

# Letting the science speak: Lessons learned from COVID-19

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Since the first cases of COVID-19 were reported, the virus has spread throughout the world. Called “the defining global health crisis of our time” by the World Health Organization, COVID-19 has raised many questions. From testing availability and access to personal protective equipment to physical distancing measures, the pandemic has left its mark.

In a Q&A interview with AMA Chief Experience Officer Todd Unger, Editor-in-Chief of Scientific Publications at *JAMA* Howard Bauchner, MD, shared some lessons learned about COVID-19 and what to look for in the coming months.

## COVID-19 is a well-defined disease

While “we’ve come a long way,” there are still “a lot of holes in our knowledge” of COVID-19, said Dr. Bauchner. However, the “virus has been very well defined. It’s been very well defined since early January.

“The entire DNA sequence was laid out by the Chinese in the public domain and that’s critically important so you can develop diagnostic tests and begin to do vaccine and other drug development,” he said, adding “that was a huge advance” and that Anthony Fauci, MD, “has said it’s a key knowledge transfer that then allows vaccine development to begin.”

## Physical distancing works

What was seen in China is that “draconian approaches to quarantine” do work,” said Dr. Bauchner, adding that “we’ve learned from Korea, Singapore, Hong Kong and Taiwan that if you can identify people quickly, you can track them and you can quarantine them. You can prevent large spread

within societies.”

Additionally, “we have pretty good information now that social distancing is working. It probably has prevented tremendous increases in disease. In some cities it remains a bit uncertain, but the data are accumulating both from an observational standpoint.”

## **There is tremendous capacity in the U.S.**

“We’ve learned that the U.S. has tremendous capacity to expand resources when necessary,” he said. This is because intensive care units around the country have doubled or tripled in size.

“The early concerns about a tremendous ventilator shortage has not occurred and that’s in part because we were able to obtain more ventilators,” said Dr. Bauchner. “But more importantly, people began to share them.”

Learn more about treatment strategies from the front lines of COVID-19 care in California, including freeing up ventilators.

## **Treatment is unclear**

Currently, effective treatments for COVID-19 remain unclear. While there are people who have “touted chloroquine, an anti-malaria drug, the data to date are inadequate,” said Dr. Bauchner. “Some would describe it as poor, and I think people are hopeful that there’ll be data from clinical trials to clarify that issue.”

“Numerous antivirals are being investigated but, again, no clear answer,” he said, adding that “people are very interested in convalescent serum. That is serum from individuals who were sick then being purified and then infused into patients who are sick.”

Additionally, “This is not one disease and that’s not uncommon at all. It may be a single causative agent, but it’s manifest in people very differently,” said Dr. Bauchner. “There’s been very, very different reports from intensive care units around the world about the best approach to ventilating these individuals or providing respiratory support.”

## Surprises from the pandemic

One of the main surprises has been the lack of disease or testing in children is a major area of the COVID-19 pandemic, said Dr. Bauchner.

“We don’t know if they’ve been infected or not. I think everyone is struck by that,” he said, adding that “children get influenza, so people believe this is like influenza that children have not ended up being hospitalized is really of interest because people want to understand if that represents a clue of potential therapies in the future.”

Additionally, while the variation in case fatality rate of 1% or 2% in some countries and up to 10 or 12% is not a surprise to Dr. Bauchner, “people felt as we did more testing, the case fatality rate would come down, that you’d end up picking up people who were less sick or asymptomatic.”

“But in fact, in most countries, as the pandemic continues, even though they expanded testing, the case fatality rate has gone up,” he said. “That’s been true in South Korea. It’s been true in Germany. It’s been true in Sweden and I think that surprised me.”

## Outlook for the coming months

Looking beyond the summer months, Dr. Bauchner doesn’t think much progress will be made with clinical treatment because an “effective treatment will reduce mortality by 20 or 30%, but that would still mean that 70 or 80% of the people who were seriously ill would die.”

“I think we will develop effective therapies, but it’s not like there’ll be a cure, so I think people need to understand what an effective therapy means,” he said, adding that what is key is the need for a public health plan.

“We had virtually no high-quality public health response other than what we’ve learned from histories of a hundred years of infectious diseases,” said Dr. Bauchner. “We were not able to test, we were not able to track, and we were not able to quarantine, so we immediately moved from containment to mitigation in terms of social distancing. We don’t want to have to do that again in the fall.”

“People need to go back to work. People need to go back to school and people need to go back to college,” he explained, adding that “if the pandemic wanes in the coming months, but then there's a recrudescence in the fall, as is often common with respiratory pathogens, this could be a huge struggle.”

“On the other hand, there's been uncertainty in the way the viruses behave. Most of the models have been largely incorrect,” said Dr. Bauchner. “It remains unclear what will happen in the fall months, but I think it'd be better to be prepared with a public health response than not be prepared.”

Stay up to speed on the fast-moving pandemic with the AMA's COVID-19 resource center, which offers a library of the most up-to-date resources from JAMA Network™, the Centers for Disease Control and Prevention, and the World Health Organization. Also check out the JAMA Network COVID-19 resource center.