



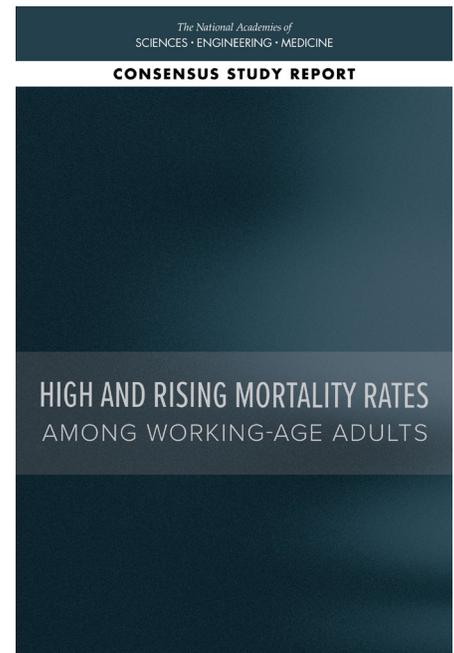
High and Rising Mortality Rates Among Working-Age Adults

Prior to the COVID-19 pandemic, life expectancy had increased in the United States and throughout the world for the past century. In 2010, however, progress in life expectancy in the United States began to stall despite continuing to increase in other industrialized countries. Alarming, U.S. life expectancy fell for 3 years in a row from 2015 to 2017, the longest sustained decline in a century since the influenza pandemic of 1918–1919. Already ranked relatively low in life expectancy among other high-income countries, the United States has continued to lose ground, further compromising its global position in national health and well-being. The stalling and subsequent decline in life expectancy during the 2010s appears to be due to an increase in mortality among “working-age” adults between 25–64 years of age. The premature death of hundreds of thousands of Americans in the prime of their lives will affect the productivity and competitiveness of the country and have a profound ripple effect on the well-being of families and the social fabric of communities for generations to come.

To understand the key drivers of increasing working-age mortality and the widening health inequalities that accompany it, the National Academies of Sciences, Engineering, and Medicine convened a committee of experts in biostatistics, demography, economics, epidemiology, medicine, public health, and sociology to investigate these trends. The committee’s report, *High and Rising Mortality Rates Among Working-Age Adults* (2021), and based on data from 1990–2017 collected before COVID-19, identifies three categories of causes of death as the predominant drivers of trends in working-age (ages 25–64) mortality: drug poisonings and alcohol-induced causes, suicide, and cardiometabolic diseases. The report also makes recommendations for future research and data collection and offers policy recommendations to reduce the rates of and disparities in mortality in this age group. As the committee emphasizes, immediate action is needed to address what has become a national population health crisis, a crisis that is being exacerbated by COVID-19.

TRENDS IN WORKING-AGE MORTALITY

The committee examined mortality trends between 1990 and 2017 and concluded that the recent decline in U.S. life expectancy appears to have been the product of an increase in mortality among working-age adults (ages 25–64) beginning in the 1990s for specific causes of death (e.g., drug- and alcohol-related causes, suicide); and a slowing of declines in mortality due to other causes of death (mainly cardiovascular diseases) after 2010. The committee identified a long-term trend of stagnation and reversal of declining mortality rates that initially was limited to younger White women and men (ages 25–44) living outside of large central metropolitan areas but subsequently spread to encompass most racial/ethnic groups and most geographic areas of the country. Between 2012–2017, mortality rates were either flat or increasing among most working-age populations. Although rising mortality began among Whites, Blacks consistently experienced much higher mortality; and disparities by socioeconomic status have widened substantially among working-age Whites, particularly women, since the 1990s.



Over the 1990–2017 period, disparities in mortality between large central metropolitan and less-populated areas widened (to the detriment of the latter), and geographic disparities became more pronounced. Mortality rates increased across several regions and states, particularly among younger working-age adults, and most glaringly in central Appalachia, New England, the central United States, and parts of the Southwest and Mountain West.

DRUG AND ALCOHOL-RELATED DEATHS AMONG WORKING-AGE ADULTS

Drugs and alcohol were responsible for more than 1.3 million deaths—approximately 8 percent—among the working-age population between 1990 and 2017. These substance-related deaths were major contributors to the increase in working-age mortality, and they continue to rise. Drug poisoning deaths have been increasing for over three decades and represent the single largest contributor to the rise in mortality rates among U.S. working-age adults, with the exception of older Hispanic adults ages 45–64. The largest increases occurred among Whites (particularly males) and older Black males. Alcohol-induced deaths also increased among Whites from 1990–2017, declined among Blacks and Hispanics from 1990–2009, but began to increase in the 2010s. While drug-related mortality rates increased in every state, the increases were most pronounced in Appalachia, New England, and the industrial Midwest.

