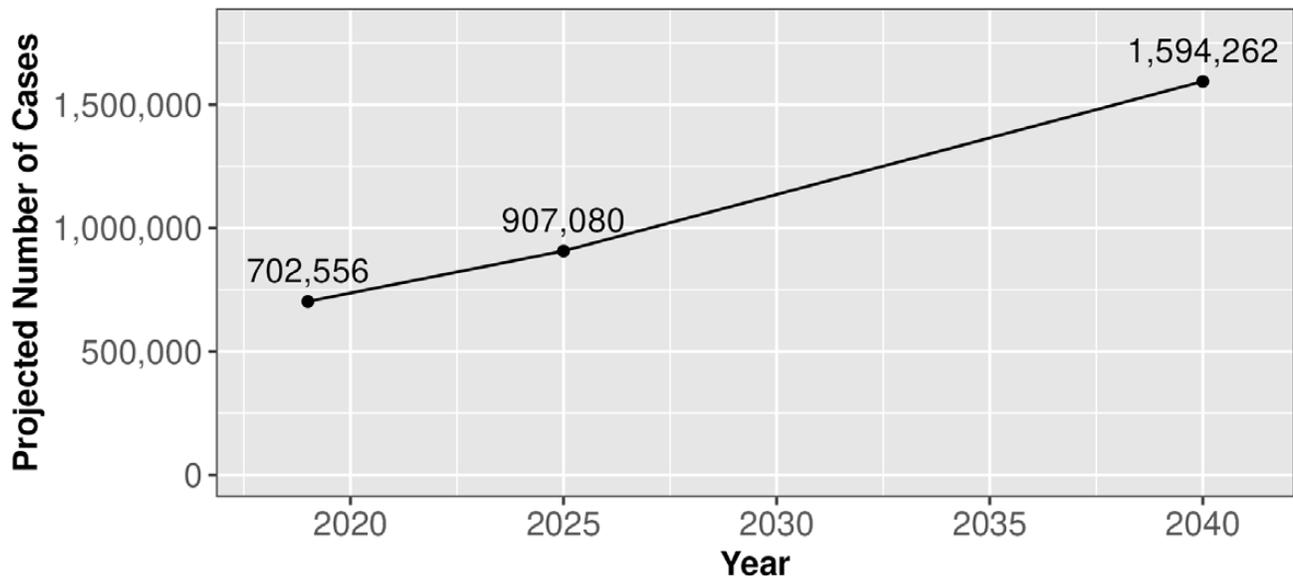


\*Includes Alzheimer's disease and related dementias.

Abbreviations: NHPI - Native Hawaiian and Pacific Islander; AIAN - American Indian and Alaska

Figure 56

Projected Number of People Aged 55+ with Alzheimer's Disease in California

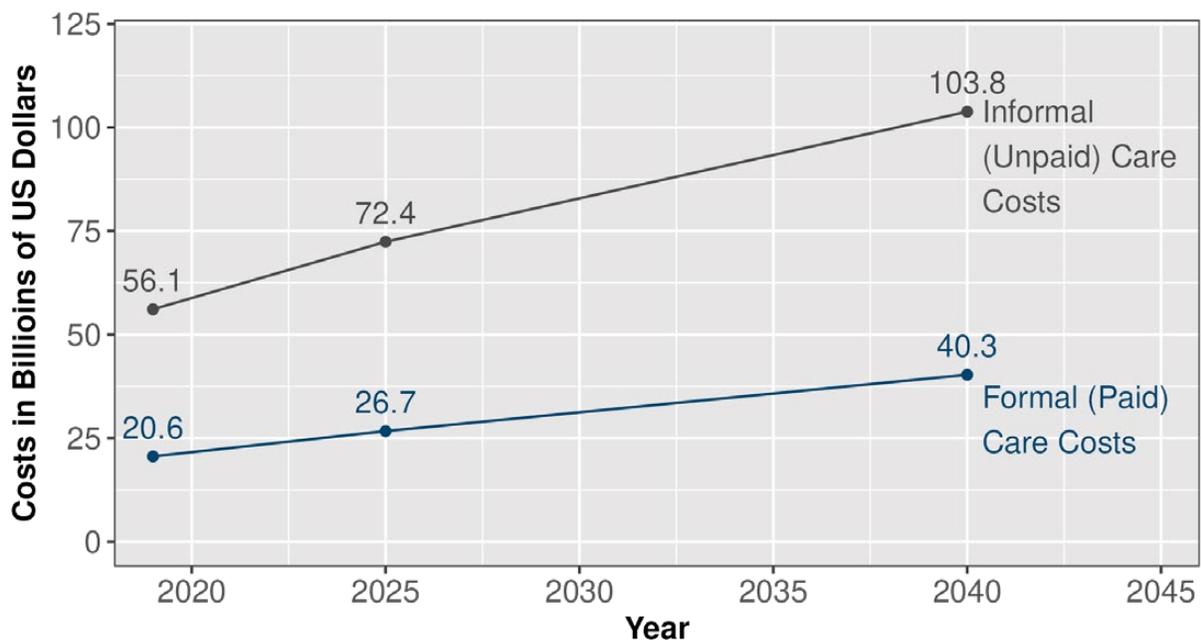


### Caregiver Wellness

- California is home to the largest number of family caregivers in the nation (1.3 million).
- Caregivers in California provided 1.9 million total hours of unpaid care in 2022, translating to billions in unpaid labor. The total cost of unpaid caregiving is expected to double by 2040.
- In 2021, 61.0% of caregivers suffered from chronic health conditions, including depression (18.6%) and poor physical health (13.1%).

Figure 57

Projected Paid and Unpaid Caregiving Costs for Alzheimer's Disease in California



## Risk Factors and Intersections with Other Health Conditions

- Stroke doubles the risk for Alzheimer's disease, and approximately 30% of stroke patients go on to develop cognitive issues within three years.
- A history of depression is associated with an increased risk for Alzheimer's disease later in life.
- A large proportion of people with Down syndrome develop Alzheimer's disease at an earlier age than people without Down syndrome.
- A lower education level, poverty, and lived trauma and discrimination—which are prevalent in marginalized populations—are all factors that are associated with an increased risk for Alzheimer's disease and related dementias.<sup>cxxxix,cxxxii</sup>
- As Alzheimer's disease advances to later stages, it impacts mood, speech, memory, balance, bowel and bladder continence, and the ability to swallow food, thereby increasing the risk of infection and other injuries.
- Alzheimer's disease and related dementias can include psychiatric symptoms, which then bring about additional risks for older adults. A recent diagnosis of mild cognitive impairment or dementia is linked to an increased risk for attempted suicide in later life.<sup>cxxxiii</sup>

## Public Health Prevention and Current Activities

The cause of Alzheimer's disease and its progression is not yet fully understood. Alzheimer's disease and related dementias are underdiagnosed and there is a general lack of public awareness of the disease, leading to underutilization of care, underreporting, and delayed diagnoses or late-stage disease diagnoses, especially in communities of color who have historically been underrepresented in Alzheimer's disease and related dementias data and research.

There are potential genetic, environmental, and behavioral risk factors for Alzheimer's disease and related dementias. There are protective factors that can reduce the risk for developing Alzheimer's disease and related dementias, as well as proactive management approaches that can slow the progression of disease and improve the quality of life of affected individuals and their caregivers.

- Maintaining a healthy diet, reducing alcohol use, and not smoking.
- Being cognitively and physically active.
- Being screened for and/or treated for hearing loss.<sup>cxxxiv</sup>
- Maintaining good sleep hygiene and managing stress.
- Socializing and maintaining connections in the community.
- Providing family caregivers with effective training in managing the day-to-day life of their care recipient.
- Coordination of care among physicians, other health care professionals and lay caregivers.
- Becoming more educated about the disease.

These and other lifestyle interventions can help reduce negative health outcomes, improve quality of life, and may delay or prevent up to 40% of dementias.<sup>cxxxv</sup>

CDPH has several initiatives and programs to address Alzheimer's disease and related dementias and advance healthy aging.

- In 2023, the [CDPH Alzheimer’s Disease Program](#) released a funding opportunity which will advance research to determine and address disease trends, obtain more meaningful data from populations that have been underrepresented in research (including American Indian and Alaska Native and Native Hawaiian and Pacific Islander individuals), and to conduct culturally responsive outreach, prevention, and treatment of diseases.
- In support of the [Governor’s Master Plan for Aging](#), a blueprint for aging across the lifespan, the [California Department of Aging](#) has launched a number of initiatives (e.g., [Cal-COMPASS](#)). CDPH has implemented the [Healthy Aging Initiative](#) intended to promote healthy and resilient communities that support older Californians and those who require additional care and support.<sup>cxxxvi</sup>
- California is also focused on supporting the [caregiver workforce through grants and training programs](#).

## Communicable Disease Highlight Topic

While leading causes of mortality and morbidity among adults are generally chronic in nature, communicable diseases remain a threat:

- Respiratory infections such as COVID-19 and influenza are significant causes of acute illness and mortality.
- Despite declines in mortality, there are ongoing challenges in preventing the incidence of sexually transmitted infections such as chlamydia, gonorrhea, and syphilis, as well as blood borne pathogens such as HIV and hepatitis C virus (HCV).

## COVID-19

[Coronavirus disease \(COVID-19\)](#) is caused by SARS CoV–2 virus infection. Symptoms are typically consistent with a mild to moderate respiratory illness. However, some individuals may become severely ill, resulting in hospitalization, ICU-level care, or death. Older individuals and those with medical co-morbidities are at higher risk for severe outcomes.<sup>cxxxvii</sup>

- Since the start of the pandemic, COVID-19 has caused about 600,000 hospital admissions and over 100,000 deaths in California.
- Severe outcomes associated with COVID-19 have decreased over time with the availability of vaccines and therapeutic interventions (e.g., Paxlovid).
- Nevertheless, COVID-19, along with other respiratory viruses such as influenza and RSV, can cause significant burden on the health care system.

