

COVID-19: ABOUT THOSE 10,000 DEATHS

The Centers for Disease Control and Prevention (CDC) set-off a firestorm with its recent [Weekly Updates by Select Demographic and Geographic Characteristics](#). The report summarizes conditions contributing to deaths involving COVID-19, and explains “For 6% of the deaths, COVID-19 was the only cause mentioned. For deaths with conditions or causes in addition to COVID-19, on average, there were 2.6 additional conditions or causes per death...” for the period February 1, 2020 through August 28, 2020, as of September 2.

Some took this to mean COVID-19 caused only 10,143 (6% of 169,044) deaths. Others tried to make the case that COVID-19 caused all 169,044, and had caused many of the underlying, chronic comorbidities. Who is right?

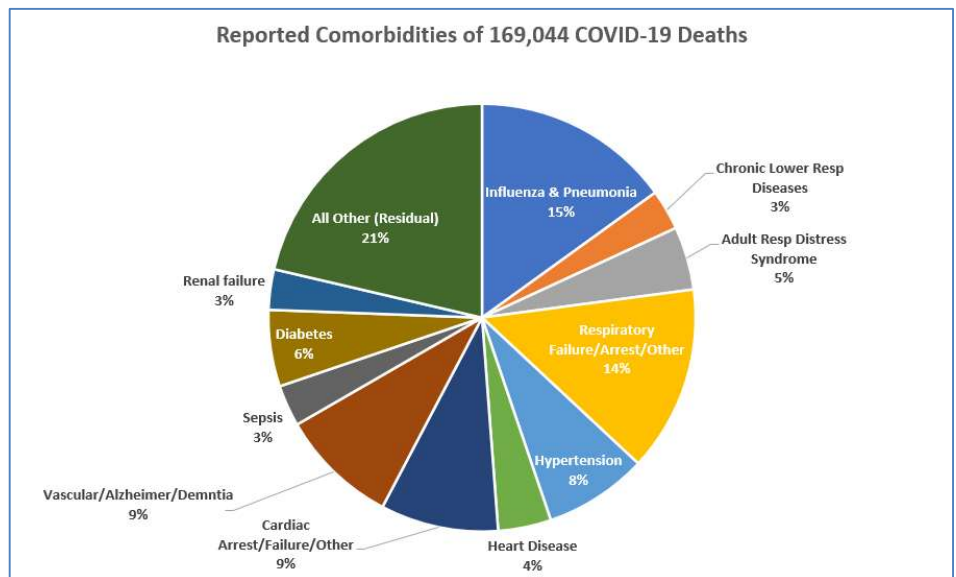
This study explores those numbers—just the numbers—without the political arguments.

THE BOTTOM LINE FIRST.

Reviewing the CDC report, it is true: about 10,143 people *died of COVID-19* in the US between the beginning of February and the end of August. No other cause of death was provided on their state-reported death certificate. That is literally true.

Another 158,901 people *died with COVID-19*, meaning they were either confirmed or “presumed” to have COVID-19 at, or prior to their death. On average, patients had 2.6 comorbidities, in addition to COVID-19. The most common were respiratory ailments. How many of these patients would have died from their other underlying conditions is a hotly debated question.

CAUSES OF DEATH. While a diagnosis of COVID-19 can be confirmed by a PCR test, confirmation of comorbidities can be more problematic. Confirming the presence of a specific disease is not the same as confirming it is the cause of a patient’s death. A patient might have heart disease, hypertension and Alzheimer’s, and test positive for COVID-19. Determining which “caused” his death can be a challenge and somewhat subjective.



The number of autopsies—the “gold standard” for determining cause of death—performed in the US has been declining for more than a generation. In 2019, Medscape.com estimated that fewer than 5% of deaths had an accompanying autopsy.

