

## THE AGE OF THE VARIANT

# COVID of today is not the virus that first emerged

BY LINDA PICONE

Michael Osterholm, PhD, MPH, has been talking about the potential for a pandemic for a long time: His 2017 book (with Mark Olshaker) was titled *Deadliest Enemy: Our War Against Killer Germs*. Even before its 2020 updates to incorporate COVID-19, the book reinforced a message Osterholm has been saying for decades: We—the world, the United States—

were not and still are not prepared for a widespread infectious disease outbreak.

Osterholm is director of the Center for Infectious Disease Research and Policy at the University of Minnesota, which on January 20, 2020, stated that COVID-19 would cause a pandemic, based on the transmission characteristics of the virus.

He says he had started following the virus in late December 2019. By the time he taught his first graduate class of the semester in January, “I said to my students that we would not finish the semester together, that we likely would be closing down the school and that this was going to take off. I think the

vast majority of those grad students thought I was a wingnut.” Of course, he was right. On a Joe Rogan podcast in early March 2020, he predicted at least 480,000 deaths in the next 18 months. He was wrong: after 18 months, there were 600,000 deaths.

Osterholm is in demand across the globe, but he talked with *Minnesota Medicine* in September about the coronavirus and where we are today. The comments here are taken from that interview.



## Variant strains of coronavirus

The virus we saw emerge with the opening days of the pandemic is not the virus we see today. The old 1960s Fifth Dimension song, “This is the Dawning of the Age of Aquarius,” keeps playing in my head over and over again. I keep hearing, “This is the dawning of the age of the variants.” These variants have fundamentally changed the game.

Most of the world is still unvaccinated, and yet not having been infected. Every time there’s a new infection, it gives rise to the potential for a new variant to develop. As bad as the Delta virus is in terms of transmissibility, the question becomes: What does this mean in terms of its immune escape? Will we have one that’s more highly transmissible? Will we have one that can avoid immune protection? We still have a ways to go with this virus.

## Children in school

If you look at data from a year ago, we couldn’t explain exactly why, it was no more severe for children than influenza in terms of illness and deaths. We had a series of recommendations of what schools could do to reduce even that risk.

When the Alpha variant came along, that was the first shock here in Minnesota. Last April, we saw widespread transmission we hadn’t seen before among youth sports. Then, when the Delta variant emerged in May and June, it changed things much more dramatically. Kids were transmitting to each other and to others and adults were able to transmit the virus to kids.

Delta will find every school. It’s not a function of *if* but of *when*. What you can do is minimize the risk of Delta transmission in schools. We have unfortunately not realized how to do that. It’s unfortunately come down to mask or no mask which is an artificially created issue that is so politically charged.

### *Hierarchy of controls*

The most effective thing you can do to reduce transmission is to make sure every room your child is in has five to six air exchanges per hour. HEPA filters deployed in a room are very effective in helping scrub out the virus in those rooms.

Next, there's testing, making sure that if someone wants a test, they can get one. We have unfortunately adopted a policy of one test per week. There's no data that one test per week makes a difference; it's just gotten to be a convenient policy. You have to talk about testing many days per week, if not every day. There are already bars and restaurants around the country that test all of their staff every day.

Then it's about density, about how many people are in a room and how close together. If you want to know how this virus can move, put a smoker in the room and see how far you have to get from them to not smell smoke. If you put a smoker 3 feet in front of a child and say they won't smell it, who's going to believe that? Unfortunately, 3 feet is the CDC recommendation. Even if you can't get rid of the smoke smell, how can you minimize it, how can you reduce it? Outdoor air does that, so hold school outdoors when you can.

The final piece is where masking comes in.

### *Mask effectiveness*

NIOSH did a study on mask leakage for different kinds of respiratory protection pre-Delta variant. The timeframes they found would be even shorter with Delta.

If I'm not wearing a mask and you're not wearing a mask and I'm infected, it's very possible that you could inhale an infectious dose of the virus within 15 minutes. With Delta, it could be as short as a 2-minute elevator ride.

If you have a cloth face covering on, you extend the time to 20 minutes. With a surgical mask, 30 minutes. With an N95 respirator that's not fitted, 2-1/2 hours. With a fitted N95, you're now getting about 25 hours of protection.

People sometimes think I'm against masking. That's absolutely not the case. What I'm for is quality masking.

### *Vaccination*

With the vaccines, we have two "bucket" issues: One is the bucket of safety, the second is the bucket of how to make the vaccines work best.

The bucket of safety we've answered over and over. These are highly, highly safe vaccines and the benefits of receiving the vaccine outweigh any potential negative implications of the vaccine.

How best to use the vaccine, we're still trying to figure out. The third shot is not really a booster; it means this is a three-dose-prime vaccine. We should have all along considered that might be the case. The three- to four-week wait before a second dose was all based on trying to get results as quickly as possible, not necessarily the optimum timeframe. We still have questions, including what are the right doses for kids.

### *What could have been done differently*

We'll always be able to go back and look at our history and say there are things we could have done better. We were dealing with the data we had at the time. We didn't have vaccines in that first year. In the meantime, we saw a country that was so politically charged. Who would have thought a vaccination or whether you were using respiratory protection would become a political issue?

I challenged the notion of lockdowns in an article last spring. I think we went into a national lockdown and as a result, there were a number of areas not impacted by the virus, but impacted negatively by the lockdown. We lost goodwill to effectively use lockdowns in a regional way.

We never in this country established what is our goal. Is it zero transmission? Is it some level of transmission? I believe we really deferred without ever clarifying it. Letting the healthcare system bend, but not break was our challenge, and of course now we see healthcare systems around the country breaking.

We did declare victory far too early. I strongly opposed the July 4 "independence from COVID." I got hit pretty hard for saying the worst could still be ahead of us. What we're seeing right now is that people got over COVID, they just wanted to be done with it, and now it's hard to bring them back. That's what I was concerned would happen.

### *The future*

We're never going to be done with it. Hopefully, we can move it into something that becomes more like a seasonal flu, where it comes and goes. One of the big challenges now is how long protection lasts. We don't know that yet; we're still learning.

Once we get all of the questions figured out and once we can supply vaccine to the world, then we may be able to put a major dent in this virus.

### *Personal impact*

Depending on which time zone a call is coming from, I may be on the phone with someone about COVID as early as 4am or late at night. I have my family and my friends, but I don't socialize, really. It's partly COVID and partly just the time of dealing with COVID. So, it's a challenge. ■■■