### Disparities

- Severe COVID-19 disproportionately impacts people over 65, Native Hawaiian and Pacific Islander, Black, and Latino populations, and communities experiencing existing health inequities. These groups are more likely to have pre-existing health conditions and lack access to health care and health insurance. Individuals living in crowded conditions and/or areas with high levels of air pollution, working in service jobs in close proximity to others, and those who cannot afford to miss work are at greater risk of infection.
- During the pandemic, hospitalization and death rates were highest among people over 65, Native Hawaiian and Pacific Islanders, Black, and Latino populations. In 2023, based on preliminary data, death rates for COVID-19 have declined for all populations; however, hospitalizations are still most common among people over 65, Native Hawaiian and Pacific Islanders, and Black populations.

Figure 58

COVID-19 Hospitalization and Deaths by Age Group, 2022

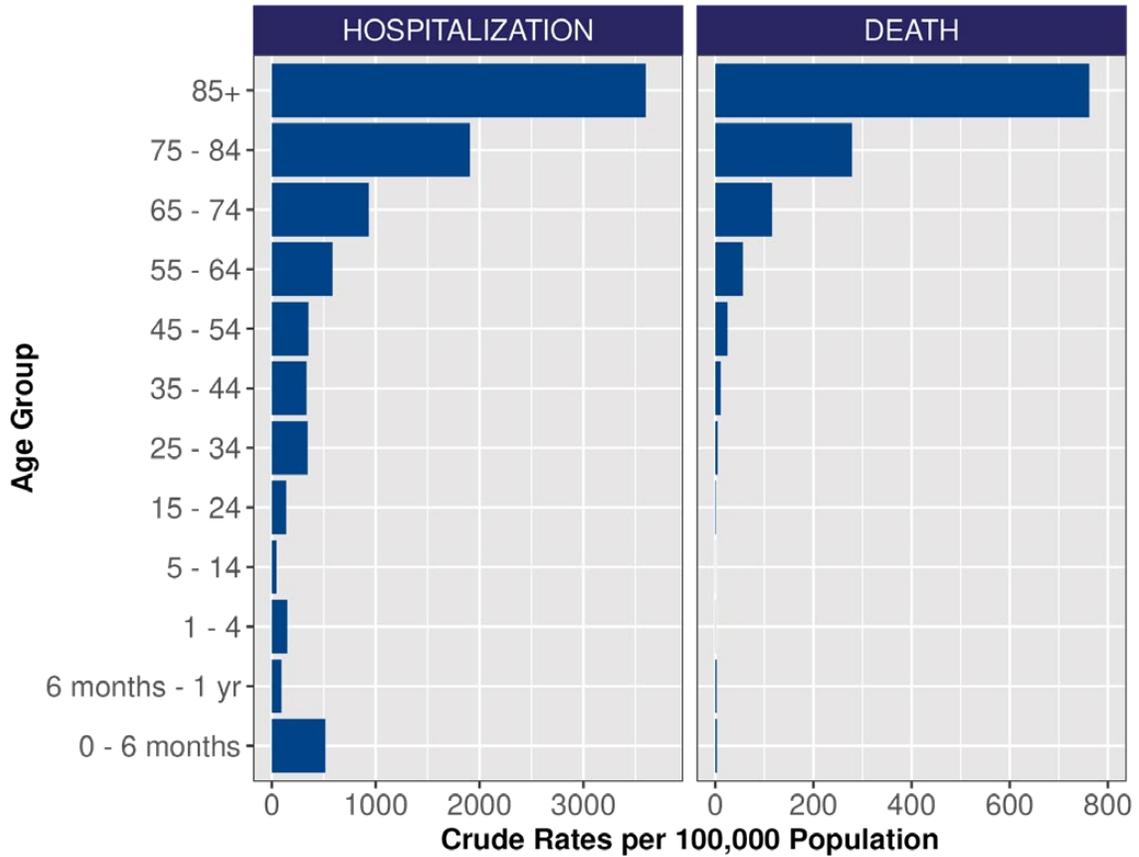
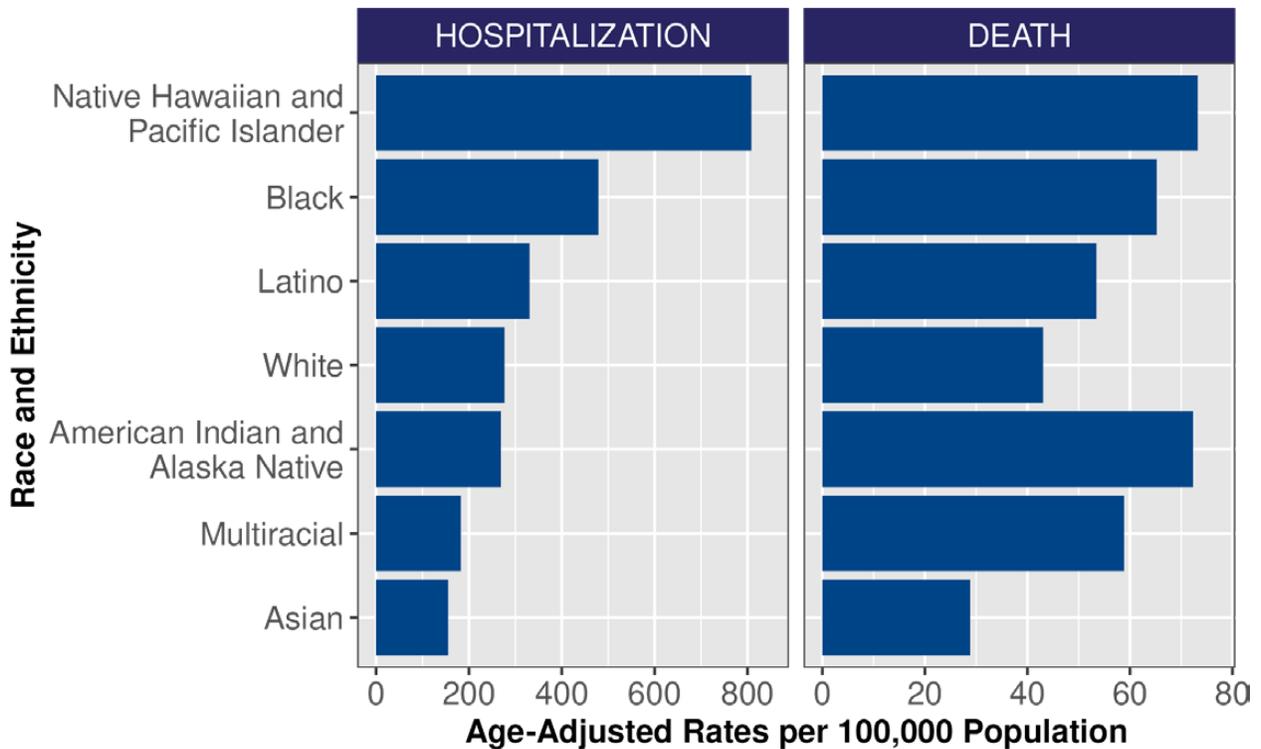


Figure 59

COVID-19 Hospitalization and Deaths by Race and Ethnicity, 2022



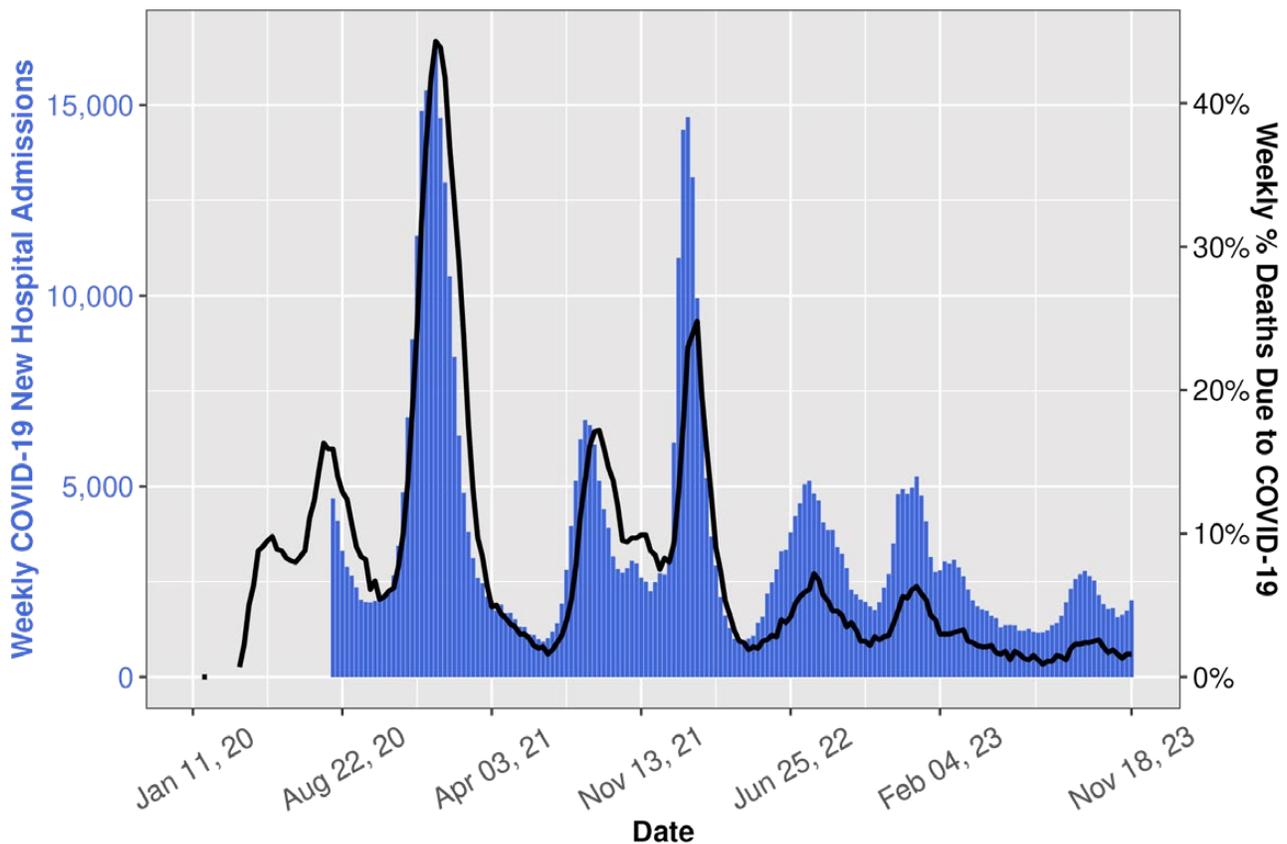
## Intersections with Other Health Conditions

- Individuals with certain medical conditions, such as diabetes, cancer, cardiovascular disease, and chronic lung disease, are at higher risk for developing severe illness with COVID-19.
- People at higher risk of adverse outcomes should be encouraged to stay up to date with COVID-19 vaccination and seek COVID-19 therapeutics early in infection.
- While most people now recover fully after infection with SARS-CoV-2, a proportion of people experience persistent symptoms or develop new conditions after infection. Referred to as post-acute sequelae of COVID (PASC), post-COVID conditions (PCC), and/or long COVID, these conditions are an area of active research. Repeated SARS-CoV-2 infection is associated with worse post-COVID sequelae, mortality, and morbidity.<sup>cxxxviii</sup>

The trend [data](#) below reflect the shift in impact of COVID-19 from widespread cases, hospitalizations, and the leading cause of death, to a less severe endemic status within a two-year period, in response to public health interventions for prevention, testing, and treatment.

