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## Coronavirus death toll: Americans are almost certainly dying of covid-19 but being left out of the official count

By **Emma Brown**, **Beth Reinhard** and **Aaron C. Davis**

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The fast-spreading novel coronavirus is almost certainly killing Americans who are not included in the nation's growing death toll, according to public health experts and government officials involved in the tally.

The U.S. Centers for Disease Control and Prevention counts only deaths in which the presence of the coronavirus is confirmed in a laboratory test. "We know that it is an underestimation," agency spokeswoman Kristen Nordlund said.

A widespread lack of access to testing in the early weeks of the U.S. outbreak means people with respiratory illnesses died without being counted, epidemiologists say. Even now, some people who die at home or in overburdened nursing homes are not being tested, according to funeral directors, medical examiners and nursing home representatives.

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Postmortem testing by medical examiners varies widely across the country, and some officials say testing the dead is a misuse of scarce resources that could be used on the living. In addition, some people who have the virus test negative, experts say.

As a result, public health officials and government leaders lack a complete view of the pandemic's death toll as they assess its course and scramble to respond.

Scientists who analyze mortality statistics from influenza and other respiratory illnesses say it is too early to estimate how many fatalities have gone unrecorded. For a disease with common symptoms such as covid-19, they said, deaths with positive results almost certainly represent only a fraction of the total caused by the disease.

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“You can’t rely on just the laboratory-confirmed cases,” said Marc-Alain Widdowson, an epidemiologist who left the CDC last year and now serves as director of the Institute of Tropical Medicine Antwerp in Belgium. “You’re never going to apply the test on everybody who is ill and everybody who dies. So without doubt — it’s a truism — the number of deaths are underestimated globally because you don’t apply the test.”

Clay Marsh, West Virginia’s “coronavirus czar,” acknowledged that the state’s count is presumably incomplete. West Virginia was the last state to report a case of the virus and had recorded only two deaths as of Saturday.

“Based on the best recent information about limited testing and sizable false negative rates of testing, we are likely underestimating the number of deaths,” said Marsh, vice president and executive dean for health sciences at West Virginia University. The count is also low in West Virginia, Marsh said, because the state has a small, rural population and had closed schools and nonessential businesses early.

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The CDC has launched an effort to use national data on illnesses, hospitalizations and death certificates to estimate covid-19 infections and deaths. The agency already publishes such estimates weekly for flu, where laboratory-confirmed cases and deaths similarly represent only a fraction of the total attributable to the disease.

“We’re probably getting more information on covid-19 because there’s a greater awareness in the community of what it is,” Nordlund said.

The CDC’s official death count, which is based on reports submitted by states, stood at 6,593 as of Saturday. Because of a lag in reporting, the number was significantly lower than the more frequently updated counts by media organizations and university researchers. The Washington Post’s count of fatalities surpassed 8,000 on Saturday.

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The federal government’s death count is broadcast around the world daily as an indicator of how quickly the virus is spreading and how profoundly the nation is struggling. It has clear political implications for President Trump, whose approval ratings rose in late March despite his having downplayed the virus’s dangers for weeks.

On Wednesday, the White House estimated that 100,000 to 240,000 Americans may be killed by covid-19, far exceeding the nearly 60,000 combat troops killed in the Vietnam War. Scientists said they did not know how the White House had arrived at its projection, and the White House has declined to provide details.

The death toll has become a heavily politicized benchmark. Trump's defenders say the official number is inflated because it includes all deceased people who tested positive for covid-19, even if there was another cause of death, such as a heart attack or an accident.

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Marc Lipsitch, a professor of epidemiology at Harvard, said there are probably some people dying *with* covid-19 who are not dying *of* covid-19. Such misattribution is a problem for any cause of death, he said, but it is a minor issue that is “swamped by the opposite problem: deaths that are caused by covid but never attributed, so the death count is underestimated.”

Around the globe, public officials are questioning whether the numbers of deaths officially attributed to the virus are deceptively low.

In northern Italy, the town of Nembro recorded 31 deaths from the virus from January to March. But Mayor Claudio Cancelli recently said the total number of deceased in that time period — 158 — was four times higher than the average for that time of year.

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“The difference is enormous and cannot be a simple statistical deviation,” he wrote in a newspaper article co-authored with a medical executive.

The number of deaths in France attributed to the virus soared last week after officials began including previously unreported deaths in nursing homes, boosting the count by more than 2,000.

Observers inside and outside China, where the virus first appeared late last year, have accused the ruling Communist Party of reporting artificially low infection and death rates. Media outlets, including The Post, have reported that a count of cremation urns ordered to Wuhan, in central China’s Hubei province, indicates that far more people died of covid-19 than the official death toll of about 2,500.

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Trump said Wednesday that China's "numbers seem to be a little bit on the light side, and I'm being nice when I say that." Chinese officials denied the accusation, saying U.S. officials were trying to deflect responsibility for the American body count.

Studies of influenza have found that, in the middle of a pandemic, real-time fatality counts are often misleading.

Widdowson, the former CDC scientist, was part of a team that estimated global deaths from the 2009 H1N1 swine flu pandemic. The World Health Organization recorded 18,631 people with laboratory-confirmed diagnoses dying of that disease. But the pandemic probably caused 15 times as many deaths, the CDC team concluded in 2012.

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A 2013 study by government and academic researchers suggested that lab-confirmed H1N1 deaths in the United States represented only 1 in 7 fatalities attributable to the disease.

