America’s COVID-19 testing has stalled, and that’s a big problem

Enlarge / After growing exponentially for most of March, US testing has stalled out at around 100,000 tests per day.
Eric Bangeman / Ars Technica

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One of America’s biggest fumbles in the early weeks of the coronavirus crisis was inadequate testing. Thanks to a series of poor decisions by federal officials, the United States had far too little capacity to test for COVID-19 throughout the month of February, hampering our ability to contain the spread of the virus.

In early March, things seemed to be turning around. According to data from COVID Tracking Project, daily testing grew exponentially from a few hundred tests on March 5 to 107,000 tests last Friday, March 27.

But since then, progress has stalled. The US has been testing a bit over 100,000 people a day for the last six days—including 101,000 yesterday. And that’s a cause for concern because the US will need to do considerably more testing to get its coronavirus outbreak under control.

Why testing matters

The most urgent need for testing is when a patient shows up at the hospital with coronavirus symptoms. Knowing if a patient actually has coronavirus or some other disease with similar symptoms determines what kinds of treatment are most appropriate. It also lets health care workers know whether they need to take precautions to avoid catching the coronavirus themselves.

Testing is also crucial for slowing the spread of coronavirus in the wider world. Ideally, when a patient is diagnosed with COVID-19, health officials would test everyone who has had close contact with that person. If someone else tested positive, officials would test all of *their* close contacts too. This process is known as contact tracing. Doing it on a wide-enough scale should allow officials to quickly identify and isolate almost everyone who has the disease.

You might not think that would matter now with so many people staying at home. But there are a fair number of people still working in essential industries who are at risk for catching COVID-19.

Amazon, for example, has had coronavirus cases at a growing number of fulfillment centers around the country. When these outbreaks occur, Amazon typically orders co-workers known to have had close contact to self-quarantine for 14 days. But those workers aren’t necessarily tested. So if one of them passed COVID-19 on to someone else before their quarantine began, public officials wouldn’t find out.

When to go back to work

So greater testing capacity would help improve treatment of patients and limit the spread of the coronavirus today. And it will become even more important once the current outbreak has

peaked and public officials want to start sending people back to work.

If officials simply lifted quarantine restrictions without taking other precautions, the virus would resume its exponential growth and we'd wind up with a second large-scale outbreak. Aggressive contact tracing and quarantine policies are needed to make sure this doesn't happen. And that requires ample testing capacity.

Large-scale testing can also inform public officials' decision about when and how to lift restrictions. That's important because today's large-scale quarantine policy is having massive economic costs. The more data officials have about the spread of the coronavirus, the more precisely they can determine when and where it's safe to relax restrictions and the sooner they can let people go back to work.

Current testing levels aren't enough

The countries that have been most successful at controlling their coronavirus outbreaks have done a lot more testing than the United States on a per capita basis. South Korea, for example, has performed 431,000 tests since its outbreak began. On a per capita basis, that's equivalent to 2.7 million tests in the US. We've only done 1.1 million tests so far, according to the COVID Tracking Project.

South Korea's testing has actually leveled off at around 10,000 tests per day. But that's because South Korea has gotten its coronavirus outbreak under control. It's had 9,976 total infections, and it had only 89 new infections on Thursday. In contrast, the US has had more than 236,000 infections, with tens of thousands of new infections daily. That's far more than South Korea even after you adjust for population. So we're going to need much more testing to get

the situation under control.

Another example: Germany is conducting 50,000 tests per day. That's about twice as much testing as the US on a per capita basis. Germany's aggressive testing may have helped the country keep its coronavirus fatality rate low.

Governors in the United States say that a shortage of testing supplies is hampering their fight against the virus. The New York Times recently obtained audio of a call between governors and President Trump:

> *Gov. Steve Bullock of Montana, a Democrat, said that officials in his state were trying to do "contact tracing"—tracking down people who have come into contact with those who have tested positive—but that they were struggling because "we don't have adequate tests."*

"We have a desperate need for testing kits," Washington Gov. Jay Inslee told CNN on Sunday.

The rising rate of positive results is an ominous sign

When testing resources are scarce, health professionals prioritize testing people with obvious COVID-19 symptoms. If testing capacity were growing faster than coronavirus infections, we would expect more testing of people with milder symptoms or no symptoms at all. That should lead to a declining rate of positive test results.

Instead, the fraction of positive test results has been steadily rising over the last two weeks. The week of March 15, around 13 percent of coronavirus tests produced positive results, according to COVID Tracking Project data. Last week it was 17 percent. So far this week, 22 percent of coronavirus tests have produced positive results. Yesterday's figure was

more than 25 percent.

This doesn’t *necessarily* mean that the number of infections is growing faster than our testing capacity. For example, it’s possible that as health care workers have become more familiar with the virus they’ve gotten better at identifying probable coronavirus cases, allowing them to prioritize testing of people who are likely to have the virus.

But it does suggest that our testing capacity isn’t significantly outpacing the number of infections. And a 25 percent positive testing rate also suggests that we don’t currently have enough testing capacity to truly bring the virus under control, because thorough contact tracing is going to require testing a lot more than four people for every infection.

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