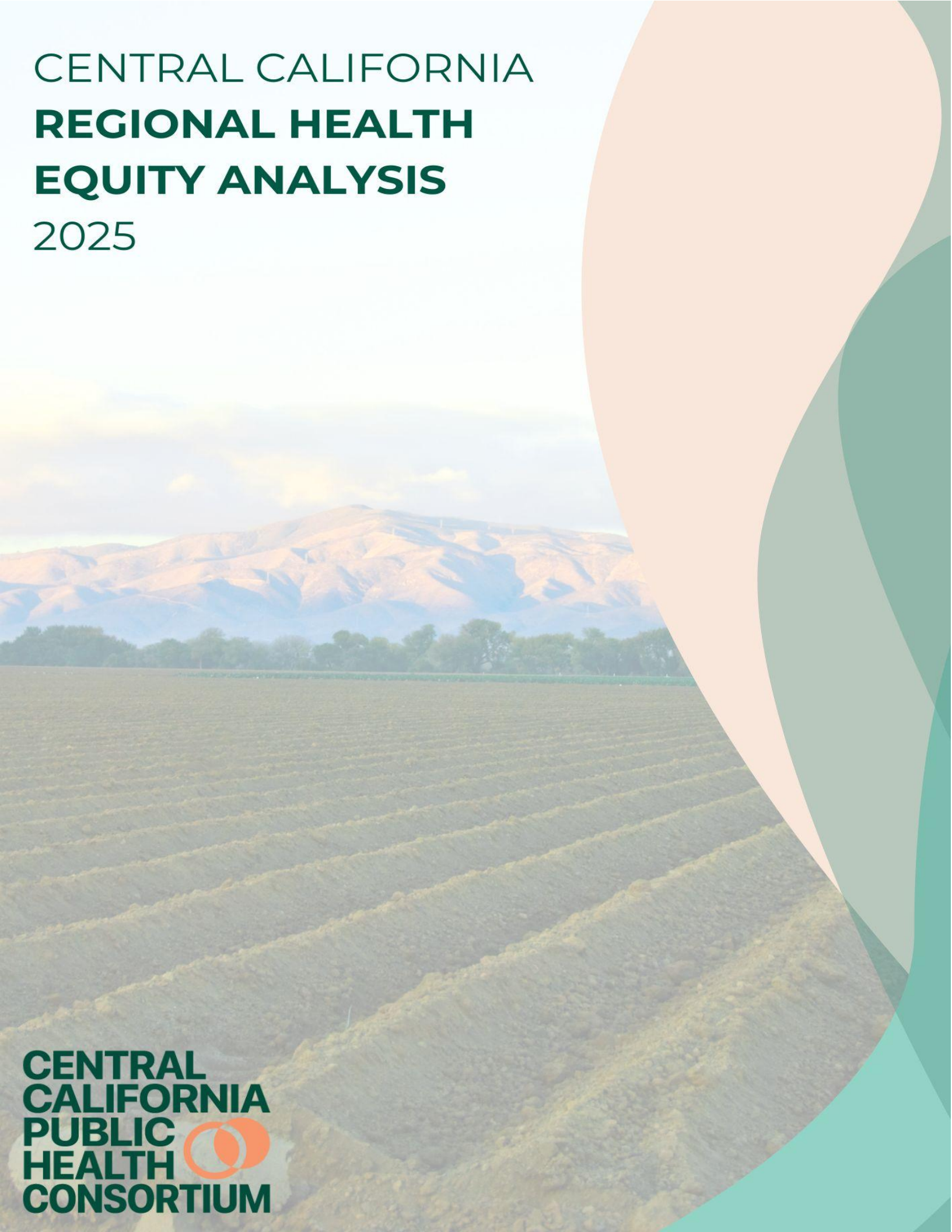
CENTRAL CALIFORNIA

REGIONAL HEALTH EQUITY ANALYSIS

2025



CENTRAL CALIFORNIA PUBLIC HEALTH CONSORTIUM

Acknowledgments

The Central California Public Health Consortium acknowledges all indigenous peoples who first inhabited the land now referred to as the San Joaquin Valley, including the Chumash, Kawaiisu, Kitanemuk, Miwok, Monache, Ohlone, Paiute-Shoshone, Salinan, Serrano, Tataviam, Tübatulabal, and Yokut tribes. We honor these tribes and thank them for allowing us to live and work in their homelands.

Advisory Board

The Central California Public Health Consortium would like to thank and acknowledge the advisory board for their feedback and thoughtful comments on the Regional Health Equity Analysis (RHEA):

- Allegra Chacon, Fresno County Department of Public Health
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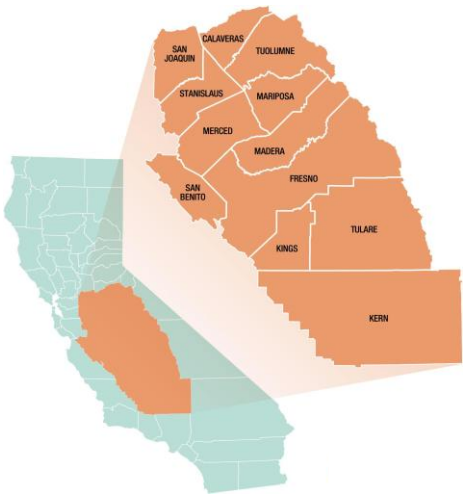
- Dr. Stephanie Koch-Kumar, Fresno County Department of Public Health
- Dr. Tania Pacheco-Werner, Central Valley Health Policy Institute

Central California Public Health Consortium

The Central California Public Health Consortium (CCPHC) represents a collaborative regional effort to address the public health needs of Central California. CCPHC is composed of Public Health and Human Services Agency leaders, including Directors, Deputy and Assistant Directors, and Health Officers, from the counties of Calaveras, Fresno, Kern, Kings, Madera, Mariposa, Merced, San Benito, San Joaquin, Stanislaus, Tulare, and Tuolumne. The Consortium is housed under the Central California Center for Health and Human Services at California State University, Fresno, and fiscally sponsored by the California State University, Fresno Foundation.



Leadership Reflections

Alyssa Kennett, CCPHC Director

In 2022, CCPHC released the region's first comprehensive health equity analysis. This report highlighted what Central California communities already know—it's challenging to achieve health, and disrupting the systems, policies, and institutions that contribute to poor health and social outcomes can feel impossible. While the report provided valuable data, it did not fully connect health outcomes with the various factors that influenced them. This 2025 version expands on the data by linking it to the social and economic context in which it exists.

I grew up in Fresno, CA, and this work is personal for me. Families, neighborhoods, and communities across the region often feel silenced, dismissed, or insignificant. They were essential during the Covid-19 pandemic, but in 2025, they're seen as disposable. They play a critical role in the nation's agricultural production yet struggle to put food on the table for their children and grandparents. They provide in-home care, transportation, and education while facing uncertainty about the future of hospitals, clinics, and social services.

I firmly believe that when we know better, we can do better. I hope this report challenges you to take action. Maybe some of the data will surprise you, sadden you, or encourage you. Good. What will you do to change what's not working? What will you do to support what is working? Maybe you are among my colleagues for whom much of the information will not be surprising. This is a tougher place to be because everything can feel like a priority, and everything can feel insurmountable. There is never enough capacity, money, political will, or time to make the changes you want.

For my public health friends, community advocates, healthcare partners, and co-laborers: we don't need big open doors for change (although those are welcome!). We just need cracks in doors. First a toe, then a foot, then a leg, then a conversation revealing shared values that becomes shared goals, mission, and vision. All of us want to live in a place where our families and friends are healthy and thriving. A healthy community is good for us all.

My hope for this report is that it makes us uncomfortable, maybe even angry, but I hope that we do not settle into anger, or let it turn into despair and apathy. Instead, I hope we harness those feelings, and that we each choose to commit to pushing open those cracked doors and to capitalizing on momentum when and where it exists.

In partnership for a thriving Central California,

Alyssa Kennett

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Executive Summary

CCPHC's 2025 Regional Health Equity Analysis (RHEA) provides a comprehensive analysis of health outcomes and their underlying drivers across Central California. The report and accompanying interactive data dashboard have been strategically developed to align with the World Health Organization's (WHO) Conceptual Framework on Social Determinants of Health (SDOH) to support collaboration, strategic planning, and equitable investment across counties in the region. The indicators were grouped based on the WHO Conceptual Framework to illustrate how systemic forces directly shape health outcomes and how poor health reinforces disadvantage, creating cyclical patterns of inequity across generations and communities. The goal of this report is to evaluate how Central California counties compare to the rest of California in terms of health outcomes and their social, economic, and environmental determinants. By equipping leaders with actionable, county-level data, the report is designed to foster data-informed regional strategies that advance health equity and improve the health of their communities

The included indicators were selected from publicly available datasets from 2020 to 2025 based on their relevance to health outcomes or determinants and their availability at the county levels across California. Indicators are organized by three broad domains: Demographics, Health Outcomes, and Determinants of Health. Indicators were analyzed to determine whether Central California counties fared "worse," "better," or "similar" to other counties in California. Comparative performance was based on percentage differences and categorized using standardized thresholds.

Key findings reveal widespread disparity, with Central California faring worse on the majority of health outcomes and determinants of health indicators compared to other California counties. Central California fares worse on 68% of the indicators spanning multiple domains. The data suggest a disproportionate and negative impact from structural determinants of health, particularly in education, income, occupation, housing, and the environment. Central California also faces persistent health system challenges, including barriers to healthcare access, quality, and utilization, as reflected by the region faring worse on a large share of system-related indicators. Additionally, the region fares worse on all indicators of social cohesion and a majority of psychosocial factors, highlighting the critical role of social isolation and chronic stress in shaping health outcomes.

The data in the report suggests the need for urgent and collective action across the region. Structural inequities, inequitable resource allocation, and meaningful community engagement need to be addressed. Focusing on the root causes of health equity is critical to building resilient communities, and through strategic actions among local public health departments and their partners, Central California can reverse these patterns and build a healthier future for all of its communities.

About This Report

Purpose

The purpose of this report and the accompanying interactive data dashboard is to evaluate health outcomes and drivers of health in Central California. With this tool, we aim to increase collaboration across Central California counties, guide local and regional planning, inform investments, and educate partners and communities.

Methods

The data sources used in this report are all publicly available. Data was selected based on its ability to represent health outcomes and determinants of health in Central California. Inclusion criteria were that the most recent year of data available is between 2020-2025, that the data can be displayed at the county level, and that the data is available for all counties in California. A full list of indicators and data sources can be found in the Appendix under the Technical Documentation. Indicators are grouped into three broad categories: Demographics, Health Outcomes, and Determinants of Health. Health outcomes are the end products of various factors that shape an individual's or population's overall health. These include indicators such as life expectancy, disease prevalence, and hospitalizations. Determinants of health factors that contribute to and may collectively cause health outcomes and include social factors (i.e., income), economic factors (i.e., education level), environmental factors (i.e., access to healthcare services), and biological factors (i.e., genetics).

Throughout this report, indicator analyses compare Central California to other counties in California. Indicators were aggregated to these geographies using different methods and are detailed in the Technical Document. The percent difference between geographies was calculated by finding the difference between them, dividing that difference by the average of the two values, and then multiplying by 100. Central California is then determined “worse off”, “better off”, or “similar” to other California counties using the criteria below in Table 1.

Table 1. *Fare Legend*

Worse Off	Similar	Better Off
Greater than 1% difference in the undesired direction	Less than 1% difference	Greater than 1% difference in the desired direction

AI disclosure: *Portions of this report, including text drafting and editing support, were developed with the assistance of artificial intelligence tools, including OpenAI’s ChatGPT. All content has been reviewed and approved by the report authors.*

Framework Overview

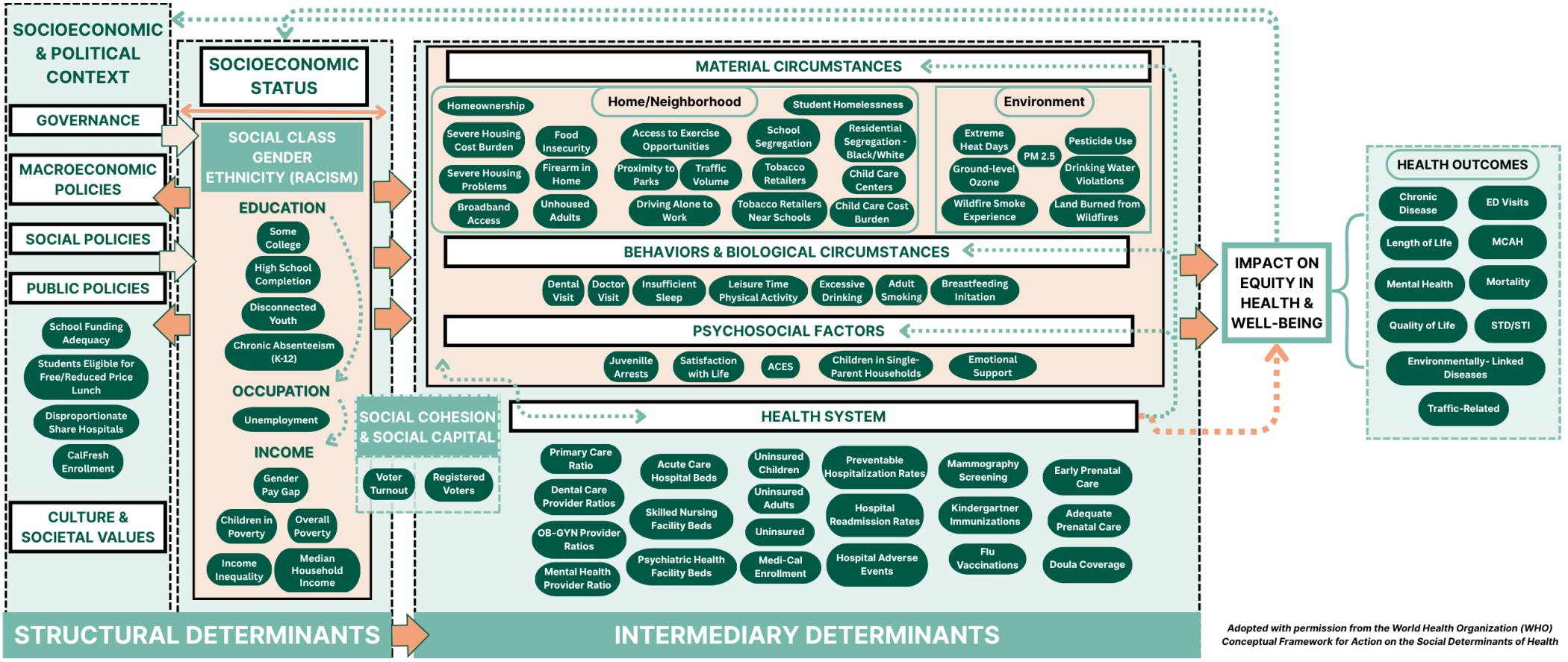
This report uses the World Health Organization's (WHO) Conceptual Framework for Action on the Social Determinants of Health to tell the story of health inequities in Central California. The framework offers a robust, globally recognized model for understanding how social determinants of health impact health outcomes. Figure 1 organizes the data indicators used in this report using the framework.

Importantly, the framework distinguishes between structural determinants (such as policies, governance, and socioeconomic position) and intermediary determinants (such as material conditions, psychosocial stressors, behaviors, and access to health systems). This helps explain how power, resources, and opportunities are distributed in society and shape patterns of health outcomes across different communities. The framework also acknowledges that health inequities do not flow in only one direction. Poor health can "feed back" to affect an individual's social position—for example, by undermining educational attainment or limiting employment opportunities, ultimately reducing income and social mobility. On a larger scale, widespread health challenges—such as epidemics—can also "feed back" to disrupt the functioning of broader social, economic, and political systems.

