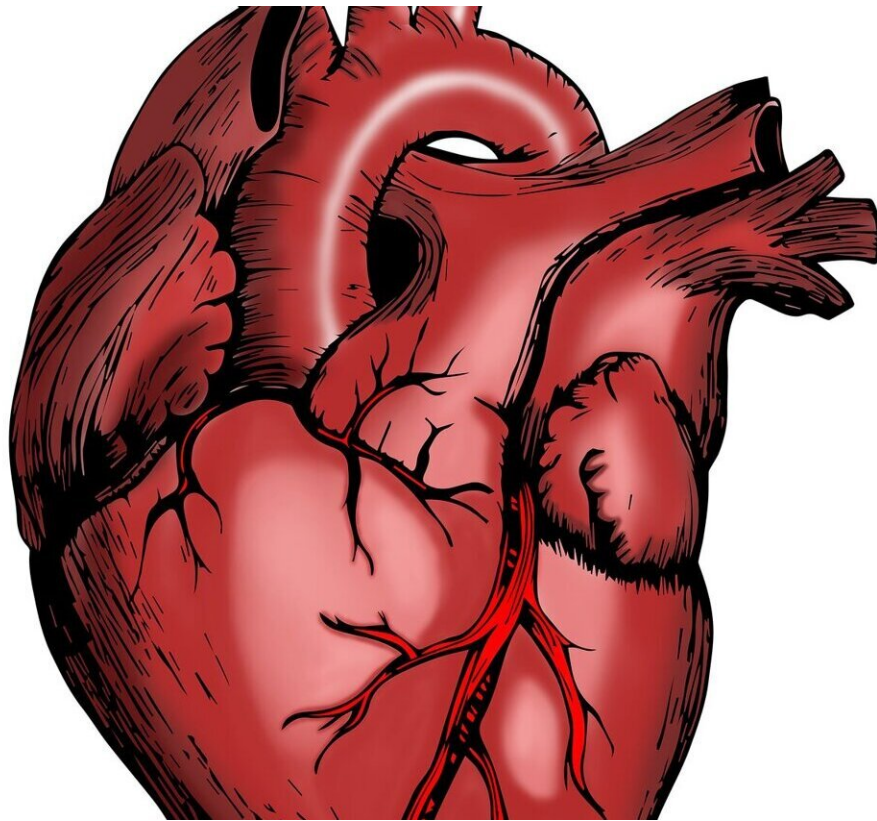


COVID toll realized: CVD deaths take big jump, especially among certain populations

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The number of people dying from cardiovascular disease (CVD) in the U.S. escalated during the first year of the COVID-19 pandemic, from 874,613 CVD-related deaths recorded in 2019 to 928,741 in 2020. The

rise in the number of CVD deaths in 2020 represents the largest single-year increase since 2015 and topped the previous high of 910,000 recorded in 2003, according to the latest available data from the Heart Disease and Stroke Statistics—2023 Update of the American Heart Association, a global force for healthier lives for all, and published today in the Association's flagship, peer-reviewed journal *Circulation*.

"While the total number of CVD-related deaths increased from 2019 to 2020, what may be even more telling is that our age-adjusted mortality rate increased for the first time in many years and by a fairly substantial 4.6%," said the volunteer chair of the Statistical Update writing group Connie W. Tsao, M.D., M.P.H., FAHA, an assistant professor of medicine at Harvard Medical School and attending staff cardiologist at Beth Israel Deaconess Medical Center in Boston. "The age-adjusted mortality rate takes into consideration that the [total population](#) may have more older adults from one year to another, in which case you might expect higher rates of death among [older people](#). So even though our total number of deaths have been slowly increasing over the past decade, we have seen a decline each year in our age-adjusted rates—until 2020. I think that is very indicative of what has been going on within our country—and the world—in light of people of all ages being impacted by the COVID-19 pandemic, especially before vaccines were available to slow the spread."

The biggest increases in the overall number of CVD-related deaths were seen among Asian, Black and Hispanic people, populations most impacted in the early days of the pandemic, and brought to focus increasing structural and societal disparities.

"We know that COVID-19 took a tremendous toll, and preliminary data from the U.S. Centers for Disease Control and Prevention (CDC) have shown that there was a substantial increase in the loss of lives from all causes since the start of the pandemic. That this likely translated to an

increase in overall cardiovascular deaths, while disheartening, is not surprising. In fact, the Association predicted this trend, which is now official," said the American Heart Association's volunteer president, Michelle A. Albert, M.D., M.P.H., FAHA, the Walter A. Haas-Lucie Stern Endowed Chair in Cardiology, a professor of medicine at the University of California at San Francisco (UCSF) and Admissions Dean for UCSF Medical School. "COVID-19 has both direct and indirect impacts on [cardiovascular health](#). As we learned, the virus is associated with new clotting and inflammation. We also know that many people who had new or existing [heart](#) disease and [stroke symptoms](#) were reluctant to seek medical care, particularly in the early days of the pandemic. This resulted in people presenting with more advanced stages of cardiovascular conditions and needing more acute or urgent treatment for what may have been manageable chronic conditions. And, sadly, appears to have cost many their lives."

According to Albert, who also is the director of the CeNter for the StUdy of AdveRsiTy and CardiovascUlaR DiseasE (NURTURE Center) at UCSF and a renowned leader in health equity and adversity research, the larger increases in the number of coronary heart disease deaths among adults of Asian, Black and Hispanic populations appear to correlate with the people most often infected with COVID-19.

