WHY ARE DEATH RATES RISING AMONG WHITES IN CALIFORNIA?

The Role of Stress-Related Conditions

Center on Society and Health

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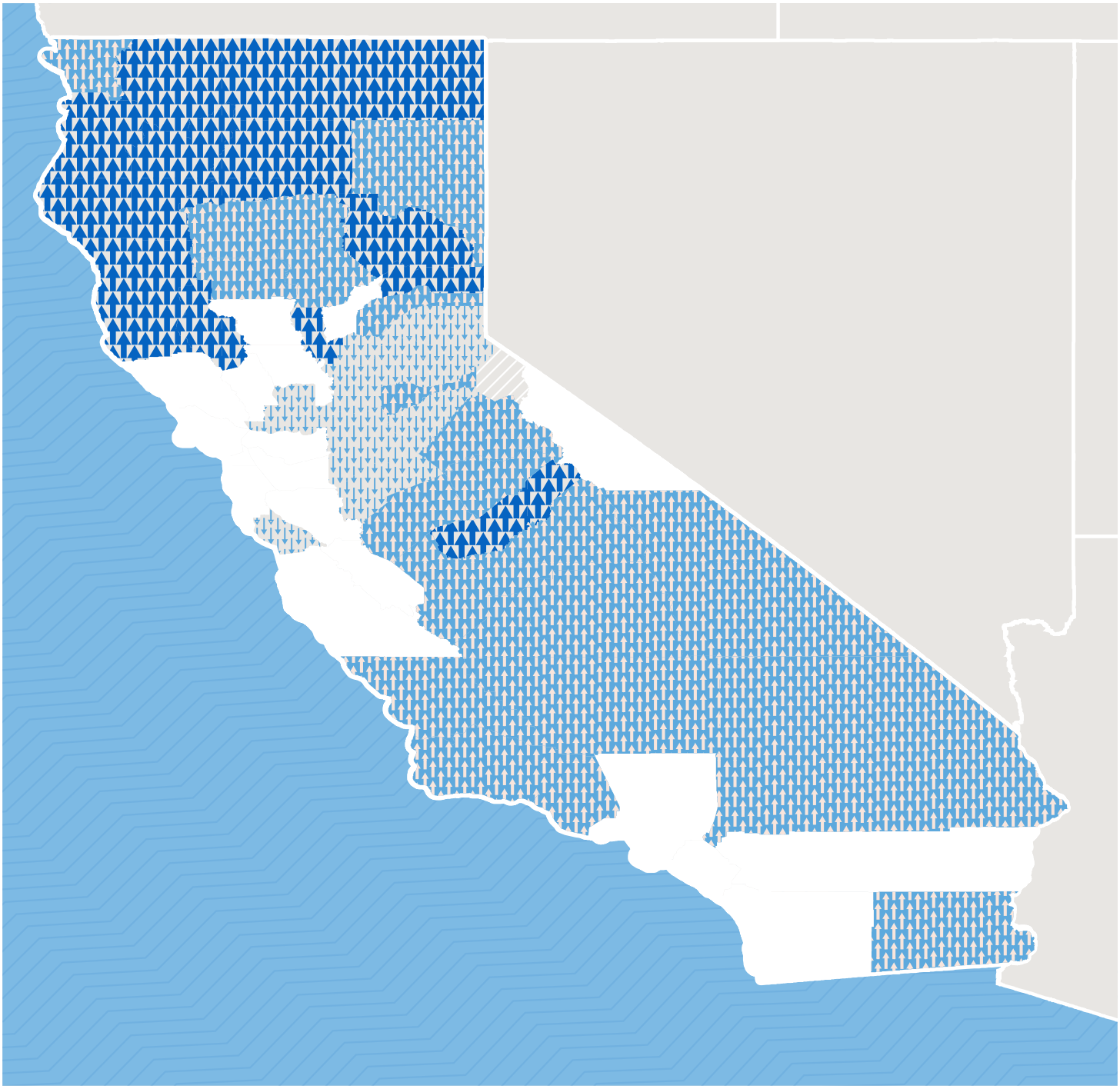