Figure 60

COVID-19 New Hospital Admissions and Percentage of Deaths by Week, 2020–2023



## Public Health Prevention and Current Activities

[California's COVID-19 response](#) played a critical role in preventing and mitigating the health, social, and economic impacts of the pandemic, including policy, communication, and planning strategies that prioritize equity and community partnership. California also took action to make sure vaccines and other resources were equitably distributed. Some examples of this include:

- Mobile clinics in local schools and places of worship,
- Partnering with community-based organizations,
- [Using data to focus resources](#) toward the hardest hit communities.

Public health continues to address COVID-19 through testing, vaccination, treatment, and public health guidance. Using lessons from the last three years, California also took specific actions to protect older individuals, including partnering with hospital and long-term care facilities around infectious disease control and medical surge staff.

California is more prepared to respond to future surges and emerging infectious diseases as detailed in its [SMARTER Plan](#).

## Mpox

[Mpox](#) is a viral disease that is caused by infection with the *mpox virus* and can be spread between people. In 2022, an outbreak began in California, where mpox is not usually found. Mpox is primarily spread by close physical contact and touching with someone who may or may not have visible symptoms. Previously mpox was found mainly in west and central African countries. People who are infected with mpox develop a rash this is usually painful.<sup>cxxxix</sup>

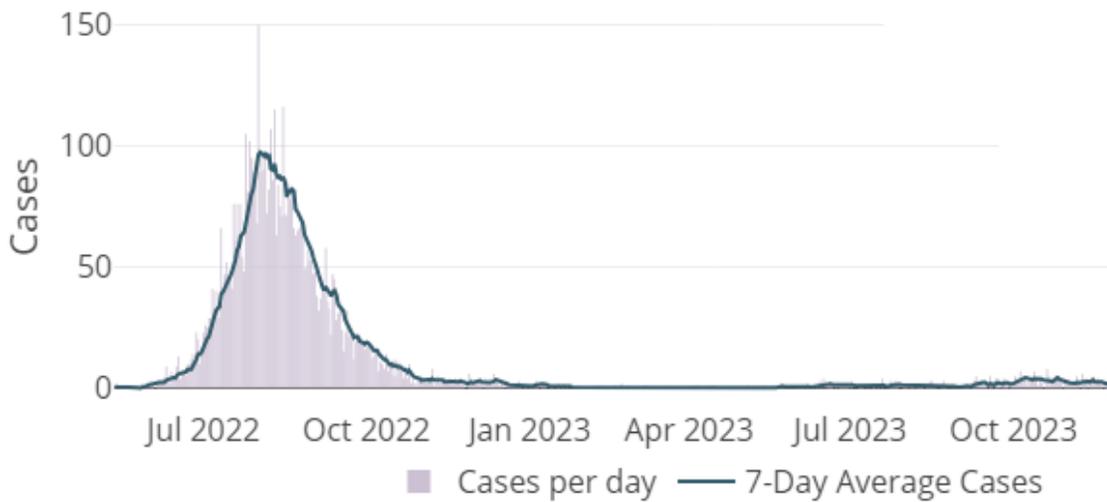
Table 7

*Mpox Cases by Sexual Orientation and Gender Identity, California (as of December 8, 2023)*

Sexual Orientation	Cumulative Cases	Percent Cases
Bisexual	518	8.5%
Gay or Same-Gender Loving	3,708	61.2%
Heterosexual / Straight	475	7.8%
Other	7	0.1%
Unknown	1,355	22.3%
Gender Identity		
Male	5,711	95.6%
Female	149	2.5%
Gender-queer/Non-Binary	16	0.3%
Transgender Female	81	1.4%
Transgender Male	19	0.3%
Unknown	87	1.4%
Total	6,063	100%

Figure 61

Mpox Cases by Episode Date<sup>1,2</sup>



<sup>1</sup> Case metrics include probable and confirmed mpox cases in California.

<sup>2</sup> Episode date is the date the event is estimated to have taken place.

### Disparities

Any person, regardless of gender identity or sexual orientation, can become infected and transmit mpox if exposed.<sup>cxl</sup> In this outbreak, more than 95% of cases in California have occurred in men and nearly 90% among people who identified as gay or same gender loving, or bisexual.

### Public Health Prevention and Current Activities

CDPH and local health jurisdiction surveillance systems were able to quickly collect demographic data among persons infected with mpox, including sexual orientation and gender identity (SOGI) to identify disparities. These data helped to identify populations impacted by the disease and focus resources to prevent morbidity and mortality.

## HIV/AIDS

Despite progress in both prevention and treatment, [HIV](#) remains a significant public health challenge in California with substantial numbers of new HIV diagnoses each year and disparities in access to optimal HIV prevention options and treatment.

In 2021, 4,444 people were newly diagnosed with HIV in California. The rate of new HIV diagnoses per 100,000 population declined by 10.5% from 2017 to 2021. The number of persons in California living with diagnosed HIV infection increased from approximately 135,468 in 2017 to over 141,000 in 2021, an increase of 2.9% in the prevalence rate. Among people living with diagnosed HIV infection in 2021 in California, 73.0% were receiving HIV care and 64.4% had achieved viral suppression. The U.S. Ending the HIV Epidemic goals are to increase linkage to care and viral suppression to 95% by 2025.

## Disparities<sup>cxi</sup>

- Transmission by male-to-male sexual contact (MMSC), including people who report both MMSC and injection drug use (IDU), accounted for 60% of new HIV cases and 73% of all people living with diagnosed HIV in California in 2021. Rates of new diagnoses among this group have declined by 40% since 2010, though the decline was uneven across racial and ethnic groups, increasing disparities.
- The rates of new HIV diagnoses per 100,000 among Latino individuals relating to MMSC were 1.3 times higher than White individuals in 2010 and increased to 2.4 times higher than White individuals in 2020. Furthermore, Latino individuals accounted for 52% of all new HIV diagnoses in 2021, and Latino cis-men reporting heterosexual sex or injection drug use transmission categories had lower viral suppression than other racial groups.
- Black individuals are disproportionately affected by HIV, accounting for 17% of new diagnoses in 2020 and showing lower rates of viral suppression than any other race/ethnicity. Black women accounted for 26% of all women newly diagnosed with HIV and 29% of newly diagnosed transgender women, and were diagnosed at a rate 5.4 times higher than White women.
- National HIV prevalence among transgender people is estimated at 9.2%, with transgender women among the groups most affected by HIV.<sup>cxlii</sup> In California, 97% of transgender people diagnosed with HIV in 2020 were trans women and 3% were trans men.
- New HIV infections will only end when communities who are disproportionately affected by HIV have access to effective HIV prevention and treatment that address unmet social needs. HIV medications should start as soon as possible after diagnosis for all patients, including those who use illicit substances. Continuation of medication for opioid use disorder, syringe services, and other harm reduction programs improve retention in care.

## Public Health Prevention and Current Activities

CDPH partners across sectors and organizations to provide innovative leadership in HIV prevention, control, and management, using strategic approaches that focus on: addressing the syndemic of HIV, HCV, and STIs; HIV pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP); outreach and health education; medication-assisted substance use treatment, syringe services, and harm reduction; rapid testing in mobile vans and routine testing in health care settings; peer navigation and linkage-to-care; case investigation and contact tracing; stigma-reducing U=U (Undetectable = Untransmittable) campaign efforts; data evaluation and epidemiology; and cutting-edge treatment.<sup>cxlili</sup>

The work is also driven by addressing capacity building in promoting racial and social justice in prevention, testing, treatment and care services, and forging strategic partnerships to ensure more diverse public outreach and engagement processes, and to advance equitable delivery of resources and services to affected communities.

Informed by a social determinants of health lens, existing public health interventions and services include but are not limited to:

- Offering more routine, opt-out HIV testing and linkage to care in emergency departments, hospitals, primary care clinics, and jails.
- Expanding access to HIV prevention and care services, especially through non-traditional care settings, such as telemedicine, mobile health care, and at-home testing programs.

- Improving outreach and provider training to make it easier for people to access PEP and initiate and adhere to PrEP.
- Promoting comprehensive, medically accurate sexuality education and condom access in schools.
- Continuing to educate providers and patients about U=U (Undetectable = Untransmittable), which reduces stigma and fear for people living with HIV.
- Increasing the number, size, and scope of syringe services programs and other harm reduction services, both in urban and rural areas throughout California.
- Advancing infrastructure changes to ensure multidisciplinary teams address HIV screening and treatment programs statewide, including housing, substance use, mental health, and medical care providers.
- Providing direct assistance with the Housing Opportunities for Persons With AIDS (HOPWA) program and collaborating with additional housing partners to expand low barrier housing options available in both urban and rural areas, including those that offer harm reduction approaches to substance use. Utilizing the evidence-based “Housing First” model that centers on providing or connecting people experiencing homelessness to permanent housing as quickly as possible.
- Promoting trauma-informed, culturally, and linguistically relevant services.
- Promoting continuity of substance use disorder and medical care upon release from institutions, and expanding low-threshold substance use disorder treatment options including contingency management programs and street medicine programs.

## CONNECTING THE DOTS

Many health issues are interconnected. The same risk factors (things that increase the likelihood of negative health outcomes) and protective factors (things that protect people and decrease the likelihood of negative health outcomes) influence many health conditions and outcomes.

