TWiV 1354 Clinical Update

Host: Vincent Racaniello

Guest: Daniel Griffin

Aired 5 September 2026

Vincent Racaniello: *This Week in Virology*, the podcast about viruses, the kind that make you sick.

[music]

VR: From *MicrobeTV*, this is *TWiV, This Week in Virology,* Episode 1354, recorded on September 3, 2026. I'm Vincent Racaniello, and you're listening to the podcast all about viruses. Joining me today here at the incubator in New York, Daniel Griffin.

Daniel Griffin: Hello, everyone.

VR: Now I can see your tie. It's polio.

DG: It is polio, yes.

VR: I'm sitting next to you. I can see it.

DG: Not when it's low quality, the streaming.

VR: Too far away. What brings you to New York?

DG: I'm at Columbia right now. I'm on the wards. I'm doing the infectious disease consult service as the attending. We've got a fellow medical student, a pharmacist. Doing a lot of teaching, patient care. It's good stuff.

VR: You basically advise them and let them make decisions, and you just check them?

DG: I try to critique. I try to educate. Yes. My whole idea is that if people have the right information, they're going to make the right choices. I make sure they have the right information.

VR: It's contrary to what this government is doing these days, right?

DG: I think that's a bit of a problem, right?

VR: There's no question that RFK provides the wrong information every time he opens his mouth.

DG: Yes. I think that's a problem because his goal, several people's goal, is to have a certain outcome. They're going to create that outcome by misinforming people, so basically by lying. They want X. They want to be rich. They want to have certain amounts of power. Then

so they feel comfortable lying to people, right? We'll get into this a little bit with the recent measles deaths, right? They're like, no, because our narrative has been that measles is not a big thing. The 10% of little kids that end up in the hospital struggling to breathe, "No, we're not going to talk about that. That's not real." They're going to lie about it. Now we've had five measles-related deaths since this new person has come in.

No, they're going to lie. They're going to go out there, why it's OK. It is tough, right? Because there's a lawyer out there, right? His rebuttal is like, "Oh, you talk about these hundreds of kids that end up in the hospital. You talk about these people that die, but I've got all these people that were harmed by vaccines." I don't know whether or not they actually believe that's true or whether or not they have the humility to realize that they don't know if it's true, because bad things happen to people. Sometimes they've had vaccination before that. Sometimes other things have happened before it. We're really careful to try to be super safe with what vaccines are out there. Yes, I do not think that that person is honest, is actually seeing so much harm, and that they're really a champion protecting these people.

VR: Daniel, lawyers and scientists are two different animals. Scientists go after the truth. Lawyers just want to win.

DG: They just want to, yes. They want to win. They want to make money. Yes, they don't actually care about the truth, right?

VR: No. They just want to win and make money. He says or she says they have all these vaccine. I don't believe it. He will not produce scientific evidence for that. It will all be hearsay.

DG: I think that's the problem. If these lawyers, these individuals really thought that people were being harmed, then they would take a moment out of their well-compensated life and actually get trained, get some formal education. That interview we're talking about where he says to the interviewer, he goes, "Well, you wouldn't actually understand because you're not a scientist." She says, "No, neither are you, buddy." I think that's true.

All right, let's jump in. This is a quotation from Dolly Parton. "When someone shows you their true colors, believe them." I think we were just talking about that. Yes, when people talk, "Oh, I'm here to make America healthy again," and yet they endorse flavored vapes and they allow more chemicals in our foods and they stop having our foods be inspected, and when we have, what, tens of thousands of cases of people getting sick from just trying to eat food, vegetables, lettuce in the U.S., when we have thousands of cases of measles, that's not healthy. That's not making us healthy.

VR: We have measles, we have *Cyclospora*, we have *E. coli* outbreaks. We have *Salmonella*.

DG: We have the children exposed to HIV from the raw milk, from the breastmilk-sharing.

VR: Influenza. This is so visible. The general population needs to understand that it's not working well for them.

DG: Yes. Listen, these people are showing you their true colors. When they say, make America healthy again and the rest, no, no. They're dismantling science. They're dismantling all the things that have made this a safe and healthy and wonderful country. All right, so Dolly Parton. Why do I quote Dolly Parton? She was a bit of the hero, I think, of a lot of

physicians, people in science, because she really used her celebrity status to try to basically help people to spread honest information.

MAHA and MAGA went after her at one point. I'll talk about that in a moment. Here's the story. I'm going to leave in a link to this YouTube. She was a big supporter of vaccines. Sitting at the Vanderbilt University Medical Center, Dolly Parton sang the song *Jolene*, but she replaced the words 'Jolene' with 'vaccine.' I'll leave a link into that. I think this was discussed on the Deep Dive because Jolene was on talking about phages.

VR: That's right. I like the line, "Once you're dead, then it's a bit too late."

DG: These are preventative. You can't go back. That's the problem. There's a nice *BMJ* article where they talk about her relationship with the University Medical Center down at Vanderbilt and how she donated $1 million towards the development of Moderna's mRNA-based vaccine. She did a lot. A lot of what she did was actually anonymous. We don't even know how much she did, but she did a tremendous amount to try to help people. At one point, she was attacked by MAGA and MAHA. She's like, "Hey, I'm Dolly Parton. What are you doing? Don't hate on me." That was really nice. She was just a genuinely sincere, really likable, kind person. Yes, no hating on Dolly Parton, because she was trying to do the right thing.

VR: This is the kind of person you need to advocate for public health for vaccines because many people like her. She's a person like them, pretty much. She's not a scientist. She says, "Hey, get vaccinated." A lot of people will listen to her. I wish we had more of that. She was quiet lately. She did a lot for COVID, but then she got quiet, maybe because she was not feeling well.

DG: Getting older, she was having some health challenges herself. Yes.

VR: Well, we need more celebrities. Do you remember when Elvis Presley got the polio vaccine?

DG: That was the turning point because people have in their heads like, oh, people remember the horrors of polio. Now, it was when Elvis said, "Let's get vaccinated," and he went on *The Ed Sullivan Show*. That's when suddenly everyone was like, "If Elvis is doing it, right?" We actually need that.

VR: Not you and me because they don't want to listen to us [chuckles].

DG: Yes, apparently, I don't have quite the notoriety of the king.

