

Some U.S. Cities Could Have Coronavirus Outbreaks Worse Than Wuhan’s

By [Nate Cohn](#), [Josh Katz](#), [Margot Sanger-Katz](#) and [Kevin Quealy](#) March 27, 2020

If the rate of growth in coronavirus cases in the New York metro area continues, it will suffer a more severe outbreak than those experienced in Wuhan, China, or the Lombardy region of Italy.

There is no guarantee, of course, that current trends will continue. What has happened to this point can’t be used to predict what will happen next. It is possible that social distancing will soon slow or arrest the growth of cases.

But what can be said is that the New York metro area has had less success in flattening the curve, at this point in its outbreak, than the city of Wuhan or the Lombardy region did at the same point in theirs. And some other American metropolitan areas appear to be on a similar path.

Here are four ways to measure the size of the outbreak across the country’s metropolitan and micropolitan statistical areas.

How Bad Is It Now? Cases Per 1,000 People

The New York City area has more known cases per capita than any other metro area in the United States.

Confirmed cases per 1,000 by metro area

METRO OR MICRO AREA	POPULATION	CASES	PER THOUSAND
City of Wuhan, China	11.1 mil.	50,821	4.59
Lombardy region, Italy	10 mil.	34,889	3.48
New York	20 mil.	43,016	2.15
Albany, Ga.	153,000	206	1.35
New Orleans	1.3 mil.	1,674	1.32
Seattle	3.9 mil.	2,543	0.65
Bridgeport-Stamford-Norwalk, Conn.	944,000	607	0.64
Mount Vernon-Anacortes, Wash.	128,000	78	0.61
Pittsfield, Mass.	126,000	73	0.58
Detroit	4.3 mil.	2,468	0.57
Kingston, N.Y.	179,000	89	0.50
East Stroudsburg, Pa.	170,000	67	0.40
Show Low, Ariz.	110,000	43	0.39
Albany, N.Y.	883,000	340	0.38
Bellingham, Wash.	226,000	86	0.38

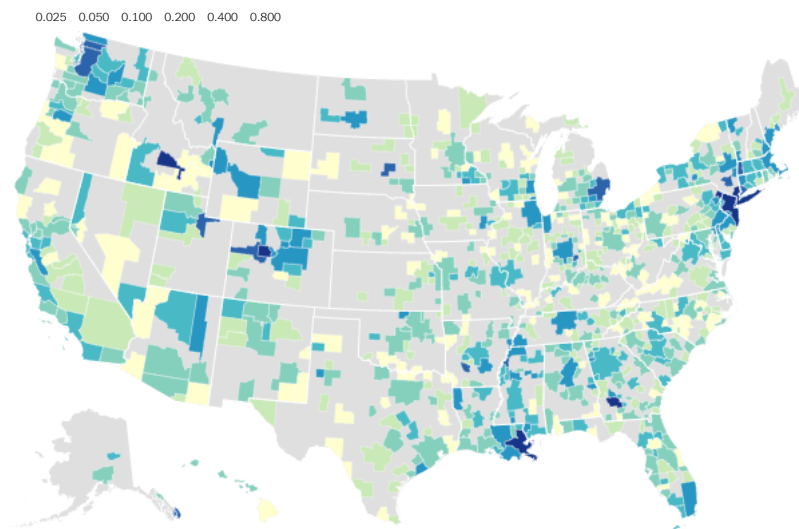
Figures as of March 26; includes micropolitan statistical areas

- Pros of this measure** Focuses on communities where the disease is prevalent.
- Cons** Varying testing rates make comparisons difficult. Not all confirmed cases are active.

In the early stages of an outbreak, the population size doesn't matter — one infected person will probably infect a few people, whether that person lives in a metropolitan area of 100,000 or one of 10 million. But as an epidemic progresses, the number of cases per capita can provide a good measure of the prevalence of coronavirus in a community. Per capita measurements also give a sense of how strained a community's health care system has become, since larger places tend to have more medical resources.

