

TWiV 1358 Clinical Update

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Guest: Daniel Griffin

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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 1358, recorded on September 17, 2026. I'm Vincent Racaniello, and you're listening to the podcast all about viruses. Joining me today from New York, Daniel Griffin.

Daniel Griffin: Hello, everyone. I'm wearing my Spike T-shirt today. I don't know if anyone can see that. No bow tie, the Spike T-shirt, which I think was a gift from you. I feel like you got me this as a gift, Vincent.

VR: Yes, that's right. I got everyone a Spike T-shirt at one point during COVID.

DG: All right. Well, let's jump in. We've got a lot to cover. I've got these two. They're very similar Mark Twain quotes. It's the second one that got me, but then I found the first one. You get double Mark Twain. Mark Twain, I guess. "No one is willing to acknowledge a fault in himself when a more agreeable motive can be found for the estrangement of his acquaintances." Then the next, which gave me pause, "Always acknowledge a fault frankly. This will throw those in authority off their guard and give you opportunity to commit more."

VR: He was really something, wasn't he?

DG: I liked that last one.

[laughter]

VR: That's good.

DG: All right, maybe people will figure out why I picked those. Unfortunately, we have some pretty sad stuff. We're up to four deaths in Pennsylvania from measles. The first two, right? We had a young child, and then we had the child at birth, the splenic rupture. Then, an unvaccinated woman likely died of measles complications. The county coroner says a 40-year-old unvaccinated woman in Pennsylvania died Saturday. That was 9/12, so a week prior from when this will drop. Most likely because of measles complications, the Jefferson County coroner, Greg Furlong, said on Sunday.

The news comes as Pennsylvania faces a rapidly expanding outbreak that has already sickened more than 670 people and hospitalized 124. I just wanted to point that out. We have over 100 people that have ended up in the hospital. As they point out, roughly one in 5

unvaccinated people in the United States who contract the virus lands in the hospital. Often for complications such as pneumonia, severe dehydration, and brain swelling. This is not *The Brady Bunch*. This is not RFK Jr. joking about stuff. These are people who get really sick.

I think Paul Offit and I have both said that you can always tell who has measles because they're the most miserable person in the room, usually the most miserable child. Fourth death from measles in Pennsylvania. An 18-year-old has died of acute disseminated encephalomyelitis, a rare severe neurological complication of measles. This is according to the coroner in Mifflin County, Pennsylvania. Prior to 2025, when three measles-related deaths relate to an outbreak in Texas, the last reported measles death in the U.S. was in 2015.

Measles was declared eliminated in the United States in 2000, but the country is likely to officially lose that status later this year. Pennsylvania Department of Health is leading a robust, proactive, and transparent response to PA's largest measles outbreak in more than 30 years. We read here, this is *Inside Medicine*, Substack. The Pennsylvania Department of Health is leading a robust, proactive response, administering nearly 4,300 MMR vaccinations at 130 pop-up vaccination clinics in the affected communities since the outbreak began in late April, in homes, churches, community centers, and anywhere they are invited.

Health care providers are seeing a surge of interest from residents seeking MMR vaccinations; in a typical month, all PA health care providers administer approximately 75,000 doses. In August, more than 46,000 MMR vaccines were administered across the Commonwealth. Really stepping up.

VR: This is just great. This is perfect. This is just what the state should be doing. You'll see this will curtail the outbreak.

DG: I really hope so. Now, the CDC doesn't seem to be helping. CDC's new tracking method for measles deaths puzzles experts. We've talked a little bit about how they didn't want to count the recent deaths. The U.S. Centers for Disease Control and Prevention, CDC, has pivoted to using data from the National Center for Health Statistics for measles death counts and not state data collected via the National Notifiable Diseases Surveillance System. Despite Pennsylvania reporting four recent measles-associated deaths, two in babies, two in adults, the CDC website states the NCHS does not currently have any death records from 2026 that indicate measles is the underlying cause.

I'm going to pause there. What's going on, Vincent? This is just craziness.

VR: This is RFK Jr. telling them not to report the measles death. What's her name? Erica Schwartz is listening to him so she can keep her job. This is very disgusting.

DG: Does that job pay really well or something? What is the price of a human soul these days? Can we say conflict of interest? Kennedy to deliver keynote for anti-vaccine group he once led. Yes, I just want to point this out. This has been his history. Health Secretary RFK Jr. will give a keynote address at a Children's Health Defense Conference in the nation's capital, embracing the anti-vaccine organization he once led.

VR: This is totally inappropriate, isn't it?