VR: Well, you are a doctor. If you have a patient, you say, "I believe you should get this vaccine for this reason," they will generally listen to you if you discuss it. If you say, "You need to get this right now," that's probably not the approach, right?

DG: I think what is really true, and this is a call out to physicians who watch and listen, is that your patients will believe you. If you sit down, you take the time, and you talk to them about what's going on. They don't necessarily trust Big Pharma. They certainly don't trust the government. They make a choice about which physician they're going to trust. Then I think it's important for us to have those conversations. Even if they're difficult at times, there's that relationship.

Take the time, educate, listen. I was on a podcast where basically saying the first thing you have to do when someone says they're not sure about a vaccine is listen. Why? What's going on? What are you worried about? Because the other side is spending millions of dollars to get them to buy their products, their vitamin packs, their alternative therapy. They want you to get sick.

It's really interesting. In medicine, we spend this time to basically get people so they're not sick because we get paid when you're sick. It's really funny. People are like, "Oh, you're a pharmaceutical shill. You take money from this." It's like us advancing vaccines and trying to get people to be healthier so that they don't have to see us, so that they don't end up in the hospital. Yes, I don't think the pharmaceutical companies give us enough money to make up for that sort of behavior. No, we took an oath. If you want to make a lot of money, yes, don't become an ID doc, just by the way.

All right, so let's go into another article. This is in certain themes, I think, that get us really excited. One of my themes is vaccines do more than just protect you against getting infections, getting sick, getting severe disease. This is another article on the recombinant shingles vaccine. “Recombinant Shingles Vaccination and the Risk of Cardiovascular Events,” was published in *Nature Medicine*. Been a few really good *Nature Medicine* articles lately. Here, these individuals conducted a natural experiment created by the rapid transition from the live attenuated to the recombinant shingles vaccine in the United States. This isn't just, boy, the recombinants vaccine for shingles is great, but it's even greater than what we were using before. This is better than before.

VR: They have this synchronized shift so you can compare populations before and after.

DG: Yes. Here's what we're doing. Now we've got this new, improved, and let's compare right after that introduction because it happens, boom.

VR: If you compare vaccinated with unvaccinated, you always have these confounders like, "Oh, vaccinated people are generally healthier. They take care of themselves." How do you deal with that? This one, they're both vaccinated.

DG: They're both vaccinated. It's just, hey, now we've got the new updated product. They compared incidence of a composite cardiovascular endpoint. This is ischemic heart disease, heart failure, or ischemic stroke. These are adults age 60 or older vaccinated immediately before versus immediately after this transition. You've got that. The recombinant vaccine was associated with a 9% decrease in cardiovascular burden over seven years.

They go through, they break this down. If you look at ischemic heart disease, basically having heart attacks, that's about a 10% decrease. Heart failure, that's a 12% decrease. Having a stroke in males, that was a 12% decrease. There was a 7% decrease in people having AFib. The results were consistent across secondary analyses. Really interesting. I think that if you look at the figure, you can see that this very quickly diverges. I've pasted it into here. What I like is we've been talking a lot about the fact that infection and post-infectious issues and these latent viruses, it's not just about the virus and the infectious disease aspect. Here we're seeing a reduction in heart disease and stroke by getting a vaccine.

VR: This is suggestion, right? We need to have a real powered clinical trial to look at this. This divergence, this very early divergence that you mentioned of the curve, it's within days

to weeks of vaccination. It's a little bit too quick. It may be, the authors acknowledge this, right? It's a flag.

DG: Yes. Why is it so quick?

VR: Confounding differences in healthcare, differential diagnosis intensity. It's hard to know, but it's very fast for a vaccine effect. I don't know what that means. It's there. The effect is real. It just needs to be teased out more. The overall reduction in inflammation caused by vaccination is plausible that you would have -

DG: Some sort of immune boosting, some sort of maybe immune realignment because we are beginning to realize more and more that strokes and heart attacks are related to some sort of inflammatory process.

VR: It may be that vaccination just helps overall besides dementia and now cardiovascular diseases, other things as well. The case will be compelling that you should get them.

DG: All right. *Cyclospora*. We've been following that for quite a while, and we'll keep people updated on that. I think we're getting out of it, right? We're out of the summer months. Usually, what we see is, we see the numbers start to come down. There's a nice CDC graph where you can see we reach this peak, really, in July, and the numbers seem to be coming down.

VR: You say there's some recent unreported illnesses [crosstalk].

DG: Yes. It's going to take a little while for that. This is like that, what they call it, the nowcasting, where you try to somehow figure out. Right now, they're basically 18,445 lab-confirmed cases. The CDC has stopped talking about that extra 12,000 that they haven't confirmed themselves, sort of trying to make their data look better. Yes. We'll see what - We're probably talking about 30 times as many parasitic explosive diarrhea cases this summer as we saw historically.

VR: It has to be tied to the turnover at CDC and less monitoring, less tracing, and so forth.

DG: FDA as well, right? We're not monitoring. Stuff's coming into the country, and it's not all being checked ahead of time. It's sort of after the fact, like, oh, by the way, we got thousands of people sick. Oh, that lettuce we've been giving people is - If you're going to be bringing stuff in, you got to make sure you do the inspections. It was the latest thing they floated for, there's that issue with the beef and bringing in 30,000 pounds or something of Argentinian tainted beef that I think the Chinese rejected, so they tried to feed it to the Texans and Floridians, and then they rejected it. Yes, [chuckles] you can't do that.

VR: All right, so they make this big deal of MAHA, Make America Healthy Again, but they're not. They're not at all. They're making it worse.

DG: Oh, it's the opposite we're seeing. We're seeing, like, you can't safely have a salad. You have to worry about that. You have to worry that they're bringing like tainted beef in from overseas. Things aren't being inspected.

VR: Well, you know, RFK Jr. said, let's give infectious diseases a break, but they're not giving us a break.

DG: Well, they're not. It's the opposite. They're not giving research a break. They're giving monitoring a break, but now we're seeing thousands of measles cases. We're seeing all these other issues, and the latest is, well, instead of inspecting the beef, we'll just let the ranchers inspect it themselves.

VR: Oh, I see. They're not conflicted, are they?