To make useful per capita comparisons, we've focused on metropolitan areas instead of countries or cities or U.S. states. That's because metropolitan areas roughly correspond with the regions where the virus might spread quickly among families, co-workers or commuters. The New York City metropolitan area includes nearby cities and suburbs in Westchester, Long Island, and northern New Jersey, as well as sprawling, outlying areas that stretch even farther from the city.

Confirmed cases per thousand residents



As of March 26; includes micropolitan statistical areas.

Our tables include numbers from Lombardy and Wuhan to provide a benchmark for metro areas in the United States. The comparisons are illustrative, but not exact. Those outbreaks have been going on longer, which means their case numbers are spread over more time. In most of the U.S., cases are from only the last month.

The number of confirmed cases is an imperfect measure of what we really care about: the prevalence of the virus in the population, and therefore — if it is early in the epidemic — how many people are sick or may be contagious. The limited availability of testing in some places means that many people with coronavirus won't be counted among the confirmed cases. And the varying rates of testing across states and countries make it hard to compare the number of confirmed cases in different regions.



Revolutionary Wireless Light

17 Ways These \$20 Lights Will Upgrade Your Home

How Bad Is It Now? Deaths Per 1,000 People

Deaths per capita are currently higher in the New York City area than in most other places.

METRO OR MICRO AREA	POPULATION	DEATHS	PER THOUSAND
Lombardy region, Italy	10 mil.	4,861	0.48
City of Wuhan, China	11.1 mil.	2,535	0.23
Albany, Ga.	153,000	10	0.07
New Orleans	1.3 mil.	65	0.05
Seattle	3.9 mil.	133	0.03
Burlington, Vt.	221,000	6	0.03
New York	20 mil.	500	0.03
Tupelo, Miss.	141,000	3	0.02
Sumter, S.C.	107,000	2	0.02
Bellingham, Wash.	226,000	4	0.02
Pittsfield, Mass.	126,000	2	0.02
Flagstaff, Ariz.	143,000	2	0.01
Bridgeport-Stamford-Norwalk, Conn.	944,000	13	0.01
Kennewick-Richland, Wash.	296,000	4	0.01
Hattiesburg, Miss.	149,000	2	0.01

As of March 26; includes only metro areas with three deaths or more.

Pros of this measure Coronavirus deaths are much more likely to be accurately counted than total cases.

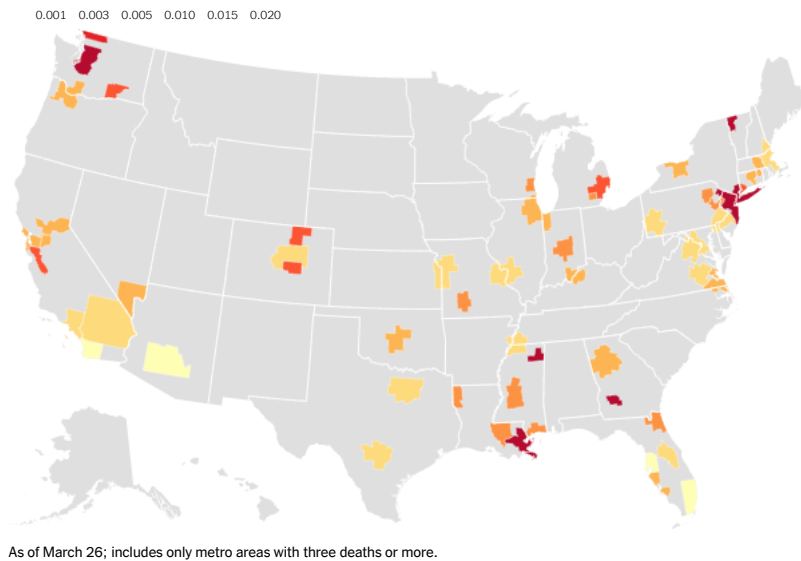
Cons Death rates depend on the underlying health and age of various communities. They also lag infections by several weeks, so they don't tell us what's happening now.