By grounding this analysis in the WHO framework, this report highlights both the root causes and cyclical consequences of health inequities in Central California, with the goal of informing effective regional strategies.

The framework is highlighted below in Figure 1 and is also available to be viewed as a separate file.

Figure 1. RHEA Data Indicators Organized Based on the WHO's Conceptual Framework



Adopted with permission from the World Health Organization (WHO) Conceptual Framework for Action on the Social Determinants of Health

Limitations

While this report draws from the most comprehensive publicly available data sources, several important limitations must be acknowledged:

- Limited Geographic Resolution
    - We believe that evaluating data through a regional lens can be extremely beneficial. However, evaluating data at a regional or county level can mask significant disparities within those geographies. Evaluating localized patterns at the neighborhood, zip code, or census tract level is not possible with most of the datasets used in this report.
- Missing or Incomplete Data
    - Not all counties consistently report data across all indicators. In some cases, data may be missing due to small population sizes, privacy concerns, or gaps in data collection and reporting systems. This can sometimes result in an incomplete picture, particularly for rural or under-resourced counties.
- Lack of Disaggregated Data
    - Many public datasets used in this report do not disaggregate information by key equity dimensions such as race, ethnicity, income, language, or immigration status. This limits the ability to examine disparities among subpopulations that may experience the most pronounced inequities.
- Time Lags and Data Currency
    - Public data is often released with significant time delays. As a result, findings may not fully reflect current conditions, especially in rapidly changing contexts or during public health emergencies.
- Limited Contextual Data
    - Quantitative data alone often lacks the contextual richness needed to understand lived experiences or structural dynamics. Without qualitative input from community members, some social and cultural drivers of health may go unrecognized.
- Potential Underreporting or Bias
    - Data quality can vary by source. Certain health outcomes (e.g., mental health conditions and substance use) may be underreported due to stigma, lack of access to care, or limitations in data systems.

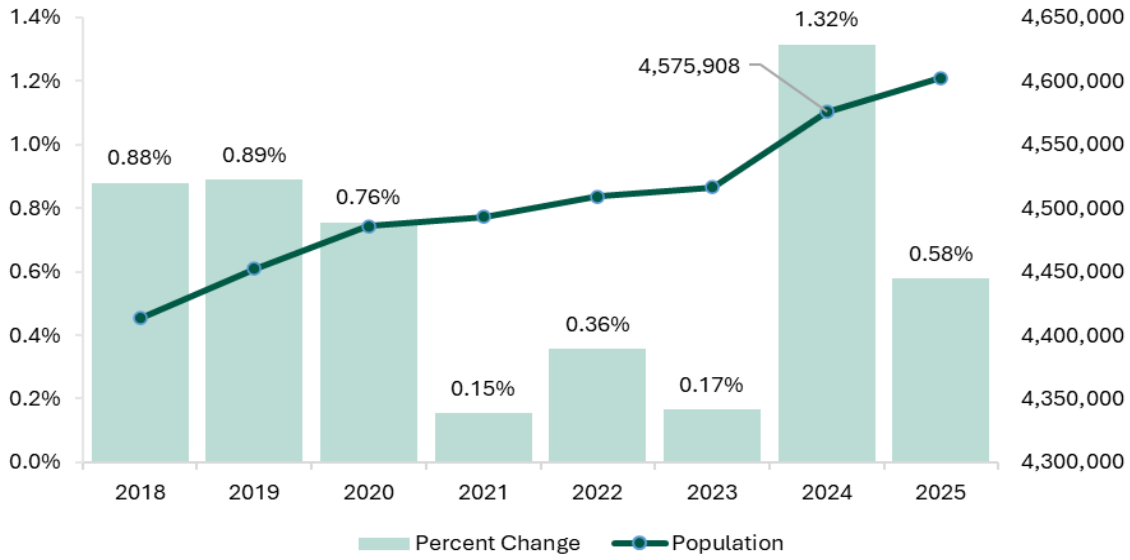
Background and Regional Context

Demographics

Population

The Central California (CC) region currently has a population of 4,575,908. The population of CC has grown by 2.8% since 2019 and by 1.3% since 2023. Figure 2 below shows the population trends from 2018 to 2025, with the bar graph representing the percentage difference in population and the line graph depicting the population.

Figure 2. *Central California's Population Trends from 2018-2025*



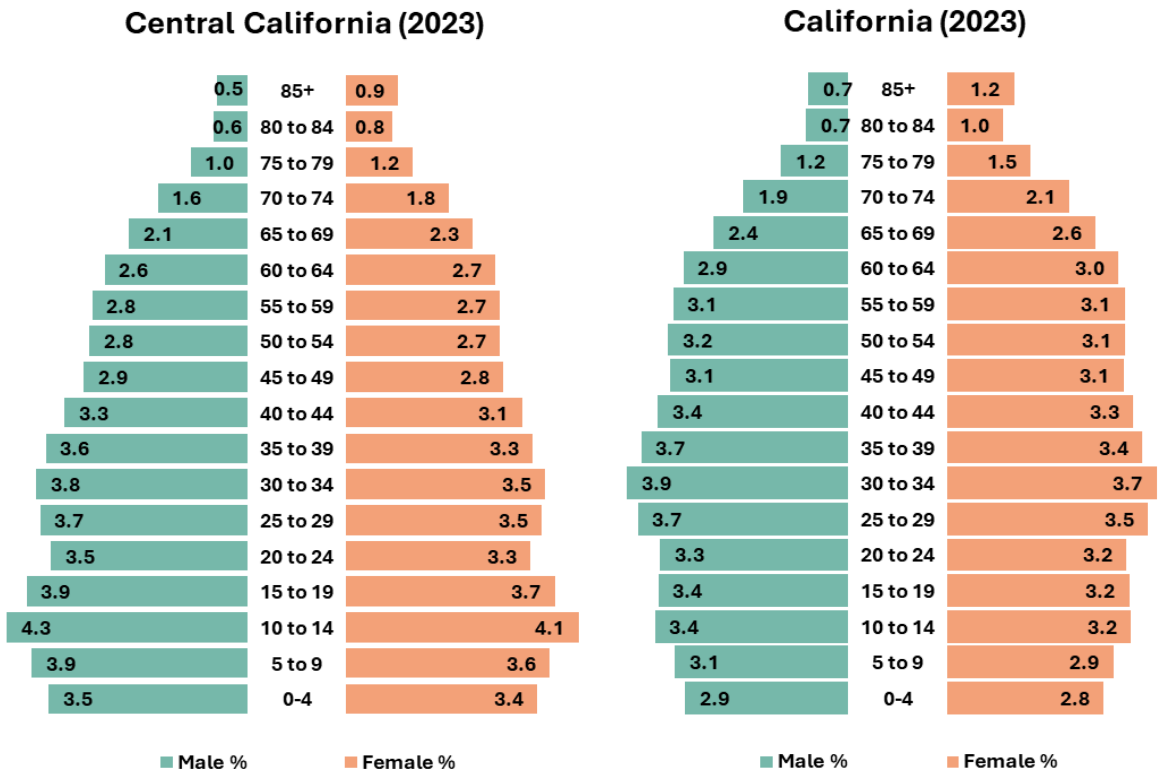
Following the steady percent increase in population from 2018-2020, the population increased much more slowly from 2020 to 2023. This could likely be due to the COVID-19 pandemic in 2020. The largest percentage increase in Central California's population was from 2023 to 2024, with a 1.32% increase. The region's population is projected to increase by 0.58% in 2025 to 4,602,356. (Department of Finance, 2020, 2025).

Age and Gender

Figure 3 shows the population pyramids for Central California and California's 2023 population, which help illustrate the distribution of the population across different age groups for Central California and other California counties. On a population pyramid, males and females are separated into distinct sections on the left and right sides. In the population pyramid below, males are on the left side and females are on the right side. Each row represents an age group, as depicted by the middle column. The shape of the population pyramids helps visualize where the majority of the population falls in terms of

age group and gender. Population pyramids for each county can be accessed through the Demographics Dashboard.

Figure 3. *Population Pyramids for Central California and California*



Key demographic trends reveal that:

- Central California has a larger percentage of children aged 10-14 in comparison to California, which has a larger percentage of adults aged 30-34.
    - The small dip in the percentage of individuals aged 20-24 could be explained by students leaving home to attend college or moving out for job opportunities.
- 50.45% of the Central California population is male, whereas 49.55% is female. Compared to California, Central California has slightly more males than females, whereas California has slightly more females than males (50.04%, 49.96%).

Data on those identifying as LGBTQ is limited and hence cannot be portrayed in the population pyramid. However, it is important to acknowledge the population distribution of LGBTQ individuals and the unique situations they face. LGBTQ individuals face historical marginalization and systemic discrimination, which significantly impact their health outcomes, leading to higher rates of mood and anxiety disorders, substance abuse, and increased risk of acquiring HIV/AIDS and STIs (Min, 2023). These disparities are exacerbated by barriers to comprehensive healthcare services, limited insurance coverage for gender-affirming care, and socio-economic challenges, including elevated

poverty rates among LGBTQ populations (Lampe et al., 2024; Min, 2023). Economic disparities further drive health inequities, with 17% of LGBTQ individuals experiencing poverty, compared to 12% of their non-LGBTQ counterparts in 2021 (Wilson et al., 2023).

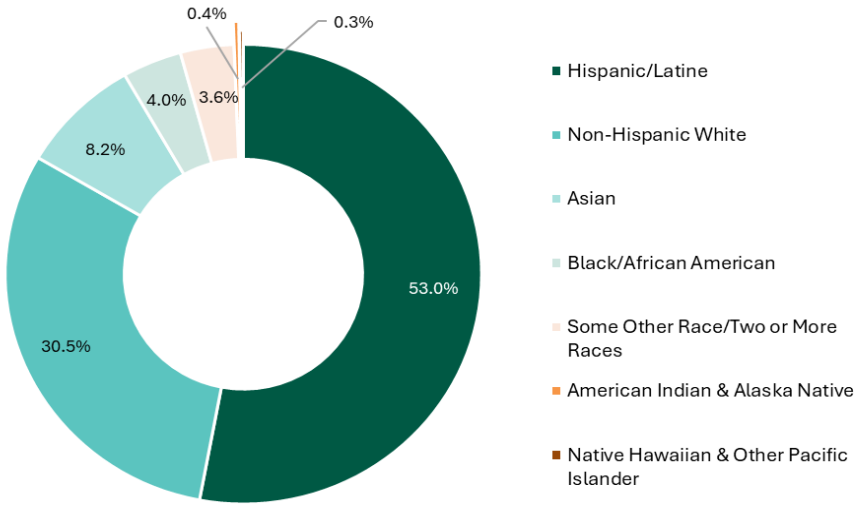
Urban/Rural Landscape

While Central California is significantly more rural than many other regions of the state, a substantial portion of the population still resides in urban centers. Both rural and urban communities face distinct challenges that impact health and well-being. In general, urbanization usually entails social improvements and a better quality of life; however, it can also proliferate social exclusion among those residing in rural areas (de Snyder et al., 2011; Sparks, 2012). Urban centers provide health care infrastructure, employment, education, and social networks, which may or may not be inclusive for those residing in rural areas where access to most of these factors is limited. Those residing in rural areas may have different sociodemographic profiles and unique environmental exposures compared to those residing in urban areas (Sparks, 2012). For Central California, 85.4% of the population resides in an urban area, whereas 14.6% resides in rural areas. In contrast, California has 94.2% of individuals residing in urban areas and 5.8% in rural areas. Urban/rural landscapes for each county can be accessed through the Demographics Dashboard.

Race and Ethnicity

Central California has many diverse racial and ethnic groups, all of which contribute to the region's diversity and unique health needs. Figure 4 shows the broad racial/ethnic groups within Central California. Racial/ethnic breakdowns for each county can be accessed through the Demographics Dashboard.

Figure 4. *Racial/Ethnic Groups in Central California*



Hispanics/Latine represent a majority of the region's population (53%), followed by Non-Hispanic Whites (31%), Asians (8.2%), African Americans (3.6%), American Indians & Alaska Natives (0.4%), and Native Hawaiians and other Pacific Islanders (0.3%). In addition to outlining the broad racial and ethnic composition of Central California, it is critical to highlight the ethnic diversity within certain groups to reflect the region's rich and varied demographic landscape.

Key breakdowns within the broad racial/ethnic groups include:

- For those identifying as Hispanic/Latine:
  - 91% are Mexican, 1% are Puerto Rican, and 7% identified as "Other."
- For those identifying as Asian:
  - 25% are Filipino, 22% are Indian, 8% are Chinese, and 5% are Vietnamese.

Language

Central California is home to a variety of racial and ethnic communities, which is reflected in its linguistic diversity. It is challenging to find language data that is updated, recent, and by different geographical levels; however, the most recent household data from 2023 allows an understanding of the region's linguistic diversity. A threshold of 1% was utilized to identify languages that were spoken by more than 1% of Central California's households. Table 2 shows the languages broken down by their percentages.

Table 2. *Languages Spoken by More than 1% of the Central California Population (2023)*

Language	%
English	43.5%
Spanish	43.0%
Punjabi	1.5%
Tagalog	1.4%
Hmong	1.0%

Other languages that were spoken by less than 1% in the region include:

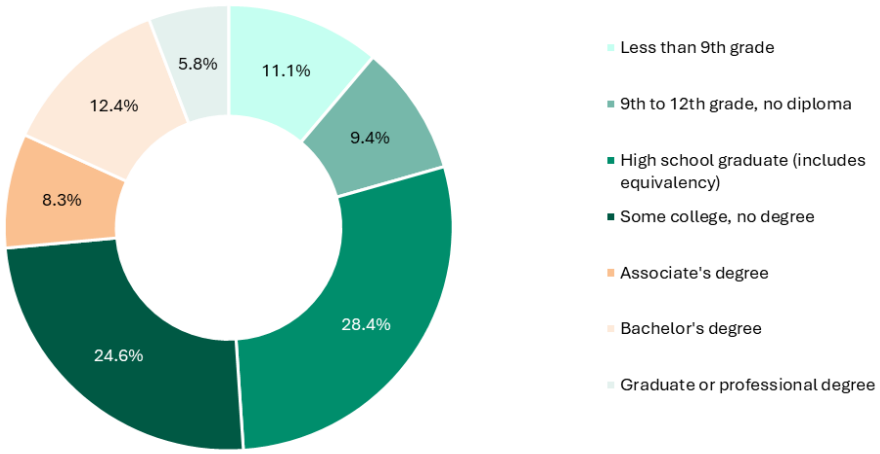
- Arabic (0.62%)
- Khmer (0.59%)
- Vietnamese (0.51%)

Educational Attainment

Educational attainment refers to an individual's highest level of education completed and achieved. Educational attainment is a strong predictor of income and employment rates, along with social mobility (Baranova et al., 2024; Haveman & Smeeding, 2006). Figure 5 shows the overall percentage of the population with different

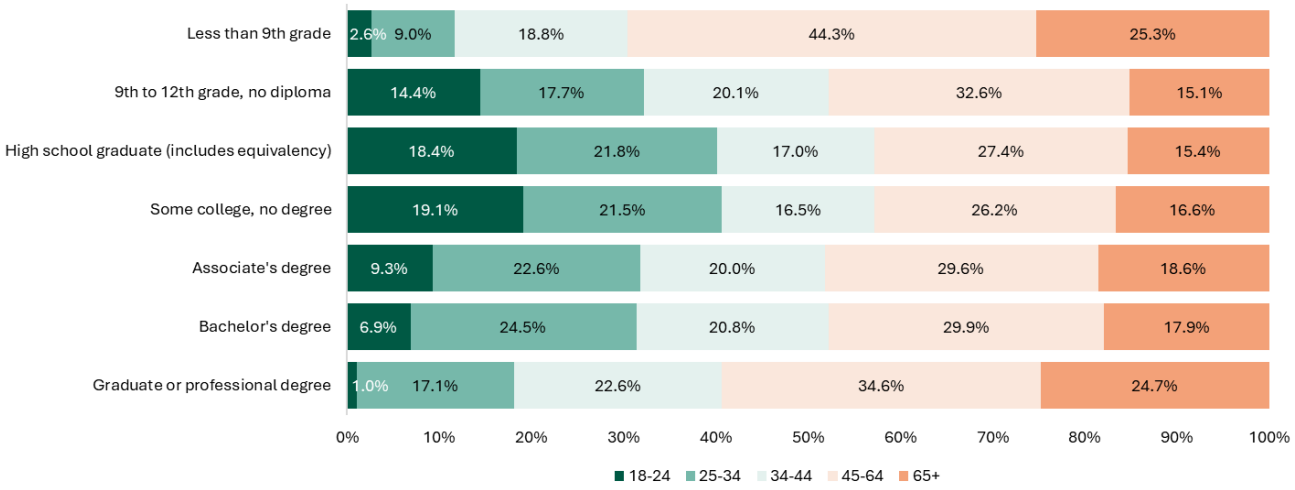
educational attainments. Educational attainment breakdowns for each county can be accessed through the Demographics Dashboard.