[chuckling]

DG: All right. Screwworm, we're up to 48 cases, and it's still in that, clustered in that area, right, down by the Texas-Mexico border. Maybe good news, FDA issues emergency use authorization for generic drug to treat, to prevent New World screwworm in cattle. This is a U.S. FDA emergency use authorization for Bimectin injections. Basically, ivermectin, for the prevention of New World screwworm infestations, (myiasis), in cattle.

They get it within 24 hours of birth, at the time of castration, or at the appearance of a wound. This is an injection, and they're trying to do this to keep our supply safe, but you have to be careful, right, because it's critical that cattle producers carefully follow the 35-day slaughter withdrawal time. You put this in, you can't then slaughter this, not for veal, because you need to give this a chance to get out of there. You don't give it to your lactating dairy cows.

VR: How long will this last?

DG: They want this 35-day washout, so it's a long-acting effect.

VR: How long will it protect the -

DG: For weeks, yes.

VR: Then you presumably have to keep giving them doses?

DG: We'll have to see, because you're hitting at certain timing. If they get a wound, you give them a shot, but they might end up with another wound, so they might get another shot.

VR: Because I'm thinking of river blindness treatment. There you get one shot a year, right? This is not the same?

DG: No, you're seeing a washout here, because the ivermectin there is a dropping your burden, and then you come in periodically. No, it should actually last for a period of time. Remember, you're giving it to the cattle at birth. You're giving it when you castrate them. You're giving it when you have a wound, and then you're not going to get born again, right? They can only get that one. You only get it castrated once, but then the wound does present like, could this happen again?

All right. Ebola. We have the *MMWR*, "Notes from the Field: Characteristics and Monitoring of the 2026 Outbreak of Ebola Disease Caused by the -"

VR: Bundibugyo virus. It's good. Bundibugyo.

DG: "The Democratic Republic of the Congo, August 2026." Our listeners know this background, but I'll share. The 2026 Ebola DRC outbreak caused by -

VR: -Bundibugyo virus-

DG: - is now the second-largest Ebola outbreak ever recorded. As of August 21, DRC reported 5,458 confirmed cases, 2,606, 48% confirmed deaths. Really, basically 50-50, yes. We should mention that 52% that survived, a lot of people have sequelae. It's not like, "Oh, I had a little bit of Ebola, and now I'm better." You may live, but there's still an impact there.

Cases have been reported from six of the 26 DRC provinces, 57 of the 151 health zones in the affected provinces. There's an outbreak epicenter, which is the Ituri province, and that's 84% of the reported cases. Most operational indicator measures remain below established response targets, and data for others were unavailable. Basically, there's gaps here in surveillance, contact tracing, issues with lab testing, healthcare seeking, isolation. Basically, we're seeing that this is not being well-controlled, and it looks like we're well into a protracted, complex humanitarian emergency.

This is also complicated because it's an area with armed conflict. I've talked a little bit about these militias in these areas. Government does not have good control. Ongoing armed conflict, limited health infrastructure in this part of the DRC, population displacement and mobility. Really basically, I'll leave in a link to this, but things continue to go poorly. If we look at the numbers, this is as of August 31, so 10 days after this report, CDC has updated us with confirmed cases now up to 6,186, over 3,000 confirmed deaths. There's a nice map where you can just see how much of the DRC. It's really particularly in the north and then a little bit down as you get right along the Uganda border, we're seeing all these cases.

VR: I think part of the issue is that they can't take care of them as well either. They don't have the facilities.

DG: Yes. They don't have facilities. They don't have the testing. There's a lot of issues with trust.

VR: I think people stay home and then they spread it to family members and it gets worse.

DG: Then the issue with the funerals. You have to be really careful about how you manage that because they believe, I was raised as a Catholic, that when you die, your soul is still in that body and it's important that you go through a proper ritual so that your loved one's soul does not stay trapped in the body. If you put a person in a black bag and you show up and take them away, then people are not so excited about that. It needs to be done in a respectful way. You need to engage community leaders. It's an ongoing disaster.

VR: One of several.

DG: Yes, one of several. All right. Measles. Two more kids die and one more theater show. This is from “Your Local Epidemiologist,” Substack by Katelyn Jetelina. We read, "Last year, I got a text from a friend in public health." I'm going to leave in a link to this. "They were checking into a hotel in West Texas to help contain a measles outbreak that would eventually balloon to more than 900 known cases. In reality, likely 10 times that number. This 20th century disease, which we had once eliminated as a country, had already killed one child. Local health department was small, chronically underfunded, so it quickly got overwhelmed by the most contagious virus on earth.

"Epidemiologists from across the country came to support the community, which is typical

in these types of situations. They turned around at the front desk and, standing right behind them, checking into the same hotel, were representatives of the Children's Health Defense, the most powerful anti-vaccine lobby formed by RFK Jr., also arrived at the same time to check into the same hotel and 'respond on the ground.'

"What followed turned into national theater. Grieving families' names dragged into public view just hours before they had buried their own kids. A bold, deceptive information campaign seeding narratives about whether the child died with measles or from it, as if the distinction mattered to the parents. Now two more kids died this week in Pennsylvania.

"A lot of details aren't clear, but the theater proceeded and is now doused in jet fuel, politicians with the mic infecting every level of the response from the highest offices to the local coroner, massive information voids cracked wide open through poor communication, a backdrop where trust in vaccines is being directly targeted, and very little trust between each other as individuals and the system around us. The list accomplishes a number of things, except one, it doesn't center the children being sick and the suffering community."

I thought that was very powerful. Now, “Beyond the Noise,” August 28,” Beyond the Noise,” by Paul Offit. "We have RFK Jr., Secretary of Measlesland." That was a catchy title. "For several reasons, the Pennsylvania measles outbreak is about to get much worse." I will leave in a link, but Paul Offit points out that "When the two deaths in Pennsylvania due to measles were announced, the anti-vaccine community, including Secretary of Health and Human Services, RFK Jr., were quick to claim that these two measles deaths were fabricated. RFK Jr.'s claims were ironic given that on July 28, 2021, in front of more than 1,500 people in Lancaster County, RFK Jr. said that measles infections were no big deal and were easily treated with chicken soup and vitamin A.