While death rates have generally been decreasing in the United States and other industrialized countries, death rates in California have stopped declining among young and middle-aged whites (ages 25–34 years and 40–64 years, respectively) since 2000.[a] The impact of this trend is startling: between 1995 and 2014, increases in death rates in these two age groups from specific causes claimed an estimated 21,350 lives. This trend is consistent with findings from national studies, which also report rising death rates among certain groups of whites, especially those who are middle-aged, have less education, and women.[1–3] The decrease in life expectancy has been attributed to the opioid epidemic.[4]

a. The study focuses on whites, with the expectation that understanding the causes of this phenomenon among whites could be relevant to all racial and ethnic groups. For simplicity, this report uses "whites" as shorthand to refer to non-Hispanic whites (those who do not designate themselves as Hispanic).

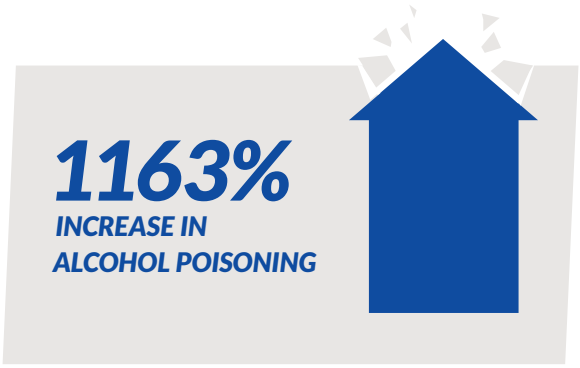
What about non-whites? *At the same time (1995–2014) that death rates were increasing among young adult and middle-aged whites in California, mortality rates among blacks, Asians and Pacific Islanders, and Latinos decreased by 25%, 27%, and 21%, respectively. Nonetheless, troubling health disparities persist: Californians of certain races (notably blacks and Native Americans) live shorter and less healthy lives than whites, Asians, and even Latinos. Death rates among American Indians and Alaskan Natives increased by 27% after 1995. By 2010–2014 the death rate among blacks remained 1.3 times that of whites: in fact, it was higher than that of whites 15 years earlier. Continued efforts are needed to reduce the persistently high mortality rates among people of color. In addition, the unprecedented reversal of the usual decline in death rates among whites also requires attention. This potential cause of the narrowing gap between blacks and whites has implications for people of all races and ethnicities, and is therefore examined here.*

To better understand where and why this is happening in California, we undertook a detailed examination of state vital statistics from 1995 to 2014 and compared results across the state's 58 counties.[b] The study was funded by the California Endowment and involved a partnership between the Center on Society and Health at Virginia Commonwealth University and the Graduate School of Public Health at the University of Pittsburgh.

b. Trends in death rates in this report generally refer to age-adjusted rates, in which the "crude" mortality rate was recalculated to account for changes in the age distribution of the population over time.

WHAT CAUSES OF DEATH ARE RESPONSIBLE FOR CHANGING DEATH RATES AMONG WHITES?

We found that the leading causes of rising death rates among whites in California included drug and alcohol overdoses, suicides, and accidents. The rise in drug and alcohol abuse and suicides is striking — what some have called "deaths of despair:"[5]



- Death rates from drug overdoses doubled between 1995 and 2014 among young and middle-aged whites in California.
- Death rates from alcohol poisoning (e.g., binge drinking) more than quadrupled among younger whites and increased by 1163% — more than a 12-fold increase — among those ages 40–64 years.
- The rate of suicides among middle-aged whites increased by 37% after 2000. Hanging, strangulation, or suffocation were the most common forms of non-firearm suicide, doubling in frequency after 1995.

