

## Experts Discuss COVID-19—Vaccine Doses, Virus Variants, and More

**J**AMA Live Highlights features comments from livestream interviews by JAMA Network Editor in Chief Howard Bauchner, MD. His discussions with experts in clinical care, public health, and health policy focus on critical issues related to the coronavirus disease 2019 (COVID-19) pandemic. Comments have been edited for clarity.

### Rochelle P. Walensky, MD, MPH

Director of the Centers for Disease Control and Prevention (CDC) and former chief of the Infectious Diseases Division at Massachusetts General Hospital

**On leading the CDC:** How is it that I make sure that these incredible scientists, these incredible civil servants for their entire career, understand and feel the value that we should be giving them? They have been diminished. I think they've been muzzled. This top-tier agency hasn't really been appreciated over the last 4 years, and really markedly over the last year, so I have to fix that. The good news in my mind is there hasn't been a mass exodus of the talent. And so what I need to do is make sure that those voices get heard again, that I'm leading with trust, that this science is actually conveyed.

**On CDC communications:** I have to make sure that we're communicating to the American people. I've done numerous media appearances where I've heard people say, "This is the first time we've heard from the CDC director in a year on this show." So I want to be able to convey, in layman's terms, what the science shows, when guidelines change, when *Morbidity and Mortality Weekly Reports* are released.

I can do television appearances, I can do interviews, we can do media briefings, but science is now conveyed through Twitter. Science is conveyed on social media, on podcasts, and in many different ways, and I think that's critical. As we talk about vaccine hesitancy, or as we talk about anti-vaxxers, what's the CDC saying on Twitter about that? We have to have a social media plan for the agency.

**On emerging virus variants:** We worry about increased transmissibility, and we've seen that with some of the variants. We worry about increased morbidity



and mortality. We haven't yet seen that, although I think we should worry about it because with more disease and more cases, we're going to have more morbidity and mortality. And then we worry about how well and how robust our vaccines and our therapies are in tackling the variants when they arise. I think the good news is that the efficacy of the vaccine is so high that we have a little bit of a cushion. I just want to remind people that almost no vaccine we have is 95% accurate. Will it be 95%? Maybe. Will it be 70%? Maybe. But our flu vaccines aren't 75% effective every year, and we still get them. I'm still currently pretty optimistic.

**On monoclonal antibody therapy:** It's been so hard and clumsy to implement. And then we have this sort of concern in the back of our heads—are they going to work on the variants? If you have a cocktail, maybe that's a little bit better. **Monoclonal antibodies** may be a step in the path to get us to a better place, but I don't think that anybody envisions that this is going to be the panacea for outpatient treatment. It's just too hard.

Full video and audio of this interview are available online.

### Paul A. Offit, MD

Director of the Vaccine Education Center and professor of Pediatrics in the Division of Infectious Diseases at the Children's Hospital of Philadelphia

**On why getting the second vaccine dose is important:** When Pfizer did its trial it gave a first dose and then 3 weeks later it gave a second dose. In that 3-week period of time the vaccine was roughly 52% effective. With Moderna, probably because it was a longer period of time between dose 1 and dose 2, it was somewhere in the vicinity of 80% to 90% effective in that 4-week period.

After 1 dose you have a neutralizing antibody response in your circulation that is considerably less than after the second dose. You clearly get a booster dose with a second dose, and you get a T-cell response. You will have longer-term immunity with that second dose. You can't wait very long. If you're waiting 2 months, 3 months, 4 months later, I think that's a problem.

**On how many people must be vaccinated:** I would think that if you can vaccinate say 60, 65 million people with 2 doses, that we can stop the spread of this. And to do that we need to be vaccinating at

least a couple million people a day and probably closer to 3 million if we're going to try and stop spread of this virus by summer.

**About virus variants and vaccine effectiveness:** What we need to do initially is to see whether or not the sera that are obtained from people who are immunized with these [mRNA vaccines](#) neutralize that virus variant. If people who are vaccinated with these mRNA vaccines who are then exposed to these variant viruses get sick, then we're going to have to have essentially a multivalent vaccine strategy where it's not just, for example, 1 mRNA in there, but also the variant strains.

Full [video](#) and [audio](#) of this interview are available online.