"We have learned that one of the two measles deaths was an infant who died shortly after birth due to splenic rupture. The coroner reported detecting measles virus in lung tissue. Given that congenital measles infection can cause splenic enlargement and thinning of the splenic capsule, it is likely that the child ruptured the spleen during birth." Paul is sharing a concern in this post that we also read.

"The Pennsylvania measles outbreak is particularly worrisome for several reasons. First, the PA-DOH issued its report in August. Measles is typically a late winter, early spring disease. It is likely that this outbreak will only worsen as we approach the winter months. Second, two deaths among 400 cases represents a mortality rate of one per 200 for a virus that typically has a mortality rate of per 1,000, suggesting the outbreak is much worse than is claimed. Many more people, possibly hundreds more, have been infected but not reported.

"Third, children--" and this is the most worrisome, I thought, "Third, children in Pennsylvania are about to return to school where they will share their viruses more easily. School vaccine mandates, which have been around for decades, were put in place because outbreaks often center on schools. Indeed, a measles outbreak in Philadelphia in 1991, which involved 1,400 cases and nine deaths, centered in two religious schools where children were unvaccinated.

"Fourth, Pennsylvania has both a religious and philosophical exemption to vaccination for school entry. It's easy for Pennsylvania's children to enter school without proof of having received an MMR vaccine. Fifth, President Donald Trump recently held a press conference warning against the MMR vaccine, claiming that the combination was ‘quite lethal.’ Some people might have been influenced by his false claims."

VR: These two deaths, you probably are following in the controversy that the coroner says initially, at least one, the baby. We don't know about the other. He says it has nothing to do with measles. The spleen was ruptured, but it wasn't enlarged, so it wasn't measles, even though he said he detected measles in the respiratory tract. The mother was not vaccinated. She had measles, so she passed it on to the fetus. Now, what do you think? If a baby has measles, it's born, its spleen ruptures, it dies. What caused the spleen to rupture?

DG: I think the father has come out publicly and basically said, hey, my wife had measles. It is incredibly rare for a baby to be born and then have their spleen rupture and have them die. Incredibly rare. It is clearly associated with measles. Mom has measles. The baby dies of a known complication of measles. I think it's very easy to connect the two. I think to assume that, oh, by the way, this woman had measles, the kid had measles in the lungs, the kid's spleen ruptured, but it was just one of these incredibly rare other, the numbers don't work out.

The coroner's going back and forth. Initially, they said, yes, this was listed as measles-related. Then got all this pressure, took it off. Then they realized, I'm going to lose my license if I don't tell the truth, so it's back on. What's really maybe more upsetting is the CDC director, right?

VR: Yes.

DG: Right now, if you look at the statistics, which we will in a minute, is now an asterisk where they say those two deaths are being further investigated. We have the director of CDC, Erica Schwartz, who's like, "No, I'm going to look out for America. I'm going to put the health of Americans first. I am not going to cave." Well, she caved. She took the two measles deaths off the CDC website.

VR: The Department of Health of Pennsylvania said these are measles deaths. They've determined that they were measles deaths. Kennedy immediately says it's fabricated, which is just abhorrent that he does that. He has no information.

DG: The kids did die. This was not made up. He was like, "Oh, no, it was made up." No, they're dead, RFK Jr. and all the RFK supporters. These children, they're dead. You can discuss whether or not it was measles-related, but initially, the coroner, the people on the ground, the state said, yes, these are measles-related deaths. Now, the federal government comes in and was like, "No, we're going to change the truth. We need to rewrite this." We've got Erica Schwartz on board with this who took an oath. I'm going to, no.

VR: The thing is that people in public health do not lie about these things. They want the truth out there. RFK, who's the head of all public health in this country, is lying about it. This is just unacceptable. People need to understand this.

DG: This needs to be changed. This needs to be undone. One of the biggest, I was actually talking to my wife about this because she had realized that on social media, they're really using *The Brady Bunch.* That's part of the anti-vaccine rhetoric. I don't know if you saw *The Brady Bunch*.

VR: I didn't see any of it, and I didn't see this episode, for sure.

DG: There's this episode of *The Brady Bunch*, that's part of the anti-vaccine rhetoric.

VR: What is that, a journal or something?

DG: I don't know if you saw *The Brady Bunch*.

VR: I didn't see any of it and I didn't see this episode, for sure.

DG: There's this episode of *The Brady Bunch*, which apparently, they're using in the anti-vaccine rhetoric. It's all about, oh, it's not such a big deal. Back in 2019, in NPR, there was the article, "Brady Bunch Episode Fuels Campaigns Against Vaccines and Marcia's Miffed." I like the little alliteration there. Just a few passages, but I'm going to leave in a link. You probably could watch this as a rerun on YouTube or something. This goes back to 2019. This was pre-pandemic. They were already using this in their list.

People are critical of vaccines. They bring this episode. It is used in videos and memes and cited by activists like Dr. Toni Bark, who testifies against vaccines in courts and public hearings across the country. To them, it aptly illustrates what they consider to be the harmlessness of the illness. The year that *The Brady Bunch* episode came out, according to data from the Centers for Disease Control and Prevention, there were more than 25,000 measles cases and 41 deaths. 25,000 measles cases, 41 deaths. It was six years after the vaccine was developed.

Everyone who caught measles in *The Brady Bunch* episode was fine by the next episode. Most people who catch the measles in 2019 will be fine too. That's not always the case. The virus can cause pneumonia. In severe cases, brain swelling and deafness, and as we've seen, deaths. Now, Lloyd J. Schwartz, the son of Sherwood Schwartz, the creator of *The Brady Bunch*, who passed away in 2011, also took issue with using the show to dissuade vaccination. Dad would be sorry because he believed in vaccination, had all of his kids vaccinated. If this episode was realistic, right, with six kids, one of them would have ended up in the hospital requiring oxygen. This is a kids' show. This is not a realistic depiction of how horrible measles can be.

VR I can't believe the lawyers are using it in court cases.

DG: It's craziness. Really? You're referencing a kids' show? It's like, in this one kids' show, they didn't show measles as horrible. See, that's proof. What planet? What are the numbers? We're now up to - and I'm just going to use the Johns Hopkins tracker. I've just given up on the CDC for the moment. Maybe I'll get them back. We are over 3,000, so 3,048 measles cases. CDC decided not to even update last Friday because they're just like, the truth is killing them.