Although other studies have also reported increased death rates among whites from drug overdoses, alcoholism, and suicide, our detailed analysis also found dramatic increases in deaths from organ diseases, which accounted for a large proportion of excess deaths among middle-aged whites. The medical disorders responsible for these deaths included viral hepatitis, liver cancer, heart disease, and other organ diseases, many having potential links to substance abuse and trauma (e.g., accidents), among other risk factors. Examples are shown in Figure 1:

Viral hepatitis: The use of injectable drugs increases the risk of certain viral infections of the liver, such as hepatitis C, a chronic liver disease that can be fatal. Death rates from viral hepatitis among middle-aged whites increased by 66% between 1995 and 2014. Between 2000 and 2014, the death rate from hepatitis C increased 10-fold (993%).

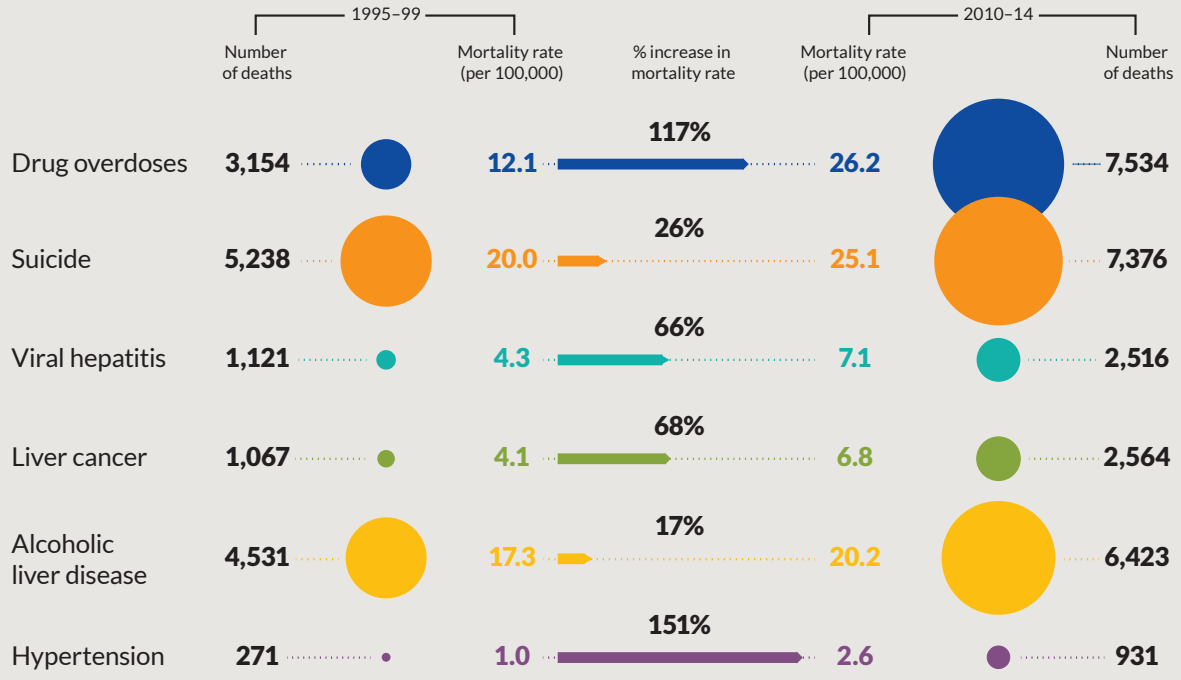
Liver cancer: Hepatitis C and other kinds of viral hepatitis increase the risk of liver cancer. Death rates from liver cancer increased by 68% among middle-aged whites between 1995 and 2014.

Chronic liver disease: Death rates from alcoholic liver diseases, such as cirrhosis, increased by 17% after 1995 among middle-aged whites, claiming almost as many lives as drug overdoses or suicides.

Essential hypertension: Alcohol consumption is among the risk factors for a variety of cardiovascular disorders. For example, the death rate from essential hypertension increased by 151% after 1995 among middle-aged whites.

