

## Social distancing could buy U.S. valuable time against coronavirus

**It's a make-or-break moment with coronavirus to test one of the most basic — but disruptive — public health tools**

[Carolyn Y. Johnson](#), [Lena H. Sun](#) and [Andrew Freedman](#)

March 10, 2020 at 10:41 a.m. PDT

With coronavirus cases in more than 30 states and the [District of Columbia](#) already starting to strain limited resources, including [masks](#) and [lab tests](#), the United States is at a make-or-break moment that will depend on one of the most basic, but inconvenient and disruptive, public health tools in the book: social distancing.

The best way to prevent a catastrophic explosion of cases in the next few weeks, many experts think, is to break potential chains of transmission by preventing infected people from coming in close contact with healthy ones, whether it means canceling conferences or relying on individual decisions to avoid [crowded public transportation](#) or postpone weddings.

The goal isn't to stop the virus; not anymore. It is to slow it down.

The city of Austin canceled its [South by Southwest festival](#). San Francisco has called off the [ballet](#), the symphony and other gatherings for the next two weeks. Boston canceled its [St. Patrick's Day parade](#). In Washington state, where [20 people have died in King County](#), the health department is urging people to avoid large gatherings "if you can feasibly avoid bringing large groups of people together."

"Whenever you see the virus, it's moved on already — it will have infected other people by the time you become aware of it," said [Bill Hanage](#), an epidemiologist at the Harvard T.H. Chan School of Public Health. "Slowing it down matters because it prevents the health service becoming overburdened. We have a limited number of beds; we have a limited number of ventilators; we have a limited number of all the things that are part of supportive care that the most severely affected people will require."

In a country whose government is unlikely, or unable, to impose draconian limits on freedom of movement as China did, such voluntary measures may be the best countermeasure. The reason isn't that it will stop the virus; it's likely the same number of people will ultimately still get sick. But it could mean the difference between a manageable surge of patients and one that overwhelms scarce resources, resulting in unnecessary deaths.

Social distancing won't just require government-level decisions — individual people will need to take steps to change their daily routines, based on their own judgment and the local situation. By the time it stops feeling silly to consider major life changes, it may be too late.

"If you're going to a concert in a small jazz club, that's not a big deal. But if you're going to a family wedding where there are 200 people drinking and eating, that's a bit more concerning," said Jeanne Marrazzo, the director of the Division of Infectious Diseases at the

University of Alabama at Birmingham School of Medicine. It really comes down to how much people are sharing personal space and the extent to which people can trust that others who attend an event will stay home if they aren't feeling well.

Disrupting everyday life is more easily said than done, with effects that will ripple through individual families and the global economy. Much to the consternation of health officials, it is already creating dissonance and conflicting messages, starting at the very top. [President Trump argued on Twitter](#) on Monday that even though the flu killed 37,000 people last year, "Nothing is shut down, life & the economy go on. At this moment there are 546 confirmed cases of CoronaVirus, with 22 deaths. Think about that!"

Particularly for people who are young and healthy, disruptions may seem to be excessive — alarmist restrictions. But graphics comparing the speed of spread of epidemics with and without social distancing provide a powerful visual illustration of the importance of what experts call "flattening the curve." It's the difference between a viral outbreak that has the profile of Mount Everest, exploding vertically, vs. one that unfolds over time — a long, low hill.

"The idea is that the sooner you stop that transmission chain, you are actually limiting an exponential growth," said Yvonne Maldonado, an infectious-disease epidemiologist at Stanford University. "That's really important, because instead of preventing 1,000 cases, you might be preventing 100,000 cases — and a matter of days can make a difference."

An early study, not yet peer-reviewed, of two cities in China suggested the potential difference. The Wuhan outbreak reached its peak quickly, and a similar growth curve "would fill our ICU" beds with [coronavirus](#) cases for the United States, tweeted [Marc Lipsitch](#), a Harvard epidemiologist.

Guangzhou, which intervened in the epidemic earlier than Wuhan did in its own case, had a smaller peak of hospitalizations.

History has taught this lesson before. A [study](#) in the Proceedings of the National Academy of Sciences of the United States of America of the [1918 influenza pandemic](#) provided powerful evidence that cities that implemented interventions early — such as closing churches, schools, theaters and dance halls and forbidding crowding on street cars and banning public gatherings — experienced much lower peaks in the death rates than ones that did not.

[Philadelphia](#) famously held a citywide parade 11 days after the first cases of flu were identified and didn't implement closures until the following week. The city experienced a much more intense epidemic than St. Louis, a city that put social distancing measures in place earlier. The overall flu death rate was twice as high in Philadelphia, but perhaps more important, the death rate peaked earlier and was eight times Saint Louis's.

## Effects of social distancing on 1918 flu deaths



As the first cases of the 1918 flu were reported in Philadelphia in September 1918, authorities played down the significance and allowed public gatherings to continue. Closures in Philadelphia were only enacted once the virus had spread. The first cases in St. Louis were reported in early October, with measures to contain the spread enacted two days later. This resulted in a slower spread and lower mortality rate.

Sources: "Public health interventions and epidemic intensity during the 1918 influenza pandemic" by Richard J. Hatchett, Carter E. Mecher, Marc Lipsitch, Proceedings of the National Academy of Sciences May, 2007. Data derived from "Public health interventions and epidemic intensity during the 1918 influenza pandemic" by Richard J. Hatchett, Carter E. Mecher, Marc Lipsitch, Proceedings of the National Academy of Sciences May, 2007.

TIM MEKO/THE WASHINGTON POST

Philadelphia and St. Louis responded differently to the flu outbreak in 1918. (Tim Meko)

"The challenge as we're seeing right now is this incredible surge for resources at the beginning of an outbreak," said Drew Harris, a population health researcher most recently

at Thomas Jefferson University who created a simplified version of the conceptual graphic that has been widely shared online.

Harris likened the situation we're in as a country to a family of four facing an ordinary flu virus. Would they prefer all to get sick at once, which eliminates the parents' caregiving capacity? Or would it be preferable for them to come down with the illness one after another, so that only one person is sick at a time?

Much of the attention has been on countermeasures such as vaccines or treatments that are still in early development. But people can adopt practices today that could have profound effects — staying six feet away from people as a precaution and washing their hands frequently, for at least 20 seconds each time.

“Social distancing sounds humble, like washing hands,” said Caitlin Rivers, an epidemiologist at the Johns Hopkins Center for Health Security. But during the West Africa 2014 Ebola epidemic, one of the key strategies that helped stem the outbreak was people in the communities changing their behavior to minimize contact with others, she said.

Rivers said she was in an office she had never visited before, and was struck by the number of Purell sanitizer gel bottles on conference tables and people using tissues to open door handles.

The focus should be on preventing the virus from reaching the most vulnerable such as older adults and those with underlying medical conditions or who have weak immune systems.

But the answers will involve sacrifices and may not be clear-cut as the outbreak changes day by day. Anne Reis, a librarian in Howard County in Maryland is struggling to know what to do.

Reis's husband is 57, had a kidney transplant and takes daily medication that suppresses his immune system. His sister, who lives in Sweden, is planning to visit the family in a few weeks and then the two women are planning to go to New York City in early April to see a Broadway show and visit museums. Reis is worried that her sister-in-law could become exposed on the plane trip to the United States and infect her brother. Or that both women could bring the virus back with them from New York City.

“I'm hearing that this is the time for social distancing. I've been doing all the things, like washing of hands,” said Reis. “Should I go traipsing off to New York? Where does social distancing end? ... I don't know what to think anymore.”