DG: He lies, because he has actually said that he distanced himself. He's not really involved

in this anymore. Now, he's going to go do this keynote. Clearly, not a lot of distance there. Now, next, I feel like we're in a lot of news section here. Exclusive: New NIH research center on vaccine harms takes shape. The NIH is preparing to launch a clinical research program to study people who believe they were harmed by vaccines, including COVID-19 vaccines. In an internal meeting last week, officials of the NIAID, so that's the National Institute of Allergy and Infectious Diseases, discussed plans for a new research center on the NIH campus in Bethesda, Maryland. That could start up in mid-October.

The agency plans to fund outside researchers to study adverse effects of vaccines, piggybacking off existing studies of people with vaccine-related illnesses. The amount of funding for the efforts has not been determined. If this was done under anyone else, Vincent, I would praise this. Clearly, we talk about the fact that there are risks with vaccines. They're greatly overshadowed by the risk of the diseases they target. I worry about people with an agenda not actually doing science, but really drumming up propaganda.

We've talked, and I've cared for folks that have had issues post-vaccinations. This is a real issue, but it needs to be addressed with science, with rigor, not with propaganda.

VR: Yes, I agree.

DG: All right, ICE. Next section is on ICE. U.S. pediatricians reported seeing fewer patients because of immigration enforcement worries. Immunization clinics in San Diego, California, are usually packed in August as parents prepare their kids for the new school year. Not this year. With agents from ICE often waiting outside medical clinics, many immigrants and their families now afraid to seek health care. We hear this from a professor of pediatrics, Pia Pannaraj. She's the vice chair of the American Academy of Pediatrics' Committee on Infectious Diseases.

Here's a quotation. "We saw a huge drop-off in people getting vaccinated," she told *CIDRAP News*. Many immigrant families, parents are afraid of being detained or arrested by ICE, and, "It's a valid fear." 31% say fewer families applying for the government programs. Almost half of all pediatricians in the United States believe they're seeing fewer families because of concerns about ICE. This is really terrible.

VR: It's horrible. That means these outbreaks are going to get worse and worse.

DG: Yes. It's also going to fuel this whole concern about immigrants. It just backfires. Now, tell me a little bit about this, Vincent. "Surgeon General Nominee Pledges Support for Vaccines in Senate Hearing." I read this, and I'm like, "Oh my gosh, somebody's going to be upset with this pick." Dr. Nicole Saphier, Mr. Trump's pick, President Trump's pick for Surgeon General, expressed unequivocal support for childhood vaccines during a hearing on Wednesday held by the Senate Health Committee. Her comments stood in stark contrast to those made by other Trump administration nominees, some of whom have cast doubt on vaccinations.

Dr. Safier said she did not believe vaccines caused autism and that she believed immunizations saved lives. She also supported universal vaccination against hepatitis B. Now, previous on our podcast, Dr. Safier had questioned the recommendation that all newborns receive the hepatitis B vaccine. A little bit interesting, here she is contradicting a false claim that Mr. Trump made in an August event at the Oval Office. Dr. Safier said at the hearing she did not believe the combinations, the measles, mumps, rubella, MMR vaccine

was lethal. Do we trust her?

VR: I don't know, Daniel. I'm just a little suspicious. Why would she be against the birth dose of hep B? Every doctor knows that it's needed in the U.S. We thought that Erica Schwartz would be good, and look what happened. Let's see with her.

DG: Yes, it's really tough. She promised. She said, "I will not do something that is not in the interest of the health of people in America," and here she is. All right. This is a long one. *CIDRAP* Op-Ed: "HHS is Asking What to Call Vaccine Recommendations. You Have Four Days to Weigh in," and we're going to leave some links. Federal vaccine recommendations come in three kinds. "Routine" means the default is to vaccinate everyone in an age group. "Risk-based" means the recommendation applies to people with a particular condition or exposure.

Here's the meat of it. "Shared clinical decision-making," which the HHS now also calls individual-based decision-making, means there is no default. The decision is made one person at a time between a clinician and a patient or parent. This third category is what the notice is built around, and it helps to know what 'no default' does in a clinic because it does more than the phrase suggests. A routine recommendation works while nobody is looking. It shows up in the chart on its own because the clinical decision support logic used by the CDC encodes routine recommendations, and the forecasting software in electronic records acts on them.

A nurse, a pharmacist just gives the vaccine understanding order. The visit begins from the assumption that the child is due, and the clinician can say so, which is the approach that communication research most consistently ties to vaccine acceptance. Shared clinical decision-making takes the default away. Nothing about the category forbids reminders or standing orders, and the conversation does not need a physician. The CDC's page lists nurses and pharmacists among the people who can have it, but the prompts and the orders would default for a schedule.

Now, you've got this issue. I'm going to leave in links to this. Did you want to jump in on this? Because there's really a lot in here. We probably need to level out of this in the show notes.