A 2008 [study](#) published in the American Journal of Medicine compared clinical diagnoses to autopsy results and concluded, “On average, 10% of autopsies revealed that the clinical diagnosis was wrong, and 25% revealed a new problem that had not been suspected clinically.” In Podbregar et al.’s [study](#) of 126 ICU patients, clinicians that were “completely certain of the diagnosis antemortem” were proven by autopsy to be wrong in 40% of cases; and confidence in the diagnoses was uncorrelated with the accuracy of the diagnoses. The same study



found perceptual specialists—radiologist and pathologists—tended to be most accurate, with an error rate between 2% and 5%; clinical specialists had an error rate estimated at closer to 15%.

What does that have to do with COVID-19 deaths? Two things: (1) “cause of death” should be taken with a grain of salt—it is not definitive without testing and/or autopsy; and (2) judging the relative contribution of comorbidities is problematic.

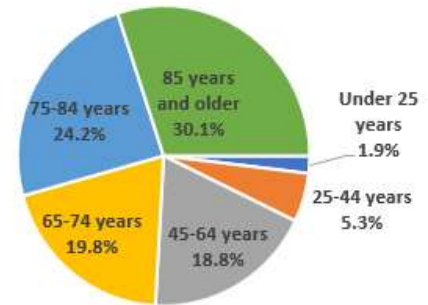
CONFIRMED OR PRESUMED. The CDC’s current working definition of a COVID-19 death is one “with [a] confirmed or presumed COVID-19” diagnosis (UCD-10 code U07.1). In April, Dr Deborah Brix of the White House COVID-19 Task Force explained that patients that died with a confirmed or presumed COVID-19 diagnosis was included in the count of COVID deaths. This practice continues. More recently, several epidemiologists have published estimates of “excess deaths”—deaths counts greater than those predicted by historical trends.

AGE DEMOGRAPHICS. COVID-19 accounted for 9.3% of all US deaths during the period February 2020 through August 2020. Much has been written about the age demographics of COVID-19: the elderly and those with other health problems face the greatest risk.

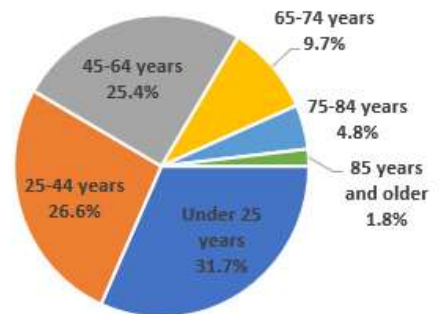
People age 65 and older comprise about 16.3% of the US population, and they account for 79% of US COVID-19 deaths in 2020. But this group also account for nearly 74% of *non-COVID-19 deaths during the same period*. The elderly and those with other health problems frequently are at the greatest risk of death.

The CDC reports 60 of 15,179 (0.4%) February through August deaths were related to COVID-19 for people under 15 years of age. Likewise, 300 of 19,318 (1.6%) deaths were related to COVID-19 for people 15 to 24 years of age.

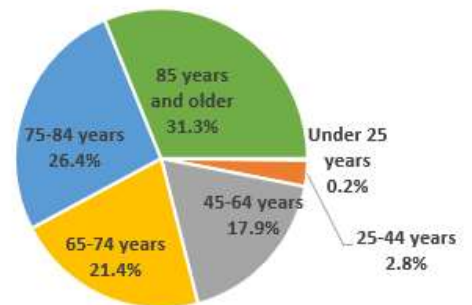
2020 (ytd) - All-Cause Deaths



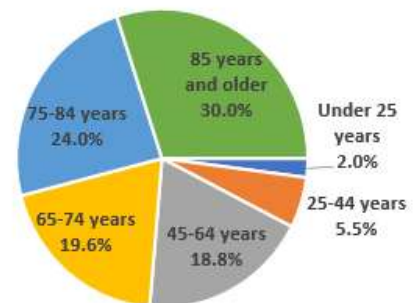
US Population (2019)



COVID-19 Deaths (0.2 M)



Non-COVID-19 Deaths (1.7 M)