Supply-and-demand factors underlie trends in drug- and alcohol-related mortality. The country’s drug overdose crisis represents a “perfect storm” resulting from the flooding of the market with highly addictive yet deadly prescription and illicit drugs and the underlying and growing demand for and vulnerability to substances that might possibly bring relief, albeit temporary, from physical and/or mental pain. On the supply side, weak governmental oversight combined with actions in the 1990s and 2000s by the pharmaceutical industry (manufacturers, distributors, pharmacies), pain control advocacy groups (often funded by pharmaceutical companies), and physicians fueled a massive increase in opioid prescribing—followed by a rise in prescription opioid misuse, addiction, and overdose. On the demand side, increasing prevalence of physical pain, deteriorating psychological health, and long-term macroeconomic trends seem to underlie substance use mortality trends for certain population subgroups and geographic areas. The decline in economic opportunities among adults with less than a college education has been especially devastating and may have contributed to the rise in drug poisoning and alcohol-related deaths in this population. Explanations centered on “despair” (which signifies hopelessness but is not itself a formal mental health diagnosis) are also consistent with long-term economic, family, and social changes that have weakened support systems that provide people with purpose and meaning.

DEATH BY SUICIDE AMONG WORKING-AGE ADULTS

Suicide accounted for 569,099 deaths in the working-age population between 1990 and 2017 when suicide rates increased primarily among Whites, especially White men, and in less populated, rural areas. For example, suicide rates are higher in Western states, especially those with large rural populations.

Research on suicide trends tend to focus on a range of contributing factors, such as the economy; social engagement, religious participation, and social support; access to lethal means; and mental and physical health. Periods of economic downturn, wage stagnation, weak safety nets, and increasing foreclosure rates are associated with rising suicide mortality in national and state-level studies. Social support from embeddedness in religious institutions, community organizations, or stable interpersonal relationships that buffer the risks of self-harm has also declined in recent decades, and this decline has been more prominent among lower-educated Whites. Although suicide mortality by firearms rose over the study period, its contribution to the rise in overall suicide mortality declined as suicides by other means (e.g., hanging, suffocation) increased more rapidly. Those with a history of mental illness also have a much higher risk of suicide; Whites tend to report more history with mental illness relative to other racial/ethnic groups.

CARDIOMETABOLIC-RELATED DEATHS AMONG WORKING-AGE ADULTS

The committee examined deaths due to cardiometabolic diseases, including endocrine, nutritional, and metabolic (ENM) diseases (e.g., diabetes, hyperlipidemia, obesity); hypertensive heart disease; and ischemic heart disease and other diseases of the circulatory system (e.g., coronary heart disease, stroke, and other cardiovascular conditions). Cardiometabolic diseases were responsible for more than 4.8 million deaths among the working-age population between 1990 and 2017 with ischemic heart disease and other diseases of the circulatory system the largest share (3.8 million deaths). The contribution of cardiometabolic mortality to the recent rise in working-age mortality involves several countervailing trends. Death rates due to ENM diseases and hypertensive heart disease generally increased during 1990–2017, especially in the 2010s; and while there have been significant long-term reductions in mortality from ischemic heart disease and other circulatory diseases since 1970, progress had stalled by 2010. The combination of these trends increased all-cause mortality after 2010 because the slowdown in mortality declines from ischemic and other circulatory diseases no longer offset the rise in mortality from ENM and hypertensive heart disease.

Within the working-age population, younger adults (ages 25–44) of all racial/ethnic groups, White men and women, Black men (in the recent decade), and those living in rural areas experienced greater relative increases in mortality due to cardiometabolic diseases. The committee identified three potential explanations for the trends in cardiometabolic mortality—the obesity epidemic; diminishing returns of medical advances; and social, economic, and cultural changes. The increased prevalence of obesity and its lagged cardiometabolic consequences are the most important. Substantial evidence shows that obesity increases the risks of hypertension, stroke, coronary heart disease, and diabetes, driving up rates of mortality due to cardiometabolic diseases. Obesity rates began to rise in the early 1980s and remain high today as a period-based phenomenon that affects children and adults of all ages. But its cardiometabolic consequences have occurred in a cohort fashion such that more recent cohorts—those born in the 1970s, 1980s, and 1990s—have been exposed to obesogenic environments their entire lives and have been more affected because of their earlier life exposure and longer durations at risk than prior cohorts who were exposed to the period-based changes at older ages.

Second, the substantial progress from the 1970s onward achieved by cardiovascular disease prevention (e.g., reduced cigarette smoking) and more advanced treatments may now be losing momentum. The benefits of medical advances may be offset by the cardiometabolic consequences of rising obesity rates. In addition, those most at risk to cardiovascular disease often face barriers in accessing and adherence to treatments for chronic disease, reinforcing disparities in cardiometabolic health. Third, social, economic, and cultural changes that have undermined economic security, intergenerational mobility, and social support networks damage cardiometabolic health through stress-mediated biological pathways and reduced access to care.