VR: Well, the problem is that they want to change this to the default where the charts say, "You're due for a vaccine, to nothing." It has to be built in. It's not part of it right now, and then it's going to cause a lot of friction in terms of getting vaccination. They go on to say that there's one recommendation that exists for the first days of life. That's the hep B vaccine that is important to get. We know that you need to get it in the U.S. If you don't do that, then you're immediately susceptible to infection.

The change there is for infants whose mothers say they're hep B negative. There's a story here about a woman who tested positive, but it was erroneously transmitted as negative, and she didn't get the birth dose in the end. That's the thing. It should be a default and not depend on any screening of the mother.

DG: Yes, it's tough. We'll leave in a link. You can go to [regulations.gov](https://www.regulations.gov). There's a docket number you search for. We'll leave that in as well. Basically, people need to write in. This is one of those things where don't just complain. We need to step up. We need to protect our children and our communities. Now, a little bit here. This is from polioeradication.org.

Vaccines at work. In Germany, approximately 21,000 children have not received their first vaccination against diphtheria, tetanus, and pertussis. Compared with the country's overall high vaccination coverage, this may seem like a small number. Nevertheless, it is one that should concern us.

Germany does not have a fundamental vaccination problem. But that is precisely where the challenge lies. Vaccination programs have been so successful that many people have never experienced the diseases they protect against. Illnesses that were once part of everyday life are now known to many only through stories or textbooks. Most young parents have never seen a child develop polio. They have never witnessed how quickly diphtheria can become life-threatening or the serious complications that measles can cause. The fact that they have been spared these experiences is one of the greatest achievements of modern medicine.

But that success has a downside. The rarer these diseases become, the easier it is to forget why vaccination is so important in the first place. That's precisely why ongoing public education remains essential. In Germany, all childhood vaccine recommendations by the Standing Committee on Vaccination, the STIKO, are free of charge. The key, therefore, is ensuring that parents have access to reliable information. They get their questions addressed early. Since this is from polio.org, they mentioned polio is perhaps the best example.

Germany has been free of endemic transmission of the virus for decades. But that does not mean poliovirus has disappeared. It continues to circulate in parts of the world and has been detected repeatedly in wastewater in several European countries in recent years, including Germany. The fact that these detections have not led to outbreaks is no coincidence, it demonstrates how well vaccines work. High levels of immunity in the population, combined with robust surveillance, prevent the virus from regaining a foothold. That is exactly why we must not allow high vaccination rates to create a false sense of security.

They are not guaranteed to continue on their own. Every generation must be reminded why vaccines matter. Every immunity gap increases the risk that diseases we believed had been consigned to history will return.

All right. Scientific funding. Researchers file First Amendment challenge to NIH grant screening. This is an interesting one. Researchers asked a federal court to find that the NIH is acting illegally in barring grants on topics disliked by President Donald Trump's administration.

NIH, which screen grants for sensitive terms and requires changes in how projects are described, is violating the Constitution's First Amendment protections of free speech and rules requiring that grants be awarded based on scientific merit. The NIH is systematically trying to silence research-related speech, including biomedical results that it suspects will express views the administration does not like on everything from DEI to gender identity to climate change. The plaintiffs are asking the court to order NIH to drop its screening policy, restore terminated grants, and re-review those not funded.

The complaint was filed in a San Francisco federal district court. Really interesting. I don't know where this comes from, but every so often, I stick my nose in social media and I see people making comments about, "Oh, yes, the NIH, they were funding all this woke research." What is woke research, Vincent? What are they talking about?

VR: [chuckles] You don't know what woke research is?

DG: What is woke research?

VR: It's basically a word that means being alert and aware of racial prejudice and social injustice. Over time, it's become a highly debated political term. Basically, today the word is used as a shorthand for progressive or left-leaning political ideas involving identity politics and social justice. It's basically used now as an insult. This lawsuit is great because them taking away grants for things they don't like, I'm sorry, it doesn't matter what you don't like. These grants were reviewed by a study section of scientists, they were approved by a council, they were funded, and the money comes from congressionally appropriated funds.

The president has no right to say, "I don't like this gender research, and you're not having your grant." This is a great suit. They have great points. I hope they get it.

DG: All right. *Legionella*, any Yankees fans? Vincent, are you a Yankees fan?

VR: No, I'm not an anything fan anymore.

DG: [chuckles] All right. I guess not after this, right? In *NBC News*, we have the headline, "Cooling Towers at Yankee Stadium Test Positive for Legionnaires' in New Cluster." We've got another cluster. The New York City Health Department has ordered 10 cooling towers in the South Bronx to be cleaned and disinfected after preliminary testing found the presence of *Legionella* bacteria as officials investigate a cluster in ZIP codes 10451 and 10456. Two of the locations are tied to high-profile sites.