An interconnected issue such as housing provides an example. Housing is a social determinant of health and essential for healthy growth and development. A lack of affordable housing has resulted in most California renters spending more than 30% of their income on housing.<sup>cxliv</sup> Unaffordable housing costs can limit individuals and families in their ability to afford necessities (e.g., food, health care, childcare, etc.), under-invest in long-term assets (e.g., education and retirement), and to accept unhealthy, substandard housing conditions.<sup>cxlv</sup> Research shows that individuals deprived of basic needs have a higher risk of multiple health conditions such as COVID-19, asthma, and heart disease, as well as mental health challenges like depression and anxiety.<sup>cxlvi,cxlvii</sup> Increased access to safe, affordable, and sustainable housing is associated with improved health and well-being.

Public health approaches aim to positively influence multiple interconnected health issues by addressing their common drivers and promoting shared protective factors. This section will explore three major themes within the State of Public Health report: 1) behavioral health and connectedness, 2) preparedness and resilience, and 3) public health infrastructure; followed by a discussion of public health opportunities and actions that employ a shared risk and protective factor approach to improving population health.

## Behavioral Health and Connectedness

One of the most dominant themes in this report is the growing impact of behavioral health conditions (i.e., mental health and substance use challenges) on Californians. A holistic understanding and approach to health considers behavioral factors in a more comprehensive approach to prevention, treatment, and recovery. Public health's primary engagement with behavioral health is in prevention; in other words, to address the conditions and factors that give rise to behavioral health conditions and prevent them from occurring in the first place. The interconnectedness of behavioral health and overall well-being underscores the importance of robust and comprehensive public health strategies and action in this domain.

## A Crisis Driven by Isolation and Trauma

In 2023, [the U.S. Surgeon General issued a general advisory](#) warning about a public health crisis of loneliness, isolation, and lack of social connection. Even before the COVID-19 pandemic, approximately 1 in 2 adults in the U.S. reported experiencing loneliness. Loneliness is associated with a greater risk of cardiovascular disease, dementia, stroke, substance use disorders, depression, anxiety, suicide, and premature death. Mental health challenges are not isolated incidents, but often derive from—and contribute to—feelings of disconnect, isolation, and alienation.

## Protective Power of Connectedness

Social connection, healthy relationships, and community are associated with improved health and well-being. People with strong perceptions of community belonging are more likely to report good or excellent health than those with low sense of belonging, and social connection can mitigate the negative health effects of stress.<sup>cxlvi,cxlvii</sup> Social connection with others is also associated with reduced risk of violent and suicidal behaviors.<sup>cl</sup> CDPH programs emphasize fostering social, cultural, and community connectedness as a key prevention strategy.

## Unequal Impacts

Intensified exposures to chronic stress and trauma can be concentrated geographically, with compounding health disparities occurring in racially, ethnically, and economically segregated places and regions.

Economic inequalities increased during the pandemic, even as temporary federal and state programs to support economic security buffered the pandemic's effects for many people. Ongoing challenges in many communities to afford healthy housing, quality childcare, food, transportation, and basic needs increase chronic stress and contribute to behavioral health issues.

Structural inequities perpetuate poverty and other factors that increase risk of behavioral health challenges and establish barriers to accessing care and healing. Racism is itself a social determinant of health associated with negative mental health impacts, and trauma from experiences of racial and cultural discrimination can be passed down from previous generations within a family or community, further exacerbating health and mental health inequities.

## Drawing on Community Strengths to Build Resilience

California communities are sources of strength and community members are most equipped to identify the assets and resources that contribute to health improvement and community resilience. Connected individuals are more resilient, can draw upon communal resources, and are less likely to experience the detrimental effects of behavioral health challenges. Public health works with communities to build resiliency while also removing barriers through the implementation of strategies that increase community leadership, participation, and decision-making power.

## Primary Prevention – Address Root Causes

Recognizing the implications of behavioral health on public well-being, CDPH has integrated a prevention-oriented approach. By addressing the root causes and the determinants of behavioral health, CDPH programs endeavor to create environments conducive to mental well-being.

Existing CDPH programs strive to create safe environments at all life stages:

- Promotion of bonding, home visiting, and referrals to safety net programs in preconception, pregnancy, and maternal care.
- During early childhood, CDPH promotes positive childhood experiences and prevention of the root causes of ACEs.
- Integrating mental health services in schools, including social emotional learning and resilience curriculum, and promoting positive relationship building between children, supportive adults, and institutions, including school climate improvements.
- Preventing substance initiation and misuse and community and intimate partner violence among transitional age youth.
- Addressing historical, institutional, economic, and systemic root causes of discrimination and disparities through equity and racial justice policies and practices across state and local systems and organizations.

### Program Highlight: California Reducing Disparities Project

The [California Reducing Disparities Project \(CRDP\)](#) aims to reduce mental health disparities experienced by Black, Asian and Pacific Islander, Latino, LGBTQ, and Native American Californians. This initiative identifies and scales community-driven mental health practices, known as CDEPs (Community Driven Evidence-based Practices), that cater to the state's diverse population, emphasizing cultural responsiveness and inclusivity. Resilience is enhanced when individuals can engage in community activities that reflect their culture and belief systems. CRDP projects recognize that culture is an important social determinant of health and connection to culture and community fosters improved health and well-being.

Public health works to advance public policy and infrastructure that fosters connection equitably, promoted and led by public health, in collaboration with many partners, in an all of government approach.

## California Action on Behavioral Health

Addressing the intertwined cycle of isolation and behavioral health requires a collective effort. CDPH, backed by the unwavering commitment of state leaders and community partners, is charting a course toward a future where behavioral health is a core component of public health strategy and community vitality; through informed investments, evidence-based programs, and a prevention-oriented approach.

- Through the [Governor's Master Plan for Kids' Mental Health](#) and the [Children and Youth Behavioral Health Initiative](#) (CYBHI), California has invested \$4.7 billion to overhaul the State's behavioral health system. Under CYBHI, public health is leading:
  - A data-driven, targeted, community-based [Youth Suicide Prevention Media and Outreach Campaign](#) for youth at increased risk of suicide.
  - A [public education and change campaign](#) co-designed with youth to reduce stigma around behavioral health and to increase help-seeking behavior and wellness support.
  - The [Youth Suicide Reporting and Crisis Response Pilot Program](#) is developing and testing models to make youth suicide and attempted suicide reportable events that initiate rapid and comprehensive responses (i.e., crisis response) in schools and community settings.
- More than 50 different Programs at CDPH are working to improve behavioral health outcomes for all Californians.
- Additional investments in behavioral health prevention include:
  - [Renewed investment](#) in the groundbreaking [California Reducing Disparities Project](#) (CRDP).
  - Creation of the [Office of Suicide Prevention](#) and increased efforts to address the root causes of suicide and self-harm injuries.
  - Funding to create the [Substance and Addiction Prevention Branch](#) at CDPH and increased outreach, education, and harm reduction efforts.
  - Future of Public Health investment in expanded staffing and program capacity to address behavioral health.
- The [2023 Behavioral Health Services Act](#) (SB 326 and AB 531), which proposed modifications to the Mental Health Services Act, would make further changes to the state's behavioral health system and continues investments in public health population level prevention efforts, with a focus on children and youth. Additionally, a proposed \$6.38 billion general obligation bond would build new behavioral health housing and treatment settings across the state. Californians will vote on this package, collectively known as Proposition 1, on the March 2024 ballot.

## Public Health Preparedness and Resilience in the Face of Climate Change

Promoting health and well-being, preventing negative health outcomes, and preparing for and responding to emergencies are essential functions of governmental public health. In recent times, the demands of public health needs have expanded and required planning and response systems to continuously evolve. Public health is well known for promoting healthy living and preventing health harms (e.g., through safer and improved living conditions, physical activity, healthy eating, tobacco and substance use prevention, and more) as well as responding to infectious disease emergencies (e.g., HIV/AIDS, smallpox, measles, H1N1, and COVID-19) and many others. There is also an important role for public health in preventing the worst impacts of climate change, and preparing for and responding to the increasing, and too often, devastating health impacts associated with climate change and extreme weather events, particularly for communities and populations facing inequities.

### Health Impacts of Extreme Weather Events

Almost half of adults experienced a hazardous weather-related event between 2020 and 2021, with 17% and 22% of those reporting the event had harmed their physical or mental health, respectively.<sup>cli</sup>

California experienced record-setting wildfire seasons in 2020 and 2021, with nearly every Californian breathing severe wildfire smoke at some point in 2020, and 88% of the population exposed in 2021. Exposure to wildfire smoke can exacerbate asthma and chronic obstructive pulmonary disease (COPD), respiratory infections, some cardiovascular effects, and can contribute to low birthweight and infant death. Researchers estimate that wildfire smoke during August and September of 2020 may have contributed to as many as 3,000 excess deaths among older Californians.<sup>clii</sup>

CDPH found that there were an estimated 395 excess deaths during the record-breaking heat wave of September 2022, or 5% more deaths than would be expected during this period, with the highest increases in mortality seen in the 25–64 age group, Latino individuals, and the South Coast region.<sup>cliii</sup>

Climate change also affects mental health.<sup>cliv,clv</sup> The mental health consequences from extreme weather events include stress and insomnia, depression, anxiety, post-traumatic stress, and high-risk coping behaviors such as increased substance use.<sup>clvi</sup> Higher temperatures increase emergency room visits for mental health outcomes, homicide, and suicide in California, with females, Latino individuals, and children 6–18 years old at highest risk.<sup>clvii</sup>

As often occurs with other public health emergencies and disasters, climate change disproportionately harms those already facing inequities, including people with existing health conditions, people inadequately housed, outdoor workers, many communities of color, immigrants, the very young or older adults, pregnant people, people with disabilities, low-income Californians, and those who are socially isolated.<sup>clviii</sup>

## Strategic Investments in Public Health Response Capability and Climate Resilience

As the frequency and scale of hazards driven by climate change in California increase so do the number of annual public health emergency activations.

Over the past six years, CDPH's [Center for Preparedness and Response's](#) (CPR) Medical and Health Coordination Center (MHCC) has been activated at a scale never experienced before – for nearly 2,000 days for over 30 different, often overlapping emergencies e.g., from the COVID-19 pandemic to extreme heat and precipitation and flooding). While previously activated for a few days or weeks at a time depending on the emergency, the MHCC was recently activated continuously for multiple, simultaneous hazards spanning August 2019 through June 2023.

