Coronavirus Disease 2019 (COVID-19)

WEAR A MASK. PROTECT OTHERS.

"Excess Death" Data Point to Pandemic's True Toll

Updated Oct. 24, 2020   Print

In the United States, there have been hundreds of thousands of deaths attributed to COVID-19 since the start of the pandemic. But CDC scientists suspect there may be more people who died, either from undiagnosed COVID-19 or from other causes related to the pandemic.

"Pandemics and disasters often cause what we call 'indirect' deaths," says Lauren Rossen, a data scientist with CDC's National Center for Health Statistics (NCHS). "An example of this is when someone dies of a heart attack or stroke because they were afraid to go to the hospital, or if changes in people's circumstances lead to increases in suicide or drug overdose. We don't know what's really happening until we look at the bigger picture."

So how do we get this bigger picture? That's where what researchers call "excess death" data come in. Simply put, excess deaths are the difference between the number of deaths that were expected to occur during a given time period and the number of deaths that actually occurred.

"NCHS has been tracking death data from all causes for decades, so we can estimate the expected number of deaths for any given week with a pretty high degree of confidence." Lauren says. "We can compare the numbers of deaths we see currently to those expected numbers to see if it's higher or lower."

If deaths are higher than average, researchers begin asking more questions: How many of those deaths were caused by COVID-19? What other causes of death, such as Alzheimer's disease and dementia, are higher than expected? Are those misclassified COVID-19 deaths, or are there other causes of death that are being affected by COVID-19?

Since the pandemic began, Lauren and a team at NCHS have been developing ways to make sure those numbers are available rapidly and are accurate enough to help answer these kinds of questions.

"People are trying to make decisions," says Lauren. "They need data they can rely on, and they need it quickly."

Working at the speed of a pandemic

Lauren and the NCHS team had to move quickly to make decisions about the best method for putting the data out. "We would normally spend months evaluating different approaches and writing up reports describing the data, methods, and results," she says. "In a pandemic, we can't afford to wait."

Fortunately, the team at NCHS was familiar with reliable methods for calculating excess deaths. Drawing on previous experience working with data on drug overdoses and other causes of death, they created a series of automated dashboards that could meet the growing demand for real-time, actionable data during COVID-19.

More than a dozen dashboards are now available online, including versions that let people view the data by age group, by select causes of death, and by race and Hispanic origin. All of the dashboards are updated weekly.

"The volume of data we're putting out is a lot more than what we usually produce," Lauren says. "Prior to the pandemic, our most frequent updates on any death data were monthly. Now we update every day, every week. We're putting up as much information as we can, as quickly as possible."

Exploring new possibilities for the data

By keeping their methods transparent as they go, the team hopes to expand uses for the data that are available. "We know we can't think of everything, so we're always looking for insights from others working on these types of analyses, whether inside or outside of CDC," says Lauren.

One possibility being explored is whether excess death data can be used to catch some of the earliest signals about the pandemic's spread. "Looking at this day in and day out, we've begun to notice that, in some of the states where we've more recently seen increases in deaths from COVID-19, deaths from all causes were generally elevated in the weeks before, even if they were not substantially higher than average," she explains.

Could a small-to-moderate elevation in excess deaths predict where the next hotspot might happen? That is just one of many questions that could be explored with these data moving forward.

Lauren and the NCHS team understand that the more data are made available, the more opportunities there are to gain these types of new insights—insights that are critical as our country continues to tackle the pandemic.

Learn More:

NCHS National Vital Statistics System

NCHS Excess Deaths Data

CDC Morbidity and Mortality Weekly Report on Excess Deaths