I'm just going to say they're tied to high. I don't know which are the two. One high-profile is the cooling tower at Yankee Stadium, where the Yankees played the Mets in the Subway Series. Oh my gosh, do we have Mets fans? Another is at the address of Lincoln Hospital. The other is the Boricua College Bronx Campus. Unfortunately, we have 13 people that have tested positive. A couple are in the hospital. Nine have been discharged. One is not hospitalized. One actually died.

Now, as we read, in addition, this PCR testing, they're also going to be doing cultures, but the culture tests take up to two weeks. They're going ahead, they're cleaning.

VR: This is a big problem because a hospital cooling tower, that could be tragic, right?

DG: It really could be, yes. Screwworm. This is interesting. We had another case of screwworm, right? We're up to 49 animal cases. For the first time in more than 60 years, New World screwworm has been detected in a ranch horse in Texas. This is just an update. I don't know if this has even made it into the numbers there. The case was detected in Presidio County. The parasite was found on the hind limb of the animal. As mentioned, we're up to 49 animals in all Texas and New Mexico. I'm glad they found it. Now, we know we have some treatments. What is happening to our country?

Ebola, the *MMWR Notes from the Field*. The first 100 days of five Ebola outbreaks, Democratic Republic of the Congo, Uganda, and West Africa, 2007 to 2026. We read: The first 100 days after identification of an outbreak. I think that's really critical. It's after identification of the outbreak. As we know, we're past 100 days because we've gone back and realized there probably were cases before we identified the outbreak. As I mentioned,

the 100 days after identification of an outbreak are important to understanding transmission dynamics, impact of early public health interventions, and trajectory of potential future cases and deaths.

Now, a large Ebola disease outbreak is underway in the DRC, which has become that country's largest and deadliest. To better understand the current outbreak, this report compared metrics from the first 100 days of this outbreak with those of four past Ebola outbreaks. Which four? The historic outbreaks of Ebola disease selected for this comparison include the two largest, so that's the 2014 outbreak in West Africa, a 2018 outbreak in DRC, and the only two previous outbreaks caused by -

VR: Bundibugyo virus.

DG: [chuckles] We had a talk on Bundibugyo virus at Columbia just on Tuesday, and they did not get the bugyo. They pronounced it the way I pronounce it, which is wrong. The 2007 outbreak in Uganda and the 2012 outbreak in the DRC. We've got these basically five in context. 2007, the Bundibugyo virus disease outbreak, Uganda. This was first identified in 2007 when it caused an outbreak of Ebola disease in Uganda. Fewer than 50 cases identified during the first 100 days of the year. That was limited, ended within six months. Total of 131 confirmed, probable suspected cases. 32% of those folks died.

2012, five years later, we get Bundibugyo virus disease outbreak in DRC. This is the second one. Fewer than 50 cases in the first 100 days. Limited to a single health zone. Ended within six months. 62 confirmed. 55% was the case fatality rate. Now, 2014, this was the big one. 2014 Ebola virus disease outbreak, West Africa. In 2014, large outbreak of Ebola virus disease caused by, this was the Zaire. It was the *Orthoebolavirus zairense*. The initial outbreak report included 49 confirmed cases, 59% deaths during the first 100 days. 759 suspected, probable or confirmed cases. 62% deaths in these cases.

The outbreak lasted three years, went on for three years with 28,610 cases and 11,308 deaths across 10 countries. 2018, this is the large outbreak of Ebola virus in the DRC. This was again the Ebola Zaire. This occurred in the DRC during the first 103 days. 295 confirmed cases. 51% was the fatality there. The outbreak resulted in 3,470 cases, 2,287 deaths. That was 66%. Now, here's where we are now. 2026, Bundibugyo virus disease outbreak. On May 14, an outbreak of Ebola disease caused by Bundibugyo virus was detected in DRC.

The outbreak was declared on May 15, at which time DRC's Ministry of Health had confirmed 246 suspected cases, 76 suspected deaths. During the outbreak's first 100 days, 5,458 confirmed cases, 2,606 deaths. Across 57 of DRC's 519 health zones, 21 probable or confirmed cases related to this outbreak were identified in Uganda, but that was limited. During the first 100 days after detection, the current outbreak resulted in more cases than the other two largest Ebola disease outbreaks. They're actually in this *MMWR*. They have the first 100 days, but I also like the fact that they do a first 365, where we put this in a broader context.

Hopefully, those will be up for our YouTube listeners to watch. What's nice too is actually, they've expanded if you go to the CDC updates. They've expanded out so you can start to get a better sense of where the DRC 2026, the current outbreak, is relative to the trajectory of some of the others. We're up to 7,200 confirmed cases, 3,475 confirmed deaths.

All right. Well, measles. Bounce back to measles. We talked earlier about the four deaths in

Pennsylvania. In the AP, we have the article, "Suspected Measles Cases Kill Nearly 1,000 as Bangladesh Struggles to Contain Outbreak."