The good news is that taking climate action can lessen the risks and impacts associated with climate change while improving living conditions and promoting public health and equity.

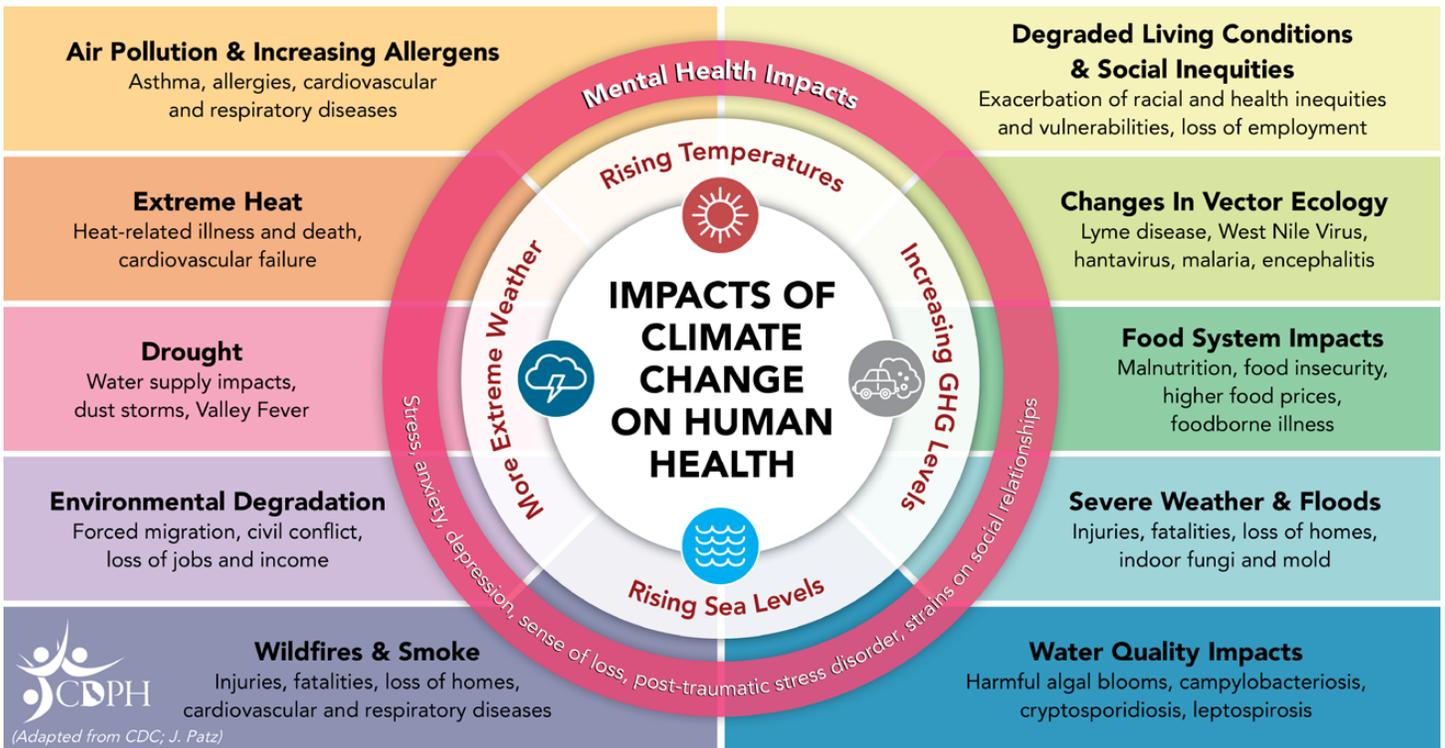
Public health prepares and protects communities from the risks of climate change and other hazards through activities such as coordinating and informing cross-sector planning and response and conducting education and outreach to the public, especially among groups at greater risk of climate impacts. Recent investments in public health infrastructure and capacity recognize public health's vital role in these life-saving efforts.

In addition to investments in public health emergency preparedness and response, California is taking action to reduce the root cause of climate change: greenhouse gas emissions from burning fossil fuels. California aims to achieve carbon neutrality no later than 2045 and increase resilience to climate-related threats, particularly for communities facing inequities; with some of the nation's strongest regulatory legislation to curb greenhouse gas emissions and significant investments to address climate change. Governor Newsom and the Legislature have prioritized addressing the climate crisis and its effects on health in the state budget, including investments to drastically reduce our reliance on fossil fuels, protect Californians from extreme heat, and build community resilience to other climate impacts.<sup>clix</sup> Many of California's climate change solutions for lowering carbon emissions—such as making it safer and easier to walk, cycle, or take public transit, or expanding community forests and greening, or home weatherization services that protect from extreme heat and wildfire smoke while reducing energy use—simultaneously reduce health inequities, foster community resilience, and address upstream determinants of health outcomes (e.g., housing, transportation, land use, economic development, and more).

CDPH's [Climate Change and Health Equity Branch](#) is a key partner in supporting these efforts and works to maximize the health equity benefits of climate action. Examples of new initiatives include establishing a statewide climate and health syndromic surveillance program; and helping create the nation's first extreme heat advance warning and ranking system. This public health program has worked in collaboration with state agencies across sectors for over a decade to embed health and racial equity priorities into statewide climate plans, programs, policies, and grant investments. Another critical area of focus is increasing the capacity of public health departments and Tribes to work on climate health equity (i.e., providing technical assistance, and facilitating a Local Health Jurisdictions Community of Practice and a cross-CDPH Climate Change Working Group).

Figure 62

Impact of Climate Change on Health and Exacerbation of Existing Inequities



Source: CDPH Climate Change and Health Equity Branch; adapted from the CDC and Jonathan Patz.

## The Future of Public Health

The Measures of Health and Life Stages sections of this report outline major trends, rankings, and disparities for select health conditions. There are also highlights of major successes, as well as significant public health challenges facing California. This section will provide a summary of recent actions to strengthen critical public health infrastructure and opportunities for the future.

The landmark Future of Public Health investment initiated by California's Governor and Legislature in 2021 has set the trajectory to strengthen state and local public health infrastructure, transition to a resilient and equitable public health system, and better prepare for the next public health emergency. It is also a key step in reversing previous decades of disinvestment in public health. This investment fills in several critical gaps seen during the COVID-19 emergency and provides an opportunity to rebuild with innovation and prepare for future emergencies and emerging public health challenges. The Future of Public Health initiative is transforming the public health system into one that is more agile, adaptive, and responsive to the emerging population and community health needs identified throughout this report.

[The Future of Public Health initiative](#) is focused on strengthening six Foundational Governmental Public Health Services: Workforce; Emergency Preparedness and Response; IT, Data Science, and Informatics; Communications and Public Education; Community Partnerships; and Community Health Improvement. State and local public health departments are hiring staff, expanding community engagement efforts, and developing new systems and structures to achieve the objectives of the Future of Public Health initiative.

## Building a Resilient Statewide Public Health System

In recognition of the gaps in response capability made evident during COVID-19 and the increasingly severe and simultaneous climate change-driven disasters,<sup>clx</sup> California and CDPH have made significant investments in the past three years to strengthen public health emergency preparedness and response capacity. Through the Future of Public Health initiative, the CDPH Center for Preparedness and Response has nearly doubled the number of staff and is developing a 24/7 Intelligence Hub to build a strong and proactive surveillance network, using real-time information that leverages data systems across CDPH and other entities to identify potential threats and inform responses.

### Program Highlight: Office of Policy and Planning

The CDPH [Office of Policy and Planning](#) (OPP) was established to facilitate integrated policy and planning across CDPH. OPP is responsible for advancing the [State Health Assessment](#) and [State Health Improvement Plan](#) in addition to the development of a shared public health policy agenda. OPP also supports grant management, lean transformation, and trauma responsive leadership to strengthen organizational capacity across CDPH.

### Program Highlight: Regional Public Health Office

The CDPH [Regional Public Health Office](#) (RPHO) emerged from the COVID-19 response in collaboration with local health departments and leaders. RPHO promotes active communication between state and local partners, regional coordination, fosters public outreach and engagement, delivers epidemiology and data expertise, and supports streamlined workforce development funding to locals.



## Expand and build a strong, well-supported public health workforce

These resources have enabled one of the most significant expansions of California's public health workforce in decades, creating over 1,600 permanent positions across the state.

Progress is underway with a focus on filling critical state and local public health positions with diverse, representative, and highly qualified staff. More than 70% of state level and 60% of local level Future of Public Health-funded positions were filled as of December 2023. Efforts also prioritize strategies to improve employee engagement and retention, including comprehensive trainings and supports in Trauma Responsive leadership and organizational practices.

## Advance equity and anti-racism

The COVID-19 pandemic highlighted and exacerbated inequitable social and economic conditions and their corresponding health impacts, including stark and growing racial and ethnic disparities in life expectancy. Civil unrest over anti-Black racism and racial injustice combined with sobering data showing disparate rates of illness and death due to COVID-19, have fostered urgency to prioritize health equity for all and actions to undo impacts of racism on social, economic and health policies. Structural racism is a public health crisis that requires urgent, sustained, and comprehensive action.<sup>clxi</sup>

Public health departments at the state and local level are taking action on internal opportunities to advance equity within our organizations and workforce. This provides a foundation to center health and racial equity and trauma-informed and healing supports into policy and planning. New initiatives also strengthen community partnership and engagement in public health planning and action through resource allocation and community advisory boards, data system modernization, and data sharing strategies within and across the public health system to inform prevention and intervention efforts.

Public health equity initiatives are supported by state-level initiatives, such as the [Strategic Growth Council \(SGC\) Capitol Collaborative on Race & Equity](#) (CCORE) racial equity capacity-building program for California State employees.<sup>clxii</sup> Public health also responds to [Governor Gavin Newsom's Executive Order on Equity](#) calling on state agencies to take critical actions on equity and discrimination, embedding anti-racism and equity analysis and considerations into their mission, policies, and practices, and establishing the state's first Racial Equity Commission. In 2021, CalHHS launched the [Justice, Equity, Diversity, and Inclusion \(JEDI\) workgroup](#), co-led by the California Department of Social Services (CDSS) and CDPH, to create shared learning opportunities to eliminate systemic racism, remove barriers to access, and drive social and health equity across CalHHS. The workgroup meets quarterly and includes equity officers and subject matter experts from all CalHHS departments.

