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## Not Like the Flu, Not Like Car Crashes, Not Like...

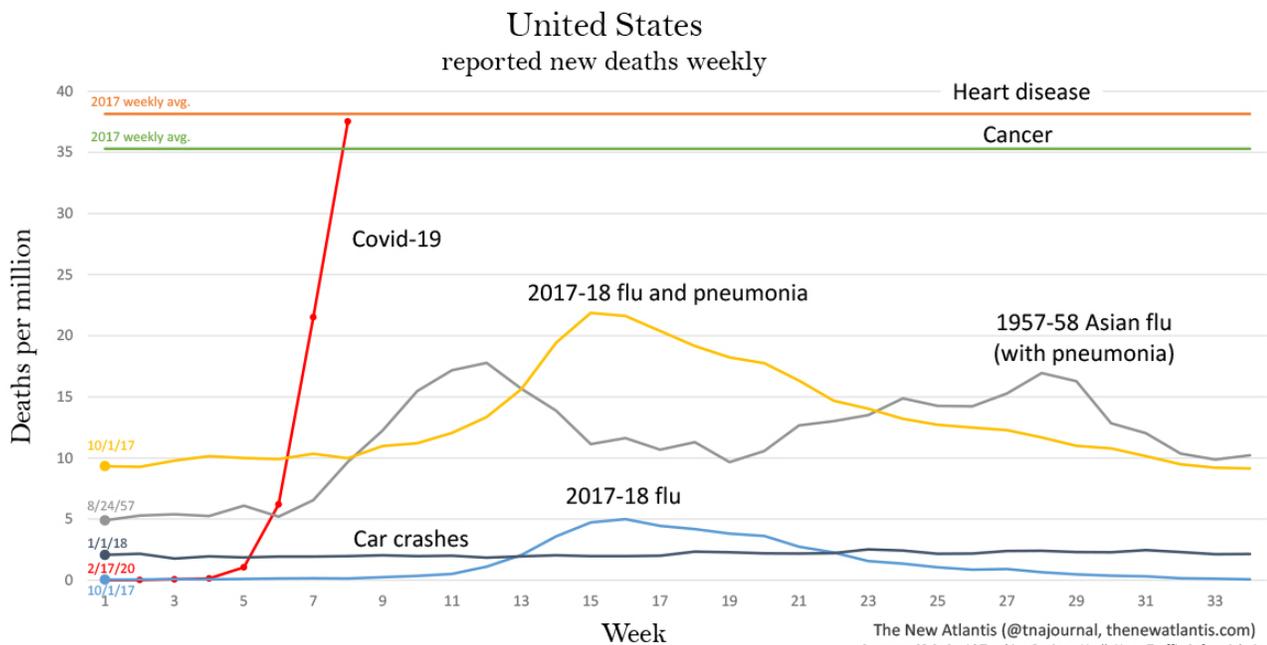
It's about the spike.

Ari Schulman, Brendan Foht, Samuel Matlack

**H**ow deadly is Covid-19 compared to seasonal flu, past pandemics, or car crashes? To offer context, we have produced two charts showing coronavirus deaths along with deaths from other common causes in the past to which the disease has recently been compared. One chart shows deaths for the United States, the other for New York, the state hardest hit.

Note that the data sets begin at different points in the year (as marked on the left). Also note that the figures shown here are for *new deaths each week*, not for cumulative deaths.

