

COVID-19 not the sole cause of excess U.S. deaths in 2020

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By the year 2017, the United States was already suffering more excess deaths and more life years lost each year than those associated with the COVID-19 pandemic in 2020, according to research from demographers Samuel Preston of the University of Pennsylvania and Yana Vierboom of the Max Planck Institute for Demographic Research.

In 2017, the United States suffered an estimated 401,000 total excess deaths, those beyond the "normal" number of deaths expected to have occurred. The Centers for Disease Control and Prevention reports 376,504 deaths related to COVID-19 in 2020.

"We do not want to diminish the tremendous losses due to COVID-19 in the U.S. and elsewhere," says Vierboom, a postdoctoral research scientist in Max Planck's Laboratory of Population Health. "It's just a helpful tool to put the U.S. mortality disadvantage into perspective."

The researchers published their findings in the journal *Proceedings of the National Academy of Sciences*.

"It is not commonly recognized how far we have fallen behind our European counterparts in mortality and survival," says Preston, a professor in Penn's Department of Sociology. "A notable U.S. disadvantage in 2000 has ballooned in the course of the 21st century."

To make age-specific comparisons of U.S. and European mortality from 2000 to 2017, Preston and Vierboom used data from the Human Mortality Database to create three indexes. For the comparison, they selected the five largest European countries—Germany, England and Wales together, France, Italy, and Spain—whose combined population nears that of the U.S. "We chose these larger countries because small countries may have unique features such as climate, diet, [social history](#), and [health care](#) that make them inappropriate models for larger and more diverse populations," Preston says.

Even more striking was the mortality comparison between the U.S. and those five European countries when using the measure known as "years of life lost." This accounts for the age at which [death](#) occurs, giving more weight to death at a younger age. In 2020, 4.41 million years of life were lost to COVID-19, yet that's only about one-third of the 13.02

million life years lost to excess mortality in the United States in 2017.

"Our results underscore the routine and persistent daily health hazards that Americans face," Vierboom says. "Identifying and remediating the factors that contribute to this massive loss of life should be a national priority."

More information: Samuel H. Preston et al. Excess mortality in the United States in the 21st century, *Proceedings of the National Academy of Sciences* (2021). [DOI: 10.1073/pnas.2024850118](https://doi.org/10.1073/pnas.2024850118)

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