Figure 5. *Distribution of Educational Attainment Among the Central California Population*



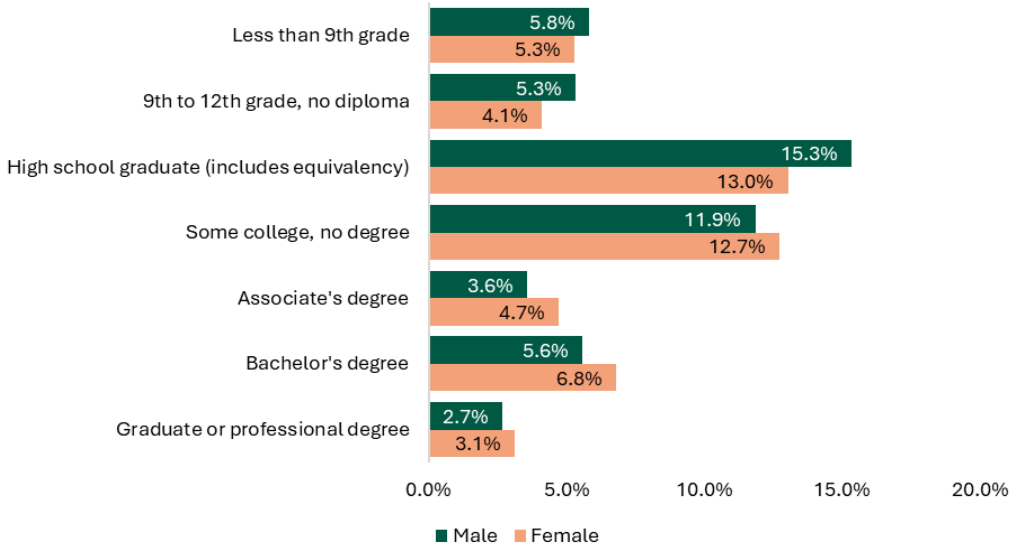
Overall, the Central California population consists primarily of high school graduates (28%). Only 12.4% of the region have a bachelor's degree. Figure 6 below shows educational attainment broken down by age groups.

Figure 6. *Educational Attainment by Age Group*



A higher percentage of the older population has graduate or professional degrees, indicative of the years of education required to obtain higher education. Generally, higher percentages of higher educational attainment are seen within the age group of 45-64. Figure 7 highlights the gender differences in educational attainment.

Figure 7. *Educational Attainment by Gender*

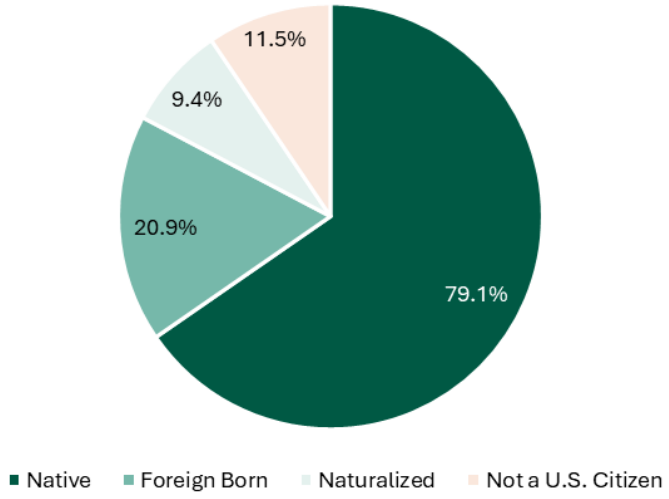


Males make up a higher percentage of those attaining education up to a high school degree (26.4%), while females make up a higher percentage of those achieving education beyond high school (27.3%).

Nativity and Citizenship

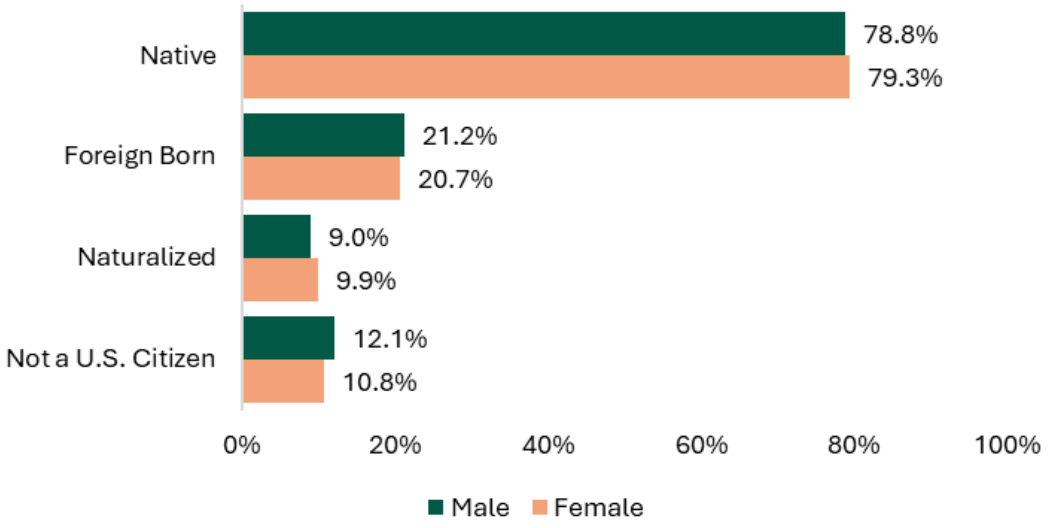
Data suggests that there are correlations between nativity (place of birth) and health disparities. Health outcomes among foreign-born populations vary based on country of origin and citizenship status. While foreign-born individuals generally tend to have better health, citizenship status can serve as a risk factor or contribute to increased vulnerability. More data is needed to fully understand the diverse health experiences of immigrant communities (Ifatunji et al., 2022; Ruhnke et al., 2022; Seff et al., 2021). Figure 8 illustrates the nativity status of Central California residents.

Figure 8. *Nativity Status in Central California*



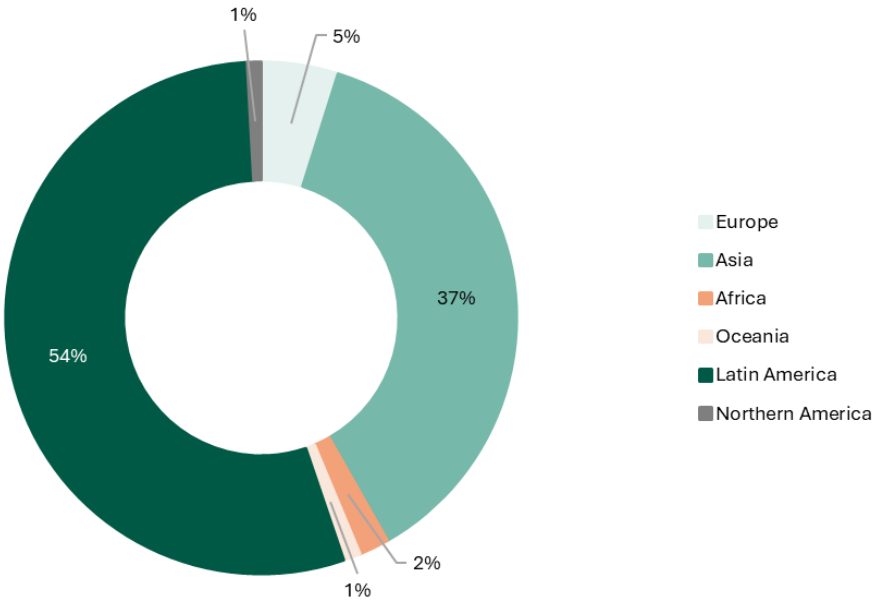
20.9% of the Central California population is foreign-born. Of those that are foreign-born, 9.4% are naturalized U.S. citizens and 11.5% are not U.S. citizens. Gender differences in nativity are portrayed in Figure 9.

Figure 9. *Nativity Status by Gender*



There are slight differences by gender; however, the trend for nativity status is relatively the same for both genders. Figure 10 highlights the nativity of foreign-born naturalized U.S. citizens, which portrays the diversity of origin of this region.

Figure 10. *Place of Birth of Foreign-Born Naturalized U.S. Citizens*



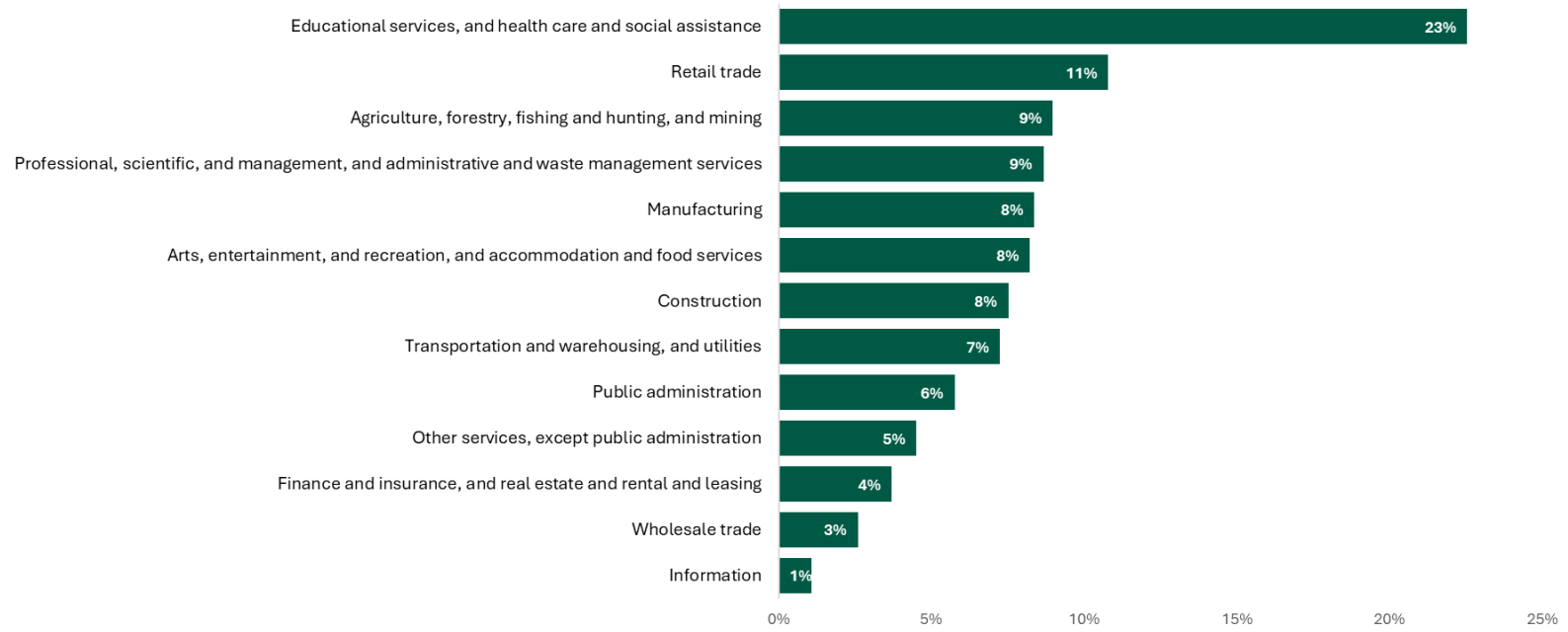
For foreign-born naturalized U.S. citizens, a majority of the population is originally from Latin America (54%), followed by Asia (37%). The same trend follows for non-naturalized U.S. citizens; however, a greater percentage are from Latin America (82%).

This data on nativity and citizenship provides a glimpse into the racial and ethnic diversity of the region and the changing political environment and legislation against the immigrant population. Fears of immigration enforcement and the lack of perceived stability within the community should be acknowledged, as these factors can significantly impact individuals' willingness to seek care, erode trust in institutions, and create barriers to effective public health outreach which can ultimately lead to poorer health outcomes (Cox et al., 2024; Stutz et al., 2019; Yamanis et al., 2021).

Employment by Industry

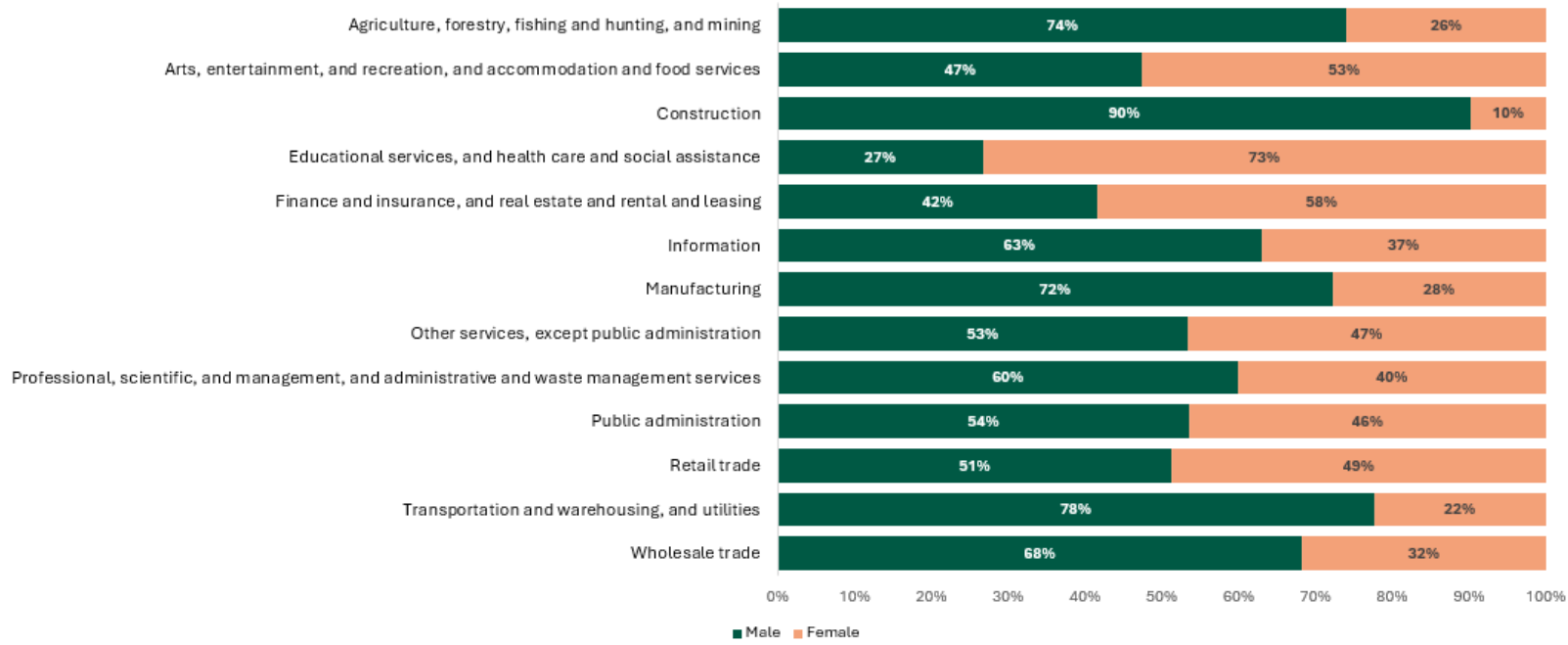
Employment is a known indicator of income, economic stability, and the lifestyle of individuals. Differing occupations may tell a story about an individual's financial stability and sociodemographic lifestyle (Banks et al., 2017; Reichard et al., 2019). Individuals living with disabilities have lower rates of employment and are more likely to face health care disparities, compared to those without disabilities (Banks et al., 2017; Reichard et al., 2019). Employment varies by region, depending on the urban and rural landscape, job opportunities, and environment (Reichard et al., 2019). Employment by industry breakdowns for each county by total population and gender can be accessed through the Demographics Dashboard. Central California has a varying number of individuals in different industries, which is reflected in Figure 11 and in Figure 12, which is broken down by gender.