### Christopher W. Seymour, MD, MSc

Associate professor of Critical Care Medicine and Emergency Medicine at the University of Pittsburgh and a *JAMA* associate editor

**On anticoagulants in COVID-19:** We see coagulation abnormalities in these patients. When you round on these patients in your unit, you're seeing maybe more deep vein thrombi or arterial thrombi that you hadn't before. And so there's good scientific rationale to move forward with trials of systemic anticoagulation and then, as we move out of the [intensive care unit], different approaches to prophylaxis. There will be side effects when you give a blood thinner. But the question is whether those side effects are balanced by the potential benefit to the patient from the drug. Three groups are working together to understand the best way to treat patients with heparin.

**On what's unique about COVID-19:** I've been surprised to see the significance and severity of the lung injury. We're really giving a lot of support to these patients. And it is just unusual and a bit of a reset to think that you're going to walk into your place of work and care for 6 people that are [proned](#). It's just very different. And that may speak to characteristics of the virus, maybe the host tolerance, but then also the aggressiveness of the host response. Very difficult to handle as an intensivist.

**On COVID-19 long haulers:** I don't know yet if the sort of symptomatology that we describe in the [long haulers](#) or the "long COVID" is actually that different than a bad case of bacterial pneumonia. In part because that research is still forthcoming.

I think we're hearing a heck of a lot more about this because there's way more people that are getting COVID. And so the frequency of these issues in our population is much, much more common than perhaps the elder with bacterial pneumonia, who then is not themselves 6 months later.

Full [video](#) and [audio](#) of this interview are available online.

### Arnold S. Monto, MD

Thomas Francis Jr Collegiate Professor of Public Health at the University of Michigan School of Public Health and acting chair of the US Food and Drug Administration's Vaccines and Related Biological Products Advisory Committee

**On the initial vaccine rollout:** I don't think anybody is ready for this. And I think this is the ultimate demonstration of problems with the American health care system, which is fragmented, which probably has some of the wrong priorities. We're all into billing and everything else. Flu vaccination is probably the closest thing we have to what we're trying to do now because people get vaccinated every year. Everybody knows where to go and how to get it. The supplies are there. This is totally new, and I think we totally underestimated the challenges that this would provide because we're really not as organized as countries that have health care as a more systematic component of the government.

#### About vaccinating pregnant women:

I think a pregnant woman should look at her risk group and get vaccinated as she would if she were not pregnant. I think that when vaccine is available for the general public, a pregnant woman should be vaccinated. By that time, I hope we have more information about some of the theoretical risks, and there are always theoretical risks, especially about the first trimester. Looking at the flu story, we've come from most pregnant women not being vaccinated to pregnant women being the highest priority.

**About vaccination for previously infected people:** Going to the back of the line if you're infected—that gets to be very cumbersome. We've not done it with anything else simply because it requires an even more cumbersome system of testing people and categorizing them. Let's hope we have enough vaccine to just go ahead and vaccinate whoever comes up in line. We know it is safe for a previously infected individual to get vaccinated.

**About the lack of serious disease among most children:** This is very unusual for a respiratory virus. Usually, children are the major sources of not only infection but transmission in the community. If there's anything standard about flu pandemics, it's the fact that young children are at particular risk of severe morbidity and mortality. And we saw the opposite here. Maybe it has to do with some kind of receptor issue. I hope we can work this out to try to figure out why this is.

Full [video](#) and [audio](#) of this interview are available online.

### Nicholas Christakis, MD, PhD, MPH

Sterling Professor of Social and Natural Science, Internal Medicine, and Biomedical Engineering at Yale University and author of *Apollo's Arrow: The Profound and Enduring Impact of Coronavirus on the Way We Live*

**On how hospitals have fared during COVID-19:** Many hospitals, even though they are providing a crucial service in the history of our nation in taking care of people who are sick from a deadly contagion, lost money. Many hospitals were at the risk of going out of business. Hospitals make money from elective procedures and high-value procedures and, apparently, taking care of people who are infected with a deadly virus is not very remunerative. This is no way to organize a health care system.

**On plagues throughout history:** We have to appreciate that we are not the first ones to be enduring a serious plague. Bad as it is, the best estimates of the infection-fatality rate of this pathogen are between 0.5 and 0.8 percent. It's going to be a leading killer in our society, but it's not as bad a plague as it could have been. Bubonic plague would kill 50% of the people in a city within a couple of months. There's no sort of God-given reason why this particular pathogen that we are facing isn't worse. It could have been so much worse. We need to cope with it in the wisest way possible, taking advantage of all of the prior knowledge that our species has accumulated about how to deal with this.

Full [video](#) and [audio](#) of this interview are available online. ■

**Note:** Source references are available through embedded hyperlinks in the article text online.

**Editor's Note:** For more coronavirus livestream interviews visit *JAMA's* [COVID-19 Q&A page](#).