The Future of Public Health initiative is accelerating progress at many levels in building a strong public health system to foster community conditions in which all Californians are safe and healthy.

## CONCLUSION

The State of Public Health Report uses multiple health measures and data sources to highlight the major trends and disparities in health outcomes across California. There have been major improvements in health and well-being over the past 20 years, and California continues to strive to boldly address issues through a myriad of initiatives. There is also a great opportunity to reduce health inequities and address the structural and social determinants of health. The effects of structural racism are evident across the life stages, disparities in health conditions, and life expectancy, as they continue to drive unequal access to the resources and opportunities necessary for good health and well-being.

This report describes public health's unique role in population health improvement, as well as the leading causes of mortality, premature death, and morbidity across the various life stages of Californians; as well as the shared risk and protective factors contributing to these health outcomes.

The life course perspective emphasized in this report illustrates the opportunity to address the unique disparities of health conditions within specific groups through prevention strategies that promote safe conditions for all Californians as they live, work, and grow. These public health priority approaches include:

- Intervention at the earliest stages of life,
- Prevention, especially primary prevention in behavioral health,
- Upstream strategies to improve social determinants that create healthy conditions for all, with a priority focus on advancing health equity, and
- Strengthening public health readiness and resiliency in the face of emerging threats and challenges such as climate change.

Public health plays a critical role as California continues the path to recovery following the COVID-19 pandemic, ensuring that California's individuals, families, and communities have the resources and supports needed to be resilient and thrive.

We hope the data, analysis, and public health strategies and actions outlined in this report serve as a guide to the current state of public health, past achievements, and where to focus our future efforts for the greatest impact as we continue to pursue a California for All.

# APPENDIX

## California Health and Safety Code 101320.3

DIVISION 101. ADMINISTRATION OF PUBLIC HEALTH [100100 - 101997]

PART 3. LOCAL HEALTH DEPARTMENTS [101000 - 101490]

CHAPTER 3. State Aid for Local Health Administration [101175 - 101320.5]

ARTICLE 7. Support for Vital Public Health Activities [101320 - 101320.5]

**101320.3.** (a) On or before February 1 of every other year, beginning in calendar year 2024, the State Public Health Officer shall submit a written report to the Governor and the Legislature on the state of public health in California. The State Public Health Officer shall present an update annually to the Assembly Committee on Budget and Senate Committee on Budget and Fiscal Review, or relevant subcommittees, during legislative budget hearings.

(b) The written report shall include all of the following:

(1) Information on key public health indicators that California is experiencing, as determined to be relevant by the State Public Health Officer.

(2) Information on health disparities identified as part of the indicators and trends, if any.

(3) The leading causes of morbidity and mortality in California and evidence of increasing or decreasing rates of morbidity and mortality over the prior three to five years, inclusive.

(4) Data on the incidence and prevalence of communicable and noncommunicable chronic diseases and conditions.

(5) Data on the incidence and prevalence of intentional and unintentional injuries, including data specific to suicides and gun violence.

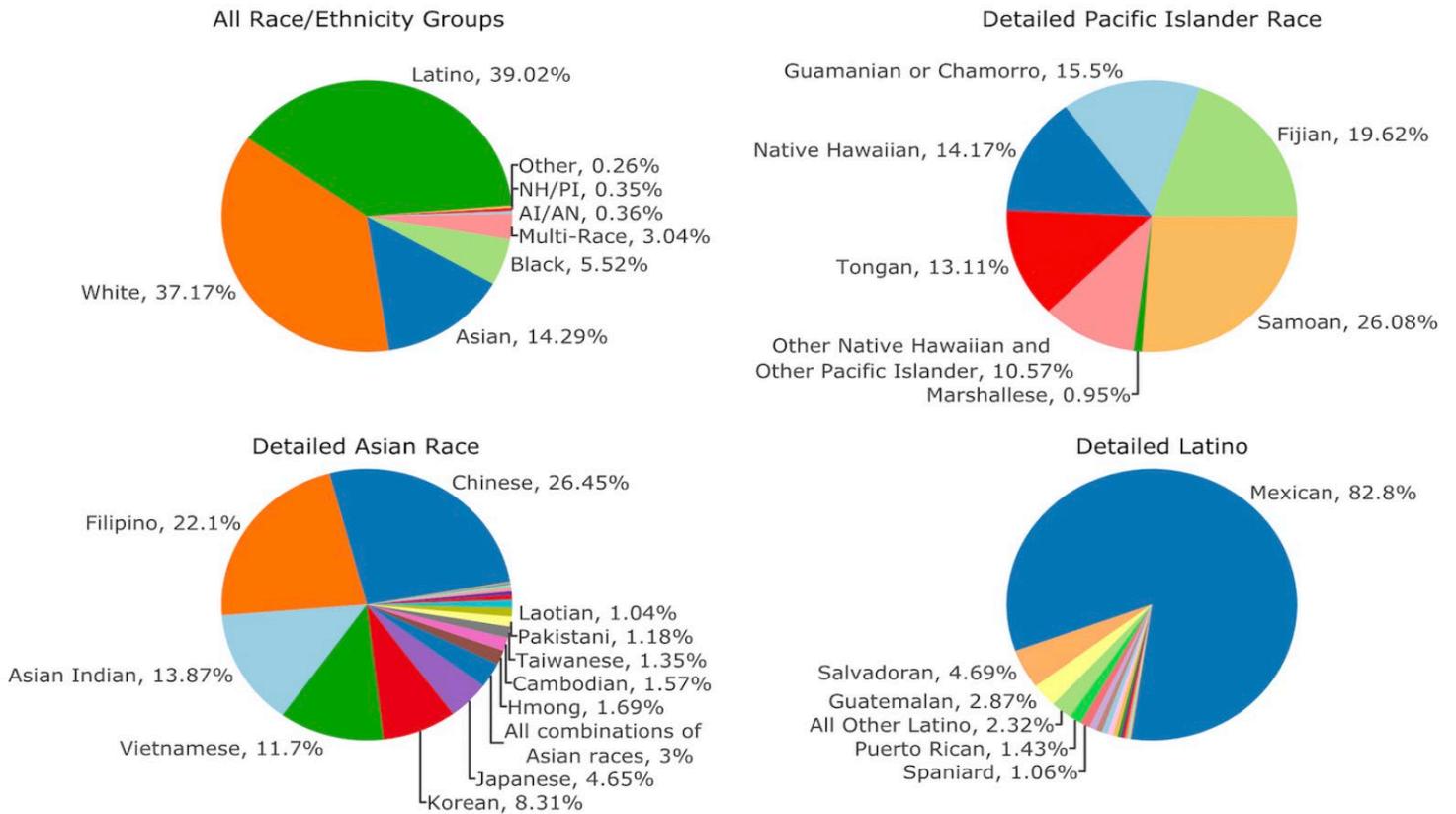
(6) Data on the prevalence of morbidity and mortality related to mental illness and substance abuse.

(c) The department shall annually seek input from stakeholders, including legislative staff, on which public health issues to address in a written report.

(Added by Stats. 2022, Ch. 47, Sec. 12. (SB 184) Effective June 30, 2022.)