Figure 11. *Total Employment by Industry in Central California*



The leading industries for employment in the Central California working population are educational services, health care, and social assistance (23%). The second largest industry is retail trade (11%), followed by agriculture, forestry, fishing, hunting, and mining (9%).

Figure 12. *Breakdown of Employment by Industry by Gender in Central California*

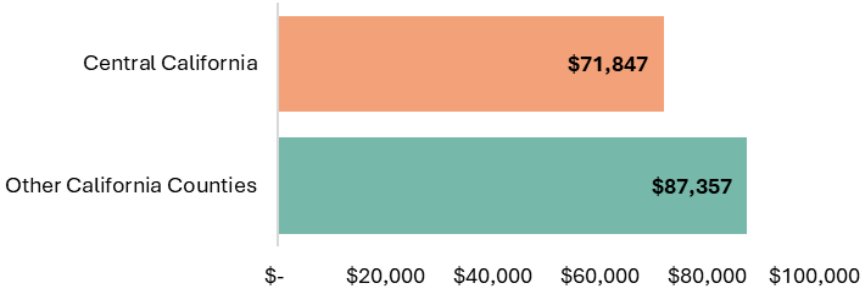


By gender, males are predominantly in the following industries: agriculture (74%), construction (90%), and transportation (78%). Females lead employment in education services, health care, and social assistance (73%), along with finance, insurance, and real estate (58%).

Median Household Income

Median household income represents the general earnings of the population. Since household income varies by county, a weighted average is used to reflect the changes that higher-earning income counties have on average. By conducting a weighted average, the weighted household median income for Central California was $71,847, compared to the median income of $87,357 for other California counties. Figure 13 illustrates these regional differences in income.

Figure 13. *Median Household Income*



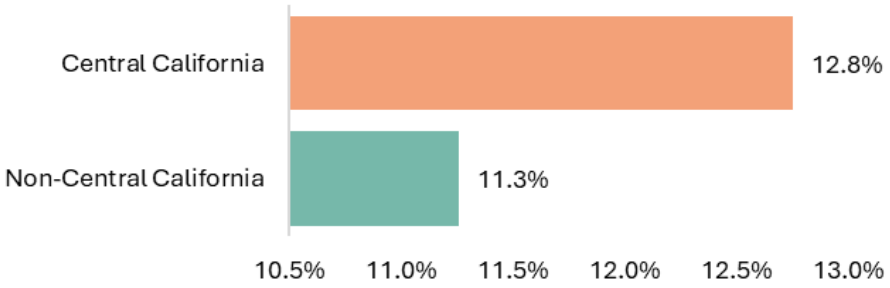
Breaking down by demographics, there was missing data for several races; however, data for White alone, Hispanic/Latine, and Asian were present:

- Weighted household median income for White individuals: $85,425
- Weighted household median income for Hispanic/Latine individuals: $65,843
- Weighted household median income for Asians: $94,843

Disability Characteristics

The disability indicator reflects the number of individuals with physical and/or mental disabilities that may or may not be visible. These include hearing, vision, cognitive, ambulatory, self-care, and independent living difficulties. Figure 14 shows the percentage of the population living with a disability for both Central California and California.

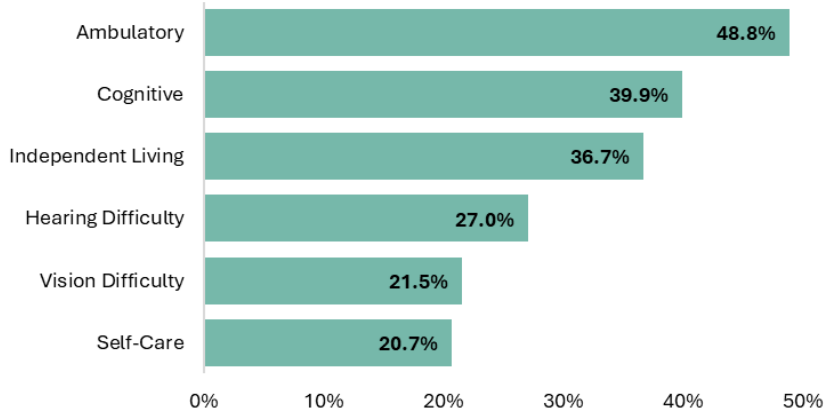
Figure 14. *Percentage of the Population with a Disability*



12.8% of the Central California population is living with a disability in comparison to 11.1% of non-Central California counties.

Figure 15 shows the breakdown of types of disabilities for Central California. The percentages do not add up to 100% since individuals may have one or more types of disability difficulties.

Figure 15. *Disabilities by Type for Central California*

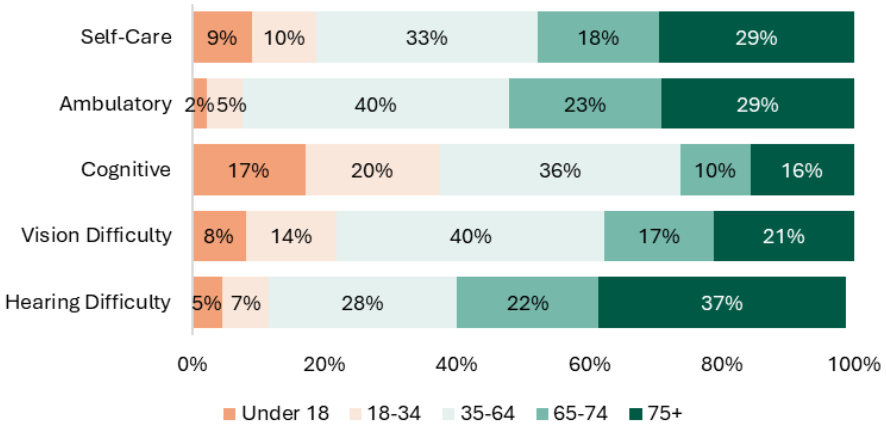


A majority of individuals have ambulatory difficulties (49%), followed by cognitive (40%) and independent living difficulties (37%).

The following disparities are also present within the demographic breakdown:

- Females are slightly more affected than males, representing 6.5% of the cases in comparison to males, which made up 6.3% of the cases.
- 41.4% of Non-Hispanic Whites and 41.6% of Hispanics were affected by disabilities, followed by 5.3% of Black/African Americans.
- Ages 35 to 64 had a higher percentage of disabilities (38.1%), followed by those over 75 years of age (21.1%).
- Disabilities by type and age groups are shown in Figure 16.

Figure 16. *Disability Types by Age Groups in Central California*



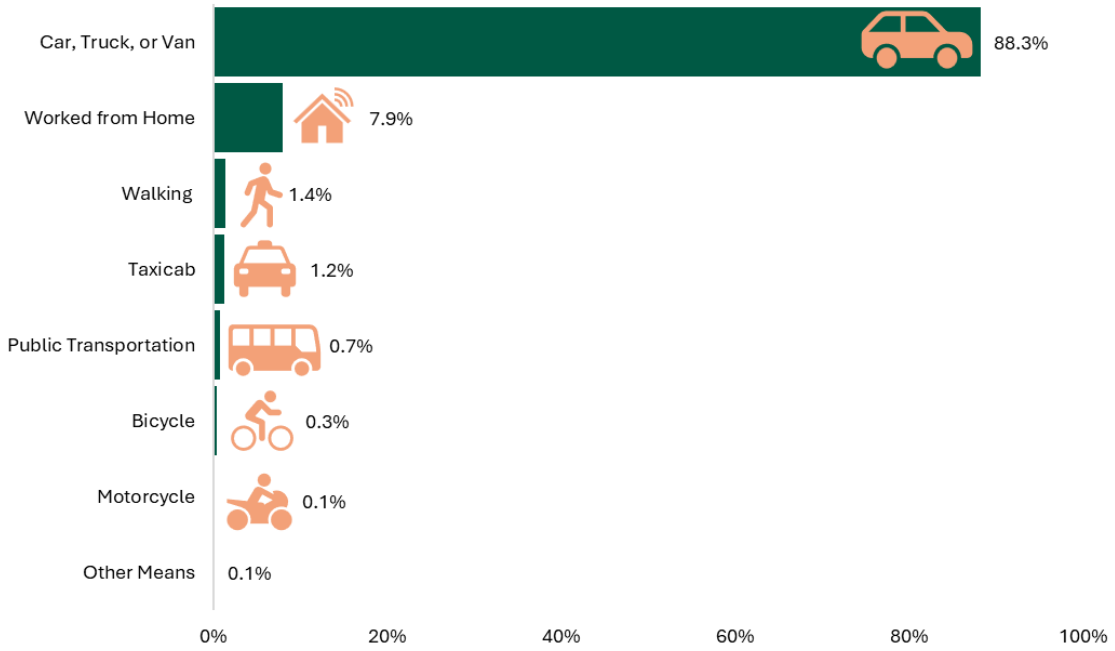
The higher percentage of disabilities was among those between the ages of 35-64 for each disability type. Hearing difficulties were most prevalent among those aged 75 and above (37%).

Means of Transportation to Work

Means of transportation to work reflect the different circumstances an individual faces when going to work. Physical and mental health can be improved by choosing to walk or bike to work; however, this presents challenges for those living in rural areas or those who have long commutes, which pose potential health risks and deteriorating health behaviors (Ding et al., 2014; Kaiser & Barstow, 2022). Driving alone may lead to increased stress and decreased social interactions, whereas it is suggested that public transportation could potentially increase health benefits due to the aerobic activity from walking or climbing stairs to reach their transportation (DeLoach & Tiemann, 2012; Morabia et al., 2010). Job accessibility is another factor that can be impacted by the choice of transportation, which is especially a challenge for low-income individuals or those who may have a disability (Grisé et al., 2019).

Figure 17 visualizes the means of transportation to work in Central California.

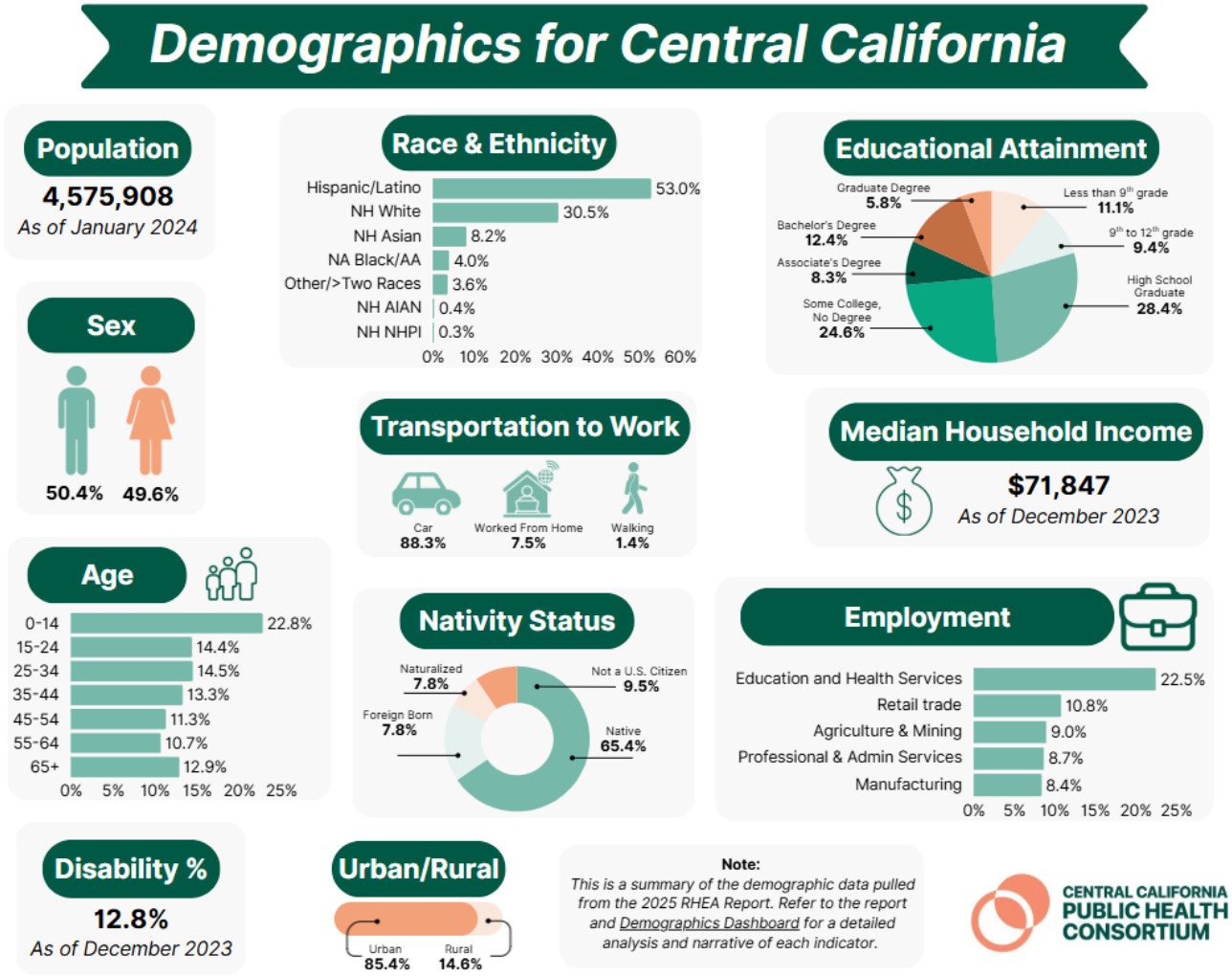
Figure 17. *Means of Transportation to Work in Central California*



Cars, trucks, or vans are a dominant form of transportation to work in Central California, representing 88.3% of the population. 7.9% of the population works from home, in comparison to 16.3% of the population in Non-Central California counties.

Summary of Demographics

A summary of the demographics can be visualized below and accessed separately through the Demographic Summary PDF. This offers an overview of the landscape of Central California for the demographic indicators discussed above. Certain indicators are in the Demographics Dashboard and can be filtered at the county level.



Detailed Results

Socio-Economic and Political Context

Governance

Governance has a key role in the Commission on Social Determinants of Health (CSDH) model, determining the effect of power, policy, and political will on health equity. Institutions, processes, and actors that formulate and implement policies influencing social determinants constitute good governance. Research suggests that party leadership and management are determinative in health effects, as governance structures can either minimize or maximize inequalities based on priority and accountability processes (Krieger et al., 2024; Hays et al., 2012). Inclusive and evidence-based public health governance has the potential to promote population health, while politicized or segmented systems undermine equity objectives (Hays et al., 2012; Schneider et al., 1997). The political economy of healthcare, such as privatization and market-based reforms, shows that laws and power dynamics reproduce and drive inequities, particularly the systems that base access on financial means rather than need. (Government, Policy, and Politics in Health Care, 2022; Kiseleva, 2022). Thus, the CSDH framework highlights that governance is a determinant of the distribution of health-improving resources, participation, and justice.