We also observed trends in deaths from accidents. Although the risk of dying in car crashes decreased in California during these years, death rates increased for other injuries. For example, after 1995, pedestrian and motorcycle fatalities increased among young and middle-aged whites. Some of these deaths are potentially associated with intoxication, although other factors may be to blame, such as distracted pedestrians using cell phones.

Figure 1. Increases in deaths among whites ages 40–64 years in California, 1995–2014

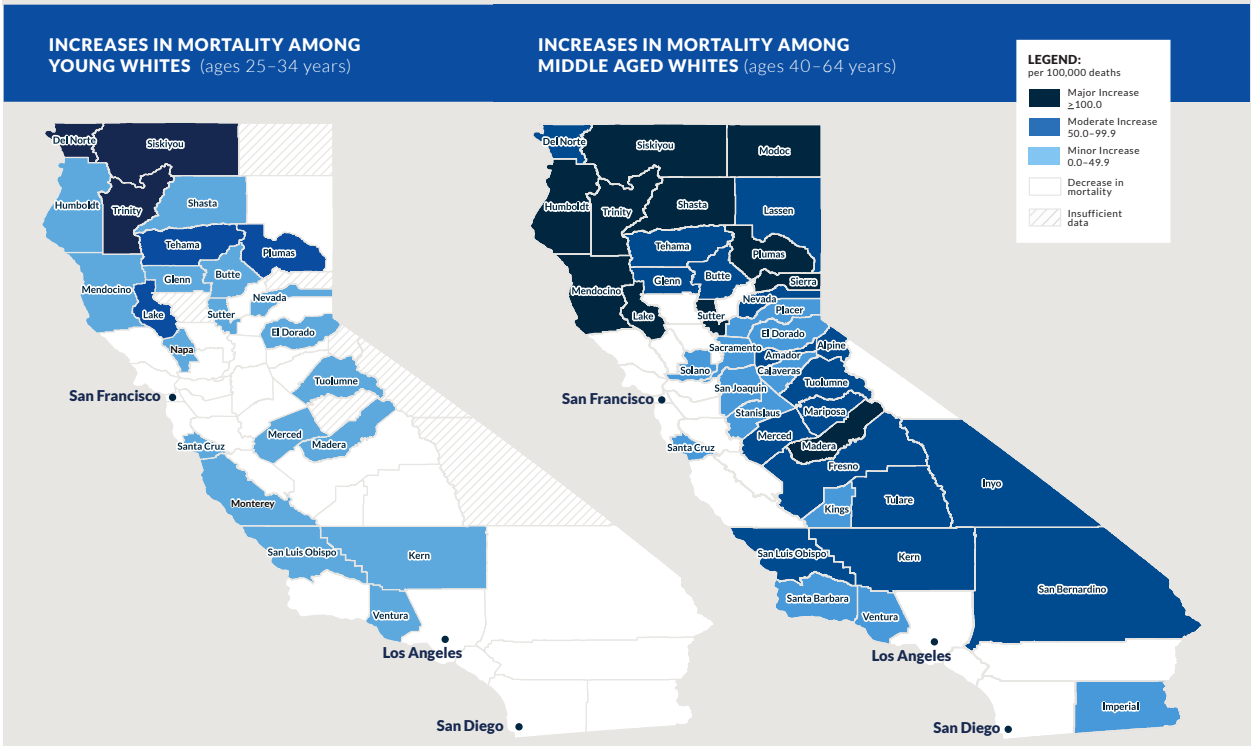


Size of colored circles is proportional to the absolute number of middle-aged whites in California who died from specific causes. Percentages in the center of the diagram refer to the proportional increase in the adjusted death rate from specific causes. Deaths from drug and alcohol poisoning refer to accidental overdoses; deaths from hypertension refer to deaths from essential hypertension.

WHERE AND WHY IS THIS HAPPENING?