Examining deaths can allow for a more direct comparison between communities, since it avoids many of the problems with variable testing. Testing differences matter less in measuring deaths because in most places with established outbreaks in the United States, the sickest patients are getting tested. (That may be less true in other parts of the world: Patients who die outside hospitals in Britain and Italy have, in some cases, been omitted from official data.)

But measuring only deaths has drawbacks, too. We know that the death rate from coronavirus differs depending on the age and health of the populations affected and the availability of medical resources, like ventilators. That means that per capita rates may look high in places where the virus has infiltrated nursing homes, for example, even if it has not spread widely through the rest of the community.

Because patients who die of Covid-19 tend to be sick for weeks first, counting deaths may also understate the current size of the outbreak in a given place if it is growing quickly.

Confirmed deaths per thousand residents



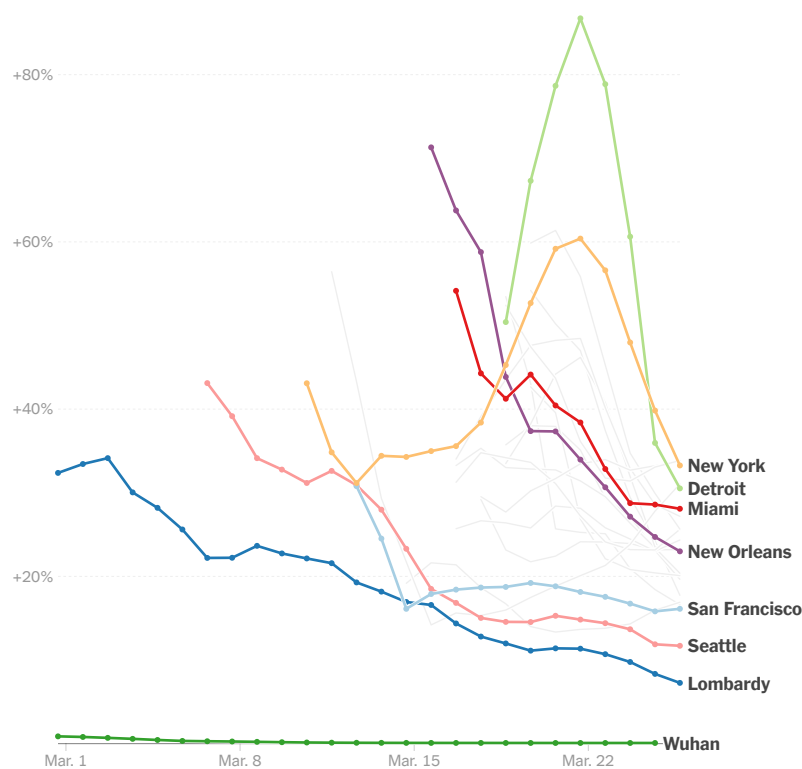
ADVERTISEMENT

How Bad Could It Get? Growth Rates Over Time

The number of cases in the New York area is still growing quickly.

To assess the possible future of the outbreak, it's helpful to look not just at the number of cases but also at how quickly they are increasing. The accompanying chart shows the growth rate of cumulative cases over time, averaged over the previous week.

AVERAGE DAILY CHANGE IN TOTAL CASES, OVER THE PREVIOUS 7 DAYS



Pros of this measure Growth rates help us judge whether the epidemic is getting better or worse in a given place right now.

Cons The timing of different outbreaks can make comparisons difficult. Case data quality varies a lot by place.