Macroeconomic Policies

Macro-environmental conditions in the CSDH model are identified as structural determinants of population health that influence employment, income, social services, and health behavior throughout the course of life. Research shows that economic cycles (growth or recession) affect patterns of chronic diseases and health behavior throughout the life course, with negative effects more likely to be more severe in a recession (Giri & Kumaresan, 2021). Macroeconomic local conditions, such as unemployment and poverty levels, are strongly related to variation in mortality and self-reported health impacts across U.S. metropolitan and micropolitan areas (Peng et al., 2021). Additionally, state-level economic and social policies—such as minimum wage, tax credit, or paid time off-related policies—have been linked to perinatal and infant health inequalities, illustrating how economic regulation is translated into actual health outcomes (Milbank Quarterly, 2022). Policy settings and macroeconomic arrangements are the center of well-being and health distribution among populations.

Social Policies

Social policy is central to the CSDH framework. Policy choices in housing, labor, income support, and the environment shape social conditions that influence health outcomes. Unstable, unaffordable housing access has always been associated with poorer health, while housing instability increases chronic stress and poor health

throughout the life course (Liang et al., n.d.). Similarly, labor policies that promote a fair wage, job stability, and a safe work environment guarantee healthier workplaces and mitigate health inequalities, especially when developed with a life course perspective (Rigó & Lunau, 2023). Researchers maintain that it is more important to address social determinants—instead of healthcare delivery—to obtain health equity and demand the inclusion of health concerns in all social policies (Satcher, 2010; Adler et al., 2016). This is also true for social and climate policy, which has a profound impact on health equity because disinvested communities bear the greatest load of pollution and climate-related hazards (Shonkoff et al., 2011).

Public Policies

Public policy is an important means by which structural, intermediate, and cross-cutting factors are shaped and addressed. Public policy is "a statement by the government of what it intends to do or not to do" to address issues that arise from market failure (Meacham, 2021, Jekanowski, 2025). In other words, doing something to create a change or doing nothing to keep the status quo is a public policy. Health policy is a type of public policy that "intends to direct or influence the actions, behaviors, or decisions of others in the pursuit of health" (Jekanowski, 2025).

The Social Security Act is one of the key health policies that include provisions aimed at addressing health disparities. For example, it established the Disproportionate Share Hospital (DSH) program, which provides funding to hospitals that serve a disproportionate share of Medicaid and uninsured patients to help offset uncompensated care costs. Additionally, policies such the Affordable Care Act have expanded access to healthcare coverage, while programs like California's Universal Meals initiative, the National School Lunch Program, and the School Breakfast Program, have improved food access for low-income children (California Department of Education, n.d.; Dietz et al., 2022; U.S. Congress, 2010).

Policies not explicitly linked to health can still have significant impacts on the health outcomes of communities. In Central California, some practices such as redlining, which used the concentration of minorities to determine mortgage lending risk used by the federal government and implemented at the local level, led to the segregation and disparities in public services that persist to this day (Abrams et al., 2019; Corona et al., 2024). The impact of public policies such as redlining is evident in poor health outcomes. It is important to consider public policies through a health and racial equity lens to assess how sustaining the status quo or changing it influences health outcomes in the region.

The following indicators in Table 3 are not marked as "better" or "worse" and should not be interpreted as such. While higher enrollment in social programs may reflect greater social and economic needs, it can also indicate a region's commitment to investing in and supporting its residents. These measures capture both the presence of structural challenges, and the policy responses aimed at addressing them.

Table 3. Comparison of *Public Policy Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
CalFresh Enrollment	18.92%	10.69%	55.6%
Disproportionate Share Hospitals	33.33%	32.47%	2.6%
Medi-Cal Enrollment	50.08%	36.08%	32.5%
Public School Students Eligible for Free/Reduced Price Lunch	73.12%	59.53%	20.5%
School Funding Adequacy	-9,895.78	-2,247.91	126.0%

Culture and Societal Values

Culture and societal values shape both the structural and intermediate determinants of health, and these values vary widely across regional and national contexts. The WHO's Conceptual Framework views health as a public good and a shared societal responsibility (Solar & Irwin, 2010). In the United States, public health is shaped by federalism, a system in which both federal and state governments play roles in health policy. Over time, this has evolved into a collaborative approach to address policy challenges, particularly those caused by market failures such as limited access for low-income individuals, lack of coverage for people with pre-existing conditions, and insufficient disease surveillance or healthcare services. Historically, both levels of government have enacted policies to expand access to care, with growing attention to how these efforts affect health disparities. For example, California's 2024–25 budget emphasizes Medi-Cal as a major investment in health (87%), even as General Fund contributions to overall health spending decline (Legislative's Analyst's Office, 2024).

Structural Determinants and Socioeconomic Position

Income

Income is one of the major determinants of socioeconomic status within the CSDH model, which determines individuals' and populations' access to resources that facilitate health, such as nutritious food, stable housing, healthcare, and safe environments. Studies on the income-health gradient show that higher income is associated with better health status (Carter & Showalter, 2010). Income inequality has been shown to have negative effects on the health of populations, leading to increased stress, reduced social cohesion, and increased morbidity and mortality in more unequal societies (Matthew & Brodersen, 2018). Recent national studies affirm that income-related health disparities remain persistent and significant across racial, gender, and geographic groups in the U.S., underscoring how deeply entrenched economic inequities shape health outcomes (Kim et al., 2023). Income is a key structural driver of population-level health inequities, and addressing it requires policy action focused on both income security and economic justice.

Table 4 highlights the regional differences in structural income indicators. Central California fares worse on 3 out of 5 (60%) Structural Income indicators.

Table 4. *Comparison of Structural Income Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Children in Poverty	22.48%	13.92%	47.0%
Gender Pay Gap	0.83	0.85	-2.4%
Income Inequality	4.45	4.66	-4.7%
Median Household Income*	$71,846.50	$87,356.50	-19.5%
Overall Poverty	16.53%	11.37%	37.0%

Education

Education is a key indicator of socioeconomic status, having direct and strong effects on health through channels such as income, work, health behaviors, and access to information.

Studies have documented that generally higher levels of education are associated with improved health (Hamad et al., 2018). Those who stay in school for longer tend to exhibit healthier behaviors such as smoking less, eating better, and exercising more. Education influences public health by playing a role in achieving higher income, better employment opportunities, and improved health literacy, while also being linked to reduced vulnerability to structural and intermediate determinants of health (Brunello et al.,

2016; Carter & Showalter, 2010; Matthew & Brodersen, 2018; Kim et al., 2023). However, educational expansion and the increased expectation for education credentials in order to access good jobs have reshaped the education-health gradient by increasing the health and economic disparities between those with differing levels of educational attainment. (Delaruelle et al., 2015). Education systems may present opportunities for policy interventions that will yield both health and social benefits.

Table 5 highlights the regional differences in structural education indicators. Central California fares worse on 3 out of 4 (75%) Structural Education indicators.

Table 5. *Comparison of Structural Education Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Chronic Absenteeism	20.90%	21.05%	-0.7%
Disconnected Youth	6.93%	4.72%	37.9%
High School Completion*	78.18%	85.35%	-8.8%
Some College*	51.49%	65.69%	-24.2%

Occupation

Within the CSDH framework, occupation is a key indicator of socioeconomic position, shaping exposure to health risks, access to resources, and overall well-being. Employment status has a significant influence on health, and research indicates that people without a job or with prolonged periods of unemployment have poorer physical and mental health than their working counterparts, especially among adults of working age (Silver et al., 2022). The type of work and quality of work one does—such as job security, conditions in the workplace, and control over tasks—also contribute to health inequalities, typically reinforcing wide social gradients in health (McLeod et al., 2012). A systematic review of longitudinal studies shows that stable employment is positively associated with physical health outcomes, while precarious or no employment may result in chronic stress, diminished healthcare access, and enhanced risks for illness (Hergenrather, 2015). Additionally, equitable labor policies and employee protections are necessary to eliminate health disparities.

Table 6 highlights the regional differences in occupation indicators. Central California fares worse on 1 out of 1 (100%) Occupation indicators.

Table 6. *Comparison of Occupation Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Unemployment	7.60%	5.03%	40.7%

Social Class, Gender, Race, and Ethnicity

Social class, gender, race, and ethnicity are key structural determinants of health inequities, especially as they relate to gender, class, and racially based discrimination. These do not operate independently but rather interact in complex ways that result in poorer health outcomes (Hinze, 2014; Iyer et al., 2008). Studies have found that the interconnectedness of these factors compounds the vulnerability to the worst health outcomes of disadvantaged minorities (Hinze, 2014; Iyer et al., 2008; Brown et al., 2016). It has been well documented that poor living and working situations contribute to and reinforce health inequities such as cardiovascular disease and mental health (McLeod et al., 2012; Barr, 2019). Furthermore, health inequities that arise from poor job conditions, low wages, and policies like unpaid sick leave do not affect everyone equally; African Americans and Latine women are disproportionately impacted (Doede, 2016; Soh et al., 2024; Brown et al., 2016). Solutions must consider the interplay of the American class system and its influence on health outcomes, and address its intersection with gender, race, and ethnicity to ensure effective interventions that do not generate and reinforce discrimination (Rossides, 1996). It's important to consider additional intersectionalities such as nationality and disabilities to assess how changes in the social and political context play a role in compounding health disparities.

It is critical to acknowledge the impact of structural racism. Although formal policies banning racial segregation were established in the 1960s, informal practices continue to perpetuate residential and healthcare segregation, contributing to exposure to various health risks (Largent, 2018; Lin et al., 2023; Reynolds, 1997). Black patients were refused care until the creation of Medicare in 1966, which enabled funding to be withheld from hospitals that participated in racial discrimination (Largent, 2018; Lin et al., 2023; Reynolds, 1997). This segregation is interconnected, with factors such as differential access to care and community discrimination reinforcing historical patterns. There is still a persistent issue of health disparities stemming from segregation in hospital care, revealing that both Black and White Medicare beneficiaries experience poorer health outcomes in highly segregated environments, with Black populations facing significantly worse effects (Lin et al., 2023). Meanwhile, some improvements, such as expanded insurance coverage, have shown potential in desegregating hospital services (Lin et al., 2023).

Intermediary Determinants

Material Circumstances

Material living conditions, such as stable housing, access to green space, and proximity to essential services, have a direct impact on health. In Central California, housing quality and affordability remain critical issues, particularly in rural and low-income areas. Inadequate housing, for example, has been linked to respiratory illness,

mental health issues, and increased injury risk (Krieger & Higgins, 2002). High housing cost burdens adversely affect well-being, increasing the likelihood of material hardships such as food insecurity and difficulty in accessing healthcare (Shamsuddin & Campbell, 2022). Limited proximity to parks reduces access to safe recreation. Limited access to licensed childcare centers creates barriers to the economic stability and growth of families. Additionally, environmental exposures such as elevated air pollution, common in several Central California counties, contribute to higher rates of asthma and other respiratory conditions. These factors together reflect how place-based disparities shape health risks and opportunities.

Table 7 highlights the regional differences in material circumstances (MC) environmental indicators. Central California fares worse on 4 out of 7 (57%) Material Circumstances Environmental indicators.

Table 7. *Comparison of Material Circumstances Environmental Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Air Pollution - Ground-level Ozone	0.075	0.067	11.5%
Air Pollution - Particulate Matter	33.80	27.71	19.8%
Drinking Water Violations	249	179	32.9%
Extreme Heat Days	29	8	117.1%
Land Burned from Wildfires	10.50%	11.99%	-13.3%
Pesticide Use	3,921,378.08	6,980,906.28	-56.1%
Wildfire Smoke Experience	50.00%	76.60%	-42.0%

Table 8 highlights the regional differences in MC Home indicators. Central California fares worse on 7 out of 18 (39%) MC Home indicators.

Although it may seem that Central California is faring better in this domain for a majority of indicators, it is still crucial to acknowledge that Central California has an increased presence of firearms in the home, decreased childcare center density, higher food insecurity, and increased tobacco retailer density compared to other Central California counties.

Table 8. *Comparison of Material Circumstances Home Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Access to Exercise Opportunities*	83.76%	95.69%	-13.3%
Broadband Access*	89.19%	92.90%	-4.1%
Child Care Centers*	4.69	6.61	-34.0%
Child Care Cost Burden	29.70%	31.10%	-4.6%
Driving Alone to Work	76.47%	66.04%	14.6%
Firearm in Home	26.46%	18.51%	35.4%
Food Insecurity	54.33%	41.25%	27.4%
Homeownership	59.71%	57.61%	3.6%
Proximity to Parks	38.12%	18.77%	68.0%
Residential Segregation - Black/White	55.10	58.46	-5.9%
School Segregation	10.90%	12.90%	-16.7%
Severe Housing Cost Burden	17.01%	19.14%	-11.8%
Severe Housing Problems	24.36%	26.01%	-6.6%
Student Homelessness	3.08%	5.05%	-48.5%
Tobacco Retailers	9.49	7.18	27.7%
Tobacco Retailers Near Schools	41.94%	43.87%	-4.5%
Total Unhoused	242.82	366.66	-40.6%
Traffic Volume	135.57	231.21	-52.2%

Social-environmental or psychosocial circumstances

Emotional and social support, along with an individual's sense of life satisfaction, are strongly linked to both mental and physical health. Chronic stress, isolation, and limited community cohesion can increase vulnerability to mental health disorders, substance use, and chronic disease. These social and emotional factors often intersect with material hardship, compounding health inequities. Social connection and emotional support, on the other hand, serve as protective factors for both longevity and resilience.

Table 9 highlights the regional differences in psychosocial factor indicators. Central California fares worse on 3 out of 5 (60%) Psychosocial Factors indicators.

Table 9. *Comparison of Psychosocial Factors Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
ACES	12.43%	11.85%	4.8%
Children in Single-Parent Households	45.40%	67.97%	-39.8%
Emotional Support*	70.85%	71.27%	-0.6%
Juvenile Arrests	2.49	1.73	36.0%
Satisfaction with Life*	89.86%	91.49%	-1.8%

Behavioral and biological factors

Health-related behaviors (e.g., diet, physical activity, tobacco use) and biological predispositions are often shaped by broader social and environmental contexts. For example, individuals in low-resource communities may face limited access to healthy foods, contributing to higher rates of obesity and diabetes (Babey et al., 2008). These behaviors are not simply matters of individual choice; they are shaped by access, affordability, and cultural norms, which often reflect deeper structural inequities. Biological factors include genetic predispositions, hormonal effects, or brain chemistry, which play a role in an individual's predisposition for certain health outcomes; however, this report does not have indicators representing biological influences due to data limitations. It is still important to acknowledge the role they play in certain individuals and demographic groups facing disproportionate disparities.

Table 10 highlights the regional differences in behavioral and biological indicators. Central California fares worse on 4 out of 7 (57%) Behavior and Biological indicators.