Rural areas have been especially impacted by this trend: The 42 affected counties—where mortality increased among at least one of the two age groups studied—were primarily in northern rural California and the Central Valley (Figure 2). Death rates among middle-aged whites (ages 40–64 years) increased by more than 100 deaths per 100,000 in 11 of these counties, all but one located in rural northern California. These populations are overwhelmingly white and, for at least 15 years, have reported some of the highest poverty rates among whites in the state (approximately 15–20%).[6–8] In contrast, whites in major metropolitan areas (e.g., Los Angeles, San Francisco) and nearby coastal California counties were largely spared—their mortality rates decreased.

Figure 2. All-cause mortality increased in northern rural counties and the Central Valley



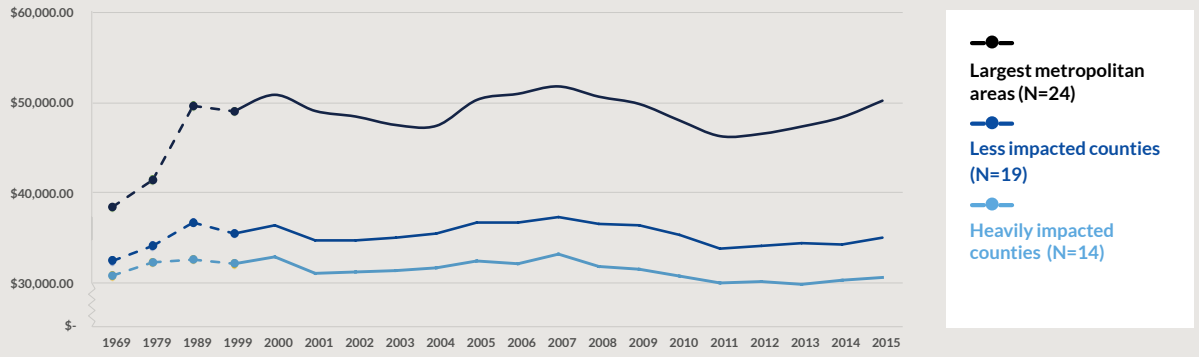
Map depicts the magnitude of change in mortality rates (for all causes) between 1995–1999 and 2010–2014, measured in deaths per 100,000. Counties that experienced a decrease in mortality (colored white) were concentrated in major metropolitan areas (e.g., the Bay area, Los Angeles, and San Diego) and nearby coastal California counties. Counties with the largest increases in all-cause mortality—an increase of more than 50 deaths per 100,000 persons (darkest shade of blue)—were largely in rural areas. Rural northern California and the Central Valley saw the greatest increases in mortality rates.

We studied the 33 counties where death rates rose among whites ages 40–64 years,[c] all of which were located outside of large metropolitan areas. We compared the characteristics of the 14 counties with the largest increases in death rates (death rates rising more than 50 deaths per 100,000) versus the 19 other counties with more modest increases (50 or fewer deaths per 100,000). People living in the 14 most impacted counties had less education, lower household incomes, higher rates of poverty and food insecurity, and a larger proportion of foreign-born residents. Residents of these counties had less access to health insurance, health care providers (primary care, dentistry, and mental health), a vehicle, or public transit. The 19 counties with more modest increases in mortality had more urban characteristics, including greater air pollution and housing that was older, substandard, and overcrowded.

We also examined socioeconomic trends in these counties between 1990 and 2014. As household income, unemployment, and poverty rates fluctuated during these years across California, especially after the 2007 recession, the four largest metropolitan areas (Los Angeles, Sacramento, San Diego, and San Francisco) consistently fared better than the 33 counties in which white mortality rates increased. The lowest household incomes were

c. This place-based analysis focused on counties that experienced an increase in deaths among middle-aged whites, and not younger whites, because the middle-aged population accounted for the largest number of excess deaths. We suspect that many of the same findings apply to counties in which death rates among younger white adults also increased.