In the United States, federal and state public health officials for weeks refused to test people unless they met strict eligibility criteria. Testing is more broadly available today, but some experts say the tests may not detect everyone with the virus. Precisely how common false negatives are is unclear.

Postmortem tests for covid-19 are happening unevenly across the country, experts said. Medical examiners, coroners and health-care providers should “use their judgment” to decide whether such testing is appropriate, according to CDC guidelines.

In addition to the 6,593 lab-confirmed deaths, the CDC on Friday reported that death certificate data shows 1,150 people have died of covid-19.

The numbers differ in part because of a lag in reporting, and because the code for recording covid-19 as a cause of death was not announced until March 24, weeks after the first known case of an American dying of the disease caused by the coronavirus. Death certificate data will be part of the CDC’s new effort to estimate total covid-19 fatalities.

To estimate the total fatalities from a disease, scientists often look at “excess deaths” — the number of deaths over and above the average number during a particular period.

The most robust estimates require national statistics that in the United States can take two or three years to compile, according to Cécile Viboud, a National Institutes of Health scientist who co-authored the study estimating the U.S. undercount during the H1N1 flu.

The number of initially uncounted flu deaths typically includes people with pneumonia and other respiratory symptoms who were never tested for influenza, as well as a larger number of people who contract the flu and are left more susceptible to dying from such conditions as cardiac arrest, stroke and diabetes. Those people may not be reported as dying of the flu, but the flu still contributed to their deaths.

Scientists do not yet know whether or how often covid-19 is killing people with these kinds of secondary problems. But it is clear that covid-19 can cause non-respiratory symptoms, scientists say.

Last week, a group of Italian scientists published a study of a 53-year-old otherwise healthy woman who had arrived at a hospital complaining of extreme fatigue. She was suffering from acute heart problems, including inflammation of the heart muscle. She tested positive for the coronavirus.

In Albany, Ga., home to one of the nation's most explosive outbreaks, funeral director Jeffery F. Wakefield Sr. said he treats every body as if it is infected with the virus. Wakefield recently handled the body of a young man, around 40 years old, who died at home alone and was not found for several days. The man's death was attributed to cardiac arrest. He was not tested for the coronavirus.

"We'll never really have true, true numbers," Wakefield said. "We'll get almost close, but we'll never have the true numbers of who died from this."

Epidemiologists say that patients who need medical treatment for conditions other than covid-19 may also suffer and die in places where the health-care system becomes overwhelmed by the virus.

Even as testing has become much more widely available, it remains limited in such places as prisons and nursing homes where the disease is spreading quickly. The CDC says hospitalized patients and health-care workers should be at the front of the line for testing. People in long-term-care facilities should come next, the agency says.

In New York, the nation's largest hot spot, Suffolk County Medical Examiner Michael Caplan said in a memo to funeral directors on Wednesday that nursing homes and hospitals are responsible for collecting samples for postmortem testing.

That is unrealistic, said Michael A. L. Balboni, executive director of the Greater New York Health Care Facilities Association, which represents long-term-care residences.

“The last thing that a nursing home is going to do is try to determine if someone who has passed away is covid or no covid,” he said in an interview. “They have their hands full trying to dispose of their remains appropriately. . . . Why waste the swabs on decedents?”

A Suffolk County nursing home operator, who spoke on the condition of anonymity to protect the company’s reputation, said some residents are sick with respiratory symptoms, and some have died, but virtually no one is being tested, dead or alive. The exception is when residents are taken to hospitals, the operator said.

“We’re assuming that everyone is positive,” the operator said. “To utilize a test on the deceased, it’s not going to be very helpful. Because at the end of the day, there’s a shortage of tests to begin with. We don’t have tests. We don’t have swabs.”

The Federal Bureau of Prisons is no longer testing at a Louisiana prison where a dozen inmates have already tested positive and at least one has died. Sue Allison, a bureau spokeswoman, said that because the virus is spreading inside the facility, any inmate exhibiting symptoms is presumed infected.

Allison said the decision on whether to posthumously test inmates who died of suspected covid-19 would be made with health officials on a case-by-case basis, depending on the availability of tests and other factors.

In most states, people who die at home or have not been under medical care are reported to a patchwork system of medical examiners, lay and sheriff coroners, justices of the peace and other local authorities.

Sally Aiken, the president of the National Association of Medical Examiners, wrote in a news release that “the public, in general, does not understand that there is not a uniform death investigation system in the United States. . . . So, a uniform response to COVID-19 by Medical Examiners will not occur.”

Medical examiners typically investigate accidental deaths, homicides and suicides and are not going to get involved in a “natural death” such as that caused by covid-19, said Amy Schaefer, an investigator supervisor for the medical examiner’s office in Summit County, Ohio, near Akron.

“You certainly are going to have numbers that aren’t being counted because deceased people aren’t being tested,” she said. “We need to test people who are still alive.”

But in Wyoming — the only state that had not reported a covid-19 death as of Saturday — Laramie County Coroner Rebecca Reid said she is ready to test anyone with symptoms who dies at home.

“We need an accurate cause of death to give the family some closure and make sure they have been safe,” she said. “It’s also very important that the public knows the truth.”

She has supplies to test five people, she said.

*Jacqueline Dupree, Abigail Hauslohner, Dalton Bennett and Lena H. Sun contributed to this report.*

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