It's interesting because historically, the argument was, "Oh, measles is a problem in these other areas where they don't have good nutrition and all the rest." We're seeing 10% to 20% of the people with measles end up in the hospital in the U.S. We saw four deaths already in Pennsylvania. Yes, measles is not just a problem in other parts of the world, but it is a problem in other parts of the world. A few years ago, Bangladesh had measles largely under control with a vaccination program that was credited for decades for protecting children and mothers from the deadly diseases of TB, diphtheria, whooping cough, tetanus, polio, and measles.

Between 2021 and 2025, the country recorded just 100 to 300 cases per year, down from 2,410 in 2020. In the last few years, disruptions to the vaccine program have left a growing number of children unvaccinated. First, the COVID-19 pandemic interrupted routine vaccinations. Then in 2024, the government largely missed a vaccination campaign, previously carried out every four years. We first discussed this on *TWiV* 1328 as the consequence of political upheaval, and I'll leave a link into the *TWiV* 1328 as well as the *AP News*. All right, and numbers, we are up to 3,387 U.S. measles cases.

We blew by last year's total of 2,242. We now have gotten to the point where we have a New York State measles dashboard, and I'll leave a link into that. Yes, this is just 51 cases in the state. This is New York State excluding New York City, because then New York City has its own. We're up to half a dozen, six confirmed measles cases in New York City. We'll keep that stuff updated. All right. Well, it is time to get your vaccine, so time to get your flu, your yearly flu jab. If you haven't gotten your RSV and qualify, look at that. Let's talk a little bit about RSV.

We've got the active, and then we've got the passive, the monoclonal antibodies. We have the article, "RSV, Immunization Effectiveness and Safety for the 2026-2027 Respiratory Season," published in *JAMA*. Here, MEDLINE, PubMed, Embase, Cochrane Central, and Scopus were searched from August 1, 2025, through June 29, 2026, for studies evaluating the safety and effectiveness of U.S.-licensed RSV vaccines or RSV monoclonal antibody products. A total of 75 eligible studies were identified, including 12 randomized controlled trials, 33 observational studies with a comparator group, 16 observational studies without a comparator, and 14 descriptive studies on RSV epidemiology.

I wanted to comment there. I saw this meme on the social media, and there's a play on *The Atlantic*, I think it's *The Vertlantic* or something like that where it's like, "No, no, not that study. Look at this study." You look at a paper like this, and they're looking at how many different studies, and then they're narrowing it down to 75 eligible, and all there. This is really the way. You can't just cherry-pick. Look at this one cherry-picked study. I want you to look at this one cherry-picked study. No, you really have to go into science with the null hypothesis, and you have to say, "What do we actually know? What's true?"

Here, what is true? In older adults, RSV vaccinations was associated with a reduction in RSV-related hospitalization, vaccine effectiveness 83.3%. That's huge. Point estimates for RSV vaccine effectiveness against hospitalization and lab-confirmed RSV illness among older adults were significantly higher during the season after vaccination compared with 12 to 18 months of follow-up. The vaccine effectiveness for maternal vaccination ranged from 51% to 70% against RSV-related infant hospitalization. Estimates for effectiveness nirsevimab, that's

getting the monoclonal, that's the baby's getting that.

For the infants, 63.6% to 93% for RSV-related hospitalization within six to 12 months. From a safety issue, NIH is now going to study vaccine safety. We always do that. No cases of Guillain-Barré, GBS, were identified across three RCTs among older adults. One self-controlled case series reported a possible increased risk of GBS during the 42 days following vaccination. None of the comparative studies included in this review found an association of RSV vaccination during pregnancy with preterm birth or other adverse pregnancy outcomes.

All right. Well, time to get your COVID jab, your yearly COVID jab. We have some updates here. I really like the map because you can really see that this is regional, right? Even with the blue-wash thing, even with changing the levels. Texas is high. California is high. Nevada, Mississippi, very high. If you follow along, we've really got a nice - well, nice, pretty significant spike in the wastewater levels. It's a little too early to tell. Have we peaked? Is this an up and down? Pretty high activity in a lot of these areas. Moderate in Alabama and Florida, that would have been high with previous.

It's going to be a challenge, right? When we see, "Oh, the peak isn't as high," we have to realize that peak has been adjusted. It is very scary for people, Vincent, to know that there's COVID around. We've tried to move those levels down. OK. [chuckles] Yes, time for the jabs. Maybe we'll talk about this in the question-answer. You've a lot of choices, right? You can get your COMIRNATY jab. You can get your Moderna Spikevax. You can get your M, Moderna mNEXSPIKE, which might be a little bit more efficacious. You've got the Nuvaxovid, which is confusing, but this is a Sanofi Novavax product, which maybe has the advantage of a little less reactogenicity.