Figure 3. Average median household income (in 1999 dollars) by county, California, 1969–2015



Largest metropolitan areas *included the 24 counties in the Metropolitan Statistical Areas of Los Angeles, Sacramento, San Francisco, and San Diego.*
Heavily and less impacted counties *included those in which the increase in age-adjusted mortality between 1995–1999 and 2000–2014 was greater than 50 per 100,000 deaths or 50 per 100,000 deaths or fewer, respectively.*

Source: U.S. Census Bureau, Small Area Income and Poverty Estimates (SAIPE) Program, 1999–2015 (https://www.census.gov/did/www/saipe/data/statecounty/data/index.html); U.S. Census Bureau, Historical Income Tables, Counties, Table C4 (https://www.census.gov/data/tables/time-series/dec/historical-income-counties.html)

in the 14 counties with the largest increases in white mortality (Figure 3). The gap in household income between these 14 counties and those with more modest increases in mortality widened during this period, from a gap of $3,867 in 1990 to $6,196 in 2014.

In short, the counties in California where death rates increased among whites tended to be economically distressed areas where families experienced limited job opportunities, stagnant wages, and increasing poverty—and where mounting frustration and despair would be expected. The reversal in mortality patterns reported here, and the startling spike in deaths from substance abuse and suicides, could be a direct response to economic stresses, but the phenomenon is probably more complex. After all, as shown in Figure 3, income levels among whites rose during the years their death rates increased. Conversely, among populations of color, which have experienced greater and more longstanding economic stresses, death rates steadily decreased.

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Other explanations for health trends among whites must therefore be considered. The influx of opioids into many communities is a prominent concern. In addition, social trends may also be relevant. For example, rural communities may not provide the levels of social support that exist in urban areas, and social ties may have weakened during the years examined in this study. Moreover, affected individuals and communities may lack the resilience needed to endure social and economic hardships and the cumulative stress of these challenges, which represent a distinct change from past expectations.

Today's generation may be experiencing a crisis of confidence in the "American dream."

During the two decades this report studied (1995–2014), young and middle class whites—the age groups examined here—experienced economic and social instability unlike that of their parents and grandparents. In the post-World War II generation, loyal workers could often count on a job for life, with health insurance, a pension, and other benefits. Earnings were generally stable enough to finance a home, put children through college, and plan for retirement.[9–14] Working-class white households were largely protected from the social disadvantage and economic insecurity that are common today and that people of color have experienced for generations. Today's generation may be experiencing a crisis of confidence in the "American dream."

Frustration and hopelessness over this uncertain future would be expected to increase anxiety and depression. Over time, chronic stress, despair, and the pain they produce can induce harmful coping behaviors. Some people turn to food, resulting in overeating and the consumption of calorie-dense fast foods. Some people cope with stress by smoking, which increases the risk of tobacco-related diseases (e.g., emphysema).[d] Some people are overcome by anxiety or depression; feelings of hopelessness can lead desperate individuals to commit suicide. Some people self-medicate with alcohol or drugs to relieve their psychic pain. And some people act out in violence, causing injury to others.

These stresses, if induced by greater social and economic hardships, may have greater impact in rural areas, where access to resources is more remote and jobs are scarcer. In rural America, entire regions—not just individuals—have lost opportunities for employment due to the collapse of major industries. Rural California is no exception. Although the Central Valley supports a thriving agricultural industry, it ranks among the five poorest regions of the United States.[15] In the northern rural counties of California, the Redwood forests support a strong timber industry, but the

d. Although death rates from tobacco-related illnesses generally decreased in California after 1995, we found that 24 counties experienced an increase in mortality from chronic lower respiratory diseases among middle-aged whites.

isolated geography and high transportation costs discourage other business development. Manufacturing and technology jobs are therefore limited, and most residents work in service-related positions with limited incomes. In one service field—the fast food industry—workers earned approximately $11,000 per year in 2008–2012 and were four times as likely as U.S. workers to live in poverty.[16] With the exception of metropolitan areas like Los Angeles and San Diego, the northern region of California has the state's highest prevalence of deep poverty (incomes below 50% of the poverty level).[17]

WHAT SHOULD BE DONE?