### United States



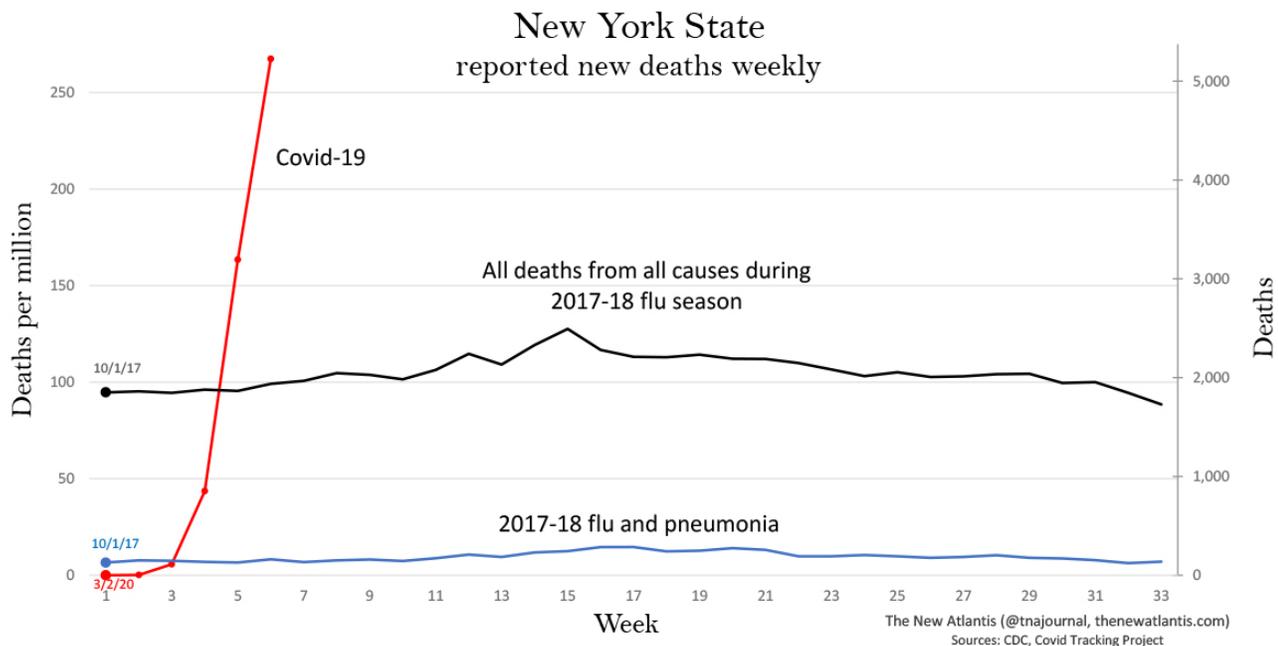
[Enlarge](#)

The chart shows deaths per capita to allow for comparison of data from different years. Deaths are shown from:

- Covid-19, starting from February 17. ([Covid Tracking Project](#))

- **The 2017-18 flu season:** This was the deadliest recent flu season. The chart shows one line for deaths attributed directly to flu, and another for deaths attributed to either flu or pneumonia. The smaller line is an undercount of flu-caused deaths, the larger is an overcount, with the real number lying somewhere in between. (More on this below.) The data begin on October 1, 2017, which the CDC considered the first week of that flu season. ([CDC](#))
- **Heart disease and cancer:** The first and second leading causes of death in the United States. The chart shows total 2017 deaths averaged per week. ([CDC](#))
- **Car crashes:** Weekly deaths beginning from January 1, 2018. ([National Highway Traffic Safety Administration](#))
- **1957-58 Asian flu pandemic:** Weekly influenza and pneumonia deaths beginning from August 24, 1957. These data come from a contemporary CDC program that surveilled 108 American cities with a total population of about 50 million people. We have used that figure, rather than the total U.S. population at the time, to calculate deaths per million. ([CDC](#))

## New York State



[Enlarge](#)

Because the number of weekly Covid-19 deaths in New York is now larger than the typical number of weekly deaths from all causes, we are omitting most of the individual causes from the chart. And because the state's population has been highly stable over the time periods considered – decreasing by just 0.7 percent since 2017, according to the latest Census Bureau estimates – we have chosen to show both absolute deaths and deaths per capita. The causes shown are:

- **Covid-19 deaths**, starting from March 2. ([Covid Tracking Project](#))
- **The 2017-18 flu season**, with week 1 beginning on October 1, 2017. ([CDC](#))

- **All deaths from all causes** for the same period as the 2017-18 flu season. ([CDC](#))

Note the markedly larger scale of deaths per million on the New York chart as compared to the United States – indicating how much harder Covid-19 has hit that state than the country as a whole.

## Uncertainty about Flu and Covid-19 Deaths

**T**here is considerably more uncertainty about how many deaths are caused by the flu than public discussion might suggest. Determining this number is not as simple as counting up death certificates listing influenza as the cause.

Many deaths have multiple causes. The flu can cause other illnesses, such as pneumonia, which in turn can cause death. The CDC thus includes “influenza-associated deaths” [in its estimate](#) of the toll of the flu. Conventionally, statistics often group together deaths from influenza and pneumonia. Furthermore, many estimates try to account for under-reporting of flu deaths: Not everyone who dies of an influenza-associated illness has been tested for the flu.