Table 10. *Comparison of Behavior and Biological Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Adult Smoking	12.35%	9.67%	24.3%
Breastfeeding Initiation*	89.10%	94.38%	-5.8%
Dental Visit*	61.08%	67.38%	-9.8%
Doctor Visit*	72.70%	71.34%	1.9%
Excessive Drinking	14.34%	16.54%	-14.2%
Insufficient Sleep	33.91%	32.29%	4.9%
Physical Activity*	26.53%	19.31%	31.5%

The Health System

Table 11. Comparison of *Health System Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Acute Care Hospital Beds*	211.36	215.22	-1.8%
Adequate Prenatal Care*	73.77%	71.94%	2.5%
Dental Care Provider Ratio	1,673	1,028	47.8%
Doula Coverage*	2.10	2.40	-13.5%
Early Prenatal Care*	85.07%	87.99%	-3.4%
Flu Vaccination*	38.37%	44.29%	-14.3%
Hospital Adverse Events	4.10%	4.06%	1.0%
Hospital Readmission Rates	14.76%	14.52%	1.6%
Kindergartener Immunizations*	47.63%	54.19%	-12.9%
Mammography Screening*	69.88%	70.19%	-0.4%
Mental Health Provider Ratio	313	204	42.2%
OB-GYN Provider Rate*	15.58	26.65	-52.4%
Preventable Hospitalization Rates	277.61	204.33	30.4%
Primary Care Ratio	1,817	1,183	42.3%
Psychiatric Health Facility Beds*	2.71	2.48	8.8%
Skilled Nursing Facility Beds*	270.03	281.58	-4.2%
Uninsured	7.85%	7.62%	3.0%
Uninsured Adults	10.18%	8.97%	12.6%
Uninsured Children	3.16%	3.13%	1.0%

A Crosscutting Determinant: Social Cohesion & Social Capital

Social cohesion and social capital are cross-cutting factors that play a role in structural and intermediate determinants of health. The CSDH framework underscores that while it's important to recognize social cohesion and social capital as influential, it's also critical to emphasize that one of the key goals of health politics should be building cooperative relationships between citizens and institutions. This means the state should take on the role of creating flexible systems that make access easier and encourage genuine citizen participation (World Health Organization, 2010), in other words, facilitating equitable civic engagement. We utilized voter registration and voting turnout as proxies of civic engagement to take a snapshot of the community's exertion of political power through which they shape the direction of policies that impact health

Table 12 highlights the regional differences in social cohesion indicators. Central California fares worse on 2 out of 2 (100%) Social Cohesion indicators.

Table 12. *Comparison of Social Cohesion Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Registered Voters*	76.82%	83.10%	-7.9%
Voter Turnout*	31.63%	35.33%	-11.1%

Impact on Health Equity and Well-Being

Health disparities significantly undermine an individual's well-being by limiting equitable access to essential resources and opportunities for health, leading to preventable illness, reduced quality of life, and premature death, further entrenching systemic inequities across communities. The data above underscores how persistent disparities are across Central California in both structural and intermediary determinants of health. Some examples include inequities in provider rates, proximity to parks, food insecurity, air pollution, extreme heat days, and poverty. These conditions influence a wide range of health outcomes and perpetuate and reinforce cycles of poor health. For example, density of providers and obesity are negatively associated, suggesting that equitable investments in infrastructure and health care access can positively impact health outcomes (Aljabri, 2022; Mohajan & Mohajan, 2023). Food insecurity has adverse mental health outcomes and increases maternal complications for pregnant women (Chehab et al., 2025; Nagata et al., 2019). Air pollution has vast outcomes for physical health in terms of cancer mortality rates, cardiovascular disease, and cognitive disorders (Aguilera et al., 2021; Radua et al., 2024; Sekhon et al., 2025; Xu et al., 2022). Poverty is a

critical determinant of health, impacting oral health, mental health outcomes, obesity, and sexually transmitted diseases (Chong & Gansky, 2024; Gotlieb et al., 2025; Lee et al., 2022).

The following analysis underscores the depth and breadth of health and well-being disparities affecting communities in Central California. The health outcomes are divided into broad categories, each of which has multiple indicators related to it.

Chronic Disease

Chronic diseases such as diabetes, heart disease, and asthma are major drivers of poor health outcomes and healthcare costs, particularly in communities facing social and environmental inequities (McPhail, 2016).

Table 13 highlights the regional differences in Chronic Disease indicators. Central California fares worse on 9 out of 9 (100%) Chronic Disease indicators.

Table 13. *Comparison of Chronic Disease Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Adult Obesity	73.23%	62.62%	15.6%
Asthma Diagnosis	17.69%	15.19%	15.2%
Cancer Diagnosis, Except Skin	7.67%	7.23%	5.9%
Chronic Kidney Disease Diagnosis	3.72%	3.63%	2.4%
Chronic Obstructive Pulmonary Disease Diagnosis	7.09%	5.37%	27.6%
Coronary Heart Disease Diagnosis	7.54%	5.80%	26.1%
Diabetes Diagnosis	15.87%	11.86%	28.9%
Hypertension Diagnosis	39.22%	30.55%	24.9%
Stroke Diagnosis	3.88%	3.07%	23.3%

Emergency Department (ED) Visits

Emergency Department (ED) visits often reflect gaps in primary care access and preventive services, serving as a critical indicator of unmet health needs in vulnerable populations (Beckerleg & Hudgins, 2022; Zarate-Gonzalez et al., 2024).

Table 14 highlights the regional differences in ED Visit indicators. Central California fares worse on 4 out of 4 (100%) ED Visit indicators.

Table 14. *Comparison of ED Visit Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Asthma ED Visits	49.34	36.19	30.7%
Children and Youth Mental Health Services ED Visits	318.26	259.75	20.2%
Drug-Related ED Visits	59.68	47.42	22.9%
Heat-Related ED Visits	28.81	15.35	61.0%

Environmentally-Linked Disease

In Central California, environmentally-linked diseases like Valley Fever and West Nile Virus highlight the intersection between climate, geography, and public health. Valley Fever, caused by inhaling fungal spores from disturbed soil, is especially prevalent in the region's arid and agricultural areas (Howard et al., 2024). Similarly, West Nile Virus, transmitted by mosquitoes that thrive in warm, stagnant water, poses seasonal health risks that are exacerbated by climate change and water management challenges (Wang et al., 2024). These diseases disproportionately affect rural and underserved communities, reflecting how environmental conditions directly shape health outcomes in the region.

Table 15 highlights the regional differences in Environmentally-Linked Disease indicators. Central California fares worse on 2 out of 2 (100%) Environmentally-Linked Disease indicators.

Table 15. *Comparison of Environmentally-Linked Disease Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Valley Fever	86.24	8.43	164.4%
West Nile Virus	2.17	0.88	84.9%

Length of Life

Life expectancy is a fundamental measure of population health and is influenced by a wide range of social determinants, including income, education, environment, and access to care (Smits & Monden, 2009).

Table 16 highlights the regional differences in the Length of Life indicators. Central California fares worse on 3 out of 3 (100%) Length of Life indicators.

Table 16. *Comparison of Length of Life Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Life Expectancy*	76.69	78.95	-2.9%
Premature Mortality	490.54	389.77	22.9%
Years of Potential Life Lost	8071.74	5938.80	30.5%

Maternal, Child, and Adolescent Health (MCAH)

Maternal, child, and adolescent health outcomes are shaped by access to prenatal care, nutrition, housing stability, and education, making them key indicators of health equity (El Ayadi et al., 2022; Laraia et al., 2022; Ratnasiri et al., 2020).

Table 17 highlights the regional differences in MCAH indicators. Central California fares worse on 4 out of 6 (67%) MCAH indicators.

Table 17. *Comparison of MCAH Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Child Mortality	50.24	36.31	32.2%
Infant Mortality	4.90	3.43	35.2%
Low Birthweight	7.27%	7.19%	1.1%
Preterm Birth	9.49%	8.90%	6.4%
Severe Maternal Morbidity	96.49	112.12	-15.0%
Teen Births	16.52	9.31	55.9%

Mental Health

Mental health outcomes are deeply interconnected with socioeconomic status, trauma, housing, and access to services, and have far-reaching implications for overall well-being and community health (Baranova et al., 2024; Blebu et al., 2024; Gawai & Deller, 2025; Nagata et al., 2019; Radua et al., 2024).

Table 18 highlights the regional differences in Mental Health indicators. Central California fares worse on 3 out of 3 (100%) Mental Health indicators.

Table 18. *Comparison of Mental Health Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Days Unable to Work due to Mental Problems	82.00%	77.80%	5.3%
Depression Risk	28.02	25.62	8.9%
Poor Mental Health Days	4.28	4.17	2.5%

Mortality

Mortality rates provide a direct reflection of the effectiveness and equity of health systems, revealing disparities by geography, race/ethnicity, and income. Mortality rates for certain chronic conditions are impacted by environmental factors followed by socioeconomic factors influencing the severity of the disparities among certain demographic groups (Gujral & Basu, 2019; Ratnasiri et al., 2020; Sekhon et al., 2025; Sidney et al., 2016).

Table 19 highlights the regional differences in Mortality indicators. Central California fares worse on 9 out of 17 (53%) Mortality indicators.

Table 19. *Comparison of Mortality Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Accidents (Unintentional Injuries) Mortality Rate	59.78	47.33	23.3%
Alzheimer's Disease Mortality Rate	41.18	43.76	-6.1%
Breast Cancer Mortality Rate	62.51	68.91	-9.7%
Cardiovascular Disease Mortality Rate	165.52	163.99	0.9%
Cerebrovascular Disease (Stroke) Mortality Rate	41.50	45.93	-10.1%
Chronic Liver Disease and Cirrhosis	62.47	48.11	26.0%
Chronic Lower Respiratory Disease Mortality Rate	114.36	88.21	25.8%

Table 19. *Comparison of Mortality Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Colorectal Cancer Mortality Rate	41.20	42.04	-2.0%
Diabetes Mortality Rate	102.06	84.88	18.4%
Drug Overdose Mortality Rate	21.26	19.83	7.0%
Firearm Mortality Rate	39.31	24.55	46.2%
Homicide Rate	28.42	16.52	53.0%
Influenza and Pneumonia Mortality Rate	42.39	39.77	6.4%
Lung Cancer Mortality Rate	75.86	76.93	-1.4%
Overall Cancer Mortality Rate	425.76	452.69	-6.1%
Prostate Cancer Mortality Rate	50.42	58.55	-14.9%
Suicide Mortality Rate	33.05	31.27	5.6%

Quality of Life

Quality of life encompasses physical, mental, and social well-being, and is heavily influenced by chronic conditions, environmental stressors, and access to community resources (Gawai & Deller, 2025; Lee et al., 2022; Smits & Monden, 2009).

Table 20 highlights the regional differences in Quality of Life indicators. Central California fares worse on 3 out of 4 (75%) Quality of Life indicators.

Table 20. *Comparison of Quality of Life Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Days Missed from Work due to Physical Health	31.90%	33.58%	-5.1%
Poor or Fair Health	23.78%	17.37%	31.2%
Poor Physical Health Days	4.79	3.98	18.5%
Total Tooth Loss	10.24%	7.37%	32.6%

Sexually Transmitted Diseases and Infections (STD/STI)

Sexually transmitted infections are preventable health conditions that are often linked to structural barriers, including limited access to education, care, and screening services. These disparities are apparent in disadvantaged communities, indicating persistent inequities in sexual health outcomes across different racial and ethnic communities (Gotlieb et al., 2025).

Table 21 highlights the regional differences in STD/STI indicators. Central California fares worse on 3 out of 5 (60%) STD/STI indicators.

Table 21. *Comparison of STD/STI Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Chlamydia Incidence	578.35	494.59	15.6%
Congenital Syphilis Incidence	233.01	104.33	76.3%
Gonorrhea Incidence	193.47	206.87	-6.7%
HIV Prevalence	249.13	445.99	-56.6%
Primary and Secondary Syphilis Incidence	22.90	19.41	16.5%

Traffic-Related

Traffic-related injuries and fatalities are a public health concern tied to transportation infrastructure, urban planning, and environmental justice, with higher risk in underserved areas.

Table 22 highlights the regional differences in Traffic-Related indicators. Central California fares worse on 4 out of 4 (100%) Traffic-Related indicators.

Table 22. *Comparison of Traffic-Related Indicators*

Indicator	Central California Counties	Other California Counties	Percent Difference
Total Traffic Fatality Rate	26.91	13.05	69.4%
Total Traffic Injury Rate	1,351.47	1,239.83	8.6%
Alcohol-Involved Traffic Fatality Rate	4.65	1.56	99.3%
Alcohol-Involved Traffic Injury Rate	81.08	59.20	31.2%

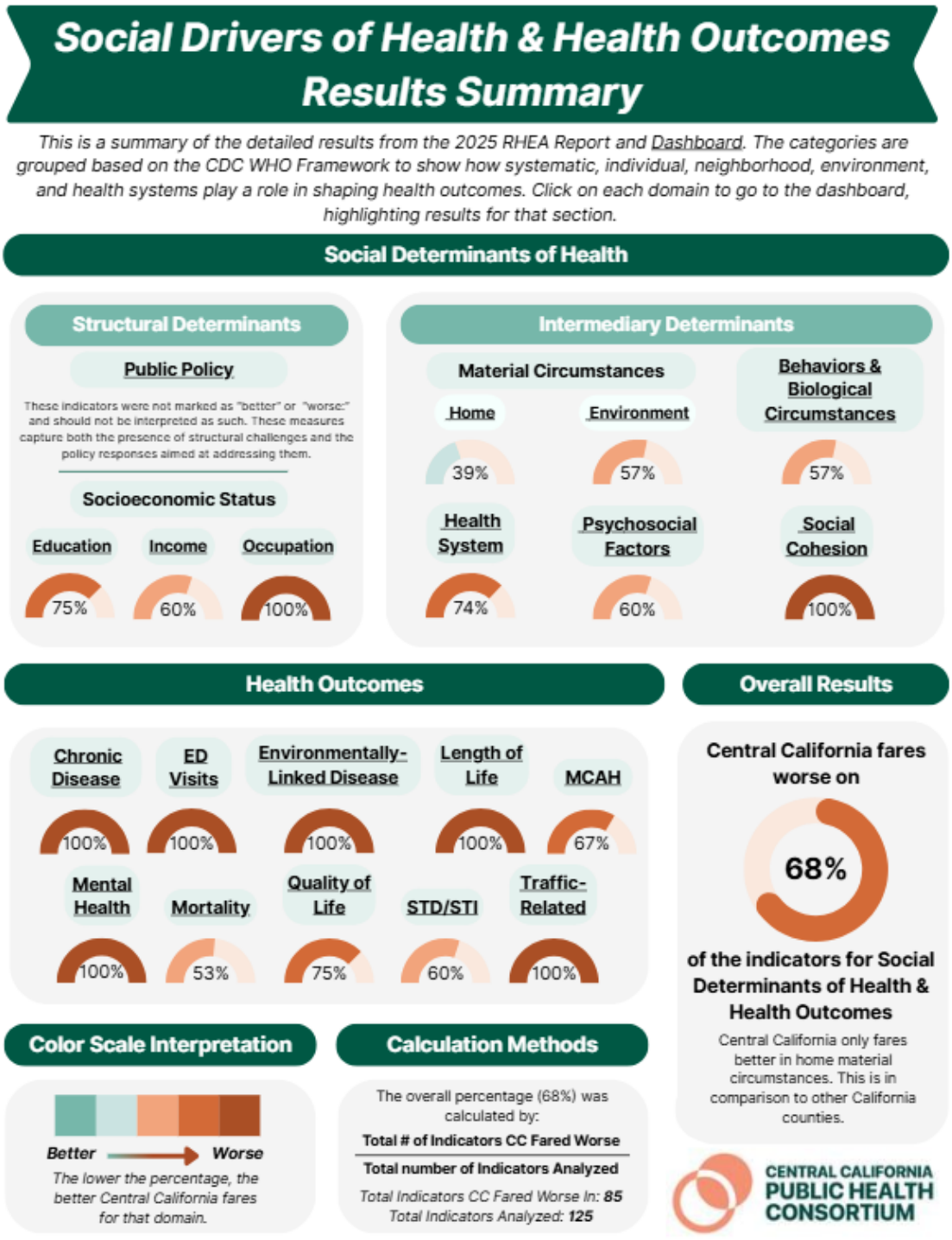
Summary of Results

Table 23 below provides a summary of the results based on the social determinants of health and health outcomes. The first column reflects the number of indicators in which Central California fared worse, followed by the total number of indicators utilized for data analysis in that category.