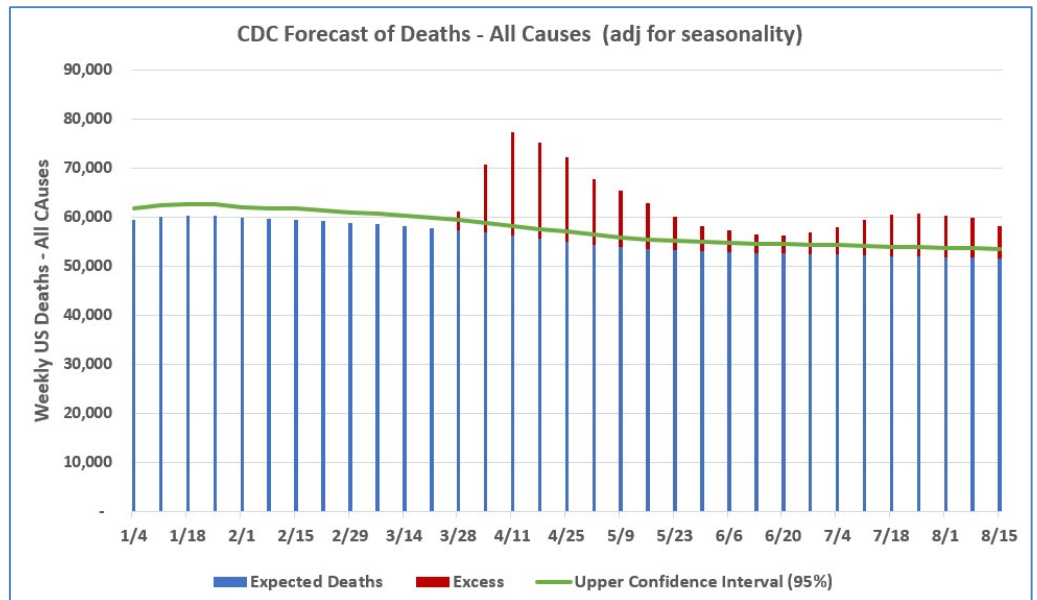
EXCESS DEATHS. CDC recently reported that the US has experienced 2.1 million deaths from “all causes” January 1 through August 22—190,912 (9.2%) greater than the expected total, based on their model that uses prior year weekly totals. New Jersey and New York comprise nearly 15% of the excess (28,198 deaths).

Some public health analysts sought to assign the excess deaths to COVID-19. While the association *seems clear* to them, we have written before that an “association” is not the same as “a cause.”

Several recent studies sought to estimate excess deaths that might be associated with COVID-19, including [one](#) from the Yale School of Public Health. The focus of this study was “all causes” deaths, irrespective of reported causes and comorbidities. The Yale team reported there were about 1,781,000 deaths in the US during the period March 1 through May 30, 2020. That total was 122,300 greater than the expected total during the period, based on historical weekly totals.

With 95,235 reported deaths officially attributed to COVID-19, the team concluded that COVID-19 deaths might have been undercounted by as much as 28%—the difference between reported and expected “all-cause” deaths—they proposed all excess deaths might have resulted from COVID-19.

Not included in the CDC comorbidity numbers, nor addressed by the Yale team were deaths that might have resulted indirectly from COVID-19 and without a diagnosis of the disease—suicides, stress-induced heart attacks, substance abuse, etc. These non-viral deaths are anecdotally much more frequent in 2020 than prior years and likely part of the excess deaths,



but results have not been published and may not be until 2021 or later.

OUR CONCLUSION. COVID-19 caused considerably more than 10,143 deaths. The portion of 158,901 additional deaths—those with comorbidities—that would have happened without COVID-19 because of underlying health conditions is unknowable.

We take seriously the threat of pandemics that can cause death. We also think the value of future “expert” guidance should consider past track records. Tyler VanderWeele’s (Harvard School of Public Health) [JAMA article](#) suggesting strong action at the beginning of a pandemic is probably appropriate, but that further action should be tempered by developing data and consider a wider range of interests. We continue to look forward to the measurement and publication of those interests.

Note: This work was completed without commercial sponsorship of any kind from any source. We established a GoFundMe site (<https://gofundme.com/f/just-the-numbers>) to help underwrite our effort to develop independent, politics-free analyses.

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