## Additional Charts and Tables

**Figure 1. Population Distribution by Broad and Detailed Race and Ethnicity Groups**

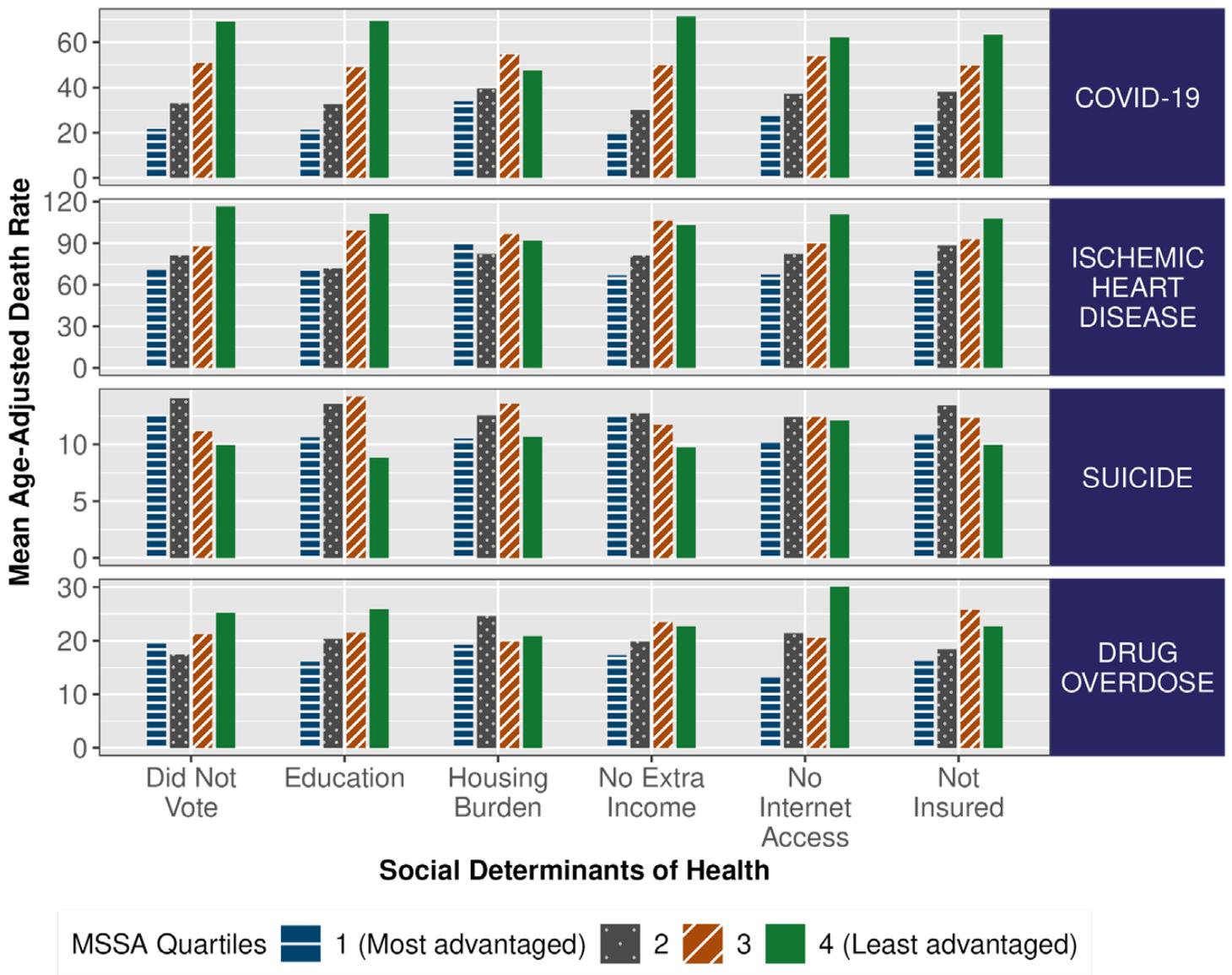


**Figure 2. Cause-Specific Mortality and Social Determinants of Health**

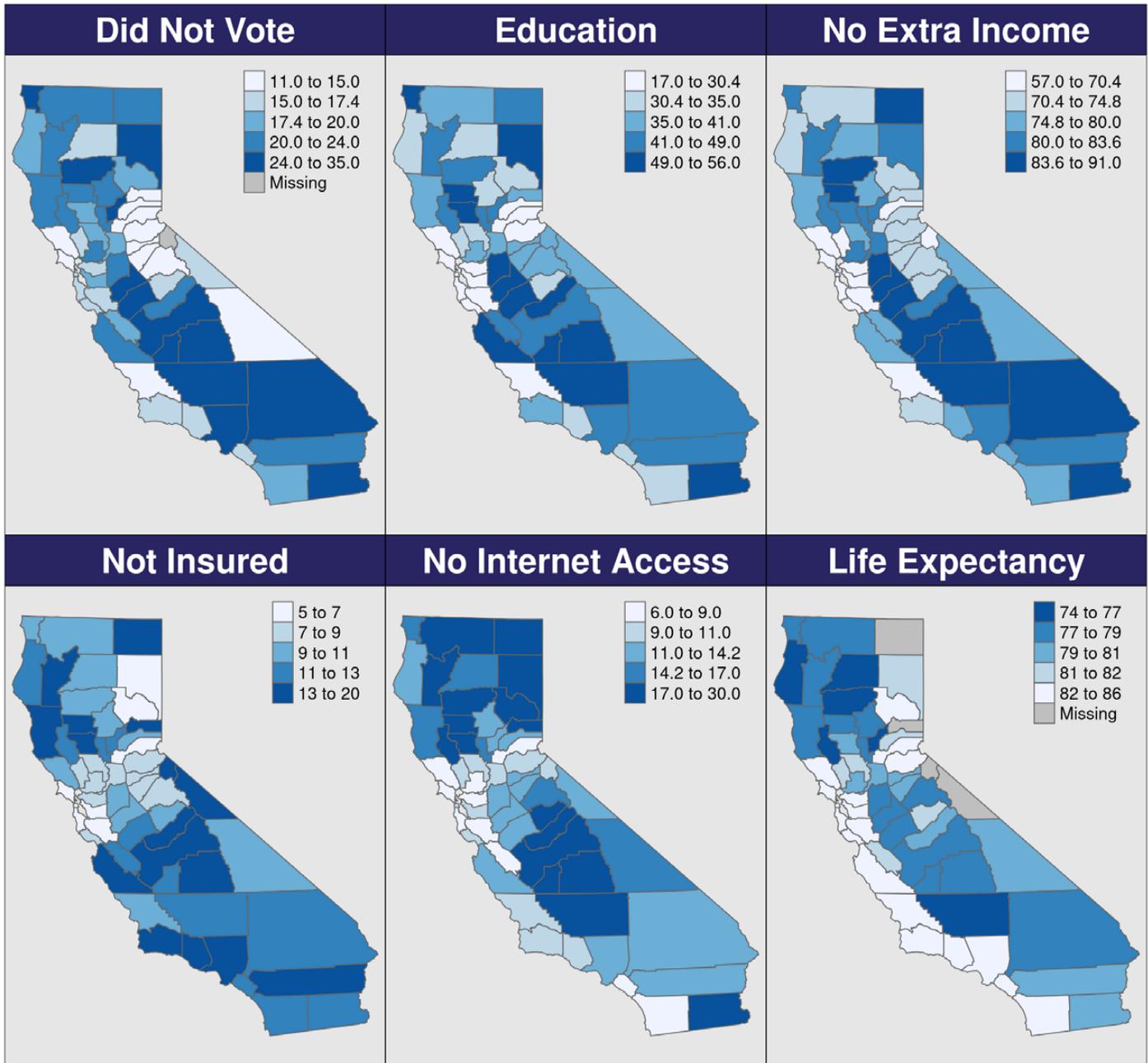
The figure and maps below explore the relationships between social determinants of health and specific causes of death at the community (MSSA) or county level and shows strong associations between social determinants of health and causes of morbidity and mortality. And, while almost all social determinants are correlated with one-another, by examining the patterns below, important highlights and hypotheses can be noted, regarding where a focus on which of these upstream factors may be most impactful for which conditions or condition groups. Some associations are stronger than others. For example, a strong relationship is seen in COVID-19 with all social determinants of health, where the least advantaged communities experienced higher COVID-19 deaths. In contrast, suicide shows very different patterns, with varying, and “non-linear” associations.



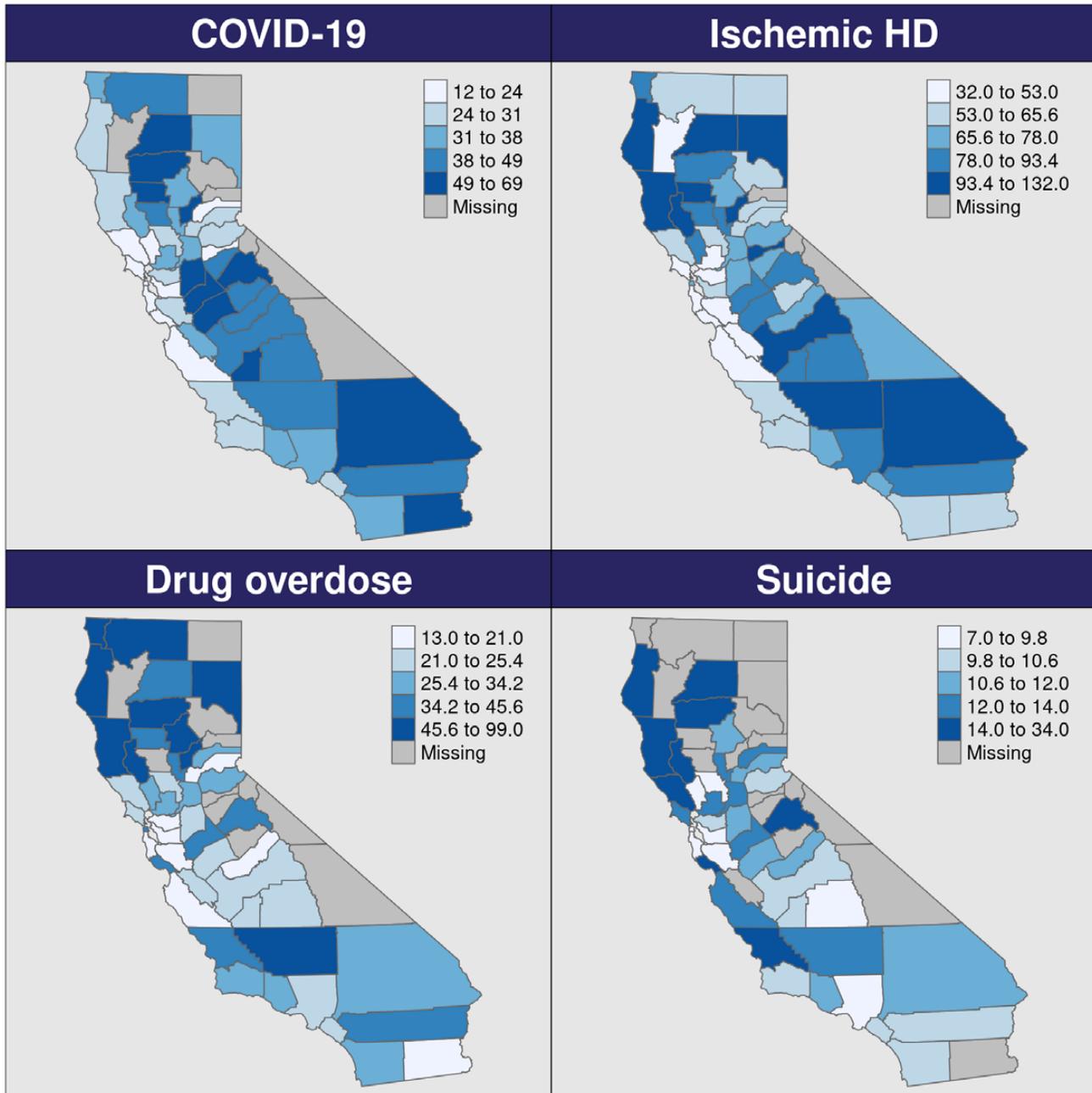
Mean Age-Adjusted Cause-Specific Death Rate (per 100,000) by Quartiles of SDOHs



**Figure 3.** Selected Social Determinants of Health by County



**Figure 4.** Selected Causes of Death by County



**Table 1. Communities\* with Highest and Lowest Life Expectancy, 2018-2022**

County	MSSA	Life Expectancy	Age-Adjusted Death Rate	Number of Deaths	Did Not Vote	Education Level**	No Extra Income	Not Insured	No Internet Access	Population
<b>MSSAs with lowest Life Expectancies</b>										
Lake	Clearlake	70.0	1386.0	1,596	30.5%	54.3%	85.5%	12.5%	26.0%	19,553
Kern	Alta Sierra	70.5	1167.5	1,650	20.3%	49.9%	81.4%	10.1%	25.4%	15,427
San Bernardino	Barstow	70.5	1205.3	3,390	28.2%	48.8%	86.0%	10.1%	20.9%	53,038
San Bernardino	Muscoy	72.0	1128.3	5,365	42.5%	64.3%	94.7%	18.6%	15.9%	128,786
Los Angeles	Lancaster Central	72.0	1132.7	5,053	36.1%	55.3%	93.0%	9.0%	21.0%	107,898
<b>MSSAs with highest Life Expectancies</b>										
Los Angeles	Century City	86.7	421.0	4,175	21.6%	11.0%	65.5%	4.5%	4.5%	135,142
Santa Clara	Los Altos	86.9	406.7	4,518	11.5%	5.9%	47.4%	2.8%	2.8%	137,232
Santa Clara	Cupertino	87.0	397.5	3,309	12.6%	8.3%	48.5%	2.4%	2.4%	113,944
Orange	Laguna Beach	87.2	410.1	4,327	11.5%	20.5%	61.3%	7.8%	7.8%	83,032
Los Angeles	Bel Air	87.4	386.1	3,533	16.4%	9.0%	40.8%	2.9%	2.9%	98,189

\* This table shows the communities (MSSAs) with the five highest and five lowest levels of life expectancy in the State, and shows deaths, the social determinant indicators, and overall population size for these communities. The life expectancy of 70.0 in the “Clearlake/Clearlake Oaks” community in Lake County, with high levels disadvantages based on the social determinants, is over 16 years less than the life expectancy of 87.4 in the very advantaged community of “Bel Air /Beverly Glen /Beverly Hills” in Los Angeles County.

