

America's True Covid Toll Already Exceeds 100,000

The reported numbers leave out thousands of deaths clearly resulting from the pandemic.



May 13, 2020

Many supporters of President Trump believe that the figures for coronavirus fatalities are inflated, and Trump himself shared a tweet doubting the accuracy of some virus figures.

He's right that the death toll seems off — but not in the direction he would suggest. We've crunched the numbers, state by state, and it appears that somewhere around 100,000 to 110,000 Americans have already died as a result of the pandemic, rather than the 83,000 whose deaths have been attributed to the disease, Covid-19.

That's my estimate reached with the help of a Harvard statistician, Rafael Irizarry, based on a comparison of death rates this spring with those in previous years. Some states have been largely unaffected — death rates in some even appear to have dropped, perhaps because of less driving and fewer car accidents — but others have seen huge surges in deaths.

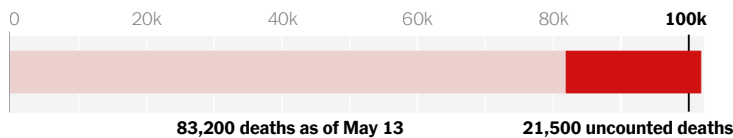
Over all, in a bit more than two months, the United States lost more Americans to the coronavirus than died over seven decades in the Korean, Vietnam, Persian Gulf, Afghanistan and Iraq Wars.

Here's how we reached our estimates; they are not definitive, for they are based on preliminary data, and I invite discussion.

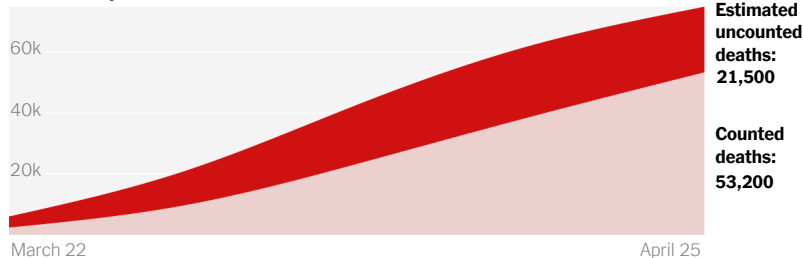
More Than 100,000 Deaths

These estimates include excess deaths calculated by comparing death rates this spring with those in previous years.

Total U.S. deaths from Covid-19 after adding estimates of uncounted deaths



Toll as of April 25



Based on calculations by Harvard statistician Rafael Irizarry. Note: Estimated uncounted deaths exclude Connecticut, Pennsylvania and North Carolina, which had missing or unreliable data. | By The New York Times

The starting point is that the cause of death is often uncertain. Most people who die don't get an autopsy, and many never had a coronavirus test. The precise number who died from Covid-19 is in some sense unknowable.

Still, one standard approach to measure the impact of a pandemic like this is to look at "excess deaths," meaning mortality greater than the average for a particular time period.

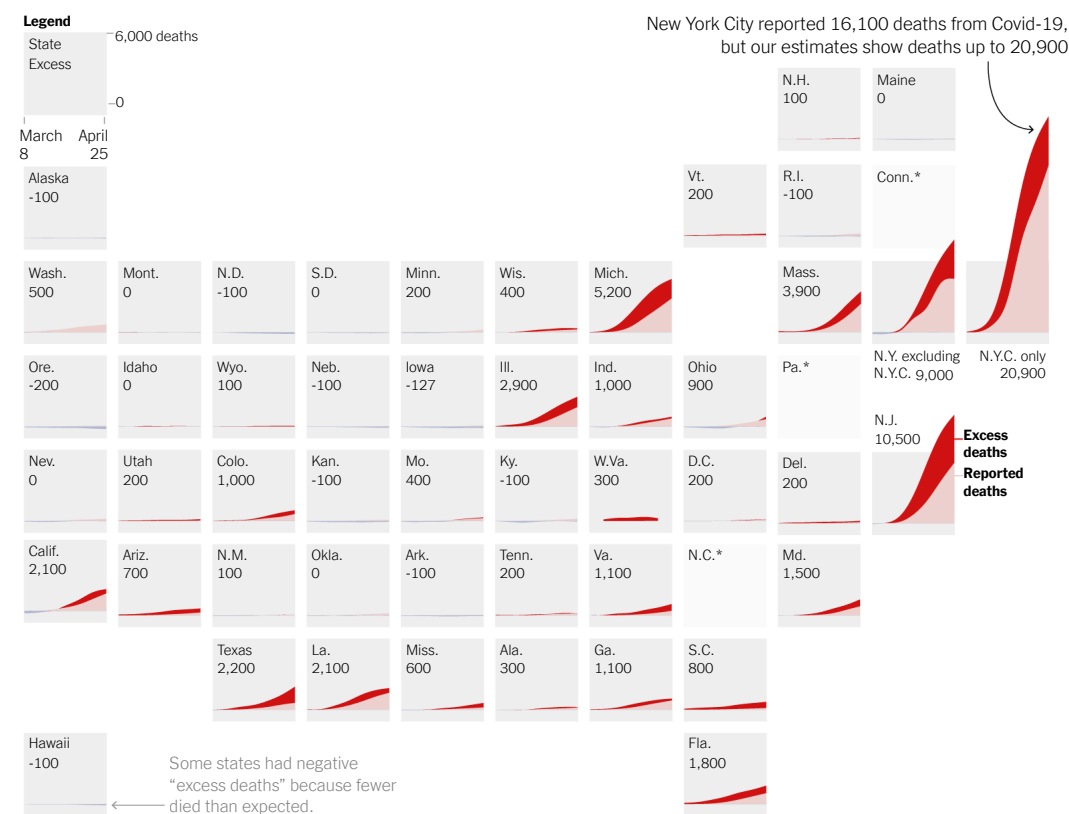
For example, for the seven weeks ending April 25 in the United States, about 70,000 more Americans died than is normal for those weeks (death is seasonal and normally declines over the course of spring and summer). That 70,000 figure for excess deaths does not include Connecticut, North Carolina and Pennsylvania, which were excluded because of missing or dubious data.