"People from communities of color were among those more highly impacted, especially early on, often due to a disproportionate burden of cardiovascular risk factors such as hypertension and obesity. Additionally, there are socioeconomic considerations, as well as the ongoing impact of structural racism on multiple factors including limiting the ability to access quality health care," Albert said. "The American Heart Association responded quickly at the beginning of the pandemic to address the impact of COVID-19 and focus on equitable health for all. The Association launched the first-ever rapid response research grants calling on the research community to quickly turn around

transformative science; established a COVID-19 CVD hospital registry through the Get With The Guidelines quality initiative; and also made an [unprecedented pledge](#) to aggressively address [social determinants](#) while working to support and improve the equitable health of all communities. We are empowering real change that will save lives."

Cardiovascular disease, overall, includes coronary heart disease, stroke, heart failure and hypertension/high blood pressure. Coronary heart disease includes clogged arteries or atherosclerosis of the heart, which can cause a heart attack. Known generally as 'heart disease', coronary heart disease remains the #1 cause of death in the U.S. Stroke continues to rank fifth among all causes of death behind heart disease, cancer, COVID-19 and unintentional injuries/accidents. COVID-19 appeared in the list of leading causes of death for the first time in 2020, the most recent year for which final statistics are available from the U.S. Centers for Disease Control and Prevention (CDC).

Appropriately, this year's statistical update includes many references to COVID-19 and its impact on [cardiovascular disease](#). Data points and scientific research findings are inserted throughout most chapters of the document, including those related to the risk factors for heart disease and stroke such as obesity, diabetes and high blood pressure, all of which also put people at increased risk for COVID. Many of the studies noted identify specific gender, race and ethnicity disparities.

However, disparities don't only occur among age, sex and racial/ethnic groups, according to a [special commentary](#) authored by members of the Statistical Update writing committee. While the Statistical Update has been including various social determinants of health data in its report, the commentary noted that data from other underrepresented populations, such as LGBTQ people and people living in rural vs. urban areas of the U.S. are still lacking. The commentary authors call out the lack of scientific research and cumulative data on the impacts of social

identity and social determinants.

"We know that to address discrimination and disparities that impact health, we must better recognize and understand the unique experiences of individuals and populations. This year's writing group made a concerted effort to gather information on specific social factors related to health risk and outcomes, including sexual orientation, gender identity, urbanization and socioeconomic position," Tsao said.

"However, the data are lacking because these communities are grossly underrepresented in clinical and epidemiological research. We are hopeful that this gap in literature will be filled in coming years as it will be critical to the American Heart Association's goal to achieve cardiovascular health equity for all in the U.S. and globally."

Global data

Cardiovascular disease continues to be the #1 killer globally, taking the lives of more than 19 million people around the world each year, including people of all ages, genders and nationalities. Yet, the risk factors that lead to heart disease and stroke continue to disproportionately impact certain populations in the U.S. as well as around the world.

Supplemental tables in this year's statistical update look at the trend of overall CVD-related deaths globally and regionally, and also provide the number and proportion of deaths caused by various cardiovascular diagnoses. Additionally, the supplemental tables compared all-cause deaths and CVD-related deaths attributable to various risk factors, as well as age-standardized disability-adjusted life years, or DALYs, in various countries and regions. Of special note:

- Globally, [ischemic heart disease](#) and stroke represent the top two causes of CVD-related deaths and account for 16.2% and 11.6%

of all causes of deaths, respectively. These rates have increased across the world over the past decade in all but two regions—North America and Europe/Central Asia. Note that ischemic heart disease is the term used in global data sources and is also known as [coronary heart disease](#).

- In 1990, ischemic heart disease represented 28.2% of all deaths in North America, dropping to 18.7% of all deaths in 2019. Stroke dropped from 7.3% of all deaths in North America in 1990 to 6.4% of all deaths in 2019.
- In the region of Europe and Central Asia, ischemic heart disease dropped from 27.2% of all causes of death in 1990 to 24.4% in 2019, while stroke represented 15.1% of all causes of death in 1990 and dropped to 12.5% in 2019.
- The region of East Asia and Pacific is the only region where stroke represents the highest proportion of CVD-related deaths, with the proportion of deaths increasing from 14.8% in 1990 to 18.3% in 2019. During this same time period, the proportion of deaths caused by ischemic heart disease nearly doubled from 8.1% to 15.6%.
- The region of Sub-Saharan Africa noted the lowest proportion of CVD-related deaths as a percentage of all causes of [death](#). Stroke was the leading cause of CVD-related deaths in the region of Sub-Saharan Africa in 1990, representing 3.6% of all causes, followed by ischemic heart disease (3.1%). In 2019, ischemic heart disease and stroke were both at 5.4% of total deaths.

"As the U.S. prepares to celebrate the 60th annual Heart Month in February 2023, it's critical that we recognize and redouble the life-saving progress we've made in nearly a century of researching, advocating and educating, while identifying and removing those barriers that still put certain people at disproportionately increased risk for cardiovascular disease," Albert said. "Tracking such trends is one of the reasons the American Heart Association publishes this definitive statistical update

annually, providing a comprehensive resource of the most current data, relevant scientific findings and assessment of the impact of cardiovascular disease nationally and globally."

The annual update represents a compilation of the newest, most relevant statistics on [heart disease](#), stroke and risk factors impacting cardiovascular health. It tracks trends related to ideal cardiovascular health, social determinants of health, global cardiovascular health, cardiovascular health genetics and health care costs. Tsao emphasized the importance of this surveillance as a critical resource for the lay public, policy makers, media professionals, clinicians, health care administrators, researchers, health advocates and others seeking the best available data on these factors and conditions.

This statistical update was prepared by a volunteer writing group on behalf of the American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee.

More information: Heart disease and stroke statistics—2023 update: A report from the American Heart Association, *Circulation* (2023). [DOI: 10.1161/CIR.0000000000001123](#)

Provided by American Heart Association

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