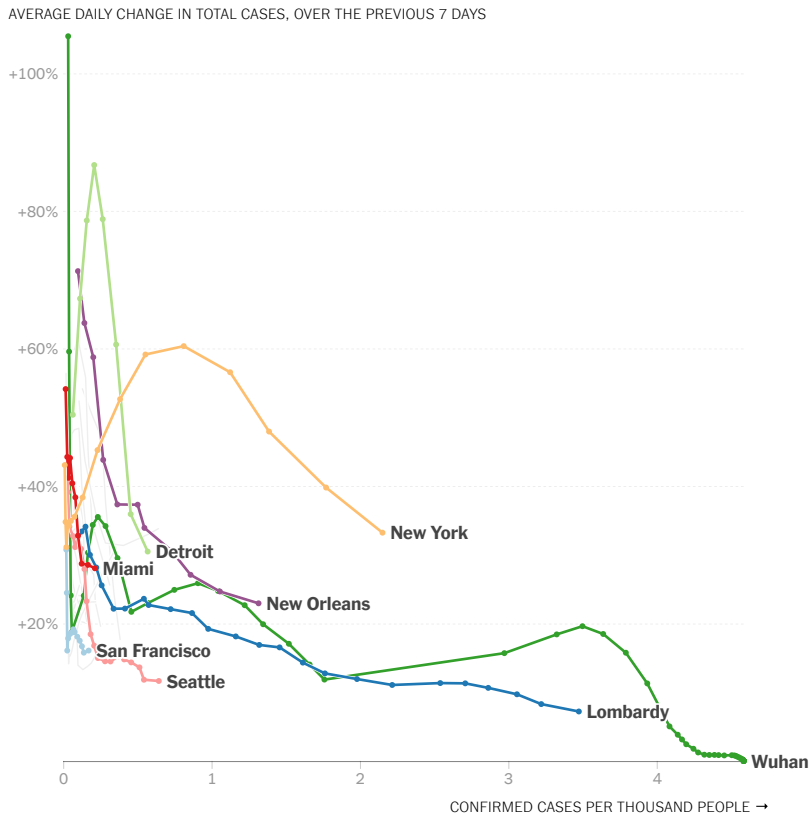
Here, we can see whether the trajectory of a local epidemic is getting better or worse. A growth rate of 40 percent on this chart means the cumulative number of cases is growing by 40 percent every day. A rate of 100 percent would mean that the number of cases was doubling daily.

Public health officials have been talking about the value of social distancing measures as a way to “flatten the curve” of the epidemic. Such a flattening would mean that the rates in this chart are falling, eventually to zero. New York’s current growth rate is just over 30 percent, suggesting that its curve remains quite steep, and that the disease is continuing to spread rapidly throughout the region.

In some other metro areas, like Baton Rouge, La., the growth rate is high, but the number of cases is still low. That means the community may still have time to flatten its curve before the outbreak becomes widespread. But communities with a lot of cases and a high growth rate are on track to have a serious problem. A high growth rate on top of a large number of cases means that a still larger number of people are on track to become ill or die.

How Bad Could It Get? Growth Rates by Case Count

Case numbers in the New York area are also growing quickly given the size of its outbreak.



Pros of this measure Helps distinguish between places where cases are growing fast with few cases and places where cases are numerous and still growing fast.

Cons Hard to read. Relies on case data.

The chart above shows the growth rate by the number of cases in a given place. This measurement shows whether a community has succeeded in slowing the rate of growth before there are many cases. In other words, it shows whether a community is succeeding at flattening the curve.

By this measure, the situation in the New York area does not appear promising. The rate of increase in cases is far higher for the number of cases than it was in Wuhan or Lombardy, once they had reached similar numbers of cases. Other metropolitan areas, like Detroit and New Orleans, stand out as places where a coronavirus outbreak might escalate quickly without preventive measures. The Seattle and San Francisco areas, in contrast, seem to have made serious progress in flattening the curve.



The Best Places in the World to Retire for Free Guide

We've ranked, rated, compared, & contrasted the best retirement

The chart also helps avoid the illusion of success created by a slow, initial rate of growth. Many charts depict the growth of cases over time, and it can be easy to assume that the communities that get an outbreak quickly, and therefore appear above the pack on the chart, are faring the worst. But a community that experiences a high rate of growth with a large number of cases is in serious trouble, regardless of whether the outbreak occurs 10 or 100 days after it had its first cases.

Sources: Department of Civil Protection, National Institute of Statistics (Italy), Wuhan Municipal Health Commission (Wuhan), New York Times database of coronavirus cases

Additional reporting by Allison McCann and Jin Wu