The official number of Covid-19 deaths in that period for the rest of the country was 49,100. That suggests an undercount of more than 20,000 coronavirus-related deaths as of April 25.

Add those 20,000 missed deaths to today’s total of 83,000, and you already get more than 100,000 pandemic-related deaths. But the undercount probably continued after April 25, albeit at a lower rate.

Where Covid-19 Deaths Weren’t Counted

Analysis of C.D.C. estimates of deaths from March 8 to April 25 shows that many more people died during those six weeks than died in the corresponding period in years past. In many cases, these “excess deaths” are much higher than the death toll from Covid-19 reported on April 25.



*Figures omitted for Pennsylvania, North Carolina and Connecticut, which had missing or unreliable data. • Source: Analysis of C.D.C. data by Harvard statistician Rafael Irizarry. • By The New York Times

We don’t have good enough mortality data to assess excess deaths in late April and early May, a period in which more than 30,000 Americans are reported to have died of Covid-19. Testing increased significantly, and over time doctors seemed more willing to list Covid-19 as the cause of death.

“There’s probably less underreporting as time goes on,” notes Robert N. Anderson, the chief of mortality statistics at the C.D.C.’s National Center for Health Statistics. In New York City, a study likewise found enormous underreporting in the first half of April, then gradually diminishing by the beginning of May.

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In the period we looked at, the undercount also diminished. Initially, there were more than twice as many excess deaths as reported coronavirus deaths, but by April 25 there were only 40 percent more. If the undercount thereafter were 10 percent, that would add a few thousand to the total, possibly bringing it closer to 110,000.

These numbers are uncertain, but the implication is that somewhere around 25,000 more Americans died as a result of the pandemic than are recorded in the death tallies.

This kind of analysis can't determine if they died directly from the virus or indirectly. Some presumably perished from heart attacks or strokes because they feared going to hospitals and delayed calling 911, or because ambulance services were stretched thin. In other words, a modest number presumably died *because* of the virus without being infected *by* it.

One reason to think that a great majority of the excess deaths are directly caused by the virus is that in some states that seem to have meticulous reporting, such as Massachusetts, the number of excess deaths and the number of Covid-19 deaths are not so far apart.

Professor Irizarry, who is also chairman of the department of data science at Dana-Farber Cancer Institute in Boston, notes that our new estimates are built on several layers of uncertainty. It typically takes two months for deaths to be reported in a reasonably complete way, so one critical issue is how to adjust for lags in reporting. The C.D.C. tries to estimate what the death total will eventually be based on incomplete reporting, and our estimates depend on its algorithms.

The mortality figures show enormous variation by state. Texas and California appear to have suffered more deaths from the 2018 flu epidemic than from the coronavirus so far. And according to the C.D.C. numbers, some states, including Arkansas, Hawaii, Iowa, Kansas, North Dakota, Oregon, South Dakota and Rhode Island, actually experienced fewer deaths than normal in the seven weeks ending April 25. The reason might be a decline in driving and a drop in accidental deaths.

Irizarry calculates that about 70 percent of excess deaths nationally derive from just five states: New York, New Jersey, Michigan, Massachusetts and Illinois.

The idea that official figures are undercounts is widely acknowledged. Dr. Anthony S. Fauci told a Senate health committee on Tuesday that he didn't know if the real death toll was 50 percent higher than the official figures, but that "almost certainly it's higher."

"Most frontline doctors will tell you that the numbers are grossly underreported," said Michael P. Jones, an emergency medicine physician who works at hospitals in the Bronx that were particularly hard hit. Especially in the early days, he said, many Covid-19 deaths were simply listed as some variant of "respiratory failure" or "multisystem organ failure."

Dr. Alicia Skarimbas, who practices in New Jersey, said, "We signed so many death certificates, we would get behind and take turns doing them."

Skarimbas said that she would list Covid-19 as the cause of death when that seemed obvious, but her partners might simply list "respiratory failure" unless there had been a positive test for the virus. Thus it was often random whether Covid-19 was listed as the cause of death.

The undercounting is a global problem, not just one in the United States. Dr. Christopher Murray of the Institute for Health Metrics and Evaluation at the University of Washington estimates that globally, excess deaths are about double the official Covid-19 death counts.

Excess deaths are often used to gauge mortality from an event or an epidemic. When Hurricane Maria struck Puerto Rico in 2017, the official death toll stood for a year at 64. But Irizarry and other scholars used a variety of techniques to calculate that excess deaths in the aftermath exceeded 1,000, perhaps by a wide margin. As a result of the statistical work, the official death toll is now 2,975.

Covid-19 will inevitably continue to kill people in the weeks ahead. Those who die over the next week or two have already been infected, perhaps several weeks ago. Dr. Tom Frieden, a former director of the C.D.C., notes that even if one could end all new infections, thousands would still die from infections already contracted.

Given the uncertainty and the lags in data, why go through this exercise of estimating deaths? Because flawed numbers based on an undercount are already a central part of the discussion, informing policy decisions, and Trump has made them so.

"We have saved thousands and thousands of lives," he said on May 1. "Hopefully, we are going to come in below that 100,000 lives lost." In that context, it seems worthwhile to note that this milestone has already been exceeded.

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