Sub-Category: Dashboard Name & Link	Indicators in which Central California fares worse	Total number of indicators	Percent of indicators in which Central California fares worse
Social Determinants of Health			
Behaviors & Biological Circumstances	4	7	57%
Health System	14	19	74%
Material Circumstances: Environment	4	7	57%
Material Circumstances: Home	7	18	39%
Psychosocial Factors	3	5	60%
Social Cohesion	2	2	100%
Structural Determinant: Public Policy	-	-	-
Structural Determinant: SES-Education	3	4	75%
Structural Determinant: SES-Income	3	5	60%
Structural Determinant: SES-Occupation	1	1	100%
Health Outcomes			
Chronic Disease	9	9	100%
ED Visits	4	4	100%
Environmentally-Linked Disease	2	2	100%
Length of Life	3	3	100%
MCAH	4	6	67%
Mental Health	3	3	100%
Mortality	9	17	53%
Quality of Life	3	4	75%
STD/STI	3	5	60%
Traffic-Related	4	4	100%

Results One-Pager

The summary of the results is highlighted in this one-pager visualizing the indicators in Central California. Central California fared worse on 68% of the indicators. Methods behind this calculation are also detailed in the Technical Document. The Results one-pager can also be viewed separately as a PDF.



Conclusions and Recommendations

This regional health equity analysis highlights persistent and concerning patterns of inequity in Central California. Central California fares significantly worse than other California counties across a majority of health indicators, particularly those tied to structural determinants of health. The data make clear that the region's health disparities are not merely the result of individual choices or biological factors but are driven by entrenched practices and policies embedded in our social, economic, environmental, and institutional systems. These systems actively produce and sustain cycles of inequity, reinforcing barriers to health and perpetuating poor outcomes across Central California communities.

Across the indicators, Central California shows disproportionately negative outcomes in structural indicators, which include education, income, and occupation. These suggest educational inequities that are likely limited to health literacy, economic mobility, and long-term health potential, followed by economic challenges like poverty and unemployment. Central California also fares worse in Social Cohesion indicators, which suggest the region's social fragmentation, limited community resources, and potential lower levels of trust in institutions or civic engagement.

Health outcomes also mirror these same structural inequities. Central California fares worse in a majority of the health outcome indicators, primarily chronic disease, ED visits, environmentally-linked disease, mental health, traffic-related injuries, and mortality indicators. These underscore and imply the downstream effects of structural disadvantage. This data suggests that health equity cannot be achieved without addressing the structural and systemic barriers that shape communities' daily lives. Individual-level interventions alone will not create change; systemic change is essential.

Recommendations based on this data suggest the need for structural and policy interventions. The magnitude and complexity of these disparities, however, demand collaborative actions across different sectors, requiring partnerships between counties and other sectors that could address the root causes of health inequity. The brief analysis of social cohesion and psychosocial stressors urges a need for investing in community trust-building, civic engagement, and locally driven health initiatives. Although a few indicators had disaggregated data, robust and disaggregated data for many structural determinants continue to remain missing. Enhanced data collection and surveillance could allow for a better understanding of disparities among different groups, which would allow for targeted interventions.

The California Health and Safety Code 131019.5 defines health equity as the efforts needed to ensure that all people have full and equitable access to opportunities to enable them to lead healthy lives. Public health departments and their partners must act collectively to transform the social and economic conditions that shape individuals' daily

lives. This urges a regional commitment to equity-centered public policy, inclusive community engagement, and a reimagining of what it means to build a just and healthy Central California.

Recommendations

1. Assess your personal and organizational commitment to ensuring that each person in Central California has the opportunity to achieve their optimal health.
    a. This report and these recommendations are underpinned by an assumption that widespread health disparities between regions and across demographic factors is a social issue that needs a solution (likely, many solutions). If disparities in health outcomes do not raise an alarm for yourself of your organization, it may be challenging to actively implement the remaining recommendations.
2. Actively work to identify policies and systems that are contributing to Central California's poor health outcomes.
    a. Conversely, actively identify evidence-based policies and programs that are eliminating inequities, and work to expand those policies and programs.
3. Develop regional priorities and strategies.
    a. Collaborate across sectors to design long-term, measurable, and actionable goals related to improving health and social outcomes
    b. Identify opportunities for alignment across sectors and opportunities that leverage mutual interests, resources, and values.
4. Prioritize strategies that adopt a Policy, Systems, and Environmental Change Framework.
5. Build on the first four recommendations, and develop domain-specific recommendations in partnership with communities and regional organizations
    a. These recommendations are first steps, not last steps, and certainly not all of the steps necessary to address the issues laid out in this report.

Appendix

Technical Documentation

The technical documentation includes descriptions for the indicators, notes for missing data or counties, and data aggregation methods.

Indicators

Below is a table of the indicators, definitions, data sources, and year from when the data was pulled. Notes on data unavailability for counties are listed below.

Demographics / Context for Region

Indicator	Description	Dataset	Year	Stratification
Age	Estimates and percentages of the population by age groups and gender by county	ACS	2023	Age, Sex
Educational Level	Highest level of formal education completed by age groups and gender by county	ACS	2023	Age, Sex
Gender	Estimates and percentages of the population by age groups and gender by county	ACS	2023	Age, Sex
Race/Ethnicity	Estimates of individuals by different race/ethnicities by county	ACS	2023	Race/Ethnicity
Language Spoken at Home*	Language spoken by household by county	ACS	2023	N/A

Indicator	Description	Dataset	Year	Stratification
Top Employment Industries	Employment industries by sex by county for population over 16 years of age	ACS	2023	Sex
Nativity	Place of birth and naturalization status by county	ACS	2023	N/A
Citizenship	Citizenship status by sex and age by county	ACS	2023	Age, Sex
Transportation	Means of transportation by county of residence	ACS	2023	N/A
Disability Characteristics	Disability type by age group, race/ethnicity, and sex by county	ACS	2023	Age, Race/Ethnicity, Gender
Urban/Rural	Estimates of individuals residing in urban/rural by county	ACS	2023	Age, Race/Ethnicity, Gender
Population Estimates	Annual populations estimate for Central California counties	ACS	2023	Age, Race/Ethnicity, Gender

Data Notes

- Language Spoken at Home
    - *Mountain counties (Calaveras, Mariposa, and Tuolumne) are grouped with other mountain counties. San Benito is also grouped with Monterey.

Social Determinants of Health

Indicator	WHO Category	Description	Dataset	Year	Stratification
Adult Smoking	Behaviors & Biological Circumstances	Percentage of adults who are current smokers	Behavioral Risk Factor Surveillance System	2022	N/A
Dental Visit	Behaviors & Biological Circumstances	Adults who have visited a dentist, dental hygienist, or dental clinic within the past year	Behavioral Risk Factor Surveillance System	2022	N/A
Doctor Visit	Behaviors & Biological Circumstances	Adults who have visited a doctor for a routine checkup within the past year	Behavioral Risk Factor Surveillance System	2022	N/A
Excessive Drinking	Behaviors & Biological Circumstances	Percentage of adults reporting binge or heavy drinking (age-adjusted).	Behavioral Risk Factor Surveillance System	2022	N/A
Insufficient Sleep	Behaviors & Biological Circumstances	Percentage of adults who report fewer than 7 hours of sleep on average (age-adjusted).	Behavioral Risk Factor Surveillance System	2022	N/A
Leisure Time Physical Activity	Behaviors & Biological Circumstances	Adults who reported doing physical activity or exercise during the past 30 days other than their regular job	Behavioral Risk Factor Surveillance System	2022	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Breastfeeding Initiation	Behaviors & Biological Circumstances	Rate of breastfed infants per 100 births with known feeding method	CDPH County Health State Profiles	2020-2022	N/A
Flu Vaccinations	Health System	Percentage of adults who have received a flu vaccine in the past 12 months	Behavioral Risk Factor Surveillance System	2022	N/A
Mammography Screening	Health System	Women respondents aged 40+ who have had a mammogram in the past two years	Behavioral Risk Factor Surveillance System	2022	N/A
Dental Care Provider Ratio	Health System	Ratio of population to dental care providers other than physicians.	California County Health Rankings	2023	N/A
Mental Health Provider Ratio	Health System	Ratio of population to mental health care providers other than physicians.	California County Health Rankings	2024	N/A
Primary Care Ratio	Health System	Ratio of population to primary care providers other than physicians.	California County Health Rankings	2023	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
CA hospital performance ratings	Health System	Performance ratings for coronary artery bypass graft (CABG) surgery, inpatient mortality indicators (IMIs), and elective percutaneous coronary intervention (PCI).	California Hospital Performance Ratings	2017-2022	N/A
Adequate Prenatal Care	Health System	Relative numbers of births to mothers who received adequate/adequate plus prenatal care per 100 births	CDPH County Health State Profiles	2020-2022	N/A
Early Prenatal Care	Health System	Number of births to mothers who began prenatal care during the first trimester of the pregnancy per 100 births	CDPH County Health State Profiles	2020-2022	N/A
Acute Care Hospital Beds	Health System	Number of beds in acute care hospital per county	Department of Health Care Access and Information (HCAI)	Varies (2018-2023, unspecified)	N/A
Community Clinic Beds	Health System	Number of community clinic beds per facility	Department of Health Care Access and Information (HCAI)	Varies (2018-2023, unspecified)	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Hospital Readmission Rates	Health System	Rate of all-cause, unplanned, 30-day inpatient readmissions in hospitals by race/ethnicity and age	Department of Health Care Access and Information (HCAI)	2011-2023	N/A
Kindergartener Immunizations	Health System	Percent of kindergarteners that are up-to-date on vaccines	Department of Health Care Access and Information (HCAI)	2021-2022	N/A
Preventable Hospitalization Rates	Health System	Counts and rates of preventable hospitalization per 100,000	Department of Health Care Access and Information (HCAI)	2021	N/A
Psychiatric Health Facility Beds	Health System	Number of psychiatric health facility beds per county	Department of Health Care Access and Information (HCAI)	Varies (2018-2023, unspecified)	N/A
Skilled Nursing Home Facility Beds	Health System	Number of skilled nursing home facility beds per facility	Department of Health Care Access and Information (HCAI)	Varies (2018-2023, unspecified)	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
OB-GYN Provider Rate	Health System	Rate of Active Obstetrics and Gynecology M.D.s per 100,000 female population	Department of Health Care Access and Information; U.S. Census Bureau	2021	N/A
Uninsured	Health System	Percentage of the population under age 65 without health insurance.	Small Area Health Insurance Estimates	2022	Sex, Race/Ethnicity
Uninsured Adults	Health System	Percentage of 18–64-year-olds without health insurance.	Small Area Health Insurance Estimates	2022	Sex, Race/Ethnicity
Uninsured Children	Health System	Percentage of children under age 19 without health insurance.	Small Area Health Insurance Estimates	2022	Sex, Race/Ethnicity
Land Burned from Wildfires	Material Circumstances: Environment	Percentage of acres burned by wildfires	CalFire; US Census Bureau	2024	N/A
Wildfire Smoke Experience	Material Circumstances: Environment	Experienced smoke from wildfire in past 2 months	California Health Interview Survey (AskCHIS)	2023	Age, Race/Ethnicity, Gender
Extreme Heat Days	Material Circumstances: Environment	Annual Number of Extreme Heat Days: Absolute Threshold: 100 F	CDC National Environment Public Health Tracking Network	2023	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Pesticide Use	Material Circumstances: Environment	Pounds of Pesticide Chemicals Applied and Rank	Department of Pesticide Regulation	2021-2022	N/A
Air Pollution - Ground level Ozone	Material Circumstances: Environment	Average daily density of ground-level ozone in parts per million (O3)	EPA's Air Quality System (AQS)	2023	N/A
Air Pollution - Particulate Matter	Material Circumstances: Environment	Average daily density of fine particulate matter in micrograms per cubic meter (PM2.5).	EPA's Air Quality System (AQS)	2023	N/A
Drinking Water Violations	Material Circumstances: Environment	Indicator of the presence of health-related drinking water violations. Number of violations per water site.	Safe Drinking Water Information System	2024	N/A
Broadband Access	Material Circumstances: Home	Percentage of households with broadband internet connection.	American Community Survey, 5-year estimates	2019-2023	N/A
Driving Alone to Work	Material Circumstances: Home	Percentage of the workforce that drives alone to work.	American Community Survey, 5-year estimates	2019-2023	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Homeownership	Material Circumstances: Home	Percentage of owner-occupied housing units.	American Community Survey, 5-year estimates	2019-2023	N/A
Severe Housing Cost Burden	Material Circumstances: Home	Percentage of households that spend 50% or more of their household income on housing.	American Community Survey, 5-year estimates	2019-2023	N/A
Firearm in Home	Material Circumstances: Home	Percent of the population who report having a firearm in or around their home	Behavioral Risk Factor Surveillance System	2022	N/A
Access to Exercise Opportunities	Material Circumstances: Home	Percentage of population with adequate access to locations for physical activity.	California County Health Rankings	2024, 2022 & 2020	N/A
Child Care Centers	Material Circumstances: Home	Number of child care centers per 1,000 population under 5 years old.	California County Health Rankings	2010-2022	N/A
Child Care Cost Burden	Material Circumstances: Home	Childcare costs for a household with two children as a percent of median household income.	California County Health Rankings	2024 & 2023	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Residential Segregation - Black/White	Material Circumstances: Home	Index of dissimilarity where higher values indicate greater residential segregation between Black and white county residents.	California County Health Rankings	2019-2023	N/A
Traffic Volume	Material Circumstances: Home	Average traffic volume per meter of major roadways in the county.	California County Health Rankings	2023	N/A
Student Homelessness	Material Circumstances: Home	The percentage of K–12 public school students who were reported as being homeless during the academic year	California Department of Education	2023-2024	Sex
Proximity to Parks	Material Circumstances: Home	Percentage of individuals that live farther than half a mile from a park	California Department of Parks and Recreation	2020	N/A
Tobacco Retailers	Material Circumstances: Home	Tobacco retailers per 1,000 Population	California Tobacco Health Assessment Tool	2024	N/A
Tobacco Retailers Near Schools	Material Circumstances: Home	The percentage of K-12 schools with a tobacco retailer within 1,000 feet	California Tobacco Health Assessment Tool	2021, 2024	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Severe Housing Problems	Material Circumstances: Home	Percentage of households with at least 1 of 4 housing problems: overcrowding, high housing costs, lack of kitchen facilities, or lack of plumbing facilities.	Comprehensive Housing Affordability Strategy (CHAS) data	2017-2021	N/A
Food Insecurity	Material Circumstances: Home	Percentage of population who lack adequate access to food.	Map the Meal Gap	2022	Age, Race/Ethnicity
School Segregation	Material Circumstances: Home	The extent to which students within different race and ethnicity groups are unevenly distributed across schools when compared with the racial and ethnic composition of the local population. The index ranges from 0 to 1 with lower values representing a school composition that approximates race and ethnicity distributions in the student populations within the county, and higher values representing more segregation.	County Health Rankings	2022-2023	Age, Race/Ethnicity, Gender

Indicator	WHO Category	Description	Dataset	Year	Stratification
Total Unhoused*	Material Circumstances: Home	Percentage of population unhoused by sheltered homeless, unsheltered homeless, and total homeless by county/COC	U.S. Department of Housing and Urban Development	2017-2019	N/A
Children in Single-Parent Households	Psychosocial Factors	Percentage of children that live in a household headed by a single parent.	American Community Survey, 5-year estimates	2019-2023	N/A
ACES	Psychosocial Factors	The percent of adults that have more than 4 or more Adverse Childhood Experiences (ACEs)	Behavioral Risk Factor Surveillance System	2022	N/A
Satisfaction with life	Psychosocial Factors	Percentage of adults who reported being satisfied or very satisfied with their life	Behavioral Risk Factor Surveillance System	2022	N/A
Social Support	Psychosocial Factors	Percentage of adults who report that they usually or always get the social support they need	Behavioral Risk Factor Surveillance System	2022	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
Juvenile Arrests	Psychosocial Factors	Rate of arrests per 1,000 juveniles.	Department of Justice (DOJ) Criminal Justice Statistics Center (CJSC); Monthly Arrest and Citation Register (MACR)	2021	Age, Race/Ethnicity, Gender
Registered Voters	Social Cohesion	Percent of the people who are eligible to register are registered to vote	CA Secretary of State Election Statistics	July 2024	Age
Voter Turnout	Social Cohesion	Percentage of eligible voters that voted in the last general election	CA Secretary of State Election Statistics	2024	N/A
Public School Students Eligible for Free/Reduced Price Lunch	Structural Determinant: Public Policy	Percentage of children enrolled in public schools that are eligible for free or reduced-price lunch.	California Department of Education	2023-2024	N/A
Disproportionate Share Hospitals	Structural Determinant: Public Policy	Percentage of hospitals with disproportionate share of low-income and uninsured patients	Department of Health Care Access and Information (HCAI)	2023	N/A