THE ROLE OF RACIAL/ETHNIC, SOCIOECONOMIC, AND GEOGRAPHIC DISPARITIES IN WORKING-AGE MORTALITY

A review of research identified significant, and in some cases, widening racial/ethnic, socioeconomic and geographic disparities in working-age mortality. While the explanations for these disparities are often specific to certain causes of death, the committee identified three common themes that affected population subgroups at different time periods or in different contexts.

The first is the role of adverse economic trends (e.g., stagnant wages, collapse of job sectors, unemployment) that affected certain geographic areas and population subgroups more so than others. For example, the loss of manufacturing and mining jobs in the industrial Midwest and Appalachia in the 1970s led to a long-term economic decline, often concentrated among the largely White families and communities in these areas. Declining economic conditions tend to weaken societal institutions, community resources, family bonds, social networks, and access to health care—all of which could explain working-age mortality disparities according to geography, socioeconomic status, and race and ethnicity.

A second theme is socioeconomic inequality, which could explain the pace and timing of rising 21st century working-age mortality, as well as the longstanding racial/ethnic disparities in mortality that have persisted throughout U.S. history. Due to the legacy and persistence of structural racism in the United States, Blacks and other minority groups have experienced longstanding socioeconomic inequalities that have compromised their health and produced much higher mortality rates than among Whites. With the growing importance of education within U.S. society and need for academic credentials to obtain well-paying technical and professional jobs, socioeconomic inequality has also deepened among Whites, widening socioeconomic disparities in White mortality.

A third theme includes vulnerability, which mediates the degree to which adverse economic conditions and socioeconomic inequality make particular groups more susceptible to morbidity and mortality risks. For example, due to educational, job, and housing discrimination, Blacks tend to work and live in segregated and often disadvantaged neighborhoods, increasing their exposure to obesogenic, unsafe, and low resource environments that limit access to healthy foods and green space for physical activity and medical and behavioral health services, which in turn, increase mortality risks.

RESEARCH AND POLICY IMPLICATIONS AND RECOMMENDATIONS

From a historical perspective, the rise in U.S. working-age mortality and resulting declines in life expectancy are relatively new. Additional research is needed to more fully understand the factors underlying changing mortality patterns by age, sex, race and ethnicity, and socioeconomic status. The committee proposes numerous research efforts to generate better evidence that can serve as a basis for evaluating and refining policies. These recommendations span multiple levels and modes of analysis, address a variety of disparities (socioeconomic, racial/ethnic, geographic), encompass a range of causes of death and related factors (drug poisonings; alcohol-related deaths; suicide; cardiometabolic diseases; mental illness; obesity; adverse childhood experiences; psychosocial indicators, such as stress, despair, hopelessness, coping, and resilience; long-term economic changes; social factors, such as family structure, community support, and religiosity), and propose numerous improvements to data infrastructure.

The report also describes the need for urgent policy action to address this crisis, with policy responses focusing not only on the immediate causes of deaths, such as drugs and obesity, but also on the upstream “causes of the causes,” such as living conditions that increase the vulnerability of communities, families, and individuals to premature mortality. The committee offers policy recommendations regarding obesity prevention programs, especially in early life; interventions to target the substance use and overdose crisis; and the expansion of Medicaid under the Affordable Care Act to increase access to health care among the most vulnerable. The committee also presents broader policy conclusions, for example, related to the need to revitalize the communities hit hardest by the addiction and overdose crisis as well the need to dismantle structural racism and discriminatory policies to reduce inequalities that drive racial/ethnic disparities in health and mortality in the United States. The COVID-19 pandemic has highlighted these long-standing social and economic inequalities that leave some populations vulnerable when new health threats emerge. It has also demonstrated the important role that public policy can play to achieve health equity.

The United States is losing far too many lives far too early. This national crisis requires action and the report’s conclusions and recommendations outline a path forward.

COMMITTEE ON RISING MIDLIFE MORTALITY RATES AND SOCIOECONOMIC DISPARITIES

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For More Information . . . This Consensus Study Report Highlights was prepared by the Committee on Population and the Committee on National Statistics based on the Consensus Study Report, *High and Rising Mortality Rates Among Working-Age Adults* (2021). The study was sponsored by the National Institute on Aging of the National Institutes of Health and the Robert Wood Johnson Foundation. Any opinions, findings, conclusions, or recommendations expressed in this publication do not necessarily reflect the views of any organization or agency that provided support for the project. Copies of the Consensus Study Report are available from the National Academies Press, (800) 624-6242 or <https://nationalacademies.org/RisingMortality>.

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