In short, the number of flu deaths as reported by the CDC and often cited in public discussions – between 24,000 and 62,000 deaths [for this past season](#) – is a rough estimate of how many people had the flu and died of illnesses that were likely associated with it, whether or not directly caused.

Instead of using estimates, on our U.S. chart, we have shown one line for deaths in which influenza was listed as a cause (which undercounts influenza-associated deaths); and another line showing deaths in which influenza or pneumonia was a cause (which overcounts flu deaths, as many pneumonia cases are not caused by flu).

With Covid-19, there are similar difficulties in arriving at the true number of deaths caused by the virus. Skeptics of the reported death counts have argued that most people who die *with* the virus don't die *of* the virus. This is surely true in some cases, as it is with the flu. In many deaths, webs of causation are tangled.

However, in addition to some possible overcounting, there may also be significant undercounting. Reports from [Northern Italy](#) and [New York](#) suggest that far more people are dying in outbreak areas than are being reported:

In the first five days of April, 1,125 people were pronounced dead in their homes or on the street in New York City, more than eight times the deaths recorded during the same period in 2019, according to the Fire Department.

Many of these people – as well as many who die in hospitals – are not being tested for the virus, and therefore are not included in the official death counts.

## The Deaths in Context

**E**ven with the limits of the available data, we can still draw some reasonable conclusions about how Covid-19 compares to other causes of death – and about what these comparisons often miss:

**Different time scales:** We are still early in this pandemic. It has only been a few weeks since the first reported U.S. deaths. Comparing these deaths to, say, an entire year of deaths from car crashes or influenza is not meaningful.

**A spike:** Perhaps the most noticeable feature of both graphs is the Covid-19 spike – the rapid growth in deaths since the pandemic began. Car crashes, by contrast, show little variation week to week. And even compared to past flu seasons or pandemics, the *rate of increase* in Covid-19 deaths is markedly faster.

The number of new deaths reported in the U.S. in the week beginning March 16 was 678 percent higher than the previous week. In New York State, the number grew *thirty-six-fold* the same week. By comparison, the worst one-week increase during the 2017-18 flu season was 24 percent, and during the 1957-58 Asian flu was 48 percent. Although the growth in Covid-19 deaths is now slowing, the number of new deaths last week was still more than double that of the week before.\*

**A leading cause of death in the United States:** Several weeks ago, coronavirus deaths were few in comparison with other causes. But last week, reported U.S. Covid-19 deaths were just shy of the normal rate from heart disease, usually the leading cause of death.

**More than all typical deaths in New York:** Strikingly, in the state of New York, the number of people who died with coronavirus last week was more than any other cause of death – in fact, more than *twice the average number who die in a week from all causes combined*.

In the worst week of the 2017-18 flu season, New York saw 218 deaths from flu and pneumonia and 2,098 total from all causes. Last week, the state saw 4,694 reported Covid-19 deaths alone. These figures must put to rest the “dying with but not of” line of skepticism. The idea that this many people would have died anyway even without Covid-19 is simply not credible.

Any serious attempt to put coronavirus deaths in context by comparing it to some other cause of death in a previous year must acknowledge the marked differences in the Covid-19 trend – most notably, the rapid spike in deaths that is still underway, and the wide range of uncertainty about when it will peak, how high it will peak, and whether it will peak only once. As long as the pandemic is rapidly spreading, these comparisons will be fraught.

Perhaps a better way to state the danger posed by the coronavirus is just that we *cannot* easily compare it to any precedent in recent history. Nor do we need to dispute projections about future deaths to recognize what has happened already. Amid the statistical noise is a powerful signal. The question is whether we choose to see it.

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\* **Editor's Note:** An earlier version of this article incorrectly stated the week with the highest growth in new deaths relative to the prior week as 663 percent for the U.S. and thirtyfold for New York State. (The correct numbers are 678 percent and thirty-six-fold, respectively.) Additionally, when discussing the dates of weeks of Covid-19 deaths, it incorrectly specified the last days of those weeks as the first days. (For example, “the week beginning March 22” should have been “the week beginning March 16.”)

**Ari Schulman** is editor, **Brendan Foht** is associate editor, and **Samuel Matlack** is managing editor of The New Atlantis.

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