Also, as we pointed out, it's not mRNA. If you have an issue with mRNA, this is a traditional protein-based vaccine. We've got a lot of choices out there. Again, somebody is throwing a wrench in the gears. COVID vaccines delayed for half of U.S. children. The Health Department has not decided whether to provide shots to states through the Vaccines for Children program, which serves uninsured and low-income families. Nearly three years after the FDA approved, nearly three weeks after the FDA. You've got to imagine this is getting me quite upset.

We were told, "Don't worry, everyone who wants vaccines are going to be able to get them." Well, this is not that. The FDA approved updated COVID vaccines, and now about half of American children still cannot receive them because the federal government has not made the doses available through the Vaccines for Children program. We hear from Emily Hilliard, a spokesman for the Department of Health and Human Services. She confirmed on Wednesday the department has not yet made a decision about whether to provide shots through that program.

Vaccines for Children provides free shots to children who are uninsured, underinsured, eligible for Medicaid, as well as American Indian or Alaska Native children. Pediatric doses are available for children who have insurance or whose parents can afford to pay for vaccines out of pocket. What pocket do we -? What country do we live in?

VR: This is this administration. They have tons of money, and they're cheaping out to protect children. We have not yet decided whether to protect children who can't afford it. This is so obnoxious, it's unbelievable. I don't know this Emily Hilliard should be ashamed of herself for saying that.

DG: We haven't decided whether or not to make vaccines eligible for children who can't afford them. If you got insurance and money, you're all good. That is not the country we live in. We've been trying to repeat this for a while. I really feel like maybe it's good to just the mantra. Vaccines prevent disease. That's what it's about. Whether you get a little extra benefit, but really, vaccines prevent disease. People want to know, "Should I even bother? Should I go ahead? Should I get that COVID-19 shot?"

I was at Stop & Shop the other day. I got my COVID shot and my flu shot. I did the Nuvaxovid. Of course, it was a problem. The only reason I got it was because my wife helped me navigate, which shouldn't be that way. She's like, we go there, "Oh, we don't have that." My wife, fortunately, ready, and she said, "No, I called. I spoke to Jason, the pharmacist. He said you got your shipment this morning." [chuckles] Back and forth, half an hour later. I get my flu. I get my COVID shot. There was an older couple next to me. Older is anyone over 59. They were over 59.

They were just getting their flu shot. No COVID shot. What's up with that? Maybe we need a little more education. "COVID-19 Vaccine Effectiveness and Safety for the 2026-2027 Respiratory Season," was published in *JAMA*. This is a systematic evidence review. This is not some cherry-picked study that you found in your social media. Cochrane Central Register of Controlled Trials, PubMed, MEDLINE, Embase, and Scopus were searched from August 1, 2025, through June 29, 2026. Studies were eligible if they reported on the effectiveness, efficacy, or safety of a U.S.-licensed COVID-19 vaccine or SARS-CoV-2 epidemiology in the U.S.

They look at 11,829 identified references. When people tell me, "Oh, I did my own research." "Really? You looked through those 11,829 references?" You then tailored them down to, as they did, 155 publications that were eligible, including 15 randomized clinical trials, 84 observational studies with a comparative group, 38 product safety studies, 18 descriptive studies consistent with prior evidence. Studies reported that updated COVID-19 vaccinations were associated with a reduction in the risk of hospitalized among both older adults.

These are folks 65 and older, 53% vaccine effectiveness at reducing your risk of ending up in the hospital. For adults 18 to 64, a 54% reduction in ending up in the hospital. Maternal vaccination was associated with reduced risk of COVID-19-associated emergency department or urgent care encounters among individuals vaccinated, 58% with fewer COVID-19-related hospital contacts in the first two months of life among the infants. That was 50% to 54%, regardless of what trimester you got your vaccine. Vaccination was also associated with a significant reduction in COVID-19-related pediatric emergency department visit, 9 months to 4 years. That was 76%.

Vaccination was associated with a reduced risk of critical COVID-19 illness. That's ending up in the ICU or dying. That was vaccine effectiveness of 32% to 53%. Healthcare personnel, oh my gosh, they were protected too. Post-acute COVID-19 symptoms were reduced 57%. No identified studies conducted under the updated guidance on extended dosing intervals for the primary series reported an increased risk of myocarditis or pericarditis. I want to point that out. No new safety signals, no increased risk of myocarditis or pericarditis. We are seeing increased myocarditis and pericarditis if you get COVID without the protection of the vaccination.

All right. We're going to come to an end here. No one is safe until everyone is safe. This is

where I ask everyone to pause their recording right here. Go to parasiteswithoutborders.com and click on Donate. Even a small amount helps. I'm going to thank you to everyone who's actually stepped up so far because we're going to be using this fundraiser. We're going to be matching these. We're doubling your donations. We're trying to do this five-year lecture series on One Health in memory of Dickson Despommier. We're going to fund that. We're going to support ASTM and H, and even their president's reception.