\*\* Education level indicates percent community population over 25 years of age with a High School diploma or less education.

**Table 2. Deaths and Disability Adjusted Life Years\* (DALYs) Directly Attributable to Environmental Effects, 2019**

Type of Environmental Effects	Cause	Deaths	DALYs
All Environmental Effects	All causes	30,202	751,565
Air pollution	All causes	7,737	176,823
Air pollution	Cardiovascular diseases	3,376	71,389
Air pollution	Chronic respiratory diseases	2,535	46,844
Air pollution	Diabetes and kidney diseases	554	32,071
Air pollution	Enteric infections	0	7
Air pollution	Maternal and neonatal disorders	51	4,512
Air pollution	Neoplasms	907	17,403
Air pollution	Other infectious diseases	0	11
Air pollution	Other non-communicable diseases	1	48
Air pollution	Respiratory infections and tuberculosis	314	4,519
Non-optimal temperature	All causes	13,157	197,469
Non-optimal temperature	Cardiovascular diseases	7,056	103,520
Non-optimal temperature	Chronic respiratory diseases	2,914	43,080
Non-optimal temperature	Diabetes and kidney diseases	1,777	31,020
Non-optimal temperature	Respiratory infections and tuberculosis	1,410	19,849
Occupational risks	All causes	5,858	316,793
Occupational risks	Chronic respiratory diseases	1,470	52,815
Occupational risks	Neoplasms	3,499	56,334
Occupational risks	Transport injuries	646	42,517
Occupational risks	Unintentional injuries	243	37,907
Other environmental risks	All causes	3,259	54,953
Other environmental risks	Cardiovascular diseases	2,368	34,972
Other environmental risks	Diabetes and kidney diseases	253	4,147
Other environmental risks	Neoplasms	639	12,269
Unsafe water, sanitation, and handwashing	All causes	191	5,527
Unsafe water, sanitation, and handwashing	Enteric infections	107	4,332
Unsafe water, sanitation, and handwashing	Respiratory infections and tuberculosis	84	1,195

\* Disability adjusted life years account for the cumulative number of years lost due to premature death and years lived with disability.

## Technical Notes

### Data Sources

Most of the charts and tables in this report are based on death data:

- The death data used are from the California Integrated Vital Records (CallVRS) system, based on death certificates/reports transmitted to the California Department of Public Health, Center for Health Statistics and Informatics (CHSI). Details of the exact data sets used, aggregation of International Classification of Disease 10th Revision (ICD-10) codes into causes of death, calculation methods, demographic and geographic detail, data de-identification, and a wide range of other particulars are available in the [Technical Documentation section of the California Community Burden of Disease Engine \(CCB-Tech\)](#).
- All sections in this report use the single underlying cause of death ICD-10 code.
- All measures using vital statistics death data represent the accuracy of the coding of cause of death on the death certificate.

Note on population denominator data sources for calculation of rates:

- For State-level mortality and incidence rates in the Report, denominators are based on California Department of Finance Table P-3 “Complete P-3 Race/Ethnicity and Sex by Age for California and Counties” files. Trend data for 2000 to 2009 are based on the 2000-2010 “Annual Intercensal Population Estimates” released on March 19, 2013. Most rates for 2010 to 2022 are based on the Vintage 2020 P-3 file released on July 14, 2021. In selected cases, rates for 2020 to 2022 are based on the Vintage 2023 P-3 file released on July 19, 2023. The P-3 versions used were selected based on: 1) the timing of the file release and timing of different programs analyses, and 2) considerations regarding differences with the age-sex-race/ethnicity distributions between the two versions.
- Caution should be used when comparing rates or assessing trends among population subgroups, as rate fluctuations – especially among smaller subgroups – may reflect changes in denominator estimates.
- Data for most sub-county (Medical Service Study Area) rates in the Report are based on the American Community Survey 5-year extracts (tables B01001\_001E, B01001\_002E, and B01001\_026E) using the most recent 5-year period available corresponding to 2010 census tracts, 2015–2019.

## Reporting Time Frames

- This report generally includes data through the most recent year for which complete data are available. For some charts, data for just 2022 are shown and for others, mainly the trend charts, data for 2000 through 2022 are shown.
- In some cases, for statistical stability and/or data deidentification purposes, years are aggregated into 3- or 5-year groups.
- Vital statistics death information cited in this report is primarily based on preliminary 2022 data. A small portion of delayed or amended registrations are routinely omitted in preliminary vital records while still being captured in the state's vital records master file which was not available at the time of compiling condition-specific mortality measures.

## Measure Definitions and Key Terms

Primary measures used with death data include **number** of deaths, **crude death rate**, **age-adjusted death rate**, and **life expectancy**.

- *Number of deaths (or hospitalizations, etc.)* describes the absolute magnitude of deaths, and is a clear and easily understood measure. All other things being equal, the number of deaths will be larger in areas with larger populations. This measure does not take into account the age distribution or size of the population.
- *Crude Death Rate* takes the size of the population into account by dividing the number of deaths by the number of people in the population (multiplied by 100,000 for interpretability, i.e., number of deaths per 100,000 people).
- *Age-adjusted Death Rate* takes into account or controls for the age distribution of the population where the rate is being assessed. It is the rate that would have existed if the population had the same age distribution as a reference population. This allows for comparisons between populations with differences in age distributions, accounting for the fact that age itself is generally correlated with higher mortality.
- *Life Expectancy* (specifically, "Life Expectancy at Birth") is a familiar and widely used measure that summarizes in one number the 'force of mortality' in a population, and provides a valuable single measure to compare the overall health status between populations. Its calculation is complex, but is generally interpreted as the number of years people born in a particular year are likely to live.

Other commonly used epidemiological measures in this report include incidence and prevalence.

- *Incidence* refers to the number of new cases of a specific health condition or event that develop in a defined population during a specified time period. It is often expressed as a rate, such as the number of new cases per unit of population at risk per unit of time (e.g., in a single year).
- *Prevalence* refers to the total number of new and existing cases of a specific health condition in a defined population at a particular point in time, and is a static measure of proportions of the population having the condition of interest, regardless of how long ago the condition occurred. Of note is while prevalence can be estimated from cross-sectional population-based surveys, limitations of this approach need to be recognized including potential selection biases (e.g., noncoverage of those not in the sampling frame) and misclassification of disease or condition due to self-reported data not being independently verified.

In addition to these measures, several other measures are used, specifically in ranking charts. Explanations of these measures are:

- *Years of life lost* (sometimes referred to as “premature mortality” and sometimes as “years of premature life”) can be calculated using two different methods. The first method is simpler, and is based on summing for all deaths, the number of years prior to age 75 that each death occurs, with 0 years of life lost used for deaths occurring at ages  $\geq 75$ . This method has the advantage of (1) emphasizing more strongly deaths that occur at younger ages and (2) being simpler to explain and understand. The second method is that of Global Burden of Disease Study and the Institute for Health Metrics. With this method the years of life lost for each death is based on the age at death and the additional number of years a person of that age living in an optimal setting could be expected to live. For example, someone dying at birth would be associated with 91.94 years of life lost, someone dying at 25 associated with 67.08 years, and someone dying at 98 with 3.70 years. These additional number of years at each age are based on data from nations with longest lived populations, as presented in a table from the WHO GBD Study. In the report the first method is used in all instances except where data are used directly from IHME; IHME uses the second method.
- *Percent Increase* measures the change in the death rate between two different years, and shows which conditions are increasing (or decreasing) most rapidly. This is measured by showing the percentage increase in the age-adjusted death rate. Age-adjusted death rates are used to account for the impact of the changing age distribution of the California population on the measure. Because this measure focuses on the degree of increase it may sometimes highlight a condition or group for which the absolute number of deaths is relatively small, but the percent increase is great.
- *Disparity Ratio* measures the difference in the death rate between racial and ethnic groups for the same condition using combined data from a three-year period. The measure compares the age-adjusted death rate in the group with the highest rate to the group with the lowest rate. A large ratio between the two rates indicates a large disparity.
- *Years Lived with Disability* is based on calculations and modeling done by the Institute for Health Metrics and Evaluation. These models utilize assumptions and multiple data sources to produce reliable California-specific estimates of years lived with disability (expressed here as rate per 100,000 population, most recent year available).
- *Social Determinants Measure Definitions:*
  - Extra Income: Percent of households in community not receiving dividends, interest, or rental income in the past 12 months\*
  - Voting: Percent of registered voters in community who did not vote in the most recent general election (California Secretary of State, Elections Division, Reports of Registration, University of California Berkeley School of Law, Center for Research)
  - Education: Percent of the community population over 25 years of age with a High School diploma or less education\*
  - Insured: Percent of adults ages 19 to 64 years in the community not currently insured\*
  - Internet: Percent of households in the community with no internet access\*

\* Based on US Census American Community Survey

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