While further research is needed to understand this phenomenon, rising death rates should be considered a public health crisis in need of urgent action. Policies to reverse this trend and save lives include not only topic-specific solutions, but also social and economic policies to address the upstream conditions that may be driving people to their deaths (see Table 1). Topic-specific solutions will not achieve meaningful impact without addressing the root causes that are inducing drug and alcohol use and producing the desperation that causes suicides. These strategies are needed to support all communities in suffering, not only whites but all racial and ethnic groups.

Rising mortality rates among whites appear to be unique to the United States and not widely reported by other developed countries that are also experiencing the economic impacts of globalization. The absence in this country of robust social benefits (e.g., universal health care, subsidized post-secondary education,

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TABLE 1: POLICY STRATEGIES TO ADDRESS RISING MORTALITY RATES

Strengthen behavioral health services	Prevention, detection, and early treatment of drug and alcohol abuse — including the opioid epidemic Strategies for suicide prevention, including better access to treatment for depression and other risk factors for suicide
Address root causes by improving economic and social conditions for populations in need	Policy action by government and the private sector to improve job opportunities, increase wages, reduce poverty, and promote economic mobility Reforms and investments to improve the quality of education — from preschool through high school — and to improve the affordability of college, vocational training, and professional education
Invest in communities	Economic development by business, investors, and philanthropy, and the promotion of new industry in marginalized and resource-poor rural counties Civic engagement and cross-sector partnerships to leverage and target resources and expand opportunities to break the cycle of poverty Cross-racial alliance building to understand and address common causes of health threats facing different racial and ethnic groups
Prepare the health care system for expanding caseloads	Affordable health care and insurance coverage, and strategies to address shortages in clinicians and facilities Resources to address expanding caseloads among clinicians, practices, hospitals, emergency medical services for care at the scene, intensive care in the hospital, long-term care in rehabilitation facilities, and psychological counseling for mental illness and addiction
Conduct research on underlying causes	Establish the causal links responsible for rising death rates Research by social scientists and economists to better understand the unique challenges facing young and middle-aged whites, the explanations for deteriorating health in this population while health improves in other racial and ethnic groups, and the economic and social conditions in impacted communities, such as rural counties

paid leave, job retraining, etc.) may make working-class Americans uniquely vulnerable to rapid shifts in the global economy. Policy approaches that enhance social benefits and rebuild the social safety net may help blunt the rise in death rates.

This health crisis requires action by decision-makers in sectors outside of health to help boost the economy, increase wages, create jobs, reform education, and revitalize communities. The most promising solutions cut across sectors and support improvements across various demographic groups: investments in communities that improve the material wellbeing and health of families can also benefit education, workforce productivity, and the infrastructure and economic vitality of communities. Conversely, the neglect of disadvantaged communities — especially cutbacks that reduce access to health care, safety net programs, and community investments — can contribute not only to increased disease rates but also higher health care costs for employers and government and sicker workforces that weaken corporate competitiveness. Health care reforms that result in weakened coverage will, in the face of rising death rates, escalate the death toll.

CONCLUSIONS

The dramatic rise in opioid addiction and fatal overdoses have rightfully alarmed the public and policymakers. But *the opioid crisis is the tip of an iceberg*: many people are dying from the use of other drugs, alcohol abuse, the injuries and diseases they cause, and suicides. The death toll will not stop by attending only to drug abuse. We must also focus upstream on the root causes that are driving people to their deaths. Addressing the economy and alleviating the hardships responsible for chronic stress may do more to alleviate desperation and may save more lives than focusing exclusively on symptoms.

Meaningful attention to these root causes requires a partnership of policymakers that cuts across sectors, in which the fields of public health and medicine collaborate with government officials and business leaders. These upstream conditions are not solved by doctors and addiction specialists, but by policies that strengthen the middle class and provide the poor with basic resources to climb the economic ladder, such as a good education.

The increasing death rates among whites in California, and the apparent anguish they are experiencing, are poignant reminders of how much is at stake: not just the length of our lives but the health of our children, the stability of our economy, and the future of our communities.

NOTES

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