VR: Do you know that 84% of these cases are in Republican counties? 84%.

DG: Wow.

VR: I didn't know there was a susceptibility difference in political party, did you?

DG: It has a lot to do with this anti-vaccine, anti-science messaging. You're not helping. Just to give people a sense. We're talking about 8% to 11% in the last two years of these cases have ended up in the hospital. We talked about how incredibly expensive this is per case. You can even break down the percentage that are hospitalized. A lot of these are little kids.

VR: When you're hospitalized with measles, is it typically because of pneumonia?

DG: Typically because you're having trouble breathing, typically because of the pneumonia that you develop. There's a measles viral pneumonia, which can also be complicated with a bacterial pneumonia. These are kids requiring oxygen. We don't hospitalize for quarantine. It's another lie of RFK.

VR: All you can do is give them oxygen because there's no antiviral, right?

DG: True. You give them oxygen, supportive care. Sometimes they end up on ventilators in the ICU.

VR: In the days when people got vaccinated, this wasn't an issue because there were no cases. Now that we have thousands of cases, should we have an antiviral?

DG: Probably should, yes. If this is going to be the future, we're going to need to work on antivirals.

VR: In fact, there is at least one out there. I heard about it at a measles meeting. Peter Klemper is his name at Georgia State. He had developed it years ago. I remember doing a *TWiV* with him years ago. He said, "There's no market for this." Then I saw him a few weeks ago, and he said, "Yes, now there's a market."

DG: It'll be interesting because if this is a group that hasn't vaccinated, and now you can say, oh, well, boy, if their kid ends up sick enough that they're in the hospital requiring oxygen, then maybe they're going to be like, "OK, I've changed my mind." Then it becomes the COVID timing issue. By the time they end up in the hospital, it might be too late for the antiviral. You might be getting more into that. That's going to be a challenge.

In this link, I'll leave a link in the CDC, you can see that there's an asterisk for the total number of deaths, 2026. It says, “this week's measles outbreak update will not include the two measles-associated deaths,” which is really interesting. They call them measles-associated deaths reported by the Pennsylvania Department of Health on August 25, while CDC reviews additional information regarding the circumstances and causes of death. At this time, available information does not establish whether measles caused or contributed to the deaths or whether the individuals died from other causes while infected with measles.

VR: What would you need to prove that the baby died of measles directly?

DG: This is one of the challenges, because they can go ahead and say, "I need 100%." Nothing in medicine is 100%, right?

VR: Well, couldn't you look in the spleen and look for evidence of fused cells, which are typical of measles?

DG: These would be reasonable. Now you're taking these poor kids, these poor families and saying, and really, it's political, right?

VR: Sure. Of course.

DG: It's political at this point. It is likely measles-related. Really, what are you doing to the poor dad, the poor mom?

VR: If you have a patient who has a heart attack after having influenza, what do you put on

the death certificate?

DG: It's really interesting. I think we've tried to make that connection, that if you can get people vaccinated, get the reduction in the severity of flu, you're going to reduce a lot of those heart attacks. We don't necessarily. If the person got admitted to the hospital with flu, then had a heart attack a few days later and died, then yes, it's going to be influenza-related.

There's probably these heart attacks that happen two, three weeks after the flu because you increase your incidence significantly. Those really probably should be marked as flu-related.

VR: Well, this baby, if it didn't have measles, it probably would have lived.

DG: This was a congenital measles infection, documented, and they had a known complication and died, yes, that should be very straightforward. This is just politics.

VR: Yes, it is. The coroner, by the way, is a political appointee.

DG: It's a problem. All right. Still, on the measles, we have the *MMWR,* "Use of Nowcasting to Estimate Real-time Transmission Trends During a Measles Outbreak - South Carolina, October 2025,-March 2026." We read here, during October 2025, March 2026, South Carolina experienced the largest measles outbreak in the United States in approximately 30 years with 997 cases reported.

I feel like Texas somehow got more publicity. Maybe it was because of the three deaths. The South Carolina Department of Public Health reported confirmed measles cases to CDC through regular updates of provisional line-list data, including essential date fields for each case, rash onset, public health report dates. As in all disease surveillance systems, because provisional data are subject to reporting delays, determining the current transmission trends can be challenging.

CDC developed a nowcasting estimation model to generate real-time estimates that correct for reporting delays. Real-time estimates were generated for the final case counts and time-varying effective reproductive number, trying to basically follow the rate of new infections, whether it was increasing or decreasing. Now, whether case reporting during an active measles outbreak would be stable enough to support accurate real-time nowcasting was unknown before the data in this report was analyzed. During the outbreak, nowcast improved estimates of cumulative outbreak size compared with provisional data and our estimates generally captured underlying transmission trends.

They've got two really nice figures where you can actually see the trends that happened here. You can see they very well captured likely increasing, and then they moved into the likely decreasing. You can see where it peaked in early January. Then they actually have a second figure, too, where you can follow this trajectory over time. Really, by February, you were really getting pretty good predictions of what was going to happen.

Just to close us out with what we've talked about before, we have that article, "Fighting Measles is Expensive. See What it Cost to Contain 10 Cases." This was in *The Washington Post*. Ten cases, half a million dollars. That's really expensive when you decide not to get vaccinated. This is that whole like, "Oh, it's my choice," but who anted up the half a million

dollars, right?

VR: Yes, true.

DG: Was it the person who said, "Oh, I decide not to get vaccinated?" Then where's the half million? Now, half a million dollars, that's about how much it cost several public health agencies to contain one small measles outbreak in the Denver area this year. That was a relatively modest cluster, a total of 10 cases involving nine children and one adult. It nevertheless consumed 6,785 hours of labor by state and local workers to track and snuff out the outbreak after exposed individuals traveled through grocery stores, schools, fast food restaurants, and more. Benjamin Franklin famously popularized the phrase, "An ounce of prevention is worth a pound of cure."

VR: People don't think about the inconvenience they're putting on others, right? Other people get infected, other people have to work to take care of them. All they think about is, I don't want to be told what to do, with no thought of the repercussions in a broader sense.