We're going to, as we've been doing for quite a while, we're going to help support early career people from around the world coming to the annual meeting.

VR: It's time for your questions for Daniel. You can send yours to daniel@microbe.tv. Brian writes, "I know COVID vaccines have been discussed a lot on Twitter, but since we are entering booster season, could you briefly list and summarize the current COVID boosters available and the differences between them? My understanding is that there are three mRNAs, one traditional available. Are there differences between them in terms of indication and efficacy? Can you explain the rationale behind mNEXSPIKE? Is the higher precision of this formulation intended to reduce inflammation and other unintended immune activation sequelae of vaccination?"

DG: All right. Brian, thanks for this. I'll just run through this. We've moved early on. Early on, we did this prime and boost. For little kids, there still is a scheduled series of vaccines. You never saw COVID, never got a shot before. You would get a prime, you'd get a boost. Actually, the kids, some of the sequenced or scheduled series would be three shots. We've now moved to the same way we approach influenza. It's fall. Maybe at some point, SARS-CoV-2 will cooperate and will respect the 12-month time it takes for us to get around the sun. We'll just have a nice, clean winter peak like flu has done for us.

Maybe like RSV has been doing for a number of years. We don't care what you did in the past. We don't care if you didn't get a shot last year. We don't care if you didn't get a shot before. We're expecting to see SARS-CoV-2. We're expecting to see cases of COVID-19 this winter. You got four choices. You go in, you get your one shot, and you're good for the winter season. You can get COMIRNATY. That's Pfizer's product. That's an mRNA product. There are two choices available from Moderna. We have the Spikevax and the mNEXSPIKE.

We discussed a while back a head-to-head trial where it looked like the mNEXSPIKE might actually be a little more efficacious. It was about a 25% increase in reducing symptomatic COVID-19. Then number four, you've got the Nuvaxovid. What a horrible name. They should have just called it Novavax, but it's the Sanofi Novavax. It's the protein-based. If are concerned about the mRNA, it also has a slightly lower reactogenicity. Those are your four choices out there.

VR: Christine writes, "I find the increase in rate of vitamin K refusal for newborns to be alarming and symptomatic of a rise in pseudoscience and misinformation fueled by RFK Jr. and his acolytes. As healthcare providers and public health professionals, we are obligated to advocate for our patients, particularly the most vulnerable, like newborns. What short-term and long-term strategies do you recommend in countering dangerously false messaging and improving vaccine uptake and life-saving interventions like vitamin K? I appreciate your measured approach at a time when the loudest and most outlandish voices seem to consume public attention."

DG: Christine, this is tough. We've been doing what we've been doing. It's just constant education. The other side, for whatever their agenda is, they are willing to misinform. They're willing to be dishonest. We need to just keep countering that dangerous misinformation with the truth. They say that people who you trust, people who seem to care about you. I think that's important. Whether it's a doctor, whether it's a nurse, whether it's just you're talking to your neighbor as just a person out there.

When there's this misinformation, when there's this dangerously false messaging going on, we just have to stand up and say, "No, that's not the case." What we're seeing now, unfortunately, as we're having vitamin K refusals for newborns, we're actually seeing negative outcomes for these little kids.

VR: I'm at the European Society for Clinical Virology meeting. There was a session today on vaccine resistance. One of the points they made was sometimes it doesn't help to give numbers. There was a campaign in Japan for encouraging the use of Gardasil, the HPV vaccine. They said, "All someone has to do is tell the mother, 'Do you want to see grandchildren? Then your daughter should get this vaccine.'" That was incredibly powerful at raising Gardasil uptake in Japan.

DG: Wow. I think it's important to realize we're psychological beings. We're not all scientists that numbers. You see, "Oh my gosh, this woman now has cervical cancer, and you could have prevented that, and they're going to die, and they're not going to be able to have children." We need to hear stories. Also, I hate to share the stories of the people that died of measles, but you need to hear this little baby died because its spleen ruptured because it was riddled with measles virus, and the mother was really upset she'd been lied to, or the other child that died.

What was RFK's, "It was going to die anyway." "Oh my gosh, we're all going to die anyway," but it's horrible, or the other two deaths that we talk about. You need to hear that 10%, 20% of people with measles end up in the hospital. You need to hear about people that die because the other side is, "Oh, it's no big deal. Watch *The Brady Bunch*." "Oh, we don't have to do HPV. It's going to get people to be more promiscuous." We have some really incredible, powerful tools, but there's a lot of money in this misinformation. No, it's important for us to use the language that really allows people to understand why we're encouraging vaccination.