Indicator	WHO Category	Description	Dataset	Year	Stratification
CalFresh Enrollment	Structural Determinant: Public Policy	Percent of the population enrolled in CalFresh	Department of Social Services	2024	Age
Medi-Cal Enrollment*	Structural Determinant: Public Policy	Estimated % of the Population Enrolled in Medi-Cal	DHCS Medi-Cal Eligibility Statistics	2024	Age, Sex
School Funding Adequacy	Structural Determinant: Public Policy	The average gap in dollars between actual and required spending per pupil among public school districts. Required spending is an estimate of dollars needed to achieve U.S. average test scores in each district.	School Finance Indicators Database	2021	N/A
Disconnected Youth	Structural Determinant: SES- Education	Percentage of teens and young adults aged 16-19 who are neither working nor in school.	American Community Survey, 5-year estimates	2019-2023	Sex
High School Completion	Structural Determinant: SES- Education	Percentage of adults ages 25 and over with a high school diploma or equivalent.	American Community Survey, 5-year estimates	2019-2023	Sex

Indicator	WHO Category	Description	Dataset	Year	Stratification
Some College	Structural Determinant: SES- Education	Percentage of adults ages 25-44 with some post-secondary education.	American Community Survey, 5-year estimates	2019-2023	N/A
Chronic Absenteeism (K-12)	Structural Determinant: SES- Education	The percentage of students eligible to be considered chronically absent during the academic year and they were absent for 10% or more of the days they were expected to attend	California Department of Education	2023-2024	Age, Sex
Median Household Income	Structural Determinant: SES- Income	Median Income in the Past 12 Months (in 2023 Inflation-Adjusted Dollars)	American Community Survey	2023	Age, Race/Ethnicity
Children in Poverty	Structural Determinant: SES- Income	Percentage of people under the age of 18 in poverty.	American Community Survey, 5-year estimates	2019-2023	Age, Race/Ethnicity, Gender
Overall Poverty	Structural Determinant: SES- Income	Percent of the population below poverty level	American Community Survey, 5-year estimates	2019-2023	Age, Race/Ethnicity, Gender

Indicator	WHO Category	Description	Dataset	Year	Stratification
Gender Pay Gap	Structural Determinant: SES- Income	Ratio of women's median earnings to men's median earnings for all full-time, year-round workers, presented as	California County Health Rankings	2019-2023	N/A
Income Inequality	Structural Determinant: SES- Income	Ratio of household income at the 80th percentile to income at the 20th percentile.	California County Health Rankings	2019-2023	N/A
Living Wage	Structural Determinant: SES- Income	The hourly wage needed to cover basic household expenses plus all relevant taxes for a household of one adult and two children.	California County Health Rankings	2024	N/A
Unemployment	Structural Determinant: SES- Occupation	The percentage of the population ages 16 and older unemployed but seeking work.	Bureau of Labor Statistics	2024	N/A

Data Notes

- Total Unhoused
  - *Counties were grouped by COC
  - San Benito and Monterey were grouped together; Fresno/Madera; Kings/Tulare; and Mountain counties
  - 2019 Population Data from the Department of Finance was utilized to calculate the rate of unhoused per 100,000 people

- Medi-Cal Enrollment
    - *Percentage is calculated based on newly enrolled, not total enrollment

Health Outcomes

Indicator	Subcategory	Description	Dataset	Year	Stratification
Asthma Diagnosis	Chronic Disease	Percentage of Californians who have been told they have asthma	Behavioral Risk Factor Surveillance System	2022	N/A
Cancer Diagnosis, Except Skin	Chronic Disease	Ever been told you had melanoma or any other type of cancer (except skin cancer)	Behavioral Risk Factor Surveillance System	2022	N/A
Chronic Kidney Disease Diagnosis	Chronic Disease	Percentage of Californians who have been told they have chronic kidney disease	Behavioral Risk Factor Surveillance System	2022	N/A
Chronic Obstructive Pulmonary Disease Diagnosis	Chronic Disease	Percentage of Californians who have been told they have COPD, emphysema, or chronic bronchitis?	Behavioral Risk Factor Surveillance System	2022	N/A
Coronary Heart Disease Diagnosis	Chronic Disease	Percentage of adults with diagnosed CHD or angina	Behavioral Risk Factor	2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
			Surveillance System		
Diabetes Diagnosis	Chronic Disease	Percentage of adults aged 20 and above with diagnosed diabetes (age-adjusted).	Behavioral Risk Factor Surveillance System	2022	N/A
Hypertension Diagnosis	Chronic Disease	Percentage of adults with diagnosed hypertension	Behavioral Risk Factor Surveillance System	2021	N/A
Stroke Diagnosis	Chronic Disease	Percentage of Californians who have been told they have a stroke	Behavioral Risk Factor Surveillance System	2022	N/A
Adult Obesity	ED Visits	Percentage of the adult population (age 18 and older) reports a body mass index (BMI) greater than or equal to 30 kg/m2 (age-adjusted).	Behavioral Risk Factor Surveillance System	2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Asthma ED Visits*	ED Visits	Counts and rates (per 10,000 residents) of asthma emergency department (ED) visits stratified by age and race/ethnicity	Department of Health Care Access and Information (HCAI)	2015-2022	N/A
Children and Youth Mental Health Services ED Visits	ED Visits	Youth ED visits for mental health services by county from Medi-Cal claims (Medi-Cal only)	Department of Health Care Access and Information (HCAI)	2019 - 2022	Age, Race/Ethnicity, Gender
Drug Related ED Visits	ED Visits	Number of drug-related ED visits per 100,000 population.	California Overdose Surveillance Dashboard	2023	Age, Race/Ethnicity, Gender
Heat-Related ED Visits	ED Visits	The number of ED visits due to heat-related illness among California residents; expressed as a rate per 100,000 California residents.	Tracking California, Public Health Institute	2022	N/A
Teen Births	ED Visits	Number of births per 1,000 female population ages 15-19.	California Department of Public Health MCAH	2000–2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Valley Fever	Environmentally-Linked Disease	Incidence Rate of Valley Fever per 100,000 people by county of residence	CDPH Center for Infectious Diseases	2001-2023	N/A
West Nile Virus	Environmentally-Linked Disease	Number of Reported West Nile Virus human cases by county of residence	CDPH Center for Infectious Disease	2014-2023	N/A
Life Expectancy	Length of Life	Average number of years people are expected to live.	California County Health Rankings	2020-2022	N/A
Premature Age-Adjusted Mortality	Length of Life	Number of deaths among residents under age 75 per 100,000 population (age-adjusted).	California County Health Rankings	2020-2022	N/A
Premature Death	Length of Life	Years of potential life lost before age 75 per 100,000 population (age-adjusted).	California County Health Rankings	2020-2022	N/A
Child Mortality	MCAH	Number of deaths among residents under age 20 per 100,000 population.	California County Health Rankings	2019-2022	N/A
Infant Mortality	MCAH	Number of infant deaths (within 1 year) per 1,000 live births by race/ethnicity	CDPH County Health State Profiles	2019-2021	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Low Birthweight	MCAH	Counts of live births with low birthweight (< 2,500 grams).	CDPH Cal-ViDA Birth Query	2024	Age, Race/Ethnicity
Preterm Births	MCAH	Counts of live births that are preterm or birth before 37 weeks gestation	CDPH Cal-ViDA Birth Query	2020-2022	Age, Race/Ethnicity
Severe Maternal Morbidity	MCAH	Rate per 10,000 of unexpected and potentially life-threatening complications from L&D, resulting in significant short or long-term health consequences	CDPH Maternal, Child, and Adolescent Health Division	2022	N/A
Days Unable to Work due to Mental Problems	Mental Health	Number of days unable to work due to mental health problems	California Health Interview Survey (CHIS)	2011-2023	Age, Race/Ethnicity, Gender
Depression Risk*	Mental Health	Number of people at risk for depression per 100,000 of state population	Mental Health America	2020-2024	N/A
Poor Mental Health Days	Mental Health	Average number of mentally unhealthy days reported in past 30 days	Behavioral Risk Factor Surveillance System	2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Accidents (Unintentional Injuries) Mortality Rate*	Mortality	Total deaths due to accidental injuries by place of residence & race/ethnicity	CDPH Cal-ViDA Death Query	2019-2024	Age, Race/Ethnicity
Alzheimer's Disease Mortality Rate*	Mortality	Total Deaths due to Alzheimer's disease by place of residence & race/ethnicity	CDPH Cal-ViDA Death Query	2019-2024	Age, Race/Ethnicity
Breast Cancer Mortality Rate*	Mortality	Age-adjusted death rate from female breast cancer per 100,000 female population	CDPH County Health State Profiles	2020-2022	N/A
Cardiovascular Disease Mortality Rate*	Mortality	Total Deaths due to cardiovascular disease by place of residence & race/ethnicity	CDPH Cal-ViDA Death Query	2019-2024	Age, Race/Ethnicity
Cerebrovascular Disease (Stroke) Mortality Rate*	Mortality	Total Deaths due to cerebrovascular disease (Stroke, TIA, Aneurysms, AVM) by place of residence & race/ethnicity	CDPH Cal-ViDA Death Query	2019-2024	Age, Race/Ethnicity
Chronic Liver Disease and Cirrhosis	Mortality	Age-Adjusted Mortality Rates due to CLD per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Chronic Lower Respiratory Disease Mortality Rate	Mortality	Age-Adjusted Mortality Rates due to CLRD (COPD. chronic bronchitis, emphysema, and asthma) per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Colorectal Cancer Mortality Rate	Mortality	Age-adjusted death rate from colorectal cancer per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Diabetes Mortality Rate	Mortality	Age-Adjusted Mortality Rates due to Diabetes per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Drug Overdose Mortality Rate*	Mortality	Number of drug poisoning deaths per 100,000 population.	California Overdose Surveillance Dashboard	2022	Age, Race/Ethnicity, Gender
Firearm Mortality Rate	Mortality	Age-Adjusted Mortality Rates due to Firearms per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Homicide Rate	Mortality	Age-Adjusted Mortality Rates due to Homicide per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
Influenza and Pneumonia Mortality Rate	Mortality	Age-Adjusted Mortality Rates due to influenza and pneumonia per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Lung Cancer Mortality Rate	Mortality	Age-adjusted death rate from prostate cancer per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Overall Cancer Mortality Rate	Mortality	All Cancer type Mortality Rates per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Prostate Cancer Mortality Rate	Mortality	Age-adjusted death rate from prostate cancer per 100,000 male population	CDPH County Health State Profiles	2020-2022	N/A
Suicide Mortality Rate	Mortality	Age-Adjusted Mortality Rates due to Suicide per 100,000 population	CDPH County Health State Profiles	2020-2022	N/A
Days Missed from Work due to Physical Health	Quality of Life	The number of days missed from work due to injury, illness, or disability	California Health Interview Survey (AskCHIS)	2019 - 2023	Age, Race/Ethnicity, Gender
Poor or Fair Health	Quality of Life	Percentage of adults reporting fair or poor health (age-adjusted).	Behavioral Risk Factor	2022	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
			Surveillance System		
Poor Physical Health Days	Quality of Life	Average number of physically unhealthy days reported in past 30 days	Behavioral Risk Factor Surveillance System	2022	N/A
Total Tooth Loss	Quality of Life	Adults who have had all permanent teeth removed because of tooth decay or gum disease	Behavioral Risk Factor Surveillance System	2022	N/A
Chlamydia Incidence	STD/STI	Number of newly diagnosed chlamydia cases per 100,000 population.	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2023	Age, Race/Ethnicity, Gender
Congenital Syphilis Incidence	STD/STI	Cases and Incidence of Congenital Syphilis per 100,000 live births	CDPH STD Control Branch	2023	N/A
Gonorrhea Incidence	STD/STI	Cases and incidences of Gonorrhea per 100,000 population	CDPH STD Control Branch	2023	N/A

Indicator	Subcategory	Description	Dataset	Year	Stratification
HIV Prevalence	STD/STI	Number of people aged 13 years and older living with a diagnosis of human immunodeficiency virus (HIV) infection per 100,000 population.	National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	2022	Age, Race/Ethnicity, Gender
Primary and Secondary Syphilis Incidence	STD/STI	Cases and Incidence of Primary and Secondary Syphilis per 100,000 population.	CDPH STD Control Branch	2023	N/A
Alcohol-Involved Traffic Fatalities	Traffic-Related	Counts of deaths due to alcohol involvement in traffic fatalities	California Crash Reporting System (CCRS)	2024	Age, Sex
Total Fatal Traffic Crashes	Traffic-Related	Counts of crashes resulting in a fatality	California Crash Reporting System (CCRS)	2024	Age, Sex
Total Traffic Fatalities	Traffic-Related	Counts of deaths due to traffic accidents or incidents	California Crash Reporting System (CCRS)	2024	Age, Sex

Data Notes

- Asthma ED Visits
  - * ACS 2023 Population Estimates were utilized to deconstruct and aggregate data
- Drug Related ED Visits
  - * ACS 2023 Population Estimates were utilized to deconstruct and aggregate data

- Heat-Related ED Visits
    - * ACS 2023 Population Estimates were utilized to deconstruct and aggregate data
- Valley Fever
    - *Rates were calculated using Department of Finance population estimates for 2000-2010, 2011-2020, and 2021-2025
    - LHJ jurisdictions, such as Pasadena, Berkeley, and others, were removed since they were cities not counties
- Depression Risk
    - *Mono and Alpine were unstable after re-calculating rates
- Accidents (Unintentional Injuries) Mortality Rate
    - *ACS 2023 Population Estimates were utilized as the denominator
- Alzheimer's Disease Mortality Rate
    - *ACS 2023 Population Estimates were utilized as the denominator
- Cardiovascular Disease Mortality Rate
    - *ACS 2023 Population Estimates were utilized as the denominator
- Cerebrovascular Disease (Stroke) Mortality Rate
    - *ACS 2023 Population Estimates were utilized as the denominator
- Drug Overdose Mortality Rate
    - * ACS 2023 Population Estimates were utilized to deconstruct and aggregate data

Data Aggregation Methods

For the development of the regional report, data aggregation was conducted using Tableau Desktop to ensure accuracy and consistency across indicators. The primary steps involved in aggregating data for Central California included:

1. **Summation of Incidents**
    a. Reported incidents (e.g., health, crime, or environmental) were summed using Tableau formulas to obtain total counts across the 12 counties within Central California.
2. **Population Normalization**
    a. Aggregated values were then normalized by dividing by the total population of Central California to calculate per capita rates (e.g., incidents per 100,000 people)
    b. Population data was pulled from the 2023 American Community Survey (ACS) population estimates.

These calculations were embedded directly into Tableau Desktop using calculated fields and table aggregations to automate the reporting process and maintain reproducibility. In the case of missing counties, the incidents were summed up for the counties that were available and divided by the population of the available counties.

Indicator Percentages

The total percentage of indicators Central California fared worse on was calculated using the following methods.

1. The total number of indicators analyzed was 125. This is the sum of all the indicators in each domain highlighted in the Summary of Results.
2. The total number of indicators Central California fared worse on was 85. This is the sum of the indicators in each domain highlighted in the Summary of Results.
3. Both numbers were divided together to obtain the total percentage of 68%.

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