DG: I think that's the challenge, right? Because people say, why is this your business? Why do you care what I choose to do? It's because it affects us. It affects us financially. We're talking about with the measles now being 3,000. We're talking about over $100 million that we're spending because of this decision. We're talking about hundreds of children that end up in the hospital. That affects our healthcare costs for everybody. We're talking about, I don't go to the fast food restaurant because that would be unhealthy, and I'm not going to admit that in public. I might go to one of these other places, and then now I've got to worry because, oh, someone was there with measles.

VR: Right. Exactly. Nobody thinks about it.

DG: It's a contagious disease. That's the problem.

VR: People don't think about it. Yes.

DG: It's contagious. That's why we care. We care because as a society, this means I have to worry if my daughter decides to have a baby, right?

VR: The irony is the vaccine is completely protective and safe.

DG: Incredibly safe.

VR: There's no reason not to get it.

DG: Yes. You get measles, a 10% chance you end up in the hospital. There's no 10% chance with the vaccine you're going to end up in the hospital.

VR: No.

DG: Yes. All right. Flu, just to mention, they're starting to come out with the flu shots, right? I think people are starting to get vaccinated.

VR: I have an appointment Saturday to get my flu and COVID, and they asked if I wanted the high dose. Maybe I can get high dose for the first time. We'll see.

DG: All right. I'm trying to get the mRNA flu shot. I'll give you a report. We can compare. Fair enough.

VR: That's not available yet, right?

DG: I have not seen this. I've been looking. I haven't seen the opportunity yet. Which COVID shot are you going to get? Whichever they give you, do you have a preference?

VR: It's one of the mRNAs. That's all.

DG: OK.

VR: It's the updated.

DG: The updated XFG.

VR: OK. Because I'm traveling in two weeks, so I thought it would be a good time to get it.

DG: OK. No, I agree. As we go to our COVID, you can see that we're actually really starting to see that the numbers are coming up. They're really higher than they, because of the blue washing we talked about, right? CDC basically changed the goalpost, right? They made the goal half as big. You can see there's areas of the country like Texas, oh my gosh. Even with the new metric, it's very high in Texas. It's moderate. It's high down in Mississippi, right? Moderate California, Nevada, Louisiana, Florida.

VR: Why is Texas so high? Is it low vaccination rates, you think?

DG: It's interesting because it's COVID, right? We're right at that time when people haven't gotten vaccinated yet, so I'm not sure what's going on down there in Texas.

VR: It really stands out, right?

DG: Really stands out. We've got a lot of activity there. We're starting to see it. We're starting to see folks in the hospital with COVID. Numbers are even coming up here. Transmission. Kathy Spindler sent me an article. This was the article, "Heterogeneity of Airborne Virus Transmission in the Built Environment: A Narrative Review," published in *Pathogens and Immunity*.

I like the title. I like the in the built environment, right? Because a lot of us spend so much of our life indoors, right? Maybe 100 years ago when they were talking, maybe people spent more of their life outdoors. This was published in *Pathogens and Immunity*. I feel like refining our terminology and understanding transmission was unfortunately a bit of a lost opportunity during the pandemic. After 100-plus years of a paradigm that's to some degree flawed, we had the opportunity to actually correct this. Instead, we decided we were just going to fight about airborne or not instead of understanding that transmission of infectious respiratory particles is maybe a bit more complex.

This article, it's a narrative review, and it discusses that as the COVID-19 pandemic unfolded, the spread of SARS-CoV-2 challenged this traditional notion of droplets and airborne transmission, right? That was that 5-micron distinction that people had. Physicians, epidemiologists, virologists, and aerosol scientists came together to clarify roots of virus transmission. I think they actually have some figures that really clarify that complexity here.

I'll pull out my glasses, but the first figure is this cartoon, right? It really couples well with Figure 2 where they break down. First, they're looking at emissions. There's a lot of variability there. There's a pretty broad range of differences when you look at the rate of respiratory particle emissions. This is sort of the exhaled air velocity. Are you sneezing? Are you coughing? Are you singing? Are you whispering? That rate of respiratory particle emissions can have a huge, from a sort of 1 to 10 to the seventh. The orders of magnitude difference on how much is getting out there.

Also, number and size of the expelled particles. Number matters. Size matters. Then, also, the environmental, right? Droplet evaporation and shrinkage. That, again, can have a pretty significant impact. Then you move into this transport. You've got your source person. You're super spreader or not. Then you've got this whole transport. It's got to get from them to the other person. They talk about air change rates, whether there's any filtration, the surface deposition rate. There's a rate of biological decay. You've got all these variables in.

Then, you've got your, we'll call it your exposure, your recipient person. There, it's duration of contact. I think people seem to remember that. We talked about how far away and then 15 minutes was this cutoff, so 14 minutes, you're completely safe, 16 minutes, you're going to get sick. No. The duration of contact has, again, quite a gradation there.

The volume flow rate of inhaled air. Are you taking big, deep breaths? It's going to increase your exposure. How efficient is the deposition in the respiratory tract? Then even the availability of cell receptors. There's really a lot of variation that goes into this.

VR: A room is not a simple place, right? All kinds of currents, there are obstacles and so forth. It's not just a matter of staying six feet away.

DG: Yes.

VR: It happens. We do get transmission.

DG: Yes, we do get transmission. There are definitely things that we keep talking about, of ways to impact that, right? We've talked about masking. We've talked about air exchanges, opening windows, keeping the HVAC fan on, air filtration, limiting exposure time. All this stuff could be put together. I wish we would stop fighting about airborne or not. It's like, what does that word actually mean? Do you mean airborne as it was used 100 years ago? What exactly do you mean?

VR: I heard a talk at a flu meeting just this weekend, and the lady said, she was an epidemiologist, she said, a droplet is something that falls to the ground and airborne keeps floating for a long time. That was the best definition I've heard, right? Because a droplet, what's in the word droplet? Drop.

DG: Drop. Yes. All right. We've got our three, actually four. We've got all our approved COVID-19 vaccinations. We've got Pfizer, the Comirnaty XFG. We've got a couple options from Moderna. We've got the Spikevax and the mNEXSPIKE. The mNEXSPIKE is supposedly a little better than the Spikevax in the data we have. We have the Nuvaxovid by Novavax-Sanofi actually. They're slightly a little different in who's eligible, right? If you're f5 and up, you can get Comirnaty. If you're 6 months and up, you can get a Moderna.