VR: Brandi writes, "After listening to episode 1352, I wanted to offer some information regarding state vaccine registries and required immunization forms. I'm a pediatrician practicing in Mississippi. I can't verify the process in Alabama, which was referenced in the email at the end of the episode. However, when a new patient moves to our state, the family can have previous immunization records entered into the state registry one of two ways. The family can take proper documentation to our local health department, or the family can bring the same documentation to a new patient clinic appointment.

Staff in either setting can upload the vaccinations into our state registry and then allow for state-specific proof of immunization form to be generated. Schools and day care centers require this form for registration. Unfortunately, the states all have individual vaccine registries that don't link to each other, at least not in my experience. Thanks to all you do, and the *TWIV* team do, to educate, longtime listener from the primary care trenches."

DG: All right. Thank you, Dr. Coleman. This is super helpful.

VR: Pamela writes, "Greetings from a loyal *TWiV* follower. Today, I went for my appointment at a local CVS after booking a Nuvaxovid vaccine online. Despite clear indication in writing that this was my request, the pharmacist messed up and gave me Spikevax. Though he was profusely apologetic and admitted his error, it's not like he was going to suck it back out of my arm. My question now is whether it would be worth a follow-up vaccine at some point this winter, and if so, when. Though it is unscientific and N equals 1. Last year, I did not get COVID with Nuvaxovid despite two bouts in previous years after the Moderna mRNA vaccine."

DG: Pamela, we've looked at the Moderna vaccine. We looked at the Pfizer vaccine. We've looked at the Nuvaxovid, which I know you were hoping to get. It all looks like very similar efficacy. I don't think there's a huge - you've got to rush back in and get that Nuvaxovid. This sounds like a little frustrating. I described how hard it seemed to actually be able to get this even when I was specifically asking for it. There can be a safety issue. I guess I'll bring that up. If you look at the licensing and the product inserts, you do not want to get a second COVID-19 vaccination if you've had a prior one within the last two months.

This is similar. If someone shows up in the ER and maybe they have a bad, dirty wound and they got a tetanus shot a couple of weeks before, and the ER doc is thinking about giving them a tetanus shot and they say, "Oh, no, I just got one two weeks ago," then we don't, in general, because we want to avoid potential reactogenicity and a bad reaction. I think the two things is: one, is fingers crossed. Unfortunately, vaccines, they're not 100%. They're not a bulletproof shield. You still may end up with COVID this winter, but hopefully, we're going to reduce your risk of severe disease, either severe disease at all or the severity of that disease.

If you do end up getting another one, you want to, just from a safety point of view, make sure you let the provider know so that you don't end up with getting a second shot that would cause problems.

VR: Janet writes, "On today's show, you spoke to taking Tamiflu when diagnosed with flu. My 42-year-old son tested positive for flu B last Monday. He was able to get a script and find a pharmacy which stocked Tamiflu the next day. He did this because he has MS and is on a drug that dampens his immune system. He thinks he got flu from his two kids, ages 4 and 7, who had runny, stuffy noses in the previous days. No one else but him did a rapid test. In today's show, I think you said everyone with flu should get an antiviral, not just those who are immunocompromised or elderly.

How would this work with kids? Would you be swabbing them every time they had a runny nose? Here in Canada, each test costs \$15, and it's challenging to swab kids' noses and throats. Do GPs even prescribe Tamiflu for otherwise healthy kids?"

DG: Janet from Halifax, Nova Scotia. I'm probably going to head up to Halifax next July. Janet, keep writing in, and I'll let you know if I'm going to be up there. There's a sailboat race, Vincent, where you sail from Massachusetts across. When I was in primary care in rural northern Colorado, a lot of times, you wouldn't necessarily have to do a flu test on everyone. A lot of times, you'll basically have - it's the flu's running rampant, and you have a whole bunch of people with positive flu tests, and then the next group of folks come in, and you just presumptively get them going on the Tamiflu.

It is a little challenging because if every test costs \$15, I get it. Kids' noses, they're always

running. There is a challenge. I think it was funny, early in the pandemic, "Oh, kids can't transmit COVID." I'm like, "Oh my gosh, really? Children can't transmit respiratory viruses? In what world?" They're always a running nose. My daughter, she's teaching fourth grade. She's like, "Daddy, I'm sick all the time." I'm like, "Yes, welcome to children." It is challenging. As we talked about a study last time, little kids can end up in the hospital.

We've actually lost a few hundred kids, half of them completely healthy otherwise, before they died from the flu. It does make sense to pay attention. It is tough to make that distinction. I certainly recognize that. Right now, we have a lot of entero-rhinovirus going around, but it's a challenge because in a lot of different groups, we've clearly shown this benefit of getting Tamiflu, particularly in the first 48 hours.

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

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

[music]

[00:54:12] [END OF AUDIO]