VR: You need to have an underlying condition. That's not right.

DG: Yes.

VR: Whose idea was that?

DG: FDA.

VR: That's not right. Everyone should be able to get a COVID vaccine.

DG: Yes. I wonder if it'll be enforced in any way. Slightly different windows.

VR: How do you document an underlying condition?

DG: I think if you just say, hey, I'm at risk. If you smoked once in your life, you're a prior smoker -

VR: I think people shouldn't lie, but this is putting you in an untenable position. During the pandemic, everyone could get the vaccine.

DG: Yes. It is interesting what is considered this. For instance, so approved for 65 and older, or you're under 65, but you have an underlying condition. Then I could be like, I don't work out enough. I carry too much extra weight. I smoked once. I got hypertension. It's sort of a question of what. It's a pretty low bar.

VR: Can you say you have a stressful job?

DG: You do, right? [laughs]

VR: My job is great. No, my job is less stressful. It's lovely, but I can imagine people who have to work night shifts or whatever, they could say, I'm stressed all the time.

DG: Working night shift would put stress on your immune system, yes. All right, so now the late phase. I think I've got a couple articles here. The first is this article. This is very sciencey. "A Distinct Effector B Cell Population Drives Autoantibody Production in SARS-CoV-2 Infection," published in Cell Press, the journal *Immunity*. Autoantibodies are linked to mortality and long COVID, yet their cellular origins remain unclear. This group analyzes the INCOV cohort, identified 12 age- and sex-matched participants with varying autoantibody abundance, integrated single-cell RNA-seq and ATAC-seq. Data from B cells, plasma proteomics, proteome-wide autoantibody profiling, clinical data, and in vitro assays.

Basically, what did they do? They found out that autoantibody abundance inversely correlated with neutralizing IgG. The better you were at getting the right neutralizing IgG, or the worse, if you were worse, you got more autoantibodies. If you got a proper, then yes. This was actually parallel to the contraction of these atypical memory B cells. These are really the CD11c positive, 27 negative. It's a certain type of atypical memory B cell. You think of your normal memory B cells as being 27 positive, but not having 11c positive. Interestingly enough, these particular CD11c positive atypical memory B cells, they've been associated with lupus and rheumatoid arthritis. Some interesting immunology there.

All right, now these next tie together. "Rapid Recruitment for a Remote Long COVID Clinical Trial" was published as a correspondence in *The Lancet Infectious Diseases*. Here they describe the launch of the Long COVID Treatment Trial Tirzepatide in October 2025. The goal was to fully accrue the 1,000-person study within two months, which they did in less

than two months. Each of the 1,000 participants learned about the trial, completed an eligibility survey, shared documentation of their Long COVID diagnosis and their identity, and completed consent within that timeframe. I'll leave a link into that.

Then we have the preprint "Insights from a Double-blind, Randomized, Direct-to-Participant Intervention Trial for Long COVID" posted on MedRxiv. Basically, we designed and conducted a double-blind or are conducting a double-blind placebo-controlled phase two trial for Tirzepatide for Long COVID fatigue using an entirely remote infrastructure. You basically can read through here.

In results, interestingly, they say the trial enrolled 1,058 participants in 73 days. At least double the rate of any other Long COVID trial. Mean baseline metrics include the mean fatigue severity score, daily step count. You see these are more severely affected population than other clinical trials that collected comparable data. We're really waiting for the data. Just to let you know that was up, it enrolled really quickly. Let people know this could be done. If you do it and you do this model, within two months, you can basically be up and running.

This is probably the most newsworthy. This is the article, "Nirmatrelvir–ritonavir Targeting Viral Persistence in Post-COVID-19 Condition (Long COVID) in the USA (RECOVER-VITAL): A Randomised, Double-blind, Placebo-controlled, Phase 2 Trial," published in *The Lancet Infectious Disease.* These are results of a double-blind placebo-controlled randomised trial involving adults who had developed viral persistence symptoms greater than or equal to 12 weeks associated with three major symptom phenotypes, cognitive, autonomic, or exercise after acute SARS-CoV-2 infection at 69 U.S. sites.

Between July 27, 2023, September 6, 2024, 1,207 individuals were screened. Of these, 964 were randomly allocated and 959 participants, excluding four participants were later found ineligible and one who did not initiate treatment were enrolled in the three phenotypes. We've got 332 in the cognitive, 334 autonomic, 332 in the exercise. They're going to basically do Paxlovid for 15 or 25 days. No evidence of benefit in Long COVID in any of the three phenotypes studied. This was true for the primary and the secondary endpoints.

VR: All right. It's a good-sized trial.

DG: Yes. It's a good-sized trial. No signal here. Unfortunately, it does not look like this was helpful.

VR: I mean, it means that there's no replicating virus that's causing Long COVID, right? It's likely.

DG: I really take that as a takeaway. People are like, oh, it just means this one, now let's try a different antiviral. I say, no, I think that we've -

VR: No, this is a good one. It's a really good trial.

DG: This gives us that answer. I think it's time to move on and look at other studies. All right. No one is safe until everyone is safe. We're doing a pretty major fundraiser right now. This is our ASTMH fundraiser, American Society of Tropical Medicine and Hygiene fundraiser. What are we doing? We're going to go to the annual meeting of the American Society of Tropical Medicine and Hygiene. That's in November. We're going to sponsor the president's

reception. That's going to be in the evening at one of the days of the conference. At that reception, we're going to announce the five-year Dickson Despommier One Health lecture series.

We're going to be doing some podcast recording there at the conference. They have some special timing and space for us. This five-year lecture series, it's going to be once a year. It's going to be a One Health lecture series, talking about the One Health linkage between the whole world and infectious diseases. We'll have our booth there. We're going to give away some books, and we're going to do a lot of our educational. We would like our listeners, we would like you to pause the recording right now. Go to parasiteswithoutborders.com. Click on that Donate button. We're really trying to get enough donations to move forward with this.

VR: Great. It's time for your questions for Daniel. You can send yours to Daniel at microbe.tv. Theodore writes, "Dear Virophiles, I got a positive COVID test last Thursday, 27 of Aug, a few days before my scheduled ustekinumab injection for psoriasis. The treatment was, of course, postponed. Fully vaccinated and boosted. Minimal symptoms. I started Paxlovid on Saturday and all went well. Negative on September 2. Would it be wise to wait at least 14 days from the COVID onset before taking again ustekinumab? I was thinking about September 11 to 14."

DG: That actually makes sense. Just think about your timing. You want to jump in right away, which you did. You've got your first week as that viral phase. You've got a second week, which is this inflammatory phase. I think if you wait 14 days from onset to go ahead with your psoriasis therapy, that would be right in line with our recommendations and the evidence we have. This is our Athenian friend Theodore, right?

VR: I guess it's Athens, Greece, right? Not Athens, Georgia.

DG: [laughs] Hard to tell, right? I spent some years growing up in Sparta, New Jersey.

VR: I think Athenian probably refers to Greece because Athens, Georgia, you don't call yourself an Athenian. Julie writes, "What are your thoughts on taking ensitrelvir (XOCOVA) for post-COVID exposure?"

DG: All right. I'm actually going to do some talks. It's Shionogi, right, that does ensitrelvir (XOCOVA)? We've talked about the data. The data's great, right? When you've got great data, I'm happy to talk and share about it. This is the situation where somebody has COVID, and then you're exposed, right? We're talking contagious disease. You're in a nursing home. You're in a home environment. Your spouse gets COVID, and you want to reduce your risk of getting COVID.

XOCOVA was shown pretty significant, compelling data. I would say personally, right, if that exposure, I would want to take something because I don't really want to get COVID. I don't want to get COVID and then spread it on to the next person. I don't want to get COVID and risk having long-term issues or even acute issues. I think it's got to play a great role in the nursing homes, in high-risk individuals having these exposures. Yes. I think it makes a lot of sense. We've shared the data.

VR: Ken writes, "Great channel, very informative. I work as a paramedic in British Columbia, Canada. I'm curious about your thoughts. My two boys are fully vaccinated as per the

Canadian and British Columbia health guidelines, including yearly flu. However, they were not vaccinated against COVID as we all caught COVID as the vaccine was being rolled out for children. Please share your thoughts on the risk benefit in vaccinating my two boys against COVID at this point when they have had multiple exposures from school outbreaks since? If not, is there a good time to start?

I can't seem to find any good evidence for or against vaccination in the pediatric population if already inoculated with COVID. Both boys are healthy with the exception of one having a fully resolved case of pediatric osteomyelitis when he was 3. Thanks for all your advice. I had my first Gardasil shot, trying to dodge head and neck cancers and a measles booster and shingles shot in the last year as a 49-year-old male."

DG: I like this, Ken. There's a lot in here. We'll go backwards. One, interesting, right, Gardasil? We shared the data. The significant reduction was greater than 90% reduction in some types, but 80% more reduction in head and neck cancers. It's going to be interesting to see. That really needs to get out there and be appreciated. You got your measles booster because measles is back here in the U.S. It's also back in Canada. Got your shingles shot. That's interesting, 49, right? 50 is what we talk about in the U.S., but it's not etched in stone.

The COVID vaccine for kids, right? My kids have always gotten the COVID vaccines. Unfortunately, they've also gotten COVID here and there. What do the vaccines do? The vaccine can reduce your risk of getting infected, can reduce your risk of medically attended,

VR: Disease, not infected.

DG: Even infection, right? Because it depends on the PCR, yes.

VR: How early it is, a few months maybe after the vaccine?

DG: Yes, for those few months, right? A few months, you get a reduction in infection, right? That's not what we care. We care much more about disease, right? Because if you ended up, oh, PCR positive but minimal symptoms, but you're going to reduce your risk of being sick enough that you're going to end up going to see the physician, you're going to end up missing school. Also, reduce your risk of spreading it onto others.

VR: And Long COVID.

DG: Long COVID because about 1% or 2% of these kids will get COVID, and then it's two months later, it's three months later, they're not better.

VR: I think it's a no-brainer.

DG: I think it's a no-brainer. Yes.

VR: Ken writes, no, Brent writes, sorry. "I read that new COVID vaccines were just approved, but it looks like if you're under 65, you can only get them if you have a risk of severe infection. Is this different from past years? Will I be able to just sign up to get one?" We were just talking about this, right?

DG: Yes, so 65 and over, go ahead. If you're under 65, they're requesting that you have one risk factor for eligibility. There's a lot of risk factors out there, right? Scratch through. Have you ever had a cigarette? Are you a former smoker? Are you overweight? You get as much

exercise as you should? Yes.

VR: Mike writes, "We enjoy listening to the podcast and thank you for the information you share. It's a valuable and trusted resource. Here's an article you might want to comment on. This is an article where two German airport workers die of malaria after mosquito arrives on plane."

DG: Yes. I saw this, yes.

VR: What's your comment?

DG: Occasionally we see this, right? There have been a couple at JFK where we try to do this really good job of spraying the planes, not letting the mosquitoes with malaria come into our country and bite people, but it sounds like there was a bit of a breakdown. Yes, there were these two deaths in Germany. Yes, so what happens? The problem is people aren't thinking about it. A person comes in, they've got a fever. They're like, I work right here. You don't think of a case of malaria, but periodically we've had those. If you don't have the index of suspicion, they can get pretty sick. They can actually die before anyone thinks of the proper diagnosis.

VR: I was going to say, why would you die of malaria in Germany? You should be treated, right?

DG: They probably don't even think about it yet.

VR: Six people have come sick, various people who work there, and they're trying to find out if they're infected with one mosquito or six different mosquitoes.

DG: It is interesting because some females are double biters, but they're really not triple biters. It probably was more than one mosquito. It probably wasn't like one female bit the first person and then bit a second person a period of time later. Because you bite the first person, you pick up the parasites. You bite the second person, you infect them. You probably don't live long enough to bite another person. We think it might be when the wheels come up. There might be that the mosquitoes are in there. They come aboard and they spray the inside of the plane, but you're worried about some of the other areas as well.

VR: In a place like Frankfurt where planes are coming from everywhere, it's a concern. Even here, Newark and JFK, same situation.

DG: Yes. That's why we see it.

VR: That's *TWiV* weekly clinical update with Dr. Daniel Griffin. Thank you, Daniel.

DG: Oh, thank you. Everyone, be safe.

[music]

[01:05:22] [END OF AUDIO]